

Technical Paper E4 (a)
An Assessment of the Landscape
Sensitivity to Onshore Wind and
Large Scale Solar Photovoltaic
Development in Cornwall

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N.B. This is a live document that will be updated

FINAL REPORT

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by
Land Use Consultants**

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1 Introduction

INTRODUCTION TO THIS STUDY

- I.1 Cornwall is faced with a wide range of challenges arising from a changing climate. Balancing the need to make a meaningful contribution towards reducing harmful emissions from our energy use (through cleaner energy production) with the protection of Cornwall's unique landscape is one of these challenges.
- I.2 Cornwall's landscape is of national and international importance as well as being vitally important to the local economy. Approximately 30% of the County is designated an Area of Outstanding Natural Beauty (AONB) and a further 24% is recognised locally as Area of Great Landscape Value (AGLV).
- I.3 Cornwall's landscape has a significant economic value, providing the setting for economic activity and often becoming a central factor in attracting business and tourism. It has a social and community value, as an important part of people's lives, contributing to our sense of identity and well-being, and bringing enjoyment and inspiration. It also has an environmental value, as a home for wildlife and a cultural record of society's use of the land.
- I.4 Cornwall also has a number of other natural assets that present significant opportunities to reduce our greenhouse gas emissions. It has some of the best conditions to produce wind and solar electricity in the UK.
- I.5 The Council recognises these opportunities and understands the need to maximise renewable energy generation. However, the development of wind and solar electricity generating installations across Cornwall needs to be managed carefully to achieve the greatest contribution towards our energy needs, while at the same time ensuring that the important characteristics of the Cornish landscape not unacceptably harmed.
- I.6 In order to help understand how best to accommodate wind and solar electricity generation installations in the Cornish landscape Cornwall Council has commissioned Land Use Consultants (LUC) to undertake an assessment of the landscape sensitivity to onshore wind and large scale solar photovoltaic (PV) development¹. The study will form part of an evidence base to support the emerging Cornwall Core Strategy and the outputs will enable Cornwall Council to make robust, well-informed decisions on the wind and PV applications received.
- I.7 The main aims / outputs of this study are:
 - To assess the sensitivity of the Cornish landscape to wind farms and solar PV developments. This assessment includes landscape recommendations on the appropriate siting and scale of future development (wind and solar PV) within each of the county's 40 Landscape Character Areas.
 - To develop a 'landscape strategy' for deployment of each technology in each LCA (to give an indication of the relative amounts of development

¹ For the purposes of this report, we will use the shorter term 'solar PV development(s)'

that might be accommodated in different LCAs - independent of renewable energy targets).

- I.8 Cornwall Council is keen to ensure objectivity in the final study outputs, and ensure that stakeholders have been consulted with throughout the course of the study. This has involved engaging with the following groups at key stages:
- Cornwall Council officers and Members
 - Statutory consultees and landscape / planning professionals
 - Industry representatives
 - Community representatives
 - Neighbouring authorities, including Devon County Council and nearby district councils.
- I.9 **Chapter 2** presents the characteristics of wind energy development and solar PV development. **Chapter 3** presents the landscape character and quality baseline for Cornwall and **Chapter 4** sets out the method used for assessing sensitivity to these renewable energy types within Cornwall. The results of the sensitivity assessment and landscape strategies for each LCA are summarised in **Chapter 6** and the individual detailed LCA assessment sheets are presented in **Annex I**.
- I.10 LUC has also been commissioned to produce generic guidance on the siting and design of wind energy development and large scale solar PV development in Cornwall, and on the cumulative assessment of wind energy and large scale solar PV. The guidance is intended for a range of audiences, including the unitary authority's development management team, Council Members and developers involved in the preparation, presentation, review and consenting of wind energy and solar PV development proposals in Cornwall and is presented in **Annexes 2-4** of this technical report.
- I.11 A Glossary is provided at **Appendix I** and a User Guide is included as **Appendix 2**

Definitions of 'landscape sensitivity' and 'landscape capacity'

- I.12 The terms 'landscape sensitivity' and 'landscape capacity' have been defined in various ways in a number of different guidance documents and studies.
- I.13 The current Landscape Character Assessment (LCA) Guidance² does not provide a definition of 'landscape sensitivity', although 'landscape capacity' is defined as follows:

