



Craig Y Perthi Solar Farm

Environmental Statement

Chapter 05 Landscape and Visual

Prepared for

RWE

RWE Renewables UK

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5.0 LANDSCAPE AND VISUAL IMPACT ASSESSMENT (LVIA)

5.1 Introduction

- 5.1.1 Amalgam Landscape Limited, a Registered Practice of the Landscape Institute, has produced this Landscape and Visual Impact Assessment (LVIA) for the proposed Craig y Perthi Solar Farm (the Proposed Development), near Bishton, Newport.
- 5.1.2 The LVIA was prepared by Angela Watts, a Chartered Landscape Architect and Director of Amalgam Landscape Limited, with over 25 years' experience in consultancy. Supporting illustrations and visualisations were completed by Paul Shephard, Senior Consultant, with over 30 years' experience in consultancy.
- 5.1.3 The purpose of the LVIA is to identify the existing landscape character and visual amenity receptors within the study area, including their sensitivity to change, and to assess the potential magnitude of impact and level of effect, including a determination of their significance, resulting from the Proposed Development. Design and mitigation measures are proposed, including during the initial design phase, to reduce the impacts and effects of the Proposed Development.
- 5.1.4 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.
- 5.1.5 The LVIA also considers the cumulative effects of the Proposed Development when perceived with other developments within the study that are under construction, consented or currently pending determination. The influence of existing (or operational) developments, including wind energy schemes and solar schemes, are also considered within the assessment of existing conditions.
- 5.1.6 The LVIA also informs the subsequent more detailed design in respect of the development of the Site with the emphasis on promoting landscape character, reducing visibility as well as improving biodiversity and nature conservation benefits and public accessibility.
- 5.1.7 Therefore, 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.

5.2 Methodology and Scope of Assessment

Guidance

5.2.1 The LVIA is carried out by an experienced chartered landscape architect who applies professional judgements in a structured and consistent way in accordance with the guidelines produced by the relevant professional bodies concerned with landscape and visual impact assessment. These include:

- i) The Landscape Institute and the Institute of Environmental Management and Assessment, Guidelines for Landscape and Visual Impact Assessment (GLVIA), Third Edition, 2013..
- ii) The Landscape Institute, Technical Guidance Note 06/19, Visual Representation of Development Proposals, 17th September 2019.
- iii) The Landscape Institute, Technical Guidance Note 1/20, Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs), 10th January 2020.
- iv) The Landscape Institute, Technical Guidance Note 02/21, Assessing Landscape Value Outside National Designations (no date).
- v) The Landscape Institute, Technical Information Note 01/2017 (Revised), Tranquillity – An Overview (no date).
- vi) Using LANDMAP in Landscape and Visual Impact Assessment (GN46) (on-line version, available at www.naturalresources.wales).

Scope of the LVIA Chapter

5.2.2 The LVIA chapter:

- i) Identifies the methodology, including defining the extent of the study area and the detailed technical approach.
- ii) Describes the Site and its immediate surroundings, including a determination of its value and tranquillity. Aerial photographic images and annotated panoramic photographic views are used to help describe and illustrate the existing site.
- iii) Identifies operational, under construction, consented and pending developments within the study area and assesses the additional cumulative



effects of the Proposed Development in combination with these developments on the surrounding landscape character and views from visual amenity receptors. Operational developments (including renewable energy schemes) also form part of the baseline (existing) conditions assessment.

- iv) Describes the wider context of the Site and its sensitivity within the study area including landscape relevant designations, landscape character and visual amenity receptors and their views. Annotated panoramic photographic views, from agreed publicly accessible locations are used to help describe and illustrate the existing context.
- v) Proposes mitigation measures that aim to avoid, reduce or compensate for any adverse effects. Embedded mitigation that has been specifically incorporated into the Proposed Development, such as through siting and design, during the earliest stages of the assessment process, is critical in reducing the potential landscape and visual effects of the Proposed Development. Additional enhancement or mitigation measures proposed to prevent, reduce or offset adverse effects unavoidable through design, or to provide benefits to the Proposed Development and local environment, are also proposed, including new planting. An indicative landscape masterplan (Figure 5.37) helps to illustrate the integration of the Proposed Development into the wider landscape, whilst also providing landscape and nature conservation and biodiversity benefits.
- vi) 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 Zone of Theoretical Visibility (ZTV) to identify the locations in the study area where the Proposed Development could be potentially visible. Annotated panoramic photographic views and photomontages (where the proposed development is superimposed onto the existing photographic view) are also used to illustrate the potential impacts and effects of the Proposed Development from largely publicly accessible agreed viewpoints, immediately following construction, which illustrates the 'worst-case' scenario, and following the growth of the proposed landscape mitigation measures (where applicable), assumed to be after 10 years.
- vii) Provide conclusions on the overall landscape and visual effects of the proposed development.

Assessment Methodology

5.2.3 In line with GLVIA, the primary guidance in respect of LVIA, the methodology used for this assessment has three iterative key stages, as follows:

- i) Baseline, or existing, conditions – this includes the gathering and description of information to inform the LVIA, including information on other operational developments within the study area.
- ii) Design – this includes input into the design at key stages including defining the boundary of the Site and the extent of the Proposed Development, identification of opportunities and constraints, review of initial design layout, discussion and recommendation of additional landscape mitigation measures, in liaison with other EIA disciplines within the technical and environmental team. A leading role was played by the chartered landscape architect in developing the design during the assessment process, including advising on development location and extent and determining the landscape mitigation measures. The landscape mitigation measures were also discussed and agreed with the ecologist.
- iii) 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

5.2.4 The 'main' study area is a minimum of 5 km radius offset from the boundary of the Site (excluding the cable route to the Severn Power Station), as this is where the most 'noticeable' effects may occur. The extent of the study area was also determined through analysis of the extent of visibility and landform and identification of key constraints and includes the rising hills and ridges to the north, including the Wentwood Special Landscape Area, Magor to the east, the fringes of Newport to the west and the coastal fringes including the Caldicot Levels Special Landscape Area and the Wales Coast Path recreational route to the south.



5.2.5 The minimum of 5 km radius study area, offset from the boundaries of the Site was also defined with reference to the LANDMAP Guidance¹ which states:

“The LVIA should identify the detailed study area that needs to be covered when assessing landscape and visual effects. This will usually be based on the extent of landscape aspect or character areas likely to be significantly affected, either directly or indirectly. It may also be based on the extent of area from which the development is visible, defined as the Zone of Theoretical Visibility (ZTV), or a combination of the two.”

5.2.6 The LANDMAP Guidance also states that Visual and Sensory aspect areas and Historic Landscape aspect areas should be assessed within the study area, defined as minimum 5 km radius offset from the boundaries of the Site. Cultural Landscape, Geological Landscape and Landscape Habitat aspect areas should include those areas *“that overlap fully or partially or are adjacent to the development site boundary, these are most likely to undergo change.”* The extent of the study area for the Cultural Landscape, Geological Landscape and Landscape Habitat aspect areas was therefore determined as the Site itself and the immediate surrounds, defined as a minimum 2.5 km offset from the boundaries of the Site.

5.2.7 The different study areas for the five aspect areas of LANDMAP² are therefore summarised as follows:

- i) Visual and Sensory – 5 km radius offset from the boundaries of the Site.
- ii) Historic Landscape – 5 km radius offset from the boundaries of the Site.
- iii) Cultural Landscape – 2.5 km radius offset from the boundaries of the Site.
- iv) Geological Landscape – 2.5 km radius offset from the boundaries of the Site.
- v) Landscape Habitats – 2.5 km radius offset from the boundaries of the Site.

Baseline Conditions Assessment Methodology

¹ Using LANDMAP in Landscape and Visual Impact Assessment (GN46) (on-line version, available at www.naturalresources.wales)

² LANDMAP is an online tool provided by Natural Resources Wales to aid the decision making process by providing a consistent approach to establishing landscape baseline. <https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/evidence-to-inform-development-planning/landmap-the-welsh-landscape-baseline/?lang=en>



- 5.2.8 The description of the baseline conditions reports the existing situation against which the effects of the Proposed Development are assessed.
- 5.2.9 The description of the baseline conditions includes the following:
- i) Site description – the description of the Site, the boundaries and the immediate surrounds, including a determination of its value and tranquillity.
 - ii) Cumulative information – information on operational developments, particularly similar energy developments that could give rise to a cumulative impact with the Proposed Development. Consented developments and those currently being determined, do not form part of the baseline conditions assessment.
 - iii) Landscape relevant designations – the description of areas or features recognised for their landscape value, at a national and local scale. These designations help inform the sensitivity and importance, attributed by national and local government, to areas or features within the Site and study area.
 - iv) Landscape character – the description of the physical characteristics of the landscape and their sensitivity to change. The landscape is divided into discrete areas of similar characteristics. Reference is made to previously published landscape character assessments at a national and local scale, including LANDMAP. With reference to the LANDMAP Guidance³, all aspect areas within the boundaries of the Site and the ‘outstanding’ and ‘high’ sensitivity aspect areas within the relevant study areas are considered as part of the baseline conditions.
 - v) Visual amenity receptors – the identification of people and groups of people and a description of their views. Views from settlements including towns, villages, hamlets and individual residential properties and farms, places of interest, national cycle routes, recreational routes, open access areas, local Public Rights of Way (PRoW), bridleways and cycleways, major and minor roads and railway lines are assessed. The sensitivity of the visual amenity receptors is also described.
- 5.2.10 Baseline conditions information is collected through a combination of desk studies, site surveys and consultation.

³ Using LANDMAP in Landscape and Visual Impact Assessment (GN46) (on-line version, available at www.naturalresources.wales)



Desk Study

- 5.2.11 An initial desk study was undertaken to review existing data relevant to the study area. A summary of the desk study process is outlined below:
- i) 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.
 - ii) Review of 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 of the Site and within the wider relevant study area.
 - iii) Review of maps and internet data to gain an understanding of the landform and landscape pattern as well as for information on location of PRoW and visitor attractions.
 - iv) Identification of operational, under construction, consented and under determination developments within the study area. The information on these developments is correct as of June 2026.

Site Survey

- 5.2.12 An initial site survey, including a photographic survey, was undertaken in fine weather in August 2021 by an experienced chartered landscape architect.
- 5.2.13 The Site and selected viewpoints in the surrounding area were visited. The purpose of the initial site visit was to inform the layout and extent of the Proposed Development, provide advice on the development of the design, including initial landscape mitigation measures and to inform the pre-application and scoping advice.
- 5.2.14 Following consultation feedback, a further site survey was undertaken in October 2022.
- 5.2.15 The site survey, including the taking of panoramic viewpoint photographs within the study area, was undertaken from selected publicly accessible areas, such as public highways and PRoW. Views from private properties, such as houses and settlements, were estimated from the closest publicly accessible location and checked using aerial photography.



- 5.2.16 Following the public consultation, an additional site survey was undertaken in October 2023, where additional photographic views were taken from within the Site and from the immediate surrounds.
- 5.2.17 The site surveys allowed an understanding of the existing landscape character and visual amenity receptors and their views, present within the study area, and helped identify the potential impacts and effects as a result of the Proposed Development as well as developing the design and mitigation measures. This supplemented the available information collected during the desk study.

Consultation

- 5.2.18 Pre-application advice has been received from Newport City Council (NCC), including within the pre-application enquiry response dated 25 January 2022 (see Appendix 1.1). Of relevance to the LVIA chapter, NCC advised:
- i) The landscape and visual impact of the Proposed Development would be significant due to its scale and the nature of the development. It is vital that this is fully assessed through a LVIA, produced by a landscape professional. This must address all elements of the Proposed Development, including the substation, grid connection, battery storage, access tracks, passing bays, visibility splays, inverters etc. It will be important that the LVIA does not underplay the impacts and that the impact immediately adjacent to the site is reviewed and mitigated for, in addition to mid and longer distance impacts.
 - ii) Given the location of the Proposed Development, it would be prominent to sensitive receptors (dwellings) in Bishton, which should be considered fully.
 - iii) Several PRoW cross the Site and the impact on PRoW users should be considered within the LVIA. The PRoW should be maintained and consideration should be given to provide an improved user experience, such as providing wider corridors.
 - iv) There are likely to be cross-border impacts within Monmouthshire County Council (MCC) and plans showing unitary authority boundaries will be helpful.⁴
 - v) The peripherals to solar schemes are often ignored and their design often functional with no effort to blend into the landscape. A colour palette, developed

⁴ The unitary authority boundaries are illustrated on Figure 5.3



as part of the Landscape Strategy, would help to steer an appropriate design response to the landscape setting.

- vi) The LVIA should include an assessment of tranquillity which is an important feature of the Gwent Levels, particularly given the proximity to Newport and Cardiff.
 - vii) The Site lies within the historic extent of the Gwent Levels. The RSPB led Living Levels project should be a consultee.
 - viii) Cumulative and serial visual impacts are relevant and should be taken into account in the LVIA.
 - ix) The site is detached from the Gwent Levels Historic Landscape.
- 5.2.19 The pre-application advice has been incorporated into the development of the LVIA.
- 5.2.20 With respect to viewpoint selection, the pre-application advice and how these viewpoints have been incorporated within the LVIA are outlined below:
- i) Consideration needs to be given to long distance views from the seawall (Wales Coast Path) over the Caldicot Levels Special Landscape Area (SLA) and the likely impact on amenity of users of this important recreational route. This has been included in the LVIA as Viewpoint 14: From Wales Coast Path recreational route, in Caldicot Levels Special Landscape Area and Gwent Levels Landscape of Historic Interest (Figures 5.26A-5.26C).
 - ii) Longer distance views from the south should be included. These have been included as Viewpoint 12: From Redwick Conservation Area on Green Street and NCR4 in Caldicot Levels Special Landscape Area and Gwent Levels Landscape of Historic Interest (Figure 5.24), Viewpoint 14: From Wales Coast Path recreational route, in Caldicot Levels Special Landscape Area and Gwent Levels Landscape of Historic Interest (Figures 5.26A-5.26C) and Viewpoint 17: From North Row and NCR4, in Caldicot Levels Special Landscape Area and Gwent Levels Landscape of Historic Interest (Figure 5.29).
 - iii) Views from Llanwern Village to the west should be included. This has been included as Viewpoint 10: From public right of way adjacent to Llanwern (Figures 5.22A-5.22C).
 - iv) Assessment of the views on Saint Cadwaladr's Church will be required. This has been included as Viewpoint 8: From Bishton Road adjacent to St Cadwaladr's Church (Figure 5.20).

- v) Views from elevated areas to the north, including from the Wentwood Special Landscape Area should be included. This has been included as Viewpoint 13: From public right of way in Wentwood Special Landscape Area (Figures 5.25A-5.25C).
 - vi) Views from the overbridge to the M4 motorway should be included, as large-scale development across the flat open Gwent Levels is often highly visible from the small number of elevated locations. This has been included as Viewpoint 11: From bridge over M4 (Figure 5.23).
 - vii) Views from the South Wales Main Line railway should be considered given their proximity to the Site. These have been included as Viewpoint 2: From minor road south-east of Bishton, adjacent to railway line (Figures 5.11A-C and 5.12A-C), Viewpoint 7: From public right of way adjacent to railway line (Figures 5.19A-5.19C), Viewpoint 18: From public right of way, adjacent to railway line (Figures 5.30A-C) and Viewpoint 22: From close to public right of way, adjacent to railway line (Figures 5.34A-C).
 - viii) Views from the National Cycle Route (NCR) 4 should be considered. These have been included as Viewpoint 12: From Redwick Conservation Area on Green Street and NCR4, in Caldicot Levels Special Landscape Area and Gwent Levels Landscape of Historic Interest (Figure 5.24) and Viewpoint 17: From North Row and NCR4, in Caldicot Levels Special Landscape Area and Gwent Levels Landscape of Historic Interest (Figure 5.29).
 - ix) The viewpoints should represent a range of receptors and respond to the LANDMAP visual and sensory aspect areas. 24 viewpoints were selected to inform the LVIA. These are from a varied range of receptors and LANDMAP visual and sensory aspect areas.
- 5.2.21 An EIA Scoping Direction was also received from PEDW on 25th May 2023. Of relevance to the LVIA, it states:
- i) Any photomontages used should incorporate the whole Proposed Development and not just the solar panels. The photomontages have been produced according to the relevant Landscape Institute Guidance and include the whole Proposed Development, as identified on the layout plans.
 - ii) The Applicant should liaise directly with the Council's Landscape Architect in order to establish whether the scope of the LVIA and the viewpoints are

appropriate. Advice on the potential viewpoints to inform the LVIA was discussed with the Council during the pre-application stage.

