

SENSITIVITY AND CAPACITY STUDY FOR RENEWABLE ENERGY DEVELOPMENT

BLAENAU GWENT CBC
AND TORFAEN CBC

October 2021



TACP



Blaenau Gwent
County Borough Council

TORFAEN
COUNTY
BOROUGH



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BLAENAU GWENT CBC AND TORFAEN CBC

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CONTENTS

CONTENTS	I
GLOSSARY	II
1 INTRODUCTION	1
1.1 National Policy background	3
1.2 Scope	4
1.3 Consultation	5
2 METHODOLOGY	7
2.1 Landscape Assessment Units	8
2.2 Development Typologies	9
2.2.1 Wind turbines	9
2.2.2 Solar PV Panels	11
2.3 Landscape and Visual Susceptibility Criteria	11
2.4 Landscape Sensitivity	16
2.5 Landscape Capacity	18
3 LANDSCAPE ASSESSMENT UNIT STATEMENTS	19

GLOSSARY

BBNP	Brecon Beacons National Park
BGCBC	Blaenau Gwent County Borough Council
GIS	Geographical information system
GW	Gigawatt
ha	Hectare
HL	Historic Landscape (with reference to the LANDMAP assessment process)
LANDMAP	A Wales -wide landscape assessment process adopted for national planning and assessment purposes
LAUs	Landscape Assessment Units
LDP	Local Development Plan
LNR	Local Nature Reserve
LSAs	Local search areas
LVIA	Landscape and Visual Impact Assessment
MW	Megawatt
NCN	National Cycle Network
NRW	Natural Resources Wales
OS	Ordnance Survey (mapping system)
PAA	Pre-Assessed Area (for Wind Energy)
PPW11	Planning Policy Wales (11 th Edition Feb 2021)
PRoW	Public Right of Way
PV	photovoltaic
RLDP	Replacement Local Development Plan
SAC	Special Area of Conservation
SINC	Sites of Importance for Nature Conservation
SM	Scheduled Monument

SSSI	Sites of Special Scientific Interest
TCBC	Torfaen County Borough Council
VS	Visual and Sensory (with reference to the LANDMAP assessment process)
WHS	World Heritage Site (with reference to Blaenavon WHS)

FIGURES

Figure 1	Study Area and Landscape Assessment Units
Figure 2	Regional Landscape Constraints
Figure 3	LANDMAP Visual and Sensory Classification Level 2
Figure 4	Landscape Sensitivity to Wind Turbine Development
Figure 5	Landscape Sensitivity to Solar Farm Development
Figure 6	Existing Wind Turbines and Solar Farms
Figure 7	Landscape Assessment Units - Local Landscape Constraints

TABLES

Table 2.2.1	Landscape Assessment Units
Table 2.2.2	Wind Turbine typologies
Table 2.2.3	Solar PV typologies
Table 2.3.1	Landscape and visual criteria with susceptibility to wind energy development
Table 2.3.2	Landscape and visual criteria with susceptibility to solar farm development
Table 2.3.3	Criteria for assessing landscape value
Table 2.3.4	Glossary of LANDMAP terminology
Table 2.4.1	Sensitivity matrix
Table 2.4.2	Typical sensitivity criteria for landscape units

1 INTRODUCTION

TACP has been commissioned by Blaenau Gwent County Borough Council (BGCBC) and Torfaen County Borough Council (TCBC) to assess the sensitivity of their landscapes to wind and solar development, and from this identify the capacity of the landscape to absorb these types of development. This assessment will form part of the evidence base for the development of renewable energy policies in the respective Replacement Local Development Plans and will also function as a Development Management tool to assist in the determination of planning applications going forward.

The assessment has been developed with reference to a range of potential development scenarios throughout the region as identified in the Carbon Trust Renewable and Low Carbon Energy Assessments carried out for each Local Authority. The Sensitivity and Capacity Study for Renewable Energy Development, however, includes the entirety of the County Boroughs of Blaenau Gwent and Torfaen, including and not restricted to areas that have been identified as suitable for renewables development. This is to provide a broader long-term view, as criteria for renewable development have changed considerably over recent years and may be expected to change over the life of the Local Development Plan (LDP).

LANDMAP visual assessment units are used as the baseline units of the assessment. Sensitivity may vary within these units, which at the strategic level of this assessment may not be fully identified. However, the further Landscape and Visual Impact Assessment (LVIA) required as part of planning control for individual developments, will identify the finer grain visual and landscape impacts, with scheme specific mitigation recommended.

The purpose of this report is to provide strategic spatial planning guidance for the two County Borough Councils. This will help to inform the identification of Local Search Areas (LSAs), broad, geographical areas for development of solar photovoltaic (PV) and onshore wind within which there is a presumption of such development (subject to detailed policy criteria). In this way renewables development can progress in a managed way, reducing impacts on the most sensitive landscapes.

This is a strategic level planning tool providing landscape and visual baseline sensitivity and capacity guidance for the development of future planning policy and to provide context for use in consideration of further renewable energy development. It is not the intention of this study to identify areas that cannot accommodate renewable energy development due solely to the areas' landscape sensitivity value. Rather the final decision will be dependent on a wide variety of factors that should be considered in addition to the landscape sensitivity. Further aspects for consideration should include, but not be limited by, ecology and biodiversity, sustainability, scheme specific visual impacts, land quality and cultural heritage and the historic environment and the need for the development in contributing towards Welsh Government targets.



1.1 NATIONAL POLICY BACKGROUND

Under the Environment (Wales) Act (2016) (Amendment of 2050 Emissions Target) Regulations 2021, Wales is required to reduce net greenhouse gas emissions by at least 100% by 2050 (against a 1990 baseline) with interim targets and carbon budgets to assist with meeting this target.

In March 2019, Welsh Government published a plan, Prosperity for All: A Low Carbon Wales, which sets out how the first carbon budget (2016-2020) will be met (Welsh Government, 2019). This plan pulls together 76 existing pieces of policy from across Welsh Government, UK Government, and the EU and sets out 100 policies and proposals to accelerate the transition to a low carbon economy (Welsh Government, 2019). Within this plan, local authorities are identified as having a significant role to play in achieving this transition.

An update on achieving reduced emissions was provided in the Progress Report: Reducing emissions in Wales (December 2020). This identified an ambitious 78% reduction target compared to 1990 levels across the Sixth Carbon Budget period (2033 - 2037) to bring emission reduction in line with the newly legislated Net Zero target for Wales and the UK by 2050.

The 2016 Environment Act also places an obligation on Welsh Ministers to set carbon budgets for Welsh emissions covering five-year periods to 2050. So far, Wales has legislated for the first two carbon budgets, which require emissions to be 23% below the baseline over the period 2016-2020 and 33% below the baseline for 2021-2026.

In addition to requirements set out in the Environment (Wales) Act (2016), Welsh Government has introduced the following targets specifically related to local energy generation and ownership:

- Wales to generate electricity equal to 70 per cent of its consumption from renewable sources by 2030.
- 1 gigawatt (GW) of renewable electricity and heat capacity in Wales to be locally owned by 2030.
- New energy projects to have at least an element of local ownership from 2020.

The Well Being of Future Generations (Wales) Act (2015) places an obligation on all public bodies in Wales to consider the long-term impact of the decisions made, with respect to all elements of sustainable development to ensure that the well-being of future generations is safeguarded.

Future Wales: The National Plan, is a new spatial development plan for addressing key national priorities (including decarbonisation) through the planning system (Welsh Government, 2021). It is the highest tier of development plan, to be built on at a regional level by Strategic Development Plans, and at a local level by Local Development Plans (Welsh Government, 2021). One of the 11 outcomes of Future Wales is to develop “a Wales where people live [...] in places which are decarbonised.”

Future Wales: The National Plan 2040 (Welsh Government, Feb 2021) identifies **Pre-Assessed Areas** (PAAs) for large-scale (over 10 MW) wind energy developments and key urban areas that should prioritise the development of district heat networks, as shown in **Figure 2: Landscape Constraints**. Both this and the eleventh edition of Planning Policy Wales (PPW11, 2021) provide significant policy support for renewable energy projects and strengthen the Welsh Government’s commitment to tackling the climate emergency.

