Part 2:

Caerphilly County Borough Smaller Scale Wind Turbine Development

Landscape Sensitivity and Capacity Study Final Report November 2015

(Combined document including the Heads of the Valley study and Remainder of Caerphilly study)

Part 2:
Caerphilly County Borough
Smaller Scale Wind Turbine Development
Landscape Sensitivity and Capacity Study

Prepared by Gillespies and
Caerphilly County Borough Council

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Section One: Background and Policy Context

Introduction

A landscape sensitivity and capacity study was undertaken in 2014 for the Heads of the Valleys area in South Wales, titled "*Heads of the Valley Smaller Scale Wind Turbine Development Landscape Sensitivity and Capacity Study"* (Heads of the Valleys Study- HOV). The northern part of Caerphilly County Borough was included within the HOV study. A separate study was commissioned by Caerphilly County Borough Council (CCBC) which covers the remaining outstanding areas. Figure 01 indicates the separate study area boundaries. For simplicity, these two study areas have been merged into this final document.

There are currently a significant number of applications to local authorities in Wales for single and multiple wind turbine developments that are not large enough to be considered a 'wind farm' but together or individually could potentially have a significant impact on the landscape. There has been insufficient guidance available for local authorities or developers to allow consistent assessment of the potential impacts of these developments.

The purpose of this final Caerphilly County Borough study is to provide guidance in the assessment of the landscape and visual impacts of proposed wind turbines across the whole County Borough. The study provides guidance for developers when making planning applications and for Planning Authority Planning Policy and Development Management Officers (Local Planning Officers) when considering applications.
The South Wales Landscape Liaison Group (comprising representatives of 13 local authorities, 2 National Parks and representatives of Natural Resources Wales (NRW) and the Welsh Government) identified the need to develop consistent guidelines and clarity for local authorities and applicants in the consideration of proposals for single turbines and groups of turbines in the Heads of the Valley study area. This guidance has been published as *Planning Guidance for Smaller Scale Wind Turbine Development: Landscape and Visual Assessment Requirements April 2015* for the Heads of the Valley Landscape Officers and Planners. This guidance is relevant to Planning Authorities in South Wales and should be referred to when considering planning applications for wind turbine development in Caerphilly County Borough, alongside this guidance document.

The approach to the assessment of landscape sensitivity and capacity for wind turbine development was developed during the preparation of the Heads of the Valleys Study with the client group for that project and with representatives of the South Wales Landscape Liaison Group. The approach has been updated to be relevant to the current study area.

This is a strategic study and is not prescriptive at an individual site level. It does not replace the need for the local authorities to assess individual planning applications or for developers to prepare specific local landscape and visual impact assessment as part of a planning application.

Appendix 1 includes a list of Abbreviations and a Glossary of Terms used in this study

National Policy Context

Planning Policy Wales (PPW) (July 2014) Edition Seven

Land use planning policies for the Welsh Government, set out in Planning Policy Wales (PPW), establish the Government's objectives for conservation and improvement of natural heritage, in particular the protection of native habitats, trees and woodlands and landscapes with statutory designations. The LANDMAP[1] information system is endorsed as an important resource to use for landscape assessment. All forms of renewable energy are promoted where they are environmentally and socially acceptable.
PPW confirms the Welsh Government's commitment to energy efficiency and sustainable renewable energy. The Welsh Government's *Energy Policy Statement* (2010) has the target of all local energy needs being met by low carbon electricity production by 2050 at the latest.
PPW states that '*Planning policy at all levels should facilitate delivery of both the ambition set out in Energy Wales: A Low Carbon Transition and UK and European targets on renewable energy. The*

1 LANDMAP is the Welsh approach to landscape assessment.

Renewable Energy Directive contains specific obligations to provide guidance to facilitate effective consideration of renewable energy sources. In this context both local planning authorities and developers should have regard in particular to the guidance contained in Technical Advice Note 8: Planning for Renewable Energy, and Planning for Renewable Energy - A Toolkit for Planners.[2]

Technical Advice Notes

PPW is supported by a series of TANs. **TAN 8: Renewable Energy (July 2005)** identifies seven SSAs where the Welsh Government decided that for efficiency and environmental reasons, amongst others, large scale (over 25MW) onshore wind turbine development should be concentrated. TAN 8 states that most areas outside SSAs should remain free of large scale wind turbine development although there may be some potential for wind farm schemes up to 25MW capacity on urban brownfield sites and for smaller community based and domestic wind farm schemes less than 5MW elsewhere.

There is an implicit objective in TAN 8 to accept landscape change within and immediately adjacent to SSAs, for there to be no <u>significant</u> change outside SSAs and <u>no change</u> in landscape character from wind turbine development within National Parks and Areas of Outstanding Natural Beauty (AONBs).[3]

TAN 12: Design (July 2014), requires Local Planning Authorities to appraise the character of the landscape, including its visual and sensory qualities and emphasises that landscape character needs to be considered when developing a robust and coherent planning framework. This is intended to ensure that adverse landscape impacts are limited by locating development, including wind turbine development, in areas where the landscape is able to accommodate it without significant harm. TAN 12 advocates the use of LANDMAP to help inform and identify where development is preferable in landscape terms.

Local Policy Context

Caerphilly County Borough Local Development Plan (LDP) (November 2010)

The LDP has a number of key objectives, one of which is to "improve energy, waste and water efficiency while promoting environmentally acceptable renewable energy to maintain a cleaner environment and help reduce our impact on climate change". The LDP also includes a number of policies that are relevant to this study and the assessment of wind energy development proposals in the area. They are listed below.

- NH1 Special Landscape Areas (SLA) – Six SLAs are identified CCBC.
- NH2 Visually Importance Local Landscapes (VILL) – Four VILLs are identified in CCBC.
- CW4 Natural Heritage Protection – this policy seeks to protect local designations and ensure appropriate mitigation measures where there are local effects.
- CW6 Trees, woodland and hedgerow protection – this policy is concerned with the protection of hedgerows and trees that may be affected by development.
- CW15 General Locational Constraints – the policy sets out criteria against which development proposals will be considered.
- CW22 Locational Constraints – minerals – this policy is concerned with the protections of mineral safeguarding areas.
- SI1 Green wedges – this policy is concerned with maintaining open spaces within and between urban areas. There are a number of green wedges identified in the study area.
- SP10 Conservation of Natural Heritage – this policy is concerned with protecting, conserving and enhancing the natural heritage within CCBC.

[2] Planning Policy Wales (Edition 7, July 2014)

[3] TAN 8 Annex D Paragraph 8.4

Section Two: Methodology

Overview of Methodology

Wales is unique within the UK in having implemented LANDMAP a consistent approach to the assessment of the landscape across the whole country, recorded in a publicly accessible database. This sensitivity study is based on LANDMAP data supplemented by other sources of information and field survey.

The methodology identifies a number of landscape characteristics, captured as answers within the LANDMAP data, which are indicators of the susceptibility of the landscape to wind turbine development.

Table 1 Typologies sets out the typologies developed for the Planning Guidance for Wind Turbine Development Landscape and Visual Impact Assessment Requirements

Table 2: Definition of Sensitivity sets out the definitions of sensitivity.

Table 3 Criteria for Assessing Landscape and Visual Sensitivity to Wind Turbine Development sets out in detail:

- which LANDMAP questions have been used in the study;
- why they have been chosen as indicators of landscape susceptibility to wind turbine development;
- how the answers have been interpreted to indicate higher or low susceptibility.

Table 3 also sets out where other sources of information have been used to inform the assessment and where field survey work has been particularly important.

Table 4: Criteria for Establishing Landscape Value sets out the relevant criteria for establishing landscape value.

As no landscape character assessment had previously been undertaken for the study area Landscape Units have been defined for this wind turbine sensitivity study using LANDMAP aspect areas boundaries and existing studies where possible.

Landscape value has been identified using international, national and local designations, and using LANDMAP data, in particular overall evaluations of high or outstanding.

For each landscape unit an overall evaluation of sensitivity for each of the wind turbine typologies has been given. The sensitivity assessments take account of:

- the identified landscape susceptibilities;
- the value placed on the landscape; and
- existing presence of wind turbine development within or visible from the landscape unit.

An indicative capacity for wind turbine development has been given for each landscape unit. This is based on the sensitivity of the unit, the size of the unit and the presence of existing turbines within the unit or visible from the unit.

Section five of this study provides generic guidelines for the location of wind turbine development. Specific guidance for each unit is also provided. Unit specific guidelines consider in particular landscape or cultural designations within the unit, the characteristics of the landscape types within the unit, and inter visibility with neighbouring units.

The methodology for the study is illustrated in the flowchart opposite and is described in detail in the following text.

Table 1: Typologies

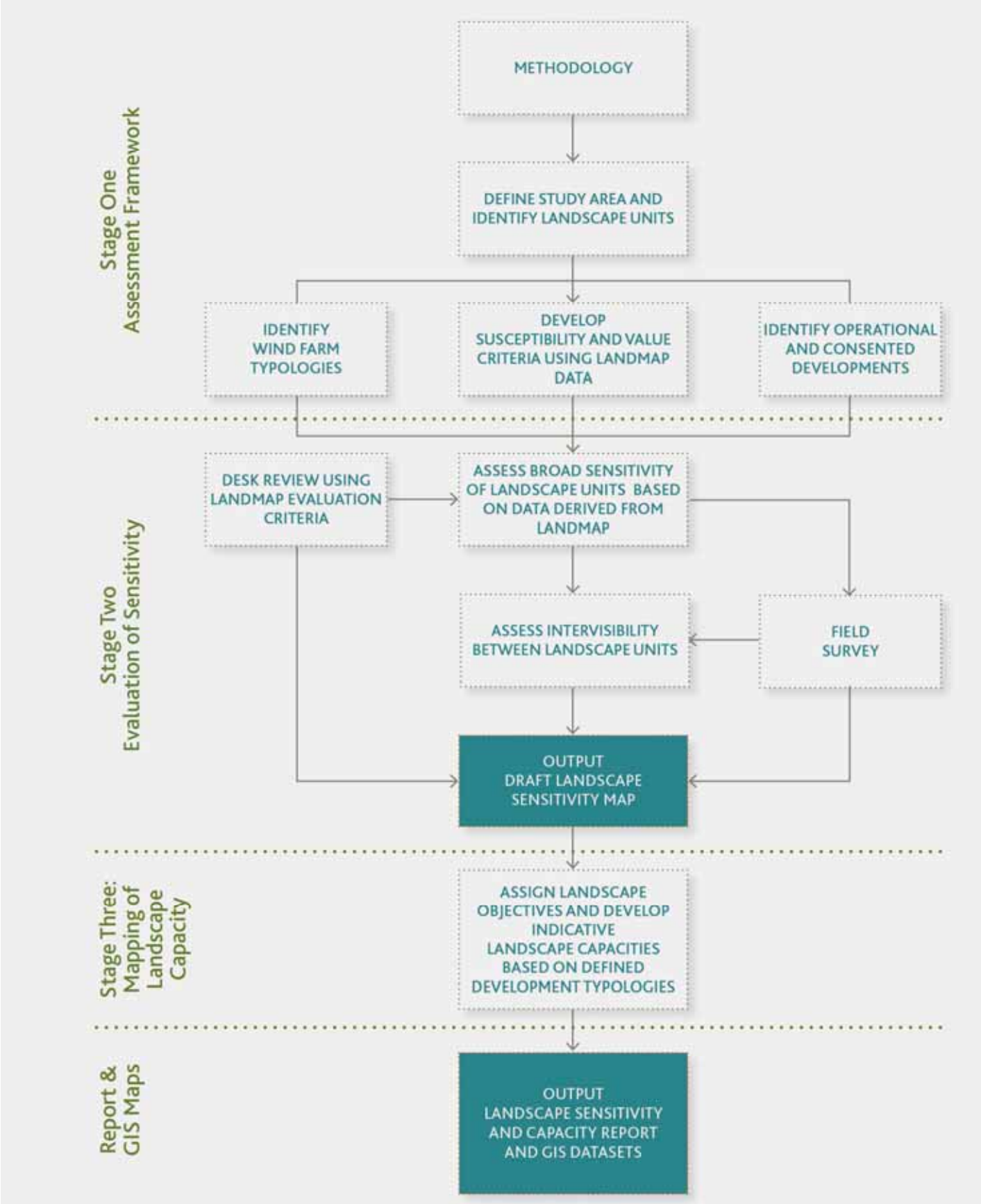
	Turbines development in this typology will have a blade tip height of:	And will consist of:
Micro (Mi)	Less than 25m or roof mounted	Only one turbine
Small (S)	Less than 50m	Three turbines or fewer
Medium (M)	Less than 80m	Four turbines or fewer
Large (L)	Less than 109m	Five turbines or fewer
Very Large (VL)	109m or greater	Any number of turbines

Note: Any group of six or more turbines will belong to the very large typology irrespective of the height of the turbines

HEIGHT TO BLADE TIP	1	2	3	4	5	6 to more
< 25m	Micro[1] (Mi)	Small (S)	Small (S)	Medium (M)	Large (L)	Very Large[2] (VL)
< 50m	Small (S)	Small (S)	Small (S)	Medium (M)	Large (L)	Very Large[3] (VL)
< 80m	Medium (M)	Medium (M)	Medium (M)	Medium (M)	Large (L)	Very Large[4] (VL)
< 109m	Large (L)	Large (L)	Large (L)	Turbines of this height and number are likely to exceed 5MW		
≥ 109m	Very Large (VL)	Very Large (VL)	and therefore be appropriate only within SAAs			
NUMBER OF TURBINES						

1. Or roof mounted
2. To exceed 5MW about 250 turbines would be required
3. To exceed 5MW about 22 turbines would be required
4. T exceed 5MW about 10 turbines would be required

Methodology Flow Chart:



Stage One: Assessment Framework

Guidance

The methodology was informed by the documents listed in Appendix 2, including guidance developed in Scotland which is specific to wind turbine development and widely accepted in England and Wales. The following good practice documents were particularly informative:

- *Guidelines for Landscape and Visual Impact Assessment* (GLVIA3). The Landscape Institute and the Institute for Environmental Management and Assessment Third edition April 2013. This is the industry standard for landscape and visual assessment.
- *LANDMAP Guidance Note 3: Using LANDMAP for Landscape and Visual Impact Assessment of Onshore Wind Turbines* (Guidance Note 3)

Both GLVIA3 and Guidance Note 3 advocate the use of professional judgement and an understanding of landscape character to assess what makes one landscape more or less susceptible than another to particular forms of development. Key to this is an understanding of which aspects of the landscape, physical and perceptual, are particularly susceptible to the type of development proposed.

Data Sources

The assessment was informed by data gathered from baseline information sources listed in Appendix 3. LANDMAP was the primary source supplemented by maps, relevant landscape and historic character assessments, fieldwork and consultations with the client group.

LANDMAP is the Welsh approach to landscape assessment and has been extensively used to inform this study in accordance with GLVIA3 recommendations. LANDMAP is an all-Wales GIS based landscape resource where landscape characteristics, qualities and influences on the landscape are recorded and evaluated into a nationally consistent dataset. LANDMAP comprises five spatially related datasets (layers) - Cultural Landscape, Geological Landscape, Historic Landscape, Landscape Habitats and Visual and Sensory. Information on each is detailed in the *LANDMAP Overview: Guidance for Wales* (CCW 2008 updated May 2013).

Each of the five spatial layers are subdivided into discrete geographical units (GIS polygons) referred to as **aspect areas**. Each mapped aspect area is defined by its recognisable landscape characteristics and qualities. Accompanying each aspect area is a description (Collector Survey record) which describes and documents the landscape character, qualities and features. Management recommendations are also provided, together with an overall evaluation score, contextualised from a local to international scale of importance. Each Collector Survey records information from the unique perspective of the LANDMAP layer concerned, with each LANDMAP layer being produced independently for each of the five layers. Therefore when key characteristics are referred to across several layers for the same geographic area, the value of their importance is typically emphasised.

Figures 02a & 02b shows the very distinctive typography within the study area.

Study Area

Figures 03a and 03b shows the Caerphilly County Borough study area, incorporating those areas assessed under the HOV study (figure 03a), and the subsequent Caerphilly study (figure 03b). The study area comprises the Heads of the Valleys areas of the County Borough including Deri, Fochriw, Aberbargoed, Argoed and Rhymney, as well as the southern valleys of Islwyn and the Caerphilly basin. Major communications corridors follow the valleys.

Landscape Units

Landscape sensitivity and capacity studies are typically based on existing local landscape character assessments. As there is no landscape character assessment for Caerphilly County Borough, landscape units have been defined for the purpose of this study on the same lines as those units originally identified and defined in the Heads of the Valleys study. The landscape units are not landscape character areas or types.

All of the study area is covered by LANDMAP data and that data has contributed to identifying the landscape units. The landscape unit boundaries were determined taking account of place, landform/ topography, intervisibility and receptors and were refined using local knowledge. Twenty two separate landscape units have been identified and used in the sensitivity study.

The landscape units are shown on Figure 04a and 04b and the broad landscape types in the Heads of

the Valleys are shown in Figure 05. The boundaries between the units are indicative and at boundaries units may share characteristics. When considering development that is close to the boundary of a landscape unit the guidance for the neighbouring unit should also be considered.

Wind Turbine Typologies

Definitions for wind turbine typologies, based on past wind turbine development applications and anticipated future trends, have been developed for the Consultation Draft *Planning Guidance for* Wind *Turbine Development: Landscape and Visual Impact Assessment Requirements.* They were used for the Heads of the Valley and Gwent Levels Landscape Sensitivity and Capacity Studies and therefore the same typologies are used in this study. It was considered that both the height of the turbine to blade tip and the number of turbines proposed was relevant to the overall definition of the typology. The five typologies (**micro, small, medium, large and very large)** which were identified are described in Table 1 above.

Operational and Consented Wind Turbine Development

An Online Wind Turbine Database for South Wales (Online Database) has been developed for the 13 local authorities that make up the South Wales Landscape Liaison Group. The Online Database contains information on the size and location of all operational and consented turbines and turbines for which a planning application has been submitted.

The Online Database was used to inform this sensitivity study which has mapped and considered all wind turbine development recorded in the online database as operational or consented by November 2014, within the study area and within 10km of the study area boundary where the development has a high degree of invisibility with the study area.

Landscape and Visual Sensitivity Criteria

LANDMAP data was used to provide a consistent, independently verified description of the characteristics of the landscape, physical and perceptual, which may potentially be affected by wind turbine development.

Table 3 sets out:

- the characteristics that have been identified as indicators of susceptibility to wind turbine development and an explanation of how they affect landscape and/or visual susceptibility;
- the LANDMAP answers and other sources of information that have been used to establish the characteristics present in each landscape unit;
- the LANDMAP evaluations and other sources of information that have been used to establish to determine the value of each landscape unit.

Appendix 4 Using LANDMAP data to inform sensitivity assessments, explains how the dataset of LANDMAP answers for each landscape unit is interrogated to provide percentages for each question.

A landscape which is highly valued by society may still be able to accommodate some wind turbine development in the right location if it fits with the characteristics of the landscape. In designated landscapes wind turbine development is acceptable if it does not compromise the purpose of designation and its special qualities. In undesignated landscapes wind turbine development is acceptable if it does not compromise the qualities and values attached to the landscape. Conversely a landscape that isn't designated may be highly sensitive to wind turbine development if it has particular landscape or visual characteristics that are very susceptible to wind turbine development.

The susceptibility of each landscape unit within the study area was assessed against each of the susceptibility criteria as described in Table 3 and graded using a three point susceptibility scale, high, medium or low. Table 3 shows how LANDMAP answers or evaluations have been used to indicate susceptibility to wind turbine development. The Sensitivity and Capacity Tables for each landscape Unit form **Section Four** of this Study.

In accordance with GLVIA3, judgements regarding landscape and visual sensitivity are derived from combining judgements about the susceptibility to change arising from the specific proposals with judgements about the value attached to the landscape and visual receptors.

In common with most wind turbine landscape sensitivity studies the final assessment of sensitivity combines:

- judgements relating to landscape susceptibility;
- judgements relating to visual susceptibility;
- the value attached to the landscape; and
- the presence and nature of visual receptors.

Table 2: Definition of Sensitivity

	Definition
Low	Areas where the key characteristics are not very vulnerable to change and could accommodate some wind turbine development if sensitively sited and designed without significant adverse effects on the character of the landscape or the value placed on it.
Medium	Areas where wind turbine development may cause some adverse effects on key landscape characteristics by introducing new inappropriate characteristics or result in a change in character or the value placed on the landscape. However, the landscape may be able to absorb some development if sensitively sited and designed.
High	Areas where the key landscape characteristics are vulnerable and likely to be adversely affected by wind turbine development. The landscape would not be able to accommodate wind turbine development without significant effects on its character or on the value placed on the landscape.

Table 3: Criteria for Assessing Landscape and Visual Susceptibility to Wind Turbine Development

Landscape Criteria			
LANDMAP and other data sources	Susceptibility to wind turbine development		
	Low	**Medium**	**High**

Scale			
A large scale expansive landscape is typically less susceptible to large wind turbine developments than a small scale intimate landscape. A large height differential between valley floors and hill tops may help reduce susceptibility by lessening the perceived size of the turbines but care has to be taken to ensure that the apparent scale of the landform is not diminished by the height of the turbines. Single ridges and narrow ridges are likely to be more susceptible to wind turbine development than plateau or broad ridges. The susceptibility increases where the scale/height of the ridge is relatively small in relationship to the size of the turbine and/or if the slopes of the ridge are well defined/steep and/or with rock outcrops.			
VS8: Scale	vast or large scale landscapes	medium scale landscapes	small scale or intimate landscapes

Landscape Criteria			
LANDMAP and other data sources	Susceptibility to wind turbine development		
	Low	**Medium**	**High**

Landform			
Landforms that are smooth, regular and convex, or flat and uniform are likely to be less susceptible to wind turbine development than complex varied landforms with distinctive landmarks where visible wind turbines may have a detrimental effect on the appearance and experience of the landform. Complex landforms may provide some screening opportunities for turbines but care has to be taken not to dominate intricate landforms. Disturbed landscapes where landform has been altered by human activities are considered less susceptible to change.			
VS4: Topographic Form	levels, plateau, disturbed	high hills/mountains	hills / valleys, rolling land undulating

Landcover pattern			
This criterion is not concerned with the particular material sensitivity of a type of landcover (which is considered in ecological assessments) but with the character of the landscape created through the land cover pattern. Simple uncluttered landscapes with sweeping lines and a consistent ground cover are likely to be less susceptible to wind turbine development. Areas of commercial forestry and intensive farming may also indicate lower susceptibility. Complex landscapes comprising a variety or mosaic of characteristic or susceptible landscape features such as trees and woodlands, irregular field patterns and hedgerows are typically more vulnerable to change arising from wind turbine development. Tree and woodland cover offers the potential to screen small scale turbines in certain situations (particularly in combination with undulating landform) although care must be taken not to allow turbines to detract from or dominate locally distinctive features such as tree knolls, ancient specimen trees or avenue trees. Where landscape complexity is due to past or current commercial / industrial influences this indicates lower rather than higher sensitivity.			
VS Classification level 3	excavation, urban, flat open lowland farmland	mosaic rolling lowland, open rolling lowland, open lowland valleys village, hill & lower plateau grazing	river, mosaic lowland valleys, amenity land, informal open space
VS5: Land cover pattern	development, open land, forestry	mixture, woodland	field pattern/mosaic water
VS16: Pattern	formal, organised	regular	random
HL Classification level 3	recent reclaimed land, extractive, processing manufacturing, communications, military, settlement	marginal, woodland, recreational, historic reclaimed land	various fieldscapes, settlements, recreation, designed, water and wetland

Landscape Criteria			
LANDMAP and other data sources	Susceptibility to wind turbine development		
	Low	**Medium**	**High**

Built environment:			
This criterion is concerned with the presence of built structures and human intervention present in the landscape. The presence of modern structures such as wind turbines, transport, utility or communications infrastructure or industrial development may reduce landscape susceptibility to wind turbine development, as may the visible influences of quarrying or landfill. The frequency of built form and human intervention in more contemporary densely settled areas may also indicate a reduced susceptibility to the introduction of wind turbines. However, in all of these cases, care must be taken to avoid further visual conflict or significant cumulative change through the introduction of additional vertical structures. Areas which are more sparsely settled and/or characterised by a more established, traditional or historic built character, including historic structures are likely to be more susceptible to wind turbine development.			
VS6: settlement pattern	urban, linear	village, mixture, clustered	None, scattered rural/farm,
VS20: use of construction materials	inappropriate	generally inappropriate	appropriate, generally appropriate
VS25: sense of place	weak, none	moderate	strong
Built Form (observation and mapping)	presence of large scale buildings and infrastructure	medium scale buildings and infrastructure	presence of small scale/human scale built form e.g. residential
Presence of large scale development/infrastructure (observation and mapping)	pylons, masts, large sheds, trunk roads, railways	residential and smaller scale commercial development	none

Visual Criteria Cont.			
LANDMAP and other data sources	Susceptibility to wind turbine development		
	Low	**Medium**	**High**

Skylines and settings			
Landscapes with distinctive ridges or skylines are likely to be more susceptible to wind turbine development than skylines that are less prominent or have been affected by existing contemporary structures such as electricity or communications infrastructure. The presence of distinctive or historic landscape features such as hilltop monuments, church spires/towers or vernacular villages, increases susceptibility.			
Topographic data and observation.	smooth, flat landscapes.	undulating landscapes	distinctive ridge lines and focal points,
Local knowledge - information provided by the client group	monotonous uniform skyline, industrial skylines	rolling / gently undulating skyline	presence of distinctive or historic skyline features

Movement			
Turbines can draw the eye by introducing movement into the landscape. Landscapes that are already affected by movement are therefore likely to be less susceptible, whilst landscapes which are valued for their tranquility will be more susceptible.			
VS18:Level of Human access	constant, frequent	infrequent	rare, occasional,
Observation during survey	busy, presence of industrial scale movement (e.g. open cast mining), windswept	human presence noticeable but not busy, gentle movement	quiet, calm, still

Visual Criteria Cont.			
LANDMAP and other data sources	Susceptibility to wind turbine development		
	Low	**Medium**	**High**

Visibility, key views, vistas			
The likelihood of turbines being highly visible in the landscape depends on the scale of the development, the landform in which the development is sited and the screening opportunities of land cover, especially buildings, trees and woodlands. Landscapes which are visually contained with limited inward and outward views are likely to be less susceptible than open landscapes with extensive inward and outward views. The availability of views of these landscapes from neighbouring areas will also influence susceptibility. Landscapes which are experienced from tourist routes, national or regional trails and other recognised visitor locations are more susceptible to wind turbine development. Similarly, close proximity to settlement which increases the chance of adverse effects on visual amenity may increase an area's susceptibility.			
VS9: Enclosure	enclosed	open	exposed
Presence of views into the area (observation and mapping)	limited or no views into the area	some views, framed views into the area	extensive views of the area from the surrounding countryside
Presence of views out of the area (making it more visually susceptible to development outside the area) (observation and mapping)	limited views out of the area	some views, framed views out of the area	extensive views out of the area to the surrounding countryside

Intervisibility, associations with adjacent landscapes			
Landscape units that have limited intervisibility (inward and outward views to and from adjoining landscapes) are likely to be less susceptible than units that have extensive views. Where adjoining landscapes are intervisible and are of higher susceptibility this increases the susceptibility of the landscape unit. The setting of designated landscapes may be more susceptible where the setting contributes to the overall scenic quality of the designated landscape.			
VS22: There are attractive views	neither in or out	out	both in and out, within, into or out
VS23: There are detractive views	both in and out, within, into or out	out	neither in or out
Observation during survey	limited or no views into or out of the unit.	framed views and intermittent views into and out of the unit.	extensive views into and out of the unit

Visual Criteria Cont.			
LANDMAP and other data sources	Susceptibility to wind turbine development.		
	Low	**Medium**	**High**

Typical receptors			
The most susceptible receptors are likely to be residents, communities, people engaged in outdoor recreation where landscape is part of the experience, visitors to landscape whose interest is focused on natural and built heritage assets, users of scenic routes. Each location brings with it certain expectations. Transport routes are generally considered less susceptible receptors, however single and sequential views from strategic road and rail routes are important to the perception of the landscape.			
Types of receptors (desk study)	commercial, transport routes	places of work, etc.	residential, leisure, tourists

Views to / from Important Landscape and Cultural Heritage Features			
Landscapes which are important to the views within or the setting of key designated landscape and cultural heritage areas / focal features (such as AONBs, National Parks, World Heritage Sites (WHS), Historic Landscapes, Registered Parks and Gardens, Areas of Outstanding Beauty, National Trails, Cycle Networks and promoted routes and key/focal designated visitor attractions such as historic hill forts/castles/church spires/towers) are likely to be more susceptible.			
Views to/ from landscape and cultural heritage features (survey and mapping and local knowledge)	none or few, little intervisibility between sites	intermittent intervisibility from designated areas/national trails	National Park, WHS, inter visibility between sites presence of and close views from National Trails

Aesthetic, Perpetual and Experiential Criteria			
LANDMAP and other data sources	Susceptibility to wind turbine development.		
	Low	**Medium**	**High**

Aesthetic, Perceptual and Experiential Criteria			
Scenic Quality and Character			
Areas of attractive scenery, character, quality, integrity, strong sense of place and local distinctiveness will typically be more susceptible to wind turbine development than less scenic areas. This includes landscapes designated for their natural beauty (see below) but also areas of undesignated landscape, including areas that are locally distinctive or have strong character. LANDMAP data should be supported by observation during study.			
VS46: Scenic Quality	low	moderate	outstanding, high
VS47: Integrity	low	moderate	outstanding, high
VS48: Character	low	moderate	outstanding, high

Remoteness Tranquility			
Areas which are relatively remote and have a wild and/or tranquil character and lack built development have increased susceptibility to wind turbine development. Adjacent turbine development can undermine the special qualities and setting of such areas. Where the development is associated with and in scale with other forms of development, such as farms, the effects may be lessened.			
VS24: Perceptual and other Sensory Qualities	noisy, unattractive, threatening	sheltered, settled, safe	attractive, remote, tranquil, wild
observation during survey	accessible/frequented /busy/many detractors/fragmented /urbanized/indistinct	Secluded/interrupted	inaccessible/remote/ few detractors/intact

Table 4: Criteria for Assessing Landscape Value

Value Criteria			
LANDMAP and other data sources	Landscape value		
	Low	**Medium**	**High**

Value Criteria			
Landscape Value			
Landscapes that are formally designated for their scenic, designed or recreational value are likely to be more sensitive to wind turbine development than undesignated areas. The degree of sensitivity depends on the nature of the proposal and the landscape qualities which are valued by the designation. The hierarchy of the designation has a bearing on sensitivity of a landscape. Internationally and nationally designated landscapes such as National Parks, WHS and AONBs are considered to be very sensitive, closely followed by regional and local designations such as Special Landscape Areas (SLAs). Landscape value is formally recognised by designation, but value can also be informed by published documentation such as tourist leaflets; art and literature. Areas which are predominantly recognised by Outstanding or High LANDMAP evaluations on the Visual and Sensory, Landscape Habitat or Geological layer are also likely to be more sensitive to wind turbine development.			
Designation	none	local designations (SLA etc.), local parks and gardens	National Park, WHS, Registered Landscape of Historic Importance.
VS50: Overall evaluation	low	moderate	high to outstanding
VS49: Rarity	low	moderate	high to outstanding
LH45: Overall evaluation (habitats)	low	moderate	high to outstanding
GL31: Rarity	low	moderate	high to outstanding
GL33: Overall evaluation	low	moderate	high to outstanding

Historic Value

Areas designated for their international, national or regional historic or cultural heritage value such as WHS are likely to be more sensitive to wind turbine development especially if the character or perception of the landscape in which they are located is likely to be significantly altered. Registered Landscapes of Historic Interest and Registered Parks and Gardens are not protected by designation but are considered to be of national value. Areas which are predominantly recognised by Outstanding or High LANDMAP evaluations in the Historic layer are likely to be more highly sensitive to wind turbine development.

Designated sites	none	local designations and sites of local interest	WHS, Registered Historic Landscapes. Frequent listed buildings or scheduled ancient monuments
HL35: Integrity	low	moderate	high to outstanding
HL36: Survival	low	moderate	high to outstanding
HL38: Rarity	low	moderate	high to outstanding
HL40: Overall evaluation	low	moderate	high to outstanding

In addition to the above the Aesthetic, Perceptual and Experiential susceptibility criteria may also be indicators of the value placed on a landscape.

Cultural Value

Cultural value has been assessed using LANDMAP Cultural Landscape Aspect Area fields. The cultural landscape layer has been interrogated and in particular CL18: Value, CL19: Condition, CL20: Trend and CL40: Overall evaluation. The cultural layer may indicate where a landscape is particularly valued due to its cultural associations, such as literary associations. However the reasons for the Overall Evaluation can vary widely and in some areas almost all the Cultural Landscape Aspect Areas are assessed as high or outstanding.

Stage Two – Assessing Landscape and Visual Sensitivity

Baseline Assessment

The first step in the process was to:

- Identify and evaluate the existing landscape of the study area, including its distinctive characteristics, existing landscape designations and effects of existing wind turbine developments; and
- Identify and evaluate the existing views and visual amenity of the study area.

The following information was reviewed as a desk exercise:

- Ordnance Survey maps and aerial photography;
- Designated and nationally/regionally valued landscapes, including locally designated Special Landscape Areas (SLAs), Registered Landscapes of Historic Interest, Registered Parks and Gardens;
- Information from LANDMAP datasets;
- Natural and Built Heritage GIS mapping data;
- Existing wind turbine developments within the study area.

The findings of the desk surveys, which were subsequently refined following field survey work, are presented in **Section Four.** They include an overview of the key landscape characteristics of the study area, a description of existing and consented wind turbine developments and their effect on the landscape, and comments on any issues of existing and potential cumulative effects. Figures 06a through to figure 15b all inform the data in Section Four.

Assessing the Sensitivity of Landscape Units

Sensitivity assessment sheets for each landscape unit were prepared, as presented in **Section four.**

The key features of each landscape unit are described and evaluated against the susceptibility criteria described in Tables 3 using a three point grading: high, medium or low. Those characteristics which are considered particularly susceptible to wind turbine development are highlighted. The value of the landscape is established according to the criteria set out in Table 4.

A judgement on the overall sensitivity to change of each landscape unit is made in association with each wind turbine development typology identified in Table 1, based on a five point sensitivity scale: **low; low-medium medium; medium-high; and high**. This process involved a balanced approach, considering all the assessed criteria.

These evaluations represent the judgement of two qualified and experienced landscape architects, based on desk top studies and field surveys. The evaluations of sensitivity are not based on a mathematical formula. Sensitivity can vary locally within the landscape units and the overall evaluation represents the general sensitivity across the landscape unit to reflect the strategic nature of this study. The guidance notes provide some additional information regarding variations within landscape units.

Field Survey

On completion of the draft assessment, field surveys were undertaken to help test and refine the findings and provide the following information:

- Better understanding of the general characteristics of the landscape including the effects of existing wind turbine developments and any forces for change which it may be experiencing.
- Analysis of the landscape, in terms of the characteristics and qualities which affect its susceptibility to wind turbine development, including the special qualities of any designations which apply.
- Appreciation of the variations within individual landscape units and more detailed understanding of scenic quality and landscape condition.
- Appreciation of the nature of any visual amenity issues.
- Understanding of the degree of intervisibility, both between landscape units within the study area and with landscapes outside the study area.
- Important views to and from each landscape unit, identifying distinctive features such as iconic viewpoints, views to and from

designated landscapes, skylines or uninterrupted horizons. It is important to understand how the landscape is experienced both from fixed viewpoints and sequentially as people travel through an area.

- Understanding of how individual characteristics either alone or in combination make one landscape more susceptible than another. This helped identify any specific strategic sensitivity / capacity constraints which may reduce the potential of particular landscape areas to accommodate wind turbine development.

The fieldwork also briefly considered the likely implications of the different wind turbine development typologies in relation to different aspects of the landscape. The acceptability of the different wind turbine development typologies varies across all landscape units.

Based on the results of the field surveys, the draft evaluations of landscape unit sensitivity were refined and the final sensitivity assessment and accompanying summary tables for each landscape unit prepared

Stage Three – Assigning Landscape Objectives and Capacity

This stage in the study applied professional judgement to determine the most appropriate landscape objective(s) and the relative capacity of each of the identified landscape units. The sensitivity to each wind turbine typology was derived from the landscape and visual susceptibility criteria (including issues of intervisibility), the value of the landscape and the potential for cumulative effects.

Landscape Objectives

There is an implicit objective in TAN 8 to accept landscape change within and immediately adjacent to SSAs, for there to be no significant change outside SSAs and no change in landscape character from wind turbine development within National Parks and Areas of Outstanding Natural Beauty (AONBs)[4]. This has been expressed as the following three landscape objectives:

Table 5 Landscape Objectives

Objective 1	
Landscape Protection	No change to the integrity and quality of landscape character within nationally designated landscapes. *Typically no wind turbine development or very infrequent smaller scale wind turbine development.*

Landscape protection is applicable to landscapes where the conservation of the landscape resource and the visual experience of the landscape has been assessed to be of very high importance. It aims to retain or reinforce the present character, quality and integrity of the landscape.

It is likely to be difficult to accommodate anything more than 'micro scale' wind turbine development in such areas. Micro scale development may be acceptable where this relates well to the existing built environment. Whilst smaller scale wind turbine development may be appropriate in certain circumstances within areas where landscape protection is the primary objective, such opportunities are likely to be very limited due to the landscape and visual sensitivities of these areas and would be dependent on how well the scale and design of development relates to the existing landscape and visual constraints.

With tall structures such as turbines, intervisibility must be carefully considered to avoid adverse landscape and visual effects arising from multiple developments.

Where a landscape designation is in place, it is important to understand how wind turbine development could affect the special qualities for which it is designated.

PPW (Edition 7, July 2014) aims to maintain the integrity and quality of the landscape within the National Parks, AONB, Natura 2000 Habitat Directive Sites, National Nature Reserves and WHS. In these areas, 'landscape protection' will be the most appropriate landscape objective, reflecting the high degree of protection afforded these designated areas.

[4] TAN 8 Annex D Paragraph 8.4

Objective 2	
Landscape Accommodation	In other landscapes, outside the strategic search areas (SSAs), to maintain the landscape character. *Typically a landscape with occasional wind turbine developments*

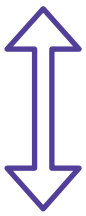
Landscape accommodation is applicable to landscapes where the conservation of landscape character and visual amenity has been assessed to be of moderate to high importance.

This objective aims to retain the overall character, quality and integrity of the landscape, whilst accepting that occasional small to medium scale developments may be allowed. Such development may have an effect on the local landscape but should not bring about significant adverse changes in character. Wind turbines should not become either the dominant or the key characteristic of a landscape.

Objective 3	
Landscape Change	Within the strategic search area, to accept landscape change. *Typically a landscape with a notable amount of wind turbine developments*

Within (and immediately adjacent) to the SSAs, the implicit objective is to accept a significant change in landscape character resulting from wind turbine development located within the SSA. Whilst it is accepted that the area is one whose landscape character may be allowed to change, not all locations in a SSA are suitable in terms of landscape or visual impact. Within SSAs good landscape design principles need to be followed to ensure that the development is appropriate to the scale and character of the landscape.

The general relationship between landscape sensitivity, landscape objectives and capacity is illustrated below.

Landscape Sensitivity	Landscape Objective	Landscape capacity	Threshold
High Sensitivity	Landscape protection	Limited capacity	*No wind turbine development or very infrequent smaller scale development*
	Landscape Accommodation		*A landscape with occasional wind turbine development*
Low Sensitivity	Landscape change	Greater capacity	*Typically a landscape with a number of wind turbine developments*

Each landscape unit is assigned a landscape objective, or in some cases two landscape objectives (i.e. where there is a national designation in part of the unit), to assist the local authorities' decision making on new applications. These landscape objectives then form the basis for recommendations on the wind turbine development typologies which may be appropriate in each of landscape units.

The relationship or thresholds of landscape change that may arise from development varies depending on the landscape and the nature of the potential development. It is assumed however that there is typically greater capacity for wind turbine development in areas of lower sensitivity where landscape change is considered more acceptable. Conversely areas of higher sensitivity, particularly those which are designated are likely to have very limited capacity.

Indicative Landscape Capacity

An overall indicative landscape capacity has been derived for each landscape unit by considering the following:

- Overall sensitivity to wind turbine development, reflecting landscape and visual susceptibility and landscape value; the range of visual experiences; how the landscapes of the area are seen and their contribution to strategic and local issues;
- Landscape objective for the area;
- Operational and consented wind turbine developments within and adjacent to each landscape unit; and
- The size of each landscape unit. There may be scope for a greater number of developments within larger landscape units before a capacity threshold is reached.

The indicative landscape capacity helps to identify the type of developments which could be potentially accommodated. However, this does not in itself suggest that all planning applications for wind turbine development of the typology identified will be appropriate in these areas. Site specific landscape and visual issues and other variables such as ecological designations, are beyond the scope of this strategic assessment and will need to be considered on a case by case basis.

In some cases where sensitivity is low capacity may also be low as a result of the characteristics and scale of the proposed development and the presence of features in the landscape that mean capacity has already been reached.

Siting and Design Guidance in Relation to Potential Landscape and Visual Impacts of Wind Turbine Development

Guidance has been formulated for each landscape unit to help direct development to the most appropriate locations in landscape and visual terms. This guidance broadly indicates which typologies (if any) may be considered appropriate and highlights specific design and siting issues. Any specific constraints which may reduce the potential of a particular landscape unit to accommodate wind turbine development are noted, as are any potential cumulative and cross boundary effects of existing wind turbine development.

A number of more general guidance notes have been developed to be read alongside this specific guidance; these are found in **Section five.**

Section Three: Landscape Context

Landscape Character Baseline

The Heads of the Valley area, which forms part of the South Wales Coalfield, has distinct geology and topography. Figure 03a shows the typography of the study area. The red sandstone massif of the BBNP to the north makes way for limestone ridge slopes on its southern fringes just north of the Heads of the Valleys road. To the south, the Pennant Sandstone South Wales coalfield plateau exhibits a strongly glaciated pattern, with north/ south parallel ridges dissected by U-shaped valleys with dramatic glacial features such as crags and cwms in places. The plateau landform is relatively consistent in height allowing views for long distances with the intervening valleys and associated settlements only apparent when close to the valley edge.

The Caerphilly study area (figure 03b) comprises the Rhymney, Sirhowy and Ebbw Valleys south of the Heads of the Valley at the southern end of the South Wales Coalfield. These valleys are glaciated U-shaped valleys that run in a north south direction in the northern part of the study area. In the middle of the study area the Sirhowy valley turns east to meet with the Ebbw Valley at Crosskeys. At Caerphilly town the Rhymney valley turn east to Machen then meanders its way south through the lower lying landscape. The River Rhymney is the southeast boundary of Caerphilly and the study area. To the west the study area boundary broadly follows the ridgeline of the upland between the Rhymney and Taf valleys which is the boundary between Caerphilly and Rhondda Cynon Taf.

There is evidence of human activity in the area dating back to prehistoric times and at Gelligaer Common there are a number of archeological sites dating back to Roman times. However, it was the development of the coal mining industry on the South Wales coalfield in the 19th and 20th centuries that has shaped much of the landscape seen in the area today. Prior to the advent of industrial scale coalmining the area would have been a rural landscape with scattered settlements. The more remote valleys and upland areas have retained some of this rural character.

Protected Landscapes

PPW (2014) sets out the targets for renewable energy development whilst also establishing the Government's objectives for conservation and improvement of natural heritage. Parts of the Caerphilly study area are protected by statutory and non-statutory landscape designations.
These landscape designations and cultural heritage features are illustrated on Figures 03a and 03b and the key designations related to landscape character and value are outlined below.

Open Access Land

In May 2005 the Countryside and Rights of Way Act (CROW) came into force, clearly identifying Open Access Land (open country and/or common land) in Wales. One fifth of Wales is mapped as 'access land' where the public has a right of access on foot. Figures 04a and 04b shows the areas of open access in the study area which includes Registered Common Land.

It is recognised that wind turbine development may occur in open country and on common land. However each wind turbine would be regarded as a building, therefore the turbine and the developed land immediately around it would be excepted land under Schedule 1 of the CRoW Act. Any application for wind turbine development on common land would be subject to the Commons Act 2006.

Registered Historic Landscapes (Wales)

The Historic Landscapes Register aims to help planners and developers introduce changes and new developments in ways that will cause the least harm to the historic character of the land. Inclusion in the Register does not confer statutory protection but it does help highlight the cultural heritage importance of some parts of the landscape.

There is one Registered Historic Landscape in the study area. Gelligaer Common Landscape of Special Historic Interest is located north west of Blackwood and extends into the Heads of the Valley study area.

Registered Parks and Gardens

There are four Registered Parks and Gardens of Special Historic Interest in the study area. Although not protected by statutory designation they are nationally valued as they form an important and integral part of the historic and cultural fabric of Wales.

- Maes Manor is located north of Blackwood and is the site of a terraced Edwardian formal garden.
- The Van is located on the eastern edge of Caerphilly and is the remains of a Tudor walled and terraced garden attached to an important house of the period.
- Ruperra Castle is located south of the Rhymney Valley and comprises the remains of a deer and landscape park, formal gardens and pleasure grounds and the site of a summerhouse.
- Cefn Mably is located on the southern boundary of the study area and is the site of a formal terraced garden, pleasure grounds, a landscape park and a walled garden.

Each of these parks also has their essential settings mapped. Figure 03a and 03b: Areas of Landscape Interest and Landscape Designations shows the location of the Registered Historic Parks and Gardens in the HOV and Caerphilly study respectively.

Special Landscape Areas (SLA)

SLAs are a local landscape designation. A review of SLAs in CCBC was carried out by TACP in 2007 and the report published in January 2008: *Designation of Special Landscape Areas.* The review used the Special Landscape Area Designation Criteria methodology developed by the South East Wales Local Authority Consortium which utilises data from LANDMAP to identify areas worthy of SLA designation. CCBC has designated six SLAs in the county, five of which are located in the study area. The SLAs are described in *Caerphilly County Borough Local Development Plan up to 2021 Appendices to the Written Statement.* Those in the study area are mapped on Figure 03 and are as follows:

- NH1.1 Upper Rhymney Valley
- NH1.2 Gelligaer Common
- NH1.3 Mynydd Eglwysilian
- NH1.4 North Caerphilly
- NH1.5 South Caerphilly
- NH1.6 Mynyddislwyn

Visually Important Local Landscapes (VILL)

Following the 2007 review of SLAs in CCBC TACP prepared a report with recommendations that was published in April 2008: *Designation of Visually Important Local Landscapes.* VILLs are local landscape designations that comprise areas that did not fulfill the new criteria required for SLA designation when preparing the LDP but that have several aspects of high visual and sensory evaluation that made these areas worthy of recognition. There are four VILLs in CCBC that were identified during the SLA review and two of these are in the study area. They are described in *Caerphilly County Borough Local Development Plan up to 2021 Appendices to the Written Statement.* Those that are in the study area are mapped in Figure 03 and are as follows:

- NH2.1 Northern Rhymney Valley
- NH2.2 Manmoel
- NH2.3 Abercarn
- NH2.4 Rudry

Wales Regional Landscape Character Areas

The landscape character map for Wales divides the country into 48 regional landscape character areas. The landscape character area that relates to the study area is 37: South Wales Valleys.

Caerphilly County Borough Council has not carried out a landscape character assessment for the county.

Landscape Units

Twenty Two landscape units have been identified for the whole of the County Borough's study area- twelve in the HOV study, and ten in the Caerphilly basin study (see figure 04). **For ease of reference and cross referral, the Landscape Units within Caerphilly County Borough attributed as part of the HOV study will remain with the same numberings as indicated in the HOV study**. Note that these landscape units have not been identified as part of a landscape character assessment but for the purposes of this study. Figure 05 shows the landscape units for the study area and they are described briefly below. Section four contains a detailed sensitivity and capacity assessment for each unit.

1. Caerphilly West (Nelson and Abertridwr)
This unit extends down the western boundary of the study area from Gelligaer Common in the north to Mynydd Maen in the south. It comprises areas of grazed upland and hillside grazing with fields bounded by stone walls at higher elevations and by hedgerows with trees at lower elevations. The unit also includes settlement in the Nant y Aber valley (Abertridwr and Senhenydd) west of Caerphilly and Nelson in the north.

