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**RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL**

**Coed-Ely Solar Farm, Tonyrefail**

**Landscape and Visual Appraisal**

**July 2023**

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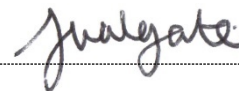
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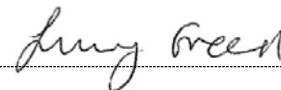
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## **1 INTRODUCTION**

### **1.1 Heads of terms**

1.1.1 This report identifies and assesses the likely landscape and visual effects of the proposed solar farm at Coed-Ely near Tonyrefail, upon the site and surrounding area.

1.1.2 The methods of appraisal and conclusions drawn are based on standard industry guidance<sup>1</sup> and the professional judgement of an experienced chartered landscape architect.

### **1.2 Description of the development**

1.2.1 The development is described more fully in the Planning, Design and Access Statement which accompanies the planning application but the visible components whose effects have been studied in this assessment are summarised here.

#### ***Construction phase***

1.2.2 The anticipated construction period for the development would be approximately 6 months, during this time there would be:

- a temporary site compound with accommodation, vehicle parking and storage areas;
- construction of the new access tracks;
- construction of the solar farm;
- cable laying;
- construction of the stations;
- installation of the surrounding security fence (deer fencing), entrance gates and cameras; and
- hedgerow planting.

#### ***Operational phase***

1.2.3 The development consists of solar panels mounted in arrays, set out in rows running across the site north to south, with an approximate height of 2.9m high (max) at the highest point. There would also be 4 small substation buildings, the maximum height

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<sup>1</sup> Guidelines for Landscape and Visual Impact Assessment: 3<sup>rd</sup> Edition LI and IEMA 2013

of which would be 2.9m. The solar panels would be black/dark blue in colour and would be in a matt finish.

- 1.2.4 Principal access to the site would be from the existing track to the east. New onsite tracks would then be constructed access to the various areas of the site.
- 1.2.5 The site would be surrounded by deer fencing; approximately 2m (max) high with double leaf gates at the site entrance.
- 1.2.6 There would be supplementary hedgerow planting within the site and along the track that runs through the site, which is a public footpath.

### ***Decommissioning***

- 1.2.7 The operational lifespan for the development is 40 years, at the end of which it would be dismantled, and the site restored, or an application would be submitted to extend the life of the development. For the purposes of this assessment, it has been assumed the development would be dismantled and the site restored.

## **2 METHODOLOGY**

### **2.1 General approach**

2.1.1 Landscape effects associated with a development relate to changes to the fabric, character and quality of the landscape resource and how it is experienced. This requires consideration of the character of the landscape, the elements and features that it contains, and any value attached to the landscape (whether formally or informally).

2.1.2 Landscape assessment studies:

- direct effects upon specific landscape elements, especially prominent and eye-catching features;
- change in character, which is the distinct, recognisable and consistent pattern of elements that creates distinctiveness and a sense of place;
- subtle effects that contribute towards the experience of intangible characteristics such as tranquillity, wildness and cultural associations; and
- effects on designated landscapes, conservation sites, and other acknowledged special areas of interest.

2.1.3 Visual effects relate closely to landscape effects, but they concern changes in views. Visual assessment concerns people's perception and response to changes in visual

amenity. Effects may result from new landscape elements that cause visual intrusion or new features that obstruct views across the landscape.

2.1.4 Both landscape and visual effects can be adverse, beneficial or neutral, short, medium or long term, permanent or temporary, reversible or irreversible, direct (an effect that is directly attributable to the proposed development) or indirect (effects resulting indirectly from the development as a consequence of the direct effects), and cumulative (relating to additional changes that may arise when the proposed development is considered in conjunction with other similar developments, see section 6.8).

2.1.5 The methodology for this Landscape and Visual Impact Assessment (LVIA) follows the recommendations and guidance set out in the following reports:

- Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA 3)<sup>2</sup>; and
- Landscape Character Assessment Guidance<sup>3</sup>.

2.1.6 The Landscape Institute Technical Guidance Note 06/19<sup>4</sup> advises its members on visual representation of development proposals; the photographs and photomontages in this LVIA have been produced and presented in accordance with this guidance.

2.1.7 GLVIA 3 and the Statement of Clarification 1/13<sup>5</sup> make clear that for non-EIA developments the Appraisal should consider all types of effects: adverse and beneficial, direct and indirect, and long and short term, as well as cumulative effects. However, none of these effects should be given a judgement involving the terms 'significant' or 'significance'. GLVIA 3 also stresses that the approach to the assessment needs to be proportionate to the scale of the development being assessed and the nature of the likely effects.

## 2.2 The study area

2.2.1 A study area of 2km from the site has been used for this assessment as beyond this

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<sup>2</sup> Guidelines for Landscape and Visual Impact Assessment, Third Edition, by the Landscape Institute and Institute of Environmental Management and Assessment (2013)

<sup>3</sup> An Approach to Landscape Character Assessment, Natural England (2014)

Landscape Character Assessment Guidance for England and Scotland (2002), Countryside Agency in conjunction with Scottish Natural Heritage

<sup>4</sup> Visual representation of development proposals, Landscape Institute Technical Guidance Note 06/19 (17 September 2019)

<sup>5</sup> GLVIA3 Statement of Clarification 1/13, 10-06-13

the development would be imperceptible. The ZTV based on LIDAR Digital Surface Model data (Figure 005) illustrates clearly the adequacy of the study area for the purpose of the assessment. Theoretical visibility of the solar farm will be very limited particularly towards the south and west of the area. It should also be noted that the ZTV does not indicate the extent of the proposed solar farm that would be visible nor how prominent it would be in views (prominence decreasing with distance).

## **2.3 Thresholds and criteria**

2.3.1 GLVIA 3 (paragraph 1.20) states that the guidance is “not intended to be prescriptive, in that it does not provide a ‘recipe’ that can be followed in every situation. It is always the primary responsibility of any landscape professional carrying out an assessment to ensure that the approach and methodology adopted are appropriate to the particular circumstances.” This assessment has therefore defined a set of typical criteria to assess the potential landscape and visual effects of the development; this is described in detail in Appendix 1.

## **2.4 Zone of Theoretical Visibility (ZTV) mapping and viewpoints**

2.4.1 A desk-based analysis was carried out to determine the ZTV of the development (Figure 005). Once this was established, a number of representative viewpoints were identified to illustrate the potential visual effects of the Development. 10 viewpoints are included in this LVA, the locations of which are also shown on Figure 005.

2.4.2 The photographs were taken during a site visit in May 2023, see Figures 018 to 031. They were taken using a digital camera with a fixed 50mm lens, mounted on a stable, levelled tripod with a professional panoramic head attached. This positions the focal centre of the camera lens above the pivot of the tripod and allows the photographs to be stitched together accurately using software. The photographs illustrate views of potential receptors and show the site in the context of the surrounding landscape and settlements.

2.4.3 It should be recognised that viewpoints are provided as part of an LVA to be representative of the potential visibility of a development from the surrounding receptors, they are not intended to illustrate every possible view of a development.