'Landscape capacity is the degree to which a particular landscape character type or area is able to accommodate change without significant effects on its character, or overall change of landscape character type. Capacity is also likely to vary according to the type and nature of change being proposed' (LCA Guidance, 2002)

- I.14 Topic Paper 6 that accompanies the LCA Guidance³ was published in 2004 to expand on the then current thinking about landscape sensitivity and landscape

² Countryside Agency and Scottish Natural Heritage (2002) 'Landscape Character Assessment - Guidance for England and Scotland', prepared by Swanwick C and LUC

³ Countryside Agency and Scottish Natural Heritage (2004) Landscape Character Assessment Topic Paper 6 – Techniques and Criteria for Judging Capacity and Sensitivity

capacity, to stimulate debate and encourage the development of common approaches. Paragraph 4.2 of the supporting Topic Paper 6 states that:

'Judging landscape character sensitivity requires professional judgement about the degree to which the landscape in question is robust, in that it is able to accommodate change without adverse impacts on character. This involves making decisions about whether or not significant characteristic elements of the landscape will be liable to loss... and whether important aesthetic aspects of character will be liable to change'.

- I.15 Various other definitions have been used over the years by different landscape practitioners.
- I.16 The national Landscape Character Assessment guidance is currently being updated and this will include a definition of landscape sensitivity. The emerging LCA Guidance will note that care is needed in the way that 'landscape capacity' is used since it can imply the existence of an objectively defined threshold below which development is acceptable, and beyond which it is unacceptable. Rarely can such a threshold be defined with any accuracy, and thresholds will be dependent upon policy and need for renewable energy.
- I.17 There is currently policy support for renewable energy through the Climate Change Act (2008) which sets out statutory target of reducing greenhouse gas emissions by 80% by 2050, Planning Policy Statements (particularly PPS1: Supplement Planning for Climate Change and PPS 22: Renewable Energy) and the Draft National Policy Statements (particularly the Overarching National Policy Statement for Energy: A Framework Document for Planning Decisions on Nationally Significant Energy Infrastructure (EN-1) and National Policy Statement for Renewable Energy Infrastructure (EN-3). It is also important to recognise that judgements about the acceptability of change can alter over time, not only in terms of our attitudes to a particular landscape but also in terms of our attitudes towards a particular type of change. This suggests that 'capacity' is a subjective term and may vary over time. It is important that any assessment is clear about which elements of it are relatively objective and unlikely to be disputed, and which ones are more subjective and likely to be viewed differently by different stakeholders.

Developing a Method for Assessing Landscape Sensitivity to Renewable Energy Developments in Cornwall

- I.18 In order to develop a method for assessing landscape sensitivity to renewable energy developments in Cornwall, a review of recent sensitivity and capacity studies of renewable energy developments from England and Scotland was undertaken. The review considered how landscape sensitivity and capacity has been defined in the studies, as well as the different approaches used to assess landscape sensitivity or capacity. In summary, the review revealed that:
 - All assessments use a spatial framework, usually based on landscape character areas or landscape types.
 - Different studies define 'landscape sensitivity' and 'landscape capacity' in slightly different ways, but they are all based on the LCA guidance definition or the Topic paper 6 definitions.

- Some studies are called ‘landscape sensitivity studies’ and some are called ‘landscape capacity studies’, but often these terms are used to mean essentially the same thing.
- Landscape ‘capacity’ studies tend to assess landscape sensitivity, and then consider how wind energy development may be best be accommodated within the landscape, either through guidance or through development of a strategy for change in each landscape character area (or type).
- Some studies note that, when assessing capacity, it is necessary to consider where landscapes can accommodate change – this judgement is a separate step to the sensitivity study.
- Different studies make different assumptions on the type of development being assessed - some assessments are based on a generic turbine (usually with a height range) while other assessments are applied using different heights of turbines or different wind farm sizes.
- All the studies use criteria, based on landscape character, to assess landscape sensitivity – although the individual criteria varies between studies.
- The presentation of results varies, although most results are presented in tabular format.

I.19 This review helped inform the method that was developed for this study, as set out in **Chapter 4**.

2 Characteristics of Wind Energy Development and Large Scale Solar PV

- 2.1 In order to develop a method for assessing landscape sensitivity to wind energy development and solar PV development, it is first necessary to understand the characteristics of these developments and how they may affect the landscape.