2. Caerphilly Basin and Lower Rhymney Valley
This unit extends along the Rhymney Valley and widens at the Caerphilly basin where the Nant y Aber and Nant Gledyr meet the River Rhymney. The urban landscape is largely confined by the topography of the valleys and the Caerphilly basin. The A468 is a major road corridor though the unit. Caerphilly Castle (13th century) occupies a central location on the lower valley side south of the River Rhymney and dominates views in the town.

3. South Caerphilly
This unit lies to the south of Caerphilly and the Rhymney river corridor. It is rural and comprises lower rolling hills and lowland. There are few settlements in the unit that has a mix of forestry and grassland fields. Caerphilly Common and Rudry Common are areas of open access in the unit south of Caerphilly. There are also three registered historic parks and gardens in the unit.

4. North Caerphilly
This unit comprises the upland area between the Rhymney and Sirhowy valleys. There are few roads and the upper part of this area is relatively remote although it overlooks development in the valleys below. There is a small area of upland grazing but the majority of the unit is hillside grazing with medium sized fields bounded by walls at higher elevations and by hedgerows with trees at lower elevations.

5. Greater Blackwood
This unit comprises the urban area of Blackwood and adjacent development along the Rhymney and Sirhowy valleys in the north of the study area. The unit includes pockets of rural landscape on the urban edge.

6. Mynyddislwyn
This unit is the upland area between Sirhowy and Ebbw valleys. There area is a combination of wooded hillside and scarp slopes, hillside and upland grazing. Fields are bound by a combination of stonewalls and hedgerows with trees. There is little built development in the unit although there are communication masts on the open upland grazed area.

7. Risca (Sirhowy and Ebbw Valleys)
The valley landscape is developed, particularly the Ebbw Valley. Both valleys are narrow and steep sided with forestry on the steep valley sides above development in the valley bottom.

8. Pen y fan and land west of Newbridge
This unit is located between Oakdale and Newbridge and abuts the Heads of the Valley to the north. The area includes Pen y fan Country Park north of Oakdale and contains two large wind turbines south west of the country park. The area provides separation between Newbridge and Oakdale. The southern part of the unit is largely surrounded by development and comprises small to medium sized fields with hedgerow boundaries that have mature trees in them.

9. Mynydd Maen
This unit is located on the eastern edge of the study area above the Ebbw valley. It comprises steep upland valleys and hillside with forestry, upland grazing and hillside grazing. There is little settlement in the unit. The Cwnbarn Forest is a popular place for recreation and is on the site of a former colliery. Of particular note is a hill fort and motte on the hilltop at Twmbarlwn that is a distinct skyline feature although views of this feature are limited by intervening forestry and landform.

10. Greater Newbridge
The unit comprises the urban area of Newbridge in the Ebbw Valley at the north end of the study area. Development extends up the valley sides where it

is less steep.

12. Merthyr Tydfil east valley side
The valley side east of Merthyr Tydfil is particularly distinctive due to the large area of earthworks.

13. Upland moorland between Taff and Rhymney Valleys.
Marginal upland landscape. The boundary has been determined by combining the historic marginal area (Level 3) with upland moorland/grassland type. Upland landscape outside the boundary here has grazed fields.

14. Bedlinog Valley and farmed upland landscape
Valley landscape and associated upland grassland with grazed fields that encloses the valley.

15. Darran Valley and hillsides
Nant Bargoed Rhymney valley and hillsides. Mosaic valley landscape type has good tree cover. Hillsides are grazed fields.

16. Rhymney Valley from Rhymney to Bargoed.
This long linear landscape unit is the valley and hillside landscapes that are associated with the Afon Rhymney and include the areas of settlement in the valley bottom as well as the slopes of the hillside above. The unit boundary incorporates some of the top of the slope into the narrow Afon Sirhowy Valley to the east.

17. Upland north of the Heads of the Valleys corridor.
This unit incorporates the upland landscape north of the Heads of the Valleys Road (A465) and incorporates the heads of two upland valleys (Rhymney and Sirhowy) which have field systems around them in contrast to the surrounding open moorland. To the east the unit includes a small portion of the BBNP north of the Clydach Gorge. The unit is a buffer between the BBNP to the north and development in the Heads of the Valleys road corridor to the south.

18. Mynydd Bedwellte and associated upland
Upland landscape type located west of Tredegar overlooking the town. Generally open grazed landscape with few field boundaries and scattered built form. The unit provides the upland setting for Tredegar and Rhymney.

19. Heads of the Valleys corridor
This landscape unit incorporates the settlements of Tredegar, Ebbw Vale and Brynmawr and the intervening upland landscape most of which has been identified as upland mosaic landscape type.

20. Sirhowy Valley northern reach from Tredegar to Pochin Houses
Valley landscape unit running north south through the centre of the study area.

21. Southern Sirhowy valley incorporating hillsides above.
Valley and associated hillside landscape south of Tredegar comprising mosaic upland valley and hillside and scarp slope mosaic landscape types. Steep sided valley is confined and development is restricted. Hillsides have scattered settlement, tree cover on steeper ground and grazed fields.

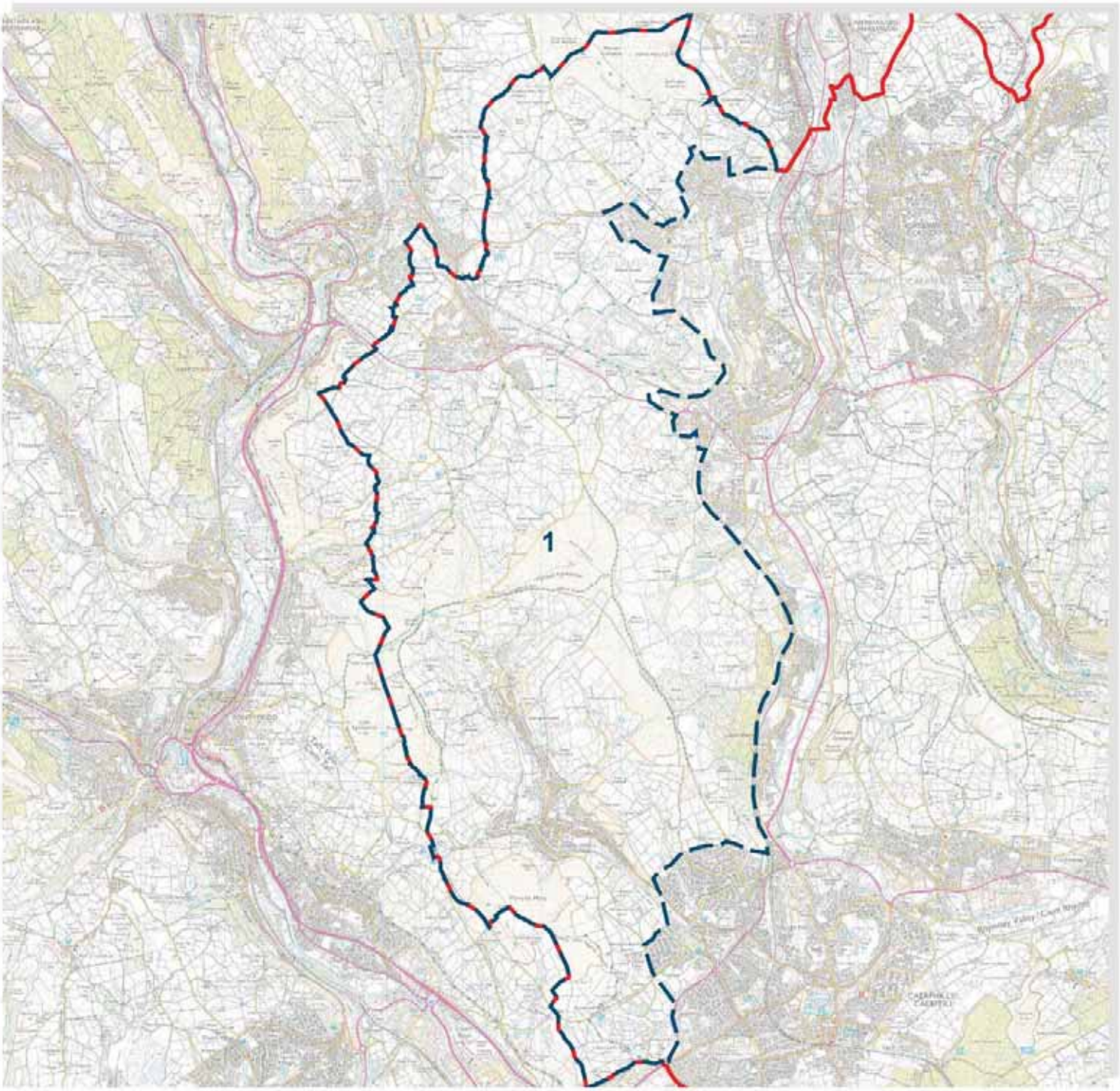
22. Northern Manmoel Ridge
Upland moorland/grassland between the Sirhowy and Ebbw valleys. The unit is largely marginal moorland.

23. Ebbw Vale valley landscape
This unit incorporates the valley sides and settled valley bottom south of Ebbw Vale. Also included is a small area of upland to the south that is closely associated with the valley landscape in particular due to land use and field pattern. Includes areas of extraction and commercial development.

Section Four: Landscape Sensitivity and Capacity Assessments

Landscape Unit: 1

Caerphilly West (Nelson and Abertridwr)



LANDSCAPE UNIT 1: Caerphilly West (Nelson and Abertridwr)

		assessed susceptibility		
		low	medium	high
LANDSCAPE				
Scale	Medium scale. VS8 Scale - medium 85%			
Landform	Upland landscape combining hills and valleys with undulating upland. VS4 Topographic form -hills/valleys 85%			
Land cover pattern	Combination of improved, semi improved and rough grassland with areas of open moorland on hill tops. Village settlement in the valley bottoms and on lower slopes. VS class level 3 - hillside & scarp slopes mosaic 77% HL class level 3 - irregular fieldscapes 52% VS5 Land cover pattern - field pattern/mosaic 77% VS16 Pattern - regular 100%			
Built Environment	Largely rural area with scattered farmsteads. Villages located in the valley bottom and on lower valley slopes. VS6 Settlement pattern - scattered rural/farm 80% VS20 Use of construction materials - generally appropriate 88% VS25 Sense of place - moderate 89%			
VISUAL				
Skylines and settings	The hillsides of the valleys provide the setting for villages in the unit and for the developed Taff valley to the west (in Rhondda Cynon Taff County Borough Council) Of note are the three conical hill tops adjacent to the mountain top above Llanbradach.			
Movement	Generally sparsely settled area with little activity apart from in the settled valleys. VS18 Level of human access - infrequent 80%			
Visibility, Key views, vistas.	Much of the landscape is open upland with areas of exposure on rounded hill tops and enclosure in valley bottoms. VS9 Enclosure - open 77%			
Intervisibility/ associations with adjacent landscapes	Overall the unit is an attractive rural unit with views into the area from high ground to the north and west in particular. Views out of the unit to the Heads of the Valleys to the north and over the Taff valley to the west. VS22 Attractive views - both in and out 88% VS23 Detractive views - out 80%			
Types of receptors	Villages of Abertridwr and Nelson in the unit have views of the surrounding hillsides. Rhymney Valley Ridgeway Footpath follows the high ground through the unit and has views across the area.			

LANDSCAPE UNIT 1: Caerphilly West (Nelson and Abertridwr)				
Views to / from landscape and cultural heritage features	Views across Gelligaer Common to the north end of the unit. Views of Caerphilly Castle in unit 2 possible in areas at the southern end of the unit.			

LANDSCAPE UNIT 1: Caerphilly West (Nelson and Abertridwr)

AESTHETIC, PERCEPTUAL AND EXPERIENTIAL

Scenic quality and Character	Views are channelled up and down valleys from the lower lying areas and become more extensive from higher ground. The unit overlooks the Taff valley to the west and the Rhymney valley to the east. VS46 Scenic quality - moderate 85% VS47 Integrity - moderate 88% VS48 Character - moderate 85%			
Remoteness Tranquility	The unit has a mix of perceptual and scenic qualities. There are areas of attractiveness along with areas of exposure and areas that are sheltered. VS24 Perceptual and other scenic qualities - other 77%			

VALUE

		assessed value		
		low	medium	high
Landscape value	VS50 Overall evaluation - moderate 77% VS49 Rarity - moderate 80% LH42 Connectivity - moderate 51%, high 44% LH45 Overall evaluation - high 75% GL31 Rarity - low 50% GL33 Overall evaluation - moderate 70%			
Historic value	HL35: Integrity - high 44% outstanding 56% HL36 Survival - high 55% outstanding 29% HL38 Rarity - high 50% HL40 Overall evaluation - outstanding 53%, high 30% Small part of the unit includes the southern extent of the Gelligaer Common Landscape of Special Historic Interest			
Cultural value	CL18: Value - high 81%, outstanding 15% CL19: Condition - unassessed 76% CL20: Trend - unassessed 76% CL40: Overall evaluation - high 81% outstanding 15%			

SUMMARY OF SENSITIVITY TO WIND ENERGY DEVELOPMENT

		assessed sensitivity		
		low	medium	high
Micro	The landscape has lower sensitivity to smaller scale development that can be associated with existing built form.			
Small				
Medium	The size of the unit and variations within results in medium sensitivity to medium and large scale development in the unit as a whole.			
Large	Large scale development would be out of scale with the unit and visually prominent.			
Very Large	Very large scale development could adversely affect the perception of this medium scale undulating landscape and disrupt the characteristic pattern.			

LANDSCAPE UNIT 1: Caerphilly West (Nelson and Abertridwr)

Additional Comments	This unit is varied in terms of landform and land cover. As a result there are areas within the unit of greater sensitivity e.g. Gelligaer Common and areas of grazed farmland with hedgerow and tree boundaries that provide the setting for villages in the unit. Development would potentially affect the historic landscape value of the area due to introduction of larger scale vertical features in area of open landscape that is of historic importance.

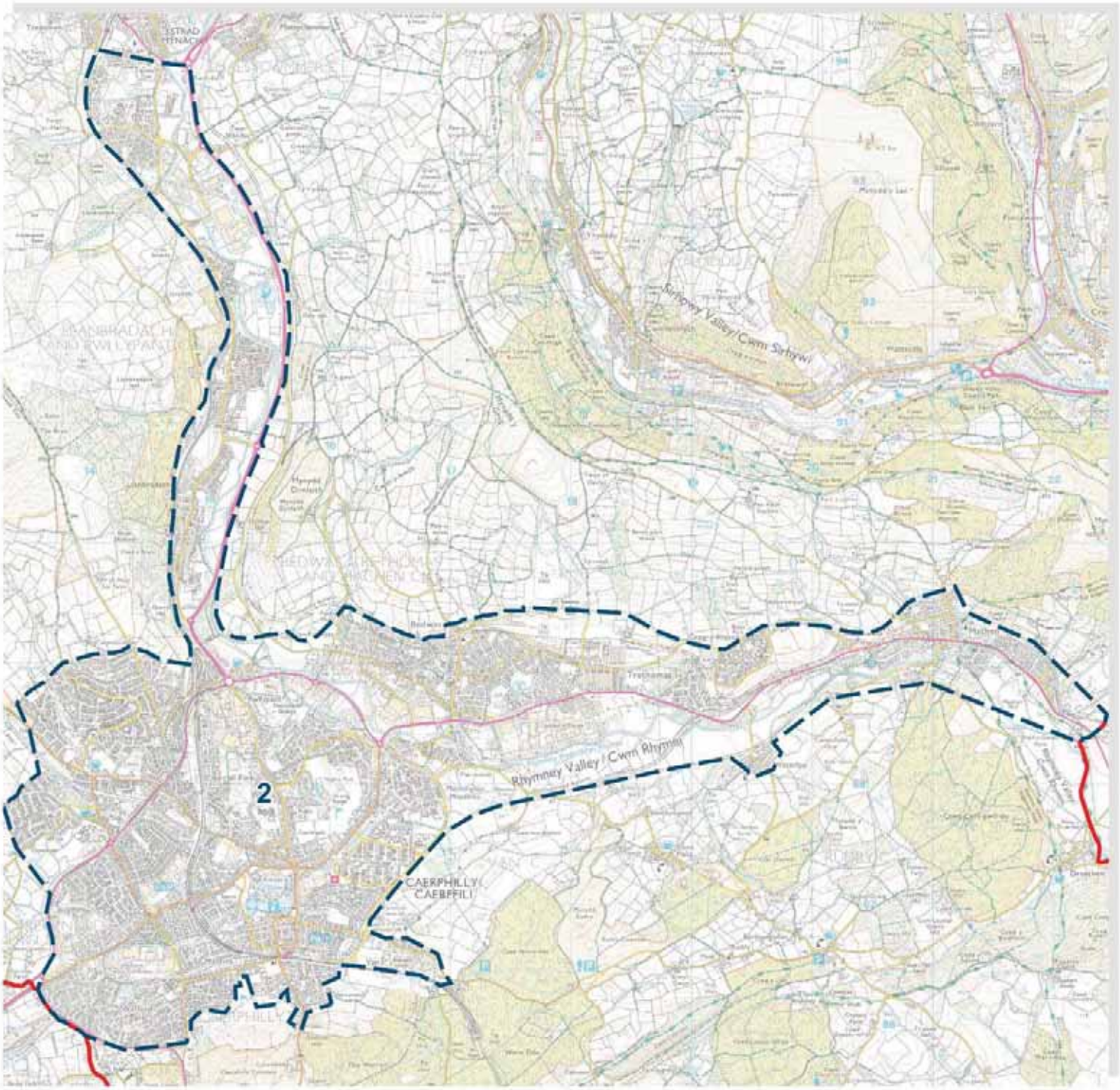
LANDSCAPE CAPACITY AND GUIDANCE FOR SITING WIND TURBINES	
Landscape objective	**Objective two: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind energy development	Designated Features within the Landscape Unit: Northern part of the unit includes the southern extent of the Gelligaer Common Landscape of Special Historic Interest. 7 SAMs including a Roman Fort at Gelligaer. 3 Conservation Areas (Gelligaer, Nelson and Groes-wen) The majority of the unit is designated SLA (NH1.2 Gelligaer Common and NH 1.3 Mynydd Eglwysilian)
	Other Susceptible Landscape, Visual and Cultural Heritage Features: Green wedges at Nelson, Gelligaer and Caerphilly. Sustrans National Cycle Route crosses the unit north of Nelson. Rhymney Valley Ridgeway Walk follows high ground through the unit. Parc Penalta Country Park Senghenydd Dyke is a significant historic feature approximately 12km in length thought to be the boundary of a Medieval deer park.
Baseline wind turbine development (Nov 2014)	No known wind turbine development operating in the unit. One micro scale turbine consented in the unit north of Caerphilly at Pen-yr-Heol Las Farm. Two medium turbines in planning at Pen-yr-Heol Las Farm. Views of two very large turbines north of Oakdale seen from the northern end of the unit looking northeast. Views of a large turbine at Penrhiwgwaith Farm on a hill top to the north of Bargoed in the Heads of the Valleys study area. A medium turbine at Pen y Fan Ganol to the north of Oakdale was under construction at the time of the study and may be visible from northern parts of unit 1. A medium turbine at Gelli-wen is consented (south of the turbine at Penrhiwgwaith Farm) and may be visible from this unit. A very large turbine in planning at Pen y Fan Industrial estate near to the two operational turbines north of Oakdale would be visible. Two further medium turbines in planning outside the unit and study area to the west at Bryn Tail in Rhondda Cynon Taf may be visible from the western part of the unit.

LANDSCAPE UNIT 1: Caerphilly West (Nelson and Abertridwr)

Indicative overall capacity	Overall there is capacity for micro and small scale wind turbine development in this unit where there is currently no wind turbine development and limited intervisibility with turbines outside the unit. There is some capacity for medium scale development that is located to avoid skylines and avoid the setting of sites of historic importance. There is limited capacity for large scale development that is sited to limit visual intrusion, respect local landform and avoid the setting of historic sites. There is no capacity for very large scale development that would be visually intrusive and at odds with existing development in this medium scale landscape.
Guidance on siting	Section 5 of this document provides generic siting and guidance. In addition the following guidance should apply: Maintain the integrity of the Gelligaer Common Landscape of Special Historic Interest. Maintain the natural beauty of the SLAs in the area and their special qualities. Maintain the integrity and setting of Gelligaer, Nelson and Groes-wen Conservation Areas. Protect the site and setting of Scheduled Monuments in the unit. Consider the effect on the fabric and setting historic features that are not scheduled e.g. Senghenydd Dyke. Consider views from the Rhymney Valley Ridgeway Footpath and Sustrans National Cycle Routes through the unit. Consider views from residential receptors in the valleys both in and adjacent to the unit. In particular Abertridwr, Senghenydd, and Nelson in the unit one and Caerphilly, Ystrad Mynach, Llanbradach to the east and Pontypridd and settlement in the Taff valley to the west. Maintain the characteristics of the country parks and consider views to and from them. Avoid the loss of woodland and tree cover and consider planting to mitigate small/micro scale development. Ensure new access tracks do not damage or disrupt historic field patterns. Maintain the role of green wedges in the unit. For proposals close to the boundary with the Heads of the Valleys study area also refer to the Heads of the Valleys Study.

Landscape Unit: 2

Caerphilly Basin and Lower Rhymney Valley



LANDSCAPE UNIT 2: Caerphilly Basin and Lower Rhymney Valley

		assessed susceptibility		
		low	medium	high
LANDSCAPE				
Scale	Medium scale urban landscape. VS8 Scale - medium 84%			
Landform	Valley landscape that broadens at Caerphilly Basin where the Nant yr Aber and Nant Gledyr tributaries meet the Rhymney River. VS4 Topographic form - Rolling/undulating 63%			
Land cover pattern	The unit largely comprises urban development along the Rhymney Valley and at the Caerphilly Basin. Mix of residential, retail, commercial and industrial development. VS class level 3 - urban 78% HL class level 3 - other settlement 92% VS5 Land cover pattern - development 83% VS16 Pattern - regular 90%			
Built Environment	The developed valley landscape includes medium scale buildings and infrastructure along side smaller scale residential development. VS6 Settlement pattern - urban 78% VS20 Use of construction materials - generally inappropriate 79% VS25 Sense of place - moderate 100%			
VISUAL				
Skylines and settings	The unit is surrounded by higher ground in adjacent units 1, 3 and 4. Particularly prominent is the skyline to the south and east (unit 2) that includes Caerphilly Common and Mynydd Rudry. Within the unit the skyline and setting of Caerphilly Castle is particularly distinctive.			
Movement	This is a busy developed landscape that includes the A468 road corridor which follows the Rhymney Valley. VS18 Level of human access - frequent 63%			
Visibility, Key views, vistas.	The unit is enclosed by built development in the unit and surrounding landform in adjacent units. Views within are often channelled up and down the valley. Of note are views from Caerphilly Castle which extend to the slopes of the valley sides above the unit. VS9 Enclosure - enclosed 82%			
Intervisibility/ associations with adjacent landscapes	The majority of attractive views are out of the unit due to the presence of a range of different types of development in the unit. A notable exception is Caerphilly Castle. VS22 Attractive views - out 73% VS23 Detractive views - within 83%			
Types of receptors	Residents and people employed in the areas as well as road users. There are a large number of sensitive receptors in the unit.			

LANDSCAPE UNIT 2: Caerphilly Basin and Lower Rhymney Valley				
Views to / from landscape and cultural heritage features	Of particular importance are views to and from Caerphilly Castle.			

LANDSCAPE UNIT 2: Caerphilly Basin and Lower Rhymney Valley

AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and Character	With exception of Caerphilly Castle there are few features that contribute to the scenic quality of the unit. VS46 Scenic quality - low 82% VS47 Integrity - low 83% VS48 Character - moderate 95%			
Remoteness Tranquility	The unit is easily accessed by the network of roads associated with the valley. VS24 Perceptual and other scenic qualities - noisy; other 63%			

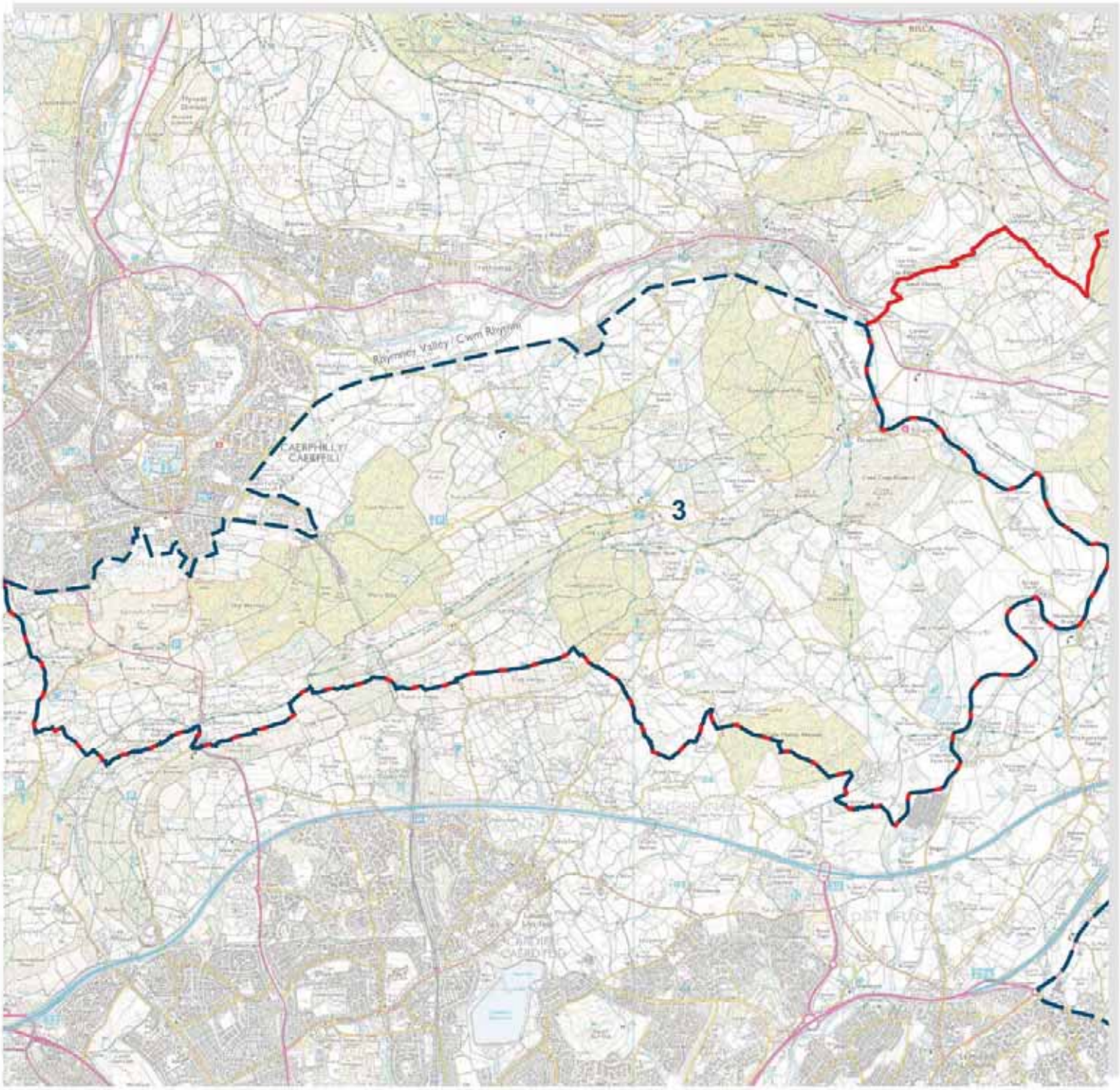
VALUE		assessed value		
		low	medium	high
Landscape value	VS50 Overall evaluation - low 83% VS49 Rarity - low 83% LH42 Connectivity - low 57% LH45 Overall evaluation - low 61% GL31 Rarity - moderate 58% GL33 Overall evaluation - moderate 61%			
Historic value	HL35: Integrity - high 95%; outstanding 5% HL36 Survival - high 50% HL38 Rarity - high 48% HL40 Overall evaluation - high 49%			
Cultural value	CL18: Value - moderate 76% CL19: Condition - good 91% CL20: Trend - improving 84% CL40: Overall evaluation - moderate 75%			

SUMMARY OF SENSITIVITY TO WIND ENERGY DEVELOPMENT		assessed sensitivity		
		low	medium	high
Micro	The relatively enclosed nature of the landscape unit and the opportunity to locate smaller scale development to limit visibility results in lower sensitivity.			
Small				
Medium	Sensitivity is greater for medium scale development that is likely to have higher visibility in the landscape.			
Large	Large and very large scale development would be out of scale with the valley landscape and existing development in the valley.			
Very Large				
Additional Comments	The developed landscape has overall low sensitivity to wind turbine development that is in scale with existing development except where it may affect the setting and integrity of sites of historic importance in particular Caerphilly Castle.			

LANDSCAPE UNIT 2: Caerphilly Basin and Lower Rhymney Valley

LANDSCAPE CAPACITY AND GUIDANCE FOR SITING WIND TURBINES	
Landscape objective	**Objective two: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind energy development	**Designated Features within the Landscape Unit:** Five SAMs including Caerphilly Castle which is also a grade 1 listed building. One Conservation Area (Llanbradach) Llancaiach Fawr Grade 1 listed building north of Nelson
	Other Susceptible Landscape, Visual and Cultural Heritage Features: Green wedges at Caerphilly and Trethomas. Sustrans National Cycle Route through Caerphilly and along the Rhymney valley east of Caerphilly. The Van is a Registered Historic Park and Garden in unit 3 and is located on the edge of Caerphilly to the east.
Baseline wind turbine development (Nov 2014)	There are currently no known proposals for wind turbines in the unit. There may be limited views of a micro turbine consented in unit 1 north of Caerphilly at Pen-yr-Heol Las Farm. Two medium turbines in planning at in unit 1 Pen-yr-Heol Las Farm north of Caerphilly.
Indicative overall capacity	There is capacity for wind turbine development that is in scale with existing development in the Rhymney valley. I.e. Micro and small scale development may be accommodated. There is some capacity for medium scale development in industrial areas but this is limited due to the presence of a high number of residential receptors. There is no capacity for large and very large scale development that would be at odds with land form and existing development in this medium scale landscape.
Guidance on siting	Section 5 of this document provides generic siting and guidance. In addition the following guidance should apply: Protect the setting of Caerphilly Castle and views to and from the Scheduled Monument. Maintain the integrity and setting of Llanbradach Conservation Area. Maintain the setting of Llancaiach Fawr a Grade 1 listed building north of Nelson. Consider views to and the setting of the Van Registered Historic Park and Garden located on the boundary with unit 3 at Caerphilly. Consider views from residential receptors within the unit. Consider sequential views of development in the valley landscape and the cumulative effect of sequential development in the valley landscape. Consider views from higher ground in neighbouring units. In particular views from Caerphilly Common and Rudry Common to the south in unit 3. Consider views from the Rhymney Valley Ridgeway Footpath and Sustrans National Cycle Routes through the unit. Scale and location of single turbines to respect local landscape pattern and relate to existing built form. Maintain the role of green wedges in the unit.

Landscape Unit: 3
South Caerphilly



LANDSCAPE UNIT 3: South Caerphilly

		assessed susceptibility		
		low	medium	high
LANDSCAPE				
Scale	Large scale overall with areas of medium scale. VS8 Scale - large 69%			
Landform	Hills south of the Rhymney valley descending to rolling lowland in the southeast corner of the study area. VS4 Topographic form - hills/valleys 69%			
Land cover pattern	Varied rural land cover comprising forestry and improved grassland fields that vary in size and pattern. VS class level 3 - hill & lower plateau mosaic 69% HL class level 3 - irregular fieldscapes 73% VS5 Land cover pattern -mixture 69% VS16 Pattern - random 69%			
Built Environment	Generally small scale scattered rural development. VS6 Settlement pattern - scattered rural/farm 100% VS20 Use of construction materials - generally appropriate 100% VS25 Sense of place - moderate 100%			
VISUAL				
Skylines and settings	The northern part of the unit is an important skyline setting to the south of Caerphilly and the Rhymney Valley. Otherwise the skylines and settings are not particularly distinctive.			
Movement	This rural unit provides the southern setting for Caerphilly and has few minor roads crossing it. VS18 Level of human access - Infrequent 69%			
Visibility, Key views, vistas.	The undulating landform results in open views that are restricted in places by forestry. VS9 Enclosure - open 100%			
Intervisibility/ associations with adjacent landscapes	Views from the northern part of the unit over Caerphilly and the Rhymney valley. The southern boundary of the unit (and the study area) includes a ridge line that overlooks the M4 corridor and Cardiff beyond. VS22 Attractive views - within 100% VS23 Detractive views - out 100%			
Types of receptors	There are few residential properties scattered throughout. Residents on the northern edge of Cardiff may have views of the ridgeline on the southern edge of the study area.			

LANDSCAPE UNIT 3: South Caerphilly				
Views to / from landscape and cultural heritage features	Registered Common Land at Mynydd Rudry has a high point overlooking the Rhymney Valley. Three historic parks and gardens in the unit. Views to and from them are restricted but CADW identify some signficaint views to Cefn Mably and Ruperra Castle. The route of the Rhymney Valley Ridgeway Footpath follows higher ground in the unit and has views across the unit and study area.			

LANDSCAPE UNIT 3: South Caerphilly

AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and Character	Rural farmed landscape with good woodland and forestry cover is pleasant and attractive. VS46 Scenic quality - moderate 100% VS47 Integrity - moderate 100% VS48 Character - moderate 100%			
Remoteness Tranquility	This rural landscape is well settled with numerous farmsteads and residential properties scattered throughout. The unit is also attractive and separates Caerphilly from the M4 corridor and Cardiff. VS24 Perceptual and other scenic qualities - settled 100%			

VALUE				
		assessed value		
		low	**medium**	**high**
Landscape value	VS50 Overall evaluation - moderate 100% VS49 Rarity - moderate 100% LH42 Connectivity - moderate 69% LH45 Overall evaluation - moderate 57% GL31 Rarity - moderate 67% GL33 Overall evaluation - high 65%			
Historic value	HL35 Integrity - high 94% HL36 Survival - outstanding 78% HL38 Rarity - outstanding 79% HL40 Overall evaluation - outstanding 84%			
Cultural value	CL18: Value - high 100% CL19: Condition - good 99% CL20: Trend - unassessed 95% CL40: Overall evaluation - high 100%			

SUMMARY OF SENSITIVITY TO WIND ENERGY DEVELOPMENT				
		assessed sensitivity		
		low	**medium**	**high**
Micro	The landscape has low sensitivity overall to micro and small scale development that could be located to respect local built form.			
Small				
Medium	Medium scale development is likely to be more visually intrusive in the unit in the open landscape and as a result sensitivity increases.			
Large	Large scale development increases in visual prominence and therefore sensitivity increases.			
Very Large	Very large scale development would be visually prominent in the open rural unit.			
Additional Comments	The rural landscape contributes to the separation between Caerphilly and development in the Rhymney Valley, and the M4 corridor to the south and Cardiff beyond. The unit is sensitive to development that would adversely impact upon the rural characteristics of the landscape.			

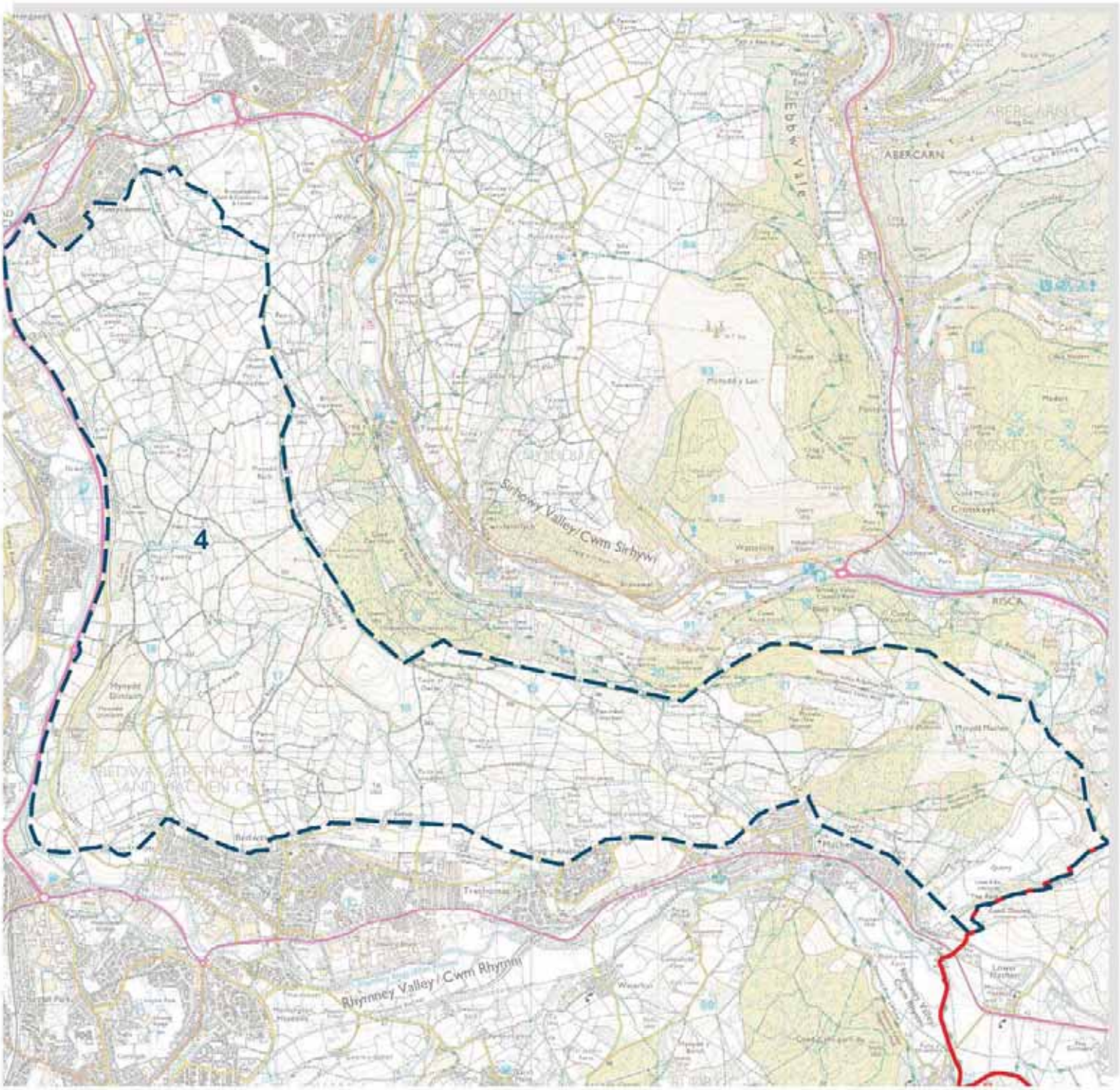
LANDSCAPE UNIT 3: South Caerphilly

LANDSCAPE CAPACITY AND GUIDANCE FOR SITING WIND TURBINES

Landscape objective	**Objective two: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind energy development	**Designated Features within the Landscape Unit:** Three Registered Historic Parks and Gardens (The Van, Ruperra Castle and Cefn Mably). Two SAMs. Two Conservation Areas (Draethen and Ruperra Castle) The northern part of the unit is designated SLA (NH1.5 South Caerphilly) Caerphilly Common and Rudry Common
	Other Susceptible Landscape, Visual and Cultural Heritage Features: Rhymney Valley Ridgeway Walk. Rhymney River Circular. The southern part of the unit is designated VILL (NH2.4 Rudry)
Baseline wind turbine development (Nov 2014)	No development constructed or proposed in the unit at present. There are views from the south east part of the unit of two small turbines at Pen y lan. Views of development in Rhondda Cynon Taf from Caerphilly mountain. Two medium turbines in planning at Pen yr Heol Las north of Caerphilly may be visible from higher ground in the unit south of Caerphilly.
Indicative overall capacity	There is capacity for micro, small and medium scale development in this unit that currently has no wind turbine development. Larger scale development would have increased visual prominence and therefore a greater adverse effect on the rural character of the unit. As a result capacity is lower to large scale development.
Guidance on siting	Section 5 of this document provides generic siting and guidance. In addition the following guidance should apply: Protect the setting and views to and from the three Registered Historic Parks and Gardens in the unit (The Van, Ruperra Castle and Cefn Mably). Maintain the integrity and setting of Draethen and Ruperra Castle Conservation Areas. Maintain the natural beauty of the SLA in the area and its special qualities. Maintain the qualities of the VILL in the unit. Consider views to and from Caerphilly Castle for development proposals located within its visual envelope. Avoid the loss of tree and woodland cover and consider planting to mitigate small/micro scale development. Consider views from the Rhymney Valley Ridgeway Footpath through the unit.

Landscape Unit: 4

North Caerphilly



LANDSCAPE UNIT 4: North Caerphilly

		assessed susceptibility		
		low	medium	high
LANDSCAPE				
Scale	Large scale upland. VS8 Scale - large 92%			
Landform	Steep valley sides and undulating hills between the Rhymney and Sirhowy valleys north of Caerphilly and the Rhymney river corridor. VS4 Topographic form - hills/valleys 95%			
Land cover pattern	Grazed farmland fields with areas of forestry and woodland. VS class level 3 - hill & lower plateau grazing 88% HL class level 3 - marginal land 88% VS5 Land cover pattern - mixture 94% VS16 Pattern - regular 95%			
Built Environment	The hillsides between two valleys are sparsely settled. VS6 Settlement pattern - scattered rural/farm 94% VS20 Use of construction materials - generally appropriate 94% VS25 Sense of place - moderate 96%			
VISUAL				
Skylines and settings	Rounded hill tops above the steep valley sides provide the skyline setting for settlement in the valleys below.			
Movement	Rural landscape between two busy valleys. VS18 Level of human access - infrequent 94%			
Visibility, Key views, vistas.	Generally open hillsides with small areas of exposure on the hill tops. VS9 Enclosure - open 88%			
Intervisibility/ associations with adjacent landscapes	Extensive views across and into the valleys from high ground in the unit. Existing turbines north of Oakdale may be seen from elevated parts to the north of the unit. Distant views of turbines at Newport possible on a clear day. VS22 Attractive views - out 99% VS23 Detractive views - both in and out 88%			
Types of receptors	Scattered residential properties in the unit. Settlement in the valley bottom, particularly Caerphilly.			
Views to / from landscape and cultural heritage features	Views of Caerphilly Castle in unit 2 from the southern part of the unit north of Caerphilly. Rhymney Valley Ridgeway walk follows higher ground through the unit.			

LANDSCAPE UNIT 4: North Caerphilly

AESTHETIC, PERCEPTUAL AND EXPERIENTIAL

Scenic quality and Character	The rural unit is pleasant and attractive with good tree cover. Machen Quarry and Bedwas tips are located at the south eastern end of the unit and are detractors in the rural landscape. VS46 Scenic quality - moderate 98% VS47 Integrity - moderate 94% VS28 Character - moderate 96%			
Remoteness Tranquility	Although surrounded by settlement and well managed for livestock farming the unit is remote in places. VS24 Perceptual and other scenic qualities - settled 88%			

VALUE

		assessed value		
		low	**medium**	**high**
Landscape value	VS50 Overall evaluation - moderate 98% VS49 Rarity - moderate 98% LH42 Connectivity - moderate 85% LH45 Overall evaluation - moderate 59% GL31 Rarity - outstanding 82% GL33 Overall evaluation - outstanding 82%			
Historic value	HL35 Integrity - outstanding 88% HL36 Survival - outstanding 88% HL38 Rarity - moderate 88% HL40 Overall evaluation - outstanding 88%			
Cultural value	CL18: Value - high 100% CL19: Condition - unassessed 100% CL20: Trend - unassessed 100% CL40: Overall evaluation - high 100%			

SUMMARY OF SENSITIVITY TO WIND ENERGY DEVELOPMENT

		assessed sensitivity		
		low	**medium**	**high**
Micro	The landscape has lower sensitivity to smaller scale development that can be linked with existing built form.			
Small				
Medium	Medium scale development is likely to be more visually intrusive in the unit in the open landscape and as a result sensitivity increases.			
Large	Intervisibility with surrounding upland landscapes increases sensitivity.			
Very Large	Very large scale development would be visually prominent in the open rural unit that separates the Rhymney and Sirhowy valleys.			

LANDSCAPE UNIT 4: North Caerphilly	
Additional Comments	The high ground between two valleys is relatively visually prominent but landform, landscape pattern and tree cover help to reduce sensitivity to wind turbine development as the scale of development decreases.

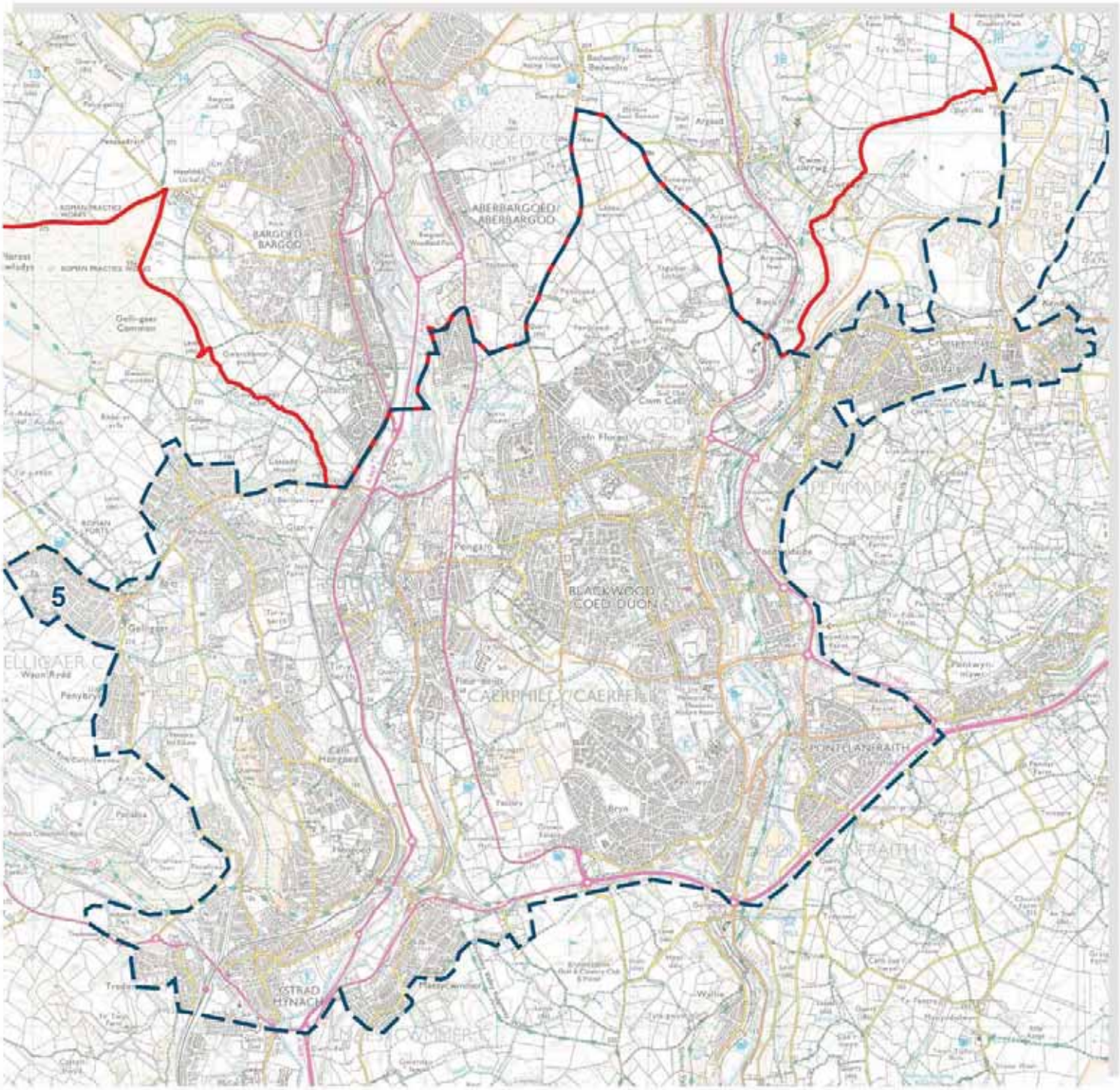
LANDSCAPE UNIT 4: North Caerphilly

LANDSCAPE CAPACITY AND GUIDANCE FOR SITING WIND TURBINES

Landscape objective	**Objective two: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind energy development	**Designated Features within the Landscape Unit:** One SAM The unit is wholly within a designated SLA (NH1.4 North Caerphilly)
	Other Susceptible Landscape, Visual and Cultural Heritage Features: Rhymney Valley Ridgeway Footpath
Baseline wind turbine development (Nov 2014)	No planned or constructed wind turbine development in the unit. Views of the two very large turbines in unit 8 north of Oakdale from the northern section of the unit. Distant views of development in Rhondda Cynon Taf from elevated ground in the unit. A medium turbine consented at Bryn Ysgawen Farm in unit 5 on the west side of Sirhowy Valley near the boundary with this unit and will be visible from elevated areas in the east side of this unit. Two medium turbines in planning at Pen yr Heol Las north of Caerphilly may be visible from higher ground in the unit.
Indicative overall capacity	There is capacity for micro, small and medium scale wind turbine development in the unit. There is limited capacity for large scale development located away from settlement edges that is associated with existing areas of disturbance i.e. disused quarries, tips and landfill in the southern part of the unit. There is no capacity for very large scale development.
Guidance on siting	Section 5 of this document provides generic siting and guidance. In addition the following guidance should apply: Maintain the natural beauty of the SLA in the area and its special qualities. Consider views to and from Caerphilly Castle for development proposals on the slopes overlooking Caerphilly. Avoid the loss of tree and woodland cover and consider planting to mitigate small/micro scale development. Consider views from the Rhymney Valley Ridgeway Footpath through the unit. Protect the setting of the Scheduled Monument in the unit. Consider views across the valleys of the upland landscape in the study area and to the north to the Heads of the Valleys study area. Avoid the loss of woodland and tree cover and consider planting to mitigate small/micro scale development. Ensure new access tracks do not damage or disrupt historic field patterns.