With respect to the Replacement Local Development Plan (RLDP), the Planning Authority should adhere to the policies in Future Wales and the guidance provided within PPW11. PPW11 requires Local Authorities to,

“...facilitate all forms of renewable and low carbon energy development and should seek cross-department co-operation to achieve this. In doing so, planning authorities should seek to ensure their area’s full potential for renewable and low carbon energy generation is maximised and renewable energy targets

are achieved. Planning authorities should seek to maximise the potential of renewable energy by linking the development plan with other local authority strategies, including Local Well-being plans and Economic/ Regeneration strategies.” (5.9.1) (Welsh Government (2021) PPW Edition 11, and;

“To assist in the achievement of energy and decarbonisation targets, local and regional authorities must take an active, leadership approach at the local and/ or regional level by setting out their vision for decarbonisation and energy for their areas.” (5.9. 2) (Welsh Government (2021) PPW Edition 11,

It further emphasises that Planning Authorities should,

“...support and guide renewable and low carbon energy development to ensure their area’s potential is maximised. Planning authorities should assess the opportunities for renewable and low carbon energy in the area and use this evidence to establish spatial policies in their development plan which identify the most appropriate locations for development of energy developments below 10MW. There should be a presumption in favour of development in identified areas, including an acceptance of landscape change, with clear criteria-based policies setting out detailed locational issues to be considered at the planning application stage.” (5.9.14) (Welsh Government (2021) PPW Edition 11.

Available at: <https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11-0.pdf> Section 5.9.

Both Councils have undertaken preliminary work to identify Local Search Areas (LSAs). The draft areas will take into account the results of this sensitivity and capacity assessment as well as being subject to stakeholder engagement before being included in their respective Deposit RLDPs for formal consultation.

1.2 SCOPE

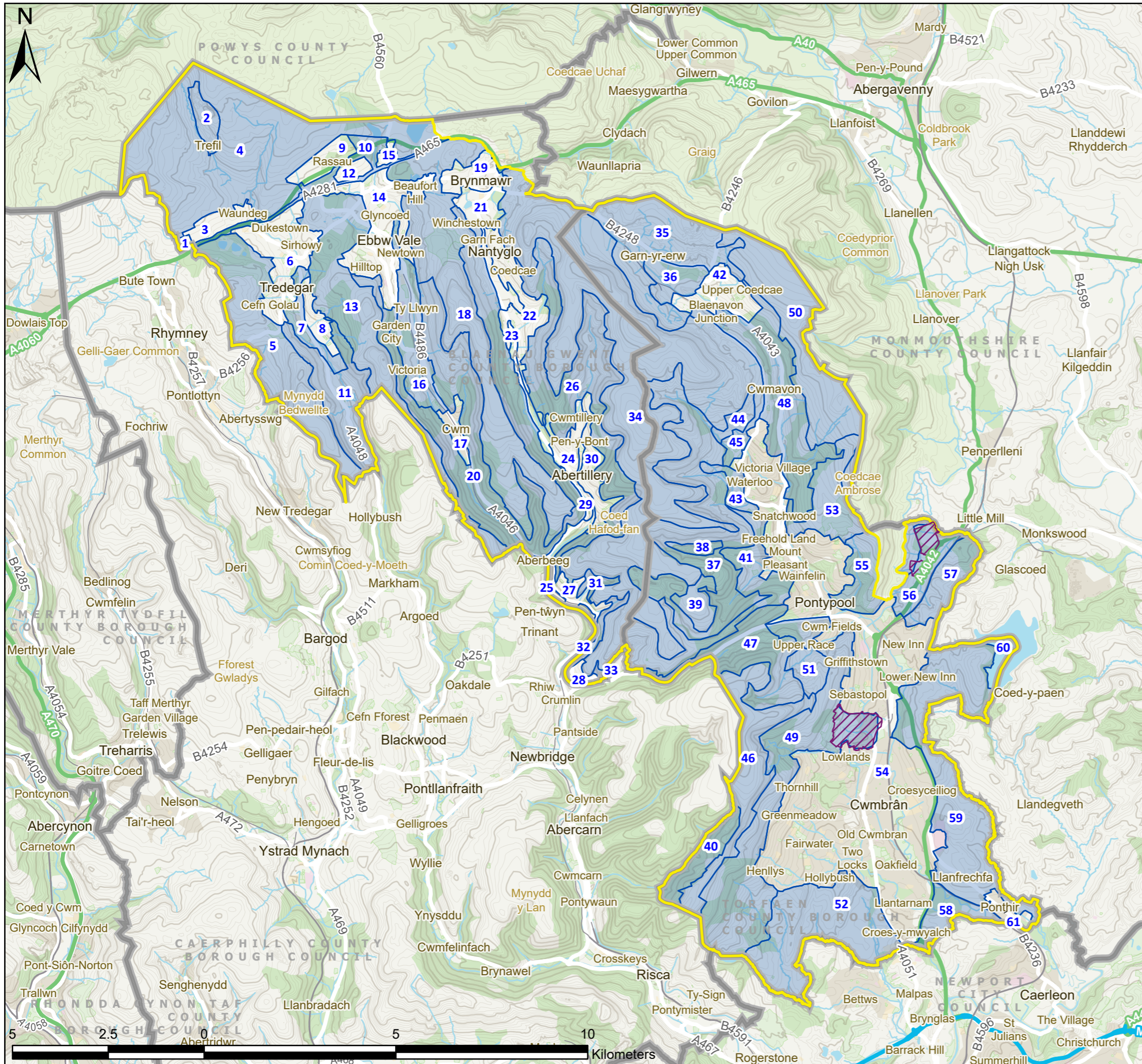
The scope of this study is to provide a strategic assessment of landscape sensitivity to, and capacity for, wind and solar renewables development within the two County Boroughs. This includes identification of specific sensitive receptors within landscape units, and general advice on options for avoidance or mitigation of impacts on these.



The study area has been identified as the County Boroughs of Blaenau Gwent and Torfaen, excluding land which falls under the National Parks Authority, with an additional 10km buffer which will enable potential cumulative visual impacts from development in neighbouring Counties, or visual impacts on Brecon Beacons National Park (BBNP) to be identified. The study area is indicated on **Figure 1.0**

The main aims of this assessment are:

- To provide an assessment of the joint County Boroughs’ landscape resource, the Study Area, to accommodate wind turbine and solar Photovoltaic (PV) development;
- To provide guidance on siting for renewable energy development within the study area; and
- To identify where particular landscapes may have a greater or lesser capacity for renewable energy development.



- Known built development since LANDMAP assessment
- Study Area
- Local Authorities
- Landscape Area Units Assessed
- Landscape Area Units Scoped Out

P3	FI	28/10/2021	Client feedback	TW	ZS	LC
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V.	S.	Date	Description	B.	C.	A.