## **2.5 Photomontages**

2.5.1 Photomontages have been produced for Viewpoints 1 and 6b.



## 2.6 Limitations of study

- 2.6.1 It is not possible to enter the curtilage of private residential properties therefore the assessment of potential effects on the visual amenity of residents has been carried out from nearby roads and footpaths. There were no other limitations to the study.

## 3 BASELINE

### 3.1 Introduction

- 3.1.1 This section firstly reviews the findings of the published landscape character studies relevant to the study area and the landscape designations and sensitive receptors within the study area. The site assessment then enabled a review of this published information on site, informing a description of the existing baseline condition of the study area.

### 3.2 Published strategic landscape character studies

- 3.2.1 The following landscape character assessments provide a strategic assessment of the study area, these are mapped on Figures 006 to 011 and the following assessments cover the study area:

- National Landscape Character Areas (NLCA) as defined by Natural Resources Wales<sup>6</sup> ;
- LANDMAP, Natural Resources Wales<sup>7</sup>.

#### ***Natural Resources Wales National Landscape Character Areas***

- 3.2.2 The site is within NLCA 37 South Wales Valleys, with NLCA 36 Vale of Glamorgan in the south of the 5km study area. The key characteristics of NLCA 37 are listed as:

- ***“Extensive Upland plateaux – typically wild and windswept, often with enclosed tracts, running roughly north-south as ‘fingers’ parallel between intervening deep valleys.***
- ***Numerous steep-sided valleys – typically aligned in parallel, flowing in southerly directions, shaped by southward flowing glaciers, leaving behind distinctive corrie and crag features. Major rivers include the Tawe, Taff and Rhmney.***
- ***Ribbon urban and industrial area in valleys – in places extending up valley sides and to valley heads. The area is sometimes regarded as being part of a ‘city***

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<sup>6</sup> National Landscape Character Areas by Natural Resources Wales, 2014

<sup>7</sup> LANDMAP, Natural Resources Wales

region;. Middle and eastern valleys tend to be most heavily and continuously developed eg Rhondda valley. The uplands by comparison have little or no settlement.

- **Extensive remains of heavy industry** – with a mix of derelict, preserved and largely redeveloped areas, notably for coal mining. Preserved as heritage (world Heritage Site) at Blaenafon this typically includes old railway alignments, buildings and former tips.
- **Contrast of urban valley activity next to quiet uplands** – eg busy roads, new developments, traffic noise, night lighting, verses the adjacent wilder, remoter, quieter uplands.
- **Large blocks of coniferous plantation and deciduous woodland fringes** – covering many steep hillsides and hilltops, most noticeably in the middle to western portion of the area, providing a softer contemporary landscape where there was once industry.
- **Improved pastures on some lower valley sides** – grazed by sheep and some dairy cattle.”

3.2.3 Key characteristics of NLCA 36 are listed as:

- **“Lowland, rolling limestone plateau with glacial till.**
- **Mixed agricultural land uses** – with predominantly rural character.
- **Small woodlands** – mainly to the east. Few large woods.
- **Mixed field patterns and sizes** – with hedgerow and hedgebanks, frequent hedgerow trees. Limestone walls define land above the cliffs in the west.
- **Predominantly still rural** – with strong senses of enclosure by historic field boundaries.
- **A number of large build development** – including Cardiff International Airport and Aberthaw Power Station. Some areas with traffic noise, eg in the M4 corridor.”

#### **LANDMAP**

3.2.4 LANDMAP maps the landscape into 5 Aspect Areas. To establish a baseline this report focusses on the Visual and sensory Aspect layer, as illustrated in Figure 008. The other 4 Aspect layers for the site and study area can be found in Figures 006-005 and 009-010.

3.2.5 Table 1 below summarises the Aspect Areas for each Aspect Layer in which the site is located.

Table 1: LANDMAP				
Aspect Layer	Aspect Area	Unique ID	Level 3 Classification	LANDMAP Overall Evaluation
Cultural Landscape	Mynydd gaer	CYNONCLS054	Hillside & Scarp Slopes Mosaic	-
Historic Landscape	Mynyddau Hugh a Maendy	CYNONHL888	Regular Fieldscapes	<b>Outstanding</b>
Visual and Sensory	Mynydd gaer	CYNONVS436	Hillside & Scarp Slopes Mosaic	High
Geological Landscape	Upper Ely	CYNONGL032	Glacial mountain valley	Moderate
Landscape Habitat	N/A	CYNONLH094	Improved Grassland	Moderate

3.2.6 The site is located within LANDMAP Visual & Sensory, Aspect Area CYNONVS436 Mynydd gaer, classified as Hillside & Scarp Slopes Mosaic (Level 3) which has an overall evaluation of High, and is described as follows:

*“undulating ridgelike landform with distinct upland character... extensive views to uplands and over adjacent lower farmland to coast... field pattern defined partially by hedgerow/trees but higher ground predominantly open rough grass and bracken... scattered clumps of trees and larger areas of conifer plantation provide some shelter from exposure, borne out by presence of wind farm, which is a dominant vertical element, together with pylons main visual detractor... traffic noise and movement from A473 is minor disruption. Windfarm has increased in size and therefore more prominent, at change detection. Also Coedely reclamation has greened up and less conspicuous. Recent housing at Hendreforgan has reduced aspect area, at change detection.”*

### 3.3 Landscape designations and sensitive receptors

3.3.1 There are no national landscape designations or sensitive receptors within the study area.

3.3.2 The site and the surrounding rural areas are within Special Landscape Areas (SLAs), as designated by Policy SSA23 of the Rhondda Cynon Taf Local Development Plan up to 2021 - Adopted March 2011, which requires development within the defined SLAs to conform to the highest standards of design, siting, layout and materials appropriate to the character of the area.

### **3.4 Landscape character of the study area**

#### ***Landform and drainage***

- 3.4.1 The landform of the study area is shown on Figure 001. The site is on the east facing hillside west of Coed-Ely. The site's landform undulates at a local level, however generally the landform rises from 100m AOD on the eastern boundary to 240m AOD at the highest point in the west. The surrounding area is undulating hillsides to the north and south and rolling with higher ground to the west beyond Griag Wind Farm towards Mynydd y Gaer Hill, and lower ground to the east towards Coed-Ely and north towards Thomastown and Tonyrefail. Beyond Coed-Ely in the north east the landform rises again forming Mynydd y Glyn reaching 377m AOD at the highest point.
- 3.4.2 There is a stream along the northern boundary of the site which flows eastwards towards the River Ely which is located approximately 260m at the nearest point from the site boundary. This stream has several tributaries which flow from within the site including one which follows the western edge of the PRoW which crosses the site in the east. Further north 620m the Nant Llanilid tributary flows through the southern edge of Thomastown towards the River Ely.