Landscape Unit: 5

Greater Blackwood



LANDSCAPE UNIT 5: Greater Blackwood

		assessed susceptibility		
		low	medium	high
LANDSCAPE				
Scale	Medium scale urban area. VS8 Scale - medium scale 100%			
Landform	Undulating valley sides. VS4 Topographic form - hills/valleys 100%			
Land cover pattern	The unit is largely urban comprising a mix or residential, retail commercial and industrial development. VS class level 3 - urban 90% HL class level 3 -other settlement 70% VS5 Land cover pattern - development 100% VS16 Pattern - regular 100%			
Built Environment	Urban area that has been influenced by the rise and fall of the coal mining industry. VS6 Settlement pattern - urban 90% VS20 Use of construction materials - generally inappropriate VS25 Sense of place - moderate 100%			
VISUAL				
Skylines and settings	The area comprises the built up areas of the Rhymney and Sirhowy Valleys and development on the higher ground between the two valleys. Skylines are not particularly distinctive in the unit. Views of the hillsides to the north are more visually prominent that those to the south.			
Movement	Busy urban landscape. VS18 Level of human access - constant 90%			
Visibility, Key views, vistas.	Unit is enclosed by land form and built form. VS9 Enclosure - enclosed 90%			
Intervisibility/ associations with adjacent landscapes	Limited intervisibility due to landform and built form. VS22 Attractive views - neither in or out 90% VS23 Detractive views - within 90%			
Types of receptors	Local residents and users of the transport corridors along the valleys.			
Views to / from landscape and cultural heritage features	Views out of the unit to Gelligaer Common to the north. Framed views in the unit along the Rhymney and Sirhowy valleys which are 'Green wedges'.			

LANDSCAPE UNIT 5: Greater Blackwood

AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and Character	VS46 Scenic quality - low 90% VS47 Integrity - low 90% VS28 Character - moderate 100%			
Remoteness Tranquility	Urban area is sprawling containing a mix of residential, retail, commercial and industrial development. VS24 Perceptual and other scenic qualities - unattractive 90%			

VALUE				
		assessed value		
		low	medium	high
Landscape value	VS50 Overall evaluation - low 90% VS49 Rarity - low 90% LH42 Connectivity - low 45%, high 30% LH45 Overall evaluation - low 45%, high 33% GL31 Rarity - moderate 85% GL33 Overall evaluation - moderate 85%			
Historic value	HL35 Integrity - high 94% HL36 Survival - moderate 64% HL35 Rarity - moderate 61% HL40 Overall evaluation - high 70%			
Cultural value	CL18: Value - high 98% CL19: Condition - Fair 73% CL20: Trend - improving 83% CL40: Overall evaluation - high 98%			

SUMMARY OF SENSITIVITY TO WIND ENERGY DEVELOPMENT				
		assessed sensitivity		
		low	medium	high
Micro	The enclosed nature of the landscape unit and the opportunity to locate smaller scale development to limit visibility results in lower sensitivity.			
Small				
Medium	Medium scale development would be in keeping with the scale of the unit but would have greater visibility across the unit.			
Large	Large scale wind turbine development would be out of scale with the majority of the unit and the presence of a high number of sensitive receptors increases sensitivity.			
Very Large	Very large scale development would not be in keeping with the scale of the landscape unit.			

LANDSCAPE UNIT 5: Greater Blackwood	
Additional Comments	Sensitivity varies across the unit. Where there is existing large scale industrial development sensitivity is lower and although sensitivity to very large scale development across the unit as a whole is high it is reduced for the area north of Oakdale that is surrounded by unit 8. Conversely this area has higher sensitivity to smaller scale development that would be seen in context with existing very large turbines in unit 8.

LANDSCAPE UNIT 5: Greater Blackwood

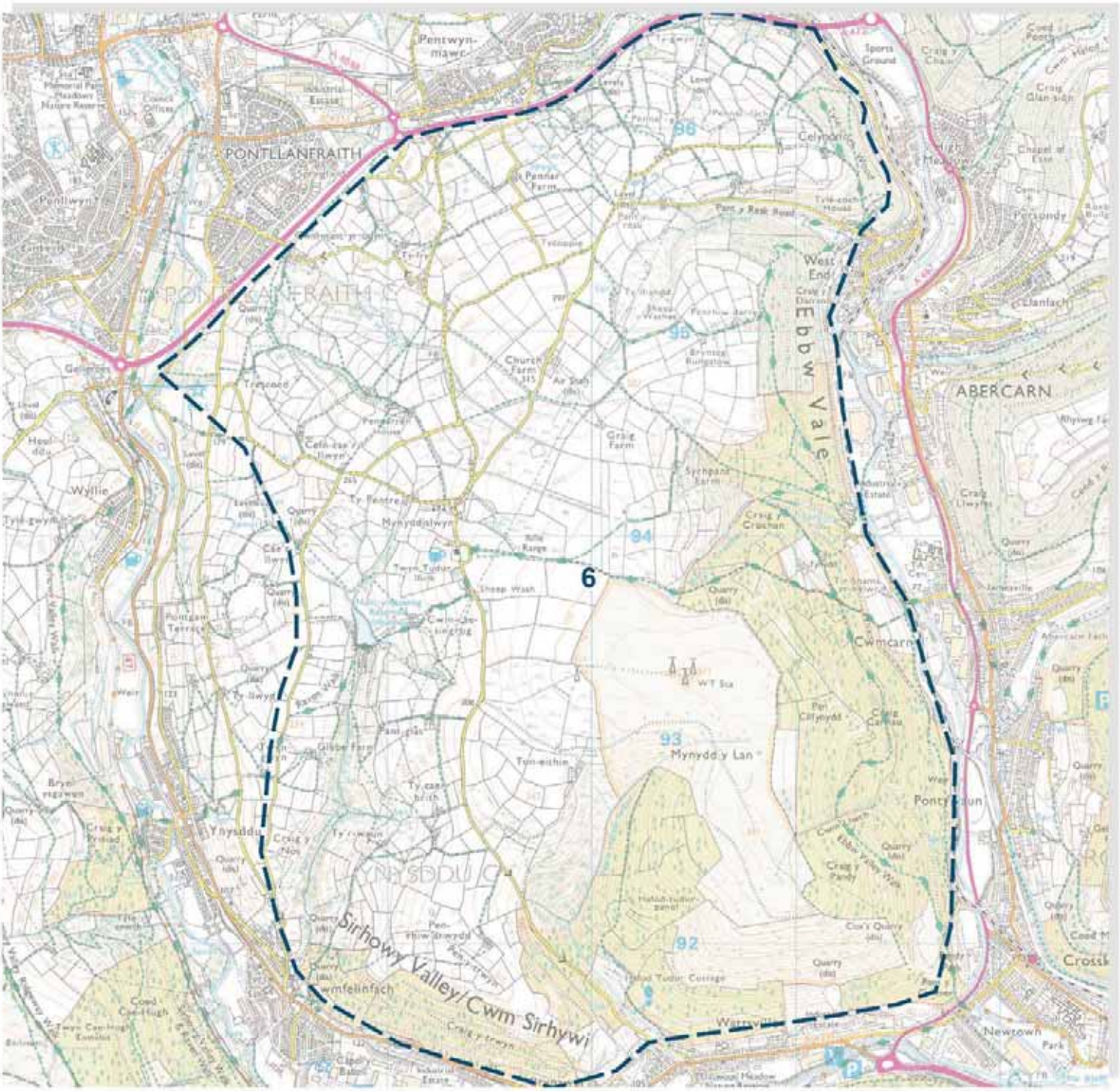
LANDSCAPE CAPACITY AND GUIDANCE FOR SITING WIND TURBINES	
Landscape objective	**Objective two: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind energy development	**Designated Features within the Landscape Unit:** Four conservation areas (Maesycwmmer/Hengoed, Gellihaf Tredomen and Oakdale village). One SAM One registered Historic Park and Garden north of Blackwood (Maes Manor).
	Other Susceptible Landscape, Visual and Cultural Heritage Features: Several green wedges. Sirhowy Valley Walk. Rhymney Valley Ridgeway Footpath
Baseline wind turbine development (Nov 2014)	There is a micro scale turbine at Greenhill Primary school on the eastern edge of Gelligaer which was observed during field survey. A very large turbine at Pen y Fan Industrial estate on the northern edge of the unit north of Oakdale and near to the two very large operational turbines is in planning. No other planned or consented turbine development in the unit. The two very large turbines north of Oakdale can be seen clearly from parts of the unit, particularly from elevated areas. There are views of a large turbine at Penrhiwgwaith Farm on a hill top to the north of Bargoed in the Heads of the Valleys study area. A medium turbine at Pen y Fan Ganol to the north of Oakdale was under construction at the time of the study and may be seen from elevated open parts of this unit. A medium turbine at Gelli-wen is consented (south of the turbine at Penrhiwgwaith Farm) and may be visible from this unit . Potential views of large scale development in Rhondda Cynon Taf from elevated open west facing areas of the unit.
Indicative overall capacity	There is capacity for micro, small and medium scale development in the unit that considers existing built form and maximises opportunities to minimise visibility. Capacity for large scale development is limited to areas where there is space to minimise impact on residential properties. There is no capacity for very large scale development except where it can be associated with existing very large scale development and avoids sensitive residential receptors.

LANDSCAPE UNIT 5: Greater Blackwood

Guidance on siting	Section 5 of this document provides generic siting and guidance. In addition the following guidance should apply: Protect the setting of the Scheduled Monument. Maintain the integrity and setting of Maesycwmmer/Hengoed, Gellihaf, Tredomen and Oakdale Conservation Areas. Protect the setting and views to and from the Registered Historic Park and Garden in the unit (Maes Manor). Consider views from the Rhymney Valley Ridgeway Footpath and Sirhowy Valley Walk through the unit. Consider views from the Sustrans National Cycle Route through the unit. Scale and location of single turbines to respect local landscape pattern and relate to existing built form. Avoid the loss of woodland and tree cover and consider planting to mitigate small/micro scale development. Maintain the role of green wedges in the unit. For proposals close to the boundary with the Heads of the Valleys study area also refer to the Heads of the Valleys Study.

Landscape Unit: 6

Myynddislwyn



LANDSCAPE UNIT 6: Mynyddislwyn

		assessed susceptibility		
		low	medium	high
LANDSCAPE				
Scale	Medium scale landscape overall. VS8 Scale - medium 74%			
Landform	Undulating upland hills and valleys between the Sirhowy and Ebbw valleys. Steep valley sides. VS4 Topographic form - hills/valleys 89%			
Land cover pattern	Diverse rural land cover pattern including open moorland, medium sized fields and forestry. VS class level 3 - hill & lower plateau grazing 53% HL class level 3 - irregular fieldscapes 71% VS5 Land cover pattern - field pattern mosaic 53% VS16 Pattern - organised 88%			
Built Environment	Very little settlement and few roads in the unit. VS6 Settlement pattern - scattered rural/farm 53%, no settlement 45% VS20 Use of construction materials - generally appropriate 88% VS25 Sense of place - moderate 88%			
VISUAL				
Skylines and settings	Skylines comprising rounded hill tops are not particularly distinctive in the unit but provide the setting for the surrounding valleys. Forestry dominates some of the steeper slopes.			
Movement	Rural area that is sparsely populated. VS18 Level of human access - infrequent 72%			
Visibility, Key views, vistas.	Generally open landscape with areas of enclosure associated with valleys and exposure associated with hill tops. VS9 Enclosure - open 53%			
Intervisibility/ associations with adjacent landscapes	A pleasant landscape with extensive views out over the valleys to adjacent upland areas. Forestry dominates views from the upper slopes. Detractors includes masts but are not numerous. VS22 Attractive views - out 100% VS23 Detractive views - out 53%			
Types of receptors	Few residential receptors. Raven Walk, a footpath, crosses the hill from Sirhowy Valley to Ebbw Valley			
Views to / from landscape and cultural heritage features	No known important views. There is a motte at Mynyddislwyn which is a scheduled monument. The church at Mynyddislwyn has views west across the Sirhowy Valley. Raven walk footpath crossed the unit and has views across the unit.			

LANDSCAPE UNIT 6: Mynyddislwyn

AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and Character	Pleasant and attractive rural landscape with few features of particular merit. VS46 Scenic quality - moderate 89% VS47 Integrity - moderate 99% VS28 Character - moderate 88%			
Remoteness Tranquility	Access is limited to minor roads resulting in a relatively remote area despite proximity of settlement. VS24 Perceptual and other scenic qualities - sheltered/remote 36%			

VALUE				
		assessed value		
		low	medium	high
Landscape value	VS50 Overall evaluation - moderate 88% VS49 Rarity - moderate 88% LH42 Connectivity - moderate 100% LH45 Overall evaluation - moderate 54% GL31 Rarity - low 57% GL33 Overall evaluation - moderate 57%			
Historic value	HL35: Integrity - high 98% HL36 Survival - high 72% HL38 Rarity - low 71% HL40 Overall evaluation - moderate 98%			
Cultural value	CL18: Value - high 100% CL19: Condition - unassessed CL20: Trend - unassessed CL40: Overall evaluation - high 100%			

SUMMARY OF SENSITIVITY TO WIND ENERGY DEVELOPMENT				
		assessed sensitivity		
		low	medium	high
Micro	The landscape has lower sensitivity to smaller scale development that can be linked with existing built form.			
Small				
Medium	Medium scale development would have greater visibility in the open landscape however there are few sensitive visual receptors.			
Large	Intervisibility with surrounding upland landscapes increases sensitivity to large scale development that would be out of scale with the unit.			
Very Large	Very large scale development would be visually prominent in the open rural unit that separates the Sirhowy and Ebbw valleys.			
Additional Comments	The sensitivity of the unit varies and is lower for larger scale development on the forested upland.			

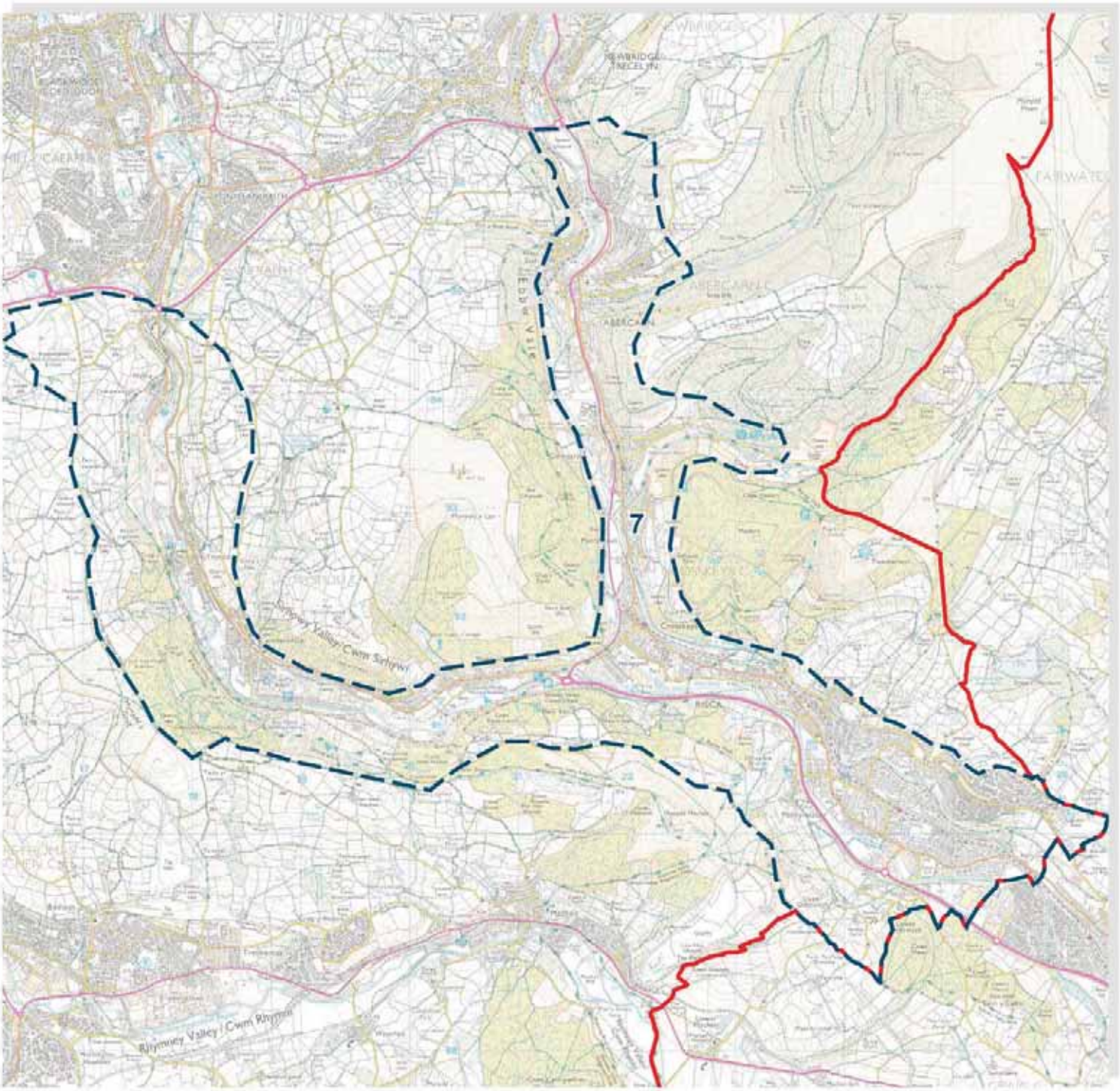
LANDSCAPE UNIT 6: Mynyddislwyn

LANDSCAPE CAPACITY AND GUIDANCE FOR SITING WIND TURBINES

Landscape objective	**Objective two: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind energy development	**Designated Features within the Landscape Unit:** One SAM - a motte at Twyn-Tudur. The majority of the unit is designated SLA (NH1.6 Mynyddislwym)
	Other Susceptible Landscape, Visual and Cultural Heritage Features: Raven Walk footpath. Mynyddislwyn Church
Baseline wind turbine development (Nov 2014)	Two micro scale turbines operational at Ty-Siriol not widely visible. No other known wind turbine development in the unit. Views of two very large scale turbines north of Oakdale from northern slopes of the unit. Views of a large turbine at Penrhiwgwaith Farm on a hill top to the north of Bargoed in the Heads of the Valleys study area. Views of large scale development in Rhondda Cynon Taf from elevated open west facing areas of the unit. A medium turbine at Pen y Fan Ganol to the north of Oakdale was under construction at the time of the study and may be visible from northern slopes of unit 6. Medium turbine consented at Bryn Ysgawen Farm in unit 7 to the west. A medium turbine at Gelli-wen to the north west in the Heads of the Valley study area is consented (south of the turbine at Penrhiwgwaith Farm) and may be visible.
Indicative overall capacity	There is capacity for micro and small scale development located to minimise visual envelope and respect existing landscape pattern. Existing micro scale development in the unit is not widely visible. There is also some capacity for medium scale development in this unit. There is limited capacity for large scale development restricted to the upland forested areas in the unit. There is no capacity for very large scale development.
Guidance on siting	Section 5 of this document provides generic siting and guidance. In addition the following guidance should apply: Maintain the natural beauty of the SLA in the area and its special qualities. Protect the site and setting of the Scheduled Monument. Consider views from Raven Walk footpath. Consider views from the settled valleys of Sirhowy and Ebbw and from high ground across the valleys. Avoid the loss of woodland and tree cover and consider planting to mitigate small/micro scale development. Ensure new access tracks do not damage or disrupt historic field patterns.

Landscape Unit: 7

Risca (Sirhowy and Ebbw Valleys)



LANDSCAPE UNIT 7: Risca (Sirhowy and Ebbw Valleys)

		assessed susceptibility		
		low	medium	high
LANDSCAPE				
Scale	Medium scale valley landscape VS8 Scale - medium 94%			
Landform	Valley landscape with steep valley sides. VS4 Topographic form - hills/valleys 100%			
Land cover pattern	Varies from the urban valley bottom to the wooded valley sides with areas of grazed grass fields. VS class level 3 - urban 47%, wooded hillsides & scarp slopes 31% HL class level 3 - other settlement 50%, marginal land 37% VS5 Land cover pattern - development 47%, mixture 36% VS16 Pattern - regular 63%			
Built Environment	Built development is influenced by the valley topography and follows contours. VS6 Settlement pattern - urban 47%, scattered rural/farm 42% VS20 Use of construction materials - generally appropriate 53% VS25 Sense of place - moderate 53%, weak 47%			
VISUAL				
Skylines and settings	Views are channelled up and down the valleys and skylines are not particularly distinctive above the steep valley sides.			
Movement	Busy in the valley bottom with major transport routes. Sirhowy valley quieter than the Ebbw valley. VS18 Level of human access - constant 47%, infrequent 42%			
Visibility, Key views, vistas.	The valley landscape is enclosed by landform and also woodland cover and built form. VS9 Enclosure - enclosed 88%			
Intervisibility/ associations with adjacent landscapes	The development within the valley contrasts with the rural valley sides. VS22 Attractive views - out 90% VS23 Detractive views - out 46% within 47%			
Types of receptors	Residential properties in the valley landscape. Transport routes through the valley landscape (road and rail. A Sustrans National Cycle Route follows the Sirhowy valley through this unit.) Sirhowy Valley Walk and Raven Walk footpath users.			

LANDSCAPE UNIT 7: Risca (Sirhowy and Ebbw Valleys)				
Views to / from landscape and cultural heritage features	Views are channelled up and down the valleys and views out of the valleys are restricted. Where the unit extends up the valley sides forestry cover dominates particularly at Crosskeys. Cwmcarn forest provides a range of informal recreation activities in an area where coal mining was the major industry until the late 20th century.			

LANDSCAPE UNIT 7: Risca (Sirhowy and Ebbw Valleys)

AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and Character	The enclosed valley landscape is well wooded and development is largely restricted to the narrow valley bottom. VS46 Scenic quality - moderate 100% VS47 Integrity - moderate 53% VS48 Character - moderate 53%			
Remoteness Tranquility	Valley floor is busy in contrast to the quieter steep valley sides. VS24 Perceptual and other scenic qualities - sheltered 47%, exposed 30%			

VALUE		assessed value		
		low	medium	high
Landscape value	VS50 Overall evaluation - moderate 53% VS49 Rarity - low 47%, moderate 43% LH42 Connectivity - moderate 72% LH45 Overall evaluation (Landscape Habitats) - moderate 57% GL31 Rarity - low 50%, moderate 41% GL33 Overall evaluation (Geological) - moderate 50%, high 41%			
Historic value	HL35: Integrity - outstanding 71% HL36 Survival - high 42%, outstanding 35% HL38 Rarity - moderate 90% HL40 Overall evaluation - high 50%, outstanding 35%			
Cultural value	CL18: Value - high 100% CL19: Condition - fair 49% CL20: Trend - improving 49% CL40: Overall evaluation - high 100%			

SUMMARY OF SENSITIVITY TO WIND ENERGY DEVELOPMENT		assessed sensitivity		
		low	medium	high
Micro	The valley landscape has lower sensitivity to small and micro scale development that can be located to minimise visual intrusion and to relate to existing development.			
Small				
Medium	Medium scale development may impact upon the scale of the valley and the setting of development in the valley bottom.			
Large	Large and very large scale development would be out of scale with the surrounding landscape and townscape.			
Very Large				

LANDSCAPE UNIT 7: Risca (Sirhowy and Ebbw Valleys)	
Additional Comments	The narrow valley landscape has greater sensitivity to large and very large scale development that would be out of scale with the valley landscape and its built form and that would encroach on the rural setting of the settlement.

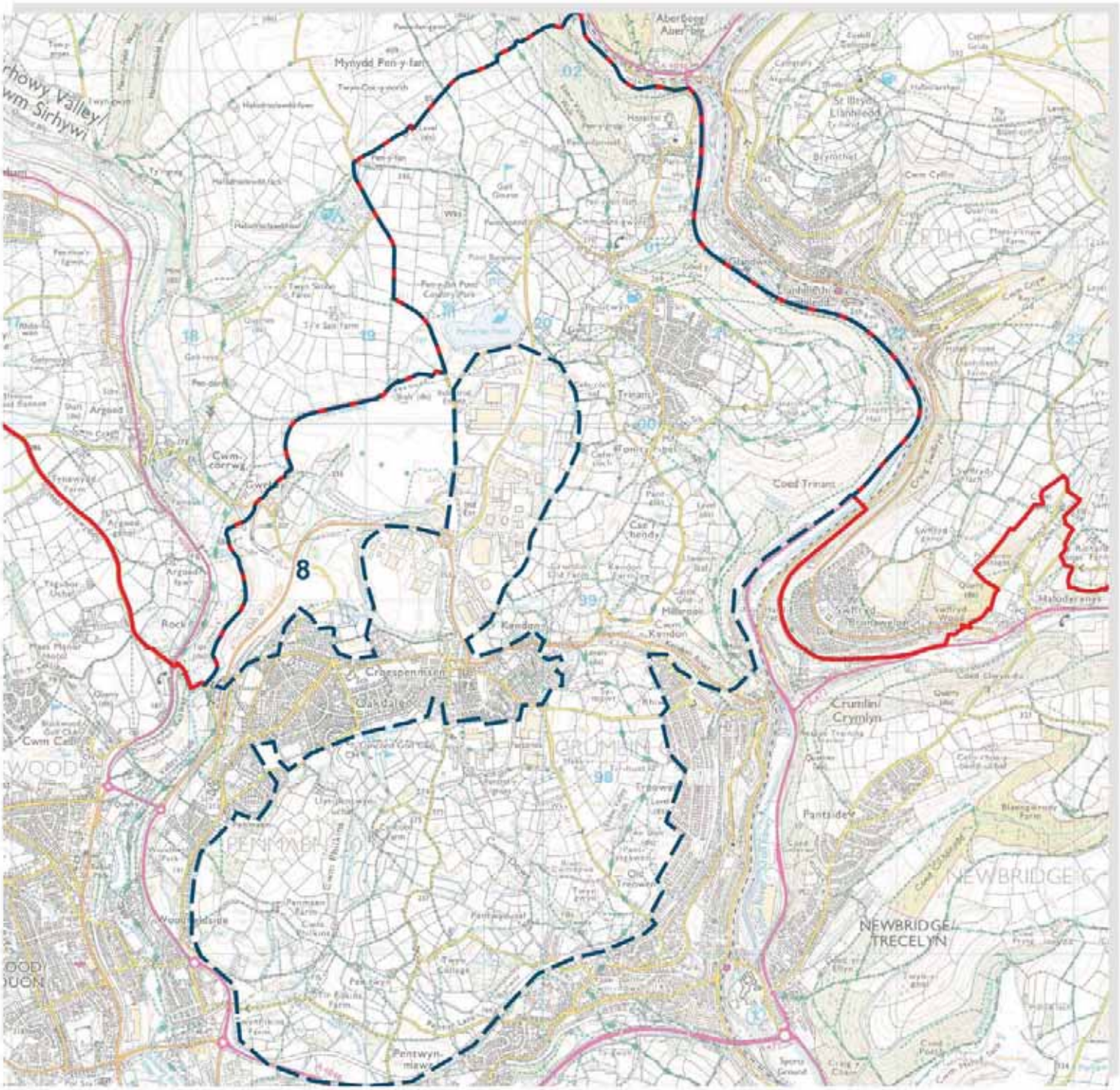
LANDSCAPE UNIT 7: Risca (Sirhowy and Ebbw Valleys)

LANDSCAPE CAPACITY AND GUIDANCE FOR SITING WIND TURBINES

Landscape objective	**Objective two: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind energy development	**Designated Features within the Landscape Unit:** Two conservation areas (Pontywaun Garden suburbs and Cwmcarn Memorial Park).
	Other Susceptible Landscape, Visual and Cultural Heritage Features: Three green wedges in the Ebbw valley, one green wedge in the Sirhowy valley. Sustrans National Cycle Route in the Sirhowy and Ebbw valleys. Sirhowy Country Park Cwmcarn Forest (informal recreation)
Baseline wind turbine development (Nov 2014)	One medium turbine consented at Bryn Ysgawen Farm on the west side of the Sirhowy valley. No other known proposals for wind energy development in this unit and views of development outside the unit are restricted due to the valley landform.
Indicative overall capacity	There is capacity for micro and small scale development that is located to relate to local built form and minimise visibility. There is limited capacity for medium scale development due to the proximity of residential receptors in the unit. There is no capacity for large and very large scale development that would be out of scale with the landform and existing built form.
Guidance on siting	Section 5 of this document provides generic siting and guidance. In addition the following guidance should apply: Maintain the integrity and setting of Pontywaun Garden suburbs and Cwmcarn Memorial Park Conservation Areas. Consider views from residential properties in the valley landscape. Consider views from Sirhowy Valley Walk and Raven Walk footpaths and from the Sustrans National Cycle Routes in the unit. Maintain the characteristics of the country parks and other recreation sites. Consider views to and from them. Avoid the loss of woodland and tree cover and consider planting to mitigate small/micro scale development. Maintain the role of green wedges in the unit.

Landscape Unit: 8

Pen y fan and land west of Newbridge



LANDSCAPE UNIT 8: Pen y fan and land west of Newbridge

		assessed susceptibility		
		low	medium	high
LANDSCAPE				
Scale	Medium scale rural landscape, VS8 Scale - medium 100%			
Landform	High ground above the developed Sirhowy and Ebbw valleys VS4 Topographic form - hills/valleys 100%			
Land cover pattern	Relatively small area sandwiched between Blackwood and Newbridge comprising rural fieldscape that separates the two settlements. VS class level 3 - hillside & scarp slopes mosaic 97% HL class level 3 - other fieldscapes 49%, irregular fieldscapes 33% VS5 Land cover pattern - field pattern/mosaic 100% VS16 Pattern - regular 97%			
Built Environment	Diverse rural landscape that provides separation between settlements. VS6 Settlement pattern - clustered 97% VS20 Use of construction materials - generally appropriate 100% VS25 Sense of place - moderate			
VISUAL				
Skylines and settings	Skylines are not particularly distinctive but the landscape in this unit separates Blackwood and Oakdale from Newbridge and contributes to the setting of these settlements.			
Movement	Although close to settlement access is via a limited narrow road network and a result the area is relatively quiet. VS18 Level of human access - infrequent 97%			
Visibility, Key views, vistas.	Upland area is open but not exposed with good tree cover, particularly in the southern part of the unit on field boundaries, which contains views and reduces exposure. VS9 Enclosure - open 97%			
Intervisibility/ associations with adjacent landscapes	Views within the unit are limited by intervening vegetation. Views out of the unit are over urban areas and north to the Heads of the Valleys study area. VS22 Attractive views - out 97% VS23 Detractive views - out 100%			
Types of receptors	Residents in neighbouring units. Few residents within the unit. Trinant is the main settlement			

LANDSCAPE UNIT 8: Pen y fan and land west of Newbridge				
Views to / from landscape and cultural heritage features	Pen y fan canal reservoir SAM and Country Park in the northern part of the unit. Ebbw Valley Walk			

LANDSCAPE UNIT 8: Pen y fan and land west of Newbridge

AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and Character	VS46 Scenic quality - moderate 100% VS47 Integrity - moderate 100% VS48 Character -moderate 100%			
Remoteness Tranquility	Although this area is difficult to access it is relatively small in area and surrounded by development. Therefore it is not particularly remote but there are areas of tranquility. VS24 Perceptual and other scenic qualities - other 97%			

VALUE				
		assessed value		
		low	medium	high
Landscape value	VS50 Overall evaluation - moderate 100% VS49 Rarity - moderate 100% LH42 Connectivity - moderate 65% LH45 Overall evaluation (Landscape Habitats) - moderate 65% GL31 Rarity - low 86% GL33 Overall evaluation (Geological) - moderate 86%			
Historic value	HL35: Integrity - high 93% HL36 Survival - moderate 93% HL38 Rarity - low 49% HL40 Overall evaluation - moderate 49%			
Cultural value	CL18: Value - high 100% CL19: Condition - fair 55% CL20: Trend - improving 55% CL40: Overall evaluation - high 100%			

SUMMARY OF SENSITIVITY TO WIND ENERGY DEVELOPMENT				
		assessed sensitivity		
		low	medium	high
Micro	The unit has low sensitivity to micro scale development which can be located to minimise effects on views and landscape character.			
Small	The northern part of the unit is sensitive to small scale development that would be out of scale with the existing wind energy development in the unit.			
Medium	Medium scale development would be in scale with the scale of the landscape but the proximity of residential receptors and the presence of two existing large scale turbines increases sensitivity.			
Large	The southern part of the unit south of Trinant and Oakdale has greater sensitivity to larger scale development as a result of the medium scale of the landscape and the intricate field pattern that is largely			

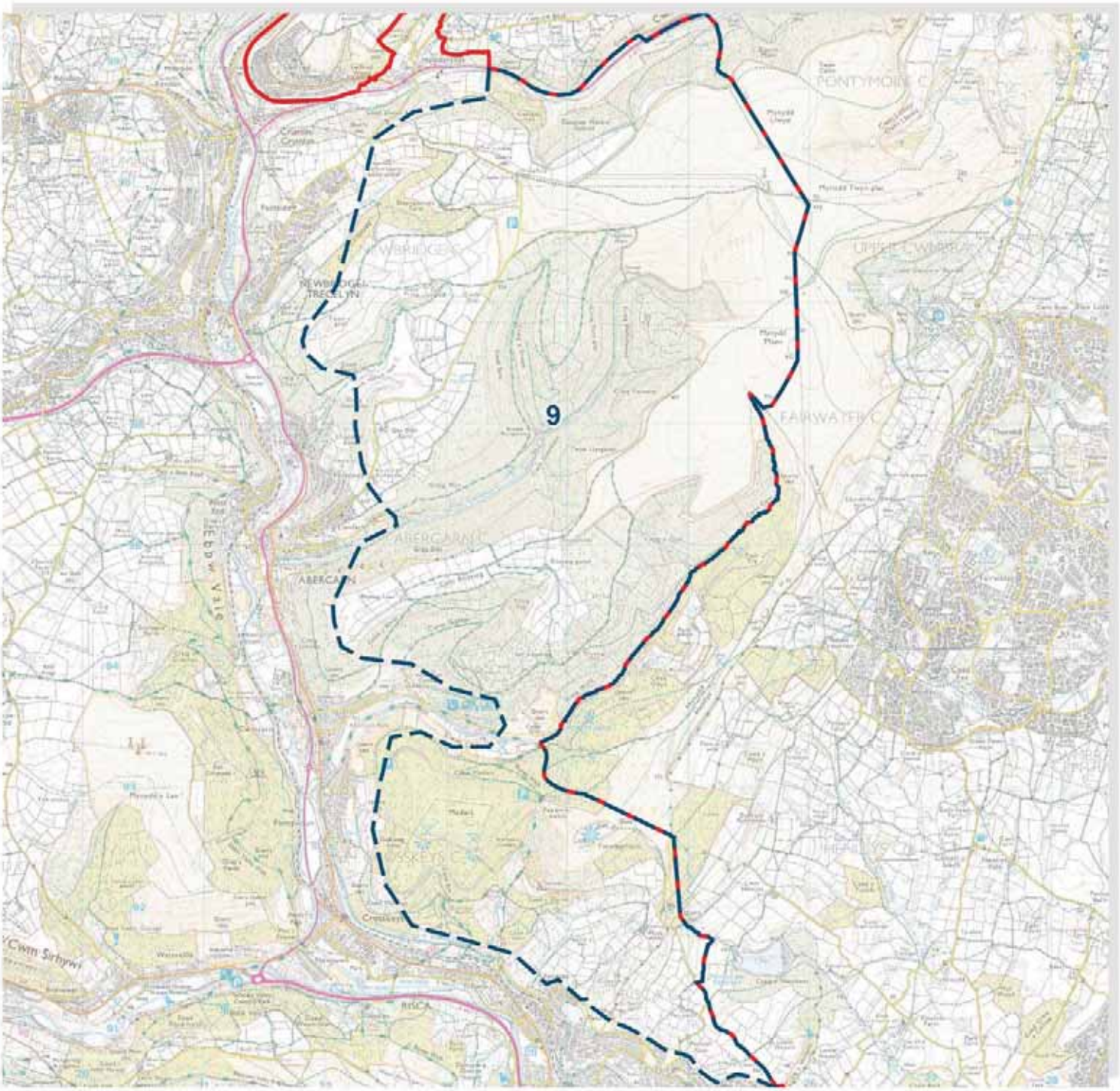
LANDSCAPE UNIT 8: Pen y fan and land west of Newbridge				
Very Large	intact.			
Additional Comments	The northern part of the unit around Oakdale already contains 2 very large scale turbines and sensitivity is considered to be lower to large and very large scale development in this area and higher to smaller scale development that would contrast visually with the scale of existing development.			

LANDSCAPE UNIT 8: Pen y fan and land west of Newbridge

LANDSCAPE CAPACITY AND GUIDANCE FOR SITING WIND TURBINES	
Landscape objective	**Objective two: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind energy development	**Designated Features within the Landscape Unit:** One SAM (Pen y fan canal reservoir)
	Other Susceptible Landscape, Visual and Cultural Heritage Features: Green wedge east of Oakdale. Ebbw Valley Walk.
Baseline wind turbine development (Nov 2014)	The unit contains the two very large turbines north of Oakdale. No other development in the unit although one withdrawn application for a turbine on the north edge of the unit (and the study area) at land north east of Pen-y-fan Farm. Views from elevated areas of a large turbine at Penrhiwgwaith Farm on a hill top to the north of Bargoed in the Heads of the Valleys study area. A very large turbine in planning at Pen y Fan Industrial estate in unit 5, near to the two operational turbines north of Oakdale, would be visible. A medium turbine at Pen y Fan Ganol to the north of Oakdale, just outside the unit was under construction at the time of the study and will be visible. A medium turbine at Gelli-wen is consented (south of the turbine at Penrhiwgwaith Farm) and is likely to to be visible from this unit.
Indicative overall capacity	The presence of two existing very large scale turbines in the northern part of the unit lowers capacity for other scales of development in this area. Micro and small scale development may be accommodated the unit away from existing very large scale development. There is limited capacity for large scale development in the southern part of the unit due to the proximity of settlement. The scale of larger development would be at odds with the scale of the landscape.
Guidance on siting	Section 5 of this document provides generic siting and guidance. In addition the following guidance should apply: Protect the site and setting of the Scheduled Monument and country park. Consider views from the surrounding urban areas of Blackwood, Oakdale and Newbridge. Consider views from the Ebbw Valley Walk. Avoid the loss of woodland and tree cover and consider planting to mitigate small/micro scale development. Ensure new access tracks do not damage or disrupt historic field patterns. Maintain the role of green wedges in the unit. For proposals close to the boundary with the Heads of the Valleys study area also refer to the Heads of the Valleys Study.

Landscape Unit: 9

Mynydd maen



LANDSCAPE UNIT 9: Mynydd Maen

		assessed susceptibility		
		low	medium	high
LANDSCAPE				
Scale	Medium scale VS8 Scale - medium 100%			
Landform	Hills to the east of the Ebbw Valley including steep upper valley slopes. VS4 Topographic form - hills/valleys 100%			
Land cover pattern	Mixed land use comprising grass fields, forestry and open upland. VS class level 3 - mosaic upland & plateau 100% HL class level 3 - marginal land 57% VS5 Land cover pattern - field pattern/mosaic 100% VS16 Pattern - regular 100%			
Built Environment	Very little built form in this unit. VS6 Settlement pattern -no settlements 100% VS20 Use of construction materials - generally appropriate 66%, appropriate 34% VS25 Sense of place - moderate 100%			
VISUAL				
Skylines and settings	Hill fort and Motte at Twmbarlwn are distinctive skyline features near the eastern boundary of the study area. Elsewhere the skyline is not particularly distinctive and forestry dominates skyline views.			
Movement	There are few roads across the unit which has very little development. As a result there is little movement. VS18 Level of human access - occasional 100%			
Visibility, Key views, vistas.	Woodland and landform result in a feeling of enclosure across the unit. However there are open locations on hill tops above the forestry. VS9 Enclosure - enclosed 100%			
Intervisibility/ associations with adjacent landscapes	There are views out of the unit across adjacent wooded valleys from open upland ridges. Pylons and communications masts are present in the northern part of the unit. VS22 Attractive views - both in and out 100% VS23 Detractive views - out 100%			
Types of receptors	There are few residential receptors within the unit. Visitors to Cwmcarn Forest have views within the unit. Potential receptors in adjacent valleys but landform restricts extensive views for the most part.			

LANDSCAPE UNIT 9: Mynydd Maen				
Views to / from landscape and cultural heritage features	Views from Twmbarlwm SAM and view point (elevation 419m) are panoramic and mapped on OS maps. Cwncarn Forest Scenic Drive has view points (south facing) along the way (also mapped on OS) and is the site of a former Colliery.			

LANDSCAPE UNIT 9: Mynydd Maen

AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and Character	Pylons and communications masts are detractors in the upland landscape that comprises open moorland with forestry and grazed fields on valley sides. VS46 Scenic quality - moderate 100% VS47 Integrity - moderate 100% VS48 Character - moderate 100%			
Remoteness Tranquility	The unit is relatively remote upland that includes steep upper valley slopes with limited access on single track roads. VS24 Perceptual and other scenic qualities - sheltered; other 66%, tranquil 34%			

VALUE		assessed value		
		low	medium	high
Landscape value	VS50 Overall evaluation - moderate 100% VS49 Rarity - high 66% LH42 Connectivity - moderate 77% LH45 Overall evaluation - moderate 50% GL31 Rarity - moderate 60% GL33 Overall evaluation - high 60%			
Historic value	HL35: Integrity - moderate 57% HL36 Survival - moderate 74% HL38 Rarity - low 78% HL40 Overall evaluation - moderate 75%			
Cultural value	CL18: Value - high 100% CL19: Condition - unassessed CL20: Trend - unassessed CL40: Overall evaluation - high 100%			

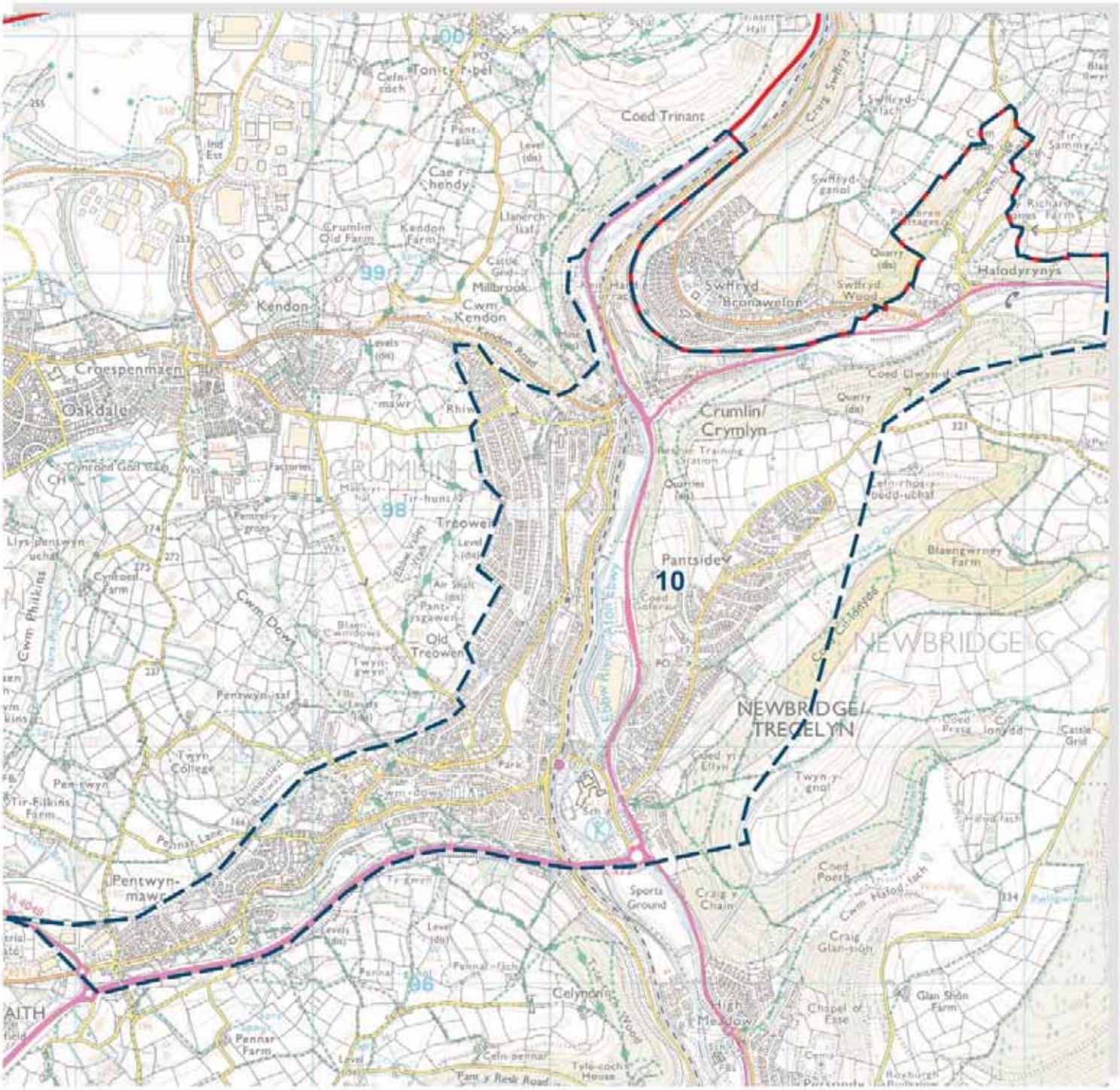
SUMMARY OF SENSITIVITY TO WIND ENERGY DEVELOPMENT		assessed sensitivity		
		low	medium	high
Micro	The upland landscape is relatively enclosed by varied landform and forestry cover that would contribute to limiting the visibility of smaller and medium turbines. Forestry tracks are already a feature in the landscape.			
Small				
Medium				
Large	Larger turbines would potentially have greater impact on views from Cwmbran (to the east outside the study area) and the Ebbw valley as well as from upland to the north in the Heads of the Valleys study area.			
Very Large				
Additional Comments	The southern part of this unit has higher sensitivity as it contains Cwmcarn Forest which is an area popular for informal recreation and there are views of the upland from lower lying areas and the developed valleys to the south.			