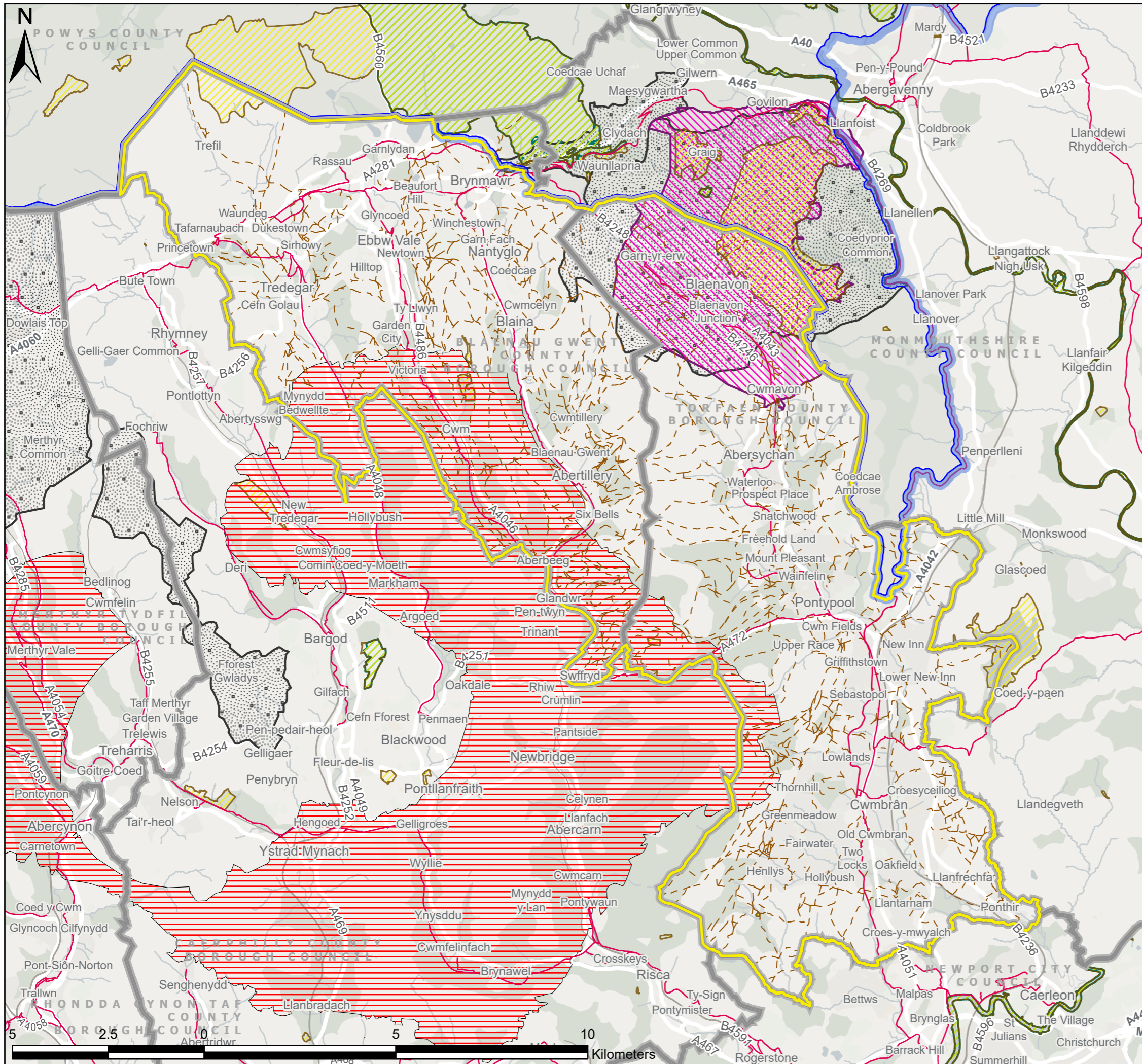
- Environmental Consultants
- Planners
- Landscape Architects
- Landscape Managers
- Urban Designers
- Ecologists

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Sensitivity and Capacity Study for Renewable Energy Development

Figure 1
Study Area and Landscape Assessment Units

Drawing no.: 61007_DWG_F1StudyArea



- Study Area
- Local Authorities
- Brecon Beacons National Park
- National Cycle Network
- BGBCB and TCBC Public Rights of Way
- Pre-Assessed Areas for Wind Energy
- Sites of Special Scientific Interest
- Special Areas of Conservation
- Blaenavon World Heritage Site
- Historic Landscapes

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Figure 2
Regional Landscape Constraints

Drawing no.: 61007_DWG_F2LandsCons

The LANDMAP landscape aspect areas have been applied to the Study Area for individual assessment. There are 41 of these Landscape Assessment Units (LAU) in total. Areas of existing built development as identified within LANDMAP are excluded. This has been further updated through field survey and in consultation with the local planning authorities to exclude additional areas of development built since the initial LANDMAP assessments were made. Although areas of built development may have potential for roof mounted solar or other renewable technologies, that is beyond the scope of this assessment. Areas of inland water have also been excluded. The use of LANDMAP visual and sensory data to identify units with consistent landscape type is explained in the Methodology section below.

1.3 CONSULTATION

The current assessment has been developed in conjunction with Planning and Landscape officers from both Blaenau Gwent and Torfaen County Borough Councils. They have been involved in a liaison process to agree methodology, development scenarios and to bring their specialist local and planning knowledge to the assessment process. The developing assessment process has been made available via Arc GIS online enabling live comment and consideration of the study to be carried out at all stages of the project.

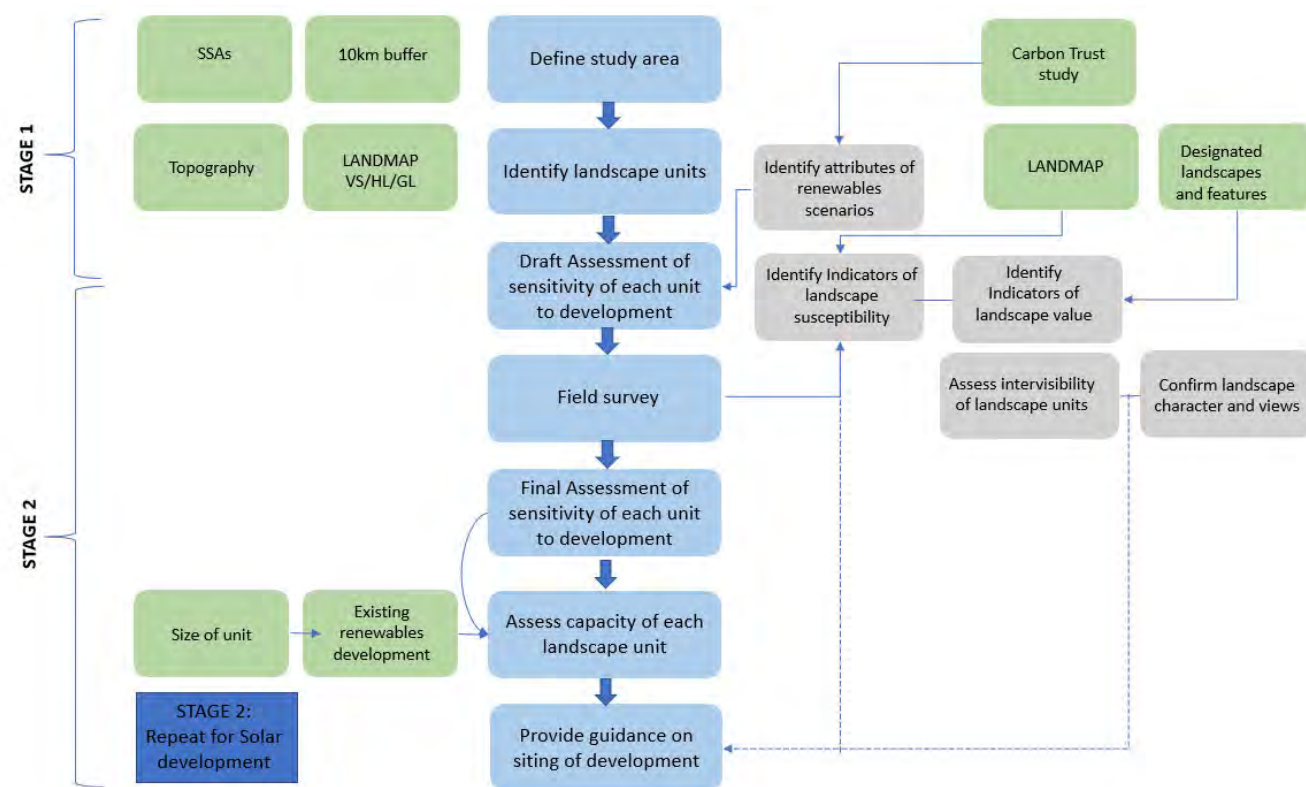


2 METHODOLOGY

The methodology approach was based on the Natural England Sensitivity Assessment guidance, modified in line with Gillespies' Heads of the Valleys smaller scale wind turbine development report¹. Gillespies study further refined the method to utilise LANDMAP data and extends it to describe indicative capacity. The methodology applied in this study is aligned to this example, which has proved successful in this area in the past. The most significant change made is to the selection of landscape units, which are at a smaller scale for this study. The planning context has also changed significantly since 2015, and this report has adapted the method to acknowledge that and to include solar PV and larger scale wind turbine development.