- iii) The Applicant should liaise directly with the Council's Landscape Architect in order to establish whether a Residential Visual Amenity Study (RVIA) should be undertaken. Should a RVIA be required, this could form part of an Appendix to the ES. The assessment of the effects on residential properties, including the nearby settlements as a result of the proposed development has been considered within the LVIA.
- iv) Magor Net Zero (DNS ref CAS-01960-J2H3X5) and Rush Wall (DNS ref 3220457) developments should be considered as part of the assessment of cumulative impacts. Magor Net Zero and Rush Wall have been considered in the assessment of cumulative effects. Their location is illustrated, in combination with other cumulative schemes, on Figure 2.1.

Landscape Character and Visual Amenity Receptor Sensitivity

- 5.2.22 Landscape character and visual amenity receptors are assessed according to their sensitivity to change, by combining the considerations of susceptibility and value.

Value

- 5.2.23 The value of the landscape is established as part of the baseline conditions assessment. A review of existing landscape relevant designations, including planning policies and cultural values, are the starting point in determining landscape value. Where there are no landscape relevant designations present, site survey can be combined with a review of the relevant landscape character assessment (LANDMAP) to determine value. The range of factors that can help in the identification of 'value' include⁵:

- i) Landscape quality – a measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements.
- ii) Scenic quality – landscapes that appeal primarily to the senses.

⁵ Box 5.1, page 84, *Guidelines for Landscape and Visual Impact Assessment (GLVIA), Third Edition, 2013, The Landscape Institute and the Institute of Environmental Management and Assessment*



- iii) Rarity – the presence of rare elements or features.
- iv) Representativeness – where the landscape contains a particular character and/or features or elements which are considered particularly important examples.
- v) Conservation interests – the presence of features of wildlife, earth science or archaeological or historical and cultural interest.
- vi) Recreation value – the landscape is valued for recreational activity where the experience of the landscape is important.
- vii) Perceptual aspects – valued for its wildness and/or tranquillity.
- viii) Associations – associated with particular people, such as artists or writers, or events in history that contributes to perceptions of the natural beauty of the area.

5.2.24 The value of visual amenity receptors and their view is determined by:

- i) Recognition of the value attached to particular views, for example in relation to heritage assets or through designations.
- ii) Indicators of value attached to views by visitors, for example by appearing in guidebooks or on tourist maps, provision of facilities for their enjoyment, such as parking spaces, sign boards and interpretive material and reference in art and literature.

Susceptibility to change

5.2.25 Determination of the landscape susceptibility to change is based on the ability of the landscape to accommodate the Proposed Development without undue consequences for the maintenance of the baseline conditions and/or the achievement of landscape planning policies and strategies.

5.2.26 The susceptibility to change of visual amenity receptors is determined through the user and the location, including:

- i) The occupation or activity of people experiencing the view.
- ii) The extent of which their attention or interest may be focussed on the views and the visual amenity they experience at particular locations.

Sensitivity



5.2.27 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 5-1.

Table 5.1 Criteria for assessing sensitivity of landscape and visual receptors

Sensitivity	Landscape character description	Visual amenity receptor description
High	Distinctive and highly valued landscape elements and/or character. Includes areas with a strong positive character with valued features that combine to give an experience of unity, richness and harmony. Landscapes in excellent/very good condition that are considered to be of importance to conserve and which may be sensitive to the Proposed Development. Likely to be nationally designated and could include very highly valued landscapes of strong scenic quality and rarity. A landscape or elements with a very low/very limited tolerance to change of the type of development proposed. Broadly comparable to the LANDMAP defined 'outstanding' category.	Residents of residential properties and settlements. Visitors to valued viewpoints (for example promoted or well-known viewpoints, key designed views or panoramic viewpoints marked on maps). Users of recreational routes/National Cycle Routes. Viewers with interest and/or prolonged viewing opportunities and/or who have a particular interest in their visual environment and/or open to many viewers, for example visitors to landmark landscapes or heritage assets.
Medium-high	Highly valued landscape elements and/or character. 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. Likely to be locally designated and could include valued landscapes of scenic quality and rarity on a local scale (Special Landscape Areas (SLAs), designed landscapes). A landscape or elements with a low/limited tolerance to change of the type of development proposed. Broadly comparable to the LANDMAP defined 'high' category.	Users of PRow/open access areas including those which could be locally recognised or in locations where the users are likely to pause to appreciate the view, such as at benches, key views to/from local landmarks.
Medium	Moderately valued or 'everyday' landscape elements and/or landscape character. These are landscapes in good condition which could be appreciated by the community but has little or no wider recognition. Some detractors likely to be present.	Travellers along identified scenic road routes. Visitors to cemeteries. Visitors staying at a caravan/camping sites. Viewers with moderate interest in their visual environment, for example,

Sensitivity	Landscape character description	Visual amenity receptor description
	A landscape or elements with a medium/partial tolerance to change of the type of development proposed Broadly comparable to the LANDMAP defined 'moderate' category.	users of local parks, open space and public realm.
Medium-low	Reasonably valued landscape elements and/or landscape character. Could 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. A landscape or elements with a tolerance to change of the type of development proposed. Broadly comparable to the LANDMAP defined 'low' category.	Travelers along most minor roads. Outdoor sporting facilities and users of recreational facilities with low interest in surrounding environment. Viewers with passing or momentary interest in their everyday surroundings including motorists, people engaged in outdoor recreational activities where the focus is not on views or appreciation of the landscape.
Low	Weak landscape structure, partly degraded with frequent detractors. Highly likely to be a non-designated landscape in poor condition which could include elements and/or areas that are generally negative in character with few, if any, valued features. A landscape or elements with a high tolerance to change of the type of development proposed. Typical of areas identified for comprehensive/recovery and/or redevelopment. Broadly comparable to the LANDMAP defined 'low' category.	Static office workers and workers in industrial facilities/indoor environments where their attention is focussed on their work or activity and/or where there are infrequent views. Travellers with limited opportunity to enjoy the view due to speed of travel (for example on motorways, trunk roads or rail routes).

Assessment Criteria / Assessment of Significance

5.2.28 The descriptions of existing conditions 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.

5.2.29 The determination of impacts and effects are assessed at different stages during the life of the proposed development including:

- i) During construction and de-commissioning.
 - ii) During operation immediately following the completion of construction activities.
- This is assumed to be Year 1.

iii) During operation (residual effects) following approximately 10 years when it is assumed that additional landscape mitigation measures have had time to mature.

5.2.30 However, it should be noted that the effects will be reversible, albeit long-term, given the 40 year life of the Proposed Development. Following completion of de-commissioning activities, it is expected that the Site will be returned to agricultural use.

5.2.31 The effects during winter are also assessed (where relevant), when it is assumed that the leaves from the existing and proposed landscape mitigation are not present.

5.2.32 The additional cumulative effects of the proposed development, when perceived with other schemes in the study area, are also assessed.

Magnitude of Impact

5.2.33 An impact is defined as a change likely to occur because of the construction, operation and de-commissioning of the Proposed Development.

5.2.34 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.

5.2.35 The duration of impact determines the time period over which changes as a result of the Proposed Development occur. Most impacts resulting from the Proposed Development would be long-term, although reversible, given the 40 year operational phase of the Proposed Development. The substation and associated access track will be permanent. Medium impacts may also be identified where mitigation such as planting is proposed. For example, it is expected that the maturing of existing and/or proposed planting would screen views over time. Impacts associated with construction and de-commissioning activity would be regarded as short-term.

5.2.36 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.



5.2.37 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 5.2.

Table 5.2 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	High levels of change to landscape elements/ landscape character. The Proposed Development would be very prominent in the landscape and would be perceived as a determining factor of the landscape character. The Proposed Development would lead to a major alteration to the landscape character and /or landscape elements. The Proposed Development, when perceived with other schemes, would be immediately apparent and contribute to a 'landscape with solar schemes.'	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 would be totally uncharacteristic of the view. The Proposed Development would dominate the field of view and be impossible not to notice. The Proposed Development, when perceived with other schemes, would be immediately apparent and contribute to a view dominated by solar schemes.
Medium-high	Prominent level of change to landscape elements/landscape character. The Proposed Development would be obvious in the landscape and would generally be perceived as a factor of the landscape character. The Proposed Development would lead to a noticeable change to the landscape character and/or landscape elements. The Proposed Development, when perceived with other schemes, would be obvious and contribute to a 'landscape with solar schemes.'	Receptors would experience an apparent change to their views. 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. The Proposed Development, when perceived with other solar schemes, would be obvious and contribute to a view influenced by solar schemes.
Medium	Partial levels of change to landscape elements/landscape character. The Proposed Development would be noticeable but not necessarily a determining factor of the landscape character. The Proposed Development would lead to a change to the landscape character and/or landscape elements. The Proposed Development, when perceived with other schemes, would be apparent and contribute to a 'landscape with solar schemes.'	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 would not dominate the field of view. The Proposed Development, when perceived with other schemes, would be apparent and contribute to a view influenced by solar schemes.
Medium-low	Minor levels of change to landscape elements/landscape character. The Proposed Development would be perceived but would not be a	Receptors would experience an apparent but minor change in their view, arising from an alteration to the view. The Proposed Development would be

Magnitude of Impact	Landscape character description	Visual amenity receptor description
	determining factor of the landscape character. The Proposed Development would lead to a minor change to the landscape character and/or landscape elements. The Proposed Development, when perceived with other schemes, would be noticeable and may contribute to a 'landscape with solar schemes.'	present in views but would form only a minor element. The Proposed Development, when perceived with other solar schemes, would be noticeable and may contribute to a view influenced by solar schemes.
Low	Low levels of change to landscape elements/landscape character. The Proposed Development would be present and would be perceived as a background feature of the wider landscape character. The Proposed Development would lead to a very minor change to the landscape character and/or landscape elements. The Proposed Development, when perceived with other schemes, would not be immediately noticeable, although it may contribute to a 'landscape with solar schemes.'	Receptors would experience a low level of change to views. The Proposed Development would be present in the wider landscape but would be perceived as a background component of views and easily go unnoticed. The Proposed Development would lead to a very minor change to the view. The Proposed Development, when perceived with other schemes, would not be immediately noticeable, although it may contribute to a view with solar schemes.
No change	Indiscernible level of change. Equivalent to no change.	Indiscernible level of change. Equivalent to no change.

Level of Effect

- 5.2.38 An 'effect' is the degree of change likely to occur as a result of the construction, operation and de-commissioning of the Proposed Development.
- 5.2.39 The level of the effects on landscape character and visual amenity receptors are determined by balancing the sensitivity of the receptor and the magnitude of impact.
- 5.2.40 The correlation between the sensitivity of the receptor and the magnitude of impact to determine the level of effect is summarised in Table 5.3. The matrix is however not a prescriptive tool and the analysis of the level of effects requires the exercise of professional judgement. As stated in paragraph 2.23 of GLVIA "*professional judgement is a very important part of LVIA. While there is some scope for quantitative measurement of some relatively objective matters... much of the assessment must rely on qualitative judgements...*" It is essential that professional judgements are described in a transparent and clear manner.

Table 5.3 Determination of level of effect on landscape character and visual amenity receptors

		Receptor sensitivity				
		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	Major or Moderate	Moderate	Moderate or Minor	Minor
	Medium	Moderate	Moderate	Moderate	Moderate or 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

5.2.41 The broad definitions of the level of effects include:

- i) Major – represent key factors in the decision making process and are likely to suffer the most damaging impact and loss of resource integrity.
- ii) Moderate – considered to be important and are likely to be material in the decision making process.
- iii) Minor – not likely to be critical in the decision making process.
- iv) Negligible - unlikely to be critical in the decision making process.

5.2.42 Major and Moderate effects, as identified in Table 5.3, are generally considered significant in the context of the EIA Regulations.

Beneficial, Adverse and Neutral Effects

5.2.43 It is important to note that effects can be beneficial (positive), adverse (negative) or neutral (no change). The definitions are outlined in Table 5.4.

Table 5.4 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.	Introducing elements that improve the view.
	Improvement to the value of landscape	This could also include removal of

Level of effect	Landscape character description	Visual amenity receptor description
	character and resource. This could also include removal of existing detractors of the landscape character	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

5.2.44 Cumulative assessment is concerned with the additional effects of the Proposed Development when considered with other developments that are under construction, consented or being determined. Given the nature of the Proposed Development, other renewable energy projects, particularly solar farms, have the potential to give rise to cumulative effects within the landscape and for visual receptors.

5.2.45 For the cumulative assessment, the Proposed Development is considered with:

- i) Existing development in the study area. This is also considered as part of the baseline assessment.
- ii) Developments under construction and consented, with an emphasis on renewable energy projects in the study area.
- iii) Developments within the study area, currently being determined and with a similar emphasis on renewable energy projects, where there is only the potential that they would be implemented.

5.2.46 The cumulative assessment considers the additional impacts and effects of the Proposed Development on landscape character, landscape relevant designations and visual amenity receptors and their views.



5.2.47 In relation to visual amenity receptors, there are two types of impact. These include:

- i) Combined impacts that occur when the receptor can perceive two or more developments from one viewpoint, in combination or in succession.
- ii) Sequential impacts that occur when the receptor must move to another viewpoint to see different developments, travelling along regularly used routes such as major roads or popular or recognised PRow.

Limitations

5.2.48 The site surveys to inform the LVIA were undertaken in fine weather in August 2021 (summer views) and in fine weather in October 2022 and October 2023 (autumn views).

5.2.49 The LVIA was based on how the Proposed Development would appear at this time of year, although assumptions on for example, on how the Proposed Development would influence the landscape and views during the winter months were considered, where relevant.

5.2.50 Access during the site survey was restricted to publicly accessible locations as well as to the Site itself. Potential views from private properties, were therefore ascertained from the closest publicly accessible location and checked using aerial photography.

5.2.51 Some of the public rights of way crossing the Site were not accessible as they were blocked by fencing and/or dense vegetation, so assumptions were made based on the closest accessible location and from aerial photographs

5.3 Baseline

5.3.1 The description of baseline (or existing) conditions outlines the landscape character and visual amenity context within the study area and forms the basis of the LVIA.

5.3.2 The baseline conditions include descriptions of the Site and its immediate surrounds and landscape relevant designations, landscape character, and visual amenity receptors and their views within the study area. The presence of existing schemes including other renewable energy schemes, such as solar and wind



development, is also discussed within the baseline assessment. The locations of these existing renewable energy schemes are illustrated on Figure 2.1.

- 5.3.3 Baseline conditions information also helps 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.

Site Description

- 5.3.4 An analysis of the Site and immediate surrounds is illustrated in Figure 5.1, with panoramic annotated photographs of the Site and immediate surrounds illustrated in Figures 5.2A-5.2E.
- 5.3.5 The Site consists of a mixture of medium to large, regular and irregular fields. The fields are currently in agricultural use and are divided by a diverse mix of hedgerows, linear tree belts and small woodlands. Straight ditches (or reens) also border and divide the flat fields, focussed broadly to the south and east, and are often lined by mature vegetation.
- 5.3.6 Sloping fields are focussed to the west and north of the Site, rising up from the fringes of the linear village of Bishton on the lower slopes. Bishton is predominantly located along Bishton Road and extends from the South Wales Main Line railway in the south to Bishton Castle in the north.
- 5.3.7 Numerous PRoW and minor roads cross and border the Site, with the South Wales Main Line railway bordering the southern fringes of the Site and the M4 motorway corridor a border to the north and north-east of the Site.
- 5.3.8 The large-scale buildings and structures of the Llanwern Steelworks to the south of the Site dominate the landscape and views. Further afield, the large-buildings and structures associated with the Gwent Europark to the south-east and the Magor Brewery to the east are also obvious. The landscape to the south is also scattered with overhead power lines and pylons, wind energy schemes and a large-scale solar scheme.