LANDSCAPE UNIT 9: Mynydd Maen

LANDSCAPE CAPACITY AND GUIDANCE FOR SITING WIND TURBINES	
Landscape objective	**Objective two: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind energy development	**Designated Features within the Landscape Unit:** One SAM (Iron Age hill fort of Twmbarlwm) in Cwmcarn Forest.
	Other Susceptible Landscape, Visual and Cultural Heritage Features: Cwmcarn Forest provides a variety of recreation activities including a scenic drive, mountain biking, walking and camping. The unit is in a designated VILL (NH2.3 Abercarn)
Baseline wind turbine development (Nov 2014)	There are currently no known development constructed or proposed for the unit. There are views from elevated parts of the unit to the north of the two very large turbines north of Oakdale in Unit 8. Views of a large turbine at Penrhiwgwaith Farm on a hill top to the north of Bargoed in the Heads of the Valleys study area. A medium turbine at Pen y Fan Ganol to the north of Oakdale was under construction at the time of the study and is likely to be visible from northern areas of this unit. A medium turbine at Gelli-wen is consented (south of the turbine at Penrhiwgwaith Farm) and may be visible from this unit. A very large turbine in planning at Pen y Fan Industrial estate near to the two operational turbines north of Oakdale would be visible.
Indicative overall capacity	There is capacity for micro, small and medium scale development that is located to minimise visibility and respect local landscape character. There is some capacity for large scale development where the scale of the landscape is larger and visual receptors are distant. There is no capacity for very large scale development in the medium scale landscape without detrimental effects on landscape character.
Guidance on siting	Section 5 of this document provides generic siting and guidance. In addition the following guidance should apply: Protect the site and setting of the Scheduled Monument and Cwmcarn Forest. Consider views from Twmbarlwm viewpoint at the SAM. Maintain the qualities of the VILL. Consider views from the Cwmcarn Forest Scenic Drive. Consider views from Raven Walk and footpaths in the Cwmbarn forest. Avoid the loss of woodland and tree cover and consider planting to mitigate small/micro scale development. Ensure new access tracks do not damage or disrupt historic field patterns.

Landscape Unit: 10

Greater Newbridge



LANDSCAPE UNIT 10: Greater Newbridge

		assessed susceptibility		
		low	medium	high
LANDSCAPE				
Scale	Medium scale developed valley landscape. VS8 Scale - medium 100%			
Landform	Ebbw Valley VS4 Topographic form - hills/valleys 100%			
Land cover pattern	Largely urban development in the valley bottom with irregular fieldscape that comprises grazed fields with some woodland/forestry cover on the valley sides. VS class level 3 - urban 70% HL class level 3 - other settlement 62% VS5 Land cover pattern - development 70% VS16 Pattern - regular 100%			
Built Environment	Built development is influenced by the valley topography and follows contours. VS6 Settlement pattern - urban 70% VS20 Use of construction materials - generally inappropriate 70% VS25 Sense of place - moderate 100%			
VISUAL				
Skylines and settings	Valley landscape with steep sided valleys and no distinctive skyline features.			
Movement	This is a largely urban unit with road corridors along the valley bottom. VS18 Level of human access - constant			
Visibility, Key views, vistas.	Valley landform, built form and tree cover restricts views that are channelled up and down the valley. VS9 Enclosure - enclosed 100%			
Intervisibility/ associations with adjacent landscapes	The urban unit is not attractive and the are a number of detractors. VS22 Attractive views - neither in or out 70% VS23 Detractive views - within 70%			
Types of receptors	Residential properties and road users throughout.			
Views to / from landscape and cultural heritage features	Views out of the unit are restricted due to the valley landform and built form.			

LANDSCAPE UNIT 10: Greater Newbridge

AESTHETIC, PERCEPTUAL AND EXPERIENTIAL

Scenic quality and Character	This urban area is not particularly attractive overall. VS46 Scenic quality - low 70% VS47 Integrity - low 70% VS48 Character - moderate 100%			
Remoteness Tranquility	Busy urban landscape with major road corridor in valley bottom VS24 Perceptual and other scenic qualities - unattractive 70%			

VALUE

		assessed value		
		low	**medium**	**high**
Landscape value	VS50 Overall evaluation - low 70% VS49 Rarity - low 70% LH42 Connectivity - low 46% LH45 Overall evaluation - low 46% GL31 Rarity - moderate 90% GL33 Overall evaluation - high 90%			
Historic value	HL35: Integrity - high 40%, outstanding 60% HL36 Survival - high 60%, moderate 40% HL38 Rarity - moderate 62% HL40 Overall evaluation - high 62%			
Cultural value	CL18: Value - high 98% CL19: Condition - fair 56% CL20: Trend - improving 58% CL40: Overall evaluation - high 98% The area has strong associations with its industrial past.			

SUMMARY OF SENSITIVITY TO WIND ENERGY DEVELOPMENT

		assessed sensitivity		
		low	**medium**	**high**
Micro	Existing development in the unit results in lower sensitivity for the smaller scale wind energy proposals.			
Small				
Medium	The presence of a large number of sensitive visual receptors results in higher sensitivity for medium scale development.			
Large	Large and very large scale development would be out of scale with existing development in the medium scale valley landscape.			
Very Large				
Additional Comments	The narrow valley landscape has greater sensitivity to larger scale development that would be out of scale with the valley landscape and its built form and that would encroach onto the rural setting of the settlement.			

LANDSCAPE UNIT 10: Greater Newbridge

LANDSCAPE CAPACITY AND GUIDANCE FOR SITING WIND TURBINES	
Landscape objective	**Objective two: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind energy development	**Designated Features within the Landscape Unit:** Newbridge Conservation Area.
	Other Susceptible Landscape, Visual and Cultural Heritage Features: none known
Baseline wind turbine development (Nov 2014)	No wind turbines consented or planned at this time. Views of the two large turbines north of Oakdale not possible due to landform.
Indicative overall capacity	There is capacity for micro, small and medium scale development in the unit that respects existing built form and maximises opportunities to minimise visibility. There is no capacity for large and very large scale development due to the proximity of residential properties, valley landform and medium scale of the landscape.
Guidance on siting	Section 5 of this document provides generic siting and guidance. In addition the following guidance should apply: Maintain the integrity and setting of Newbridge Conservation Area. Consider views from residential properties in the unit. Scale and location of single turbines to respect local landscape pattern and relate to existing built form. Avoid the loss of woodland and tree cover and consider planting to mitigate small/micro scale development. For proposals close to the boundary with the Heads of the Valleys study area also refer to the Heads of the Valleys Study.

Landscape Unit: 12

Merthyr Tydfil east valley side

LANDSCAPE UNIT 12: Merthyr Tydfil east valley side

		Assessed susceptibility		
		Low	Medium	High
LANDSCAPE				
Scale	Large scale landscape VS8 scale: large 97%			
Landform	Large scale disturbance and man made landform associated with a large scale coal recovery scheme (Ffos y Fran) apparent. VS4 Topographic - disturbed 33%, plateau 15%			
Land cover pattern	Mix of land cover dominated by man made land form of the coal recovery scheme to the north of the unit. Away from this area pattern is more traditionally rural with marginal land, fieldscapes and woodland. VS class level 3 - Derelict/waste ground 48% HL class level 3 - extractive 12%, nucleated settlement 25% VS5 Land cover pattern - open land 54%, development 18% VS16 Pattern - organised 78%			
Built environment	Despite obvious industrial activity in the area there is little built form. VS6 Settlement pattern - no settlement/scattered rural/farm 97% VS20 Use of Construction Materials - generally inappropriate 54% VS25 Sense of Place - moderate 48%			
VISUAL				
Skylines and settings	Man made landform of the coal recovery scheme dominates skyline when viewed from the north. The unit provides the landscape setting for the east side of Merthyr Tydfil and despite the man made nature of landform to the north the southern end of the unit provides a rural back drop to the setting of the town.			
Movement	Adjacent to Merthyr Tydfil much of the area is accessible VS18 Level of Human access - frequent 60%			
Visibility, key views, vistas.	Not a lot of tree cover or built form and extensive views from the valley sides in places. VS9 Enclosure - exposed/open 69%			
Intervisibility, associations with adjacent landscapes	There are views to the surrounding landscape. Detractive views appear to dominate. VS22 there are attractive views - 54% out of the unit. VS23 there are detractive views - 81% both in and out.			
Types of receptors	Few receptors although Merthyr Tydfil to the west contain numerous and varied visual receptors.			
Views to / from landscape and cultural heritage features	Views to and from the BBNP. Landform within the unit already changed considerably due to coal recovery scheme and will continue for several years before restoration complete.			

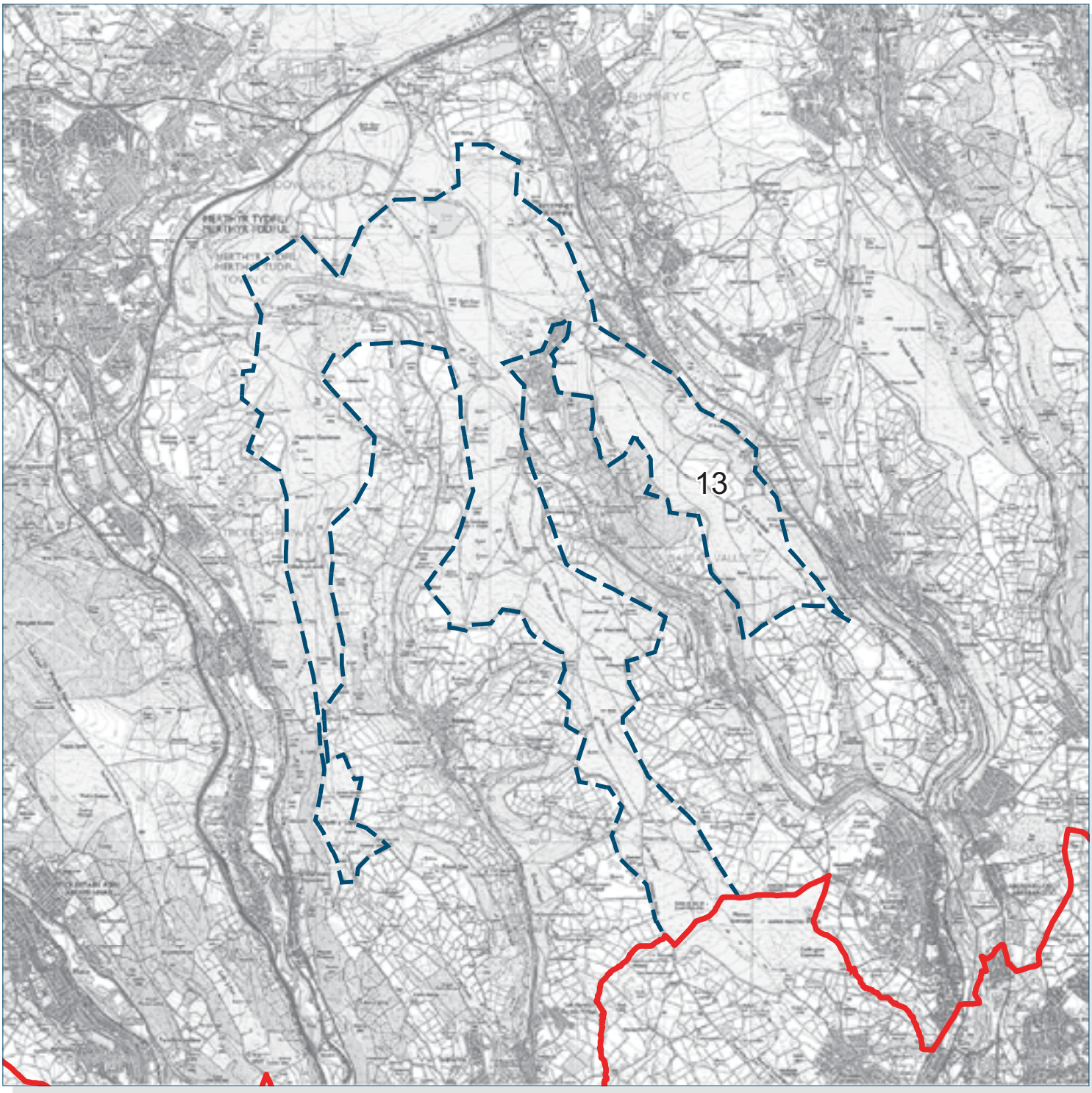
LANDSCAPE UNIT 12: Merthyr Tydfil east valley side				
		Assessed susceptibility		
		Low	Medium	High
AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and character	VS46 Scenic quality - low 54% VS47 Integrity - low 99% VS48 Character - low 63%			
Remoteness and tranquillity	Area very influenced by mans activity and generally accessible. VS24 Perceptual and other sensory qualities - noisy/unattractive/exposed/settled 80%			
VALUE				
		Assessed susceptibility		
		Low	Medium	High
Landscape value	Merthyr Tydfil Landscape of Historic Interest VS50 - overall evaluation - low 81% VS49 rarity - Low 63% LH overall evaluation - high 82% GL31 rarity - low 70% GL33 overall evaluation - moderate 72%			
Historic value	2 SAMs HL38 Rarity - high and outstanding 74% HL35 Integrity - high and outstanding 62% HL40 Overall evaluation - high and outstanding 62%			
SUMMARY OF SENSITIVITY TO WIND TURBINE DEVELOPMENT				
		Assessed value		
		Low	Medium	High
Micro	The disturbed landscape has low sensitivity to micro, small or medium development.			
Small				
Medium				
Large	The proximity of Merthyr Tydfil and the size of this unit results in medium-high sensitivity to large development.			
Very Large	The proximity of Merthyr Tydfil and the size of this unit results in high sensitivity to very large development.			
Additional Comments	A large part of the area is included a coal recovery scheme with large scale earthworks and is less sensitive to wind energy development. However, large or very large development close to the urban edge is unlikely to be easily accommodated.			

LANDSCAPE UNIT 12: Merthyr Tydfil east valley side

Landscape Capacity and Guidance for siting wind turbines	
Landscape objective	**Objective 2: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind turbine	**Designated features within the Landscape Unit:** Merthyr Tydfil Landscape of Historic Interest covers the majority of the unit. 2 SAMs (deserted mining village)
	Other susceptible landscape, visual and cultural heritage features: Hillside to the north has extensive earthworks (coal recovery scheme) and is intervisible with the BBNP. Southern extent of this unit is less open and maintains some field boundaries among historic open cast workings.
Baseline wind turbine development (March 2014)	No wind turbine development constructed or in planning. View of existing medium scale turbine in unit 10.
Indicative overall capacity	There is no capacity for very large scale development that would be viewed from the BBNP and Merthyr Tydfil and would be out of scale with the built form in neighbouring Merthyr Tydfil There is some capacity for large scale development located to avoid impacts on residential receptors and the setting of Merthyr Tydfil. There is capacity for carefully sited medium, small and micro scale development in this man
Guidance on siting	Section five of this document provides generic siting and guidance. In addition the following guidance should apply: Maintain the integrity of Merthyr Tydfil Landscape of Historic Interest. Protect the settings of designated and other important cultural heritage features and the key views to and from these features. Consider views from the BBNP and Merthyr Tydfil. Maintain field patterns that remain to the south of the unit. Consider tree planting in association with small scale and micro development on the lower slopes of the unit. Where possible turbine proposals should be located in areas that have been disturbed as a result of recent industrial activity (coal recovery scheme). These areas currently have lower scenic value and are in disturbed landscapes of lower sensitivity. Possible opportunity for wind energy development of appropriate scale to be incorporated into restoration proposals. Consider potential sequential cumulative impact from the A4060 in combination with sequential views from the A470 in unit 11 to the south.

Landscape Unit: 13

Upland moorland between Taff and Rhymney valleys



LANDSCAPE UNIT 13: Upland moorland between Taff and Rhymney Valleys

		Assessed susceptibility		
		Low	Medium	High
LANDSCAPE				
Scale	Large scale landscape VS8 scale: large 91%			
Landform	Upland gently undulating broad ridges between valleys. VS4 Topographic - High hills/mountains 74%			
Land cover pattern	Upland grazing and moorland dominates. VS class level 3 - upland grazing 55%, Moorland 38% HL class level 3 - irregular fields 45%, Marginal land 27% VS5 Land cover pattern - open land 93% VS16 Pattern - random 63%, regular 33%			
Built environment	Very little built development in the areas VS6 Settlement pattern - no settlements 79% VS20 Use of Construction Materials - appropriate and generally appropriate 50% VS25 Sense of Place - moderate 66%			
VISUAL				
Skylines and settings	Broad ridge tops have a smooth profile. Unit provides the setting for valley landscapes and their villages/towns.			
Movement	Some human access but limited to roads and footpaths. VS18 Level of Human access - infrequent or rare 95%			
Visibility, key views, vistas.	Ex[posed upland landscape with gently undulating landform and no cover. VS9 Enclosure - exposed 92%			
Intervisibility, associations with adjacent landscapes	There are attractive and detractive views in and out of the area. Given the elevated position there are views from and into the valley bottoms and to uplands across valleys and beyond. VS22 there are attractive views - both in and out 42% VS23 there are detractive views - both in and out and within 49% The northern end of the unit is particularly affected by extraction.			
Types of receptors	Few receptors. Residents, road users and walkers.			
Views to / from landscape and cultural heritage features	Distant views to and from BBNP. Unit overlooks Merthyr Tydfil Landscape of Historic Interest to the west and includes a small area of the designation. Also overlooks and includes the Gelli-gaer Common Landscape of Historic Interest. Numerous SAMs possibly prehistoric, Roman and Medieval.			

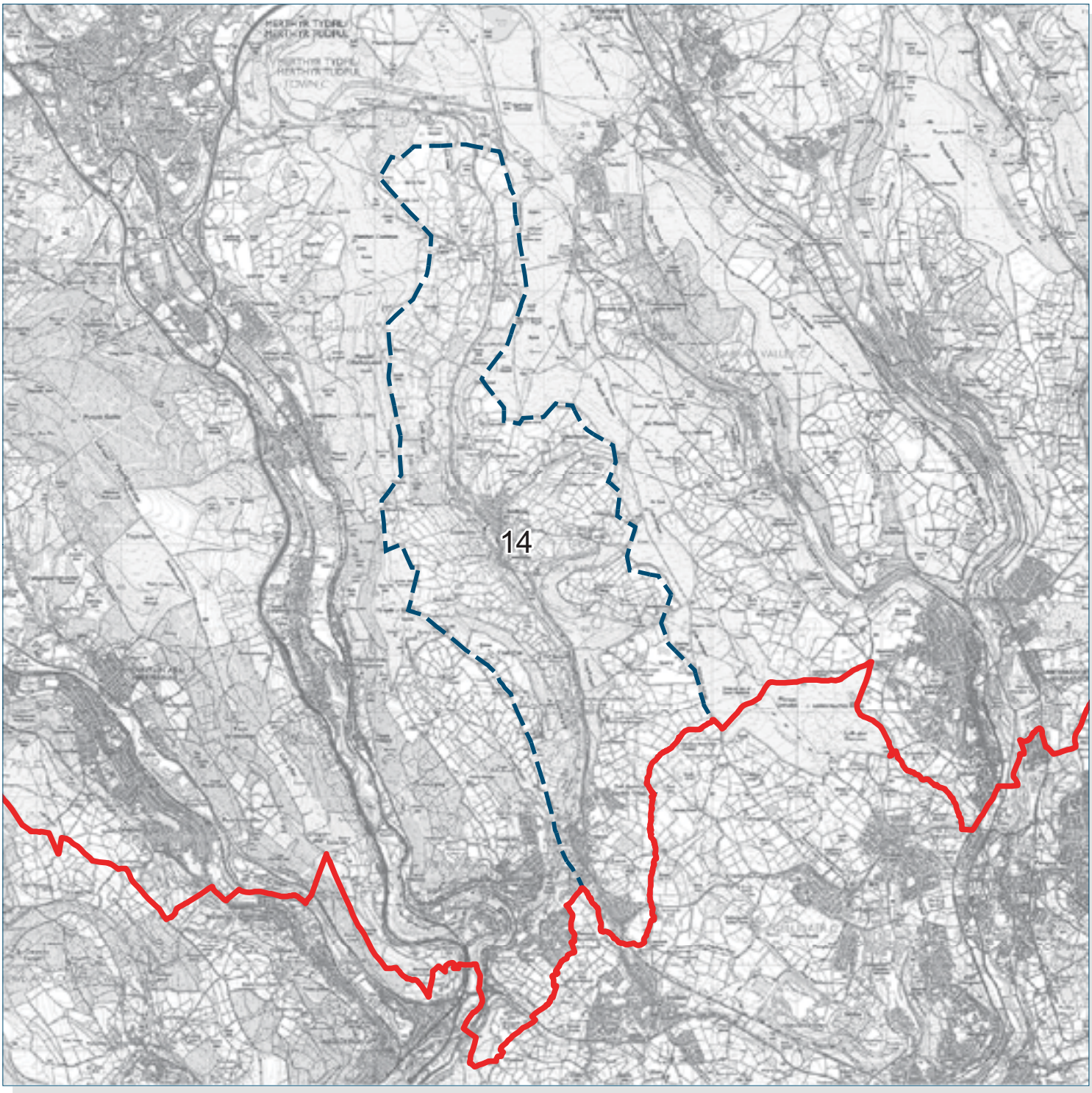
LANDSCAPE UNIT 13: Upland moorland between Taff and Rhymney Valleys				
		Assessed susceptibility		
		Low	Medium	High
AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and character	VS46 Scenic quality - high 68% VS47 Integrity - integrity low 49% VS48 Character - moderate 66%			
Remoteness and tranquillity	Very mixed. Overall exposed. Some sense of remoteness but also accessible by minor roads that appear well used. VS24 Perceptual and other sensory qualities - exposed 58%			
VALUE				
		Assessed value		
		Low	Medium	High
Landscape value	Merthyr Tydfil Landscape of Historic Interest Gelli-gaer Common Landscape of Historic Interest SLA covers approximately 15% of the unit *Gelli-gaer Common SLA* in Caerphilly VS50 - overall evaluation - high 45% VS49 rarity - moderate 60% LH overall evaluation - high 96% GL31 rarity - low 60% GL33 overall evaluation - moderate 89%			
Historic value	HL38 Rarity - high and outstanding 91% HL35 Integrity - high and outstanding 45% HL40 Overall evaluation - high and outstanding 81%			
SUMMARY OF SENSITIVITY TO WIND TURBINE DEVELOPMENT				
		Assessed sensitivity		
		Low	Medium	High
Micro	Low sensitivity to small and micro development due to scale, land cover pattern and few sensitive visual receptors			
Small				
Medium	Medium sensitivity to medium scale development.			
Large	Medium sensitivity where the area is affected by existing activity at the northern end of the unit but high sensitivity towards the south			
Very Large	High sensitivity to very large development which could affect the historic landscape and long distance views.			

LANDSCAPE UNIT 13: Upland moorland between Taff and Rhymney Valleys

Landscape Capacity and Guidance for siting wind turbines	
Landscape objective	**Objective 2: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind turbine development	**Designated features within the Landscape Unit:** Merthyr Tydfil Landscape of Historic Interest to the north. Gelli-gaer Common Landscape of Historic Interest on upland between landscape units 14 and 15. Gelli-gaer Common SLA in Caerphilly - approximately 15% of the unit. 13 SAMs (Prehistoric and Roman)
	Other susceptible landscape, visual and cultural heritage features: Upland moorland/grassland character type has extensive views across upland of the study area and north to the BBNP. There is very little if any built form in the unit. Minor roads cross the area. Remoteness and tranquillity would be affected by wind turbine development.
Baseline wind turbine development (March 2014)	No wind turbine development constructed or in planning at present.
Indicative overall capacity	There is no capacity for very large development and limited capacity for large scale development as this is an exposed landscape that is viewed from neighbouring uplands and provides the landscape setting to valley settlements that have views up to the unit. There is some capacity for medium scale development and capacity for carefully sited small and micro development.
Guidance on siting	Section five of this document provides generic siting and guidance. In addition the following guidance should apply: Maintain the integrity of Merthyr Tydfil Landscape of Historic Interest to the north. Maintain the integrity of Gelli-gaer Common Landscape of Historic Interest to the south. Protect the settings of designated and other important cultural heritage features and the key views to and from these features. Consider views from the BBNP and upland landscapes in the study area. Consider views from settlements in adjacent units. Although currently no wind development in the unit in the long term avoid potential cumulative impacts by ensuring visual separation between developments. Avoid locating turbine at the upland edge where they would be highly visible from the surrounding landscape and valleys below.

Landscape Unit: 14

Bedlinog Valley and farmed upland landscape



LANDSCAPE UNIT 14: Bedlinog Valley and farmed upland landscape

		Assessed susceptibility		
		Low	Medium	High
LANDSCAPE				
Scale	Generally large scale with some medium scale areas VS8 scale: large 67% medium 30%			
Landform	Valley landscape with steep slopes. VS4 Topographic - Hills/Valleys 90%			
Land cover pattern	Settled valley bottom with farmed valley slopes comprising mix of grazing and pockets of woodland and moorland VS class level 3 - open/wooded mosaic and open upland valleys 57% HL class level 3 - Fieldscapes 36% VS5 Land cover pattern - mixture 49% VS16 Pattern - organised 77%, random 22%			
Built environment	One major settlement in valley bottom with scattered settlement throughout. VS6 Settlement pattern - scattered Rural/Farm 93% VS20 Use of Construction Materials - generally appropriate 66% VS25 Sense of Place - strong 61%			
VISUAL				
Skylines and settings	None that are distinctive, Valley sides provide setting for settled valley bottom.			
Movement	Busy valley bottom, quiet valley sides VS18 Level of Human access - occasional and frequent 87%			
Visibility, key views, vistas.	Unit is enclosed by valley slopes, views out from lower levels are restricted. VS9 Enclosure - enclosed 57%			
Intervisibility, associations with adjacent landscapes	VS22 there are attractive views - both in and out 92% VS23 there are detractive views - both in and out. Small amount with in.			
Types of receptors	Residents in valley bottom, road users, visitors, walkers			
Views to / from landscape and cultural heritage features	Overlooked by upland areas of Merthyr Tydfil Landscape of Historic Interest and Gelli-gaer Common Landscape of Historic Interest.			

LANDSCAPE UNIT 14: Bedlinog Valley and farmed upland landscape				
		Assessed susceptibility		
		Low	Medium	High
AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and character	VS46 Scenic quality - moderate 84% VS47 Integrity - moderate 85% VS48 Character - moderate 66%			
Remoteness and tranquillity	Overall tranquil, attractive sheltered. Community is remote at the top of the valley but also accessible by road. VS24 Perceptual and other sensory qualities - attractive/tranquil/sheltered/exposed 76%. only 6% unattractive/settled.			

VALUE				
		Assessed value		
		Low	Medium	High
Landscape value	Merthyr Tydfil Landscape of Historic Interest in a small area to the north of the unit and unit shares boundary with to Gelli-gaer Common Landscape of Historic Interest on upland between landscape units 14 and 15 Taff Bargoed Community Park VS50 - overall evaluation - moderate 85% VS49 rarity - moderate 60% LH overall evaluation - high 82% GL31 rarity - moderate 98% GL33 overall evaluation - moderate 99%			
Historic value	5 SAMs Bedlinog Conservation Area HL38 Rarity - high and outstanding 90% HL35 Integrity - high and outstanding 45% HL40 Overall evaluation - high and outstanding 90%			

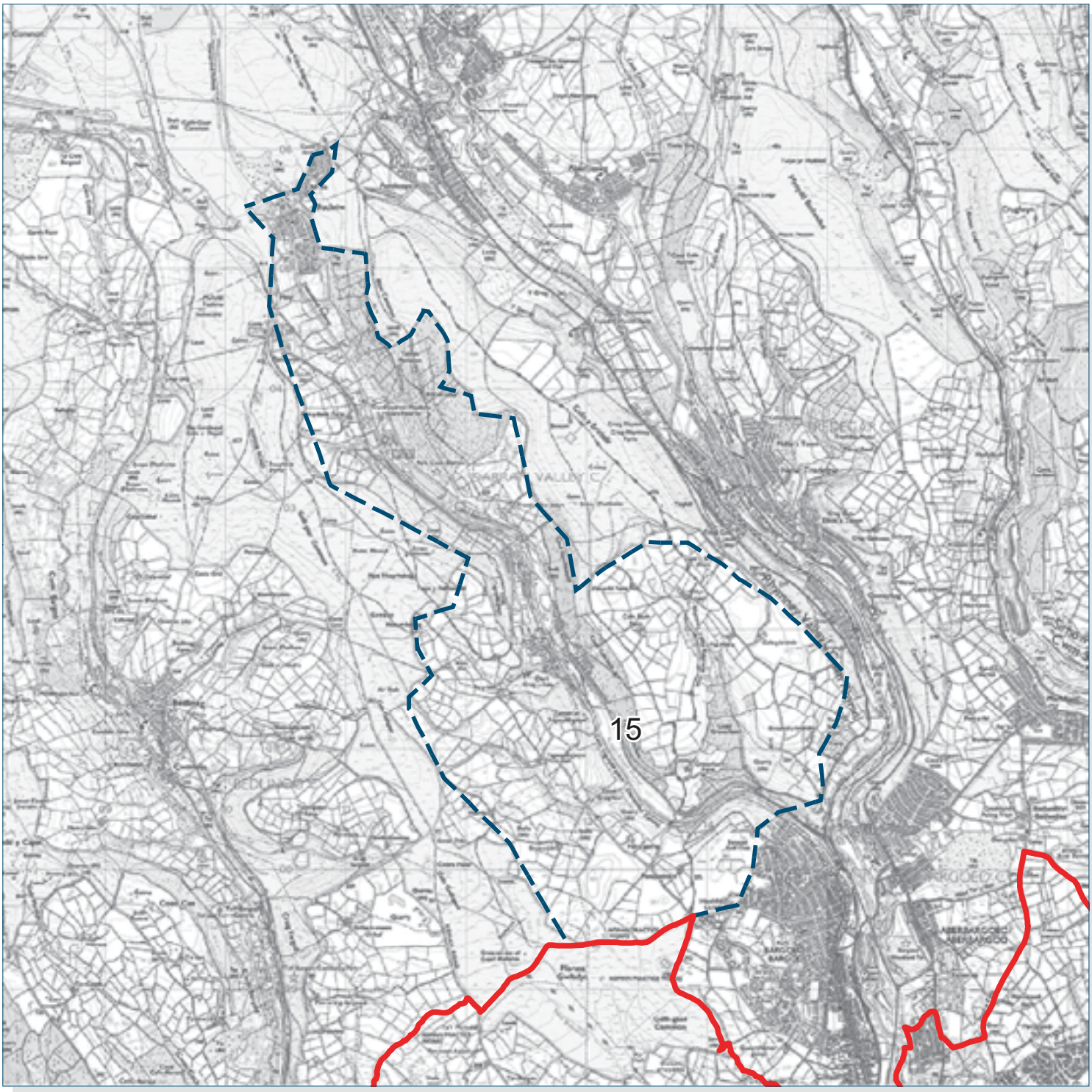
SUMMARY OF SENSITIVITY TO WIND TURBINE DEVELOPMENT				
		Assessed sensitivity		
		Low	Medium	High
Micro	Low sensitivity to micro and small development due to enclosed landscape.			
Small				
Medium	Low to medium sensitivity to medium development			
Large	High sensitivity to large or very large development which would affect views along the valley and be out of scale with the built environment.			
Very Large				
Additional Comments	This valley landscape with steep slopes and a rural settled character has not been as heavily influenced by industrial development as its neighbours. Large development could impact upon the overall tranquil character.			

LANDSCAPE UNIT 14: Bedlinog Valley and farmed upland landscape

Landscape Capacity and Guidance for siting wind turbines	
Landscape objective	**Objective 2: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind turbine development	**Designated features within the Landscape Unit:** Merthyr Tydfil Landscape of Historic Interest in a small area to the north of the unit and unit shares boundary with to Gelli-gaer Common Landscape of Historic Interest on upland between landscape units 14 and 15. Bedlinog Conservation Area 5 SAMs dating from prehistory.
	Other susceptible landscape, visual and cultural heritage features: Valley landscape is varied with settled valley floor, pockets of woodland and grazed fields with scattered farmsteads on the valley side. Informal recreation particularly along the Bargod valley.
Baseline wind turbine development (March 2014)	No wind turbine development constructed or in planning at present.
Indicative overall capacity	There is no capacity for large and very large scale development in this settled rural valley landscape where the presence of large scale development would be out of scale with existing development in the valley. There is some capacity for medium scale development and capacity for small and micro scale development that is carefully sited. Capacity may be reached quickly if wind turbine development is introduced to the valley landscape.
Guidance on siting	Section five of this document provides generic siting and guidance. In addition the following guidance should apply: Maintain the integrity of Merthyr Tydfil Landscape of Historic Interest and Gelli-gaer Common Landscape of Historic Interest. Protect the settings of designated and other important cultural heritage features and the key views to and from these features. Ensure new access tracks do not damage historic field patterns and replant any hedges affected by construction. Consider views from settlements in adjacent units. Although currently no wind development in the unit in the long term avoid potential cumulative impacts by ensuring appropriate grouping and visual separation between developments/groups of developments. Avoid siting wind turbines on the steep slopes and their crests where they would be highly visible on the skyline. Avoid the loss of trees and woodland cover. Consider the role of planting to help mitigate smaller developments. Avoid diminishing the scale of the valley through inappropriate turbine siting.

Landscape Unit: 15

Darran Valley and hillsides



LANDSCAPE UNIT 15: Darran Valley and hillsides

		Assessed susceptibility		
		Low	Medium	High
LANDSCAPE				
Scale	Medium scale landscape VS8 scale: medium 98%			
Landform	Upland glaciated valley with narrow valley bottom and steep valley sides. Incorporates grazed farmland above the top valley edge. VS4 Topographic - hills/valleys 99%			
Land cover pattern	Narrow settled valley floor with steep sided slopes comprising marginal land and grazed fields where the gradient is not so steep. VS class level 3 - hillside and scarp slope grazing 57% HL class level 3 - equal mix irregular fields, marginal land and other settlements. VS5 Land cover pattern - mixture 57% VS16 Pattern - random 41%, regular 59%			
Built environment	Some development - villages in the valley bottom. VS6 Settlement pattern - scattered rural/farm 58%, village 40% VS20 Use of Construction Materials - generally appropriate VS25 Sense of Place - moderate			
VISUAL				
Skylines and settings	No particularly distinctive skylines. Valley sides and tops provide setting for villages in valley bottom.			
Movement	Some human activity in the valley landscape but not as busy as adjacent valleys. VS18 Level of Human access - Frequent 40% infrequent 58%			
Visibility, key views, vistas.	Valley landscape with views up and down and across the valley. VS9 Enclosure - open 57%			
Intervisibility, associations with adjacent landscapes	There are views up and down the valley and across the valley from higher slopes. VS22 there are attractive views - attractive views out 59% VS23 there are detractive views - detractive views out 99%			
Types of receptors	Residents of the valley settlements have views up and down and across the valley. Additionally there are visitors and road and footpath users. Rhymney Valley Ridgeway walk through the area has views across the unit.			
Views to / from landscape and cultural heritage features	Overlooked by the Gelli-gaer Common Landscape of Historic Interest.			

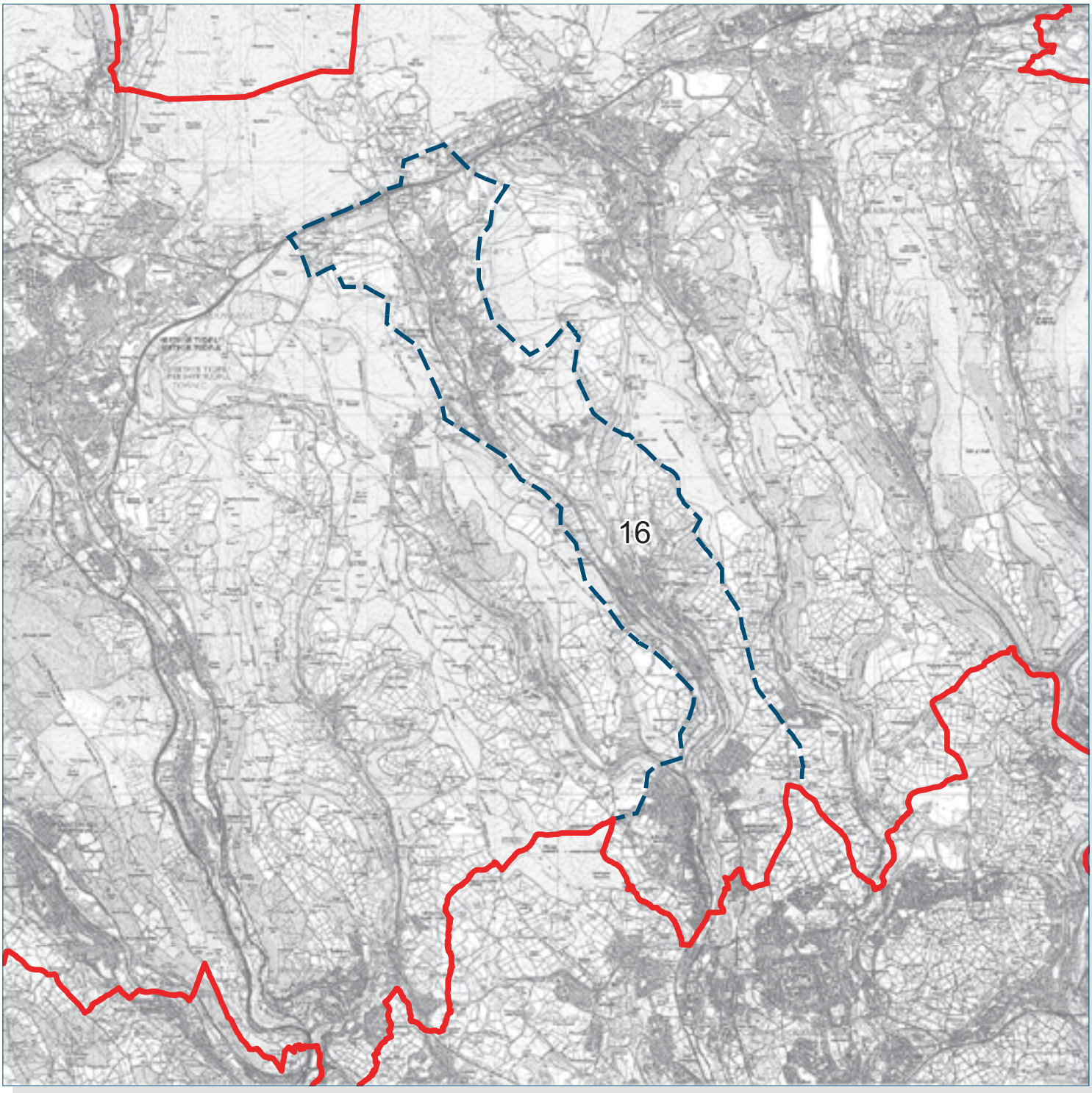
LANDSCAPE UNIT 15: Darran Valley and hillsides				
		Assessed susceptibility		
		Low	Medium	High
AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and character	VS46 Scenic quality - moderate 98% VS47 Integrity - moderate 98% VS48 Character - moderate 99%			
Remoteness and tranquillity	Remote village at the head of the valley but area is accessible on the whole. VS24 Perceptual and other sensory qualities - combination of exposed 59% and sheltered 41%			
VALUE				
		Assessed value		
		Low	Medium	High
Landscape value	SLA covers approximately 38% of the unit. *Gelli-gaer Common SLA* on the west side of the valley is an extension of Gelli-gaer Common Landscape of Historic Interest to the west. Cwmllwydrew Meadows Nature Reserve. VS50 - overall evaluation - moderate 98% VS49 rarity - moderate 98% LH45 overall evaluation - moderate 58% GL31 rarity - low 100% GL33 overall evaluation - moderate 100%			
Historic value	5 SAMs HL38 Rarity - high and outstanding 100% HL35 Integrity - high and outstanding 66% HL40 Overall evaluation - high and outstanding 100%			
SUMMARY OF SENSITIVITY TO WIND TURBINE DEVELOPMENT				
		Assessed sensitivity		
		Low	Medium	High
Micro	Valley landscape with open valley sides and ribbon development in valley bottom has low sensitivity to micro development.			
Small	Low-medium sensitivity to small development which should avoid appearing out of scale with development			
Medium	Medium scale landscape that is relatively open has medium sensitivity			
Large	High sensitivity to large and very large development which would affect views along the valley and be out of scale with the built environment.			
Very Large				

LANDSCAPE UNIT 15: Darran Valley and hillsides

Landscape Capacity and Guidance for siting wind turbines	
Landscape objective	**Objective 2: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind turbine development	**Designated features within the Landscape Unit:** Gelli-gaer Common SLA west side of the valley covering approximately 38% Gelli-gaer common Landscape of Historic Interest on the boundary to the west. 3 SAMs
	Other susceptible landscape, visual and cultural heritage features: Valley landscape is varied with settled valley floor, pockets of woodland and grazed fields with scattered farmsteads on the valley side. Cycle route in the valley bottom Narrow strip of development restricted to valley floor. Steep side valley sides either wooded or open grassland. Where less steep this gives way to small to medium sized field systems. Rhymney Valley Ridgeway walk through the area has views across the unit.
Baseline wind turbine development (March 2014)	No wind turbine development constructed. One development in planning.
Indicative overall capacity	There is no capacity for large and very large scale development in this settled valley landscape. There is some capacity for medium scale development and capacity for small and micro scale development that is carefully sited.
Guidance on siting	Section five of this document provides generic siting and guidance. In addition the following guidance should apply: Consider the potential effect on neighbouring Gelli-gaer Common Landscape of Historic Interest. Protect the settings of designated and other important cultural heritage features and the key views to and from these features. Consider views from the Rhymney Valley Ridgeway walk. Ensure new access tracks do not damage historic field patterns and replant any hedges and replace any walls affected by construction. Consider views from settlements in adjacent units. Although currently no wind development in the unit in the long term avoid potential cumulative impacts by ensuring appropriate grouping and visual separation between developments/groups of developments. Avoid siting wind turbines on the steep slopes and their crests. Maintain the natural beauty of SLAs in the area and their special qualities. Avoid the loss of trees and woodland cover. Avoid diminishing the scale of the valley through inappropriate turbine siting.

Landscape Unit: 16

Rhymney Valley from Rhymney to Bargoed



LANDSCAPE UNIT 16: Rhymney Valley from Rhymney to Bargoed

		Assessed susceptibility		
		Low	Medium	High
LANDSCAPE				
Scale	Medium scale landscape VS8 scale: medium 88%			
Landform	Valley landscape extending north south across the study area. VS4 Topographic - Hills/valleys 98%			
Land cover pattern	VS class level 3 - urban/village 25%. Remainder is a combination of grazed slopes, upland valleys and plateau HL class level 3 - marginal land 37% VS5 Land cover pattern - Development 33%, open land 11% VS16 Pattern - regular 88%			
Built environment	Settled valley bottom with a variety of development types. VS6 Settlement pattern - clustered 23%, urban 14%, village 31% VS20 Use of Construction Materials - generally appropriate 76% VS25 Sense of Place - moderate 98%			
VISUAL				
Skylines and settings	No distinct skylines. Valley setting for development and approaches to Rhymney and Bargoed.			
Movement	Variations across the unit. Busy in the valley bottom along major transport route (A 469) but quieter on the valley sides. VS18 Level of Human access - Constant or frequent 55% and infrequent 52%			
Visibility, key views, vistas.	Enclosed valley bottoms with views up and down the valley interrupted by built form. Higher up the steep valley sides the landscape is more open and there are views across the valley and to the uplands. VS9 Enclosure - enclosed 39%, open 51%			
Intervisibility, associations with adjacent landscapes	The upland areas adjacent have views down into this unit. VS22 there are attractive views mainly out of the unit. VS23 there are detractive views out and within the unit.			
Types of receptors	Few receptors. Residents, road users and walkers. Rhymney Valley Ridge walk (promoted route) on the west valley ridge			
Views to / from landscape and cultural heritage features	None apparent.			

LANDSCAPE UNIT 16: Rhymney Valley from Rhymney to Bargoed				
		Assessed susceptibility		
		Low	Medium	High
AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and character	VS46 Scenic quality - moderate 62% VS47 Integrity - moderate 62% VS48 Character - moderate 98%			
Remoteness and tranquillity	Busy landscape that in the main is easily accessible and not particularly remote or accessible. VS24 Perceptual and other sensory qualities -mainly exposed, sheltered and unattractive.			

VALUE				
		Assessed value		
		Low	Medium	High
Landscape value	SLA covers approximately 11% *Upper Rhymney Valley SLA* VS50 - overall evaluation - moderate 63% VS49 rarity - moderate 65% LH45 overall evaluation -high/outstanding 44% GL31 rarity - low 71% GL33 overall evaluation - moderate 71%			
Historic value	3 SAMs HL38 Rarity - high and outstanding 62% HL35 Integrity - moderate 43% HL40 Overall evaluation - high and outstanding 49%			

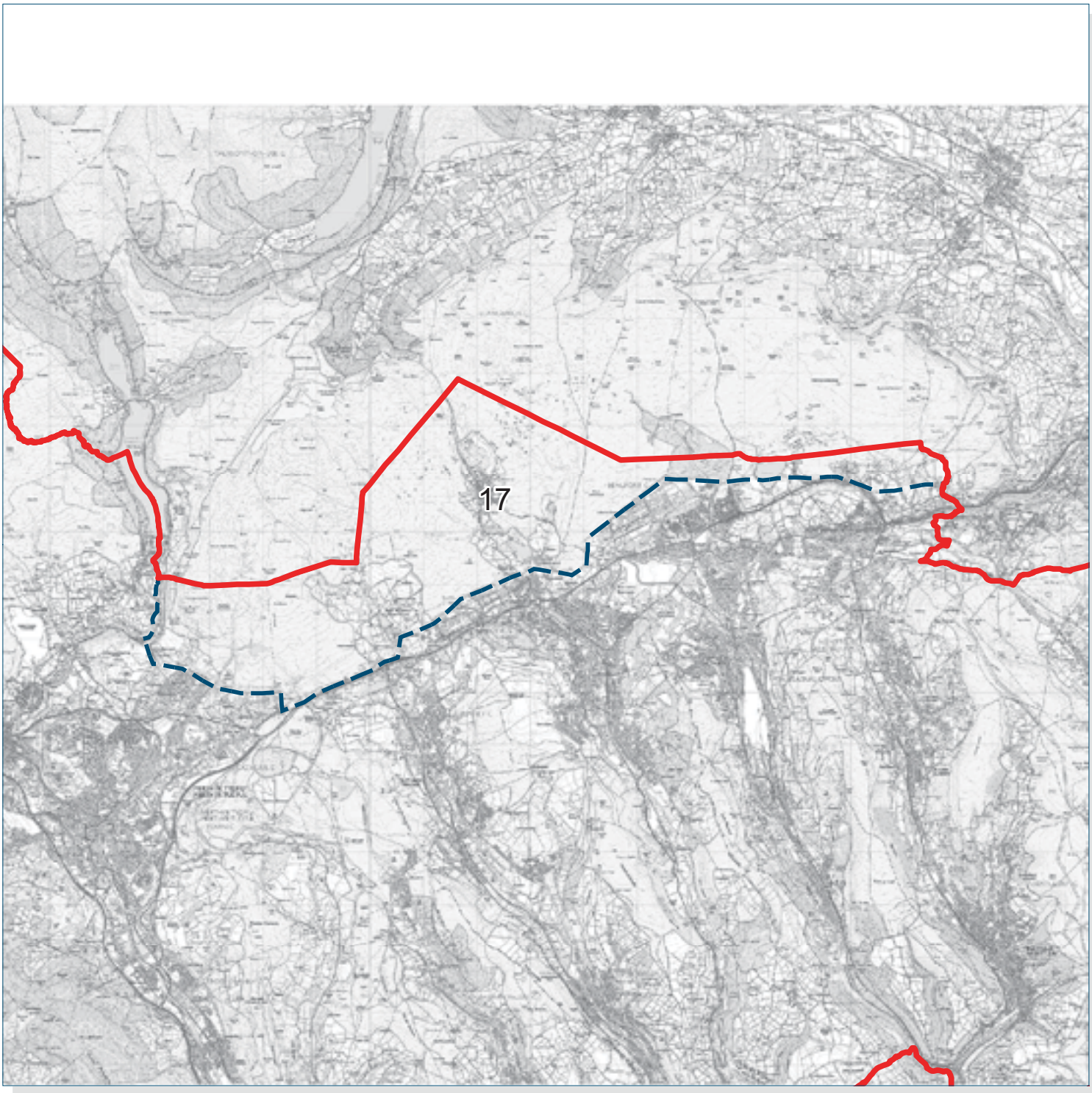
SUMMARY OF SENSITIVITY TO WIND TURBINE DEVELOPMENT				
		Assessed sensitivity		
		Low	Medium	High
Micro	Low sensitivity to micro development due to areas of enclosure in the valley and presence of existing built form.			
Small	Low to medium sensitivity due to large number of residential receptors who may be affected.			
Medium	Medium sensitivity due to large number of residential receptors who may be affected.			
Large	High sensitivity to large or very large development which could adversely affect residential amenity			
Very Large				
Additional Comments	Although some indicators suggest this area has low to medium sensitivity the settled character of the area means that residential amenity issues are likely to arise particularly with larger development.			