Stage 1: Initial Assessment Framework has been carried out with an analysis and desk study of available GIS data mapping and satellite views. This resulted in the development of a refined methodology based on that developed for the previous study undertaken by Gillespies that includes additional susceptibility criteria assessment for solar development. It should be noted that this assessment has used the publicly available data current at the time of assessment. Whilst the conclusions and guidance outline in this assessment will remain broadly relevant any final assessment decision should always be checked against the latest currently available baseline data.

Stage 2: Evaluation of Sensitivity and Fieldwork will confirm landscape characteristics and baseline development information, assess extent of sensitive views and identify any additional indicators of susceptibility that should be taken into account.



Stage 3: Mapping of Landscape Sensitivity and Capacity Reporting.

¹ Gillespies LLP (2015) Heads of the Valleys Smaller Scale Wind Turbine Development: Landscape Sensitivity and Capacity Study Final Report. BGCBC.

The results of the initial assessment and fieldwork have been reported in the form of digital proformas and captured onsite through the use of the Arc GIS collector app. A full baseline description and analysis of each landscape assessment unit accompanied with mapping for sensitivity and capacity for each area is included within the Landscape Assessment Unit Statements in Section 3.0. This has been repeated in the same format for both wind/turbine development and solar PV development.

2.1 LANDSCAPE ASSESSMENT UNITS

LANDMAP Visual and Sensory classification level 2, which identifies landform, was used to divide the study area into landscape units of similar type, termed Landscape Assessment Units (LAU). This was considered an appropriate scale to provide an overview of sensitivity, where susceptible landscape features are likely to be relatively consistent.

Adjustments were made where an anomaly in the LANDMAP Visual and Sensory assessment was identified for the central ridge of Mynydd Carn y Cefn in Blaenau Gwent, where the existing aspect area was recategorised from Upland Valley to Exposed Upland plateau. This is subject to confirmation and agreement by NRW.

The eight different types of landscape in the study area:

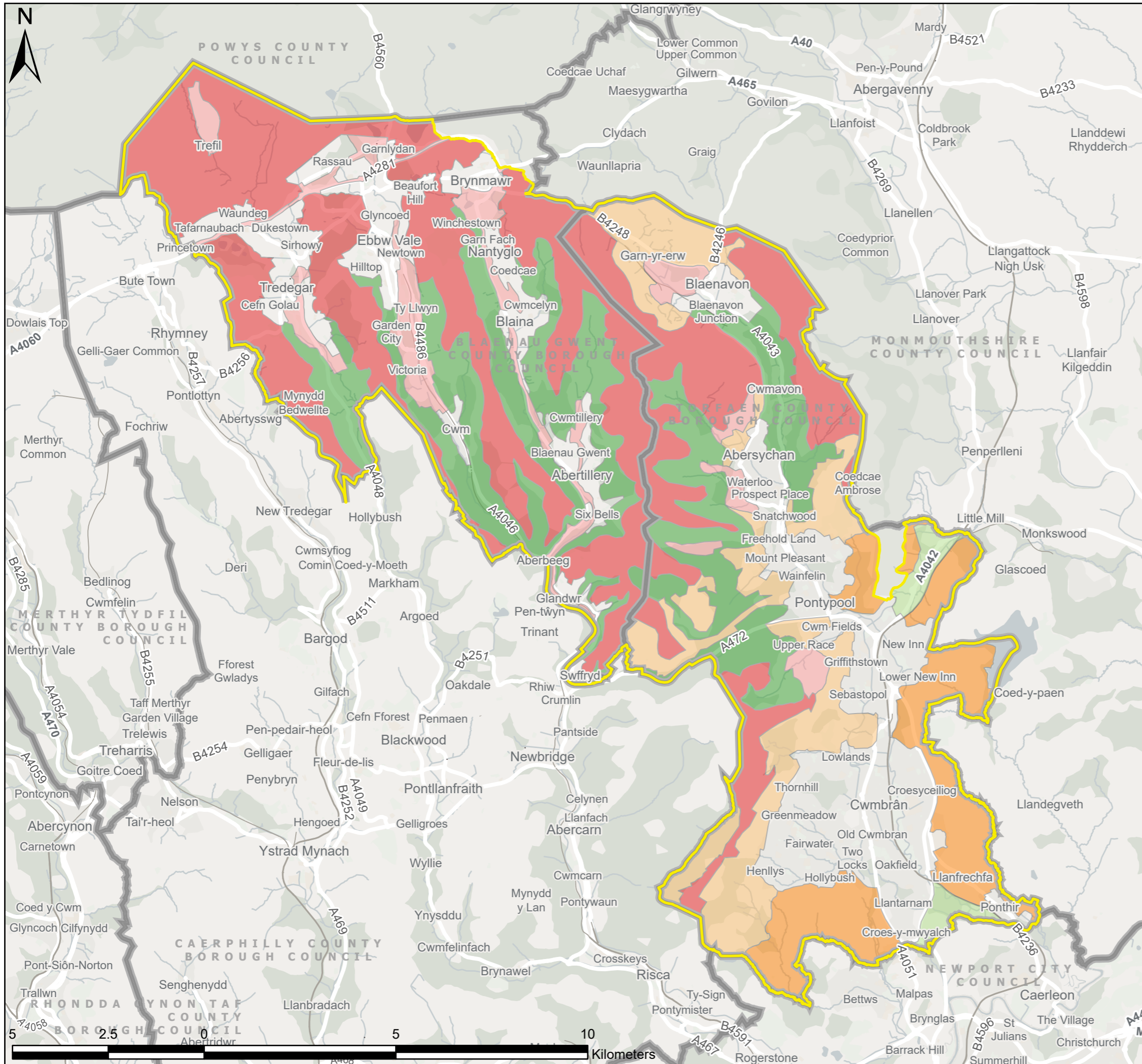
- Exposed Upland Plateau
- Upland Valleys
- Hills, Lower Plateau and Scarp Slopes
- Rolling Lowland
- Lowland Valleys
- Inland Water
- Built Development
- Developed Unbuilt Land

LANDMAP Visual and Sensory Classification Level 2 for the Study area is shown on **Figure 3.0**. Their division into the 38 LAUs is shown in the table below and on **Figure 1.0**. Regional landscape constraints are illustrated on **Figure 2.0** with more local constraints shown on the figures accompanying the LAU statements in **Section 3**.

Missing LAU numbers relate to areas of built development or inland water that have been excluded from the assessment.

Table 2.1.1 Landscape Assessment Units

LAU Ref.	LAU Name	LAU Ref.	LAU Name
LAU 2	Trefil Quarry	LAU 32	Craig Swffryd
LAU 4	Trefil and Carno	LAU 33	Swffryd Wood
LAU 5	Rhymney Hill and Mynydd Bedwellte	LAU 34	Mynydd Coity Upland Ridge
LAU 7	Tredeggar Open Space	LAU 35	Hills North of Blaenavon
LAU 10	Rassau A465 Corridor	LAU 36	Blaenavon
LAU 11	Sirhowy Valley	LAU 37	Mynydd Coity Eastern Valley Sides
LAU 13	Briery Hill and Cefn Manmoel	LAU 38	Cwm Du
LAU 16	Ebbw Vale	LAU 39	Hilltop above Gelli-Deg
LAU 18	Mynydd Carn y Cefn	LAU 40	Western Slopes of Mynydd Henllys
LAU 20	Ebbw Valley Sides and East of Carn-y-Cefn	LAU 41	Pantygasseg Valley & edge of Pontnewynydd
LAU 26	Cwm Celyn, Cwmtillery and Waun Wen Valley side	LAU 43	British Works West of Talywain
LAU 31	Cwm Cyffin	LAU 44	British Works on Mynydd Farteg Fawr



Study Area

Local Authorities

Landscape Area Units

LANDMAP Visual and Sensory Classification Level 2

- Flat Lowland/Levels
- Lowland Valleys
- Upland Valleys
- Developed Unbuilt Land
- Exposed Upland/Plateau
- Hills, Lower Plateau & Scarp Slopes
- Rolling Lowland