5.3.9 The landscape of the Site is of medium⁶ sensitivity.

Value of the Site

5.3.10 The Site and immediate landscape do not lie within any areas designated either nationally, regionally or locally for their landscape value and/or scenic quality.

5.3.11 With reference to Table 1 in TGN 02/21⁷, which defines a ‘valued landscape,’ a range of factors and indicators may be considered when determining the value of landscapes (outside designated landscapes). These are identified in Table 5.5 below:

Table 5.5 Criteria for assessing landscape value of the site and immediate surrounds

Factor	Definition and summary assessment of the Site and immediate surrounds
Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest which contribute positively to the landscape	The Site is, at least partly, within landscapes of ecological, geological or geomorphological or physiographic interest and of archaeological, historical or cultural interest, which contribute positively to the landscape, as identified through the LANDMAP aspect area descriptions.
Landscape which is in a good physical state both with regard to individual elements and overall landscape structure	The Site comprises flat to gently sloping regular fields, currently in agricultural use, separated by a diverse mix of hedgerows, scattered trees, linear tree belts and small woodlands, including numerous ditches in the levels landscape. The Site is within a landscape which is in good physical state both regard to individual elements and overall landscape structure – although there are opportunities to improve landscape elements and pattern through additional native planting to existing hedgerows, the creation of new hedgerows, tree and woodland belts, including orchards, and the management of existing field boundaries, including ditches for ecology and nature conservation benefits, in keeping with the character of the wider landscape.
Landscape which is connected with notable people, events and the arts	There are no notable associations to the landscape of the Site or its surroundings.
Landscape that has a strong sense of identity	The landscape of the Site and its surrounds appears to be typical of the wider gently rising and levels agricultural landscape in which it is situated.
Landscape offering recreational opportunities where experience of landscape is important	PRoWs pass through and along the boundaries of the Site, connecting with Bishton and the wider landscape, with the potential for close proximity views over the surrounding fields and beyond.
Landscape that appeals to the senses, primarily the visual sense	The Site is situated within an agricultural, well-vegetated landscape, affected by the proximity to the nearby major development, which influences the landscape through movement of vehicles and traffic

⁶ With reference to Table 5-1, – medium sensitivity is defined as “*Moderately valued or ‘everyday’ landscape elements and/or landscape character. These are landscapes in good condition which could be appreciated by the community but has little or no wider recognition.*”

⁷ Landscape Institute, Technical Guidance Note 02/21 Assessing Landscape Value Outside National Designations



Factor	Definition and summary assessment of the Site and immediate surrounds
	noise (even when screened by surrounding mature vegetation). Occasional long distance views across the landscape are possible to the hills and ridges broadly to the north and across the expansive levels and coastal landscape broadly to the south, although often limited by intervening mature vegetation and large-scale built development.
Landscape with a strong perceptual value notably wildness, tranquillity and/or dark skies	The Site is within an agricultural, well-managed landscape – there is no sense of wildness. With major development nearby with associated lighting which will influence the landscape, there is minimal potential for dark skies to be perceived on the Site. As defined by GLVIA and TIN 01/2017⁸, tranquillity is “<i>a state of calm and quietude associated with peace, considered to be a significant asset of the landscape.</i>” The site is adjacent to major development which both directly and indirectly influences its tranquillity in terms of noise, lighting and movement of traffic.
Landscape which performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape	The Site is and is within an agricultural, well-managed landscape.

5.3.12 In summary, overall, although the Site has valued elements it is not a valued landscape in the context of the criteria as listed in TGN 02/21.

Cumulative Schemes

5.3.13 There are scattered operational solar schemes in the study area, their location illustrated on Figure 2.1, including:

- i) Llanwern, approximately 2.1 km to the south of the Site, to the south of the Llanwern Steelworks. Set within the expansive well-vegetated flat levels landscape, the solar scheme does not ‘stand out’ with, at worst, only glimpsed views possible of the existing solar scheme from the nearby network of minor roads.
- ii) Court Farm and Hazel Farm, approximately 1.2 km and 1.5 km to the north. Set within the sloping well-vegetated landscape, to the north and south of the M4 motorway corridor, they appear to be nestled and are not perceptible within the surrounding wider diverse and developed landscape.

⁸ The Landscape Institute, Technical Information Note 01/17, Tranquillity – An Overview

- 5.3.14 There are also scattered operational wind energy schemes to the south and south-east of the Site, associated with the Gwent Europark and Tesco Distribution Centre, including within the expansive flat levels landscape and to the south-west on the industrial fringes of Newport. They appear as single or small clusters of vertical moving elements, often perceived in combination with lines of pylons and large-scale industrial buildings. Their location is illustrated on Figure 2.1.

Landscape Character

Landscape Relevant Designations

- 5.3.15 The Site is not recognised for its value or sensitivity through any landscape relevant designations.
- 5.3.16 There are however relevant landscape designations within the wider study area. The locations of these designations are illustrated on Figure 5.3 and are described in more detail below.^{9 10}
- 5.3.17 The medium-high sensitivity Gwent Levels Landscape of Historic Interest is located to the east, south and south-west of the A4810 and extends towards and along the coastal fringes, approximately 1.2 km to the south of the Site boundary at its closest point.
- 5.3.18 The Gwent Levels 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 Rhymney to the west, and Chepstow on the River Wye to the east. The Gwent Levels is a landscape of diverse environmental and archaeological potential, resulting from various periods of reclamation from the sea. This has resulted in a supreme example of a hand-crafted landscape, artificially created, 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

⁹ 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. Further detail on the potential influence on these heritage features can be found in Chapter 08 Cultural Heritage of this ES.

¹⁰ All distances are measured from the closest boundary of the Site, excluding the grid connection cabling.



- belonging to earlier landscapes. The Gwent Levels are therefore considered a uniquely rich archaeological and historical resource in Wales of international importance and significance.
- 5.3.19 The Gwent Levels Landscape of Historic Interest also includes an operational solar scheme (Llanwern) and scattered operational single wind turbines.
- 5.3.20 Landscapes of Historic Interest are protected by Newport City Council (NCC) in Policy CE4¹¹ where they “*should be protected, conserved, enhanced and where appropriate, restored. Attention will also be given to their setting.*”
- 5.3.21 The medium-high sensitivity Caldicot Levels Special Landscape Area (SLA), SP8 (v), occurs approximately 1.1 km to the south, including running along the boundary of A4810 and extending broadly to the south.
- 5.3.22 The Caldicot Levels SLA is described by NCC¹² as a unique area of landscape, consisting of reclaimed marsh and wetlands that extends from Cardiff to Chepstow. The area is characterised by its network of drainage ditches, which vary in form and character. The main lines of vegetation follow the drainage ditches and these vary from no vegetation, through reeds and scrub to strong lines of trees of primarily willow and oak.
- 5.3.23 The Caldicot Levels SLA is influenced by lines of pylons, an operational solar scheme and scattered existing wind energy schemes. The main visual detractors to the SLA are the interface with the Llanwern Steelworks on its northern boundary and the cluster of overhead lines that cross the SLA.
- 5.3.24 The medium-high sensitivity Wentwood SLA, SP8 (vi), occurs approximately 2.1 km to the north of the Site, extending to the north and north-east of the study area. The Wentwood SLA is described by NCC as a major ridge and wider landscape feature that contains and rises from the Usk Valley. It is covered with extensive plantations and woodlands, primarily under the management of the Forestry Commission.

¹¹ Newport City Council, Newport Local Development Plan, 2011-26, Adopted, January 2015

¹² Newport City Council, Designation of Special Landscape Areas, June 2009

- 5.3.25 The medium-high sensitivity River Usk SLA, SP8 (iv), is located to the north-west, west and south-west of the Site, approximately 3.4 km to the north-west at its closest point. The River Usk SLA is nestled within Newport and extends towards Caerleon. It is described by NCC as a strongly linear feature, until it opens up around Caerleon. The tidal range provides dramatic contrasts between high and low tide and is an important biodiversity resource.
- 5.3.26 SLAs have been designated at a local level to protect areas of fine landscape quality. The SLAs are recognised by NCC in Policy SP8 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.”*
- 5.3.27 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.”*
- 5.3.28 The centre of Magor, approximately 2.2 km to the east of the Site, and the centre of Redwick, approximately 3.3 km to the south of the Site, are both recognised as high sensitivity Conservation Areas. In addition, there are several Conservation Areas to the east, including Rogiet, to the west within Newport, and to the north-west in Caerleon.
- 5.3.29 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.”*
- 5.3.30 There are scattered high sensitivity Ancient Woodlands in the study area, including to the east and west of Bishton and on the western and northern fringes of the Site. 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.

- 5.3.31 Llanwern Park is located to the north-west and north of the Site and is separated from the site by woodland, including Ancient Woodland. Llanwern Park was formerly registered at Grade II on the non-statutory Register of Landscapes Parks and Gardens of Special Historic Interest in Wales. However, the statutory Register of Historic Parks and Gardens in Wales came into force in February 2022 and with regards to historic parks and gardens this replaces the non-statutory register. Whilst Llanwern Park is no longer a designated heritage asset, its contribution to landscape character is still evident.
- 5.3.32 Llanwern Park is a small, late eighteenth to nineteenth century parkland landscape, previously focused 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.
- 5.3.33 There are also other scattered high sensitivity Registered Parks and Gardens in the study area, including Pencoed Castle, approximately 675 m to the north, to the north of the M4 motorway, as well as within Newport to the west and along the A449 road corridor to the north and north-west.
- 5.3.34 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.”*
- 5.3.35 The designation does not preclude development but helps to protect the 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.

National Landscape Character

- 5.3.36 The Natural Resources Wales (NRW) *Landscape Character Map for Wales*¹³ is referred to for a strategic understanding of landscape character within the Site and

¹³ National Landscape Character Areas for Wales (www.naturalresources.wales)



the study area. This outlines the wider setting for the Site and provides a context for the description of local landscape character.

5.3.37 There are four national landscape character areas within the study area. The Site, including most of the study area extending to its fringes to the east, south and west, is within the Gwent Levels national landscape character area (34). To the north, north-east and east, extending to the fringes of the study area, is the Wye Valley and Wentwood national landscape character area (32). To the north and north-west of the study area is the Central Monmouthshire national landscape character area (31). To the west of the study area is the Newport, Cardiff and Barry national landscape character area (35).

5.3.38 The location and extent of the national landscape character areas are illustrated on Figure 5.4 and their descriptions are summarised in Table 5.6 below.

Table 5.6 National Landscape Character Areas

No.	National landscape character area	National landscape character description
31	Central Monmouthshire	To the north and north-west of the Site, extending to the fringes of the study area, this is described as: - An area of gently rolling hills, intervening valleys and the Usk flood plain. - The Usk, the main watercourse, flows south from Abergavenny and eventually becomes tidal. Rivers Trothy and Monnow in the north feed into the Wye in the adjacent character area to the east. - Hedge-bound fields are mainly given to sheep grazing and dairying, with areas of arable farming on the fertile floodplain. - Woodlands and mixed plantations cover many slopes and hill tops in parts of the area. - Mixed habitats, notably mixed broadleaved woodlands containing a variety of rare tree species and are important habitats, as is the open water of the Llandegfedd Reservoir - a key site for overwintering birds. - Small, nucleated hamlets and villages are scattered throughout the area, linked by a network of winding rural lanes. Medieval stone churches are characteristic of the villages. - The historic market town of Abergavenny sits on the banks of the Usk in the west of the area, against the striking backdrop of the Bloreng and Sugar Loaf Mountain. - Grosmont, Skenfrith, White, Raglan and Usk castles are distinctive monuments and witnesses to the area's contested past. - The sheltered landscape has a peaceful rural character, with any significant modern intrusion confined to the road corridors of the A40 and A449.
32	Wye Valley and Wentwood	To the north, north-east and east of the Site, extending to the fringes of the study area, this is described as: - The deeply incised, heavily wooded lower valley of a major river and nearby associated wooded and former ancient forest

No.	National landscape character area	National landscape character description
		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 its 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. - The area largely retains its rural and tranquil character, although town and settlement edge expansion detract from this in places. Long views are afforded from the higher ground.
34	Gwent Levels	Containing the Site and extending to the fringes of the study area to the east, south and west, this is described as: - 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.

No.	National landscape character area	National landscape character description
35	Newport, Cardiff and Barry	- The Levels are under pressure from development around Newport. To the west of the Site, extending to the fringes of the study area, this is described as: - Busy, heavily urbanised areas - containing Cardiff, and other large settlements including Penarth and Barry to the south to the west and the city of Newport and new town of Cwmbran to the east. - The M4 motorway - forms a noisy, busy corridor between and bypassing the two cities, together with the main railway; and - Lowland river corridors - Rivers Taff and Ely drain into Cardiff Bay and the tidal River Rhymney runs through east Cardiff; the tidal River Usk forms the focus of Newport with the River Ebbw meandering to the south east.

Local Landscape Character – LANDMAP Aspect Areas

- 5.3.39 The Natural Resources Wales (NRW) LANDMAP landscape character information is referred to for an understanding of landscape character within the Site and the study area.
- 5.3.40 The five LANDMAP aspect areas are illustrated in Figures 5.5A-5.5E 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, ridges and valleys broadly to the north, with the Severn Estuary broadly to the south, is illustrated in Figure 5.6.

Visual and Sensory

- 5.3.41 The location of the visual and sensory aspect areas, including their sensitivity, is illustrated on Figure 5.5A.
- 5.3.42 The Site is divided between the moderate (medium) sensitivity Llanwern Park aspect area (N034), broadly to the north which extends broadly northwards up to the M4 motorway corridor and the high (medium-high) sensitivity Wilcrick Moor aspect area (N036), to the south, east and west.

Llanwern Park aspect area

- 5.3.43 The Llanwern Park aspect area is a gently undulating rounded hill landscape which rises up from the levels at 10 m AOD to 60-80 m AOD.
- 5.3.44 The area is primarily pastoral, and fields are of small to medium scale enclosed by cut hedges and trees. Most fields have sinuous boundaries while others are rectilinear. Blocks of deciduous woodland are noticeable and give emphasis to the hillsides in places and are prominent from the M4 motorway. Settlement pattern is



a combination of clustered villages, a modern estate at Underwood, and scattered farmhouses. Llanwern Park Farm is surrounded by a parkland landscape. The adjacent M4 motorway is a source of noise and movement in an otherwise tranquil area. Views from the area to the south are dominated by the Llanwern industrial complex.

- 5.3.45 The landscape has a small scale, hilly landform of pasture emphasised by woodland with the occasional small historic settlement. It is generally in good condition and of consistent character although there is some suburbanisation of dwellings to the west. The area is generally well managed but there are areas where hedgerows appear to have been removed.

Wilcrick Moor aspect area

- 5.3.46 The Wilcrick Moor aspect area is a remnant of the northern edge of the Caldicot levels and is separated from the main bulk of the levels by the Llanwern industrial complex to the south. It is a narrow strip of land lying below 10 m AOD and sits between hills to the north and the South Wales Main Line railway to the south. It is pastoral land with a mixed pattern of linear rectangular and sinuous fields, some enclosed by cut hedges or lined with willows, but all bounded by ditches. 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. Modest linear villages, including Bishton, lie on the northern edges where the land begins to rise. Views are limited by rising land to the north and the tree belt beyond the railway line to the south.

- 5.3.47 Overall, this 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.