LANDSCAPE UNIT 16: Rhymney Valley from Rhymney to Bargoed

Landscape Capacity and Guidance for siting wind turbines	
Landscape objective	**Objective 2: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind turbine development	**Designated features within the Landscape Unit:** Upper Rhymney Valley SLA (approximately 11% at the northern end of the unit.) Area of Visually Important Local Landscape (Caerphilly local designation) Rhymney Conservation Area and Bute Conservation Area 3 SAMs related to industrial past. Green wedges
	Other susceptible landscape, visual and cultural heritage features: Valley landscape is varied with densely settled valley floor. Large number of sensitive visual receptors in the unit. Rhymney Valley Ridge walk on the west valley ridge has views down into and across the valley.
Baseline wind turbine development (March 2014)	One medium scale turbine consented but not built east of New Tredegar. Outside the area approximately 1km north in unit 18 is a second medium sized turbine also approved but not built. These two turbines may be inter visible.
Indicative overall capacity	There is no capacity for large and very large scale development in this settled valley landscape. There is some capacity for medium scale development and greater capacity for small and micro scale development that is carefully sited.
Guidance on siting	Section five of this document provides generic siting and guidance. In addition the following guidance should apply: Protect the settings of designated and other important cultural heritage features and the key views to and from these features. Consider views from the Rhymney Valley Ridgeway walk . Avoid sequential cumulative impacts from the A4049 in the valley bottom by ensuring visual separation between turbines/small groups of turbines. Ensure new access tracks do not damage historic field patterns. Replant any hedges and replace any walls affected by construction. Avoid siting wind turbines on the steep slopes and their associated tops. Maintain the natural beauty of SLAs in the area and their special qualities. Maintain the distinctive visual and sensory landscape features and characteristics of the Visually Important Local Landscape Avoid the loss of trees and woodland cover. Avoid diminishing the scale of the valley through inappropriate turbine siting. Protect the immediate setting of the towns in the valley bottom.

Landscape Unit: 17

Upland north of the Heads of Valley corridor



LANDSCAPE UNIT 17:Upland north of the Heads of the Valleys corridor

		Assessed susceptibility		
		Low	Medium	High
LANDSCAPE				
Scale	Large scale to vast landscape with smaller areas of medium scale. VS8 scale: large 36%, vast 50%			
Landform	Varied upland topography with rolling undulating landform VS4 Topographic - Rolling/Undulating 59%			
Land cover pattern	Upland grazing and moorland dominate the area with pockets of valleys and excavation. Large quarry at Trefil. VS class level 3 - Upland grazing and moorland 76% HL class level 3 - Extractive 20% Processing/manufacturing 13% VS5 Land cover pattern - open land 73% VS16 Pattern - random 92%			
Built environment	Very little settlement, mainly concentrated on Heads of the Valleys road corridor and along small upland valleys. VS6 Settlement pattern - no settlement 75%, scattered 21% VS20 Use of Construction Materials - appropriate 53% VS25 Sense of Place -strong 73% Permission has been granted for a motor racing track within this unit.			
VISUAL				
Skylines and settings	Skyline is smooth with few focal points. Two single medium scale wind turbines in the area interrupt the skyline from certain vantage points. The unit is adjacent to the BBNP and part of the setting of the BBNP.			
Movement	Sparsely populated area with limited movement. The Heads of the Valley Road Corridor on the south boundary is busy. Two single turbines have introduced movement. VS18 Level of Human access - infrequent 52% Consented race track will increase movement within this area.			
Visibility, key views, vistas.	Views of the unit from the Brecon Beacons to the north. VS9 Enclosure - exposed 87%			
Intervisibility, associations with adjacent landscapes	Views of the unit from the Brecon Beacons to the north. Attractive views in and out Some detractive views out but few within			
Types of receptors	Few receptors. Residents, road users and walkers. Visitors to the BBNP.			
Views to / from landscape and cultural heritage features	Intervisible with the BBNP. Unit provides setting for BBNP and is a buffer between the developed Heads of the Valley road corridor and BBNP. Merthyr Tydfil Landscape of Historic Interest at the west end of the unit and Clydach Gorge Landscape of Historic Interest to the east end of the unit.			

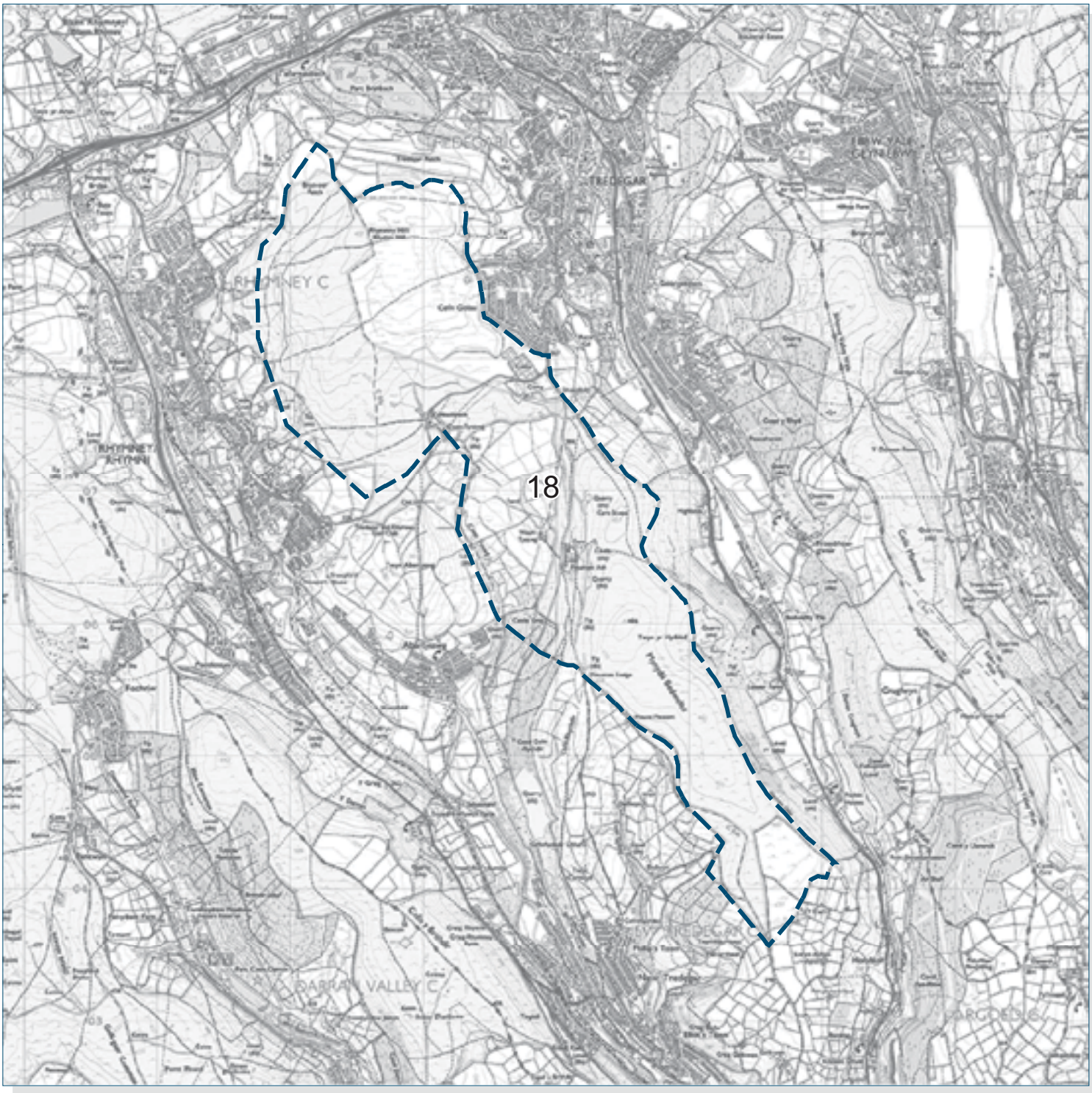
LANDSCAPE UNIT 17:Upland north of the Heads of the Valleys corridor				
		Assessed susceptibility		
		Low	Medium	High
AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and character	VS46 Scenic quality - high 76% VS47 Integrity - high 51% VS48 Character - high 56%			
Remoteness and tranquillity	Sense of remoteness along north boundary with the BBNP away from the Heads of the Valley road corridor. VS24 Perceptual and other sensory qualities - varies depending on proximity to the road corridor and associated development.			
VALUE				
		Assessed value		
		Low	Medium	High
Landscape value	SLA covering approximately 77% of the unit: *Upper Rhymney Valley SLA (Caerphilly)* *Trefil and Garnlydan surrounds SLA* Clydach Gorge Landscape of Historic Interest at the eastern end of the unit in the BBNP. Merthyr Tydfil Landscape of Historic Interest at the west end of the unit. VS50 - overall evaluation - High 55% VS49 rarity - High 68% LH45 overall evaluation - high/outstanding 89% GL31 rarity - high/outstanding 72% GL33 overall evaluation - high/outstanding 59%			
Historic value	4 SAMs HL38 Rarity - high and outstanding 59% HL35 Integrity - moderate 60% HL40 Overall evaluation - high and outstanding 59%			
SUMMARY OF SENSITIVITY TO WIND TURBINE DEVELOPMENT				
		Assessed sensitivity		
		Low	Medium	High
Micro	Large/vast scale and upland moorland and grazed landscape has low sensitivity to micro development			
Small	Large/vast scale and upland land moorland and grazed landscape has low to medium sensitivity to small development on the edge of the BBNP			
Medium	Large/vast scale and upland land moorland and grazed landscape has medium sensitivity to medium development on the edge of the BBNP			
Large	Large/vast scale and upland land moorland and grazed landscape has medium to high sensitivity to large development on the edge of the BBNP.			
Very Large	Large/vast scale and upland land moorland and grazed landscape has high sensitivity to very large development on the edge of the BBNP			
Overall Sensitivity to wind energy developments	High sensitivity overall as a result of being on the boundary with the BBNP. Away from the BBNP boundary and closer to the A465 road corridor sensitivity is reduced.			

LANDSCAPE UNIT 17:Upland north of the Heads of the Valleys corridor

Landscape Capacity and Guidance for siting wind turbines	
Landscape objective	**Objective 2: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind turbine development	**Designated features within the Landscape Unit:** Approximately 77% of the unit is SLA: Upper Rhymney Valley SLA (Caerphilly) Trefil and Garnlydan surrounds SLA Merthyr Tydfil Landscape of Historic Importance at the west end of the unit. Clydach Gorge Landscape of Historic Importance to the east end. This small area is also in the BBNP. Adjacent to the BBNP. 4 SAMs
	Other susceptible landscape, visual and cultural heritage features: This upland landscape is a buffer between the Heads of the Valleys road corridor and the BBNP and provides separation. Consented motor racing track is likely to reduce the sense of separation.
Baseline wind turbine development (March 2014)	None constructed but there are turbines applications (one constructed) in unit 19 near the boundary with this unit. Single medium scale turbine in planning north of Merthyr Tydfil.
Indicative overall capacity	There is no capacity for very large scale development due to the proximity of the BBNP. There is limited capacity for large scale development that is associated with the HoV road corridor and associated development away from the BBNP boundary. There is some capacity for medium and small scale development and capacity for micro scale development that is carefully sited on the south side of the unit closely associated with industrial development on the Heads of the Valleys road. The consented motor racing track may provide opportunities to locate associated wind turbine development but cumulative impacts will also be a consideration.
Guidance on siting	Section five of this document provides generic siting and guidance. In addition the following guidance should apply: Consider the effects of development on views to and from the BBNP and the impact on the setting of the BBNP. Maintain the natural beauty of SLAs in the area and their special qualities. Protect the settings of designated and other important cultural heritage features and the key views to and from these features. Protect the settings and character of villages and farmsteads in the unit (Trefil) Avoid sequential cumulative impacts by ensuring visual separation between turbines/small groups of turbines. This is particularly important when considering views on approaches to and from the BBNP. Avoid sequential cumulative impacts from the A465 HoV road by ensuring visual separation between turbines/small groups of turbines. Maintain the integrity of Merthyr Tydfil Landscape of Historic Interest and Clydach Gorge Landscape of Historic Interest. Avoid the loss of trees and woodland cover in this area which overall has limited tree cover.

Landscape Unit: 18

Mynydd Bedwellte and associated upland



LANDSCAPE UNIT 18: Mynydd Bedwellte and associated upland

		Assessed susceptibility		
		Low	Medium	High
LANDSCAPE				
Scale	Vast to large scale landscape VS8 scale: Vast 60%, large 23%			
Landform	Broad ridge of upland between valleys. VS4 Topographic - Hills/Valleys 65%			
Land cover pattern	Simple upland moorland and grazed landscape between Tredegar and Rhymney incorporating upper valley sides. VS class level 3 - upland grazing and moorland 65% HL class level 3 - marginal land 50% VS5 Land cover pattern - open land 83% VS16 Pattern - Random 61% regular 27% organised 12%			
Built environment	Very little built development in the unit. VS6 Settlement pattern - no settlements 83% VS20 Use of Construction Materials - Appropriate 95% VS25 Sense of Place - strong 83%			
VISUAL				
Skylines and settings	Distinctive open skyline. Cairns and the Cefn Golau cholera cemetery, seen from valleys on either side. Upland setting for neighbouring settled valleys.			
Movement	Secluded place with some human access. A minor road crosses the area and there are farms on lower slopes VS18 Level of Human access - occasional 71%			
Visibility, key views, vistas.	Upland landscape with few trees or buildings and extensive views out of the area and into the area. VS9 Enclosure - exposed 83%			
Intervisibility, associations with adjacent landscapes	This elevated areas is visible from other uplands in the study area and from some distant vantage points in the BBNP. VS22 there are attractive views - 96% both in and out VS23 there are detractive views - not so many. (60% not allocated)			
Types of receptors	Few receptors. Residents, road users and walkers.			
Views to / from landscape and cultural heritage features	Panoramic views across to other uplands to the west, and north to Brecon Beacons, & into valley from Cefn Golau.			

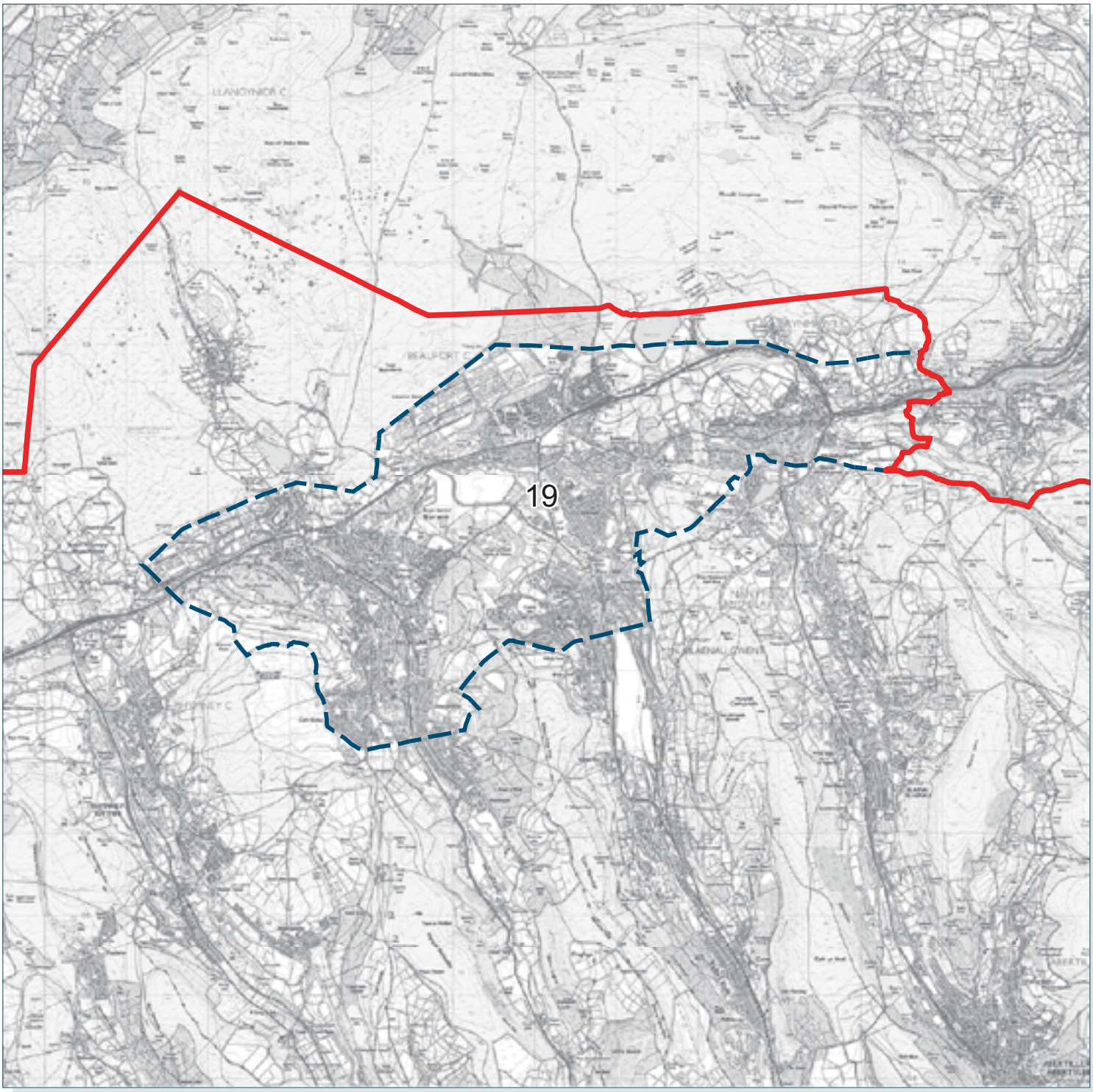
LANDSCAPE UNIT 18: Mynydd Bedwellte and associated upland				
		Assessed susceptibility		
		Low	Medium	High
AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and character	VS46 Scenic quality - high 50% VS47 Integrity - high 71% VS48 Character - high 95%			
Remoteness and tranquillity	Overall there are remote parts to this unit away from the road. Isolated in places. VS24 Perceptual and other sensory qualities - attractive, Tranquil, exposed, threatening, remote 60%			
VALUE				
		Assessed value		
		Low	Medium	High
Landscape value	Approximately 84% SLA: *Mynydd Bedwellte, Rhymney Hill and Sirhowy SLA (BG)* *Upper Rhymney Valley SLA (Caerphilly)* VS50 - overall evaluation - high 50% VS49 rarity -high 60% LH45 overall evaluation - high 45%, moderate 49% GL31 rarity - low 84% GL33 overall evaluation - moderate 84%			
Historic value	1 SAM HL38 Rarity - high and outstanding 70% HL35 Integrity - moderate 50% HL40 Overall evaluation - high and outstanding 50%			
SUMMARY OF SENSITIVITY TO WIND TURBINE DEVELOPMENT				
		Assessed sensitivity		
		Low	Medium	High
Micro	Low sensitivity to micro and small development due to large scale upland landscape with few visual receptors			
Small				
Medium	Low to medium sensitivity to medium development			
Large	Large and very large development would be seen from the BBNP and neighbouring uplands and impact on value.			
Very Large				

LANDSCAPE UNIT 18: Mynydd Bedwellte and associated upland

Landscape Capacity and Guidance for siting wind turbines	
Landscape objective	**Objective 2: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind turbine development	**Designated features within the Landscape Unit:** 84% SLA: Mynydd Bedwellty, Rhymney Hill and Sirhowy SLA (BG) Upper Rhymney Valley SLA (Caerphilly) One SAM south of Tredegar (Cefn Golau cemetery)
	Other susceptible landscape, visual and cultural heritage features: There is potential intervisibility with the BBNP from the north end of this upland landscape unit. This broad ridge line is intervisible with uplands in the study area as well as the BBNP and overlooks the Rhymney valley to the west and the Sirhowy valley to the west. Distinctive open skyline, including cairns and Cefn Golau cemetery, seen from valleys on either side. Informal recreation - footpaths and bridleways.
Baseline wind turbine development (March 2014)	One single turbine approved but not constructed in the southern end of the unit. One single turbine in planning at the northern end of the unit.
Indicative overall capacity	There is no capacity for large and very large scale development due to the exposed nature of the area and proximity to sensitive receptors. There is some capacity for medium scale development and higher capacity for small scale and micro development.
Guidance on siting	Section five of this document provides generic siting and guidance. In addition the following guidance should apply: Consider the effects of development on views to and from the BBNP in the north part of this unit. Maintain the natural beauty of SLAs in the area and their special qualities. Protect the settings of designated and other important cultural heritage features and the key views to and from these features. (in particular the Cefn Golau cemetery) Avoid sequential cumulative impacts by ensuring visual separation between turbines/small groups of turbines. Consider views from the valley settlement to the east (Tredegar) and west (Rhymney).

Landscape Unit: 19

Heads of the Valley corridor



LANDSCAPE UNIT 19: Heads of the Valleys corridor

		Assessed susceptibility		
		Low	Medium	High
LANDSCAPE				
Scale	Large to medium scale landscape. VS8 scale: large 40% medium 53%			
Landform	VS4 Topographic - rolling/undulating 95%			
Land cover pattern	Complex mix of land uses in this developed upland area at the Heads of the Valleys. Dominated by development. VS class level 3 - urban 46%, road corridor 4%, mosaic upland and plateau 34% HL class level 3 - manufacturing 14%, settlement 10% VS5 Land cover pattern - Development 53% VS16 Pattern - 53%			
Built environment	Developed landscape along the road corridor and at the Heads of the Valleys. Includes narrow corridor of Clydach Gorge to the east which is a Registered Historic Landscape. VS6 Settlement pattern - urban 49%, mixture 25% VS20 Use of Construction Materials - generally inappropriate 51% VS25 Sense of Place - moderate 60%			
VISUAL				
Skylines and settings	No distinct skyline.			
Movement	Busy developed landscape with major road corridor. VS18 Level of Human access - constant 41%, frequent 36%			
Visibility, key views, vistas.	VS9 Enclosure - enclosed 51%, open 45%			
Intervisibility, associations with adjacent landscapes	The intervisibility with neighbouring units is influenced by topography and built form. VS22 there are attractive views - 52% in and out. Attractive views are out to mostly to adjacent SLAs. VS23 there are detractive views - 77% in and out - the area comprises a variety of built form from residential to industrial.			
Types of receptors	Large number of residential receptors as well as commercial and road users.			
Views to / from landscape and cultural heritage features	There is some intervisibility with the southern edge of the BBNP but Unit 17 acts as a buffer.			

LANDSCAPE UNIT 19: Heads of the Valleys corridor				
		Assessed susceptibility		
		Low	Medium	High
AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and character	VS46 Scenic quality - low 82% VS47 Integrity - low 49% VS48 Character - moderate 54%			
Remoteness and tranquillity	Not remote. Very accessible area. VS24 Perceptual and other sensory qualities - broad range of qualities dependant on location. Very little tranquil and no remote.			
VALUE				
		Assessed value		
		Low	Medium	High
Landscape value	Clydach Gorge Registered Historic landscape Bedwellte Park, Tredegar Registered Park and Garden 24% SLA - small portions of several SLAs that surround the unit. *Mynydd Bedwellte, Rhymney Hill and Sirhowy SLA* *Cafn Manmoel SLA* *Mynydd Carn-y-Cefn and Cefn yr Arail SLA* *Eastern Ridge and Mynydd James (northern slopes) SLA* *Trefil and Garnlydan surrounds SLA* *Beaufort Common SLA* VS50 - overall evaluation - moderate 56% VS49 rarity - moderate 54% LH45 overall evaluation - low 55% GL31 rarity - low 92% GL33 overall evaluation - moderate 89%			
Historic value	3 SAMs Tredegar Conservation Area. HL38 Rarity - high and outstanding 53% HL35 Integrity - moderate 46% HL40 Overall evaluation - high and outstanding 46%			
SUMMARY OF SENSITIVITY TO WIND TURBINE DEVELOPMENT				
		Assessed sensitivity		
		Low	Medium	High
Micro	Low sensitivity to micro and small development due to the medium scale landscape with high level of enclosure			
Small				
Medium	Medium scale landscape that is settled has medium to high sensitivity to medium development			
Large	This settled unit is potentially very sensitive to large and very large wind energy developments which would be out of scale with existing built form. In addition the large number of sensitive receptors (i.e. residents) increases sensitivity to large or very large development.			
Very Large				
Overall Sensitivity to wind energy developments	Although a number of criteria suggest lower and medium sensitivity this area is densely settled and there will be residential amenity issues which will limit the potential size of wind energy development.			

LANDSCAPE UNIT 19: Heads of the Valleys corridor

Landscape Capacity and Guidance for siting wind turbines	
Landscape objective	**Objective 2: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind turbine development	**Designated features within the Landscape Unit:** 24% SLA designation at the urban edges. Mynydd Bedwellty, Rhymney Hill and Sirhowy SLA Cafn Manmoel SLA Mynydd Carn-y-Cefn nd Cefn yr Arail SLA Eastern Ridge and Mynydd James (northern slopes) SLA Trefil and Garnlydan surrounds SLA Beaufort Common SLA 3 SAMs - site of Sirhowy ironworks. Green wedges Bedwellty Park, Tredegar - Registered Historic Park and Garden Tredegar Conservation Area (include Bedwelty Park) Clydach Gorge Landscape of Historic interest at the eastern end of the unit which is also in the BBNP.
	Other susceptible landscape, visual and cultural heritage features: There is potential intermittent intervisibility with the BBNP. Recreation areas throughout have views of the surrounding landscape. e.g. golf courses, country parks. Informal recreations parks e.g. Park Brynbach at Tredegar.
Baseline wind turbine development (March 2014)	One constructed single wind turbine and two consented but not constructed.
Indicative overall capacity	There is no capacity for large and very large scale development in this unit. There is some capacity for medium scale development and higher capacity for small and micro scale development associated with industrial development along the Heads of the Valleys corridor.
Guidance on siting	Section five of this document provides generic siting and guidance. In addition the following guidance should apply: Consider the effects of development on views to and from the BBNP. No development in Clydach Gorge and the BBNP. Maintain the natural beauty of SLAs in the area and their special qualities. Maintain the role of green wedges. Maintain the integrity and setting of Bedwelty Park Registered Park and Garden. Maintain the integrity of Tredegar Conservation Area. Protect the settings of designated and other important cultural heritage features and the key views to and from these features. Avoid cumulative effects with other large scale infrastructure. Avoid the loss of trees and woodland cover in this area which overall has limited tree cover. Consider woodland and tree planting mitigation for smaller scale development where appropriate.

Landscape Unit: 20

Sirhowy Valley northern reach from Tredegar to Pochin Houses

LANDSCAPE UNIT 20: Sirhowy Valley northern reach from Tredegar to Pochin Houses

		Assessed susceptibility		
		Low	Medium	High
LANDSCAPE				
Scale	Large scale landscape. VS8 scale: large 88%			
Landform	Glaciated U shaped valley. VS4 Topographic - Hills/valleys 79%			
Land cover pattern	Rural farmed valley with settlement and transport corridor. VS class level 3 - open/wooded mosaic upland valley 71% HL class level 3 - settlement 14%, fieldscapes 40%, marginal land 28% VS5 Land cover pattern - field pattern/mosaic 73% VS16 Pattern - random 71%			
Built environment	Settled valley floor and lower valley sides. VS6 Settlement pattern - linear 71% urban 20% VS20 Use of Construction Materials -generally appropriate 74% VS25 Sense of Place - strong 77%			
VISUAL				
Skylines and settings	Narrow valley landscape - no distinct skylines.			
Movement	Settled valley landscape has some movement. VS18 Level of Human access -infrequent 73%			
Visibility, key views, vistas.	Valley landscape with some woodland but generally open views. VS9 Enclosure - open 85%			
Intervisibility, associations with adjacent landscapes	Valley landscape with attractive valley sides comprising rural farmed and wooded landscape with marginal land on steep slopes. Detractors include the road and industrial/commercial development in the valley. VS22 there are attractive views - 80% both in and out. VS23 there are detractive views - 92% both in and out.			
Types of receptors	Residents of the valley settlements, commercial premises and road users			
Views to / from landscape and cultural heritage features	None apparent			

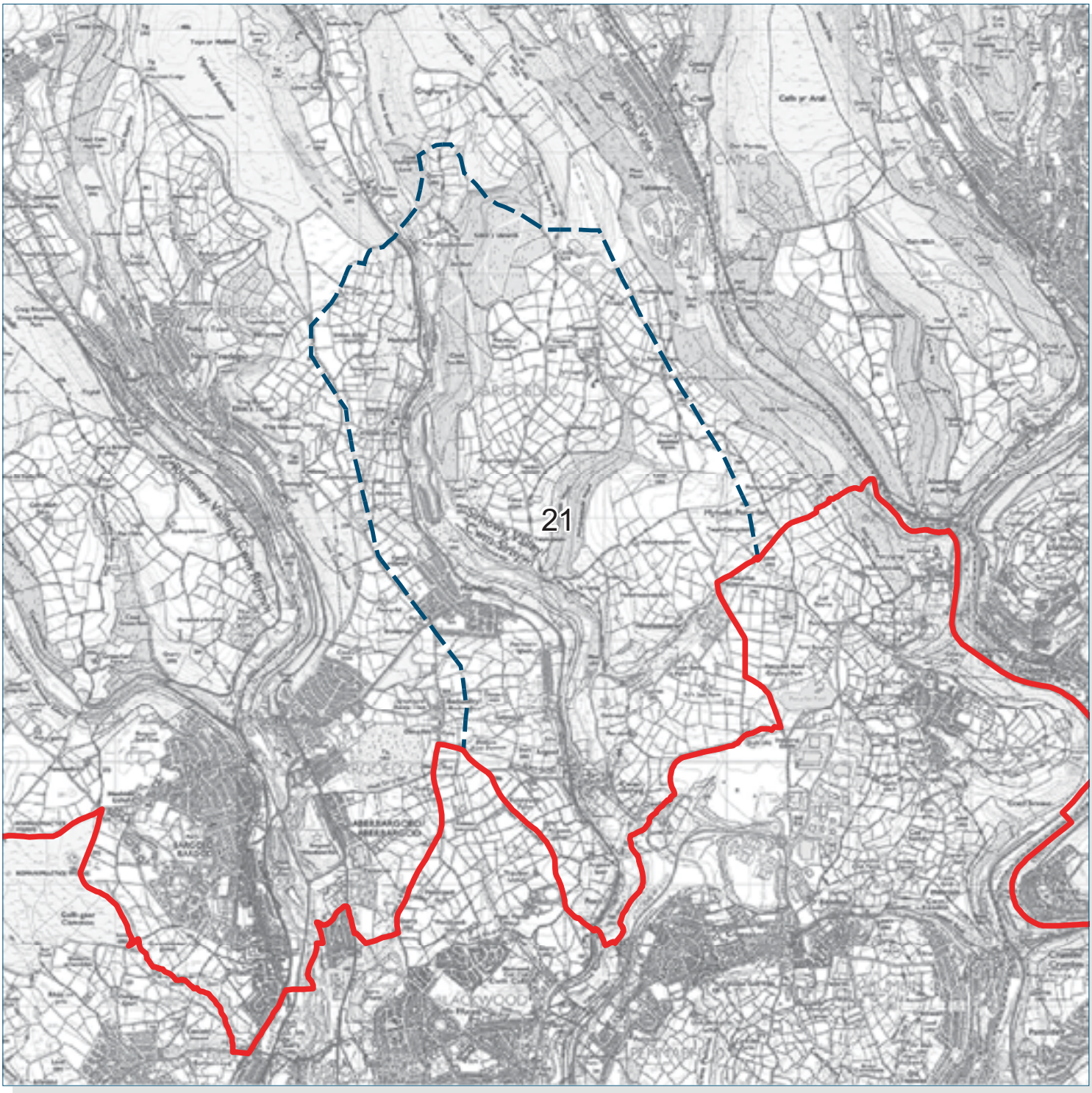
LANDSCAPE UNIT 20: Sirhowy Valley northern reach from Tredegar to Pochin Houses				
		Assessed susceptibility		
		Low	Medium	High
AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and character	VS46 Scenic quality - high 77% VS47 Integrity - moderate 82% VS48 Character - high 77%			
Remoteness and tranquillity	Accessible valley landscape that is not remote or particularly tranquil. VS24 Perceptual and other sensory qualities - Sheltered; Exposed; Threatening 71%			
VALUE				
		Assessed value		
		Low	Medium	High
Landscape value	Approximately 60% SLA *Cefn Manmoel SLA* *Mynydd Bedwellte, Rhymney Hill and Sirhowy Valley SLA* VS50 - overall evaluation - high 77% VS49 rarity - moderate 91% LH45 overall evaluation - moderate 58% GL31 rarity - low 100% GL33 overall evaluation - moderate 86%			
Historic value	HL38 Rarity - high and outstanding 57% HL35 Integrity - low 57%% HL40 Overall evaluation - moderate 57%			
SUMMARY OF SENSITIVITY TO WIND TURBINE DEVELOPMENT				
		Assessed sensitivity		
		Low	Medium	High
Micro	Low sensitivity to micro and small development due to open accessible valley landscape with no distinct skyline			
Small				
Medium	Low to Medium sensitivity for medium development.			
Large	Small unit with valley characteristics has high sensitivity to large and very large developments.			
Very Large				

LANDSCAPE UNIT 20: Sirhowy Valley northern reach from Tredegar to Pochin Houses

Landscape Capacity and Guidance for siting wind turbines	
Landscape objective	**Objective 2: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind turbine development	**Designated features within the Landscape Unit:** 60% SLA Cefn Manmoel SLA Mynydd Bedwellty, Rhymney Hill and Sirhowy Valley SLA Visually important local landscape at southern end of the unit (Caerphilly designation) 1 SAM linked to recent industrial past,
	Other susceptible landscape, visual and cultural heritage features: Valley landscape with steep valley sides that have few fields and some woodland/forestry.
Baseline wind turbine development (March 2014)	No wind turbine development
Indicative overall capacity	There is no capacity for large and very large scale development in this narrow settled valley landscape. There is some capacity for medium scale development and capacity for small and micro scale development associated with existing built form along the road corridor in the bottom of the valley. Capacity is likely to be reached quickly in this small landscape unit.
Guidance on siting	Section five of this document provides generic siting and guidance. In addition the following guidance should apply: Maintain the natural beauty of SLAs in the area and their special qualities. Maintain the role of green wedges. Protect the settings of designated and other important cultural heritage features and the key views to and from these features. Consider views from the A4048 and cumulative impacts of sequential views including in conjunction with units 19 and 21. Avoid the loss of trees and woodland cover in this area. Consider woodland and tree planting mitigation for smaller scale development where appropriate. Avoid siting wind turbines on the steep slopes and their associated tops where the skyline would be broken by turbine development.

Landscape Unit: 21

Southern Sirhowy valley incorporating hillsides above



LANDSCAPE UNIT 21: Southern Sirhowy valley incorporating hillsides above

		Assessed susceptibility		
		Low	Medium	High
LANDSCAPE				
Scale	Medium scale landscape VS8 scale: medium 99%			
Landform	VS4 Topographic - Hills/valleys 99%			
Land cover pattern	VS class level 3 - Hillside and scarp slopes mosaic 71% HL class level 3 - marginal land 30% VS5 Land cover pattern - Field pattern/mosaic 99% VS16 Pattern - regular 71%			
Built environment	VS6 Settlement pattern - clustered 71%, village 28% VS20 Use of Construction Materials - generally appropriate 99% VS25 Sense of Place - moderate 99%			
VISUAL				
Skylines and settings	Valley landscape with no distinct skyline. Includes grazed upland above the valley to the east.			
Movement	Valley bottom busy but quieter away from the road corridor and up the valley sides. VS18 Level of Human access - infrequent 71%			
Visibility, key views, vistas.	Overall enclosed by tree cover and landform. Areas of mature trees on field boundaries in upland areas restricts views. VS9 Enclosure - open 71%			
Intervisibility, associations with adjacent landscapes	Views into and out of the area across valleys. VS22 there are attractive views -71% out. VS23 there are detractive views - 99% out. Views out of the area to settlement and industrial/commercial development and transport corridors.			
Types of receptors	Few receptors. Residents, road users and walkers especially the Sirhowy Valley Walk.			
Views to / from landscape and cultural heritage features	None apparent.			

LANDSCAPE UNIT 21: Southern Sirhowy valley incorporating hillsides above				
		Assessed susceptibility		
		Low	Medium	High
AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and character	VS46 Scenic quality - moderate 99% VS47 Integrity - moderate 99% VS48 Character - moderate 99%			
Remoteness and tranquillity	Rural landscape incorporating hill tops and hillsides. Secluded and quiet. Calm. VS24 Perceptual and other sensory qualities - mixed depending upon where in the unit. Road corridor unattractive and noisy, upland areas sheltered			

VALUE				
		Assessed value		
		Low	Medium	High
Landscape value	Visually Important Local landscape designation to the north. VS50 - overall evaluation - moderate 99% VS49 rarity - moderate 99% LH45 overall evaluation - moderate 69% GL31 rarity - low 100% GL33 overall evaluation - moderate 100%			
Historic value	HL38 Rarity - high and outstanding 80% HL35 Integrity - moderate 50% HL40 Overall evaluation - high 50% NB: historic field systems around ancient settlement of Manmoel (in Caerphilly) of considerable historic and cultural value although no formal designation.			

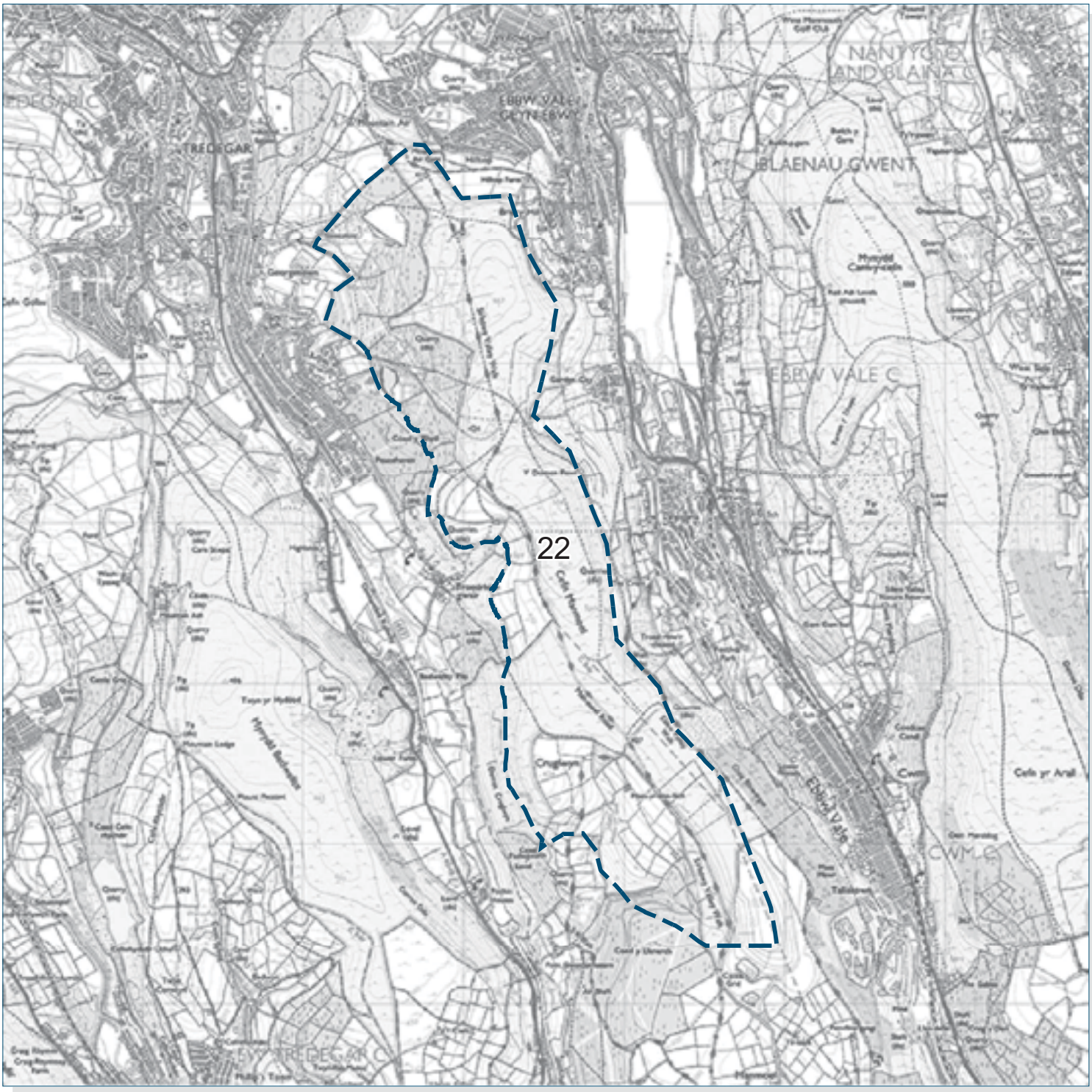
SUMMARY OF SENSITIVITY TO WIND TURBINE DEVELOPMENT				
		Assessed sensitivity		
		Low	Medium	High
Micro	Low sensitivity to micro and small development due to areas of mature trees, particularly in upland parts, restricting visibility.			
Small				
Medium	Medium scale and intricate field pattern result in medium sensitivity for medium development.			
Large	Medium scale landscape has high sensitivity to large and very large scale wind energy development not in keeping with landform and land cover.			
Very Large				

LANDSCAPE UNIT 21: Southern Sirhowy valley incorporating hillsides above

Landscape Capacity and Guidance for siting wind turbines	
Landscape objective	**Objective 2: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind turbine development	**Designated features within the Landscape Unit:** Area of Visually important local landscape at the northern end of the unit. No SAMs
	Other susceptible landscape, visual and cultural heritage features: Valley landscape on the west side of the unit with steep valley sides that have few fields and some woodland/forestry. Upland hillside farmed landscape to the east side of the unit with distinctive field pattern and field boundaries. Sparsely settled area with a remote and cut off feel. Distinctive beech hedges and tree cover strong on field boundaries in upland farmed area. Complex medium scale landscape. Limited intervisibility with surrounding areas due to landform and tree cover.
Baseline wind turbine development (March 2014)	1 medium scale turbine approved not constructed. 2 medium sized turbines constructed just outside the unit and the study area to the south.
Indicative overall capacity	There is no capacity for large or very scale development in this complex medium scale landscape. There is some capacity for medium scale development and capacity for small and micro scale development associated with existing built form.
Guidance on siting	Section five of this document provides generic siting and guidance. In addition the following guidance should apply: Maintain the special qualities of the area designated as Visually Important Local Landscape (Caerphilly) Protect the settings of villages in the unit (Manmoel and Markham) Consider views from the A4048 and cumulative impacts of sequential views including in conjunction with units 19 and 20. Ensure visual separation between turbines/small groups of turbines. Avoid the loss of trees and woodland cover in this area. Consider woodland and tree planting mitigation for smaller scale development where appropriate. Avoid siting wind turbines on the steep slopes and their associated tops. Maintain field pattern and mature hedgerow and tree lined boundaries. Ensure new access tracks do not damage historic field patterns and replant any hedges affected by construction. Avoid locating turbines on the crest of the valley where they would be visually prominent. Avoid diminishing the scale of the valley through inappropriate turbine siting.