WIND ENERGY DEVELOPMENT

General features of wind energy development

- 2.2 The key components of wind energy development are the wind turbines, which may be grouped together into a 'wind farm'. The majority of wind turbines consist of horizontal axis three-bladed turbines on a steel tower as shown in **Figure 2.1** below). Other turbines are available including two bladed turbines and vertical axis turbines. They are generally given planning permission for 25 years, although re-powering may take place after this period has elapsed.

Figure 2.1: A three bladed turbine



- 2.3 The main visible components of a wind turbine consist of a tower, nacelle and rotor blade system. Depending on the scale and design of the turbine, the transformer may be located inside or outside the tower. The tower itself sits on a concrete foundation which is hidden from view. In addition to the turbines themselves, developments involving large scale wind turbines typically require additional infrastructure as follows:
- Road access to the site and on-site tracks able to accommodate Heavy Goods Vehicles (HGVs) carrying long, heavy and wide loads (for the turbine blades and construction cranes).
 - A temporary construction compound and lay down area for major components.
 - Borrow pits to provide construction materials for the access tracks.

- An area of hardstanding next to each turbine to act as a base for cranes during turbine erection.
 - Underground cables connecting the turbines (buried in trenches, often alongside tracks).
 - One or more anemometer mast(s) to monitor wind direction and speed.
 - A control building (to ensure the turbines are operating correctly) and substation.
- 2.4 Lighting requirements depend on aviation and can be required on turbines. However, aircraft warning lights can be infrared (IR) and therefore not visible to the naked human eye. Lighting has not been considered as part of the landscape sensitivity study, although guidance advises that if lighting is required on turbines for aviation purposes, infra-red lighting where possible to minimise visual impacts at night.
- 2.5 The District Network Operator (DNO) is responsible for establishing a connection between the substation and the national grid. This connection is usually routed via overhead cables on poles, but may be routed underground (more expensive option). Since these are part of a separate consenting procedure these connections are not be considered as part of the landscape sensitivity study.

Landscape effects of wind turbines

- 2.6 Wind turbines are substantial vertical structures that will inevitably be highly visible structures within the landscape. The movement of the blades is a unique feature of wind energy developments, setting them apart from other stationary tall structures in the landscape such as masts or pylons. Wind energy development may affect the landscape in the following ways:
- Wind turbines are tall vertical features that may affect perception of a landscape, including landscapes that form a setting to heritage assets.
 - Movement of rotor blades is a unique feature of wind energy development and may affect characteristics of stillness, remoteness and solitude - larger models having slower rotor speeds than smaller models.
 - The presence of turbines may increase the perceived human influence on the landscape and appear large in the context of human scale features.
 - Turbines on skylines may compete with existing landmark features for prominence where prominent skylines or landmark features are characteristic of the landscape.
 - Different turbine designs can have different effects on landscape character, for example.
 - Construction of turbines and associated infrastructure may result in direct loss of landscape features.
 - Access tracks may be highly visible, particularly in open upland landscapes or undeveloped landscapes that currently may not contain tracks.

- Ancillary buildings and security requirements (such as fencing) may introduce new features into the landscape.
 - Development of renewable energy infrastructure may enable farmers to manage their land in the traditional way, such as maintaining small fields and hedgerows, and avoiding the need for large scale barns.
- 2.7 'Shadow flicker' only theoretically occurs within ten rotor diameters of a turbine⁴ under specific conditions and is therefore a specific residential amenity issue rather than a landscape character issue, and therefore falls outside the remit of this study.
- 2.8 In undertaking any landscape sensitivity assessments it is necessary to acknowledge that varying attitudes to wind energy development are expressed by different individuals and constituencies. Aesthetic perceptions can be positive or negative depending on individual attitudes to the principle and presence of wind generation⁵.

Cumulative issues

- 2.9 As larger numbers of wind farms are built, it is increasingly necessary to consider their cumulative effects. Scottish Natural Heritage's guidance on the siting and design of windfarms in the landscape⁶ suggests that a key consideration is understanding how different developments relate to each other, their frequency as one moves through the landscape, and their visual separation, with the aim of allowing experience of the character of the landscape in-between. These kinds of issues will be considered in the landscape strategies for deploying wind energy in Cornwall.