Caldicot Level aspect area

- 5.3.48 There are also high (medium-high) sensitivity aspect areas focussed broadly to the south, south-west and south-east of the Site within the levels landscape. These include the Caldicot Level aspect area (N037) to the south and south-west including the settlement of Redwick, further extending towards the tidal defences lining the Severn Estuary.



- 5.3.49 The Caldicot Level aspect area is an extensive landscape, below 10 m. The pattern of linear, primarily rectangular, fields is distinctive, with some enclosed by cut or outgrown hedges or lined with willows, but all bounded by ditches. 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. Settlement pattern tends to be focused on a few minor roads that pass through the area. 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.
- 5.3.50 A significant number of power lines with pylons converge on the Severn Power Station at Uskmouth, and there are scattered wind energy schemes and an operational solar scheme within the aspect area. There are relatively few PROW 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 5 m 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, including the Wales Coat Path recreational route.
- 5.3.51 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.

Western Coastal Grasslands aspect area

- 5.3.52 To the south-east of the Site, extending eastwards towards Caldicot is the high (medium-high) sensitivity Western Coastal Grasslands aspect area (M053). This is an open and exposed landscape with long views across the Severn Estuary, whilst overlooked by the Prince of Wales Bridge 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 consist of mainly improved grassland and have retained their integrity, although Caldicot Moor has been degraded somewhat by the Prince of Wales Bridge 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.

- 5.3.53 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 are mostly intact, although the area is detracted to an extent by overhead power lines. This is a unique landscape defined by its flat levels, historical character and fragile grasslands / reen system.

Other aspect areas

- 5.3.54 To the south, focussed along the Severn Estuary, are outstanding (high) sensitivity landscapes, including Estuary Mudflats aspect area (N0007) to the south and south-west, Severn Estuary aspect area (N0008) to the south, Bedwin Sands aspect area (M095) to the south-east and Western Saltmarsh and Mudbanks aspect area (M057) to the south-east.
- 5.3.55 These aspect areas form an extensive area of intertidal mud bordering the Severn Estuary. 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.
- 5.3.56 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

- 5.3.57 The location of the historic aspect areas, including their sensitivity, is illustrated on Figure 5.5B.



- 5.3.58 With respect to the historic landscape, the Site is divided between two aspect areas. The high (medium-high) sensitivity Bishton and Wilcrick aspect area (N014), broadly to the north and extending northwards towards the M4 motorway corridor, is a landscape of large regular fields bounded to the north by the M4 motorway and to the west by the urban fringe of Newport. The outstanding (high) sensitivity Oxleaze and Wilcrick Moor aspect area (N012) extends to the south, west and east, bordered by the railway line.

Bishton and Wilcrick aspect area

- 5.3.59 Settlement during the prehistoric period was centred on the Iron Age Wilcrick Hillfort to the east of the aspect area. The earthwork feature is situated on one summit of a double knolled hill surrounded by steep natural slope around which multiple ditches and ramparts had been constructed. A round barrow from the Bronze Age is known at Stockwood and north of here a recumbent standing stone is located in fields overlooking the M4 motorway. The area and village of Langstone take their name from this stone, though it has been suggested that it could be of 10th century date. Roman remains are restricted to the recovery of a coin of Vespasian (AD 71) near Llanwern village.
- 5.3.60 Early-medieval charters covering the vast majority of the area survive, demonstrating the importance of the area in that period. The charter for Bishton is particularly early and may well indicate that the land included in it was the boundaries of a Roman estate. Bishton takes its name from the medieval Bishopruck of Llandaff and the Church to St Cadwaladr was founded much earlier in around AD 570. The church at Wilcrick is first mentioned in the 13th century but what stands there now is a complete 19th century remodelling.
- 5.3.61 To the west of the church there are the remains of a large deserted medieval settlement and two fields containing ridge and furrow. At Langstone there survives a deserted medieval settlement adjacent to an early motte and bailey castle. A mill was located near the motte and several further afield at Little Milton, Llanwern and Bishton. The castle at Bishton consists of a motte but little else remains or is known.
- 5.3.62 The major modern developments in the area are the Underwood housing estate and reservoir on Waltwood Hill. Underwood is an early 1960s council estate developed from a WWII prisoner of war camp and some of the original huts were



still visible in 1990 but have since been demolished. The concrete houses of the estate were built using post-war housing initiatives and later for workers at the Spencer Steelworks, Llanwern. The reservoir was added at this time and consisted of four lagoons, which fed the steelworks to the south.

Oxleaze and Wilcrick Moor aspect area

- 5.3.63 The Oxleaze and Wilcrick Moor aspect area is a regular landscape of drained fields, artificially cut off from the Whitson aspect area, first by the alignment of the South Wales Main Line railway and then later by Llanwern Steelworks. Broadly medieval in date this landscape was likely enclosed and drained by the 13th century. However, the presence of an ecclesiastical 6th century settlement at Bishton may indicate that some drainage and reclamation may have occurred during the early-medieval period. Prehistoric flint tools and Roman roof tiles have been recovered from the moors. Significant archaeological discoveries have been made on parts of Wilcrick Moor now developed by the Gwent Europark, including an Iron Age settlement, Roman wharf and coastal trading vessel. It is highly likely that this submerged landscape continues north into this aspect area.

Other aspect areas

- 5.3.64 To the south of the Site, extending towards the Severn Estuary are numerous high (medium-high) and outstanding (high) aspect areas.
- 5.3.65 Immediately to the south is the high (medium-high) sensitivity East Usk and Llanwern Industrial aspect area (N022). This is a significant industrial landscape, dominated by the Llanwern Steelworks and the Gwent Europark but it has demonstrable and significant potential for the survival of intact archaeological remains dating back to the prehistoric era.
- 5.3.66 Further to the south is the outstanding (high) sensitivity Whitson aspect area (N019). This 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. The area also contains scattered operational wind energy schemes and an operational solar scheme. 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.

- 5.3.67 To the south-east of the Site is the outstanding (high) sensitivity Redwick aspect area (N018). This is a coherent, irregular landscape, resulting from extensive wetland reclamation during the medieval period. The landscape is 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.
- 5.3.68 The outstanding (high) sensitivity aspect areas continue in a band across the levels to the south, south-west east and south-east, including the Caldicot Level aspect area (M001) to the south-east. This 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.
- 5.3.69 The northern part of the study area is scattered with outstanding (high), high (medium-high) and moderate (medium) sensitivity landscapes.

Cultural Landscape Services

- 5.3.70 The location of the cultural landscape services aspect areas, including their sensitivity, is illustrated on Figure 5.5C.
- 5.3.71 The Site is divided between the moderate (medium) sensitivity Llanwern Park aspect area (N048), broadly to the north which extends broadly northwards up to the M4 corridor and the high (medium-high) sensitivity Wilcrick Moor aspect area (N050), broadly to the south, west and east.

Geological Landscape

- 5.3.72 The location of the geological landscape aspect areas, including their sensitivity, is illustrated on Figure 5.5D.
- 5.3.73 The Site is broadly divided between the high (medium-high) sensitivity Llanwern-Underwood aspect area (N011) to the north and west, the moderate (medium) sensitivity Wilcrick Moor aspect area (N013) to the south and east and the



moderate (medium) sensitivity Wilcrick aspect area (N014) to the east and north-east.

- 5.3.74 The Llanwern-Underwood aspect area occurs towards the northern and western fringes of the Site and extends broadly westwards towards Underwood and Llanwern. It is a level topped low plateau capped by Lower Lias limestones with a steep escarpment around most sides. It is wooded in the north-west and north-east but with only limited development. The two valleys to the south represent former coastal inlets.
- 5.3.75 The Wilcrick Moor aspect area extends from the South Wales Main Line railway to include the southern and eastern fringes of the site. It is a section of former coastal flat now isolated from mainly area of levels to the south by industrial development.
- 5.3.76 The Wilcrick aspect area forms a narrow band including the eastern and north-eastern fringes of the Site, extending to the north, north-east and north-west, to the M4 motorway. It forms a very gently sloping area between the hills to the north and the coastal levels to the south. It is a dominantly rural area with limited development of significance.

Landscape Habitat

- 5.3.77 The location of the landscape habitat aspect areas, including their sensitivity, is illustrated on Figure 5.5E.
- 5.3.78 The Site is largely within the moderate (medium) sensitivity Mosaic aspect area (N032), which extends from the South Wales Main Line railway to the south towards the M4 motorway to the north.
- 5.3.79 This aspect area comprises the flatter fields between the Llanwern Steelworks and the hills. It is a mosaic of small pasture, temporary grass lay and arable fields many of which are lined with hedges. This area contains several locally important biodiversity sites, together with the mosaic of grassland and arable and the occurrence of the reed swamp, and ancient semi-natural woodland blocks gives this area the moderate (medium) sensitivity.
- 5.3.80 The western fringes of the Site, including bordering the Site boundary to the west, north and east, are within the high (medium-high) sensitivity Mosaic aspect area



(N031) which covers the adjacent wooded hills and extends northwards to the M4 motorway, looping around Underwood. This is an area of mosaic pasture consisting of several habitats including semi-improved calcareous grassland within the improved fields; marshy grassland; woodland, including some Ancient Woodland; together with a complex of reservoirs at the top of the hill.

Visual Amenity Receptors and their Views

- 5.3.81 An overview of the visual amenity receptors and their views within the study area is described below. The location of principal visual amenity receptors is illustrated on Figure 5.7. Representative and agreed publicly accessible panoramic views from key visual amenity receptors are also illustrated on Viewpoints 1-24 (Figures 5.9-5.36), with the location of views identified on Figure 5.8.

Settlements – Towns, Villages and Hamlets

- 5.3.82 There are scattered high sensitivity settlements within the study area, the closest to the Site, the linear village of Bishton.
- 5.3.83 Bishton largely follows Bishton Road in a north to south alignment, but branches out to the east and west at various locations. As illustrated in Viewpoints 5 and 6 (Figures 5.16A-5.16C, 5.17A-5.17C and 5.18A-5.18C) and Viewpoint 23 (Figures 5.35A-35C), views from the village fringes of Bishton are possible across the surrounding fields, only partly limited by surrounding vegetation and subtle variations in the surrounding landform.
- 5.3.84 Other settlements within the study area include:
- i) Llanwern, approximately 425 m to the west of the Site. Largely situated on rising ground, although views are possible from selected elevated and open locations within and on the settlement fringes, as illustrated in Viewpoint 10 (Figures 5.22A-5.22C), wider views, including those views towards the Site, are largely restricted by intervening landform and mature woodland vegetation.
 - ii) Underwood is a compact, modern settlement, approximately 400 m to the north-west of the Site and is separated from the Site by subtle variations in landform and mature woodland vegetation.

- iii) Magor and Undy, approximately 1.8 km to the east of the Site at their closest points are compact towns situated to the south of the M4 motorway and bisected and bordered by the South Wales Main Line railway to the south and the A4810 to the west. The adjacent railway and major roads forms a strong boundary and containment to long distance views.
- iv) Llandeenny, approximately 1.3 km to the east of the Site, is a scattered collection of houses and farms set on either side of the South Wales Main Line railway. Situated on slightly higher ground, wider views over the levels landscape, including those views towards the Site, are restricted by the mature vegetation surrounding the settlement and within the wider field pattern.
- v) Redwick, approximately 3.3 km to the south-east of the Site, is a compact village focused around a public house, 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 12 (Figure 5.24).
- vi) Llandeud, approximately 1.5 km to the north is a compact settlement situated amidst a sloping and well-vegetated landscape. Largely enclosed by surrounding mature vegetation, even from selected open and elevated locations, as illustrated in Viewpoint 15 (Figure 5.27), on the fringes of the settlement, wider views, including those towards the Site are restricted by a combination of undulating landform and mature woodland vegetation.
- vii) Newport, approximately 1.3 km to the west of the Site, is separated from the Site by undulating landform, mature vegetation and large-scale industrial buildings, including Llanwern Steelworks.

Scattered Residential Properties and Farms

- 5.3.85 There are several high sensitivity residential properties and farms scattered throughout the study area. These are broadly split between those to the south of the Site within the expansive levels landscape, and those to the north of the Site within the undulating and well vegetated landscape of ridges and hills.
- 5.3.86 Many of the scattered dwellings and farms have restricted views into the surrounding landscape, resulting from the screening provided by adjacent developments, subtle variations in landform, and the presence of mature hedgerow, trees and woodland vegetation in the immediate and wider landscape.



The closest residential properties and farms to the Site are largely scattered along the minor road network to the north, east and west.

Places of Interest

- 5.3.87 The medium-high sensitivity Celtic Manor Resort comprises a hotel and golf course, situated to the north of the M4 motorway, approximately 2.2 km to the north-west of the Site.

National Cycle Routes

- 5.3.88 The high sensitivity National Cycle Route (NCR) 4: Celtic Trail crosses the study area from east to west, approximately 1.5 km to the south of the Site at its closest point.
- 5.3.89 Largely following straight minor roads and lanes, as illustrated in Viewpoint 17 (Figure 5.29) as well as passing along the fringes of settlements, as illustrated in Viewpoint 12 (Figure 5.24), the dense vegetative enclosure along the road network, as well as lining the intervening fields, restricts the majority of wider views. However, occasional expansive views are possible across the adjacent levels landscape, above the immediate vegetative enclosure. This includes views towards the overhead power lines and pylons, large industrial buildings and scattered wind energy schemes.

Recreational Routes

- 5.3.90 The high sensitivity Wales Coast Path recreational route follows the coastal fringes, broadly from the east to the west of the study area. The Wales Coastal Path follows the elevated coastal sea defenses, approximately 4.2 km to the south of the Site, and affords exposed and expansive views across the adjacent levels landscape, including views towards the distant hills, broadly to the north.
- 5.3.91 From these elevated locations along the sea defenses, as illustrated in Viewpoint 14 (Figures 5.26A-5.26C), views of overhead power lines and pylons, large industrial buildings associated with the Llanwern Steelworks and the fringes of Newport are possible. The elevated position also allows views of the scattered operational wind turbines focused within the levels landscape to be viewed against a background of well-vegetated rising hills.



Local Public Rights of Way, Bridleways and Cycleways

- 5.3.92 A number of medium-high sensitivity PRow cross and border the Site, including within the flat levels landscape broadly to the south of the Site (within the SLA and Landscape of Historic Interest), and within the rising landscape broadly to the north of the Site (within the SLA).
- 5.3.93 As illustrated in Viewpoint 3 (Figures 5.13A-5.13C and 5.14A-5.14C) and Viewpoint 19 (Figures 5.31A-5.31C), from PRows crossing the Site to the west and north of Bishton respectively, expansive views are possible across the adjacent sloping fields, towards the lower levels landscape, including views over the large industrial buildings associated with the Llanwern Steelworks, overhead power lines and pylons, and scattered wind energy schemes.
- 5.3.94 The surrounding sloping landscape, in combination with intervening mature vegetation, including woodlands, helps to screen some wider views from the network of PRow, as illustrated in Viewpoint 5 (Figures 5.16A-5.16C). As illustrated in Viewpoint 4 (Figures 5.15A-5.15C) even from an open and elevated PRow to the north, the surrounding mature vegetation including hedgerows and woodland blocks, help to restrict many views including those views towards the Site.
- 5.3.95 Within the flatter, more open fields, focussed to the east, south and west of Bishton, more expansive views are possible across the levels landscape from the network of PRow that cross and border the Site, as illustrated in Viewpoint 20 (Figures 5.32A-5.32C) and Viewpoint 23 (Figures 5.35A-5.35C).
- 5.3.96 As illustrated in Viewpoint 7 (Figures 5.19A-5.19C), Viewpoint 18 (Figures 5.30A-5.30C) and Viewpoint 22 (Figures 5.34A-5.34C), from or in close proximity to the PRow adjacent to the South Wales Main Line railway, open views are possible across the adjacent fields, including views towards the rising fields to the north. These views are only slightly limited by the intervening linear vegetation lining the fields and the nearby minor road network.
- 5.3.97 Further afield, as illustrated in Viewpoint 9 (Figure 5.21), from a PRow to the west and Viewpoint 10 (Figures 5.22A-5.22C) from a PRow on the fringes of Llanwern, a combination of subtle variations in the intervening landform and enclosure by mature vegetation, including woodlands, helps to restrict the majority of wider views towards the Site.