Landscape Unit: 22

Northern Manmoel ridge



LANDSCAPE UNIT 22: Northern Manmoel Ridge

		Assessed susceptibility		
		Low	Medium	High
LANDSCAPE				
Scale	Ranges from vast to medium scale VS8 scale: Vast 39%, large 11%, medium 49%			
Landform	Broad ridge of upland between valleys. VS4 Topographic - Hills/valleys 74%, rolling/undulating 26%			
Land cover pattern	Various fieldscapes and open moorland with evidence of quarrying. VS class level 3 - upland moorland 39%, wooded upland plateau 25%, upland grazing 10%. HL class level 3 - extraction 22%, fieldscapes 33%, marginal 22%. VS5 Land cover pattern - open land 49% VS16 Pattern - random 39%, open 34%, organised 25%			
Built environment	Very little build development in the unit. VS6 Settlement pattern - no settlements 75% VS20 Use of Construction Materials - appropriate/generally appropriate 100% VS25 Sense of Place - strong 50%, moderate 50%			
VISUAL				
Skylines and settings	Distinctive open skyline seen from valleys on either side			
Movement	Generally quiet and calm landscape with little activity in the area. VS18 Level of Human access - occasional 64%			
Visibility, key views, vistas.	Upland viewed from adjacent upland across valleys. Some enclosed due to land form and woodland /forestry. VS9 Enclosure - exposed 49%			
Intervisibility, associations with adjacent landscapes	Views from this upland area are across valleys to adjacent uplands and BBNP to the north. VS22 there are attractive views - 65% in and out. VS23 there are detractive views - 60% out.			
Types of receptors	Few receptors. Residents, road users and walkers.			
Views to / from landscape and cultural heritage features	Sirhowy valley walk (promoted) runs through the area along the broad ridge and has views down into the valley and to upland across the valleys. Panoramic views across to other upland areas and the BBNP			

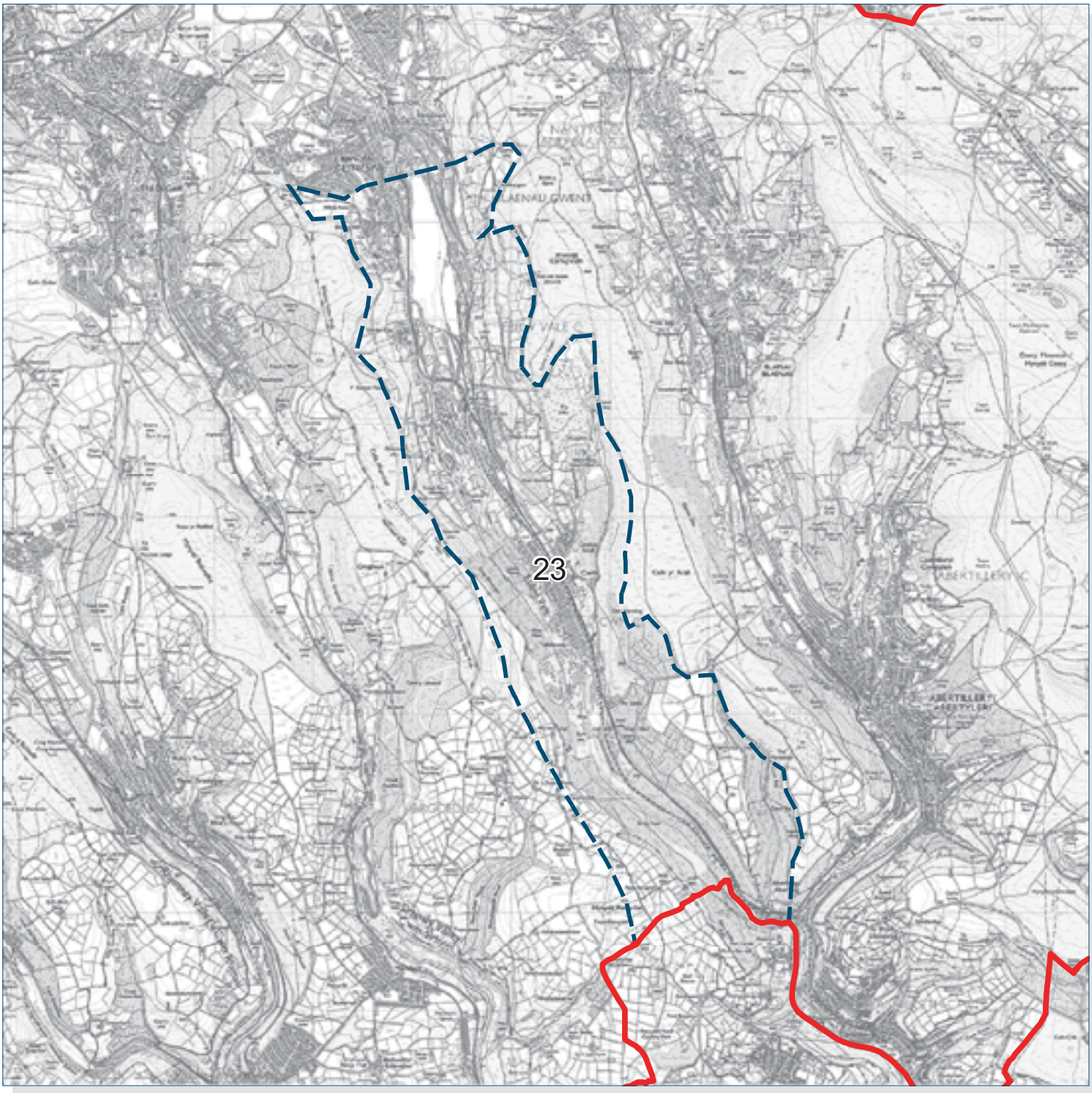
LANDSCAPE UNIT 22: Northern Manmoel Ridge				
		Assessed susceptibility		
		Low	Medium	High
AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and character	VS46 Scenic quality - High 50%, moderate 50% VS47 Integrity - high 50%, moderate 50% VS48 Character - high 50%, moderate 50%			
Remoteness and tranquillity	Sense of remoteness due to lack of roads and limited human access despite proximity to development in the valleys. VS24 Perceptual and other sensory qualities - Attractive, tranquil, exposed, threatening, remote 39%, Tranquil, sheltered, smell 25%			
VALUE				
		Assessed value		
		Low	Medium	High
Landscape value	*65% Cefn Manmoel SLA* VS50 - overall evaluation - high 50%, moderate 50% VS49 rarity - moderate 60% LH45 overall evaluation - high 61% GL31 rarity - low 100% GL33 overall evaluation - moderate 100%			
Historic value	2 SAMs HL38 Rarity - high 66% HL35 Integrity - moderate 55% HL40 Overall evaluation - moderate 55%			
SUMMARY OF SENSITIVITY TO WIND TURBINE DEVELOPMENT				
		Assessed sensitivity		
		Low	Medium	High
Micro	Low sensitivity to micro and small development in larger scale areas with few receptors			
Small				
Medium	Medium sensitivity to medium development in larger scale areas with few receptors			
Large	High sensitivity to large and very large development due to distinctive skyline and visibility of the elevated areas in the BBNP.			
Very Large				

LANDSCAPE UNIT 22: Northern Manmoel Ridge

Landscape Capacity and Guidance for siting wind turbines	
Landscape objective	**Objective 2: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind turbine development	**Designated features within the Landscape Unit:** 65% Cefn Manmoel SLA Visually important local landscape at southern end of the unit (Caerphilly designation) Two SAMs
	Other susceptible landscape, visual and cultural heritage features: Upland open landscape that is intervisible with surrounding uplands. Sirhowy Valley Walk (promoted route) and cycle routes close to the ridge line of this upland and has views of development in the valleys below, other uplands within the study area and the BBNP. Historic/cultural interest of reduced settlement of Troedrhiw-gwair
Baseline wind turbine development (March 2014)	No wind turbine development consented or planned within the unit.
Indicative overall capacity	There is no capacity for large and very large scale development on this narow ridge. There is some capacity for medium scale development and for small or micro scale development associated with existing built form. Capacity is likely to be reached quickly in this small landscape unit.
Guidance on siting	Section five of this document provides generic siting and guidance. In addition the following guidance should apply: Maintain the natural beauty of SLAs in the area and their special qualities. Maintain the special qualities of the area designated as Visually Important Local Landscape. Protect the settings of designated and other important cultural heritage features and the key views to and from these features. Consider the effects of development on views to and from the BBNP in the north part of this unit. Consider views from the Sirhowy valley walk and cycle route. Consider views from residential receptors in neighbouring units. Avoid siting wind turbines on the steep slopes and prominent skylines.

Landscape Unit: 23

Ebbw Vale valley landscape



LANDSCAPE UNIT 23: Ebbw Vale valley landscape

		Assessed susceptibility		
		Low	Medium	High
LANDSCAPE				
Scale	Medium to large scale landscape. VS8 scale: large 59%, medium 38%			
Landform	Broad glaciated valley. VS4 Topographic - hills/valleys 70%, rolling/undulating 21%			
Land cover pattern	Mixed land cover with urban areas in the valley bottom, fields and woods on the valley sides. Some recreation and past extraction. VS class level 3 - open/wooded mosaic upland valleys 40%. HL class level 3 - Fieldscapes 35%, VS5 Land cover pattern - Field pattern/mosaic 55%, Development 23%, extractive 17% VS16 Pattern - organised 45%, random 44%			
Built environment	Linear settlement pattern along valley floor. VS6 Settlement pattern - linear 40%, urban 23% VS20 Use of Construction Materials - generally appropriate 70%. VS25 Sense of Place - strong 72%			
VISUAL				
Skylines and settings	No distinct skylines in the area. Views up to the steep valley edge that provides the setting for development on the valley floor.			
Movement	Busy valley bottom and less busy up the valley sides where there is little or no settlement. VS18 Level of Human access -Occasional or Infrequent 74%			
Visibility, key views, vistas.	Open valley sides with some enclosure due to woodlands and built form. VS9 Enclosure - open 65%			
Intervisibility, associations with adjacent landscapes	Views up and down the valley and into the valley from adjacent upland areas. VS22 there are attractive views - 58% both in and out. VS23 there are detractive views - 54% both in and out.			
Types of receptors	Few receptors. Residents, road users and walkers.			
Views to / from landscape and cultural heritage features	Local path - Ebbw Vale valley walk runs along the valley side to the west and has views up and down the valley.			

LANDSCAPE UNIT 23: Ebbw Vale valley landscape				
		Assessed susceptibility		
		Low	Medium	High
AESTHETIC, PERCEPTUAL AND EXPERIENTIAL				
Scenic quality and character	VS46 Scenic quality - high 46% VS47 Integrity - moderate 44% VS48 Character - high 80%			
Remoteness and tranquillity	Sense of remoteness and tranquillity very mixed depending on location. The top of the valley sides is remote in places but always close to development. VS24 Perceptual and other sensory qualities - sheltered, exposed threatening 40%, tranquil, sheltered 17%			
VALUE				
		Assessed value		
		Low	Medium	High
Landscape value	Approximately 76% SLA *Cafn Manmoel SLA* *Mynydd Carn-y-Cefn and Cefn yr Arail SLA* VS50 - overall evaluation - high 63% VS49 rarity - moderate 53% LH45 overall evaluation - moderate 46% GL31 rarity - low 71% GL33 overall evaluation - moderate 60%			
Historic value	1 SAM HL38 Rarity - high and outstanding 69% HL35 Integrity - moderate 58% HL40 Overall evaluation - high and outstanding 52%			
SUMMARY OF SENSITIVITY TO WIND TURBINE DEVELOPMENT				
		Assessed sensitivity		
		Low	Medium	High
Micro	Low sensitivity to micro scale wind turbine development due to the presence of existing commercial development.			
Small	Low to medium sensitivity to micro scale wind turbine development due to the presence of existing commercial development.			
Medium	Medium to high sensitivity to medium developments			
Large	High sensitivity to large and very large development due to presence and proximity of numerous sensitive receptors			
Very Large				
Additional Comments	The valley landscape has higher sensitivity to larger development due to the presence of visual receptors and potential effects on the scale, landform and pattern of the valley			

LANDSCAPE UNIT 23: Ebbw vale valley landscape

Landscape Capacity and Guidance for siting wind turbines	
Landscape objective	**Objective 2: Maintain the landscape character.**
Key landscape, visual and cultural heritage characteristics susceptible to wind turbine development	Designated features within the Landscape Unit: 76% SLA Cafn Manmoel SLA Mynydd Carn-y-Cefn nd Cefn yr Arail SLA One SAM at the southern end of the unit (Marine Colliery pumping engine)
	Other susceptible landscape, visual and cultural heritage features: Medium to large scale valley landscape that extends from the Ebbw Vale south through the study area. Mix of land cover. Large areas for informal recreation. Ebbw Valley walk links with the Sirhowy Valley Walk Ebbw Fawr sides rich in archaeological remains of industry, including tips, levels, inclines, quarries.
Baseline wind turbine development (March 2014)	Very large scale development (two turbines) proposed at Hafod-Y-Dafal decision pending (south end of the valley on the east side).
Indicative overall capacity	There is no capacity for large and very large scale development in this unit. There is some capacity for medium scale development and greater capacity for small and micro scale development associated with existing built form.
Guidance on siting	Section five of this document provides generic siting and guidance. In addition the following guidance should apply: Maintain the natural beauty of SLAs in the area and their special qualities. Protect the settings of designated and other important cultural heritage features and the key views to and from these features. Consider views from the A4046 and cumulative impacts of sequential views through the valley. Avoid sequential cumulative impacts by ensuring visual separation between turbines/small groups of turbines. Avoid the loss of trees and woodland cover in this area. Consider woodland and tree planting mitigation for smaller scale development where appropriate. Consider views from the valley settlement to the east and west, although no turbines constructed in the unit at present future siting should aim to avoid overbearing cumulative visual effects in the long term. Avoid siting wind turbines on the steep slopes and their associated tops and skylines.

Section Five: Guidance for Wind Energy Development

The following guidance should be read in conjunction with the specific locational guidance for each Landscape Unit in Section 4. This guidance is intended to aid the integration of wind turbines into the landscape through good siting and design. The first section below relates specifically to the Caerphilly County Borough study area and provides strategic guidance for the local authority and developers to consider in terms of the whole study area and its overall landscape context.

Caerphilly County Borough Study Area Specific Guidelines

The European Landscape Convention defines landscape as: '*An area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*.' The landscape in the County Borough is varied and ranges from settled valleys and remote hill tops to the north that have been shaped over many centuries. The valleys are heavily settled but development has been constrained by landform, resulting in open steep valley sides and open ridges and uplands. To the south the landform gradually descends to rolling lowland that with a mixed land cover of forestry and grazed fields with hedgerow boundaries with trees. There is evidence of prehistoric activity and Roman occupation across the study area demonstrating that the landscape seen today has been shaped by human activity of centuries.

The uplands play an important role in separating the built form of the settled valley floors. They provide a unique contrast in landscape types over a relatively small geographic area and act as a valued backdrop to the settlements. Wind turbine development that dilutes this contrast should be avoided.

The valley sides are important in providing the immediate setting for the settlements. Wind turbine development on the valley sides surrounding the settlements should avoid dominating the settlements either in height, proximity or extent. No settlement should have the sense of being surrounded by wind turbines.

The capacity of each landscape unit to accommodate wind turbine development is partly dependent on development in neighbouring units. It may be that when one landscape unit reaches capacity it will significantly reduce the capacity of adjoining units, particularly for smaller landscape units and for units where cumulative effects have been identified as a particular issue. Wind turbine development in landscape units in the Heads of the Valley study area to the north and in each of the neighbouring local authorities (Rhondda Cynon Taf, Torfaen, Newport City and City of Cardiff) may also impact on the capacity of units in Caerphilly that neighbour them.

Additional Guidance

The following notes are summarised from guidelines set out in Scottish Natural Heritage (2012) Siting and Design of Small Scale Wind Turbines of between 15 and 50 metres in height. Useful guidance is also provided in the following documents:

- Design Commission for Wales (2012 updated 2014) Designing Wind Farms in Wales.
- Scottish Natural Heritage (2014) Siting and Designing wind farms in the landscape. Version 2.

Although aimed at larger wind farm developments, the guidance set out in these documents is frequently transferable and should be considered when designing and siting smaller scale developments.

Factors Relating to Design

Turbine Choice

Small turbines offer a greater choice of variety, styles, design and colours than large commercial scale turbines and their selection should be carefully considered in relation to the site in which they are to be located. This is particularly important when other turbines are present to ensure that there aren't conflicting styles in the same locality.

Turbine Colour

Turbine colour should be chosen to help blend the structure into the landscape. The same colour should be used for all components of the turbine and should be non-reflective. A very light grey is commonly used because it minimises the visibility of the turbines when they are seen against the skyline, which is how most large scale turbines are

viewed. In all cases the aim should be to minimise visibility and reflectivity of the turbine components.

Turbine Size and Scale

Although small scale turbines are likely to have fewer landscape and visual effects than large commercial models, they can still visually dominate nearby landscape features. Identifying the main landscape and visual characteristics of the landscape in which the turbines are to be sited is an important determinant in selecting the most appropriate size. Landscapes with a simple, strong and mainly horizontal form are better able to accommodate taller turbines and large turbine groups as the height of turbines appears more proportionate to the landscape. Small scale turbines, smaller groupings or individual turbines tend to be better suited to smaller scale, more complex landscapes where there are other features such as buildings, trees or hedges. A useful rule is that turbines should generally be no more than 50% higher than nearby buildings.

Turbine Layout

Although there is scope to present a small group of turbines as a coherent visual image, this may be difficult where there are other built elements such as buildings, wood poles, pylons and masts present with the result that visual conflict can arise. Where possible turbine layout should respond to existing landscape patterns, whether field boundaries, buildings or vegetation patterns. In all cases, turbine layout should respect the underlying landform. Where possible turbines should be located along contours rather than crossing them.

Micro-siting

Micro-siting of turbines often takes place during construction due to unforeseen circumstances such as ground conditions. This can affect the original design concept, particularly the relationship with nearby vertical features such as trees and masts. It is preferable if developers undertake pre-application ground surveys to minimise the requirement for micro-siting at the construction stage.

Ancillary Infrastructure

Visual impacts of any ancillary developments and visual conflicts between turbines and ancillary structures should be minimised by:

- Sensitive siting and design of ancillary equipment and infrastructure (e.g. using local landform, locally appropriate materials, architectural style and colours to more successfully integrate them into their surroundings).
- Using turbines with integral transformers.
- Siting turbines as close as possible to the point of use or grid connection to avoid long sections of overhead power lines or cable runs (more applicable to large scale wind farm developments).
- Utilising existing tracks to avoid tree and hedgerow removal, which may have adverse landscape effects. New tracks if required should follow existing landscape features such as field and woodland boundaries.
- Minimising cut and fill operations.
- Designing fencing or walling to fit the local situation, whilst maintaining the required security.
- Identifying locations for new tree and shrub planting to provide long term screening.

Factors Relating to Location Landscape Character

This study provides the basis for identifying the key landscape characteristics of the site and the wider area. It also identifies the sensitivity of the landscape to turbines and any special qualities which should be protected. However, this is a strategic study and in all cases turbine applications must be considered on their individual merits and detailed analysis is required to fully appreciate the nature of the development, site and its surroundings.

Impacts on landscape character are likely to be related to:

- Scale of the landscape – whether it is small or large and whether the proposed turbines are of an appropriate scale.
- Topography – turbines can dominate small scale or intricate landform if not carefully sited.
- Skylines – turbines can affect the simplicity of skyline or ridges even if located below such features.
- Settlement pattern – turbines should be carefully sited in relation to existing buildings.
- Influence on the tranquility of the landscape – turbines create movement, the amount depending on the particular model.

Areas with a Sense of Remoteness

Rural areas which are particularly valued for their remoteness can be affected by the introduction of turbines, although this is less likely to be the case if the turbines are located close to farms or other existing buildings. However, incremental erosion of the special qualities of remoteness and tranquility should be avoided. Some locations close to centres of population are valued as an important recreational resource and have a sense of being unspoilt and remote even though they are close to urban areas. Locating turbines in these areas should be very carefully considered.

Valued Landscapes

This study identifies landscapes which are designated for their international, national or regionally valued qualities. This is a strategic study and in all cases turbine applications must be considered on their individual merits and detailed analysis will be required to fully appreciate the nature of the development, the site and its surroundings and effect on any locally designated or valued landscapes.

Factors relating to Siting

Landform

Smaller turbines have more potential to utilise landform (often in conjunction with vegetation) to help lessen their visual impact than larger scale commercial models. As the viewer's eye tends to be drawn towards the skyline, turbines should be set back from ridges and skylines to reduce their visibility within the wider landscape. Siting of turbines on distinctive or prominent summits or skylines should generally be avoided. Shallower side slopes or gently undulating landform below ridgelines should be selected where possible.

It is often preferable for wind energy developments to be grouped upon the most level part of the site so the development appears to be less visually confusing when viewed from different elevations and directions.

Landscape Pattern

Turbines can be sited to reflect patterns in the landscape, for example field and woodland boundaries. Conversely, care must be taken not to site turbines so that they conflict with patterns in the landscape. Groupings of turbines can affect how they appear in the landscape. For example three dispersed turbines could be grouped to form a single feature in a visually complex landscape, whilst in a larger scale landscape, a larger single turbine with the same generating capacity may be preferable.

A small group of small turbines is most likely to be preferable in valley bottoms and on lower valley slopes where there are other scale indicators.

Focal Features

Turbines are likely to become focal features in the landscape particularly when new or unfamiliar designs are introduced. Care is required to ensure that they do not cause visual conflict or competition with other focal points. The siting of turbines should therefore be carefully considered to protect views to and from important landscape and cultural heritage features and their wider setting.

Turbines can highlight features which would otherwise be hidden. For example a turbine next to a farm could draw attention to its presence when the farm itself is hidden by buildings or trees.

Settlements and Urban Landscapes

Turbines should be carefully located in relation to nearby settlements, buildings and other structures. In sparsely settled rural landscapes, turbines should be located near to existing buildings or structures.

Views to/from, or on the approach to settlements (including dispersed properties) should be carefully considered when siting wind energy developments. Turbines should be located in the least visually prominent location. The type of turbine may be influenced by its proximity to a settlement.

Turbines should be sited to minimise impacts on public viewpoints, roads and public rights of way.

Woodland & Trees

Although trees and woodlands can cause turbulence which interferes with the efficiency or longevity of turbines, in some locations there may be the opportunity to screen small scale turbines by locating them close to trees and woodland. Care should be taken to site turbines so that they do not visually dominate or compete with prominent vegetation such as parkland trees, trees on knolls, avenues etc.

Turbines should be located without the need to fell trees and woodlands particularly where they are important features in the local landscape.

Seasonal variation in leaf cover should be considered when using trees to screen turbines. The felling and restocking regimes of commercial

forestry should be considered when locating turbines close to commercial forestry.

Cumulative Considerations

Potential cumulative landscape and visual effects should be carefully considered on a case by case basis, assisted by the production of Zones of Theoretical Visibility (ZTVs) and appropriate visualisations (preferably from agreed viewpoints). Existing, consented and proposed turbines should be taken into account, in addition to any similar developments, which together may give rise to cumulative effects.

See *Pembrokeshire and Carmarthenshire: Cumulative Impact of Wind Turbines on Landscape and Visual Amenity guidance April 2013* and *Scottish Natural Heritage: Guidance on Assessing the Cumulative Impact of Onshore Wind Energy Developments (2012*) for detailed guidance on how to assess cumulative impacts.

In Combination with Micro-Renewables

Groups of micro turbines can be prominent in some locations, by drawing the eye to their rotating blades. Rotation speeds vary considerably between small and larger bladed turbines, which if viewed together can create visual disturbance and clutter. Variations in rotor blade diameter should therefore be avoided.

In Combination with Other Small Scale Developments

Multiple small scale developments can dominate the landscape. Turbines should not create visual clutter and cumulative impact with existing built development and vertical structures such as high voltage overhead power lines and communications masts. To avoid this consider the following principles:

- Avoid inconsistent turbine height, layout and design between multiple wind energy developments that are intervisible.
- Identify opportunities to lessen intervisibility between multiple developments – intervening landform and forestry are all useful in this respect.

In Combination with Larger Turbines in an area

Smaller turbines when seen in combination with large turbines can create a confusing visual image. This can be lessened by:

- Using turbine layouts of a similar arrangement where more than one turbine group is present.
- Avoid situations where turbine rotary speeds are significantly different.

Filling in Gaps between Clusters of Wind Turbines

The perception of an area can be altered by introducing small turbines between clusters of wind farms which creates a visual link between all of the developments. Where site analysis indicates that visual separation is desirable, the gap between developments should be maintained.

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Figure 02b – Topography (Remainder of Caerphilly Study)

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Figure 15a – Sensitivity to Very Large Wind Turbine Developments (Heads of the Valleys Study)
Figure 15b – Sensitivity to Very Large Wind Turbine Developments (Remainder of Caerphilly Study)

Figure 01: Study Area

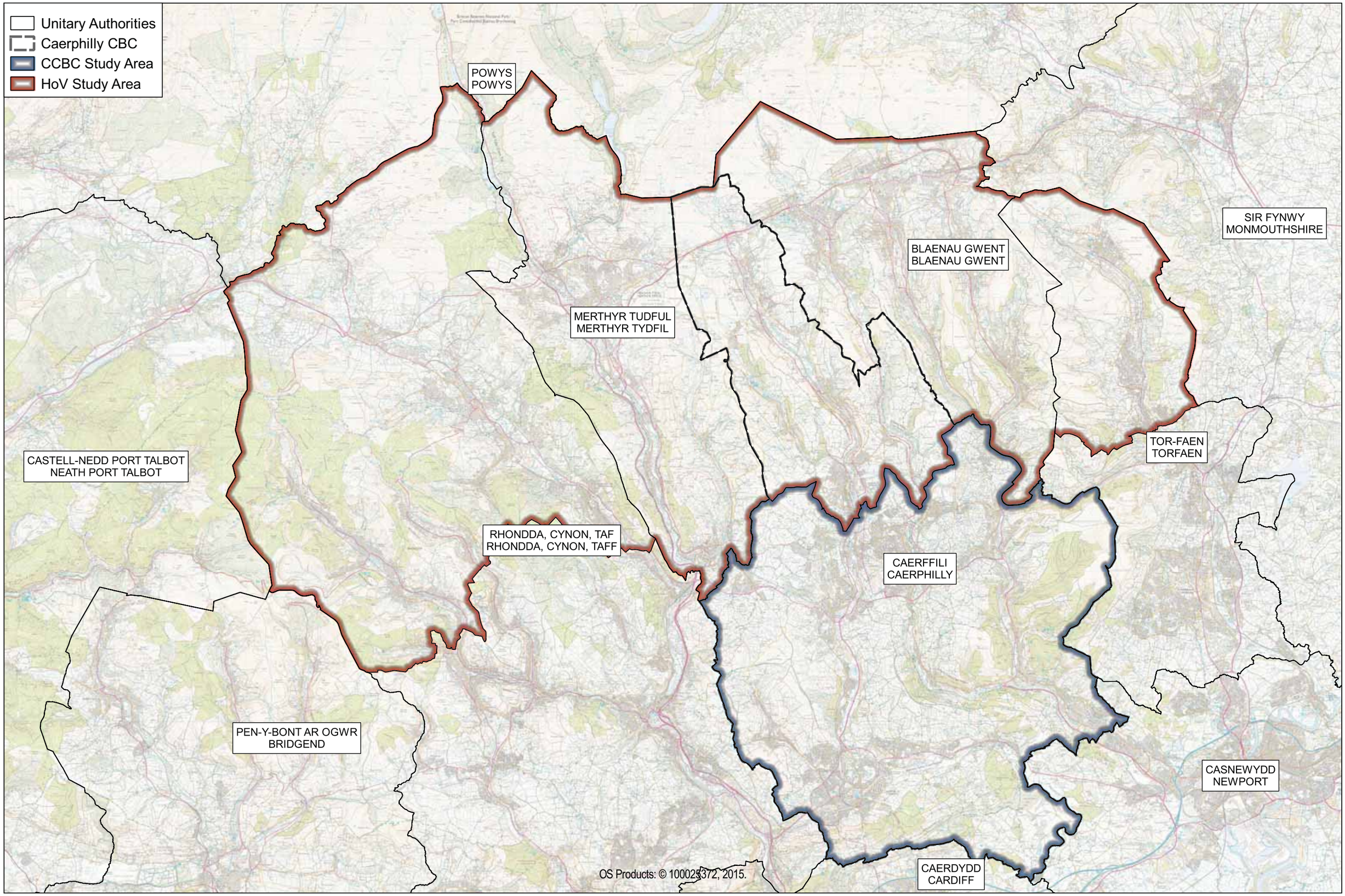
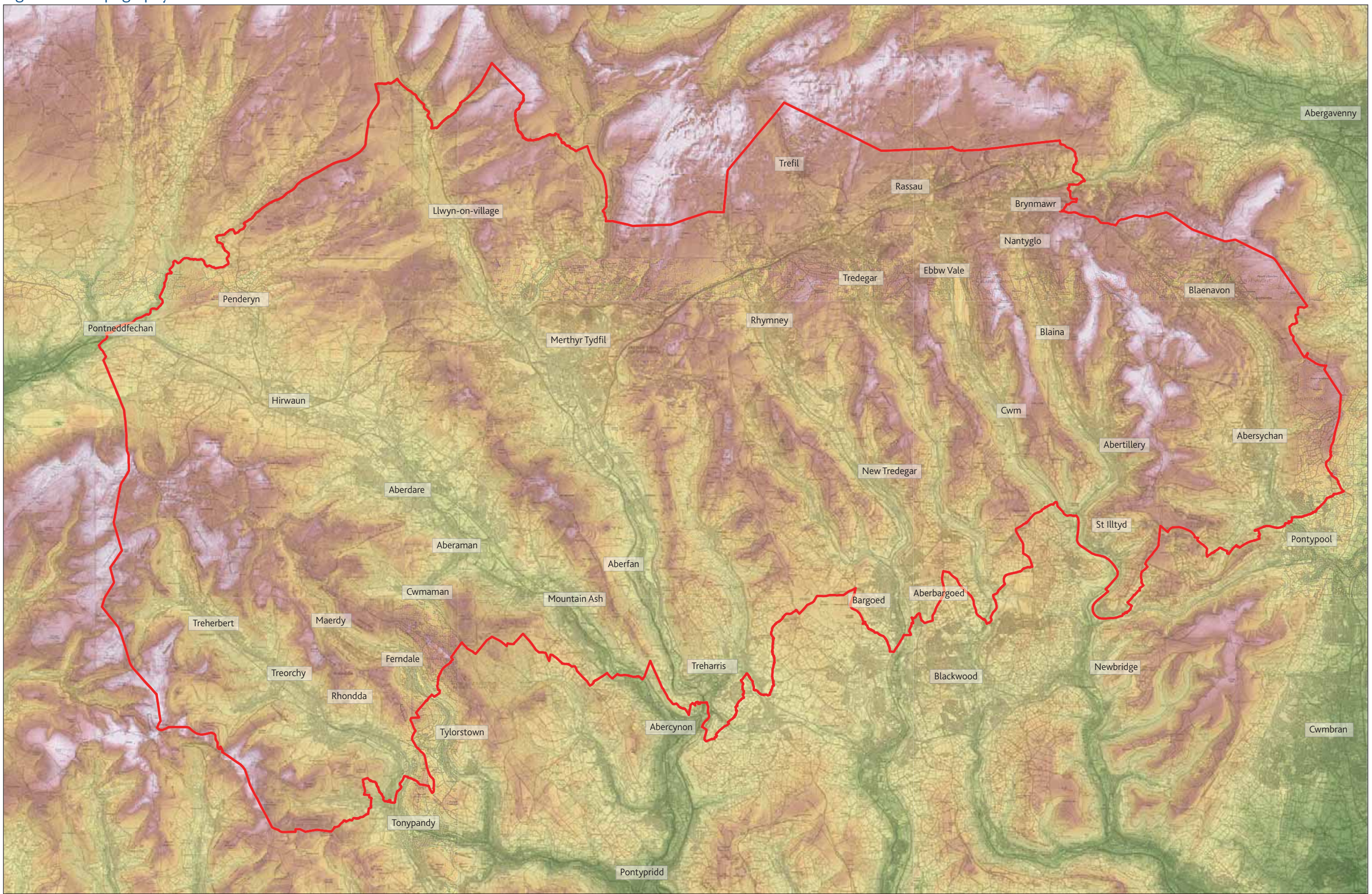


Figure 02a : Topography



Legend

Heads of the Valley Study Area

Topography

- 780m
- 0m

Notes:

1. Topography Data produced using ESRI ArcMap 10.2 Software from OS Terrain 50® OS OpenData.

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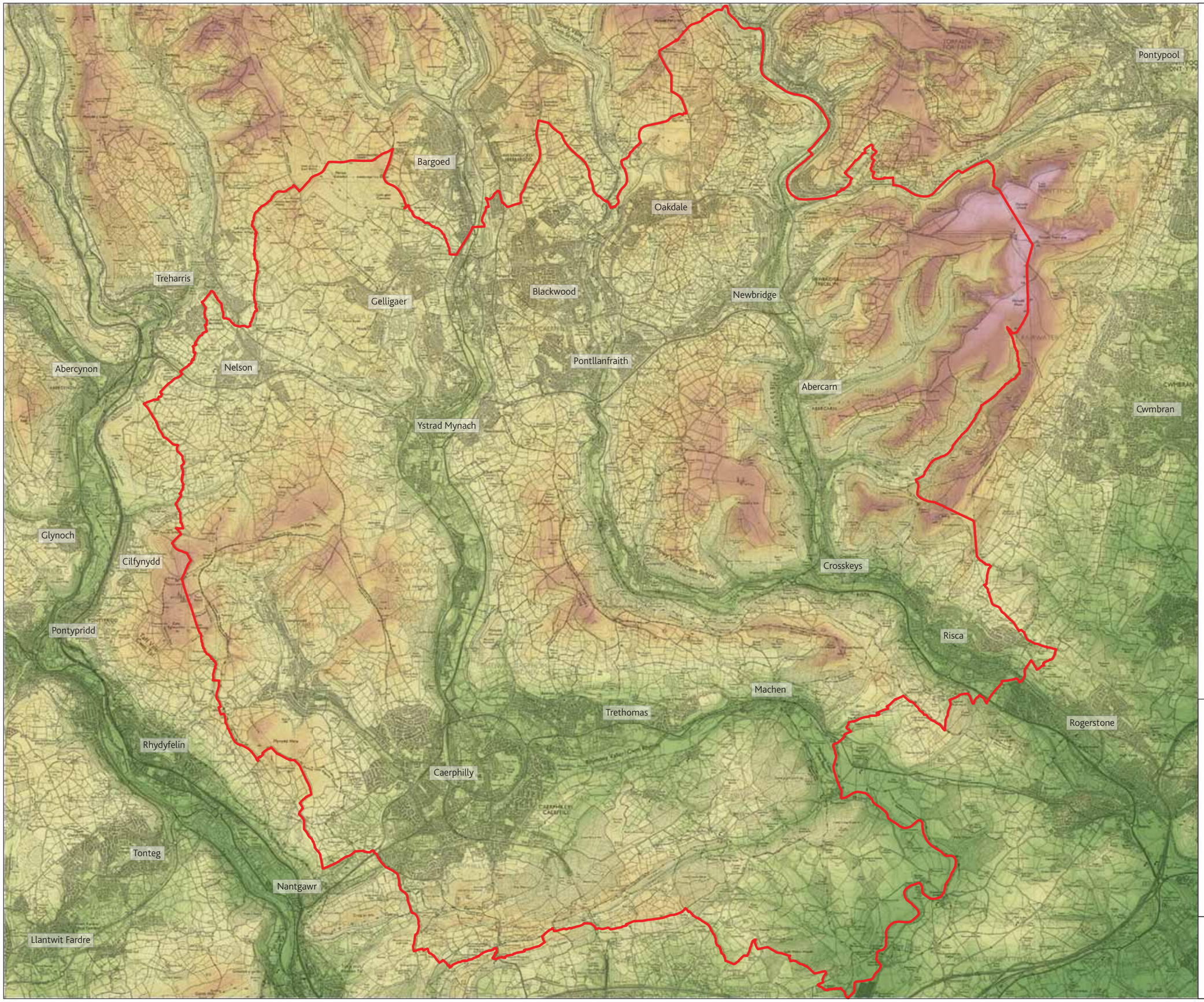
Figure 02b: Topography



Legend

Caerphilly Study Area

Legend

- 780m

- 0m

Notes:

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2. Topography Data produced using ESRI ArcMap 10.2 Software from OS Terrain 50® OS OpenData.

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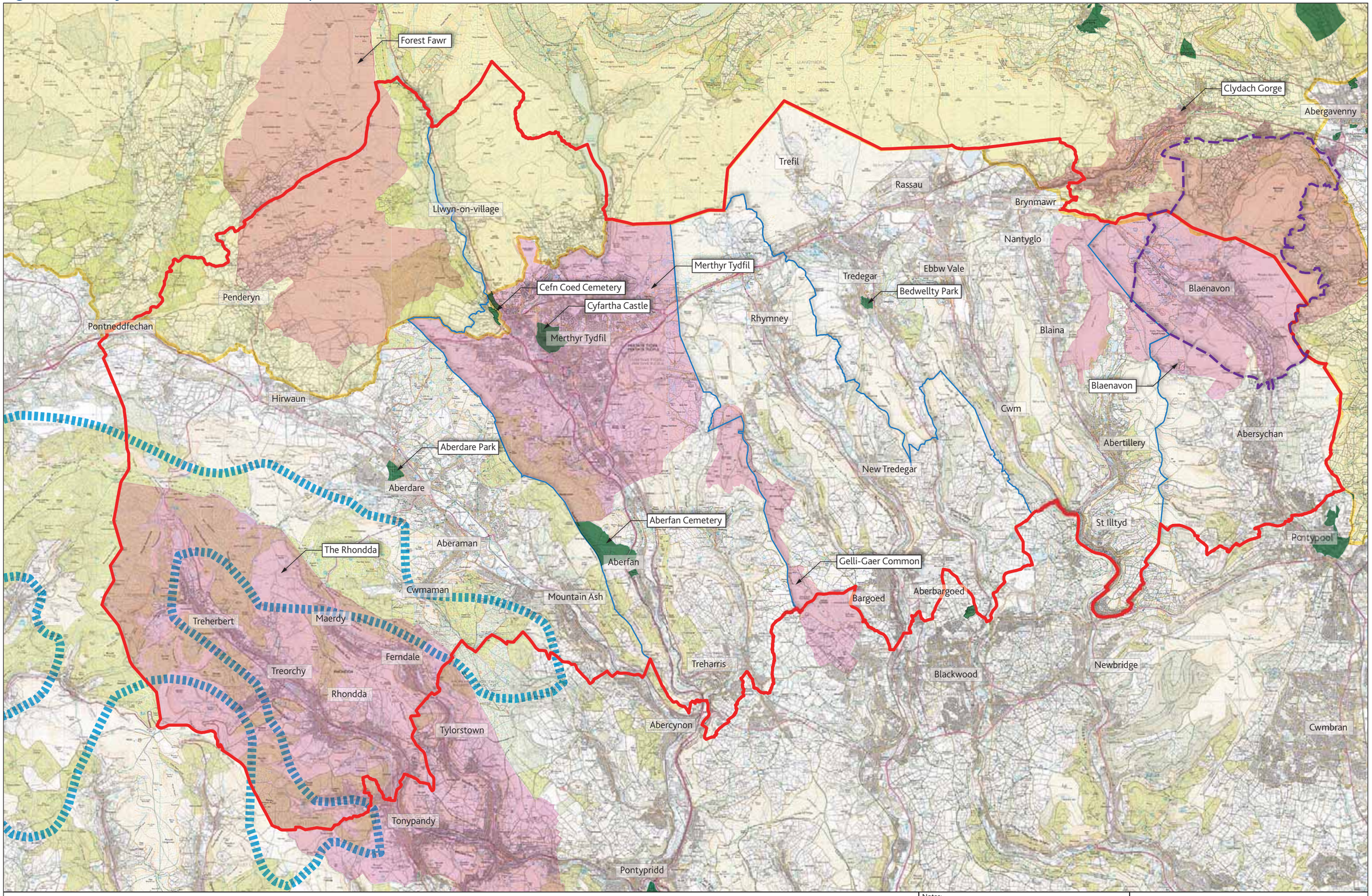
Figure 03a: Study Area and Areas of Landscape Interest



Legend

- Heads of the Valley Study Area
- Local Authority Boundary
- Brecon Beacons National Park (BBNP)
- Blaenavon World Heritage Site (WHS)
- Registered Landscapes of Historic Interest
- Registered Historic Park
- TAN 8 Strategic Search Area (SSA): F - Coed Morgannwg

Notes:

1. Local Authority boundary information derived from OS Open Data Boundary Line ESRI Shapefile.
2. National Park boundary derived from Cadw.
3. Designation information derived from the relevant local authority.
4. SSA F Coed Morgannwg Boundary derived from Technical Advice Note (TAN) 8: Renewable energy (2005) - Map 7

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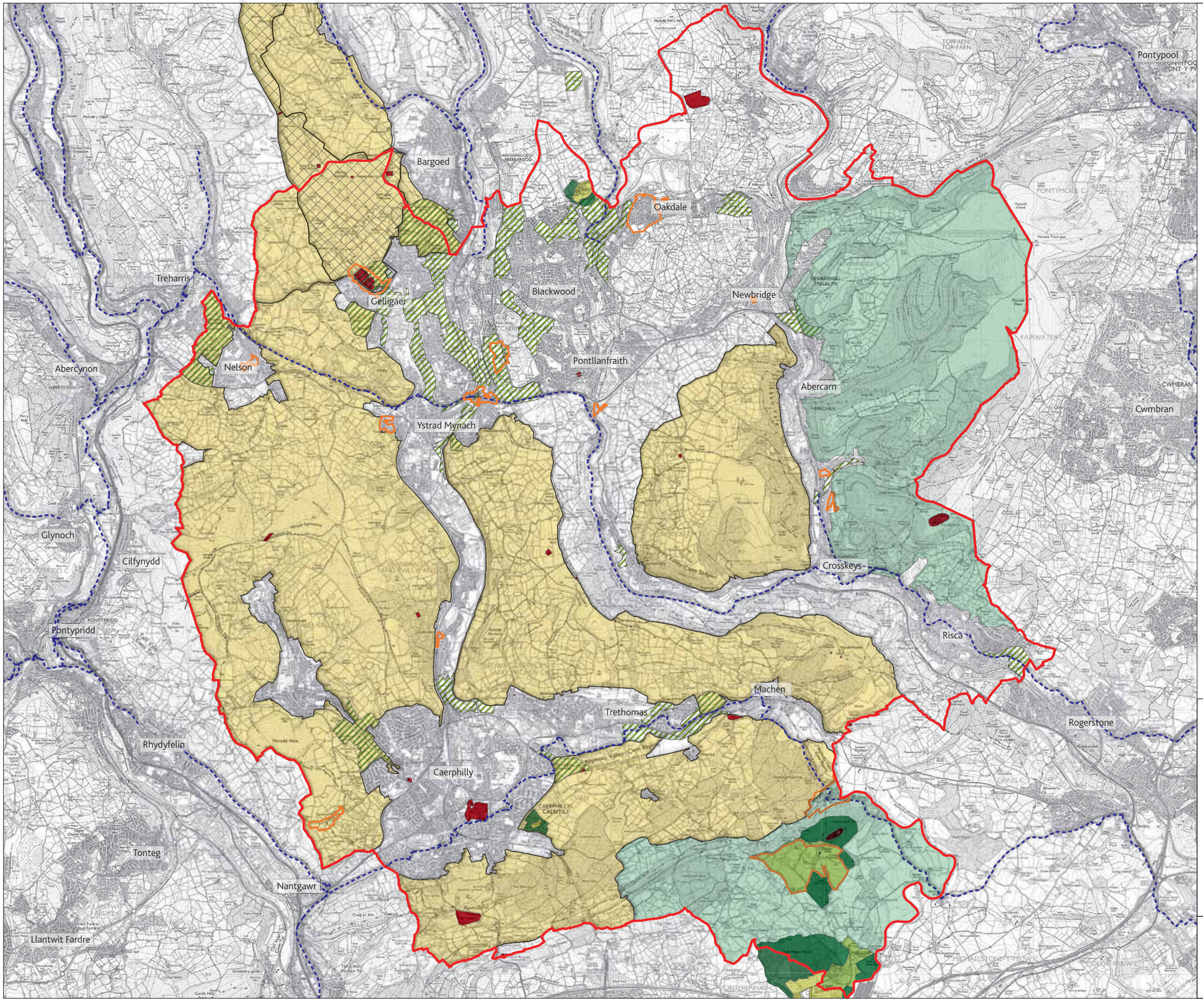
Figure 03b:
Areas of Landscape Interest & Landscape Designations



Legend

- Caerphilly Study Area
- Local Authority Boundary

Designations

- Sustrans - National Cycle Routes
- Green Wedges
- Landscapes of Outstanding Historic Interest
- Historic Parks and Gardens
- Historic Parks and Gardens - Essential Setting
- Conservation Area
- Scheduled Ancient Monuments
- Special Landscape Areas
- Visually Important Local Landscapes

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2. Local Authority Boundary drived from OS Open Data Boundary Line ESRI Shapefile.
3. Designation information derived from the relevant Local Authority
4. Open Access information derived from Cadw.

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Figure 04: Landscape Units

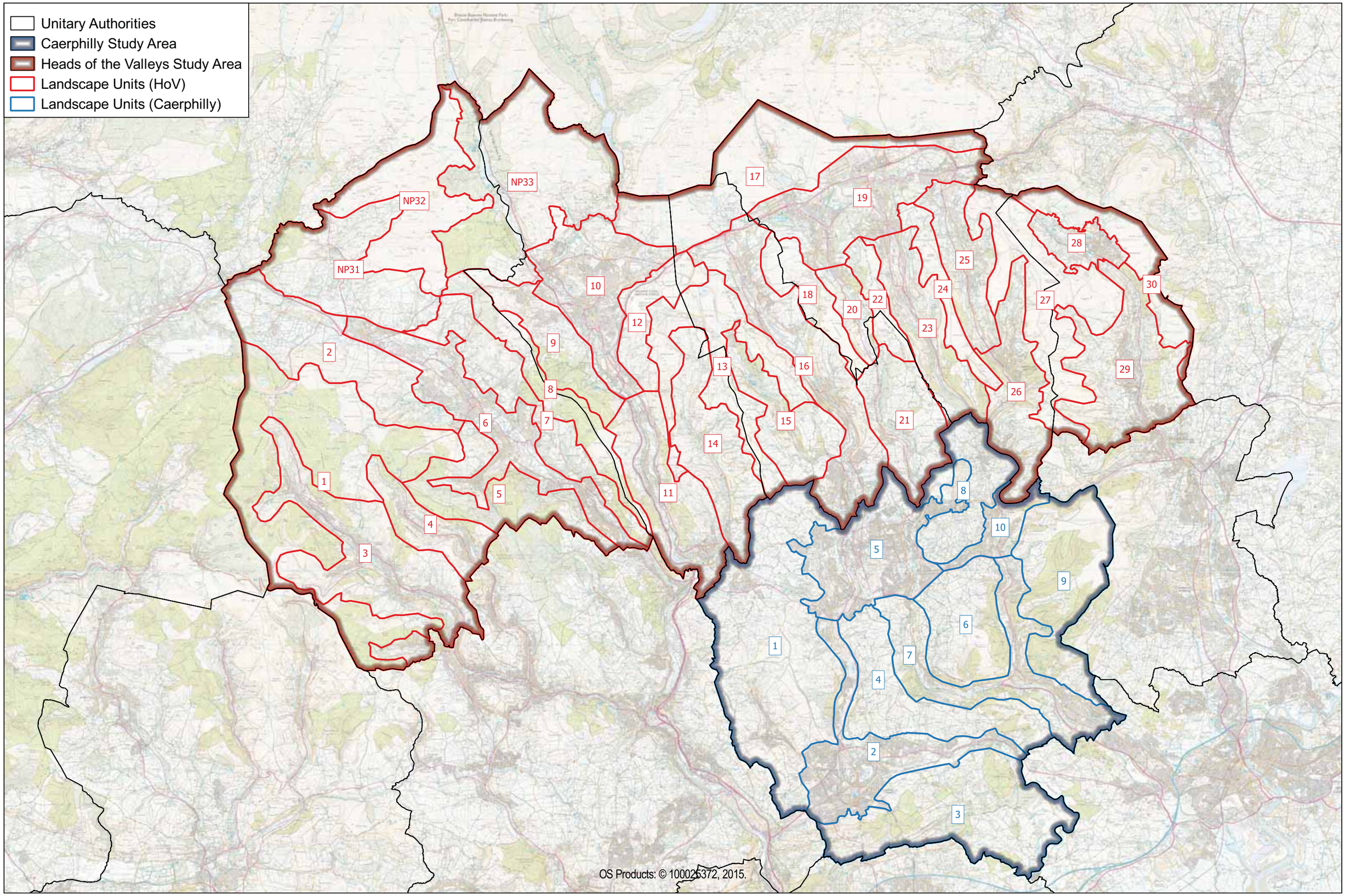
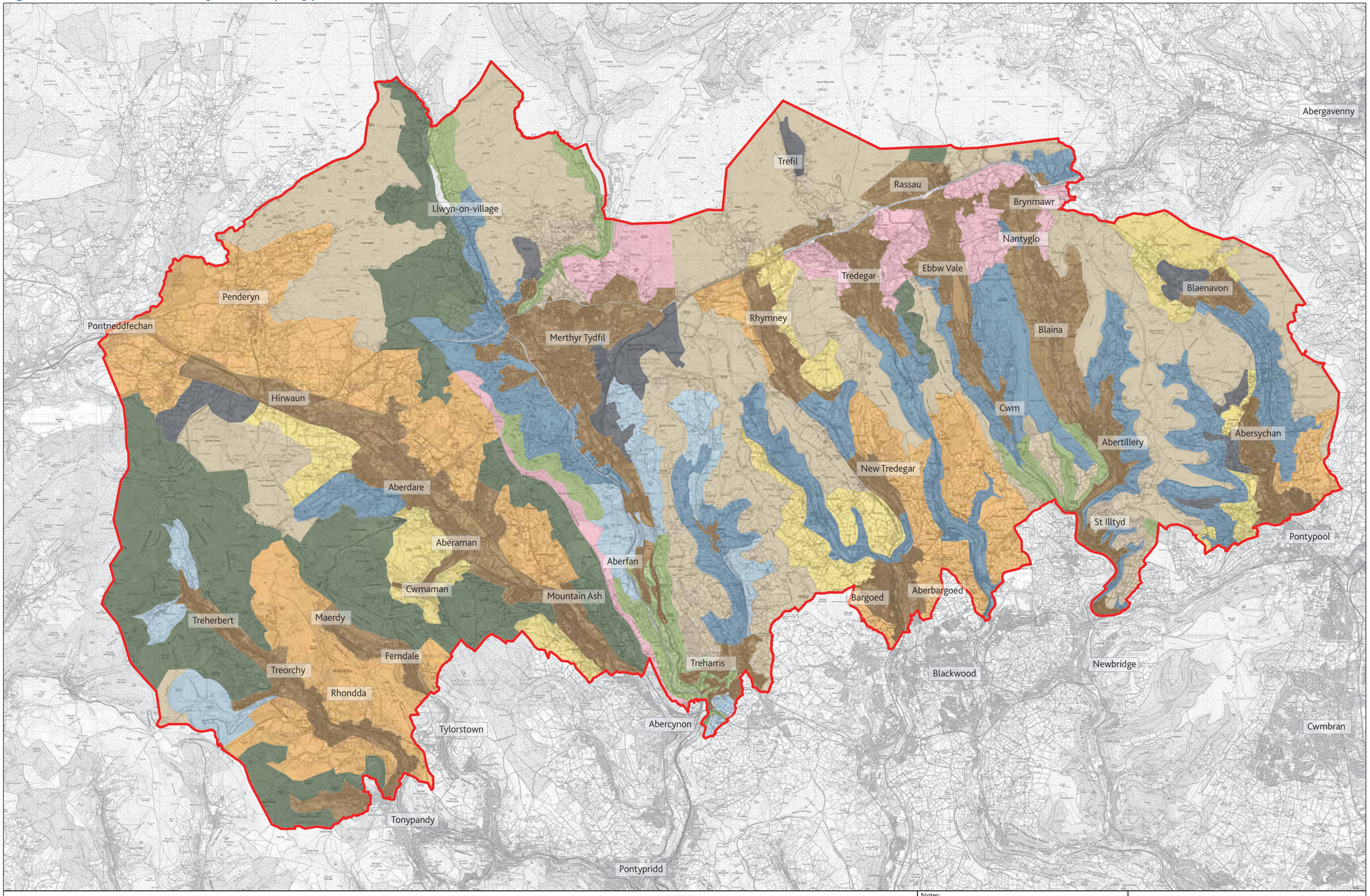


Figure 05 : Heads of the Valley Landscape Types



Legend

Heads of the Valley Study Area

Heads of the Valley Landscape Types

- Upland Moorland / Grassland
- Upland Mosaic
- Forested Upland and Plateau
- Open Upland Valley
- Mosaic Upland Valley
- Wooded Upland Valley
- Hillside and Scarp Slope Grass
- Hillside and Scarp Slope Mosaic
- Settlement
- Earthworks / Excavation / Landfill

Notes:

1. Heads of the Valley landscape types information derived from LANDMAP Visual and Sensory Classification Level 3.

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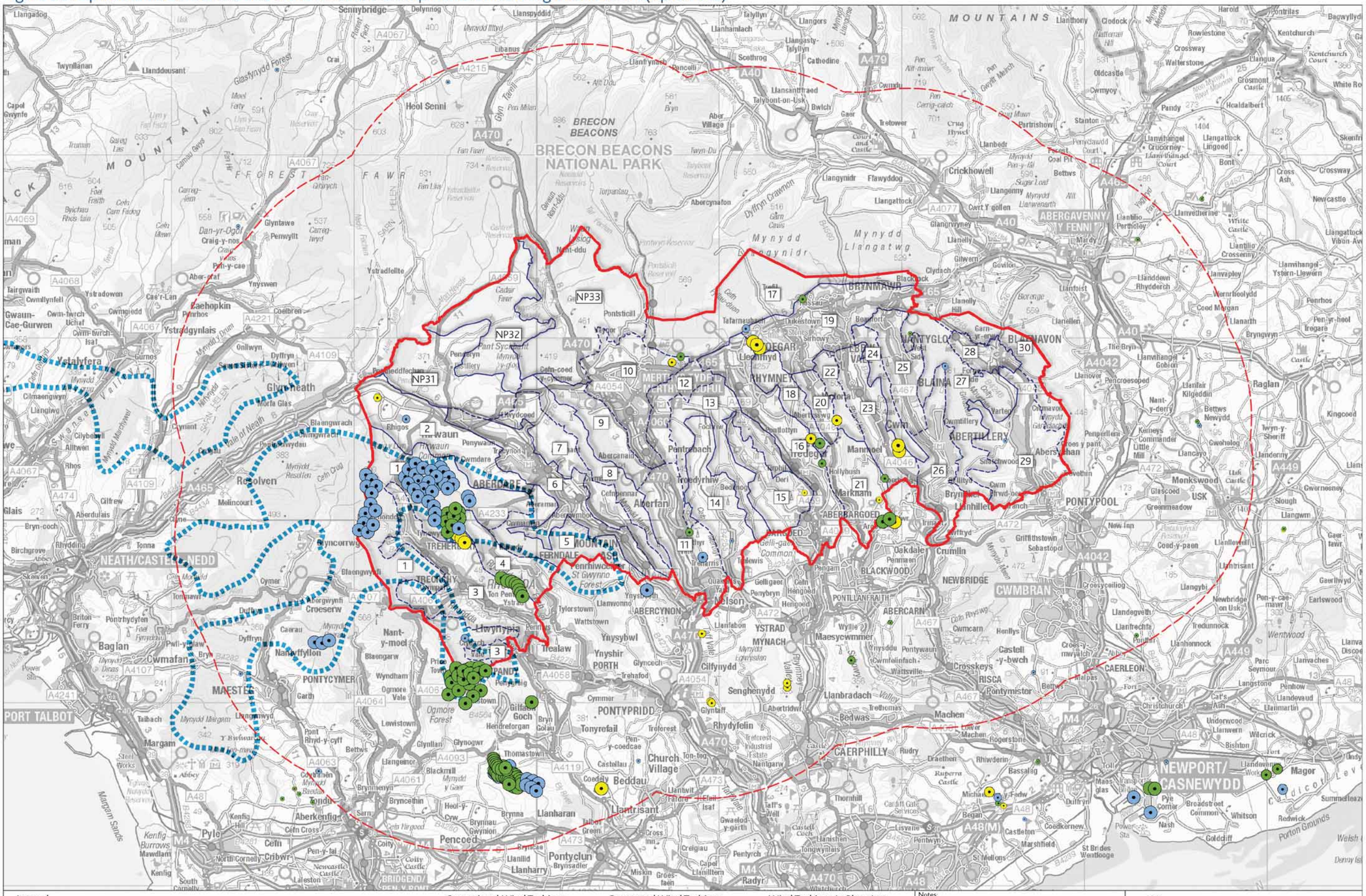
Figure 06: Operational/Consented and Wind Turbine Developments in Planning within 10km (April 2015)



Legend

- Heads of the Valley Study Area
- Study Area 10km Buffer
- Landscape Units
- TAN 8 Strategic Search Areas (SSA): E - Pontardawe & F - Coed Morgannwg

Operational Wind Turbines
- Micro
- Medium
- Large
- Very Large

Consented Wind Turbines
- Micro
- Small
- Medium
- Large
- Very Large

Wind Turbines In Planning
- Small
- Medium
- Large
- Very Large

Notes:
1. Wind Turbine locations, size and operational status information derived from submitted planning applications.
2. SSA E Pontardawe Boundary derived from Technical Advice Note (TAN) 8: Renewable energy (2005) - Map 6
3. SSA F Coed Morgannwg Boundary derived from Technical Advice Note (TAN) 8: Renewable energy (2005) - Map 7
4. Figures 06 and 07 have been updated in April 2015 with information from the online database. The sensitivity study records the situation at March 2014.