Trends in Cornwall

- 2.10 **Table 2.1** below shows the size and height of operational wind farms in Cornwall.

Table 2.1: Size and height of existing wind farms (March 2011)

Wind farm	Number of turbines	Height of turbine hub	Height of turbines (inc. blade)
Bears Down, St Eval	16	35m	57m
Carland Cross	15	32m	47m
Cold Northcott, Camelford	22	25m	42m
Crimp, Morwenstow	3	50m	81m
Delabole, Camelford (repowered)	4	64m	99.5m
Four Burrows, Truro	15	30m	45.5m

⁴ ODPM (2004) Planning for Renewable Energy: A Companion Guide to PPS22, para. 76.

⁵ Warren, C. R. et al (Nov 2005) Green on Green: Public Perceptions of Wind Power in Scotland and Ireland, JEPM 48 (6) page 853-857

⁶ Scottish Natural Heritage (December 2009) Siting and Designing Windfarms in the Landscape, Version 1.

Goonhilly, Lizard (repowered)	6	67m	107m
Roskrow Barton, Penryn	2	44m	75m
St Breock, Wadebridge	11	35m	53m

- 2.11 Sizes of wind turbines in Cornwall are increasing – driven by need for greater efficiency. At the time of preparing this report (November 2010 to March 2011) Cornwall Council had consented, or was considering, a number of wind farm proposals as shown in **Table 2.2** below. This shows a significant increase in the height of new turbines compared to the majority of the existing wind farms.

Table 2.2: Size and height of proposed wind farms

Wind farm	Number of turbines	Height of turbine hub	Height of turbines (inc. blade)
St Breock (repowering, consented)	8	-	80m
Carland Cross, Truro (repowering, consented)	10	60m	100m
Davidstow, Davidstow Woods (refused)	20	80m	126.5m
Otterham Down (B) Otterham (consented)	5	46m	71m
Truthan Barton, Truro (refused, appeal rejected)	6	-	125m

LARGE SCALE SOLAR PHOTOVOLTAICS (PV)

- 2.12 Large-scale solar PV developments are an emerging renewable technology proving popular with developers, particularly as a result of the Government's feed-in tariffs which provide an attractive financial incentive for their development (for schemes of less than 5MW in capacity). Cornwall is seen as a particularly attractive location in the UK for this technology, due to its high levels of solar radiation and presence of south-facing slopes, able to capitalise on the natural energy resource of the sun.
- 2.13 Cornwall Council's draft *Renewable and Low Carbon Energy Supplementary Planning Document* (Consultation Draft, June 2010) identifies a number of considerations which need to be taken into account in relation to large scale solar photovoltaic installations:
- Tracking
 - Height/shadow
 - Security/fencing
 - Glare
 - Orientation
 - Screening
 - Grazing
 - Landscape sensitivity
 - Cumulative impact

General features of solar PV developments

- 2.14 Since there are no existing solar PV developments in the UK, this section is based on the details set out in the current planning applications at the time of writing this report as well as information from a recent seminar held by Regen SW on 19 October 2010 ('*Planning for the Solar PV Revolution*'). Like wind farms, solar PV developments are usually given planning permission for 25 years.

Size and arrangements

- 2.15 The size of large scale solar PV developments may vary, with current planning applications at the time of writing this report varying in size between approximately 5,000 and 23,000 panels (approximately 4 and 15 hectares). On average the panels used will be able to generate about 220 watts of electrical power.
- 2.16 Panels are arranged in groups or 'arrays' of around 18-20 panels. The panels are encased in an aluminium frame, supported by aluminium or steel stands, and positioned at a fixed angle between 20-40 degrees from the horizontal, facing south. Arrays are sited with gaps in-between them, therefore they will not cover a whole field. The actual arrangement of the arrays within the landscape varies from scheme-to-scheme (i.e. regular layouts versus more varied and irregular, depending on the site situation). Generally though, layouts of the solar arrays tend to be regular.

- 2.17 Some developments contain panels that can be manually rotated several times a year to enable the arrays to track the sun, while others feature fixed panels which are positioned to face in a southerly direction. The technology does exist to allow for automatic tracking, although this is rarer.