- 5.3.98 Scattered PRow, 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.
- 5.3.99 Broadly to the north of the study area, it is only from selected high points and / or from gaps in the enclosing vegetation along the network of PRow, as illustrated in Viewpoint 13 (Figures 5.25A-5.25C), that expansive views across the sloping landscape towards the levels and coastal landscapes are possible. Even from elevated and open locations, as illustrated in Viewpoint 15 (Figure 5.27) from a PRow on the fringes of Llandeudaud, wider views including those towards the Site, are restricted by subtle variations in the intervening landform and mature vegetation and woodland.
- 5.3.100 Views are also possible from the network of PRow, which cross the levels landscapes broadly to the south of the study area. Occasional open views from this network of PRow are possible, as illustrated in Viewpoint 16 (Figure 5.28). However, the PRow in the levels landscape are often bordered by numerous lines of mature vegetation, which helps to limit many long distance views, including those views towards the Site.

Open Access Areas

- 5.3.101 There are very small, medium-high sensitivity open access areas scattered within the levels landscape. The closest of these areas are small linear strips along tracks to the south and west of Whitson approximately 1.9km to the south of the Site.
- 5.3.102 The more expansive open access areas in the study area are largely situated on land within forestry plantations, focussed to the north and north-east on the elevated and well-vegetated ridges.

Major Roads, including Motorways

- 5.3.103 The low sensitivity M4 motorway crosses from the east to the west of the study area, approximately 250 m to the north of the Site at its closest point. The M4 motorway then splits into the M4 and M48 motorways approximately 3.5 km to the east of the Site. These busy major roads are largely enclosed by a mixture of undulating landform and significant linear vegetation enclosing their fringes, as illustrated in Viewpoint 11 (Figure 5.23) from an overbridge on the M4 motorway. 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 landscape.

- 5.3.104 The low sensitivity A4810 also crosses the study area from the east to the west, connecting to the M4 motorway to the east of the Site at Junction 23A, before heading westwards to connect with the urban fringes of Newport. The A4810 connects the numerous large-scale industrial buildings scattered along this arterial route. Wider views are largely restricted by intervening mature vegetation, although views are possible of overhead power lines and pylons, and scattered wind energy schemes within the expansive levels landscape broadly to the south.
- 5.3.105 In addition, the low sensitivity A48 connects with the A449 broadly to the north of the study area and is set within the undulating and well-vegetated landscape.

Minor 'B' Roads and Unclassified Roads

- 5.3.106 A number of medium-low sensitivity minor roads cross and border the Site. As illustrated in Viewpoint 1 (Figures 5.9A-5.9C and Figures 5.10A-5.10C) and Viewpoint 2 (Figures 5.11A-5.11C and Figures 5.12A-5.12C), although intermittently lined by linear vegetation, open and exposed views over the adjacent regular fields within the flat levels landscape associated with the eastern fringes of the Site, are possible.
- 5.3.107 However, as illustrated in Viewpoint 8 (Figure 5.20), the linear vegetation lining the minor roads at the western fringes of the Site, help to restrict wider views from the minor roads. This enclosure by linear vegetation along the road network continues to the north of the Site, as the landform gently rises.
- 5.3.108 Further afield, numerous minor roads bisect the study area. These roads are largely crossing the flat levels landscape to the south of the study area, or the rising landscape to the north of the study area. These roads retain associated variable views into the wider landscape, including views towards the Site.
- 5.3.109 As illustrated in Viewpoint 17 (Figure 5.29), from the network of minor roads to the south of the study area, the dense vegetative enclosure along the road network, as well as lining the intervening fields, restricts the majority of wider views. However, occasional expansive views are possible across the adjacent levels landscape, above the immediate vegetative enclosure, including views towards the overhead power lines, large industrial buildings and scattered wind energy schemes.



- 5.3.110 Where more open views are possible from the network of minor roads, such as from selected elevated locations, the more distant views, including those towards the Site, are often restricted by subtle variations in landform and extensive intervening mature vegetation, as illustrated in Viewpoint 11 (Figure 5.23), from a bridge over the motorway.
- 5.3.111 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 views towards the scattered wind energy schemes and large-scale industrial buildings, are possible.

Railway Lines

- 5.3.112 The low sensitivity South Wales Main Line railway crosses the study area broadly from the east to the west, along the southern boundary of the Site.
- 5.3.113 The South Wales Main Line railway is in close proximity to the Site, as illustrated in Viewpoint 2 (Figures 5.11A-5.11C and 5.12A-5.12C), Viewpoint 7 (Figures 5.19A-5.19C), Viewpoint 18 (Figures 5.30A-5.30C) and Viewpoint 22 (Figures 5.34A-5.34C). The railway corridor is bordered by fencing and intermittent vegetation allowing expansive but fleeting views across the adjacent flat fields associated with the Site, rising up to the local high points to the north.
- 5.3.114 Further afield, the South Wales Main Line railway crosses the fringes of the levels landscape in a mixture of cutting and embankment. Exposed views are occasionally possible across the adjacent levels landscape, including views towards the scattered wind energy schemes to the south and the undulating and well-vegetated farmland to the north. However, these views are largely enclosed by adjacent mature vegetation and development.

5.4 Assessment of Effects

Embedded Mitigation



5.4.1 Embedded mitigation measures to help minimise the potential impacts and effects have been incorporated into distinct phases of the Proposed Development, as follows:

- i) During the site selection process – by avoiding sensitive designations, areas of high-grade agricultural land and receptors, and containing the Proposed Development within medium to large, regular fields. Medium to large, geometric fields are well suited to solar farms in terms of landscape and visual effects.
- ii) Through the assessment process - by removing fields near the linear village of Bishton from the development design, including near St Cadwaladr's Church, removing fields within the levels landscape to the east recognised for their ecological value and fields to the west and north,. This resulted in the final design being more logical and compact, less 'visible' and better integrated into the immediate and wider landscape. Extensive areas within the Site boundary have also been left free from solar panel development and would be designed and managed for nature conservation and biodiversity enhancement measures.
- iii) Through the design process – by incorporating designed in mitigation such as incorporating substantial offsets from the village fringes of Bishton; wide corridors, improved access, signage and information along all PRoW that cross and border the Site; encouragement of increased access through the provision of permissive footpaths and the creation of community facilities including an outdoor learning area, benches, picnic areas, interpretation boards and an orchard of local fruit and nut species as well as selected management, retention and enhancement of boundary and internal vegetation, including the distinctive reens.
- iv) Designing during construction and decommissioning – through sensitive design including minimising vegetation loss and all temporarily disturbed and excavated areas (including along the grid connection cable route) would be reinstated following completion of construction/de-commissioning activities.

5.4.2 The aims of the overall design and embedded mitigation measures are to integrate the Proposed Development into the adjacent surroundings, safeguarding the character and setting of the landscape, including the setting of landscape relevant designations and providing opportunities to improve and enhance the landscape, including accessibility. It is important to minimise the Proposed Development's influence on landscape character and nearby landscape relevant designations, as



far as practicable. Restricting potential views from surrounding visual amenity receptors, in particular from the closest residential properties within Bishton and the immediate PRoW and minor road network will also be important.

- 5.4.3 Design and mitigation measures have also been informed through reference to the strategy and guidelines of the relevant aspect areas as defined by the LANDMAP assessment.
- 5.4.4 The key objectives of the visual and sensory Llanwern Park aspect area, as defined by LANDMAP, and of relevance to the Proposed Development are:
- i) The area is generally in good condition and managed well although woodlands appear to lack management. Manage woodlands to ensure long-term deciduous cover.
 - ii) Replace fences with hedgerows where possible and encourage hedgerow trees.
- 5.4.5 The guidelines for the visual and sensory Wilcrick Moor aspect area, as defined by LANDMAP, and of relevance to the Proposed Development are:
- i) Maintain the rural character of levels and in particular field and drainage pattern.
 - ii) Replant and manage hedgerows and willows where gappy or deteriorating.
 - iii) Maintain field ditches and associated vegetation.
- 5.4.6 The key objectives for the landscape habitat Mosaic aspect areas (N031, N032 and N033), as defined by LANDMAP, and of relevance to the Proposed Development are:
- i) Where hedges are gappy, replant and lay; where post and wire fences existing, plant hedgerows.
 - ii) The reens should not be allowed to become overgrown or silted up and staggered management of the reens is essential to maintain the biodiversity.
 - iii) The grassland areas would benefit from enhancement and increased woodland/tree planting to increase connectivity to existing woodland; where post and wire fences exist, plant hedgerows.

- 5.4.7 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.”

Living Levels Landscape Partnership (LLLP)

- 5.4.8 The LLLP¹⁴ aims to “reconnect people and communities to the Gwent Levels Landscape and provide a sustainable future for this historic and unique area.”

- 5.4.9 The LLLP seeks to “conserve and restore the important natural heritage features of the area, to develop a greater appreciation of the value of the landscape and finally to inspire people to learn about and participate in the heritage of the Gwent Levels”.

- 5.4.10 To pursue this aim, the work will be concentrated in three core work programmes including:

1) Conserving and Restoring – this would “help to increase appreciation and understanding of the special landscape, biodiversity, management regime and heritage of the Levels for a wide range of local audiences and will provide many volunteering opportunities...”

2) Understanding and Appreciating – this would “help celebrate what is unique and special about the Levels through investments in new visitor infrastructure to enhance distinctive places, gateways and walking and cycling routes across the Levels...”

3) Learning and Engaging – this would “create a wealth of volunteering opportunities spanning history, archaeology, tourism, conservation and art work and there will be plenty of opportunities to get involved in some inspiring activities...”

¹⁴ www.livinglevels.org.uk

5.4.11 The Proposed Development would support the aims and core work programmes of the LLLP through:

- i) Restoration and enhanced management of the ditches (reens) focussed to the east and south of the Site that is characteristic of the levels landscape.
- ii) Infill planting of appropriate native species in gaps to existing boundaries.
- iii) Promoting and enhancing the existing public rights of way network, including improving accessibility through enhanced surfacing, provision of seating, picnic areas and interpretation boards.

Embedded Mitigation through Selection and Siting of the Proposed Development

5.4.12 The Proposed Development would be located within medium to large regular fields, as well as further enclosed by existing retained mature vegetation, which would restrict its visual profile in the immediate and wider landscape and would help to reduce the Proposed Development's visibility and wider effects on landscape character.

5.4.13 Any buildings or structures associated with the Proposed Development would also be situated in locations to strike a balance between operational requirements and restricting their wider visibility and coloured in a way to minimise their influence.

5.4.14 The Proposed Development was also designed to minimise direct effects on landscape elements. Existing access points, including gateways and bridges over ditches, would be used where practicable, thereby minimising disruption to landscape elements and pattern. The existing farm tracks within the Site would be improved as required by adding an additional 300 mm of granular material, which would weather over time. Where ground disturbance occurs during construction, bare patches of earth would be vegetated and fully reinstated.

5.4.15 Existing hedgerows and trees would be retained on the boundaries and internally within the development design, where appropriate.

5.4.16 The strong hedgerow structure network, scattered with mature trees, would largely remain intact, although there would be selected removal and enhanced management of hedgerow vegetation to open up reens and ditches where required for ecological and biodiversity enhancement. The selected management of the hedgerows to open up the reens would not increase the visibility of the Proposed



Development. However, the hedgerow vegetation to be retained would be conserved, enhanced and sympathetically managed to encourage species diversity and enhanced wildlife habitats. The protection and retention of the existing landscape boundary features would provide immediate screening, retain the landscape character and pattern and help reduce the effects of the Proposed Development.

- 5.4.17 The Proposed Development, which would be located within relatively contained fields, would also not disrupt the surrounding and established landscape regular pattern. The Proposed Development would integrate into the existing landscape pattern, would not be out of scale with the character of the local landscape and would be absorbed within the wider landscape.

Construction and De-commissioning Phase

- 5.4.18 Construction activities that have the potential to temporarily affect the landscape character and views from visual amenity receptors include:
- i) Deliveries to site and vehicle movements on and off site.
 - ii) Installation of solar panels and associated infrastructure, buildings and cables (including the grid connection cable).
 - iii) Reinstatement works to areas disturbed by construction activities.
- 5.4.19 De-commissioning activities which have the potential to affect the landscape character and views from visual amenity receptors include:
- i) Dismantling and removal of all installed infrastructure, with the exception of the substation and associated access track which will be permanent.
 - ii) Reinstatement works to areas disturbed by de-commissioning activities.
- 5.4.20 From the description of the construction and de-commissioning activities as outlined above, any effects on landscape character (including landscape relevant designations) and visual amenity receptors and their views during the construction and de-commissioning phases would be temporary in duration.
- 5.4.21 Any disruption to the fields as a result of de-commissioning activities would be re-seeded with a species rich grassland mix.

- 5.4.22 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 would ensure that the overall effects would be, at worst, minor adverse.

Operational Phase

Overview

- 5.4.23 A Zone of Theoretical Visibility (ZTV), as illustrated in Figure 5.8, has been calculated to the height of the solar panels (no higher than 3 m) covering the 5 km radius study area. The ZTV illustrates the area of potential visibility of the proposed solar panels.
- 5.4.24 The ZTV shows the extent of potential visibility to be mainly within and immediately surrounding the Proposed Development as well as extending broadly to the north, south-east, south and south-west. The sloping landscape broadly to the north and the flat levels landscape broadly to the south, means that the potential area of visibility is extensive. However, in reality the surrounding large-scale development and infrastructure, numerous lines of linear vegetation and substantial woodlands in the varied landscape as well as enclosing the Site itself would help to restrict the visibility of the Proposed Development.
- 5.4.25 This restricted extent of visibility is reflected in the selection of the viewpoints, which generally include views from within and in close proximity to the Proposed Development, as well as further afield to the north, south, east and south-east.
- 5.4.26 Details on the preparation of the ZTVs, photomontages and photographic analysis to inform the LVIA are found in Appendix 5.1.

Viewpoint Analysis

- 5.4.27 Twenty four viewpoints have been selected to inform the LVIA and help determine and describe the magnitude of impact and level and significance of effect on landscape character and the views of visual amenity receptors. Viewpoints 1-24 are found in Figures 5.9-5.36. The location of the Viewpoints 1-24 is illustrated on the ZTV on Figure 5.8.
- 5.4.28 The agreed viewpoints, determined through analysis of existing conditions, site survey and consultation, have been specifically sought out to represent the most



potentially exposed views of the Proposed Development, from the most sensitive receptors. These viewpoints are either within or broadly surround the Proposed Development from all directions of view.

- 5.4.29 Seventeen of the viewpoints have been interpreted into photomontages, as it was determined through technical analysis that these views have the potential to perceive the Proposed Development. The photomontages have been produced to show the worst-case of the operation of the Proposed Development immediately following the completion of construction.
- 5.4.30 Photomontages are also illustrated after approximately 10 years, when it is assumed that the additional landscape mitigation measures have had time to mature.
- 5.4.31 For the other seven potential viewpoints, even though they are within the ZTV and with the potential to view the Proposed Development, the Proposed Development would not be perceived. This is due to screening by numerous lines and blocks of existing mature vegetation, built development and subtle variations in landform as well as the vegetative enclosure around the Site itself.
- 5.4.32 Analysis of Viewpoints 1 – 24 (Figures 5.9-5.36) 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 below.

Site, including Landscape Elements

- 5.4.33 The operation of the Proposed Development would introduce new built elements within the medium sensitivity landscape of the Site, comprising a mixture of medium to large, regular and irregular fields, currently in agricultural use and divided by a diverse mix of ditches (reens), fencing, hedgerows, linear tree belts and small woodlands.
- 5.4.34 Although sensitively designed to retain and improve landscape pattern, including enhancing the existing field boundaries and extensive new hedgerow, tree and woodland planting, field units would be altered to fields influenced by built development. The magnitude of impact would be high, the level of effect would be moderate adverse.