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Figure 3
LANDMAP Visual and Sensory Classification Level 2

Drawing no.: 61007_DWG_F3VSL2

LAU Ref.	LAU Name	LAU Ref.	LAU Name
LAU 45	Lower Slopes of Varteg Hill	LAU 52	Henllys Vale, Castell-y-Bwlch & Hollybush
LAU 46	Mynydd Twyn-Glas, Mynydd Maen, Mynydd Henllys Ridge	LAU 53	Lasgarn Farmland
LAU 47	Cwm-Y-Glyn and Cwm Lleucu, Twyn Calch Hill-sides	LAU 55	Pontypool Park and environs
LAU 48	Cwmavon	LAU 56	A4042 Usk Road Corridor
LAU 49	Mynydd Maen, Mynydd Henllys sides above Cwmbran	LAU 57	Llanfihangel Pont-y-Mael east of railway
LAU 50	Mynydd y Garn-Fawr, Mynydd Garnclochdy	LAU 58	Llantarnam Abbey & environs
LAU 51	Upper Race	LAU 59	Countryside east of Cwmbran

2.2 DEVELOPMENT TYPOLOGIES

A separate assessment has been made for wind and solar PV as two different development types. Not only are the attributes of the developments different, but the features of the landscape that are susceptible to each type of development differ as well.

BGCBC and TCBC have undertaken consultation with developers, as well as reviewing Government guidance, to provide the following development typologies:

2.2.1 WIND TURBINES

- Very Large: Tip height 181m to 250 metres at spacing of 0.9 km² per turbine (most likely in PAA)
- Large: Tip height 151m to 180 metres at spacing of 0.24 km² per turbine
- Medium: Tip height 121m to 150 metres at spacing of 0.24 km² per turbine
- Small: Tip height less than or equal to 120 metres at spacing of 0.2 km² per turbine

The height, number and density of turbines are all key attributes of the development in terms of landscape sensitivity and therefore the capacity assessment considers this.

It should be noted that in the 2015 study, very large was defined as turbines of 109m height or greater, or any development of more than five turbines. It concluded that all landscapes in the current study area were of high sensitivity to this scale of development. The landscape assessment units were, however, of a larger scale, reflecting the broader scope of the original study.

A 120m high feature has a potential viewshed between 3-7km, depending on local topography and intervening vegetation and built form. If placed on exposed upland it would be visible from surrounding upland locations, but not necessarily from intervening valleys. When considering turbine heights of 120m plus, it can be assumed that they will all have similar visual impact, as the potential zone of visibility is greater than the range of normal vision, even on a clear day.

A single turbine, although visible, would have less of a visual impact than several turbines in a group, which would appear as a mass rather than a point. There would also be a smaller landscape impact due to the footprint of the development. This assessment, therefore, considers group size as defining the scale of development, as follows:

Table 2.2.1 Wind turbine typologies

Single	1 turbine up to 180m height
Small group	1-3 turbines
Medium group	4-6 turbines
Large group	7-10 turbines

At planning stage, the capacity recommendations would need to be reviewed for cumulative effects with renewables development in neighbouring LAUs, where intervisibility between developments is likely. Included as an illustration of potential viewshed/visual impact of a single wind turbine considered by height rather than grouping. **Figure A** and **B** show the approximate viewshed of a 180m tall feature (calculated with Google maps viewshed tool, based on topographic data), located either on upland ridge or on upland valley side – both within areas identified in the Carbon Trust analysis of suitable sites.

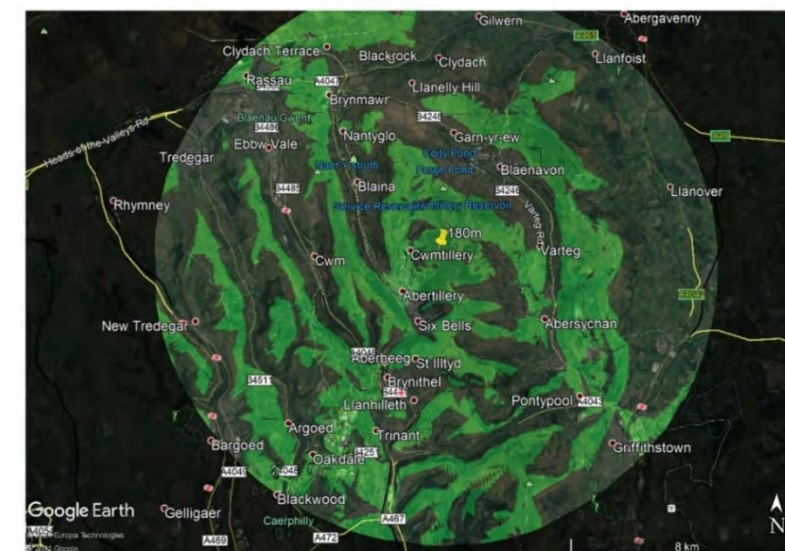


Figure A 10km Viewshed generated by large scale turbine on Coity Mountain (550m AOD) exposed upland/plateau



Figure B 10km Viewshed from large turbine on upland valley side above Festival Drive (450m AOD)

2.2.2 SOLAR PV PANELS

- 1m x 2m size panels set in aluminium frames
- Arranged in parallel rows in an east-west direction approximately 5-8m wide
- Overall height above ground level 2-3m
- Tilted to the south at fixed or tracking angle of 20-40°
- Additional infrastructure including small scale buildings to house invertors and power,
- 2.5m high Security fencing and CCTV cameras mounted on 4.5m poles
- Minimum land area between 2 and 5 Ha

The height, massing and pattern of solar panels and associated infrastructure are key attributes of this type of development. Reflectiveness also needs to be considered as glare from reflective surfaces can travel long distances and prove very eye catching for visual receptors.

In assessing landscape capacity, the following scales of development have been assessed based on the underlying landscape topography and form and consistent with the most recent development schemes considered within the study area and surrounding authorities:

Table 2.2.2 Solar PV typologies

Small array	< 10Ha
Medium array	11-20Ha
Large array	21-30Ha
Very large array	31+Ha

It is considered to be unlikely that solar development beyond this size would be practicable within the study area.

2.3 LANDSCAPE AND VISUAL SUSCEPTIBILITY CRITERIA

Landscape susceptibility is the degree to which a defined landscape and its associated visual qualities and attributes might respond to a specific development type / development scenario without undue negative effects on landscape character and the visual resource.

The assessment also needs to reflect the values society places on our landscapes in addition to their intrinsic characteristics. This is established from existing designations, recreational use, and cultural and historic associations.

Sensitivity to different types of development is then evaluated by combining susceptibility and value indicators for each landscape unit.

Susceptibility and value criteria are broadly similar for both wind and solar development. However, some variations between the two development types have been applied due to their different attributes, scale size massing and height etc, having different effects on the landscape. Values of Low, Medium and High susceptibility are provided. A number of these criteria are interdependent with subtle variations that can be influenced by other factors such as intervisibility between LAUs. In these situations, further comment has been brought out in the Landscape Assessment Units Statements to highlight variations within the LAUs such as the significance of skylines and ridges and importance of consideration for siting to avoid breaks in skylines.

The criteria were assessed using a combination of LANDMAP data, fieldwork, satellite imagery and OS mapping information. These are set out in the following tables.

A glossary of terms used as a part of the LANDMAP assessment is also given to provide clarity for the landscape and visual criteria used within the Landscape Assessment Unit Statements.