#### ***Landcover and land use***

- 3.4.3 The site consists of pastoral land to the east and grassland to the west. There are several areas of trees, hedgerows and scrub throughout the site, the majority of which was planted as part of the restoration scheme in 2006, and mature woodland and trees in the east. There are overhead transmission lines crossing the site in the east, in a north east/ south west direction, including 2 pylons located within the site boundary. Immediately to the east the site lies the former Coed-Ely Colliery (approximately 70m from the eastern site boundary) which has been left undeveloped and to the west is the Griag Wind Farm which contains 37 turbines and the closest is located 200m from the site boundary. This is a prominent feature within this landscape.
- 3.4.4 Beyond the site and its immediate surroundings, within the 2km study area the land is predominantly comprised of small villages and towns in the lower valleys with undulating hills of pastoral and arable land. Wind farms/turbines are a common feature of the upper valleys.

### ***Settlements and individual properties***

3.4.5 Coed-Ely 0.3km to the east and Thomastown 0.4km to the north are the closest settlements. There are several larger settlements which are located within and adjacent to the study area including, Tonyrefail 2km to the north and Llanharan 2.3km to the south west of the site.

3.4.6 There are a number of scattered farms and individual properties around the site. The closest to the site includes a residential property on the north eastern corner of the site boundary, farm buildings 0.1km to the north eastern corner, farm buildings 0.3km to the north and farm buildings 0.8km to the west of the site.

### ***Transport corridors and Rights of Way***

3.4.7 The A4119 is the main A-road which passes to the east of the site approximately 0.2km at the nearest point. The A473 runs through the study area 2.6km south of the site. Several minor roads spur from these main roads connecting the settlements including Ely Valley Road which connects Coed-Ely and Thomastown 0.4km to the east of the site.

3.4.8 There is a public footpath which runs from Thomastown south west towards the site. Then passing through the eastern side of the site, before heading towards the Llantrisant Forest, with routes spurring from this path namely the route from the Ely Valley Road west, south east of the site. There are also public rights of way, including the Taff Ely Ridgeway Walk, through Graig Wind Farm and towards Myuydd y Gaer hill. National Cycle Route 4 runs along the A4119 0.2km east of the site and 0.6km to the north of the site at the closest points.

### ***Landscape features***

3.4.9 The main landscape features of the site are several blocks of establishing woodland, planted when the site was restored in 2006 from its former industrial use, and remnants of a winding access route up the site to the west. There are also overhead powerlines and pylons present in the east of the site. Prominent landscape features of the surrounding area are wind turbines and areas of woodland across the valley.

### ***Landscape value***

3.4.10 The value of the site itself and the study area is considered to be medium. Referring to Table 2 in Appendix 1, the site is in a reasonable condition due to the establishing vegetation helping to integrate the restored site into the surrounding landscape. The

wider area undulating farmland does have some scenic value that is likely to be valued locally, as reflected in the SLA designation is the Local Plan.

### **3.5 Visual baseline**

3.5.1 Visibility of the existing site from the surrounding area is as follows:

- From immediately adjacent to the site and from the public footpath that runs through the site, as illustrated by Viewpoints 5 and 6.
- From the opposite valley side to the east and north east, as illustrated by Viewpoints 1 and 2. Views from lower in the valley are limited by intervening vegetation, as illustrated by Viewpoints 3, 4 and 7.
- Brief glimpse about and between intervening vegetation from higher ground to the north, as illustrated by Viewpoints 8, 9 and 10.
- There is no visibility from the west.

## **4 ASSESSMENT OF LANDSCAPE EFFECTS**

### **4.1 Introduction**

4.1.1 The main impacts that would affect the landscape character of the site and the surrounding area as a result of the development are identified as:

- use of the site access for construction;
- the temporary construction compound and stockpile area;
- the construction of the solar farm;
- the construction of the associated substations;
- the installed solar panels across the site;
- the substations;
- the surrounding security fence (deer fencing) and entrance gates; and,
- the supplementary hedgerow planting.

4.1.2 The impacts would be affected by the proposed timescales for the project. Residual impacts are reported, with the proposed mitigation measures, as set out below, assumed to be in place.

### **4.2 Landscape sensitivity to the proposed development**

4.2.1 It is considered that the site and the study area is of medium susceptibility to the proposed change. The factors that lower the susceptibility to the proposed change

are the existing vegetation on the site and surrounding it providing some screening and the presence of the pylons on the site and the existing wind farm to the west meaning renewable energy generation and infrastructure is already a feature of the area. The main factor that increases the susceptibility to the proposed change is the sloping landform of the site which allows views into the site from the opposite valley side. This combined with the medium value of the site and the study area, means that the overall sensitivity of the site and the study area to the development is assessed as medium.

### **4.3 Potential landscape effects during construction**

- 4.3.1 The anticipated construction period for the development would be approximately 6 months. During this time, the impacts of the construction activities on the landscape character of the site and the surrounding area would be of a localised nature and adverse due to the disturbance caused over the short term by construction activities. The construction would affect both the physical characteristics of the site, such as the land use and pattern of the site, and the perceptual characteristics of the local area, such as tranquillity.
- 4.3.2 The storage area and stockpiles of construction materials would introduce new incongruous elements, temporarily impacting upon the rural character of the site.
- 4.3.3 The magnitude of the effects of the construction phase on the landscape character would be medium as effects would mainly only be perceived within approximately 1km of the site and the effects would be short term, therefore it is considered that the overall effects of the construction phase would not exceed moderate adverse.

### **4.4 Potential landscape effects during operation**

#### ***Land use and land management***

- 4.4.1 The site is currently managed as grassland for grazing with areas of woodland planting. The development would introduce an additional land use, with the farmland inside the site including that surrounding the panels and structures continuing to be managed as by grazing. The magnitude of the effects on the land use and land management of the site and the immediate surroundings is assessed as medium and the overall effects on landscape character are assessed as moderate adverse, due to the effects being of a localised nature and as renewable energy generation and infrastructure is already a characteristic of the area.

### ***New buildings / structures***

- 4.4.2 The solar panels and associated substations would introduce new features and structures, creating a new pattern which would add a different texture and colour to the existing landscape, causing a potentially adverse effect upon the semi-rural character of the area. The surrounding hedgerows, trees and landform would mean that this would only be perceptible from within approximately 1km of the site. Furthermore, the presence of the pylons and the existing wind farm to the west would mean that the development would not be uncharacteristic when set within the attributes of the receiving landscape.
- 4.4.3 The magnitude of the effects of the new buildings / structures on the site and the immediate surroundings is assessed as medium for the reasons given above, therefore it is considered that the overall effects of these changes would not exceed moderate adverse on a limited area around the site.

### ***Landscape features***

- 4.4.4 The notable positive landscape features within the site and immediate surroundings are the existing woodland, hedgerows and trees, all of which would be retained and enhanced by additional hedgerow planting.

### ***Lighting***

- 4.4.5 There is no requirement to light the development overnight for security as all security cameras would be fitted with infra-red lighting, therefore the impacts of this is assessed as negligible.