- 5.4.35 With reference to the illustrative landscape masterplan (Figure 5.37), the retention of the existing hedgerow boundaries, woodland copses and trees within the development design, as well as the infill shrub and tree planting to the existing field boundaries in any gaps and extensive proposed hedgerow, tree, woodland and orchard planting, would result in low impacts and minor beneficial effects to landscape elements.
- 5.4.36 The rough grassland buffers and corridors and grasslands for biodiversity enhancement would also offer benefits to nature conservation and biodiversity.
- 5.4.37 The management of existing boundaries and the growth of the proposed hedgerows, trees and woodlands would also help to create new field boundaries and promote the regular landscape pattern. The new hedgerows, trees and woodlands would also provide screening and enclosure as well as nature conservation and biodiversity benefits.
- 5.4.38 The new hedgerows, tree, orchard and woodland planting and retention and improvement to the existing field boundaries would also follow the overall strategy and key landscape guidance for the relevant aspect area as well as strengthening the landscape pattern, increase screening and improve nature conservation and biodiversity with associated minor beneficial effects.

Landscape Relevant Designations

- 5.4.39 The operation of the Proposed Development would not directly influence any landscape relevant designations. There will be no direct influence on any landscape relevant designations as a result of the Proposed Development and the impacts will be no change and the effects will be neutral.
- 5.4.40 However, with reference to the ZTV (Figure 5.8) and the viewpoints (Figures 5.9-5.36), the operation of the Proposed Development would have the potential to indirectly influence the setting of selected landscape relevant designations within the wider study area, as follows:
- 5.4.41 The medium-high sensitivity Gwent Levels Landscape of Historic Interest occurs to the east, south and south-west of the A4810 and extends towards and along the coastal fringes, approximately 1.2 km to the south of the Proposed Development at its closest point.



- 5.4.42 Already directly influenced by pylons, scattered wind energy schemes and an operational solar scheme, the addition of the Proposed Development would largely not indirectly influence this area recognised for its rich archaeological and historical resource.
- 5.4.43 As illustrated in Viewpoint 12 (Figure 5.24), Viewpoint 16 (Figure 5.28) and Viewpoint 17 (Figure 5.29), even from open locations within the Gwent Levels Landscape of Historic Interest, a combination of screening by intervening large-scale development and numerous 'lines' of mature vegetation would ensure, that even during the winter months, the Proposed Development would largely not be perceived.
- 5.4.44 Even when potentially perceived at distance, as illustrated in Viewpoint 14 (Figures 5.26A-5.26C), from an elevated and open location along the coastal path, the Proposed Development would be difficult to identify. The Proposed Development would be largely screened by intervening large-scale development, set adjacent to a landscape already influenced by pylons and scattered wind energy schemes, with only the elevated fringes of the Proposed Development having the potential to be perceived at distance. At worst, the magnitude of impact would be low, the level of effect would be negligible adverse.
- 5.4.45 For the vast majority of the Gwent Levels Landscape of Historic Interest, the Proposed Development would not be perceived or would be very difficult to identify. The Proposed Development would not influence the wider setting or integrity. The magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.46 The medium-high sensitivity Caldicot Levels Special Landscape Area (SLA), SP8 (v), occurs approximately 1.1 km to the south, including running along the boundary of A4810 and extending broadly to the south of the Proposed Development.
- 5.4.47 Already directly influenced by pylons, scattered wind energy schemes and an operational solar scheme, the addition of the Proposed Development would largely not indirectly influence this unique area of landscape consisting of reclaimed marsh and wetlands which extends from Cardiff to Chepstow.
- 5.4.48 As illustrated in Viewpoint 12 (Figure 5.24), Viewpoint 16 (Figure 5.28) and Viewpoint 17 (Figure 5.29), even from open locations within the Caldicot Levels SLA, a combination of screening by intervening large-scale development and

- numerous 'lines' of mature vegetation would ensure, that even during the winter months, the Proposed Development would not be perceived.
- 5.4.49 Even when potentially perceived at distance, as illustrated in Viewpoint 14 (Figures 5.26A-5.26C), from an elevated and open location along the coastal path, the Proposed Development would be difficult to identify. The Proposed Development would be largely screened by intervening large-scale development, set within a landscape already influenced by pylons and scattered wind energy schemes, with only the elevated fringes of the Proposed Development with the potential to be distantly perceived. At worst, the magnitude of impact would be low, the level of effect would be negligible adverse.
- 5.4.50 For the vast majority of the Caldicot Levels SLA, the Proposed Development would not be perceived or would be very difficult to identify. The Proposed Development would not influence the wider setting or integrity. The magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.51 The medium-high sensitivity Wentwood SLA, also occurs approximately 2.1 km to the north of the Proposed Development, extending to the north and north-east of the study area. Primarily covered in extensive plantations and woodlands, it would only be from selected open and elevated locations that the Proposed Development would have the potential to be distantly perceived. As illustrated in Viewpoint 13 (Figures 5.25A-5.25C), although the Proposed Development would have the potential to be distantly perceived, nestled on the lower slopes within an expansive and well-vegetated landscape, largely screened by intervening development, infrastructure, variations in landform and mature vegetation, any indirect influence on the Wentwood SLA as a result of the Proposed Development would be very difficult to ascertain, and would largely go unnoticed. At worst, the magnitude of impact would be low, the level of effect would be negligible adverse although for the majority of the Wentwood SLA, the magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.52 The medium-high sensitivity River Usk SLA, to the north-west, west and south-west approximately 3.4 km to the north-west at its closest point is excluded from the ZTV and would experience no indirect influence on its setting as a result of the Proposed Development. The magnitude of impact would be no change, the level of effect would be neutral.

- 5.4.53 The high sensitivity Magor Conservation Area, approximately 2.2 km to the east and the scattered Conservation Areas to the east, including Rogiet and to the west and north-west within Newport and Caerleon, are excluded from the ZTV and would experience no indirect influence on their settings as a result of the Proposed Development. The magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.54 The high sensitivity Redwick Conservation Area approximately 3.3 km to the south, which is within the ZTV, would not be indirectly influenced by the Proposed Development. As illustrated in Viewpoint 12 (Figure 5.24), from an open location on the fringes of the settlement on the boundary of the Conservation Area, a combination of screening by intervening large-scale development and numerous 'lines' of mature vegetation would ensure, that even during the winter months, the Proposed Development would not be perceived. The magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.55 No high sensitivity Ancient Woodlands would be directly affected by the Proposed Development. The Proposed Development has been designed to be substantially offset from the closest Ancient Woodlands, including to the east and west of Bishton and on the western and northern fringes of the Site, to ensure their retention and protection. The Proposed Development would not result in the unacceptable loss or harm to trees, woodland or hedgerows that have wildlife or amenity value. The magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.56 The scattered high sensitivity Registered Parks and Gardens in the study area, including Pencoed Castle, approximately 675 m to the north, to the north of the M4 as well as within Newport to the west and along the A449 road corridor to the north and north-west are excluded from the ZTV and would experience no indirect influence on their setting as a result of the Proposed Development. The magnitude of impact would be no change, the level of effect would be neutral.

Landscape Character

- 5.4.57 The operation of the Proposed Development would introduce a new built element, including a permanent substation and associated access track, solar panels and associated buildings, perimeter fencing punctuated by CCTV camera masts and access tracks within the landscape, which would influence the landscape character.



The Proposed Development would however be contained within regular and relatively enclosed fields, enhanced over time through the management of existing vegetation and the growth of the extensive proposed landscape mitigation measures, within a wider well-vegetated and enclosed agricultural landscape. The Proposed Development would also be perceived adjacent and in the same context as the large-scale buildings and structures associated with the Llanwern Steelworks and Gwent Europark, and the distant scattered operational wind energy schemes and pylons that already influence the wider landscape character.

- 5.4.58 With reference to the ZTV (Figure 5.8) and viewpoints (Figures 5.9-5.36), the Proposed Development would be potentially perceived over a limited area. This would mainly be within and immediately surrounding the Proposed Development, and from a few selected open, distant and elevated locations as the landform broadly rises to the north, and potentially from a few selected open locations within the levels landscape broadly to the south.
- 5.4.59 Further descriptions of the potential influence of the Proposed Development on the LANDMAP aspect areas, as illustrated in Figures 5.5A-5.5E, is outlined below.

Visual and Sensory

- 5.4.60 The main influence on the visual and sensory landscape would be on the moderate (medium) sensitivity and high (medium-high) aspect areas in which the Proposed Development would be located.
- 5.4.61 The Proposed Development would be divided between the moderate (medium) sensitivity Llanwern Park aspect area (N034), broadly to the north which extends northwards up to the M4 corridor and the high (medium-high) sensitivity Wilcrick Moor aspect area (N036), broadly to the south, east and west.
- 5.4.62 There would be impacts on the visual and sensory aspect areas in which the Proposed Development would be situated. The sensitive design and layout however integrates within the field pattern, and is bordered by hedgerows and ditches which contribute to the character of the area.
- 5.4.63 The Proposed Development would however introduce built elements to these landscapes, already indirectly influenced by development. The magnitude of impact would be high, the level of effect would be moderate adverse.



- 5.4.64 However, the Proposed Development would be retained for grazing, with improved field boundaries and management of the reens as well as extensive proposed hedgerow, tree, orchard and woodland planting. This would be in keeping with the character of the aspect areas, with associated low impacts and minor beneficial effects.
- 5.4.65 High (medium-high) and outstanding (high) sensitivity aspect areas are also focussed broadly to the south, south-west and south-east of the Proposed Development within the levels and coastal fringe landscape. This includes the Caldicot Level aspect area (N037) to the south and south-west, encompassing the settlement of Redwick and extending towards the tidal defences lining the Severn Estuary and the Western Coastal Grasslands aspect area (M053), broadly to the south-east. Any indirect influence on their setting because of the Proposed Development on these open and exposed landscapes of reclaimed pasture would be restricted by the vegetative enclosure in the surrounding field network as well as the enclosure and screening provided by the intervening large-scale development.
- 5.4.66 Glimpsed and distant views of the Proposed Development may be possible from selected open and elevated locations, with an associated minimal and barely discernible increase of built development in the view. The magnitude of impact would be low, the level of effect would be minor or negligible adverse. For the majority of the aspect areas, the Proposed Development would not be perceived or be largely discernible and the magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.67 The northern part of the study area is also 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.
- 5.4.68 Glimpsed and distant views of the Proposed Development may be possible from selected open and elevated locations, with an associated minimal and barely discernible increase of built development in the view. The magnitude of impact would be low, the level of effect would be minor or negligible adverse. However, for the majority of the aspect areas, the Proposed Development would not be



perceived or be largely discernible and the magnitude of impact would be no change, the level of effect would be neutral.

Historic Landscape

- 5.4.69 The Proposed Development would be divided between the high (medium-high) sensitivity Bishton and Wilcrick aspect area (N014), broadly to the north which extends northwards towards the M4 corridor and the outstanding (high) sensitivity Oxleaze and Wilcrick Moor aspect area (N012), broadly to the south, west and east.
- 5.4.70 There would be impacts on the historic landscape aspect areas in which the Proposed Development would be situated. The sensitive design and layout avoids and minimises the influence on the large regular fields and drained landscape that dominates the aspect areas.
- 5.4.71 The Proposed Development would however introduce built elements to these extensive landscapes. The magnitude of impact would be high, the level of effect would be moderate adverse.
- 5.4.72 The potential for indirect influence on the outstanding (high) and high (medium-high) sensitivity aspect areas which extend broadly to the south would however be minimal. The combination of flat landscape, lined by numerous lines of mature vegetation would ensure that any indirect influence on these reclaimed, coastal plains landscape would be difficult to perceive.
- 5.4.73 Glimpsed and distant views of the Proposed Development may be possible from selected open and elevated locations, with an associated minimal and barely discernible increase of built development in the view. At worst, the magnitude of impact would be low, the level of effect would be minor or negligible adverse. However, for the majority of the aspect areas, the Proposed Development would not be perceived or be largely discernible and the magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.74 The northern part of the study area is also scattered with outstanding (high), high (medium-high) and moderate (medium) sensitivity historic landscapes. Glimpsed and distant views of the Proposed Development may be possible from selected open and elevated locations, with an associated difficult to perceive increase of built development in the view. At worst, the magnitude of impact would be low, the

level of effect would be minor or negligible adverse. However, for the majority of the aspect areas, the Proposed Development would not be perceived or be largely discernible and the magnitude of impact would be no change, the level of effect would be neutral.

Cultural Landscape Services

- 5.4.75 The Proposed Development would be divided between the moderate (medium) sensitivity Llanwern Park aspect area (N048), broadly to the north which extends broadly northwards up to the M4 corridor and the high (medium-high) sensitivity Wilcrick Moor aspect area (N050), broadly to the south, west and east.
- 5.4.76 There would be impacts on the cultural landscape aspect areas in which the Proposed Development would be situated. The sensitive design and layout however integrates within the field pattern, and is bordered by hedgerows and ditches which contribute to the character of the area.
- 5.4.77 The sensitive design and layout retains the field pattern and the management of the field boundaries, including the reens and extensive proposed landscape mitigation measures, would have low impacts and minor beneficial effects.
- 5.4.78 However, the Proposed Development would introduce built elements to this largely agricultural landscape, albeit indirectly influenced by large-scale development. The magnitude of impact would be medium, the level of effect would be moderate adverse.

Geological Landscape

- 5.4.79 The main influence on geological landscape would be on the aspect area in which the Proposed Development would be situated.
- 5.4.80 The Proposed Development would be broadly divided between the high (medium-high) sensitivity Llanwern-Underwood aspect area (N011) to the north and west, the moderate (medium) sensitivity Wilcrick Moor aspect area (N013) to the south and east and the moderate (medium) sensitivity Wilcrick aspect area (N014) to the east and north-east.
- 5.4.81 Other than the footprint of the Proposed Development, there would be limited impacts on the geological aspect areas. The sensitive design and layout, including construction methods, would avoid and minimise the influence of the Proposed



Development on the geological landscape aspect areas. The magnitude of impact would be no change, the level of effect would be neutral.

Landscape Habitat

- 5.4.82 The main influence on the landscape habitat would be on the aspect areas in which the Proposed Development would be situated.
- 5.4.83 The Proposed Development would be largely within the moderate (medium) sensitivity Mosaic aspect area (N032), which extends from the South Wales Main Line railway to the south towards the M4 motorway to the north. The western fringes of the Proposed Development would be within the high (medium-high) sensitivity Mosaic aspect area (N031) which covers the adjacent wooded hills and extends northwards to the M4 motorway, looping around Underwood.
- 5.4.84
- 5.4.85 Other than the footprint of the Proposed Development, there would be limited impacts on the Mosaic aspect areas. The sensitive design and layout avoids and minimises the influence on, in particular, the important reens and field boundaries and the grassland areas would be retained for grazing. The improved management of the existing hedgerow boundaries, sensitive management of the reens, extensive new native hedgerow, tree, orchard and woodland planting and rough grassland buffers around the periphery and within the Proposed Development, would have low impacts and minor beneficial effects, over time.
- 5.4.86 However, the Proposed Development would introduce built elements to this pastoral landscape and the magnitude of impact would be medium, the level of effect would be moderate adverse.

Visual Amenity Receptors and their Views

- 5.4.87 An overview of the potential impacts and effects as a result of the operation of the Proposed Development on visual amenity receptors and their views within the study area is described below.



- 5.4.88 The location of principal visual amenity receptors is illustrated on Figure 5.7. Representative publicly accessible panoramic views, some of which have been interpreted as photomontages, from key visual amenity receptors are also illustrated on Figures 5.9-5.36, their location shown on Figure 5.8.