Table 2.3.1 Landscape and visual criteria with susceptibility to wind energy development

Criteria (LANDMAP category)	Susceptibility indicators:		
	LOW	MEDIUM	HIGH
Landscape			
Scale VS8: Scale	Vast or large-scale landscapes	Medium scale landscapes	Small scale landscapes
Landform VS4: Topographic form	Levels, plateaux, disturbed	High hills/ mountains	Hills/valleys, rolling land, undulating
Landcover pattern			
VS Classification level 3	Excavation, urban, upland moorland, upland grazing, Hillside and scarp slopes grazing, Lake,	Wooded upland and plateau, hillside and scarp slopes, village, mosaic upland and plateau, Hillside and scarp slopes mosaic, Mosaic rolling lowland	Open upland valleys, open/wooded mosaic, upland valleys, amenity land, informal open space, mosaic lowland valleys,
VS5: Landcover pattern	Development, open land, water	Mixture, woodland	Field pattern/mosaic
VS16: Pattern	Formal , Organised	Regular	Random
HL Classification level 3	Reclaimed land, extractive, processing manufacturing, communications, military	Marginal, woodland, recreational	Various fieldscapes, settlements, nucleated settlements, designed
Built Environment			
VS6: Settlement pattern	Urban, linear	Village, mixture, clustered	None, scattered rural/farm
Built form and infrastructure: Maps and fieldwork	Large / concentrated urban / modern settlements, industrial development and large sheds, pylons, masts, trunk roads, railways	Residential and smaller scale commercial development and structures	Unpopulated areas, presence of historic buildings / structures or settlement

Criteria (LANDMAP category)	Susceptibility indicators:		
	LOW	MEDIUM	HIGH
Visual			
Skylines and settings: Topographic data and fieldwork	Less prominent skylines Existing vertical features (modern development) Smooth, flat landscapes	Undulating landscapes	Prominent or distinctive skylines, Uninterrupted / undeveloped skylines, Distinctive / sensitive landscape features such as historic landmarks
Movement VS18: Level of human access; observation during fieldwork	Constant, frequent	Infrequent	Rare, occasional
Visibility, intervisibility between units			
VS9: Enclosure	Enclosed, confined	Open	Exposed
VS22: Attractive views	Neither in or out	Out	Both in and out, within, into
VS23: Detractive views	Both in and out, within, into	Out	Neither in or out
Views into the area Field observation and mapping	Contributes little to wider landscape, limited views in	Some views, framed views in	Extensive views in from surrounding countryside
Views out of the area Field observation and mapping	Sparsely populated or inaccessible, limited views out	Some views, framed views out of the area	Landscapes with far reaching views, densely populated areas.
Typical Receptors: Desk study	Commercial, transport routes	Sports fields and other recreation not dependent on setting, workplaces	Residential, leisure, tourists
Scenic quality and character			
VS46: Scenic quality	Low	Moderate	Outstanding, High
VS47: Integrity	Low	Moderate	Outstanding, High
VS48: Character	Low	Moderate	Outstanding, High

Table 1.3.2 Landscape and visual criteria with susceptibility to solar farm development

Criteria (LANDMAP category)	Susceptibility indicators:		
	LOW	MEDIUM	HIGH
Landscape			
Scale VS8:Scale	Vast or large-scale landscapes	Medium scale landscapes	Small scale landscapes
Landform VS4: Topographic form	Levels, plateaux, disturbed	High hills/ mountains	Hills/valleys, rolling land, undulating
Landcover pattern			
VS7: Boundary type	Overgrown hedges, hedge with trees, fences with trees	Managed hedge, Clawdd	Fences, stone walls, slate fences, none
VS5: Landcover pattern	Development, open land, water	Mixture, woodland	Field pattern/mosaic
VS16:Pattern	Formal	Regular	Random
HL Classification level 3	Regular fieldscape, reclaimed land, extractive, processing manufacturing, communications, military, organised	Marginal, woodland, recreational, settlements, horticulture	Irregular fieldscape, designed
Built Environment			
VS6: Settlement pattern	Urban, linear	Village, mixture, clustered	None, scattered rural/farm
VS20: Use of construction materials	Inappropriate	Generally inappropriate	Appropriate, generally appropriate
Built form and infrastructure: Maps and fieldwork	Large / concentrated urban / modern settlements, major infrastructure (transport / communications / utility infrastructure / industrial elements)	Residential and smaller scale commercial development and structures	Unpopulated areas, presence of historic buildings / structures or settlement
Visual			
Visibility, intervisibility between units			
VS9: Enclosure	Enclosed, confined	Open	Exposed
VS22: Attractive views	Neither in or out	Out	Both in and out, within, into
VS23: Detractive views	Both in and out, within, into	Out	Neither in or out
Views into the area Field observation and mapping	Contributes little to wider landscape, limited views in	Some views, framed views in	Extensive views in from surrounding countryside

Criteria (LANDMAP category)	Susceptibility indicators:		
	LOW	MEDIUM	HIGH
Landscape			
Views out of the area Field observation and mapping	Sparsely populated or inaccessible, limited views out	Some views, framed views out of the area	Landscapes with far reaching views, densely populated areas.
Typical Receptors: Desk study	Commercial, transport routes	Sports fields and other recreation not dependent on setting, workplaces	Residential, leisure, tourists
Scenic quality and character			
VS46: Scenic quality	Low	Moderate	Outstanding, High
VS47: Integrity	Low	Moderate	Outstanding, High
VS48: Character	Low	Moderate	Outstanding, High

Table 2.3.3 Criteria for assessing landscape value.

Type of value	Indicators of value		
	LOW	MEDIUM	HIGH
Landscape Value			
Designations	None	Local designations, Registered Landscape of Historic Interest, Ancient woodland	National Park, World Heritage Site,
VS50: Overall visual sensory evaluation	Low	Moderate	High, Outstanding
VS49: Rarity	Low	Moderate	High, Outstanding
LH45: Overall habitats evaluation	Low	Moderate	High, Outstanding
GL31: Rarity	Low	Moderate	High, Outstanding
GL33: Overall geological evaluation	Low	Moderate	High, Outstanding
HL38: Rarity	Low	Moderate	High, Outstanding
HL35: Integrity	Low	Moderate	High, Outstanding
HL40: Overall historic evaluation	Low	Moderate	High, Outstanding

Type of value	Indicators of value		
	LOW	MEDIUM	HIGH
Visual Value			
Key views, vistas.			
Views to and from Important Landscape and Cultural Heritage Features (both within and outside of each assessment unit): Mapping and field survey with local knowledge	None or few, with little intervisibility between sites	Intermittent intervisibility from designated areas/national trails	Presence of and close views from National Trails, intervisibility with WHS or National Park
Aesthetic, perceptual and experiential			
Sense of place VS25	Weak, none	Moderate	Strong
Remoteness and tranquillity VS24: Perceptual and other sensory qualities	Noisy, unattractive, Threatening.	Sheltered, safe, settled	Attractive, remote, tranquil, wild

Table 2.3.4 Glossary of LANDMAP terminology.

Term	Definition
Character	The distinct and recognisable pattern of elements, features and qualities that occur within a particular landscape area.
Remoteness	Physical isolation and removal from the presence of people, infrastructure (roads and railways) and settlement.
Sense of Place	The character of a place that makes it locally distinctive i.e. different from other places. The essential character and spirit of an area (derived from genius loci- literally 'spirit of the place')
Threatening	Perceived danger posed by terrain and/or weather or other threat
Tranquillity	Sense of peace without disruptive noise or movement.
Wildness	The quality of an area which appears to be uninhabited and is often relatively inaccessible where the influence of human activity on the character and quality of the environment appears to have been minimal.

2.4 LANDSCAPE SENSITIVITY

Landscape sensitivity is the measure of resilience to change of the landscape to the type of development being assessed. Sensitivity was established by assigning each susceptibility and value criteria a score based

on its position in the overall range for each County Borough. The range was divided into low, medium and high scores. The total score for susceptibility was then combined with the total score for value as in the matrix below. The combined scores for each landscape unit represent the overall sensitivity to either wind or solar development of that area.

Table 2.4.1 Sensitivity matrix

Overall sensitivity	Value		
Susceptibility	LOW	MEDIUM	HIGH
LOW	VERY LOW	LOW	MEDIUM
MEDIUM	LOW	MEDIUM	HIGH
HIGH	MEDIUM	HIGH	VERY HIGH

The scores were checked against the following sensitivity criteria, using professional judgement and fieldwork records to confirm or adjust the score for each landscape unit accordingly.

Landscape Sensitivity to Wind Turbine Development is illustrated on **Figure 4**, whilst Landscape Sensitivity to Solar PV Development is illustrated on **Figure 5**.