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0 2.0km 10km

Figure 06b: Operational / Consented and Wind Turbine Developments in Planning within 10km (November 2014)

Legend

- Study Area 10km Buffer
- Caerphilly Study Area
- Landscape Units
- TAN 8 Strategic Search Areas (SSA): F - Coed Morgannwg

Operational Wind Turbines

- Mi - Micro
- S - Small
- M - Medium
- L - Large
- VL - Very Large

Consented Wind Turbines

- Mi - Micro
- S - Small
- M - Medium
- VL - Very Large

Wind Turbines In Planning

- Mi - Micro
- S - Small
- M - Medium
- L - Large
- VL - Very Large

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2. Information derived from the Online Wind Turbine Database for South East Wales

N

0 2.5 5 7.5 km

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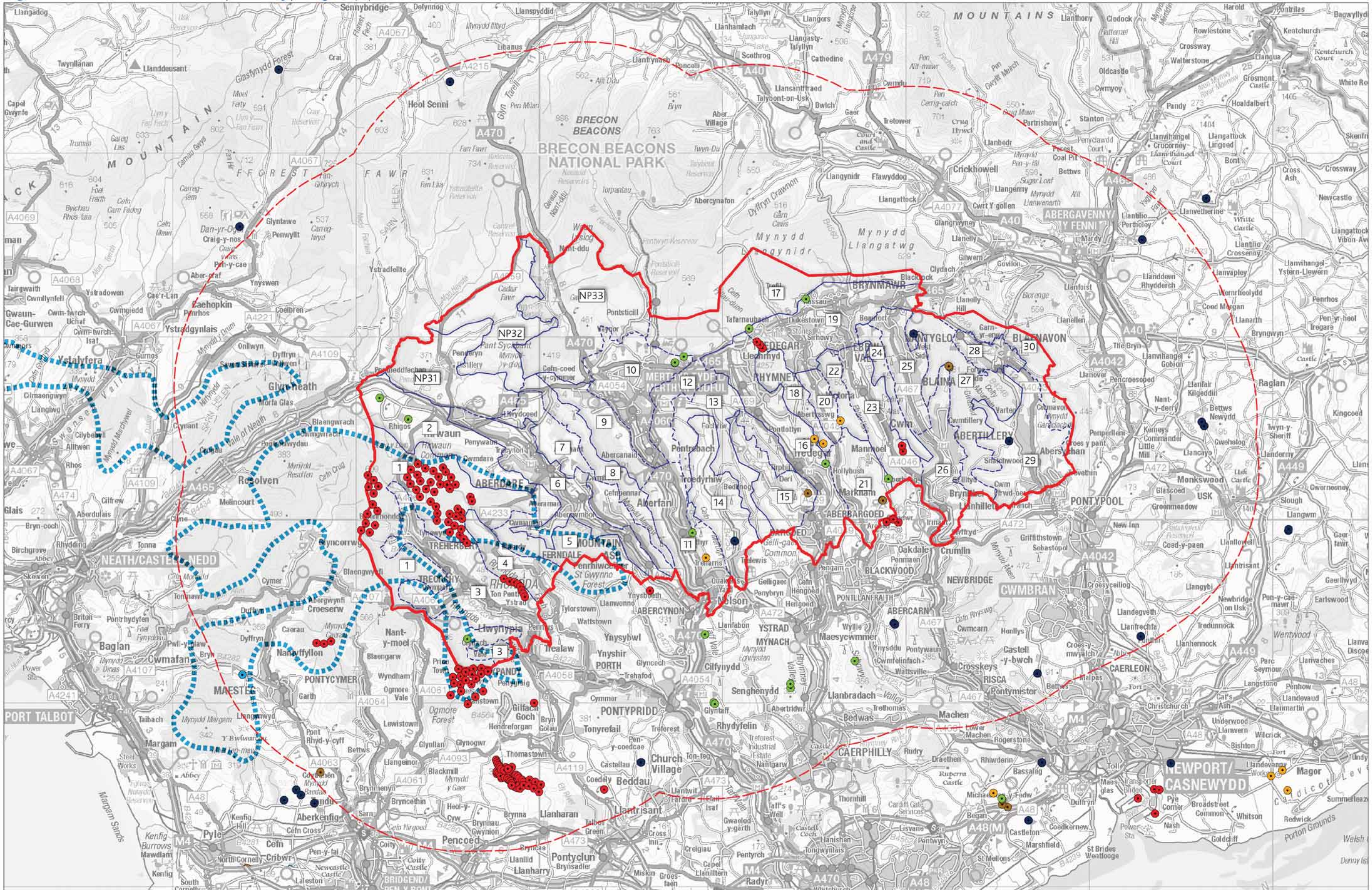
Figure 07 : Wind Turbine Development Typologies (April 2015)



Legend

- Heads of the Valley Study Area
- Study Area 10km Buffer
- Landscape Units
- TAN 8 Strategic Search Areas (SSA): E - Pontardawe & F - Coed Morgannwg

Wind Turbine Development Typologies

- Micro
- Small
- Medium
- Large
- Very Large

Notes:

1. Wind Turbine locations, size and operational status information derived from submitted planning applications.
2. SSA E Pontardawe Boundary derived from Technical Advice Note (TAN) 8: Renewable energy (2005) - Map 6
3. SSA F Coed Morgannwg Boundary derived from Technical Advice Note (TAN) 8: Renewable energy (2005) - Map 7
4. Figures 06 and 07 have been updated in April 2015 with information from the online database. The sensitivity study records the situation at March 2014.

N

0 2.0km 10km

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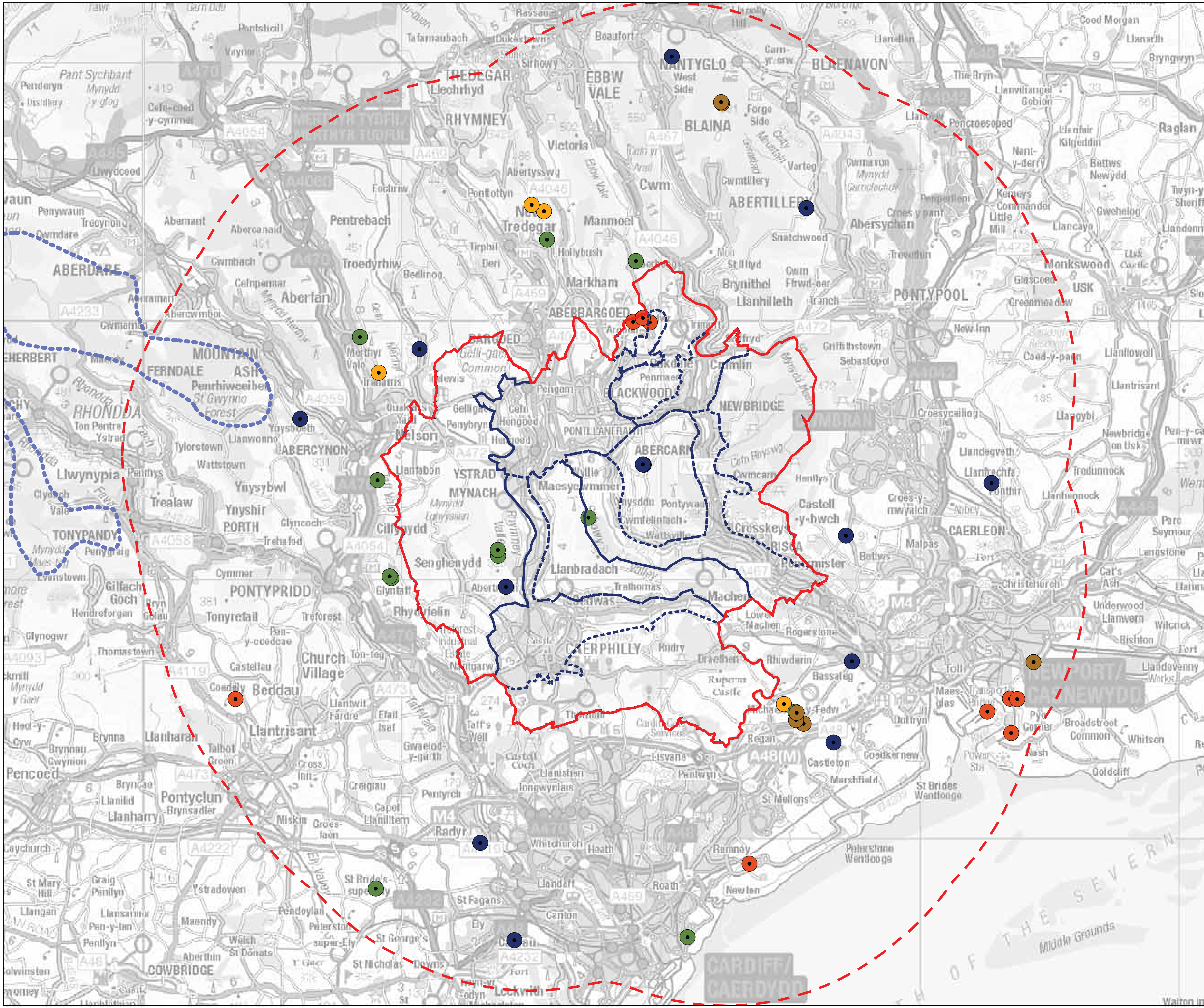

Figure 07b:
Wind Turbine Development Typologies within 10km (November 2014)

Legend

- Caerphilly Study Area
- Study Area 10km Buffer
- TAN 8 Strategic Search Areas (SSA): F - Coed Morgannwg
- Landscape Units

Wind Turbine Development Typologies

- Mi - Micro
- S - Small
- M - Medium
- L - Large
- VL - Very Large

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2. Information derived from the Online Wind Turbine Database for South East Wales

N

0 2.5 5 7.5 km

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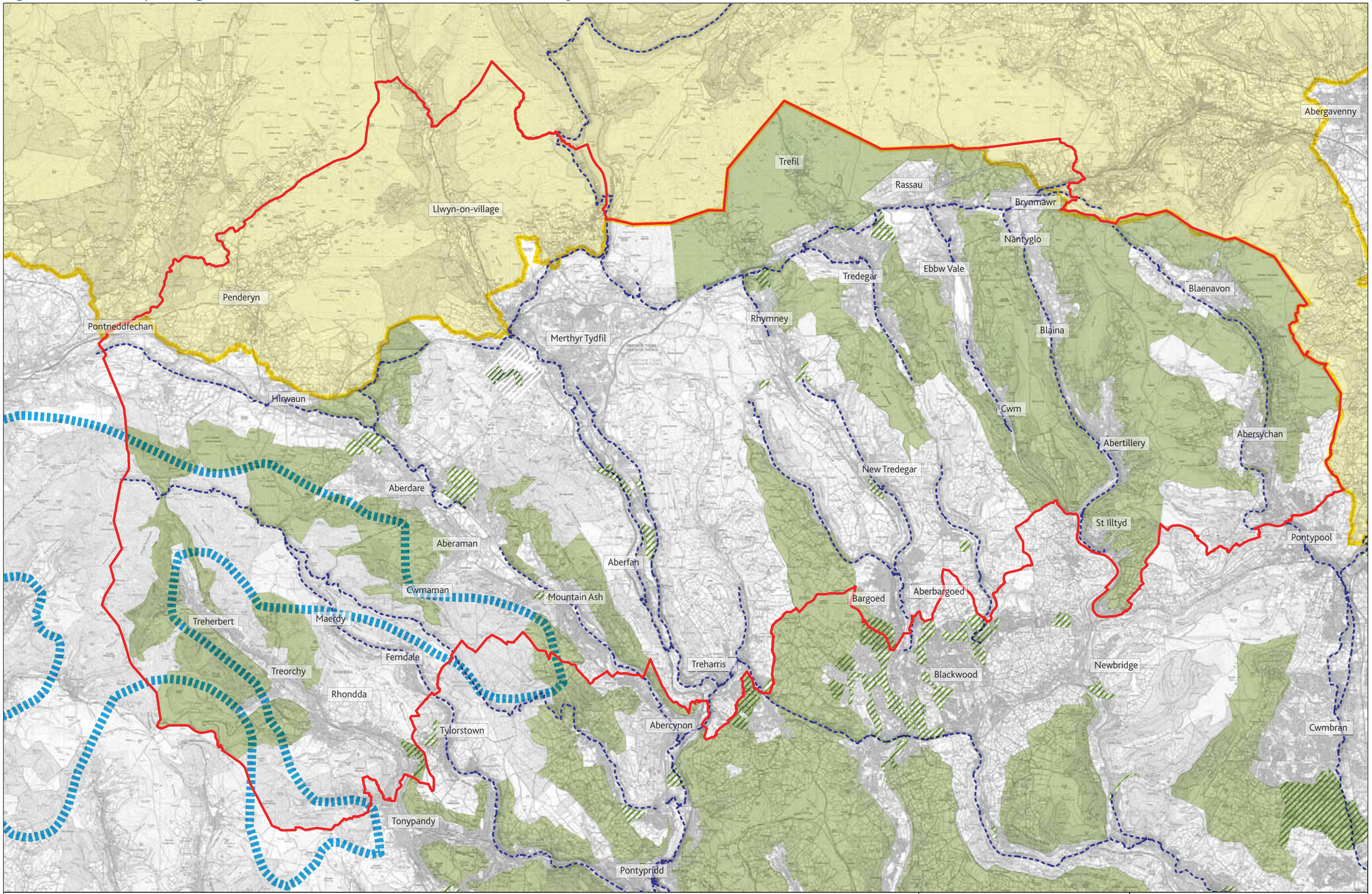
Figure 08a : Landscape Designations, TAN 8 Strategic Search Area and National Cycle Routes



Legend

- Heads of the Valley Study Area
- TAN 8 Strategic Search Area (SSA): F - Coed Morgannwg
- Brecon Beacons National Park (BBNP)
- Special Landscape Areas (SLA)
- Sustrans - National Cycle Routes
- Green Wedges

Notes:

1. National Park boundary derived from Cadw.
2. Designation information derived from the relevant local authority.
3. SSA F Coed Morgannwg Boundary derived from Technical Advice Note (TAN) 8: Renewable energy (2005) - Map 7

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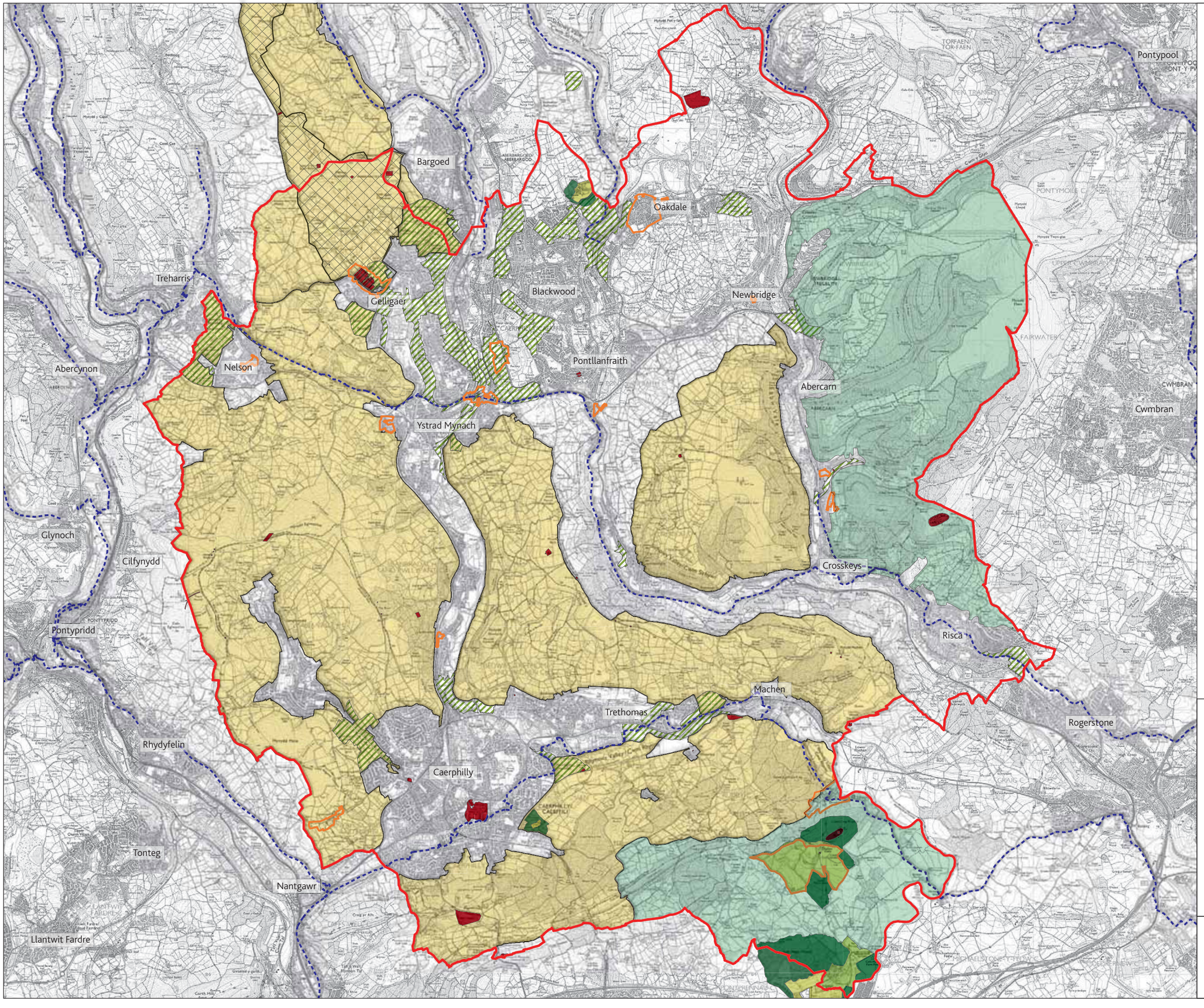
0 1.0km 5.0km

Figure 08b:
Areas of Landscape Interest & Landscape Designations



Legend

- Caerphilly Study Area
- Local Authority Boundary

Designations

- Sustrans - National Cycle Routes
- Green Wedges
- Landscapes of Outstanding Historic Interest
- Historic Parks and Gardens
- Historic Parks and Gardens - Essential Setting
- Conservation Area
- Scheduled Ancient Monuments
- Special Landscape Areas
- Visually Important Local Landscapes

Notes:

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2. Local Authority Boundary drived from OS Open Data Boundary Line ESRI Shapefile.
3. Designation information derived from the relevant Local Authority
4. Open Access information derived from Cadw.

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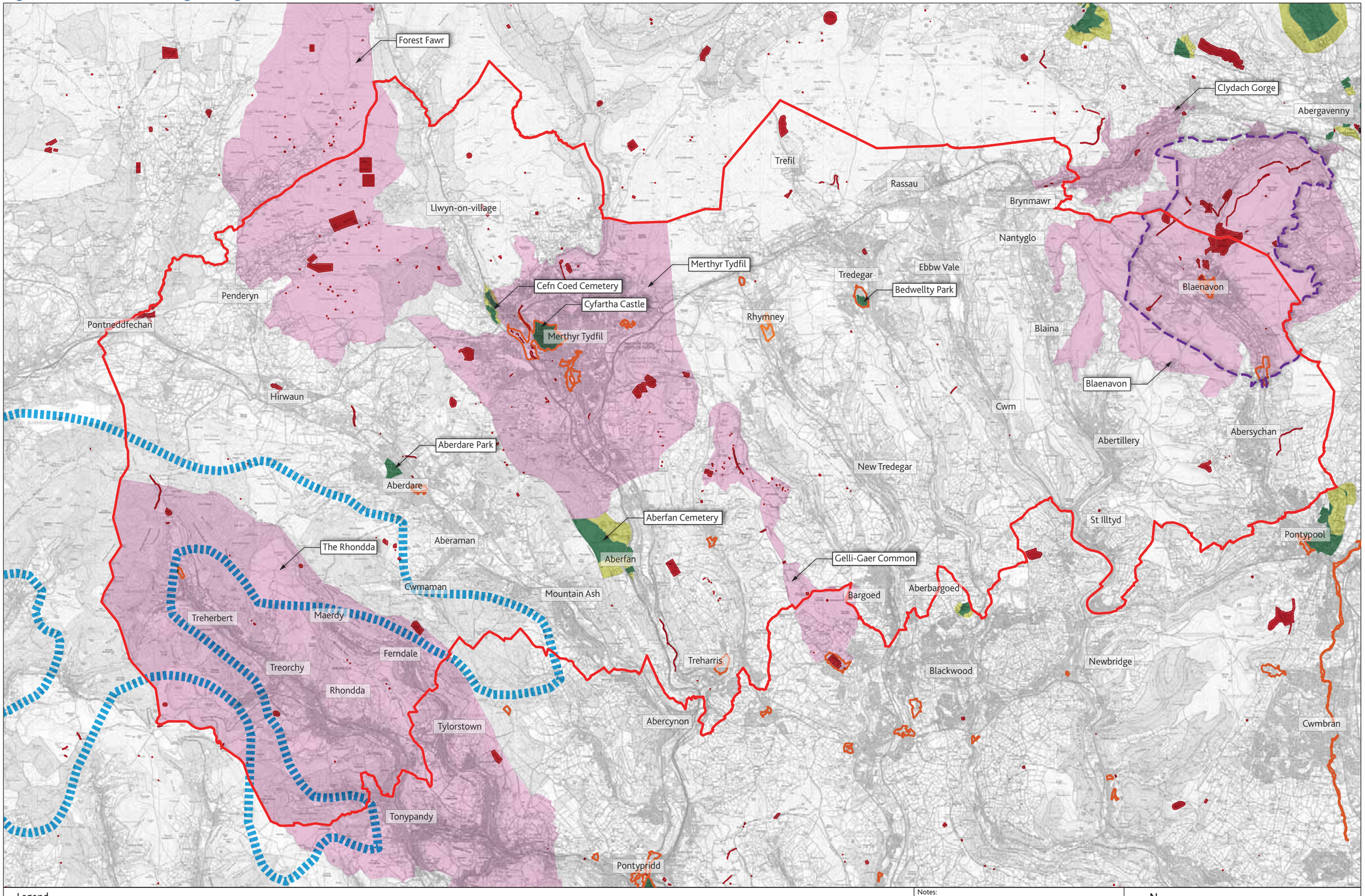
Figure 09 : Cultural Heritage Designations



Legend

- Heads of the Valley Study Area
- TAN 8 Strategic Search Area (SSA): F - Coed Morgannwg
- Blaenavon World Heritage Site (WHS)
- Conservation Area
- Scheduled Ancient Monuments
- Registered Landscape of Historic Interest
- Registered Parks and Gardens
- Registered Parks and Gardens - Essential Setting

Notes:

1. Designation information derived from the relevant local authority.
2. SSA F Coed Morgannwg Boundary derived from Technical Advice Note (TAN) 8: Renewable energy (2005) - Map 7

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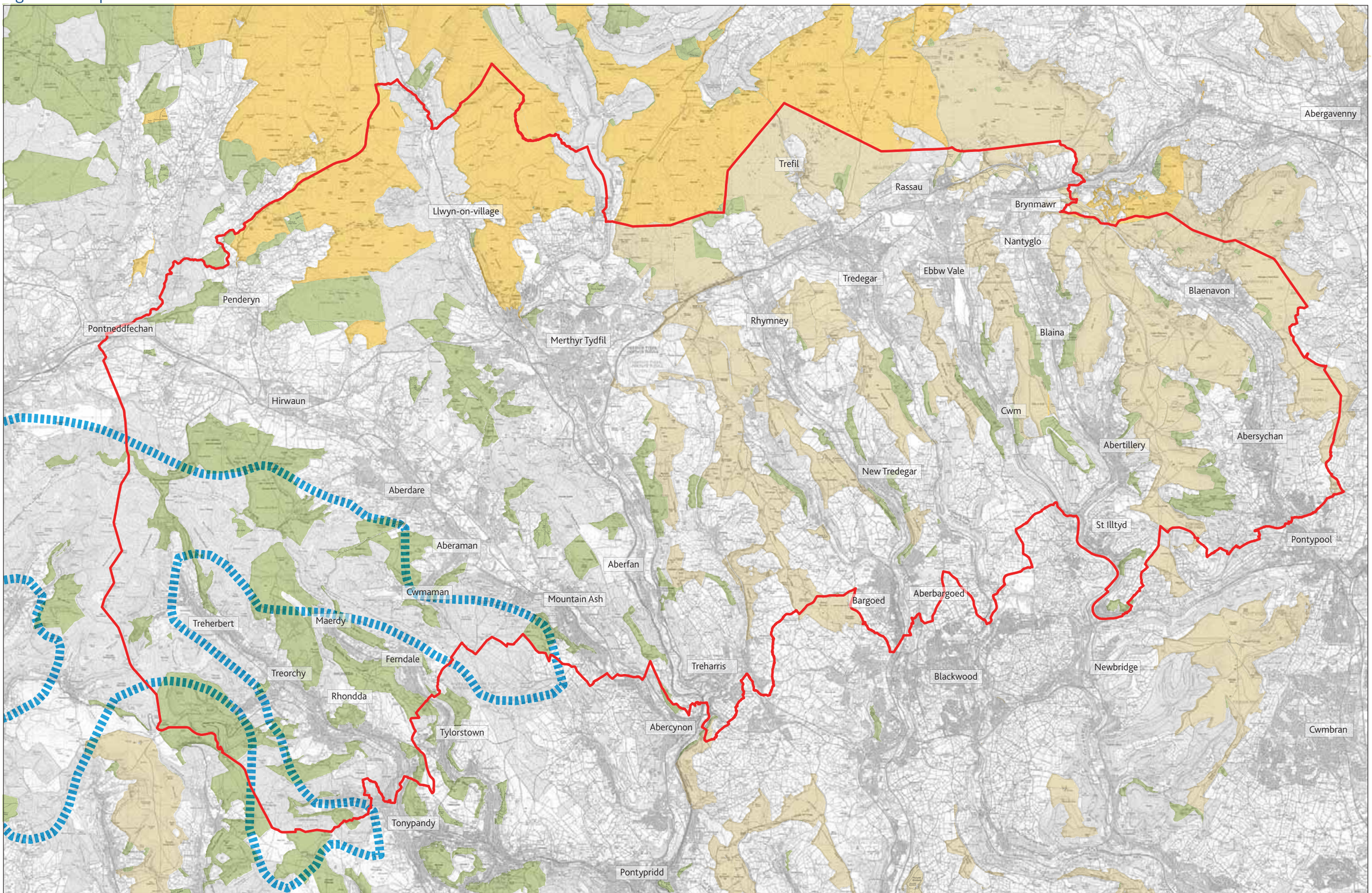
Figure 10a : Open Access Land



Legend

- Heads of the Valley Study Area
- TAN 8 Strategic Search Area (SSA): F - Coed Morgannwg
- Open Access Land - Registered Common Land
- Open Access Land - Open Country
- Open Access Land - Other Statutory Access Land

Notes:

1. Open Access Data derived from Cadw.
2. SSA F Coed Morgannwg Boundary derived from Technical Advice Note (TAN) 8: Renewable energy (2005) - Map 7

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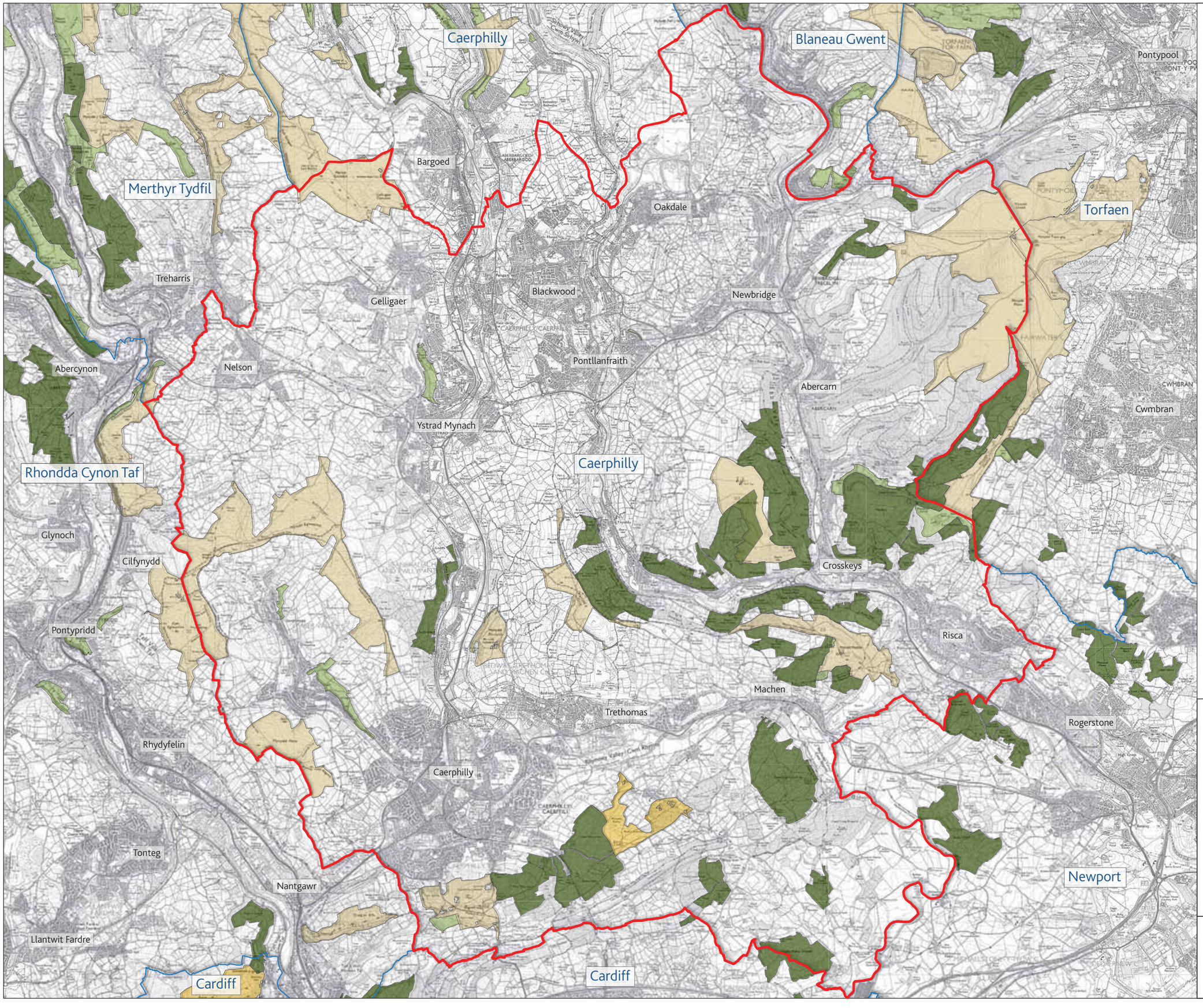
0 1.0km 5.0km

Figure 10b: Open Access Land



Legend

- Caerphilly Study Area
- Local Authority Boundary

Designations - Open Access Land

- Registered Common Land
- Open Country
- Other Statutory Access Land
- Public Forest

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3. Designation information derived from the relevant Local Authority
4. Open Access information derived from Cadw.

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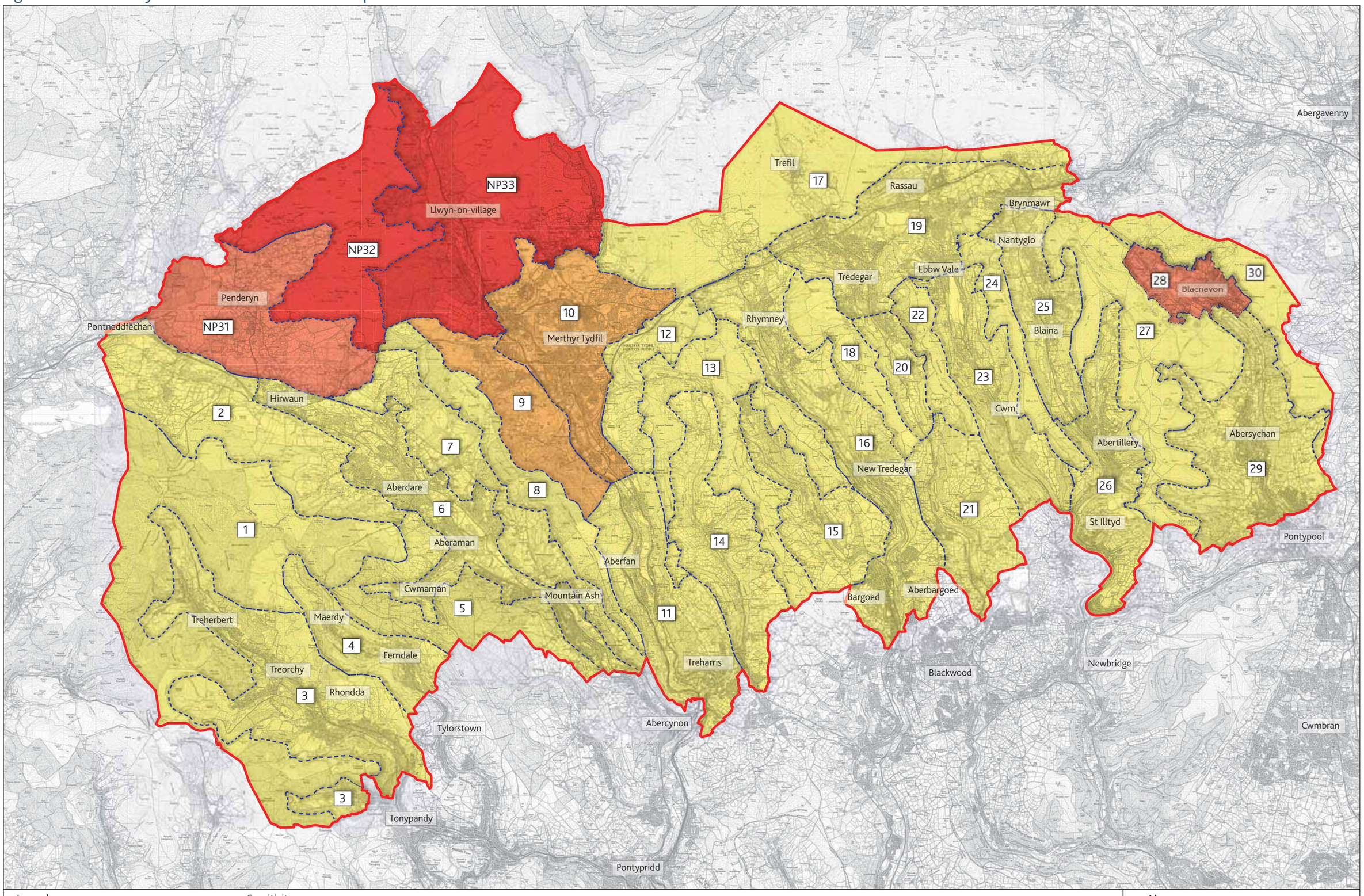
0 1km 3km

Figure 11a : Sensitivity to Micro Wind Turbine Development



Legend

- Heads of the Valley Study Area
- Landscape Units (LU)

Sensitivity

- Low Sensitivity
- Low to Medium Sensitivity
- Medium Sensitivity
- Medium to High Sensitivity
- High Sensitivity

N

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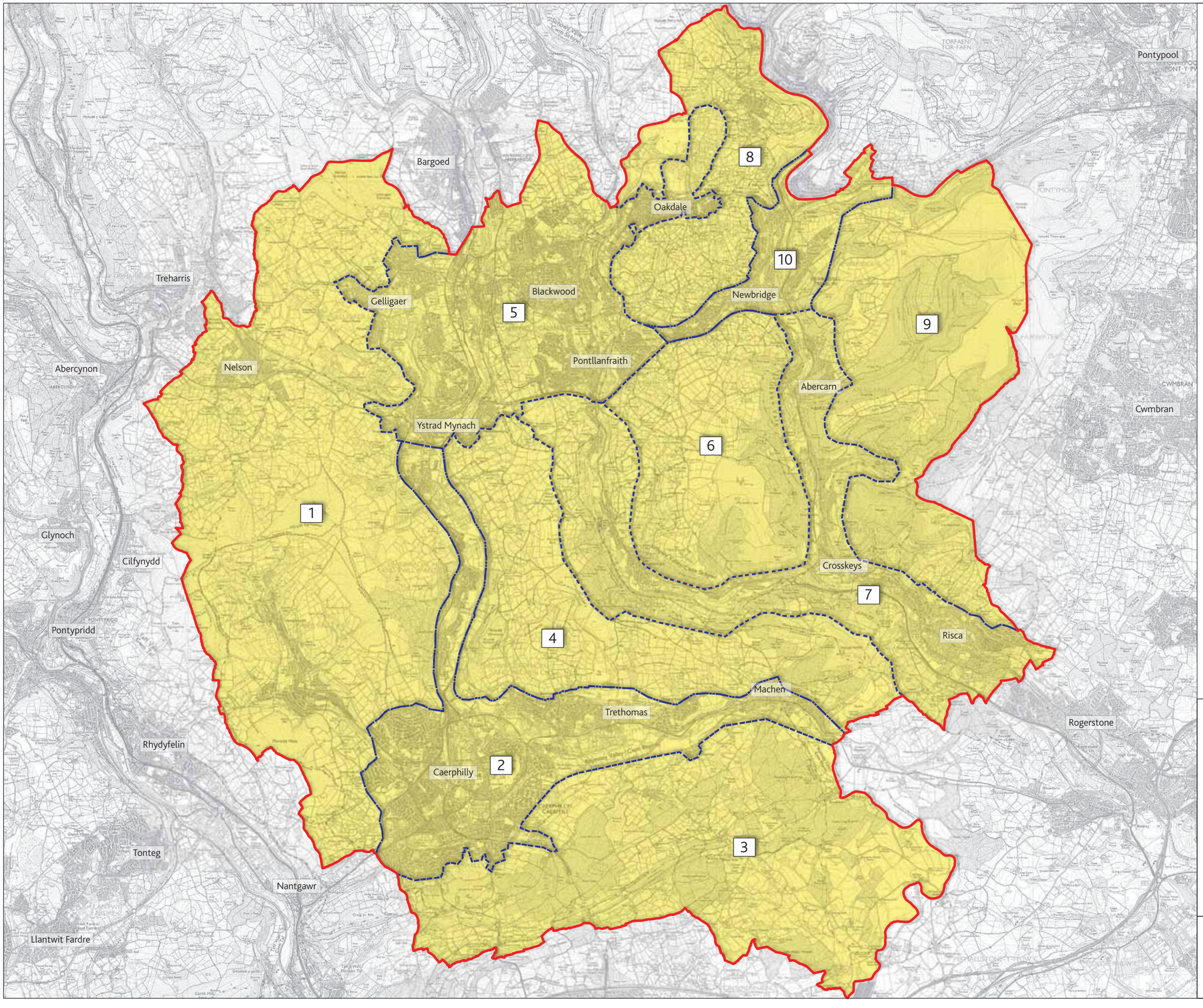
0 1.0km 5.0km

Figure 11b: Sensitivity to Micro Wind Turbine Development



Legend

- Caerphilly Study Area
- Landscape Units (LU)

1. Caerphilly west (Nelson and Abertridwr)
2. Caerphilly basin and Lower Rhymney Valley
3. South Caerphilly
4. North Caerphilly
5. Greater Blackwood
6. Myynddislwyn
7. Risca (Sirhowy and Ebbw Valleys)
8. Pen y fan and land west of Newbridge
9. Mynydd maen
10. Greater Newbridge

Sensitivity

- Low Sensitivity
- Low to Medium Sensitivity
- Medium Sensitivity
- Medium to High Sensitivity
- High Sensitivity

Notes:

N

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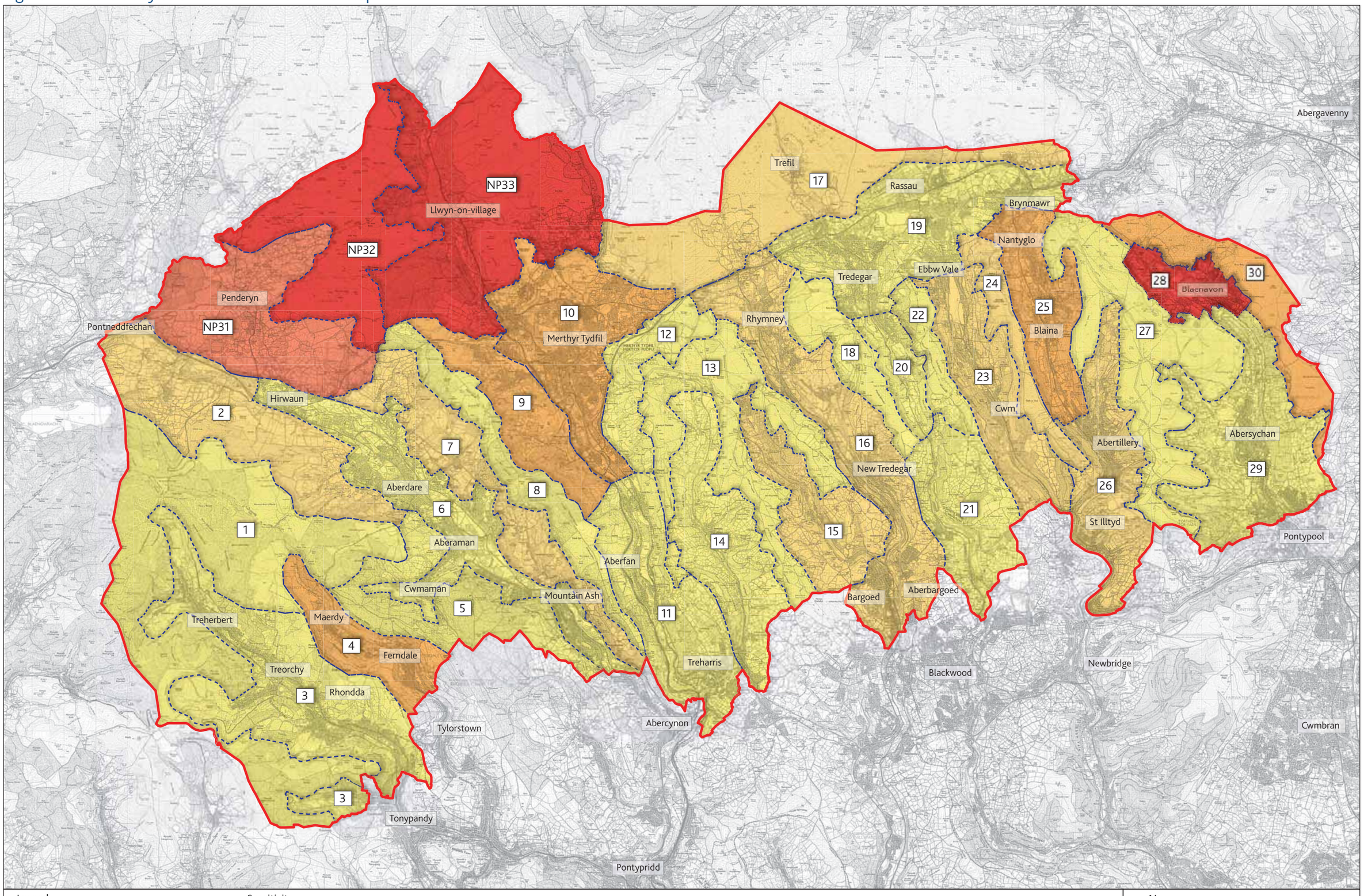
0 1km 3km