Location in the landscape

- 2.18 In general, the favoured sites for PV schemes from a technical point of view are plateaux tops or gently sloping landforms, with a southerly aspect to maximise efficiency. Though fixed, the panels themselves are able to be rotated to ensure maximum capture of the sun's energy. Movement due to automatic tracking is likely to be imperceptible as it will be slow. From a logistical point of view, steep slopes are avoided. Unless viewed from above, it is unlikely that a whole solar PV development would be visible to the eye.

Height of the solar panels

- 2.19 Ground mounted panel arrays are usually mounted around 3-4m above ground level.

Appearance of the panels

- 2.20 In the planning applications studied, the panels are described as appearing dark in colour as a result of their non-reflective coating and maximised absorption of light, and have been likened to poly tunnels when viewed from a distance. Existing solar PV developments are sometimes likened to areas of standing water (i.e. reservoirs or lakes) when viewed from certain angles and from a distance. An example of a solar PV development in Germany is shown in **Figure 2.2** below. However, it should be noted that the panels may also be seen from behind (back of the panels) or from the side (down the rows of frames) which will also influence how they are perceived.

Figure 2.2: Solar PV development in Muhlhausen, Germany



Other features of large-scale solar PV development

- 2.21 Other features of large scale solar PV development include:
- Temporary storage compounds for plant, machinery and materials during the construction phase.

- Inverters to convert the electricity from DC to AC – which may be housed within new or existing buildings.
- Transformer and underground power cables to transfer the electricity to the National Grid.
- On-site power house (usually a Portacabin with a concrete base).
- Security fencing up to 2.5 metres in height required for insurance purposes.
- Hedges or tree planting to screen sites.
- CCTV (e.g. one application proposes cameras on 4.5m high poles).

2.22 New access tracks are not necessarily a requirement because temporary matting can be used to bring the solar panels to a site (i.e. if a site is not accessible by existing roads or tracks). However, transportation of panels to the site needs to be considered.

Landscape effects of large scale solar PV development

2.23 Solar PV development, although not prominent in terms of height, can occupy substantial areas of ground which may be visible, particularly if located on slopes. Landscape effects may include the following:

- As extensive developments, solar PV developments may be particularly visible in open landscapes or on upper slopes of hillsides, especially where covering significant areas.
- The presence of PV panels and associated infrastructure may increase the perceived human influence on the landscape, including landscapes that form a setting to heritage assets.
- Solar PV developments will change the land use and appearance of a field or fields, affecting landcover patterns.
- Solar PV development could affect the outstanding universal value (OUV) of the World Heritage Site (WHS) if the arrays are located on areas of REL, industrial and post industrial land, ornamental landscapes and settlements within the WHS.
- The regular edges of solar PV developments may be conspicuous in more irregular landscapes (particularly where they do not follow contours).
- Construction of the solar PV development may result in damage to landscape features.
- Structures may appear out of place in particularly wild or undeveloped landscapes which are valued for their qualities of remoteness.
- Screen planting around solar PV development can change the sense of enclosure of a landscape (NB some changes in management, such as allowing hedges to grow out, may enhance diversity and local landscape character resulting positive change – as long as native species are used).
- Ancillary buildings and security requirements (such as fencing and/or CCTV) may introduce new and unfamiliar features into the landscape.

2.24 The possibility of light or glare emitting from the solar panels is an important consideration in terms of the visual impacts of schemes. However, photovoltaic technology requires absorption of sunlight to allow for the

conversion of energy to take place and therefore there is very little light energy is lost through reflection. Glare is further minimised through the use of translucent coating materials to improve light transmittance through the glass⁷.

Cumulative issues

- 2.25 Cumulative effects of multiple schemes are a significant issue for local authorities to deal with. This is because solar PV developments tend to cluster around grid connection points.

Trends in Cornwall

- 2.26 Cornwall Council is leading the way in solar PV development and approved the first solar PV development in the country.