## **4.5 Overall operational effects on landscape character**

- 4.5.1 The landscape character of the site would be changed by the presence of the development, but the surrounding field areas and landscape features including hedgerows, trees and woodland would be retained and enhanced with additional hedgerow planting. The solar farm and infrastructure would create a new pattern to the existing landscape; however, these changes would only be perceptible at the site level and within approximately 1km of the site to the east and north due to the low-level nature of the proposals and the surrounding vegetation and landform. The scale of the development is in keeping with the existing scale of the different parcels of land of the site and the development would not be out of character due to the nearby wind farm. Therefore, the magnitude of effect on the landscape character of the study area,



including the 'Hillside & Scarp Slopes Mosaic' and the SLA that the development would be within, is assessed as low and the overall effect as slight adverse.

#### 4.6 Potential impacts upon landscape character after decommissioning

4.6.1 The development would have an operational lifespan of approximately 40 years, at the end of which it would be dismantled, and the site restored to agricultural land. The actual removal of the solar farm and infrastructural facilities at decommissioning would result in some temporary construction impacts but, once this is complete, there would be no adverse residual effects on the site or its setting. The landscape effects of the scheme are reversible in the longer term. The hedgerow planting would remain as permanent features.

### 5 ASSESSMENT OF VISUAL EFFECTS

#### 5.1 Introduction

5.1.1 Table describes the main visible components of the development, with a summary of the predicted effect and mitigation measures that would be implemented in order to reduce, remove or offset the level of effect.

Table 2: Visible component features of the development		
Component	Predicted effect	Mitigation
<b>Construction</b>		
Construction vehicle movement	The increase in activity for a short time and temporary increase in amount of visual clutter would not exceed the capacity of the area to absorb these effects.	Vehicle movements would be kept to a minimum.
Construction compound	This would be temporary.	Boundary vegetation would be retained and protected. Removed post construction.
Installation of the solar panels and associated structures and infrastructure, including the substations	Construction impacts would be temporary; they would be adverse for visual receptors within approximately 1km of the site, but these impacts would swiftly reduce with distance as well as over time.	Boundary vegetation would be retained and protected.
<b>Operation</b>		
The completed solar farm and the associated structures and infrastructure	The solar farm would only be partially visible from the visual receptors within approximately 1km of the east and north of the site and adjacent to the site due to the undulating landform of the area and the surrounding vegetation. The panels would be a maximum height of 2.9m, they would be matte dark blue in colour and not reflective.  The associated structures would not be of a	Boundary and onsite vegetation would be retained. Supplementary hedgerow planting within the site.

<b>Table 2: Visible component features of the development</b>		
<b>Component</b>	<b>Predicted effect</b>	<b>Mitigation</b>
	substantially larger scale than the panels themselves. The infrastructure would consist of underground cables and there would be limited visibility of the onsite tracks.	
Site access	Principal access to the site would be from the existing track from the ease. New onsite tracks would then be constructed access to the various areas of the site. Vegetation removal will be minimal.	Boundary and onsite vegetation would be retained. Supplementary hedgerow planting within the site.
<b>Decommissioning</b>		
Restoration	The development would be dismantled and removed from site leaving no residual impacts, other than the hedgerow planting which would be retained as permanent features.	N/A

## 5.2 Potential visual effects during construction

5.2.1 Table identifies possible visual effects during construction. Visual impacts are assumed to be adverse during the construction phase but would be temporary and therefore not substantially adverse.

## 5.3 Potential visual effects during operation

5.3.1 Appendix 2 provides the assessment of visual effects for each of the viewpoints included in this assessment. Effects of the different receptor groups are assessed below.

### ***Residential receptors***

5.3.2 These comprise individual properties and settlements, all of which are considered high sensitivity receptors.

5.3.3 The majority of Coed-Ely is located in the bottom of the valley therefore the views from these properties would be screened by intervening landform and vegetation, as illustrated by Viewpoints, 3, 4 and 7. Viewpoints 1 and 2 illustrate representative views of the more elevated areas of the different areas of settlement, where the views are directly opposite the site. The proposed development is likely to be visible but not dominating in these views, therefore impacts on Coed-Ely would not exceed low to medium and effects would not exceed moderate adverse.

5.3.4 Viewpoints 8, 9 and 10 are representative of more elevated areas of Thomastown and Tonyrefail from where there may be brief glimpses of the development above and

between intervening vegetation. Impacts would not exceed low to negligible and effects would not exceed slight adverse.

- 5.3.5 There are a small number of properties close to the site boundary, including the semi-detached properties on the northern boundary, Ty'n-y-coed just to the north and Graig Fatho to the south, views from which would be screened by surrounding vegetation.

#### ***Transport and Rights of Way network***

- 5.3.6 These include roads and public rights of way (Figure 004) within the study area and the ZTV. Road users are generally considered medium sensitivity receptors and rights of way users are generally considered high sensitivity receptors. Effects are intermittent as the roads and paths cross areas of potential inter-visibility.
- 5.3.7 None of the users of the main roads running through the study area would experience effects. Views from the A4093 and the A4119 would be screened by the surrounding landform and vegetation.
- 5.3.8 Of the rights of way users in the vicinity of the site, the main effects would be experienced by users of the path that runs through the site, as illustrated by Viewpoints 5 and 6. The eastern section of the development would be the most visible and impacts would reduce as the proposed hedgerow planting along the path establishes. Impacts would not exceed medium and effects would not exceed moderate to substantial adverse. As illustrated by the ZTV, these effects would be very localised, beyond the site views would be screened by the intervening vegetation.
- 5.3.9 Viewpoints 1, 8 and 10 are representative of rights of way on the opposite valley sides. Impacts would be most prominent in views from the paths in the vicinity of Viewpoint 1. Impacts would not exceed low to medium and effects would not exceed moderate adverse; and they would reduce with distance from the site.

#### ***Recreational receptors***

- 5.3.10 Other than the users of the rights of way described above, none of the recreational receptors within the study area would experience effects.

### **5.4 Potential visual effects after decommissioning**

- 5.4.1 The removal of the development at decommissioning would result in some temporary impacts but once dismantled the site would be restored and the long-term visual

impacts caused by the development would disappear. The effects of the visible elements of the development are reversible.

## **6 MITIGATION**

6.1.1 Mitigation measures are required in order to avoid, reduce, remedy or compensate for any adverse effects of a development. The principle of mitigation commences with the design of a development and is an iterative process, in that measures are taken, wherever possible, to adjust the design to minimise adverse effects. This has already been undertaken by retaining as much of the existing vegetation on site as possible and incorporating additional hedgerow planting to provide screening of the views from the footpath that runs through the site and to link habitats.

## **7 RESIDUAL EFFECTS**

7.1.1 Because the mitigation for the potential landscape and visual impacts of the development has been incorporated into the scheme, the assessment of effects has addressed residual effects and therefore there are no further effects to consider.

## **8 CUMULATIVE EFFECTS**

8.1.1 There is a proposed solar farm currently in planning at Rhiwfelin Fawr Farm, Heol Sticil-Y-Beddau, Llantrisant, Pontyclun, CF72 8LQ (22/1413/10), which would be approximately 1.4km to the east of the site on the opposite valley side. Intervisibility of the two schemes would be limited by the valley landform and intervening vegetation, therefore cumulative landscape and visual effects would not be substantial adverse. The main visual receptors likely to experience cumulative effects would be walkers on the footpath that runs through the Coed-Ely site. They would experience some sequential views of the two schemes, rather than combined or successive views, from the path between the Coed-Ely site and the Llantrisant Forest, these views would be limited by intervening vegetation.