Figure 12a : Sensitivity to Small Wind Turbine Development



Legend

- Heads of the Valley Study Area
- Landscape Units (LU)

Sensitivity

- Low Sensitivity
- Low to Medium Sensitivity
- Medium Sensitivity
- Medium to High Sensitivity
- High Sensitivity

N

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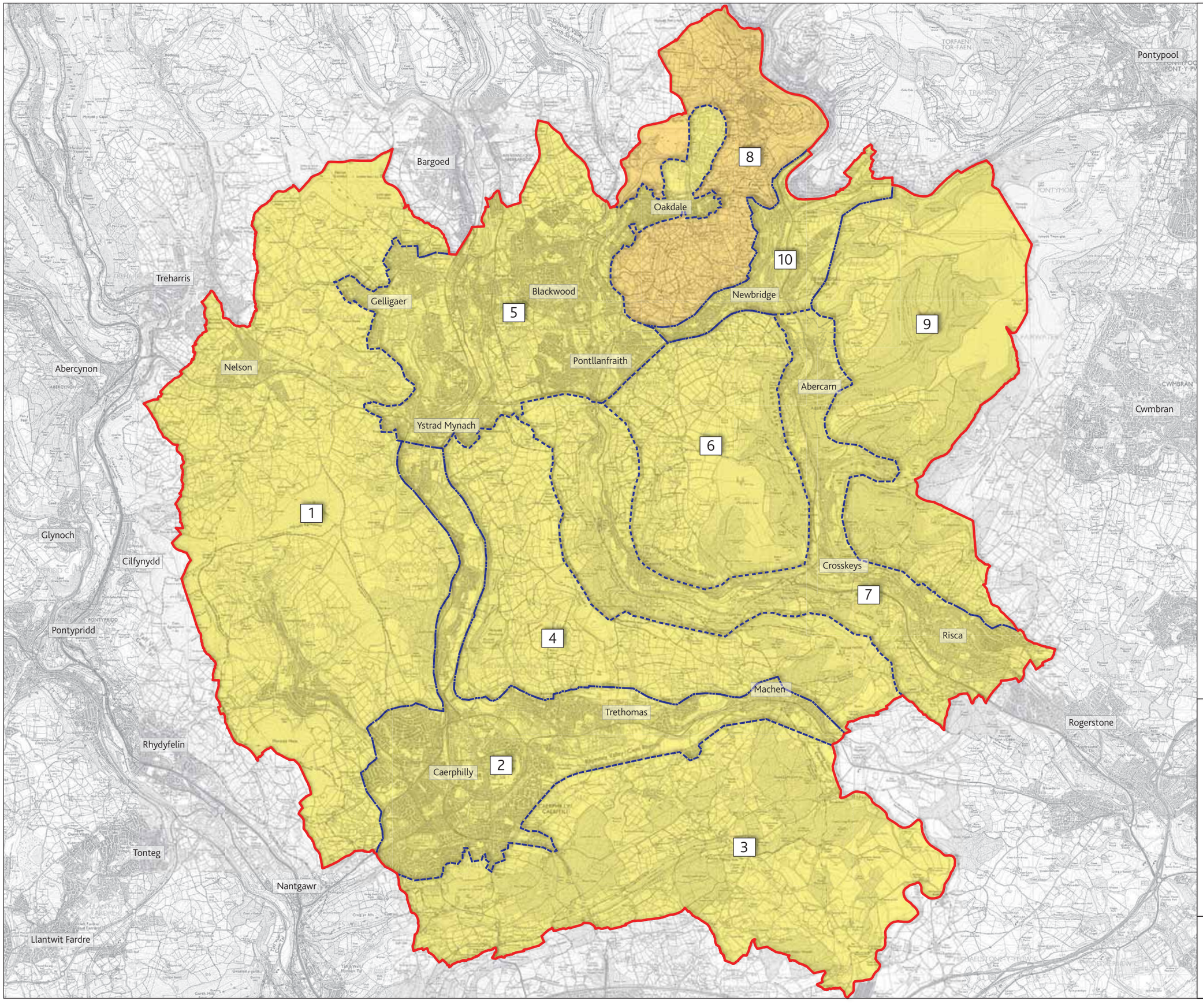
0 1.0km 5.0km

Figure 12b: Sensitivity to Small Wind Turbine Development



Legend

- Caerphilly Study Area
- Landscape Units (LU)

1. Caerphilly west (Nelson and Abertridwr)
2. Caerphilly basin and Lower Rhymney Valley
3. South Caerphilly
4. North Caerphilly
5. Greater Blackwood
6. Myynddislwyn
7. Risca (Sirhowy and Ebbw Valleys)
8. Pen y fan and land west of Newbridge
9. Mynydd maen
10. Greater Newbridge

Sensitivity

- Low Sensitivity
- Low to Medium Sensitivity
- Medium Sensitivity
- Medium to High Sensitivity
- High Sensitivity

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N

0 1km 3km

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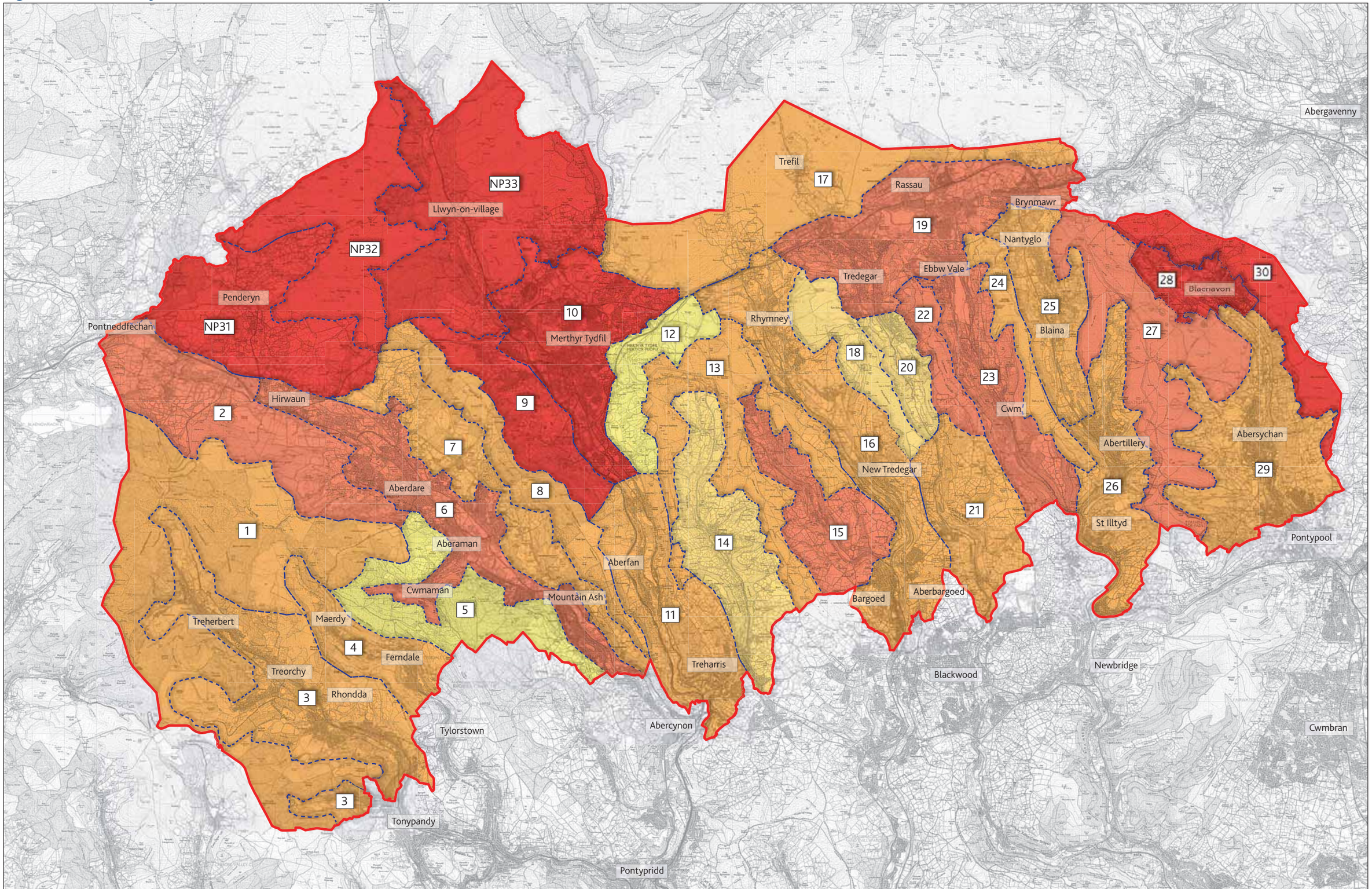
Figure 13a : Sensitivity to Medium Wind Turbine Development



Legend

- Heads of the Valley Study Area
- Landscape Units (LU)

Sensitivity

- Low Sensitivity
- Low to Medium Sensitivity
- Medium Sensitivity
- Medium to High Sensitivity
- High Sensitivity

N

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0 1.0km 5.0km

Figure 13b: Sensitivity to Medium Wind Turbine Development

Bargoed
Pontypool
Treharris
Oakdale
Blackwood
Gelligaer
Newbridge
Abercynon
Nelson
Pontllanfraith
Abercarn
Cwmbran
Ystrad Mynach
Glynoch
Cilfynydd
Crosskeys
Risca
Pontypridd
Machen
Trethomas
Rogerstone
Rhydyfelin
Caerphilly
Tonteg
Nantgawr
Llantwit Fardre

1
2
3
4
5
6
7
8
9
10

Legend

Caerphilly Study Area

Landscape Units (LU)

1. Caerphilly west (Nelson and Abertridwr)
2. Caerphilly basin and Lower Rhymney Valley
3. South Caerphilly
4. North Caerphilly
5. Greater Blackwood
6. Myynddislwyn
7. Risca (Sirhowy and Ebbw Valleys)
8. Pen y fan and land west of Newbridge
9. Mynydd maen
10. Greater Newbridge

Sensitivity

- Low Sensitivity
- Low to Medium Sensitivity
- Medium Sensitivity
- Medium to High Sensitivity
- High Sensitivity

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0 1km 3km

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Figure 14a : Sensitivity to Large Wind Turbine Development

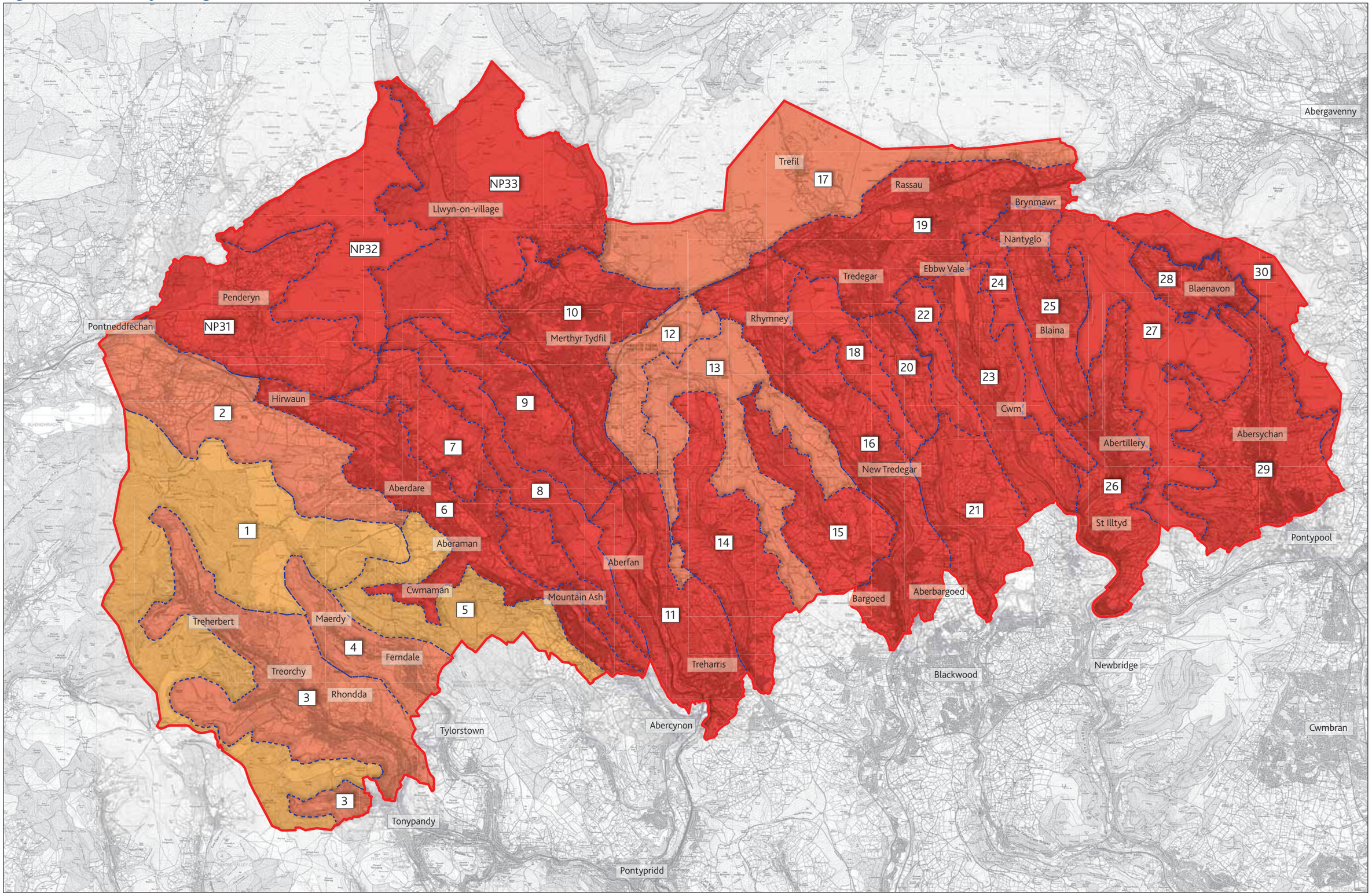
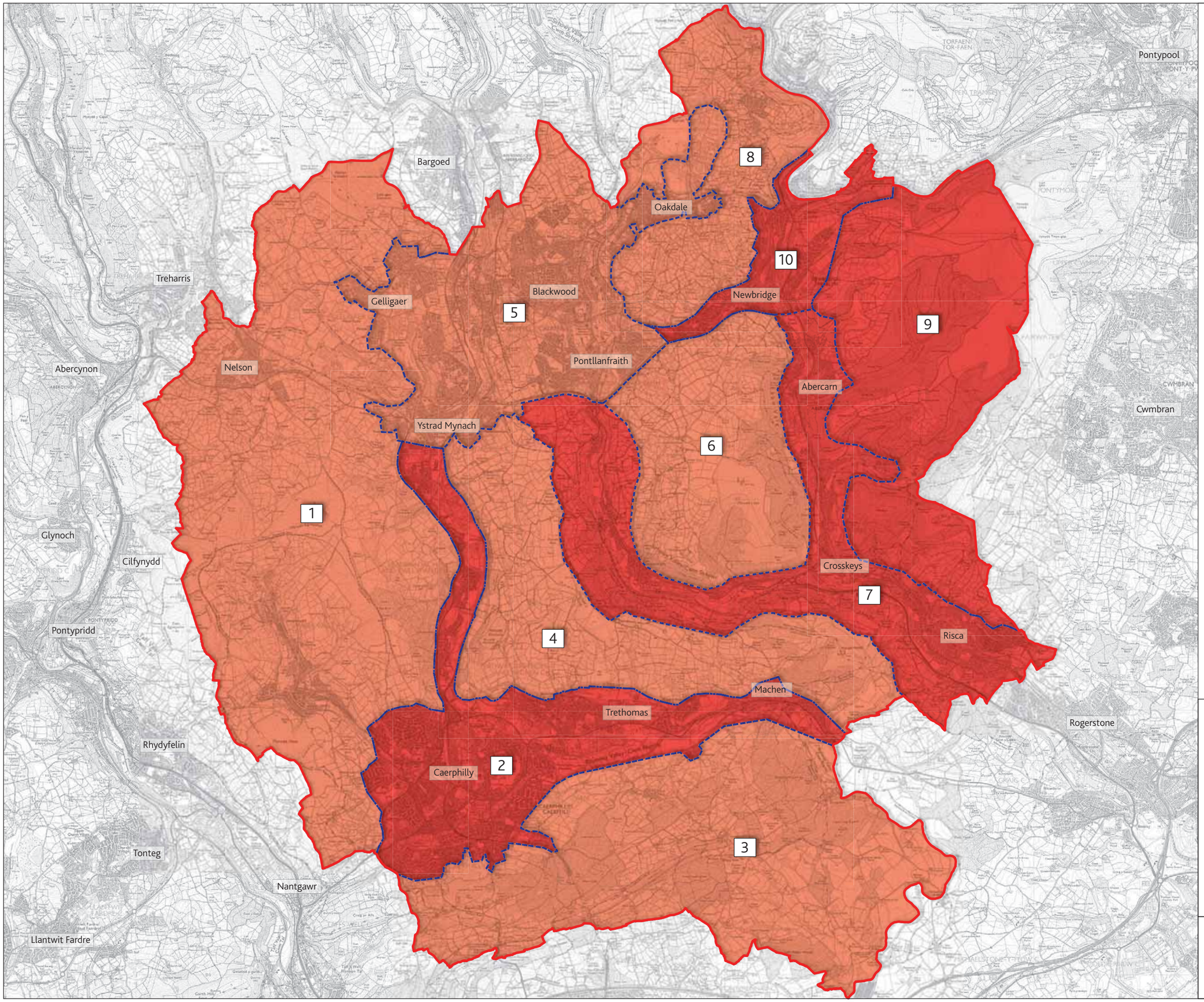


Figure 14b: Sensitivity to Large Wind Turbine Development



Legend

- Caerphilly Study Area
- Landscape Units (LU)

1. Caerphilly west (Nelson and Abertridwr)
2. Caerphilly basin and Lower Rhymney Valley
3. South Caerphilly
4. North Caerphilly
5. Greater Blackwood
6. Myynddislwyn
7. Risca (Sirhowy and Ebbw Valleys)
8. Pen y fan and land west of Newbridge
9. Mynydd maen
10. Greater Newbridge

Sensitivity

- Low Sensitivity
- Low to Medium Sensitivity
- Medium Sensitivity
- Medium to High Sensitivity
- High Sensitivity

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N

0 1km 3km

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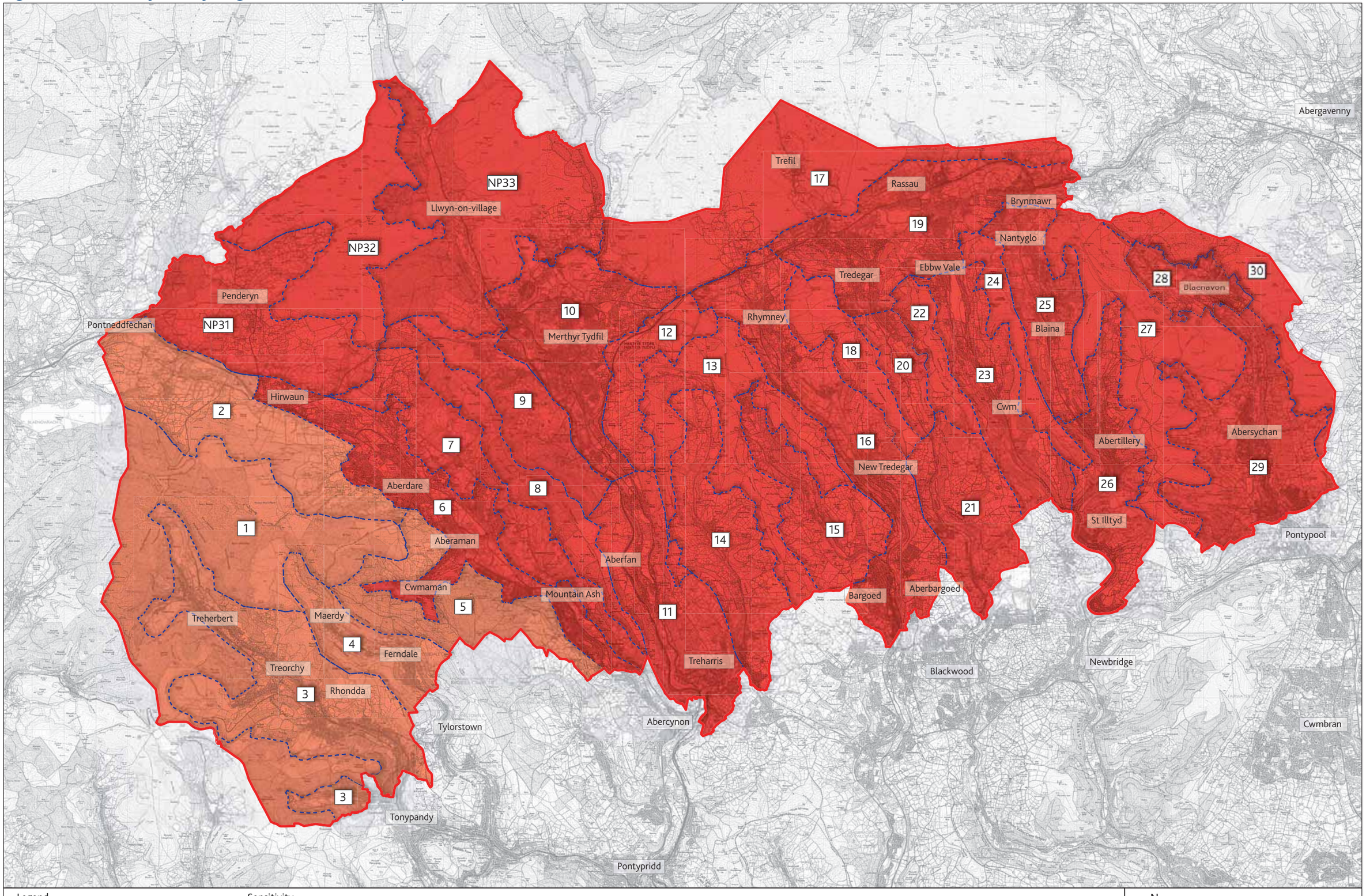
Figure 15a : Sensitivity to Very Large Wind Turbine Development



Legend

- Heads of the Valley Study Area
- Landscape Units (LU)

Sensitivity

- Low Sensitivity
- Low to Medium Sensitivity
- Medium Sensitivity
- Medium to High Sensitivity
- High Sensitivity

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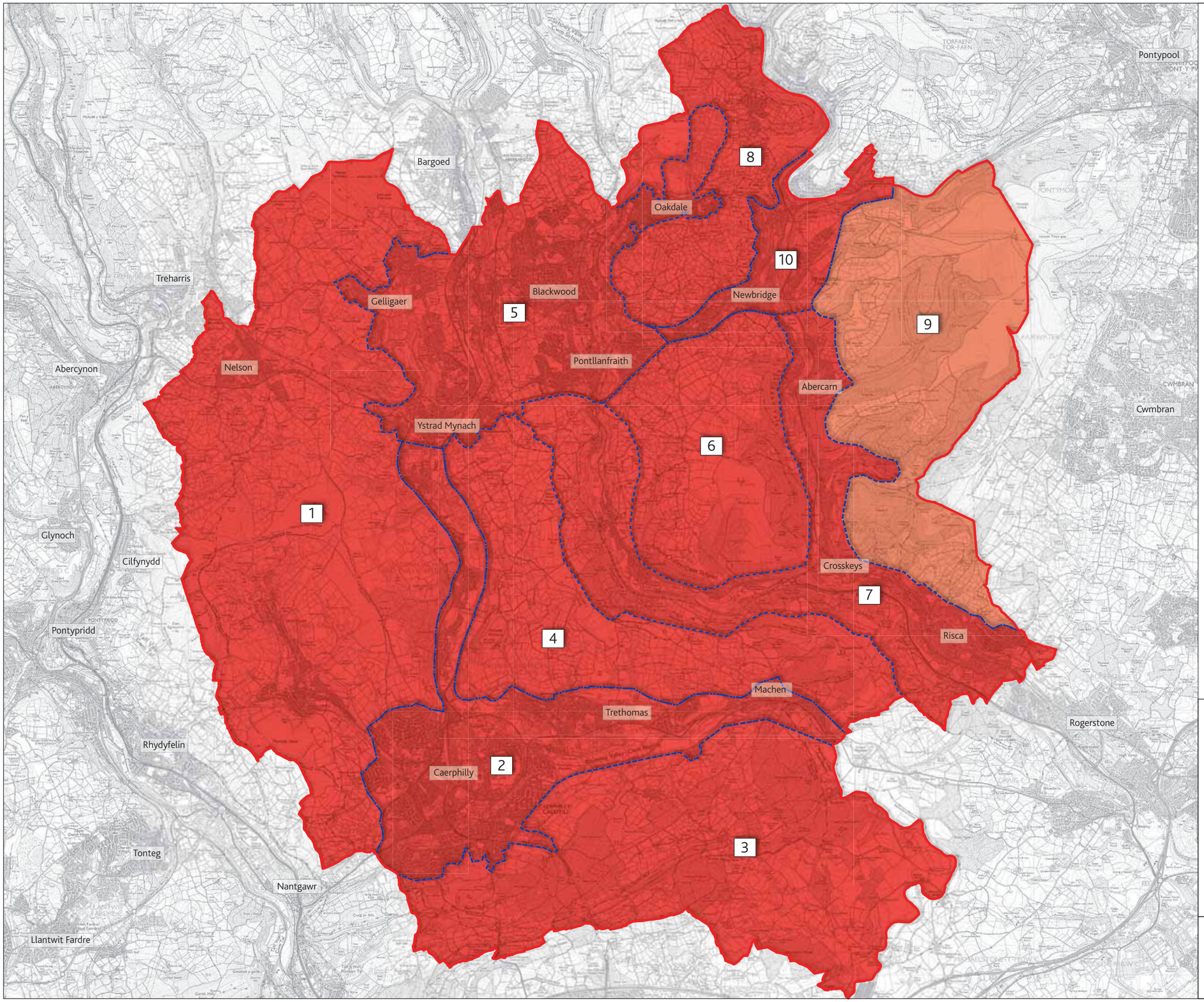
0 1.0km 5.0km

Figure 15b: Sensitivity to Very Large Wind Turbine Development



Legend

- Caerphilly Study Area
- Landscape Units (LU)

1. Caerphilly west (Nelson and Abertridwr)
2. Caerphilly basin and Lower Rhymney Valley
3. South Caerphilly
4. North Caerphilly
5. Greater Blackwood
6. Myynddislwyn
7. Risca (Sirhowy and Ebbw Valleys)
8. Pen y fan and land west of Newbridge
9. Mynydd maen
10. Greater Newbridge

Sensitivity

- Low Sensitivity
- Low to Medium Sensitivity
- Medium Sensitivity
- Medium to High Sensitivity
- High Sensitivity

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APPENDIX 1

Abbreviations & Glossary of Key Terms

Abbreviations

Below is a list of abbreviations used in this study.

AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
CCW	Countryside Council for Wales (Now Natural Resources Wales)
CROW	Countryside & Rights of Way Act (2005)
DCfW	Design Commission for Wales
GIS	Geographical Information Systems
GLVIA3	Guidelines for Landscape and Visual Impact Assessment. Third Edition. Landscape Institute and Institute for Environmental Management and Assessment (2013)
LCA	Landscape Character Area
LCT	Landscape Character Type
LU	Landscape Unit
MW	Megawatt
NRW	Natural Resources Wales (formerly the Countryside Council for Wales)
PPW	Planning Policy Wales
SLA	Special Landscape Area
SNH	Scottish Natural Heritage
SSA	Strategic Search Area
TAN	Technical Advice Note
WHS	World Heritage Site
ZTV	Zone of Theoretical Visibility

Glossary of Key Terms

Landscape is defined as *'An area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.'* [5] GVLIA3 notes that the term does not only mean landscapes that are recognised as being special or valuable but is also about the ordinary and the everyday landscapes where people live and work, and spend their leisure time. This includes rural landscapes, seascapes and townscapes.

Landscape Sensitivity is a term applied to specific receptors, combing judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor.

Landscape Value is defined as the relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons.

Landscape Capacity relates to how much change arising from wind energy development can be accommodated without unacceptable adverse effects on the character or perception of the landscape and without compromising any values attached to it.

Cumulative Effects are the additional effects caused by the proposed development when considered in conjunction with other proposed developments or as the combined effect of a set of developments taken together.

Cumulative Landscape Effects 'can impact on either the physical fabric or character of the landscape, or any special values attached to it'.[6]

Cumulative Visual Effects can be caused by combined visibility, which 'occurs where the observer is able to see two or more developments from one viewpoint' and/or sequential effects which 'occur when the observer has to move to another viewpoint to see different developments'[7].

Tranquillity is defined as a state of calm and quietude associated with peace, considered to be a significant asset of landscape.

[5] European Landscape Convention (2007)

[6] Scottish Natural Heritage 2012:10

[7] Scottish Natural Heritage 2012:11

APPENDIX 2

Reference Documents

General Landscape and Visual Impact Assessment Documents

- Landscape Institute and IEMA, (2013) *Guidelines for Landscape and Visual Impact Assessment (GLVIA), Third Edition*
- Tudor, Christine, Natural England, (October 2014) *An Approach to Landscape Character Assessment*
- Swanwick, Carys and LUC, Scottish Natural Heritage with the Countryside Agency, (2004) Topic *Paper 6 'Techniques and criteria for judging landscape sensitivity and capacity'*
- Landscape Institute, (2011) *Photography and Photomontage in Landscape and Visual Impact Assessment, Advice Note 01/11*

Welsh Documents

- Welsh Assembly Government (2014) *Planning Policy Wales, Edition 6*
- Welsh Assembly Government (2005) *Technical Advice Note 8: Renewable Energy*
- Countryside Council for Wales, (2013) *LANDMAP Information Guidance Note 1: LANDMAP and Special Landscape Areas*
- Countryside Council for Wales, (May 2013) *LANDMAP Information Guidance Note 3: Using LANDMAP for landscape and visual impact assessment of onshore wind turbines.*
- Countryside Council for Wales, (2013) *LANDMAP Methodology: Guidance for Wales*
- Countryside Council for Wales, Cadw and Welsh Assembly Government (2007) *Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process*
- Countryside Council for Wales (2008) *Energy & Natural Heritage. Countryside Council for Wales Policy Position Statement*
- Design Commission for Wales, (2014) *Designing Wind Farms in Wales*
- Conwy and Denbighshire (2013) *Landscape Sensitivity and Capacity Assessment for Wind Energy Development*
- Consortium of South Wales Valleys Authorities (2006) *TAN 8 Annex D Study of Strategic Search Areas E and F: South Wales Valleys* Final report
- Pembrokeshire and Carmarthenshire (2013) *Cumulative Impact of Wind Turbines on Landscape and Visual Amenity guidance.*

Scottish Documents

- *Scottish Natural Heritage,* (2014) *Visual Representation of Windfarms. Version 2.1*
- Scottish Natural Heritage, (2014) *Siting and Designing Wind Farms in the Landscape, Version 2*
- Scottish Natural Heritage, (2012) *Assessing the Impact of Small-scale Wind Energy Proposals on the Natural Heritage*
- Scottish Natural Heritage, (2012) *Assessing the Cumulative Impact of Onshore Wind Energy Developments*
- Scottish Natural Heritage, (2012) *Siting and Design for Small Scale Wind Turbines between 15 and 50 metres in height*
- Scottish Natural Heritage, (2009) *Landscape Capacity Studies in Scotland – a review and guide to good practice*
- Scottish Natural Heritage, (updated March 2009) *Strategic Locational Guidance for Onshore Windfarms*
- Scottish Natural Heritage, (2002) *'Visual Assessment of Windfarms: Best Practice'*

Other guidance referred to in preparation of report

- Heads of the Valleys (2015) *Smaller Scale Wind Turbine Development Landscape Sensitivity and Capacity Study Final Report*
- Conwy and Denbighshire (2013) *Landscape Sensitivity and Capacity Assessment for Wind Energy Development*
- Pembrokeshire and Carmarthenshire (2013) *Cumulative Impact of Wind Turbines on Landscape and Visual Amenity guidance*

APPENDIX 3

Baseline Information

Background Documents

- Caerphilly County Borough Council, (November 2010) *Local Development Plan up to 2021 Written Statement and maps*
- Caerphilly County Borough Council, (November 2010) *Appendices to the Written Statement*
- Caerphilly County Borough Council, (June 2012) *A Guide to Conservation Areas in Caerphilly County Borough.*
- Caerphilly County Borough Council, Schedule of Ancient Monuments of National Importance
- Cadw (2001) *Register of Landscapes of Special Historic Interest in Wales*
- Gelligaer Common Landscape of Special Historic Interest.
- Cadw (2007) *Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process, 2nd (revised) Edition*
- Cadw (1998*) Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales*
- Countryside Council for Wales (2009) *Wales Landscape Character Areas*
- TACP for Caerphilly County Borough Council, (2008) *Designation of Special Landscape Areas*
- TACP for Caerphilly County Borough Council, (2008) *Designation of Visually Important Local Landscapes*
- Welsh Assembly Government (2014) *Planning Policy Wales, Edition 7*
- Welsh Assembly Government (2005) *Technical Advice Note 8: Renewable Energy*
- Welsh Assembly Government (2014) *Technical Advice Note 12: Design*

Appendix 4

Using LANDMAP data to inform sensitivity assessments

Landscape sensitivity is a combination of the susceptibility of landscape attributes and the value placed on the landscape.

LANDMAP is a GIS based landscape resource that consists of five layers which have been recorded as five datasets concerning Cultural Landscape, Geological Landscape, Historic Landscape, Landscape Habitats, and Visual and Sensory aspects. It is possible to use the five LANDMAP datasets to generate consistent information across Wales on those aspects of the landscape that indicate how susceptible a landscape may be to adverse impacts as a result of wind turbine development. The text below and the following diagrams explain how the information in the database is extracted.

Certain questions in each layer/dataset have been identified as indicating susceptibility to wind. These are set out in Table 3: Criteria for Assessing Landscape and Visual Susceptibility to Wind Turbine Development

The defined landscape units will include aspect areas from all five layers but is also likely to include two or more aspect areas from the same layer.

The example provided is from the Caerphilly Landscape Sensitivity and Capacity Study. It shows that Caerphilly Landscape Unit 6: Mynyddislwyn includes:

- All or part of four Visual and Sensory aspect areas;
- Two main Geological aspects areas; and
- Two main Historic aspect areas.

The criteria for assessing the landscape and visual sensitivity of a landscape to wind turbine development include a number of questions from the LANDMAP dataset.

Plan 1, for example, shows the answers to the question ‘Aesthetic Qualities: Scale?’ for Caerphilly Landscape Unit 6. This is question 8 of the Visual and Sensory layer – VS8.

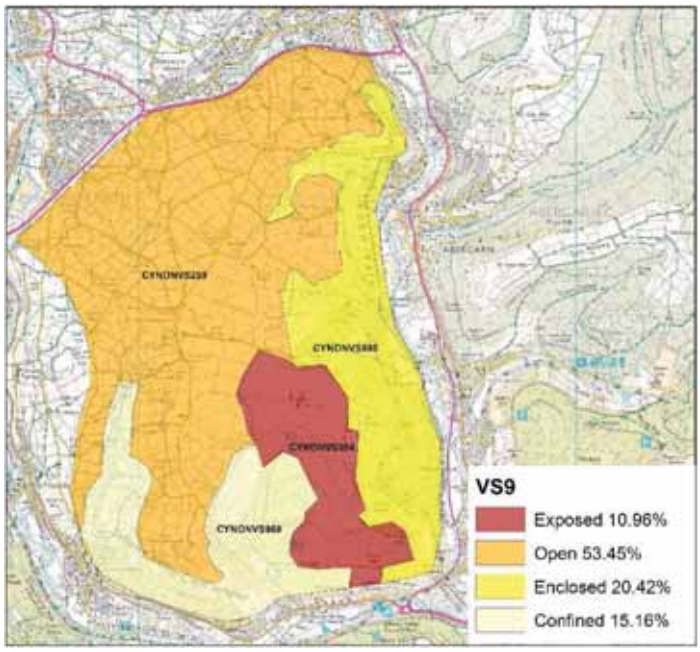
Within Caerphilly Landscape Unit 6 two of the Visual and Sensory Aspect Areas are assessed as being large scale whilst two are medium scale. This can be seen in Plan 1. It is possible to know exactly how much of how much of Caerphilly Landscape Unit 6 is assessed as large and how much is assessed as medium because the information is recorded in a GIS dataset. In this case 74% is assessed as large and 26% as medium. This information is used, alongside other criteria to decide how susceptible that particular attribute is to wind turbine development.

Plans 2-4 show the answers to three other Visual and Sensory questions including the overall Visual and Sensory evaluation where 88% of the unit has been assessed as moderate and 11% assessed as high.

Plans 5-7 show the same process for the overall evaluation for the Geological aspect areas and two of the questions for the Historic layer. It can be seen that whilst the whole of the unit is considered to have high integrity (very small percentages are ignored) the overall historic evaluation for the unit is moderate.

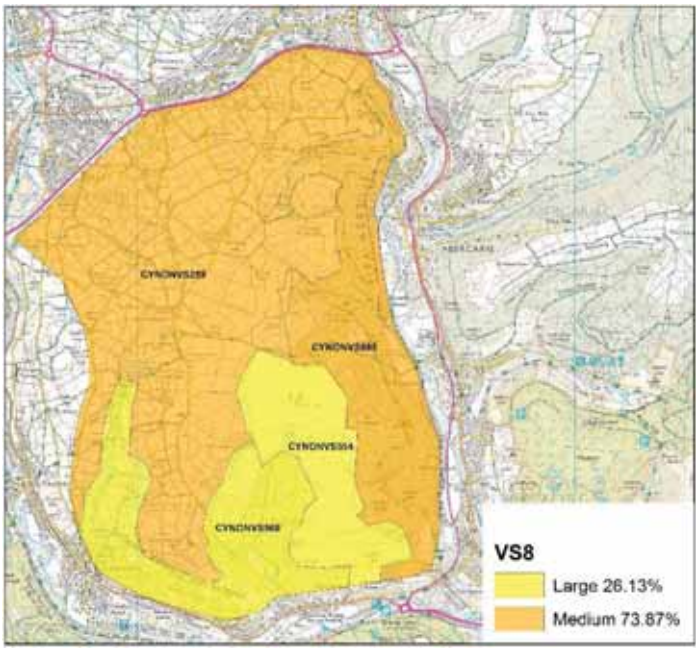
PLAN 1

Visual and Sensory - VS8: Scale



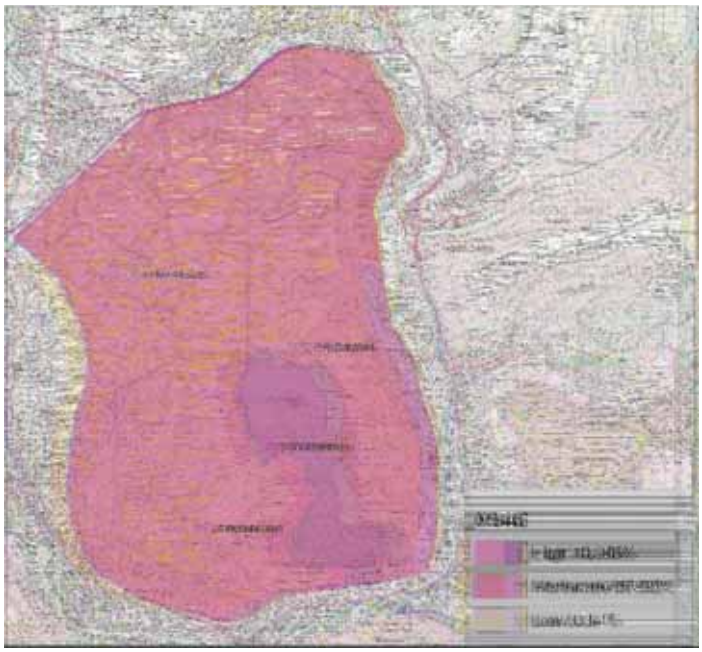
PLAN 2

Visual and Sensory – VS9: Enclosure



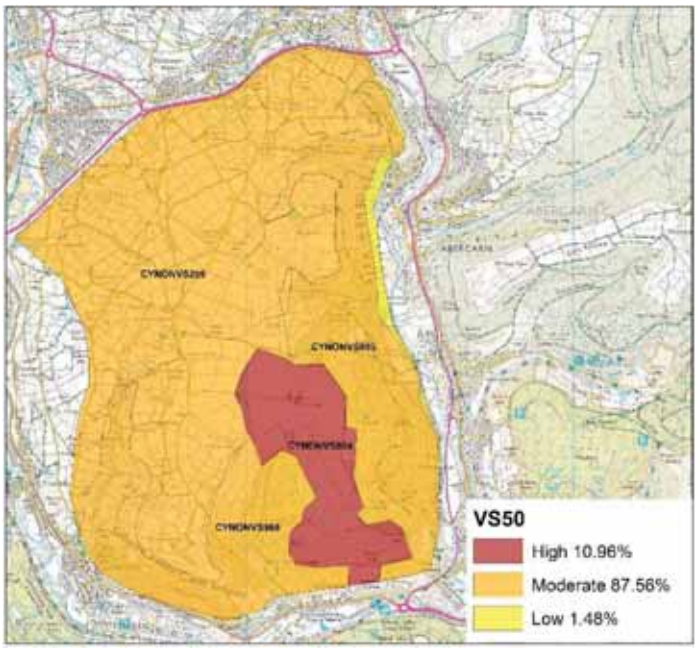
PLAN 3

Visual and Sensory – VS46: Scenic Quality

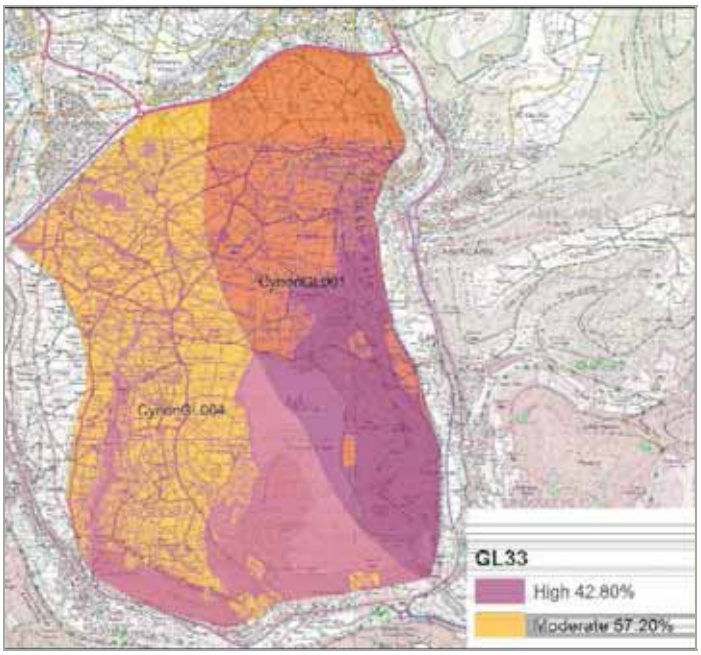


PLAN 4

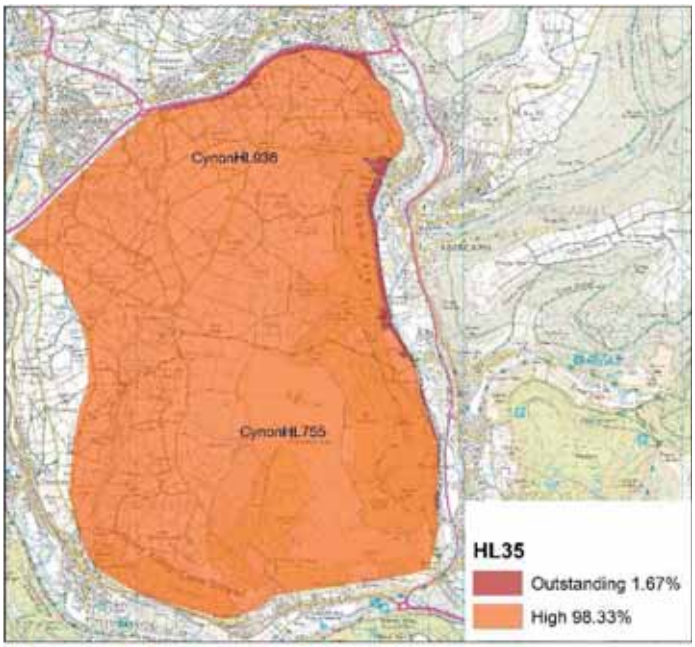
Visual and Sensory – VS50: Overall Evaluation



PLAN 5
Geological Landscape – GL33: Overall

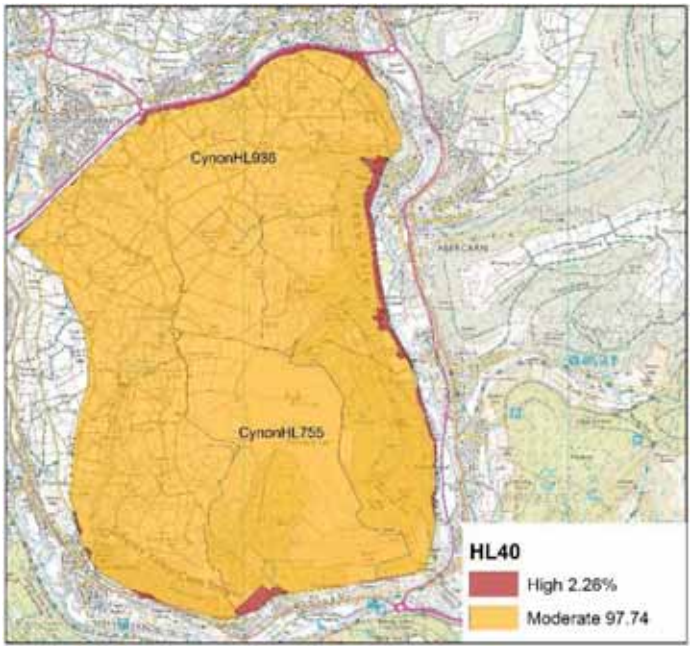


PLAN 6
Historic Landscape– HL35: Integrity Evaluation



PLAN 7

Historic Landscape – HL40: Overall Evaluation



Websites

- Cadw website (http://cadw.wales.gov.uk/)
- Caerphilly County Borough Council website (http://www.caerphilly.gov.uk/)
- Royal Commission on the Ancient and Historical Monuments of Wales website (http://www.cbhc.gov.uk/HI/ENG/Home/)
- Welsh Historic Gardens Trust website (http://www.whgt.org.uk/)
- Gelligaer Common landscape description, Glamorgan-Gwent Archaeological Trust (http://www.ggat.org.uk/cadw/historic_landscape/Gelligaer/GGdescription.htm)
- Online Wind Turbine Database for South East Wales. To access the database you can click the following link South East Wales Online Wind Turbine database

  Please note that you require Chrome (or a browser that supports HTML 5) to view the map to ensure you have the full functionality.

If the link above does not work the Online Database map can be found on the GIScloud website, http://www.giscloud.com/. You will need to register to use the site but it is free.

On the home page choose Create, upload, author, publish & share my spatial data and click on Start. Search for wind turbines and you will find the Wind Turbines in South East Wales map.

The database will be updated every 3 months. In the future further information on screening opinions, refusals, withdrawn and expired planning applications will be added.

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