Settlements – Towns, Villages and Hamlets

- 5.4.89 There are scattered high sensitivity settlements within the study area, the closest to the Proposed Development being the linear village of Bishton.
- 5.4.90 As illustrated in Viewpoint 6 (Figures 5.17A-5.17C and 5.18A-5.18C) and Viewpoint 23 (Figures 5.35A-5.35C), from selected open locations within and on the fringes of Bishton, the Proposed Development would have the potential to be perceived on the rising slopes above the village and within the expansive flat levels landscape. Although deliberately set back from the village boundary to minimise its presence, the Proposed Development would be a prominent built element from selected open locations within and on the fringes of the village. At worst, the magnitude of impact would be medium-high, the level of effect would be moderate adverse. The management of existing vegetation, in combination with the growth of the extensive landscape mitigation measures would help to restrict the influence over time. The Proposed Development would however still be perceived in views from within and the village fringes, albeit nestled within a strong existing and proposed landscape framework, in particular during the winter months. Over time, the magnitude of impact would be medium-low, the level of effect would be minor adverse.
- 5.4.91 However, as illustrated in Viewpoint 5 (Figures 5.16A-5.16C), a combination of sloping landform and screening by existing vegetation would help to screen views towards the Proposed Development from selected locations along the village fringes. The magnitude of impact would be medium-low, the level of effect would be minor adverse. The enhancement of the existing boundaries as well as the growth of the proposed landscape mitigation measures, would help to reduce the influence over time, although the Proposed Development would still have the potential to be perceived, particularly during the winter months. The magnitude of impact would be low, the level of effect would be minor adverse.

5.4.92 Other settlements within the study area include:

- i) Llanwern, approximately 425 m to the west. Situated on rising ground, although views are possible from selected elevated and open locations within and on the settlement fringes, as illustrated in Viewpoint 10 (Figures 5.22A-5.22C), wider views, including towards the Proposed Development, would be largely restricted by intervening landform and mature woodland vegetation. Although with the potential to be glimpsed, with potentially low impacts and minor adverse effects, the Proposed Development would be largely indiscernible in the view from the nearby settlement. The growth of the proposed landscape mitigation measures will also restrict the influence of the Proposed Development. For the majority of the settlement, the magnitude of impact would be no change, the level of effect would be neutral.
- ii) Underwood is a compact settlement, approximately 400m to the north and is separated from the Proposed Development by subtle variations in landform and mature woodland vegetation. It is excluded from the ZTV and the magnitude of impact would be no change, the level of effect would be neutral.
- iii) Magor and Undy, approximately 1.8 km to the east of the Proposed Development at their closest points are compact towns situated to the south of the M4 motorway and bisected and bordered by the South Wales Main Line railway to the south and the A4810 to the west. The adjacent South Wales Main Line railway and major roads forms a strong boundary and containment to long distance views. They are excluded from the ZTV and the magnitude of impact would be no change, the level of effect would be neutral.
- iv) Llandeenny, approximately 1.3 km to the east of the Proposed Development at its closest point, is a scattered collection of houses and farms set on either side of the South Wales Main Line railway. Situated on slightly higher ground, wider views over the levels landscape, including towards the Proposed Development would be restricted by the mature vegetation surrounding the settlement and within the wider field pattern. The magnitude of impact would be no change, the level of effect would be neutral.
- v) Redwick, approximately 3.3 km to the south-east of the Proposed Development at its closest point, is a compact village focused on a public house, 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. However, as illustrated in Viewpoint 12 (Figure 5.24), even from the open fringes of the village, views towards the Proposed Development would be restricted by a combination of intervening vegetation and large-scale development. The magnitude of impact would be no change, the level of effect would be neutral.

- vi) Llandeuvod, approximately 1.5 km to the north is a compact settlement situated amidst a sloping and well-vegetated landscape. Largely enclosed by surrounding mature vegetation, even from selected open and elevated locations, as illustrated in Viewpoint 15 (Figure 5.27), on the fringes of the settlement, wider views, including towards the Proposed Development would be restricted by a combination of undulating landform and mature woodland vegetation. The magnitude of impact would be no change, the level of effect would be neutral.
- vii) Newport, approximately 1.3 km to the west, is separated from the Proposed Development by undulating landform, mature vegetation and large-scale industrial buildings, including Llanwern Steelworks. It is excluded from the ZTV and the magnitude of impact would be no change, the level of effect would be neutral.

Scattered Residential Properties and Farms

- 5.4.93 Individual residential properties and farms of high sensitivity 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. The closest residential properties and farms to the Proposed Development are largely scattered along the minor road network to the north, east and west.
- 5.4.94 Many of the scattered houses and farms have restricted views into the surrounding landscape, including towards the Proposed Development. 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, would screen the majority of views. At worst, glimpsed views may be possible with medium impact and moderate adverse effects although for the majority of scattered residential properties, the magnitude of impact would be no change, the level of effect would be neutral.

Places of Interest

- 5.4.95 The medium-high sensitivity Celtic Manor Resort is situated to the north of the M4 motorway, approximately 2.2 km to the north-west of the Proposed Development at its closest point.
- 5.4.96 Only intermittently within the fringes of the ZTV, does the Proposed Development have the potential to be perceived at distance from selected open and elevated locations. However, views towards the Proposed Development are separated by the M4 motorway, as well as built development, undulating landform and extensive mature vegetation, meaning views of the Proposed Development would be limited and difficult to identify within this busy landscape and view. The magnitude of impact would be no change, the level of effect would be neutral.

National Cycle Routes

- 5.4.97 The medium-high sensitivity National Cycle Route (NCR) 4: Celtic Trail crosses the study area from east to west, approximately 1.5 km to the south of the Proposed Development at its closest point.
- 5.4.98 Largely following straight minor roads and lanes, as illustrated in Viewpoint 17 (Figure 5.29), the dense vegetative enclosure along the road network, the large buildings and structures along the A4810, as well as lining the intervening fields, would restrict the majority of views towards the Proposed Development. The magnitude of impact would be no change, the level of effect would be neutral.

Recreational Routes

- 5.4.99 The high sensitivity 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 4.2km 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 hills broadly to the north.
- 5.4.100 Even when potentially perceived at distance, as illustrated in Viewpoint 14 (Figures 5.26A-5.26C), from an elevated and open location along the coastal path, the Proposed Development would be difficult to identify. The Proposed Development would be largely screened by intervening large-scale development, set within a



landscape already influenced by pylons and scattered wind energy schemes, with only the elevated fringes of the Proposed Development with the potential to be distantly perceived.

- 5.4.101 The Proposed Development would be barely if at all perceived with at worst, low impacts and negligible adverse effects although in reality for the majority of the recreational route, the magnitude of impact would be no change, the level of effect would be neutral.

Local Public Rights of Way, Bridleways and Cycleways

- 5.4.102 A number of medium-high sensitivity PRoW cross and border the Proposed Development, including medium-high sensitivity PRoW within the flat levels landscape broadly to the south of the Site (within the SLA and Landscape of Historic Interest), and within the rising landscape broadly to the north of the Site (within the SLA).
- 5.4.103 Given their proximity, the Proposed Development would be an exposed and prominent built element within the views from the PRoW that cross and border the Site.
- 5.4.104 As illustrated in Viewpoint 3 (Figures 5.13A-5.13C and 5.14A-5.14C) and Viewpoint 19 (Figures 5.31A-5.31C), from PRoWs crossing the Proposed Development to the west and north of Bishton respectively, expansive views would be possible across the adjacent sloping fields. These views will be dominated by the Proposed Development, including towards the large industrial buildings associated with the steelworks, lines of pylons and scattered wind energy schemes within the lower levels landscape. The magnitude of impact would be high, the level of effect would be moderate adverse. However, the growth of the proposed hedgerows and trees lining the PRoWs would help to restrict the influence of the Proposed Development. The built elements associated with the Proposed Development would be largely screened over time, although glimpsed views may still be possible, including during the winter months, with associated medium-low impacts and minor adverse effects.
- 5.4.105 Away from within Proposed Development and its immediate boundaries, the surrounding sloping landscape, focussed to the north, in combination with intervening mature vegetation, including woodlands, would help to screen wider views from the network of PRoW, as illustrated in Viewpoint 5 (Figures 5.16A-

- 5.16C). A combination of sloping landform and screening by existing vegetation would help to screen views towards the Proposed Development from close proximity PRoW. The magnitude of impact would be medium-low, the level of effect would be minor adverse. The enhancement of the existing boundaries, as well as the growth of the proposed landscape mitigation measures, would help to reduce the influence over time although glimpsed views may still be possible, including during the winter months, with associated low impacts and minor adverse effects.
- 5.4.106 Even from an open and elevated public right of way to the north, as illustrated in Viewpoint 4 (Figures 5.15A-5.15C), a combination of subtle variations in the sloping landform and the surrounding mature vegetation, including hedgerows and woodland blocks, would help to restrict many views from the nearby network of PRoW towards the Proposed Development. The magnitude of impact would be medium-low, the levels of effects would be minor adverse. The enhancement of the existing boundaries as well as the growth of the proposed landscape mitigation measures helping to reduce the influence over time although glimpsed views may still be possible, including during the winter months, with associated low impacts and minor adverse effects.
- 5.4.107 Within the flatter, more open fields, focussed to the east, south and west of Bishton, more expansive views would be possible across the levels landscape from the network of PRoW that cross and border the Proposed Development, as illustrated in Viewpoint 20 (Figures 5.32A-5.32C) and Viewpoint 23 (Figures 5.35A-5.35C).
- 5.4.108 These views will be dominated by the Proposed Development, although the substantial offset along the PRoW will help to limit this initial influence. The magnitude of impact would be high, the level of effect would be moderate adverse. However, the growth of the proposed hedgerows and trees lining the PRoWs would help to restrict the influence of the Proposed Development. The built elements associated with the Proposed Development would be largely screened over time, although glimpsed views may still be possible, including during the winter months, with associated medium-low impacts and minor adverse effects.
- 5.4.109 As illustrated in Viewpoint 7 (Figures 5.19A-5.19C), Viewpoint 18 (Figures 5.30A-5.30C) and Viewpoint 22 (Figures 5.34A-5.34C), from or in close proximity to the PRoW adjacent to the South Wales Main Line railway, open views would be



possible across the adjacent fields, including towards the rising fields to the north. Views towards the Proposed Development, including the permanent substation and associated access track, as illustrated in Viewpoint 7 (Figures 5.19A-5.19C), will be only slightly limited by the intervening linear vegetation bordering the fields and the minor road network. The magnitude of impact would be medium, the level of effect would be moderate adverse. However, the enhancement of the existing boundaries as well as the growth of the proposed landscape mitigation measures, including focussed around the permanent substation, will help to reduce the influence over time. The Proposed Development, including the permanent substation and access track, however would still be perceived as the landform rises to the north, including during the winter months and the magnitude of impact would be medium-low, the levels of effects would be minor adverse. The perception of the Proposed Development from the network of PRoW would however dissipate with distance.

- 5.4.110 Further afield, scattered PRoW, bridleways and cycleways cross the study area. Often following field boundaries, they are generally enclosed by a combination of hedgerow, linear tree belt and woodland vegetation which would restrict many views, including towards the Proposed Development.
- 5.4.111 As illustrated in Viewpoint 9 (Figure 5.21), from a PRoW to the west and Viewpoint 10 (Figures 5.22A-5.22C) from a PRoW on the fringes of Llanwern, a combination of subtle variations in the intervening landform and enclosure by mature vegetation, including woodlands, would help to restrict the majority of wider views towards the Proposed Development. Although with the potential to be glimpsed from selected elevated and/or open locations, as illustrated in Viewpoint 10 (Figures 5.22A-5.22C), with potentially low impacts and minor adverse effects, the Proposed Development would be largely indiscernible in the view from the majority of the PRoWs. The growth of the proposed landscape mitigation measures will also restrict the influence of the Proposed Development. The magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.112 Broadly to the north of the study area, it would only be from selected high points and/or from gaps in the enclosing vegetation, as illustrated in Viewpoint 13 (Figures 5.25A-5.25C), that expansive views across the sloping landscape towards the levels and coastal landscapes, including the Proposed Development, would be possible. Barely discernible within the busy view, the magnitude of impact at worst



would be low, the level of effect would be negligible adverse, though the Proposed Development would easily go unnoticed in the view.

- 5.4.113 Even from elevated and open locations, as illustrated in Viewpoint 15 (Figure 5.27) from a PRoW on the fringes of Llandevaud, wider views, including those views towards the Proposed Development would be restricted by subtle variations in the intervening landform and mature vegetation, including woodlands. The magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.114 Views towards the Proposed Development would also be potentially possible from the network of PRoW that cross the levels landscapes broadly to the south of the study area. However, the scattered PRoW in the levels landscape are often bordered by numerous lines of mature vegetation, as illustrated in Viewpoint 16 (Figure 5.28), including lining the surrounding fields, which would help to limit many long distance views, including those views towards the Proposed Development. The magnitude of impact would be no change, the level of effect would be neutral.

Open Access Areas

- 5.4.115 Views towards the Proposed Development from the very small medium-high sensitivity open access areas, scattered within the levels landscape, would be restricted by numerous lines of mature vegetation, even during the winter months, as well as the screening provided by the large-scale buildings associated with the Llanwern Steelworks and the Gwent Europark. The magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.116 The more expansive medium-high sensitivity 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. These areas have wider views, including views of the Proposed Development, though these are restricted by intervening mature vegetation. The magnitude of impact would be no change, the level of effect would be neutral.

Major Roads, including Motorways

- 5.4.117 The low sensitivity M4 motorway crosses the study area from the east to the west of the study area, approximately 250m to the north of the Proposed Development



at its closest point, splitting approximately 3.5 km to the east into the M4 and M48 motorways.

- 5.4.118 Largely excluded from the ZTV, these busy major roads are largely enclosed by a mixture of undulating landform and significant linear vegetation enclosing their fringes. As illustrated in Viewpoint 11 (Figure 5.23) even from an bridge over the M4 motorway, views towards the Proposed Development would be restricted. The magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.119 The low sensitivity A4810 connects the numerous large-scale industrial buildings scattered along this busy arterial route and wider views, including views towards the Proposed Development, would be restricted by a combination of development and intervening mature vegetation. The magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.120 The low sensitivity A48 also connects with the A449 broadly to the north of the study area. Set within the undulating and well-vegetated landscape and excluded from the ZTV, the magnitude of impact would be no change, the level of effect would be neutral.

Minor 'B' Roads and Unclassified Roads

- 5.4.121 A number of medium-low sensitivity minor roads cross and border the Proposed Development with associated variable views.
- 5.4.122 As illustrated in Viewpoint 1 (Figures 5.9A-5.9C and Figures 5.10A-5.10C), open, close proximity and exposed views over the Proposed Development would be possible from an open and elevated minor road that crosses the flat regular levels landscape to the east. The Proposed Development would be a prominent built element in the view and the magnitude of impact would be high, the level of effect would be moderate adverse. The sensitive management of existing vegetation, in combination with the growth of proposed linear vegetation would help to restrict the influence of the Proposed Development, over time.
- 5.4.123 As illustrated in Viewpoint 2 (Figures 5.11A-5.11C and Figures 5.12A-5.12C), views of the Proposed Development, across the flat regular levels landscape from open and elevated locations along the minor road network as it rises up the hills broadly to the north would be possible. Set amidst and against a background of rising well-vegetated hills, views of the Proposed Development would be expansive and the



magnitude of impact would be medium, the level of effect would be moderate adverse. The growth of the landscape mitigation measures, focussed on the boundaries and within and 'breaking up' the Proposed Development will however help to restrict the influence. The magnitude of impact would be medium-low, the level of effect would be minor adverse, particularly during the winter months.