Table 2.4.2 Typical sensitivity criteria for landscape units

Sensitivity	Assessment based on Susceptibility X Value to development type
VERY HIGH	Landscape and / or visual characteristics of the assessment unit are very susceptible to change and / or its values are high or high / medium and it is unable to accommodate the relevant type of development without significant character change or adverse effects. Thresholds for significant change are very low.
HIGH	Landscape and / or visual characteristics of the assessment unit are susceptible to change and / or its values are medium through to high. It may be able to accommodate the relevant type of development but only in limited situations without significant character change or adverse effects if defined in the relevant land parcel summary. Thresholds for significant change are low.
MEDIUM	Landscape and / or visual characteristics of the assessment unit are susceptible to change and / or its values are medium / low through to high / medium and / or it may have some potential to accommodate the relevant type of development in some defined situations without significant character change or adverse effects. Thresholds for significant change are intermediate
LOW	Landscape and / or visual characteristics of the assessment unit are resilient and of low susceptibility to change and / or its values are medium / low or low and it can accommodate the relevant type of development in many situations without significant character change or adverse effects. Thresholds for significant change are high.
VERY LOW	Landscape and / or visual characteristics of the assessment unit are robust or degraded and are not susceptible to change and / or its values are low and it can accommodate the relevant type of development without significant character change or adverse effects. Thresholds for significant change are very high.

2.5 LANDSCAPE CAPACITY

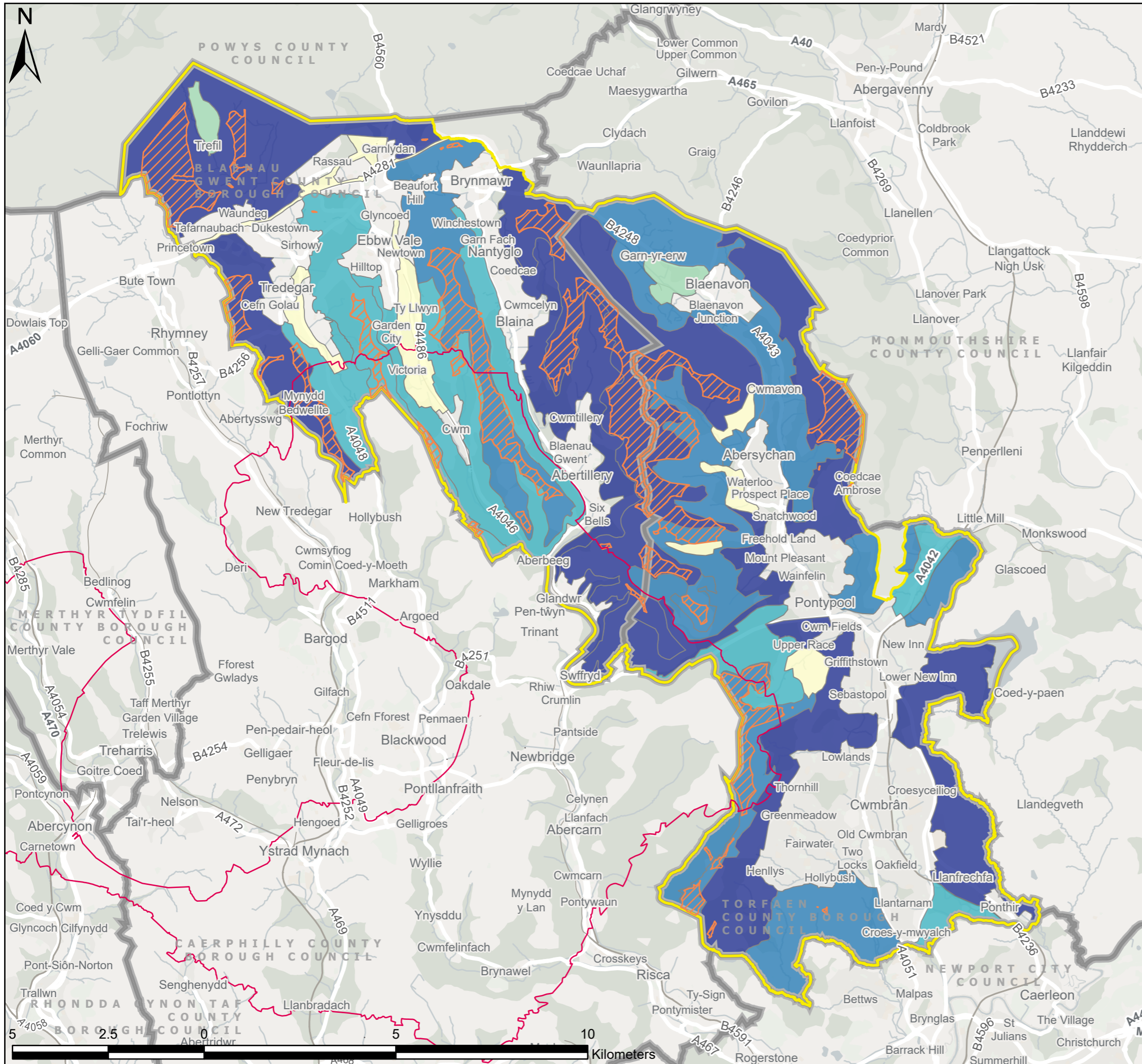
The landscape capacity assessment identifies the quantity and type of development that can be accommodated within a given LAU.

The assessment was based upon the following information and assessment sources:

- The overall sensitivity to renewable energy development derived from the landscape and visual sensitivity assessments.
- Operational and consented renewable energy development within and adjacent to each LAU (**Figure 6.0**). This also includes consideration of the PAA;
- The size of each LAU i.e., there may be scope for a larger number of developments within larger LAUs before a capacity threshold is reached. This will however depend on current land use, aspect and topography all of which may be limiting factors to accommodating further development.
- The agreed development typologies

This includes specific guidance for siting and potential mitigation within each area to aid planning officers in identifying suitable sites for renewables development and assessing submitted proposals.

This is intended to aid planning officers in identifying appropriate sites for renewables development, and potential mitigation strategies. It only provides strategic level guidance as it is anticipated that any proposed development will go through further detailed LVIA and other environmental assessments as part of the planning process.



Pre-Assessed Areas for Wind Energy
 Carbon Trust Area for Wind
 Study Area
 Local Authorities

Landscape Area Units

Sensitivity (Wind)

- Very Low
- Low
- Moderate
- High
- Very High

P3	FI	28/10/2021	Client feedback	TW	ZS	LC
P2	FI	06/07/2021	Client feedback	TW	ZS	LC
P1	S3	10/06/2021	First issue	TW	ZS	LC
V.	S.	Date	Description	B.	C.	A.

V.	S.	Date	Description	B.	C.	A.
			Environmental Consultants			
			Planners			
			Landscape Architects			
			Landscape Managers			
			Urban Designers			
			Ecologists			