Table 2.3: Details of solar PV applications reviewed as part of this study

Location	Number of PV panels	Size of each array (panels)	Land area (ha)	Other details
Benbole Farm, Bodmin (Camel and Allen Valleys LCA) <i>App. no: PA10/04656</i>	8750	20	4 ha (total site: 6ha)	<ul style="list-style-type: none"> Inverters housed in existing agricultural buildings CCTV monitoring on 14 poles of 4.5m
Polmaughan Farm, Trebyan Lostwithiel (Camel and Allen Valleys LCA) <i>App. no: PA10/05105</i>	23,000	-	12.54 ha	<ul style="list-style-type: none"> 5MW predicted energy output Max height = 2.88m Panels angled at 35 degrees
Wheal Jane Baldhu, Truro (Redruth, Camborne and Gwennap LCA) <i>Approved: App. no. PA10/03993</i>	5760	18	3.88 ha	<ul style="list-style-type: none"> Three buildings will house inverters 2.4m high security fence around site Panels angled at 30 degrees

⁷ <http://www.whealjanemasterplan.co.uk/>

3 Understanding the Baseline Landscape

LANDSCAPE CHARACTER BASELINE

Cornwall Landscape Character Assessment 2007

- 3.2 The Landscape Character Assessment of Cornwall ('Cornwall LCA', 2007)⁸ forms the spatial framework for this Landscape Sensitivity Assessment. There are 40 Landscape Character Areas (LCAs) within the county, shown spatially in **Figure 3.1**. The LCA descriptions form the primary evidence base for this Assessment.

Historic Landscape Character and Sensitivity Mapping for Wind Farm and Solar PV installations

- 3.3 Cornwall's Historic Landscape Characterisation (HLC), undertaken in 1994, maps historic landscape types across Cornwall. At the time of preparing this report, Cornwall Council's Historic Environment Service (HES) had produced maps of the sensitivity of the county's historic environment to both wind turbines and solar PV development across these historic landscape types⁹. This mapping is based on a number of different 'vulnerability' criteria and 'significance' weightings – all assessed using a numeric scoring system. A full explanation of the methodology for assessing both wind turbines and solar PV developments is given in accompanying reports produced by the HES. It should be noted that this is an internal draft study that had not been consulted upon at the time of preparing the report and there may be changes to the study in the future. Nevertheless, it is considered that the study contains useful information to feed into this landscape sensitivity study. For the purposes of the Landscape Sensitivity Assessment, the following most relevant vulnerability criteria have been used to inform the 'Historic Landscape Character' criterion:
- **Wind turbines (Vul 2 criteria):** The effect on the visibility and contribution of overall landscape character: The extent to which overall landscape character is determined by the historic aspect and the effect on this of the introduction of wind turbines (rated on a scale of 0 (least) to 4).
 - **Solar PV development (Vul 3 criteria):** Contribution to landscape coherence and legibility: The extent to which the introduction of PV installations affects the coherence of the visible historic landscape, the way its component parts work together in seemingly logical ways, and prevents a viewer from easily 'reading' its landscape history from its patterns (rated on a scale of 0 (least) to -5).
- 3.4 The mapped results from the above are shown for the county as a whole in **Figure 3.2** and **Figure 3.3**. The numeric scores used by the HES study have been interpreted at the landscape character area level as part of this assessment (see Chapter 4 for more information on the method).

⁸ Cornwall Council (2007) Cornwall and Isles of Scilly Landscape Character Study [<http://www.cornwall.gov.uk/default.aspx?page=20139> accessed January 2011]

⁹ This work is not published but is available direct from the Historic Environment Service.

LANDSCAPE QUALITY BASELINE

- 3.5 PPS22 sets out how the planning system should make positive provision for renewable energy while at the same time meeting international and national statutory obligations to protect designated areas, species and habitats from inappropriate forms of development. Natural England's 'Making Space for Renewable Energy'¹⁰ suggests that the presence of statutory protected landscapes (England's National Parks and Areas of Outstanding Natural Beauty) will substantially reduce the degree to which wind energy development can be accommodated (table 2, page 11). Cornwall contains a significant proportion of land nationally recognised for its scenic quality as Areas of Outstanding Natural Beauty (AONBs).
- 3.6 Although Natural England does not comment on local level landscape designations in 'Making Space for Renewable Energy', Cornwall Council values a number of areas at the local level as 'Areas of Great Landscape Value' (AGLV). These are based on an objective study of the landscape and as such are a relevant source of information on scenic quality.
- 3.7 6% of Cornwall is registered as the 'Cornish Mining' World Heritage Site, an international designation recognising the Outstanding Universal Value of the cultural landscape of mining in the county formed between 1700-1914.