## **9 SUMMARY AND CONCLUSIONS**

9.1.1 The effects on the landscape character of the study area resulting from the proposed solar farm development would not exceed moderate adverse and would be confined to the site itself. There would also be some localised changes to the landscape character of the views from the opposite valley side to the north-east and east resulting in some slight adverse effects on the landscape character of the study area. The valley landform and surrounding vegetation would limit the extent of the effects and the presence of the pylons and adjacent wind farm would mean that the

development would not be uncharacteristic when set within the attributes of the receiving landscape.

- 9.1.2 Views of the proposed solar farm development from the range of visual receptors: properties, settlements, users of the transport and rights of way network and recreational receptors have been assessed. These would also be limited to views from the public footpath that runs through the site and from the residential areas, local roads and rights of way on opposite valley side to the east and north-east. Impacts at the site itself would be moderate to substantial adverse, initially reducing as the proposed hedgerow planting establishes, and moderate adverse for the views from the opposite valley side within approximately 1km of the site.
- 9.1.3 The development has a design life of 40 years, at the end of which it would be dismantled, and the site restored to its current condition. The effects of the scheme are reversible. Therefore, there would be no residual adverse landscape or visual effects.

## **APPENDICES**

## **Appendix 1 Methodology**

## **APPENDIX 1 - LVIA METHODOLOGY**

### **1 METHODOLOGY FOR THE ASSESSMENT OF LANDSCAPE EFFECTS**

#### **1.1 General Approach**

1.1.1 The level of the effects on landscape character identified as part of the assessment is determined by a consideration of the sensitivity of the landscape receptors and the magnitude of the impacts (change) on the landscape.

1.1.2 The nature or sensitivity of a landscape receptor combines judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape, as defined in the GLVIA<sup>1</sup> glossary and in paragraph 5.39 of GLVIA 3. Paragraph 5.39 of GLVIA 3 also states that LVIA sensitivity is similar to the concept of landscape sensitivity used in landscape planning, but is not the same, as it is specific to the particular project or development proposed and the location in question. Thus, assessment of sensitivity is not strictly part of the initial baseline study of landscape character; it is considered as part of the assessment of the effects of the development.

1.1.3 The nature or magnitude of the impacts on the landscape receptors depends upon the size or scale of the changes, the geographical extent of the area influenced, and the duration and reversibility of the impacts.

#### **1.2 Landscape Receptors**

The landscape receptors include the constituent elements of the landscape, its specific aesthetic or perceptual qualities, the Landscape Character Type/Area (LCT/LCA) the site is within, the surrounding LCTs/LCAs and the designated landscapes within the 5km study area.

#### **1.3 Susceptibility to the Proposed Change**

1.3.1 This is defined as the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or particular aesthetic and perceptual aspects) to accommodate the proposed development without undue consequences for the

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<sup>1</sup> Guidelines for Landscape and Visual Impact Assessment, Third Edition, by the Landscape Institute and Institute of Environmental Management and Assessment (2013)



maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies (see paragraph 5.40 of GLVIA 3).

1.3.2 Susceptibility is combined with landscape value (see below) to determine the overall sensitivity of a landscape receptor / receptor landscape to the type of change proposed. Susceptibility and sensitivity are not the same, therefore, in the context of LVIA. Table 1, below, explains how criteria are applied to arrive at an assessment of susceptibility to change, in this assessment.

<b>Table 1: Criteria for the Assessment of Susceptibility to Change</b>	
<b>Level</b>	<b>Typical Criteria</b>
High	Key characteristics of the landscape are highly vulnerable to change. The nature of the development would result in a substantial change in character.
Medium	Some of the key characteristics of the landscape are vulnerable to change. Although the landscape may have some ability to absorb some development, it is likely to cause some change in character.
Low	Few of the key characteristics of the landscape are vulnerable to change. The landscape is likely to be able to accommodate development with only minor change in character.
Negligible	Key characteristics of the landscape are robust and would not be adversely affected by development.

1.3.3 Factors influencing the susceptibility of the landscape to change of the sort associated with the development include:

- 1 Enclosure: whether or not the landscape includes enclosing features. The presence of enclosing features may suggest a lower susceptibility.
- 2 Landform: Landform may be undulating, rolling or flat, and may display more or less variation in form / gradient. Featureless, convex or flat landscapes with an absence of strong topographical variety suggests a lower susceptibility, with very complex landforms exhibiting strong topographical variety at the other end of the scale.
- 3 Landscape pattern and complexity: including presence or absence of cultural pattern; time depth; landscape structure/fabric; enclosure patterns; and interplay of colour and texture. Simple, large-scale patterns (large conifer plantations, arable fields), and/or regularly disturbed, fragmented land covers are less susceptible to change. Intricate, varied patterns, and undisturbed consistent patterns of land cover or land use, and historic field patterns are more susceptible to change.

- 4 Settlement and human influence: including time depth, age, nature, form and level of settlement. The following tend to indicate a lower susceptibility to change: concentrated settlement pattern, presence of contemporary structures e.g. utility, infrastructure or industrial elements, and hard or eroded settlement edges. A higher susceptibility to change may be indicated by: dispersed settlement pattern; absence of modern development; presence of small scale, historic or vernacular settlement; and a porous / soft landscape edge with settlement well integrated with the landscape.
- 5 Condition: Landscapes with a low level of intactness with landscape elements in poor state of repair are considered to have a lower susceptibility to change; with, on the other hand, landscapes having a high level of intactness and a very good state of repair having a higher susceptibility to change.
- 6 Typicality and rarity: A lower susceptibility to change is associated with areas which have no rare features or a weak association with the key characteristics of the landscape. Conversely, a higher susceptibility to change is associated with areas which have rare features of regional importance or a very strong correspondence with the key characteristics of the landscape.
- 7 Perceptual aspects such as tranquillity (including noise and lighting) and sense of remoteness. Areas which are not tranquil, having much human activity, noise and light, are considered to have a lower susceptibility to change and vice versa. Presence or proximity to human activity or modern development or industrial structures (e.g. utilities, infrastructure) decreases susceptibility, whereas areas having a strong sense of remoteness; being either physically remote or having a perception of being remote, are considered to have a higher susceptibility to change.
- 8 Skylines: A visual component of landscape character but obviously interdependent with topography. Where the development has no relationship to the skyline, or the skyline is either not prominent / screened, or developed and/or otherwise cluttered the susceptibility to change is lower. Where there is a strong relationship to prominent, simple and undeveloped skylines, or skyline with important historic landmarks the opposite is the case.
- 9 Intervisibility: As with skylines, this is a visual component of landscape character but obviously interdependent enclosure. As might be expected, landscapes which are self-contained with restricted intervisibility have a lower susceptibility

to change than landscapes which are extensively intervisible and part of a wider landscape.

10 Views and Landmarks: As with skylines and intervisibility, this is a visual component of landscape character but has some relationship to typicality and rarity. An area which contains no landmarks and is not a feature in local views is considered to have a lower susceptibility. On the other hand, a landscape which includes important landmarks or is important in views across a wide area has a higher susceptibility.