- 5.4.124 As illustrated in Viewpoint 8 (Figure 5.20) however, the linear vegetation lining minor roads, focussed to the western and northern fringes of the Proposed Development would help to restrict wider views. Mature existing vegetation would help to restrict views towards the Proposed Development and the magnitude of impact would be no change, the level of effect would be neutral. However, glimpsed views towards the Proposed Development may be selectively possible above the enclosing hedgerows, from gaps in this enclosure, such as field gates and/or during the winter months from the minor roads. The magnitude of impact would be medium-low, the level of effect would be minor adverse. The growth of the proposed landscape mitigation measures, focussed along the field boundaries would also help to restrict the wider influence of the Proposed Development when perceived from the network of close proximity minor roads.
- 5.4.125 Further afield, numerous minor roads bisect the study area and are largely crossing the flat levels landscape to the south of the study area and focussed within the undulating rising landscape broadly to the north of the study area with associated variable views into the wider landscape, including towards the Proposed Development.
- 5.4.126 As illustrated in Viewpoint 17 (Figure 5.29), from the network of minor roads that cross the expansive levels landscape broadly to the south of the study area, screening by the intervening large-scale development and the dense vegetative enclosure along the road network, as well as lining the intervening fields would restrict the majority of wider views, including towards the Proposed Development. For the majority of minor roads crossing the expansive levels landscape, the magnitude of impact would be no change, the level of effect would be neutral.
- 5.4.127 Even when more open views are possible from the network of minor roads, such as from selected elevated locations, more distant views, including those towards the Proposed Development, would often be restricted by subtle variations in landform and extensive intervening mature vegetation, as illustrated in Viewpoint 11 (Figure



5.23). The magnitude of impact would be no change, the level of effect would be neutral.

5.4.128 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 would only be from high points, or from gaps in the enclosure, that views into the surrounding undulating farmland landscape and lower levels landscape, including those views towards the Proposed Development set amidst scattered wind energy schemes and large-scale industrial buildings, would be possible. A combination of distance, undulating landform and enclosure by extensive mature vegetation, would ensure that the Proposed Development would not stand out in the majority of glimpsed and fleeting views possible from the network of largely enclosed minor roads broadly to the north. The magnitude of impact would be no change, the level of effect would be neutral.

Railway Lines

5.4.129 The low sensitivity South Wales Main Line railway crosses the study area broadly from the east to the west, following the southern boundary of the Proposed Development. The railway has the possibility of close proximity, but fleeting views, over the Proposed Development, as illustrated in Viewpoint 7 (Figures 5.19A-5.19C) , Viewpoint 18 (Figures 5.30A-5.30C) and Viewpoint 22 (Figures 5.34A-5.34C). The Proposed Development, including the permanent substation and associated access track, as illustrated in Viewpoint 7 (Figures 5.19A-5.19C), would be a prominent built element in the view, perceived adjacent to the railway and on the rising slopes to the north. The large-scale structures associated with the Llanwern Steelworks, immediately to the south, are also perceived as prominent built elements in the view.

5.4.130 At worst, the magnitude of impact would be high, the level of effect would be minor adverse. However, the management of existing vegetation and the growth of the proposed landscape mitigation measures, focussed along the PRoWs and along the field boundaries, would help to restrict the wider influence over time. However, when perceived in close proximity and during the winter months, the magnitude of impact would be medium, the level of effect would be minor adverse.

5.4.131 Away from the immediate boundary of the Proposed Development, views towards the Proposed Development would be restricted by adjacent mature vegetation and



development. The magnitude of impact would be no change, the level of effect would be neutral.

Cumulative Effects

- 5.4.132 The Proposed Development is considered in addition to the consented and pending planning cumulative energy schemes, identified on Figure 2.1 including the consented Magor Motorway Service Area solar scheme, approximately 1.2 km to the east and the pending planning Rush Wall solar scheme, approximately 1.9 km to the south-east.
- 5.4.133 In addition, there are a number of consented and under determination varied industrial and housing developments focussed around Magor to the east, Llanwern to the west and adjacent to the steelworks on the fringes of Newport to the south-west.
- 5.4.134 The influence of the Proposed Development, in combination with other existing or operational developments is however considered within the main impact assessment.

Landscape Character

- 5.4.135 The consented Magor Motorway Service Area solar scheme, is separated from the Proposed Development by the enclosed M4 corridor and the pending planning Rush Wall solar scheme is separated from the Proposed Development by the large-scale buildings and structures associated with the Gwent Europark and the Llanwern Steelworks, lining the intervening and well-vegetated A4810. A combination of screening and separation by development, infrastructure and mature vegetation would ensure there would be no potential additional cumulative effects on landscape character as a result of the Proposed Development in combination with the consented Magor Motorway Service Area solar scheme and the pending planning Rush Wall solar scheme.
- 5.4.136 The addition of the Proposed Development would not create a landscape dominated by numerous energy schemes which would influence the setting or the integrity of landscape relevant designations or change the landscape character into one influenced by energy developments. The addition of the Proposed Development, even in combination with the consented and pending planning solar schemes, would not dominate the landscape.

5.4.137 The other consented and under determination developments, appear to be largely focussed and associated with the settlement fringes. There would be an increase in varied built development, but separated from the Proposed Development by other development, infrastructure and mature vegetation would ensure there would be no potential additional cumulative effects on landscape character as a result of the Proposed Development in combination with these other schemes.

Visual Amenity Receptors and their Views

5.4.138 The separation by intervening development, infrastructure and mature vegetation would ensure there would be no potential additional combined or sequential influence on visual amenity receptors and their views as a result of the addition of the Proposed Development with the consented Magor Motorway Service Area solar scheme and the pending planning Rush Wall solar scheme as well as the other consented and under determination developments associated with the surrounding settlement fringes.

5.4.139 The proximity between the Proposed Development and the consented and pending planning solar schemes ensures there could be the potential for combined and sequential views, particularly from the intervening M4 and A4810. However, the major roads are largely well-screened and enclosed by existing mature vegetation and development which would limit any potential cumulative sequential visual effect.

5.4.140 The wider enclosure by subtle variations in landform and mature vegetation in combination with the Proposed Development would ensure that the other consented and under determination schemes would be integrated into the wider landscape, with minimal additional cumulative effects on views from visual amenity receptors.

5.5 Mitigation

5.5.1 Additional landscape relevant mitigation measures incorporated into the Proposed Development design are illustrated on Figure 5.37 and on the relevant Viewpoints (Figures 5.9-5.36) and include:

- i) All existing retained hedgerows surrounding and within the Proposed Development would be enhanced, where appropriate and maintained at a minimum height of 3 m. Proposed native species rich gap filling planting, of



shrubs and trees, would be introduced into the existing retained vegetative structure. This would 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, with shrubs and trees, would also help to restrict views from the surrounding visual amenity receptors.

- ii) Existing hedgerows would be enhanced with proposed tree planting, where shown. This would provide additional enclosure and screening to the Proposed Development.
- iii) Proposed hedgerows would line the PRoW that cross and border the Site, where shown on the Indicative Landscape Masterplan and as illustrated in Viewpoint 3 (Figures 5.13A-C and 5.14A-C), Viewpoint 18 (Figures 5.30A-5.30C), Viewpoint 19 (Figures 5.31A-5.31C), Viewpoint 20 (Figures 5.32A-5.30C) and Viewpoint 23 (Figures 5.35A-5.35C). This would provide wide vegetated corridors along the PRoW and provide screening and enclosure.
- iv) Proposed woodland planting/scattered tree planting, where shown, would provide additional screening and enclosure, in keeping with the adjacent wooded character. Proposed woodland/scattered tree planting is focussed on the fringes of the Site, broadly to the north and west and also around the proposed substation and Bishton Castle Scheduled Monument, as illustrated in Viewpoint 24 (Figures 5.36A-5.36C).
- v) Encourage increased access through the creation of permissive footpaths and the provision of community facilities including an outdoor learning area, orchard, picnic and seating areas and interpretation boards.
- vi) Proposed community orchard will be planted to the east of Bishton and be connected with a permissive footpath, as illustrated in Viewpoint 21 (Figures 5.5.33A-5.33C). This will provide a valuable community resource as well as screening and enclosure.
- vii) Proposed planting would reflect the existing landscape character within the study area through the sensitive selection of species that would enhance the Proposed Development and the wider landscape. This would ensure that the Proposed Development complements the existing landscape. Locally sourced native tree and shrub species would include plants commonly found in the surrounding hedgerows and woodlands.

- viii) A rough grassland corridor would be managed between the proposed security fence and field boundaries, which would only be intermittently and lightly grazed. This would provide nature conservation and biodiversity benefits.
- ix) Extensive areas have been left free of development and are proposed for biodiversity and nature conservation enhancement, including areas for ground nesting birds.
- x) Any gaps or areas of bare or disturbed ground in the existing grassland, following construction would be re-seeded with a species rich, shade resistant sheep grazing grassland mix, specifically for solar parks.

5.6 Residual Effects and Conclusions

- 5.6.1 Overall, the landscape of and surrounding the Proposed Development consists of medium to large regular and irregular fields. The fields are currently in agricultural use and are divided by a diverse mix of hedgerows, linear tree belts and small woodlands. Straight ditches also border and divide the flat fields, focussed broadly to the south and east, and are often lined by mature vegetation. Sloping fields are focussed to the west and north, rising up from the fringes of the linear village of Bishton on the lower slopes. The linear village of Bishton largely runs along Bishton Road from the south to the north through the centre of the Site.
- 5.6.2 Numerous PRow and minor roads also cross and border the Site and the main railway line runs broadly from east to west along the southern fringes of the Site. The M4 motorway corridor also occurs to the north.
- 5.6.3 The large-scale buildings and structures of the Llanwern Steelworks to the south of the Site dominate the landscape and views. Further afield, the large-buildings and structures associated with the Gwent Europark to the south-east and the Magor Brewery to the east are also present. The levels landscape to the south is also scattered with lines of pylons, wind energy schemes and a large-scale solar scheme.



- 5.6.4 Overall, based on the content of this LVIA chapter, as well as consideration against Box 5.1 in GLVIA¹⁵ and Table 1 in TGN 02/21¹⁶, it is considered that the Site and its immediate landscape setting is not a valued landscape, although does have some valued elements.
- 5.6.5 In addition, the Site is not recognised for its importance through any landscape relevant designations. However, within the wider study area, focussed broadly to the south within the expansive levels landscape, the Caldicot Levels Special Landscape Area (SLA) and the Gwent Levels Landscape of Historic Interest occur. The SLA and Landscape of Historic Interest are however already influenced by development including numerous lines of pylons, a solar scheme and scattered wind energy schemes.
- 5.6.6 There are also a number of Registered Historic Parks and Gardens present, within the wider study area and the centre of some of the villages and towns are recognised as Conservation Areas. These include Magor, approximately 2.2 km to the east and Redwick, approximately 3.3 km to the south. There are also scattered Ancient Woodlands present, mainly focussed within the higher landscape broadly to the north, adding to the well-vegetated character and wider enclosure of the Site.
- 5.6.7 The Proposed Development is situated within a high and moderate sensitivity visual and sensory aspect area, within an outstanding and high sensitivity historic landscape aspect area, within a high and moderate sensitivity cultural landscape aspect area, within a high and moderate sensitivity geological landscape aspect area and within a high and moderate sensitivity landscape habitat aspect area. The sensitivity reflecting the importance of the landscape, as defined by the LANDMAP assessment.
- 5.6.8 Mitigation measures during the site selection and design stages have ensured that the Proposed Development would have minimal direct effects on landscape elements. The Proposed Development's location set in medium to large and relatively contained regular fields within a sloping to flat, well-vegetated landscape are also appropriate for solar development. The sensitive siting and location of the

¹⁵ Box 5.1, page 84, Guidelines for Landscape and Visual Impact Assessment (GLVIA), Third Edition, 2013, *The Landscape Institute and the Institute of Environmental Management and Assessment*

¹⁶ *Landscape Institute, Technical Guidance Note 02/21 Assessing Landscape Value Outside National Designations*



Proposed Development also minimises the wider impacts on landscape character, landscape relevant designations and nearby visual amenity receptors.

- 5.6.9 In addition, selected existing field boundary vegetation would be protected and enhanced and the characteristic reens focussed within the flat landscape would be sensitivity managed and enhanced, to retain and improve the landscape pattern, as well as for nature conservation and biodiversity benefits. Selected hedgerow and tree infill planting to existing boundaries would also improve screening and promote the field pattern and landscape structure. In addition, extensive proposed hedgerows, scattered tree, woodland and orchard planting, appropriate to the landscape character and landscape pattern, would also provide additional screening and enclosure to the Proposed Development as well as nature conservation and biodiversity enhancements.
- 5.6.10 The existing containment and enclosure provided by the immediate and wider well-vegetated landscape would also ensure that the Proposed Development would only have wider minimal effects on both landscape character and visual amenity receptors and their views during construction and de-commissioning, other than in the immediate vicinity.
- 5.6.11 During the operational period, the Proposed Development would largely only be perceived in close proximity, from the village fringes of Bishton and from the PRoW, minor roads and railway line that cross and border the Site. Elevated but distant views of the Proposed Development would also be possible from selected exposed and open locations as the landform rises broadly to the north.
- 5.6.12 Although perceived in close proximity, the Proposed Development would be viewed as a contained built element, within a regular and well-vegetated landscape which has already been influenced by infrastructure and development.
- 5.6.13 The majority of wider effects on landscape character, landscape relevant designations and visual amenity receptors and their views would be neutral largely because of the enclosure provided by the surrounding numerous lines of dense hedgerows and trees within the immediate and wider landscape and the screening vegetation focussed around residential properties, settlements and transport corridors.

- 5.6.14 With regard to the landscape character areas, the Proposed Development would directly affect the selected aspect areas, as defined by LANDMAP, but would not dramatically change the characteristics of the wider landscape or affect the integrity or setting of landscape relevant designations. The Proposed Development would be perceived in close proximity and from further afield to the north but would be viewed as a contained built element, within a well-vegetated landscape. The Proposed Development would integrate within the existing field pattern and would not be out of scale with the surrounding landscape. The enhanced management, maturing and reinforcement of the existing retained vegetation, with selected infill planting to retained hedgerows and extensive proposed hedgerow, tree, woodland and orchard planting, would help to further integrate the Proposed Development into the landscape pattern.
- 5.6.15 Exposed views of the Proposed Development from visual amenity receptors would be generally only from those 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.
- 5.6.16 The growth of the proposed landscape mitigation measures, as shown in the Illustrative Landscape Masterplan (Figure 5.37), including selected infill planting of the existing retained boundaries, would help to restrict even further potential views of the Proposed Development, particularly for those receptors in close proximity, over time.
- 5.6.17 The addition of the Proposed Development, in combination with other renewable energy schemes in the study area would not create a solar landscape or dramatically change the views from surrounding visual amenity receptors into a view dominated by numerous solar schemes. Even when perceived with other consented and under determination industrial and housing developments, largely focussed on and associated with the surrounding settlement fringes, will not create a landscape or views dominated by development.
- 5.6.18 In summary, the Proposed Development would:
- i) Add built elements to the landscape.
 - ii) Have no direct influence on any designated landscapes.
 - iii) Be set within the regular landscape pattern within mainly mature and well-vegetated field boundaries, which would be selectively managed, protected

and enhanced through additional planting, including infill planting to the existing boundaries, where necessary.

- iv) Only largely be perceived in close proximity, the influence reducing over time and with distance from the Proposed Development. Although perceived in close proximity, the Proposed Development would be a contained built element, set within a well-vegetated landscape, notwithstanding it is temporary and reversible.
- v) The addition of the Proposed Development would not significantly increase the perception of numerous solar or renewable energy schemes on either the landscape or views and therefore there would be limited additional cumulative effects as a result of the Proposed Development.
- vi) Overall, the Proposed Development would influence the immediate landscape and views from close by visual amenity receptors, which would be limited through sensitive design and growth of the proposed landscape mitigation measures. The Proposed Development would, due to sensitive siting, screening by surrounding development, landform and mature vegetation would have limited wider impacts on landscape relevant designations, landscape character and visual amenity receptors and their views.

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Appendix 5.1 – Technical Information for the LVIA