Areas of Outstanding Natural Beauty

- 3.8 The most scenic landscapes in Cornwall are protected by AONB status. There are two AONBs within the study area – the Cornwall AONB and the Tamar Valley AONB – the latter straddles the county boundary with Devon. These are shown in **Figure 3.4**.

Cornwall AONB

- 3.9 The Cornwall AONB is divided into twelve separate sections:
1. Hartland (Morwenstow and Kilkhampton)
 2. Pentire Point to Widemouth
 3. Camel Estuary
 4. Trevoze Head to Stepper Point (Bedruthan to Padstow)
 5. St Agnes
 6. Godrevy to Portreath
 7. West Penwith
 8. South Coast – Western (Lizard to Marazion & Helford River)
 9. South Coast – Central (Mylor & the Roseland to Porthpean)
 10. South Coast – Eastern (Par Sands to Looe)
 11. Rame Head
 12. Bodmin Moor

¹⁰ Natural England (2010) Making Space for Renewable Energy: Natural England's Approach to Assessing On-Shore Wind Energy Development (Catalogue Code: NE254)

- 3.10 Descriptions for each of these, including a 'Statement of Significance', are available in the emerging Management Plan (2011-2016)¹¹ which is available online. A summary of the key qualities for each of the areas, interpreted from the Management Plan, are presented below, followed by an interpretation of which of these qualities might particularly be affected by wind energy development and solar PV development.
- 3.11 **Hartland** - superb coastal scenery with coastal heathland edges the cliff; high rolling plateau of strong landforms giving the cliff tops a sense of grand scale; a ridge dissected by numerous streams in steeply incised valleys which form waterfalls at the cliffs; extensive views near the sea and on the open elevated ridges; secluded and intimate valleys clothed with broadleaved woodlands; 'Culm' grassland; irregular boundaries of small to medium-sized pastoral fields; small hamlets and isolated farmsteads; local building materials of slates, sandstones, cob and thatch; Morwenstow Church and Hawker's Hut as distinctive features; narrow lanes weave up and down the steep valley sides and cross streams on numerous small stone bridges.

Qualities that may particularly be affected by wind energy development are the sense of grand scale, the skylines of Morwenstow Church and Hawker's Hut as distinctive features, and the narrow lanes that weave up and down the steep valley sides.

Qualities that may particularly be affected by solar PV development are the coastal heathland, valleys clothed in broadleaved woodland, 'culm' grassland, and the irregular field pattern.

- 3.12 **Pentire Point to Widemouth** - unspoilt rocky coast including the highest cliffs in Cornwall; undulating coastal plateau cut by steep sided secluded wooded valleys which are especially deeply incised as they reach the coast at Boscastle, Crackington Haven and Millook Haven – including the tranquil 'Rocky Valley', cut by the River Trevillet; extensive, ancient, pre-clearance coastal sessile oak woodland at Dizzard; coastal heathland on cliffs and coastal valley mouths; open expanse of green pastoral fields (some arable cropping); a strong network of small to medium sized fields with irregular boundaries with larger straight sided fields recently enclosed from former upland rough ground; sparsely vegetated Cornish hedges often built with tightly packed alternating diagonal slate courses, locally called 'curzy way'; remarkable survivals of Medieval open field strip farming; network of narrow lanes, sometimes sunken or edged with high hedges; hamlets and scattered farmsteads closely associated with the pattern of medieval field enclosures; small picturesque fishing villages along the coastline; a strong sense of 'Cornish character'; slate is the characteristic local building and hedging material varying from the mid hues of Delabole slate to the darker shades sourced at Trebarwith; slate industry; the picturesque remains of the thirteenth century Tintagel Castle; prehistoric earthworks, and Iron Age cliff fortifications.

¹¹ Cornwall AONB Unit (2010) The Cornwall Area of Outstanding Natural Beauty Management Plan 2011 – 2016: DRAFT FOR PUBLIC CONSULTATION (AUGUST 2010) [<http://www.cornwall-aonb.gov.uk/management-plan/index.html>]

Qualities that may particularly be affected by wind energy development are the 'unspoilt' nature of the cliffs, and the network of narrow lanes and hedges.