## 1.4 Landscape value

1.4.1 Assessment of value is concerned with the relative value attached to different landscapes by society. A consideration of value at the baseline stage informs judgements on the level of effects. Landscapes can be valued by different people for different reasons connected to a range of factors including landscape quality (condition), scenic quality, rarity, representativeness, conservation interests, recreation value, perceptual aspects and associations (see GLVIA 3 Box 5.1 for definitions). This consensus can be recognised at a local, regional or national or international scale. Table 2 explains how criteria are applied to arrive at an assessment of landscape value for this project. It is derived from GLVIA 3.

Value	Typical criteria	Typical scale	Typical examples
High	<ul style="list-style-type: none"> <li>Excellent condition, high importance, scenic quality, rarity</li> <li>No or limited potential for substitution</li> </ul>	International, National, regional	<ul style="list-style-type: none"> <li>World Heritage Site, National Park, Area of Outstanding Natural Beauty (AONB), Registered Historic Parks and Gardens</li> </ul>
Medium	<ul style="list-style-type: none"> <li>Good condition, medium importance, scenic quality, rarity</li> <li>Some potential for substitution</li> </ul>	Regional, local authority, local community	<ul style="list-style-type: none"> <li>Local landscape designations</li> <li>Undesignated but value expressed for instance in demonstrable use</li> </ul>
Low	<ul style="list-style-type: none"> <li>Poor condition, low importance, scenic quality, rarity</li> </ul>	Local community	<ul style="list-style-type: none"> <li>Areas identified as having some redeeming feature or features and possibly identified for improvement</li> <li>Areas identified for recovery</li> </ul>

## 1.5 Sensitivity of the Landscape Receptors to the Proposed Development

1.5.1 As noted above, landscape sensitivity combines judgements on the susceptibility of landscape receptors to change of the type proposed, with the value attached to the

landscape. Generally, a higher sensitivity will be ascribed to landscapes which have a high value, and which are highly susceptible to change, and vice versa.

1.5.2 For the purposes of this assessment, landscape sensitivity is defined through the application of the typical criteria set out in Table 3, below.

<b>Table 3: Criteria for the Assessment of Sensitivity of Landscape Receptors</b>	
<b>Level</b>	<b>Typical criteria</b>
High	Many of the key characteristics and qualities of the landscape are susceptible to change from the type of development being assessed and/or the value ascribed to the landscape is high.
Medium	Some of the key characteristics and qualities of the landscape are susceptible to change from the type of development being assessed and/or the value ascribed to the landscape is medium
Low	The key characteristics and qualities of the landscape are robust and are less likely to be adversely affected by the type of development being assessed and/or the value ascribed to the landscape is low.

1.5.3 Planning policy is important and relevant to LVIA when it reflects a recognition of the value placed upon a particular landscape, or its attributes, by society. Thus, designations such as National Parks and Areas of Outstanding Natural Beauty (AONB) have relevance, since they identify a consensus about this aforesaid value. Reference to planning policy can therefore assist in an assessment, in identifying sensitive receptors.

## 1.6 Magnitude of Landscape Impacts

1.6.1 Table 4 explains how criteria are applied to determine the magnitude of impacts; this has been developed specific to this LVIA and is derived from GLVIA 3. The table gives typical criteria and not all need to be applicable.

<b>Table 4: Criteria for the Assessment of Magnitude of Landscape Impacts</b>	
<b>Level</b>	<b>Typical criteria (not all of which need be applicable)</b>
High	<ul style="list-style-type: none"> <li>• Total loss of or major alteration to key features or perceptual aspects of the baseline and/or the addition of new features considered to be totally uncharacteristic when set within the attributes of the receiving landscape</li> <li>• The impacts would be of a large scale influencing several landscape character types/areas</li> <li>• The effects would be long term (e.g. over 10 years) and/or irreversible</li> </ul>
Medium	<ul style="list-style-type: none"> <li>• Partial loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that may be prominent but may not necessarily be considered to be substantially uncharacteristic when set within the attributes of the receiving landscape</li> </ul>

<b>Table 4: Criteria for the Assessment of Magnitude of Landscape Impacts</b>	
<b>Level</b>	<b>Typical criteria (not all of which need be applicable)</b>
	<ul style="list-style-type: none"> <li>• The impacts would be at the scale of the landscape character type/area within which the proposal lies</li> <li>• The effects would be medium term (e.g. 5 to 10 years) and/or partially reversible</li> </ul>
Low	<ul style="list-style-type: none"> <li>• Minor loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that may not necessarily be considered to be uncharacteristic when set within the attributes of the receiving landscape</li> <li>• The impacts would be at the level of the immediate setting of the site</li> <li>• The effects would be short term (e.g. 0 to 5 years) and/or reversible</li> </ul>
Negligible	<ul style="list-style-type: none"> <li>• Very minor loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that are not uncharacteristic with the surrounding landscape - approximating the 'no change' situation</li> <li>• The impacts would be at the site level, within the development site itself</li> <li>• The effects would be very short term (e.g. less than 1 year) and/or reversible</li> </ul>

## 1.7 Level of Landscape Effects

1.7.1 A consideration of the sensitivity (susceptibility + value) of the landscape receptors to the development and the magnitude of the impact resulting from the development, determines the level of the predicted effect. The relationship between sensitivity and magnitude of impact to reach the level of effect is sometimes presented in the form of a matrix. However, such a matrix may lead to the same weighting of each criteria, which might not always be appropriate and may lead to a formulaic approach, therefore descriptions of how overall effects have been determined are provided (see paragraphs 3.34 and 3.35 of GLVIA 3).

1.7.2 Overall, effects may be adverse, neutral or beneficial, and are assigned a level on the scale: Imperceptible-Slight-Moderate-Substantial-Severe, taking into account mitigation measures (residual effects), and different stages of the project lifecycle. Table 5 assigns typical criteria to each level, as applied in this assessment; however, it should be noted that various different scenarios of susceptibility to change, landscape value, the size or scale, geographical extent and/or duration and reversibility of impacts could apply to result in adverse effects as described in the assessment. The criteria in Table 5 are therefore provided as typical examples. Intermediate levels, such as slight to moderate and moderate to substantial, may also apply.

<b>Level</b>	<b>Typical criteria</b>
Severe	The proposals are wholly out of character with the existing situation, both locally and on the wider scale, and/or the landscape receptors are of high sensitivity
Substantial	The proposals have a large effect within the context of the wider area, and/or the landscape receptors are of high sensitivity
Moderate	The proposals have a noticeable effect within the context of the wider area, and/or the landscape receptors are of medium sensitivity
Slight	The proposals have some, but only a limited effect within the mainly local context, and/or the landscape receptors are of low sensitivity
Imperceptible	The degree of change is so small as to have little or no effect, and/or the landscape receptors are of low sensitivity

## **2 METHODOLOGY FOR THE ASSESSMENT OF VISUAL EFFECTS**

### **2.1 General Approach**

2.1.1 As with landscape effects, a consideration of the sensitivity of visual receptors (people) and the magnitude of the impact determines the level of the predicted effect on views and visual amenity.