TACP

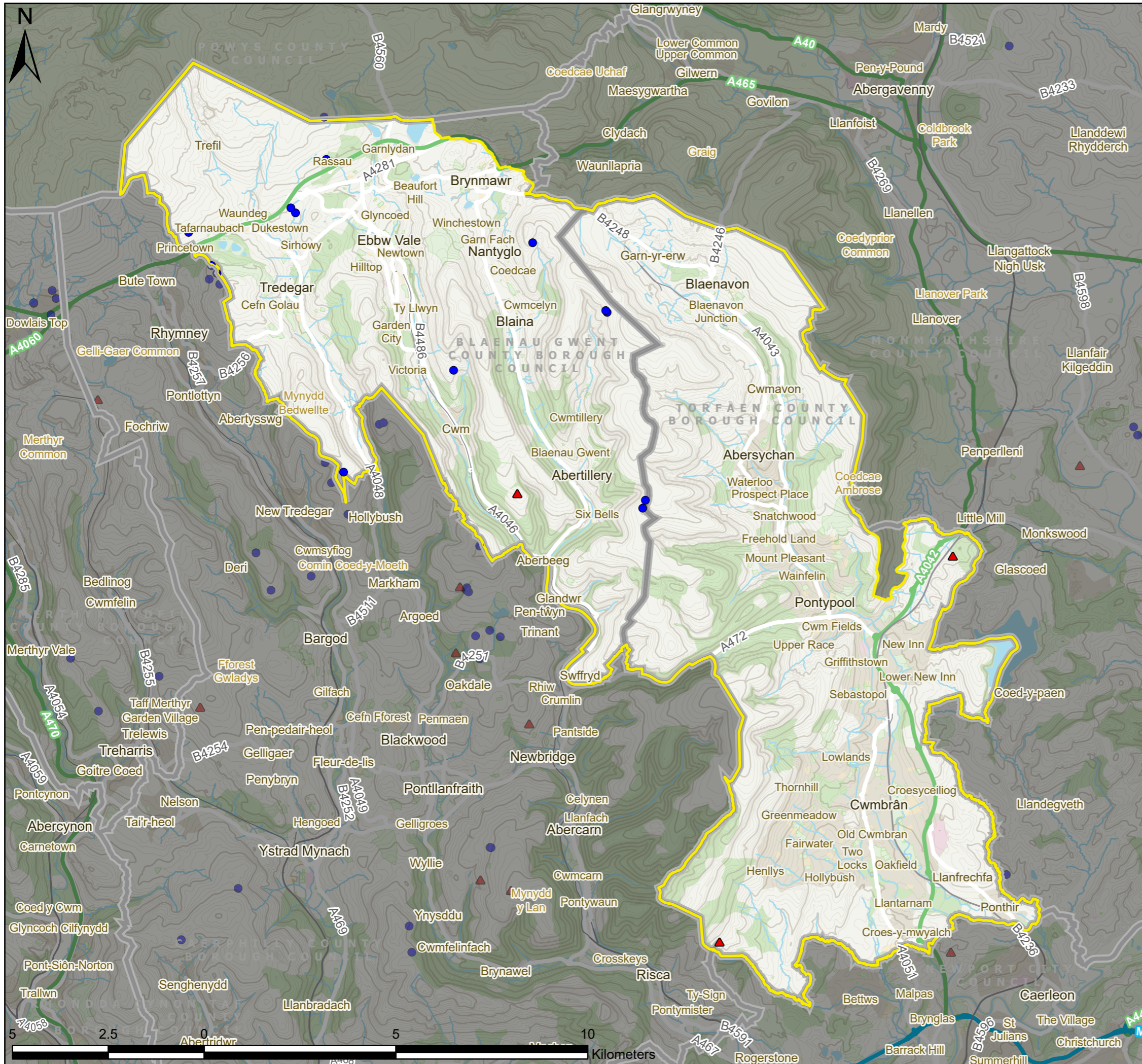
- Environmental Consultants
- Planners
- Landscape Architects
- Landscape Managers
- Urban Designers
- Ecologists

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Blaenau Gwent and Torfaen County Borough Councils
 Sensitivity and Capacity Study for Renewable Energy Development

Figure 4
 Landscape Sensitivity to Wind Turbine Development

Drawing no.: 61007_DWG_F4SensWind



Study Area
 Local Authorities

Technology Type

- Solar Farms
- Wind Turbines

P3	FI	28/10/2021	Client feedback	TW	ZS	LC
P2	FI	06/07/2021	Client feedback	TW	ZS	LC
P1	S3	10/06/2021	First issue	TW	ZS	LC
V.	S.	Date	Description	B.	C.	A.

- Environmental Consultants
- Planners
- Landscape Architects
- Landscape Managers
- Urban Designers
- Ecologists

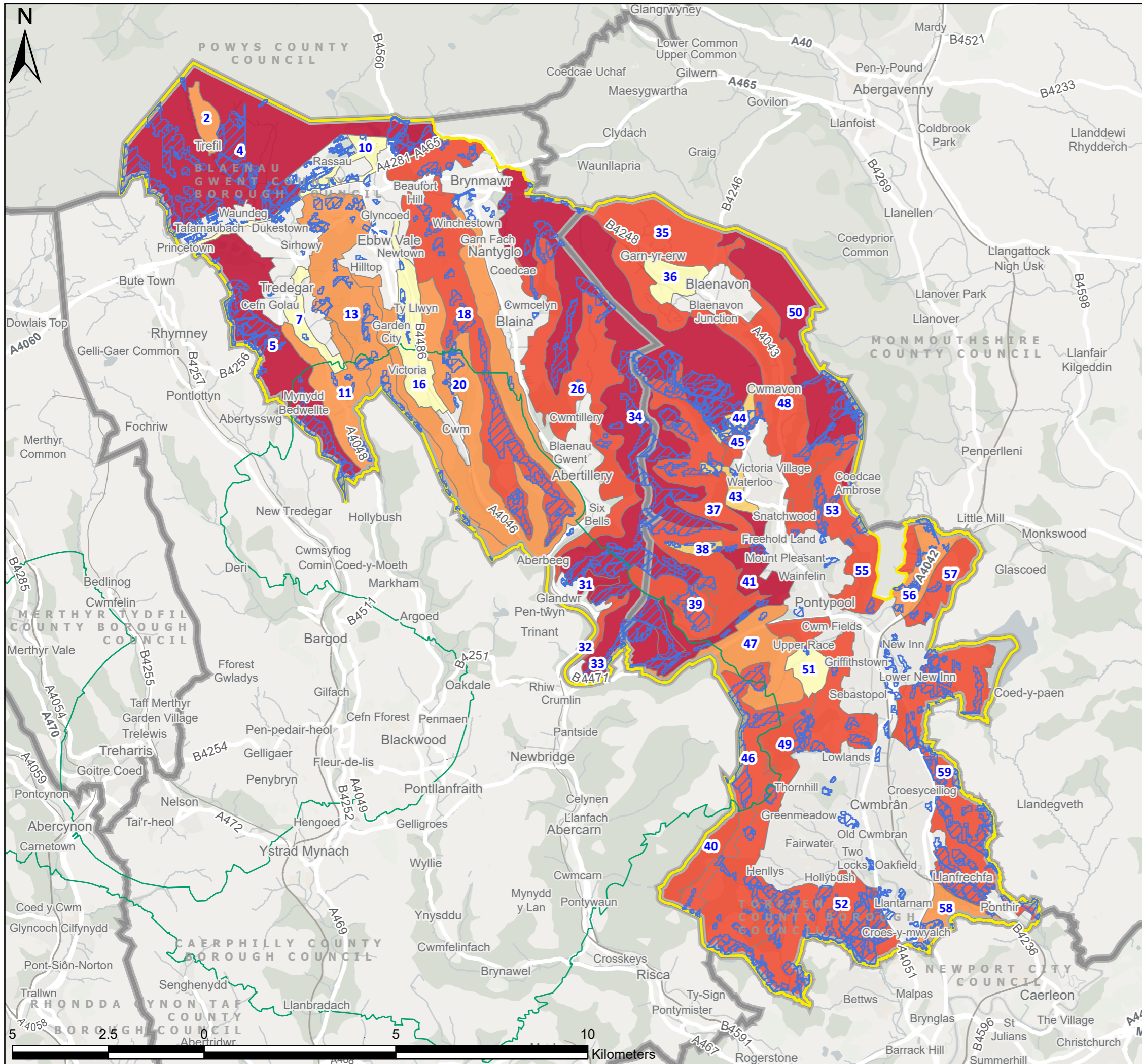
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 Sensitivity and Capacity Study for Renewable Energy Development

Figure 6
 Existing Wind Turbines and Solar Farms

Drawing no.: 61007_DWG_F6Existing



Pre-Assessed Areas for Wind Energy
Carbon Trust Area for Solar
Study Area
Local Authorities

Landscape Area Units

Sensitivity (Solar)

- Very Low
- Low
- Moderate
- High
- Very High

P3	FI	28/10/2021	Client feedback	TW	ZS	LC
P2	FI	06/07/2021	Client feedback	TW	ZS	LC
P1	S3	10/06/2021	First issue	TW	ZS	LC
V.	S.	Date	Description	B.	C.	A.

- Environmental Consultants
- Planners
- Landscape Architects
- Landscape Managers
- Urban Designers
- Ecologists

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Sensitivity and Capacity Study for Renewable Energy Development

Figure 5
Landscape Sensitivity to Solar Farm Development

Drawing no.: 61007_DWG_F5SensSolar