2.1.2 The nature or sensitivity of visual receptor considers their susceptibility to the type of change or development proposed and the value people attach to the affected views (GLVIA 3, paragraph 6.31).

2.1.3 The nature or magnitude of the impacts on visual receptors depends upon the size or scale of the changes, the geographical extent of the area influenced, and the duration and reversibility of the impacts. In visual assessment, the magnitude is also determined by the distance from the viewer, the extent of change in the field of vision, the proportion or number of viewers affected and the duration of activity apparent from each viewpoint, or a sequence of points that may have transient views, for instance along a road. Greater weight is given to the visual impacts upon public viewpoints than upon views from private properties; this does not however affect the sensitivity of the receptors experiencing views.

### **2.2 Sensitivity of Visual Receptors**

2.2.1 Visual receptors include the public or community at large, residents, visitors, workers and people travelling through the landscape. As stated above, the sensitivity of the visual receptors considers their susceptibility to the type of change or development proposed and the value people attach to the affected views. The susceptibility of receptors is a function of the occupation or activity of people experiencing the view

and the extent to which their attention or interest is focused on the view. The value attached to views takes account of recognition of the value, for example in relation to heritage assets or through planning designations, and indicators of value by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment and references to them in literature or art.

2.2.2 In the context of this development, the scale of the sensitivity of the visual receptors is as outlined in Table 6 and is derived from the GLVIA 3.

<b>Level</b>	<b>Typical criteria</b>
High	<ul style="list-style-type: none"> <li>Public views within areas of protected landscapes such as National Parks and ANOB</li> <li>Users of outdoor recreational facilities including public rights of way, or visitors to heritage assets or other attractions whose attention or interest is focused on the landscape and where tolerance to change is likely to be low</li> <li>Communities where the development results in changes in the landscape setting or valued views enjoyed by the community</li> <li>Occupiers of residential properties with views affected by the development</li> <li>Tourists travelling through or past the affected landscape in cars, on trains or other transport routes whose attention or interest is focused on the landscape and where tolerance to change is likely to be low</li> </ul>
Medium	<ul style="list-style-type: none"> <li>People, such as commuters and hauliers (not tourists) travelling through or past the affected landscape in cars, on trains or other transport routes</li> <li>Users of outdoor recreation facilities whose attention or interest will include some views of the wider landscape and where there is some tolerance of change</li> </ul>
Low	<ul style="list-style-type: none"> <li>People engaged in outdoor sport or recreation which does not involve or depend upon appreciation of views of the landscape so that the tolerance to change is high</li> <li>People at their place of work, or engaged in similar activities, whose attention may be focused on their work or activity, not their surroundings, and where setting is not important to the quality of working life</li> <li>Views from urban roads, footways, railways and industrial areas whose attention may be focused away from the landscape and where tolerance to change is likely to be high</li> </ul>

### 2.3 Magnitude of Visual Impacts

2.3.1 Table 7 explains how criteria are applied in the assessment of magnitude and is derived from GLVIA 3. The table gives typical criteria and not all need to be applicable.



<b>Table 7: Criteria for the Assessment of Magnitude of Visual Impacts</b>	
<b>Level</b>	<b>Typical criteria (not all of which need be applicable)</b>
High	<ul style="list-style-type: none"> <li>Total loss of or major alteration to views and/or the addition of new features that would be very prominent, and/or would greatly contrast with the existing view</li> <li>Full, open views, experienced for the majority of a journey or full duration of an activity</li> <li>The views would be close, direct and/or totally occupied by the proposed development</li> <li>The impacts would be long term (e.g. over 10 years) and/or irreversible</li> </ul>
Medium	<ul style="list-style-type: none"> <li>Partial loss of or alteration to views and/or the addition of new features that would be prominent, and/or would contrast with the existing view</li> <li>Partial views, experienced for part of a journey or activity</li> <li>The views would be middle distance, partially oblique and/or partially occupied by the proposed development</li> <li>The impacts would be medium term (e.g. 5 to 10 years) and/or partially reversible</li> </ul>
Low	<ul style="list-style-type: none"> <li>Minor loss of or alteration to views and/or the addition of new features that would not be prominent, and/or would not contrast with the existing view</li> <li>Glimpsed views, experienced for a small part of a journey or activity</li> <li>The views would be distant, oblique and/or only a small part of the view would be occupied by the proposed development</li> <li>The impacts would be short term (e.g. 0 to 5 years) and/or reversible</li> </ul>
Negligible	<ul style="list-style-type: none"> <li>Very minor loss of or alteration to views and/or the addition of new features that would be almost imperceptible - approximating the 'no change' situation</li> <li>Very brief glimpsed views</li> <li>The views would be very distant, very oblique and/or only a tiny part of the view would be occupied by the proposed development</li> <li>The impacts would be very short term (e.g. less than 1 year) and/or reversible</li> </ul>

2.3.2 Magnitude of impact is influenced by distance, which can influence how a development is perceived, but the extent of the development seen is also important. Magnitude can vary greatly in differing weather conditions. The LVIA has to take into account a worst case scenario and the time duration it is experienced.

## 2.4 Level of Visual Effects

2.4.1 As with landscape effects, a consideration of the sensitivity of the visual receptors to the development and the magnitude of the impact resulting from the development, determines the overall level of the predicted effect. Again, a matrix is not used; descriptions of how the level of effect has been determined are provided.

2.4.2 Table 8 assigns typical criteria to each level for visual effects, as applied in this assessment; however, it should be noted that various different scenarios of



susceptibility to change, the value of views, the size or scale, geographical extent and/or duration and reversibility of effects could apply to result in the overall level of effects as described in the assessment (see paragraphs 3.34 and 3.35 of GLVIA 3).

2.4.3 Overall, effects may be adverse, neutral or beneficial, and are assigned a level on the scale: Imperceptible-Slight-Moderate-Substantial-Severe, taking into account mitigation measures, and different stages of the project lifecycle. Intermediate levels, such as slight to moderate and moderate to substantial, may also apply.

<b>Table 8: Criteria for Determining the Overall Level of Visual effects</b>	
<b>Level</b>	<b>Typical criteria</b>
Severe	The proposals would dominate views and would be wholly out of character with the existing situation, the changes would be experienced by a very large number of people, and/or the visual receptors would be of high sensitivity to the changes.
Substantial	The proposals would be prominent and contrasting with the existing views, the changes would be experienced by a large number of people, and/or the visual receptors would be of high sensitivity to the changes.
Moderate	The proposals would be noticeable in views but not dominating, the changes would be experienced by a medium number of people, and/or the visual receptors would be of medium sensitivity to the changes.
Slight	The proposals would result in small changes to the views, the changes would be experienced by a small number of people, and/or the visual receptors would be of low sensitivity to the changes.
Imperceptible	The proposals would be imperceptible in views, the changes would be experienced by a very small number of people, and/or the visual receptors would be of low sensitivity to the changes.

### **3 METHODOLOGY FOR THE ASSESSMENT OF CUMULATIVE EFFECTS**

#### **3.1 Cumulative Landscape Effects**

3.1.1 Cumulative landscape effects are likely to include effects:

- on the fabric of the landscape as a result of removal of changes in individual elements or features of the landscape and/or the introduction of new elements or features;

- on the aesthetic aspects of the landscape – for example its scale, sense of enclosure, diversity, pattern and colour, and/or on its perceptual or experiential attributes, such as a sense of naturalness, remoteness or tranquillity;
- on the overall character of the landscape as a result of changes in the landscape fabric and/or in aesthetic or perceptual aspects, leading to the modification of key characteristics and possible creation of new landscape character if the changes are substantial enough.

3.1.2 Any cumulative landscape effects would be likely to be greatest in areas that are of greater susceptibility to change and of higher value, all other factors being equal. Other factors that would determine the level of cumulative effects include the size or scale of the cumulative effects, the extent of the geographical area influenced by the cumulative effects, and the duration of the cumulative effects. Areas where there are concentrations of people and where the landscape character is an accepted backdrop to settlements could also be particularly sensitive to cumulative landscape effects.

3.1.3 High levels of adverse cumulative landscape impacts are more likely to occur where similar development schemes would be close to the proposed development and the ZTVs overlap, resulting in energy developments becoming a greater characteristic of the landscape, changing the landscape character.

### 3.2 Cumulative Visual Effects

3.2.1 The study of cumulative visual effects concerns the effects on views and visual amenity enjoyed by people, which may result either from adding the effects of the development to other developments, or their combined effect. This study has considered the potential for the effects given in Table 9 (taken from GLVIA 3, Table 7.1):

<b>Table 9: Types of Cumulative Visual Effects</b>		
<b>Generic</b>	<b>Specific</b>	<b>Characteristics</b>
<b>Combined</b>		
Occurs where the observer is able to see two or more developments from one viewpoint	In combination	Where two or more developments are or would be within the observer's arc of vision at the same time without moving her/his head
	In succession	Where the observer has to turn her/his head to see the various

<b>Table 9: Types of Cumulative Visual Effects</b>		
<b>Generic</b>	<b>Specific</b>	<b>Characteristics</b>
		developments – actual and visualised
<b>Sequential</b>		
Occurs when the observer has to move to another viewpoint to see the same or different developments. Sequential effects may be assessed for travel along regularly used routes such as major roads or popular paths	Frequently sequential	Where the features appear regularly and with short time lapses between instances depending on speed of travel and distance between the viewpoints
	Occasionally sequential	Where longer time lapses between appearances would occur because the observer is moving very slowly and/or there are larger distances between the viewpoints

3.2.2 Cumulative visual effects are considered in terms of:

- the susceptibility of the visual receptors that have been assessed, to changes in views and visual amenity;
- the value attached to the views they experience;
- the size or scale of the cumulative visual effects identified;
- the geographical extent of the cumulative visual effects identified;
- the duration of the cumulative visual effects, including the timescales relating to both the project being assessed and the other projects being considered, and the extent to which the cumulative effects may be considered reversible.

3.2.3 In addition to above, for sequential visibility, potential cumulative visual effects are considered in terms of:

- the frequency and duration of the sequential effects (frequent or occasional, glimpsed or prolonged);
- the scale and nature of the views (near or distant views, oblique or direct views, filtered or open views);
- the speed of travel and distance and time between views; and
- the contexts of the sequential views.

3.2.4 An effect may exist but may not be important. Highly adverse cumulative visual effects are anticipated to be more likely in areas where more than one energy development is visible at the same time and in the same field of view as the proposed

development, and/or particularly where the development(s) are within close distance to the viewer and there are open views.

## **Appendix 2 Assessment of visual effects at the viewpoints**

## APPENDIX 2 ASSESSMENT OF VISUAL EFFECTS AT THE VIEWPOINTS

Potential visual effects from viewpoint locations within the 2km study area and covered by the ZTV					
Viewpoint	Distance (km) and direction from the site		Sensitivity of visual receptors	Magnitude	Overall effect
1 View from residential properties north of Coed-Ely	0.6	NE	High	Low to medium This view illustrates a middle distant from the residential area on the opposite valley side. There would be views into the development, but it would not be totally uncharacteristic and it would not be dominating in this view.	Moderate adverse
2 View from lane to the east of Coed-Ely	0.5	E	High	Low to medium This view illustrates a middle distant view of the site beyond the former Coed-Ely Colliery site. The Graig Wind Farm is visible on the horizon of the hill to the left of the view. Overhead powerlines and pylons are prominent in this view. The proposed development would be visible but not dominating in this view.	Moderate adverse
3 View from land previously occupied by the Coed-Ely Colliery	0.1	E	High	Negligible Views would be screened by existing intervening vegetation.	Imperceptible
4 View from PRow to south east of site, on land previously occupied by the Coed-Ely Colliery	0.4	SE	High	Negligible Views would be screened by existing intervening undulating landform and vegetation.	Imperceptible

Potential visual effects from viewpoint locations within the 2km study area and covered by the ZTV					
Viewpoint	Distance (km) and direction from the site		Sensitivity of visual receptors	Magnitude	Overall effect
5 View from PRow from the northern boundary of the site	Within site boundary	N	High	<p>Low</p> <p>This representative view of public right of way users at the northern site boundary. This point illustrates the limited visibility of the proposed development in the middle distant view to the south, due to intervening existing vegetation, landform and existing overhead powerlines. There are likely to be limited view of the proposed development to the south through a gap in the existing vegetation, views of the development to the west would be screened by the intervening vegetation.</p> <p>Views would reduce as the proposed hedgerow planting along the path establishes.</p>	Slight to moderate adverse
6 View from PRow from the southern boundary of the site	Within site boundary	S	High	<p>Medium</p> <p>This representative view of public right of way users at the southern site boundary. This view illustrates the openness down the hillside to the east of the site towards the residential properties of Coed-Ely. It also demonstrates the undulating landform characteristic of the surrounding area. The proposed development in the east of the site is likely to be prominent and contrasting to the existing view. The western areas would not be visible.</p> <p>Views would reduce as the proposed hedgerow planting along the path establishes.</p>	Moderate to substantial adverse
7 View from Ely Valley road south east of the site	0.7	SE	High	<p>Low to negligible</p> <p>There may just be glimpse of the development between intervening vegetation.</p>	Slight adverse
8 View from residential properties north west of Coed-Ely	0.8	N	High	<p>Low to negligible</p> <p>There may just be glimpse of the development between intervening vegetation.</p>	Slight adverse

Potential visual effects from viewpoint locations within the 2km study area and covered by the ZTV					
Viewpoint	Distance (km) and direction from the site		Sensitivity of visual receptors	Magnitude	Overall effect
9 View from residential properties south of Tonyrefail	1.5	N	High	Low to negligible There may just be glimpse of the development between intervening vegetation.	Slight adverse
10 View from residential properties west of Thomastown	1.1	N	High	Low to negligible There may just be glimpse of the development between intervening vegetation.	Slight adverse



## FIGURES