Qualities that may particularly be affected by solar PV development are the wooded valleys, coastal heath, green pastoral fields, and strong field pattern (including Medieval open strip fields).

- 3.13 Camel Estuary** - broad expanse of water at high tide, extensive mud flats and sandbanks at low tide; the Amble Marshes form a level area where water and land intermingle giving rise to valuable salt marsh habitats attractive to wildlife such as wading birds; gently rolling slopes that form the sides of the Camel Valley; Cant Hill is a prominent rounded and steep sided landmark; small tributary streams form a network of subtle shallow valleys; great variation along the estuary's edge; vast openness and scale with long range views toward the open sea contrasts strongly with the sheltered tranquil intimacy of the creeks and tributary valleys; slow passage of small boats adds animation to the scene and emphasises the extent and scale of the water; a primarily green pastoral landscape largely of improved grassland but with significant inclusion of arable use; smaller fields with irregular boundaries mixed with larger more recent regular shaped straight sided fields; Cornish hedges built of local slate and some the bare stone work of the locally characteristic herringbone pattern; mudflats of the sheltered creeks and the Amble Marshes support reed beds and narrow bands of native broadleaved woodlands edge the small tributary stream valleys together adding to the sense of enclosed shelter; a long history of human occupation indicated by a high density of recorded cropmark sites (many being Romano-British rounds (settlements)); a sparsely populated landscape whose settlement pattern retains the dispersed medieval scatter of clustered farmsteads and hamlets where grey slate is the prominent building material; small lanes bound by high hedges and overhung with trees; numerous small quays around the estuary and its creeks; historic stone bridge at the head of the Estuary; the popular Camel Cycle Trail linking Bodmin and Padstow.

Qualities that may particularly be affected by wind energy development are Cant hill as a landmark, the sheltered tranquil intimacy of the creeks and tributary valleys and the small lanes bounded by high hedges.

Qualities that may particularly be affected by solar PV development are the vast openness, the sheltered tranquil intimacy of the creeks and tributary valleys, the primarily green pastoral nature of the landscape, and the field pattern.

- 3.14 Trevoze Head to Stepper Point (Bedruthan to Padstow)** - varied coastal scenery of high headlands (Trevoze Head and Stepper Point), large and indented cliffs and rocky stacks (Bedruthan Steps), small coves and gentle sandy bays; extensive coastal sand dunes at Constantine Bay; gently rolling inland plateau gradually rising toward distant higher ground such as Bear Downs; shallow valleys; high windswept headlands with panoramic views which from Stepper Point include the yawning Camel Estuary; sparsely vegetated slate Cornish hedges displaying the characteristic herringbone pattern of alternating diagonal courses and Tamarisk; small stream valleys with narrow strips of woodland along with small fens and reed beds; intensively farmed landscape of improved grassland pastures with arable -

medium sized irregular fields of medieval origin, including medieval strip fields lending unity to the landscape; recent enclosure of rough ground near the coast; strip of rough ground on edges provides sense of wildness (including a substantial extent of coastal heathland at Bedruthan); alkaline grassland and wildflowers on the upper slopes of Stepper Point, and behind Hawker's Cove, Harbour Cove and St George's Cove; peaceful and wild nature contrasts sharply with its recreational aspects (busy beaches of Harlyn, Treynon and Constantine Bay are particularly popular for surfing); Prideaux Place registered historic parkland; numerous visible prehistoric features (cliff castles, barrows and Romano British Rounds); celtic west settlement pattern of a dispersed scatter of small farm hamlets many still named with the ancient Cornish pre-fix "Tre-"; building materials primarily slate; widespread network of narrow winding lanes bound by slate hedges or in places cut into the bare slate bedrock.

Qualities that may particularly be affected by wind energy development are the large scale of the cliffs, panoramic views along the Camel Estuary, sense of 'wildness' near the coast, prominence of visible prehistoric features, and the narrow winding lanes bounded by slate hedges.

Qualities that may particularly be affected by solar PV development are the panoramic views along the Camel Estuary, the field pattern, the sense of 'wildness' near the coast (rough ground and alkaline grassland and wildflowers).

- 3.15 St Agnes** –dominated by the large granite intrusion of St Agnes Beacon with high unstable slate cliffs; deep stream valleys incise the plateau, steep sided where they emerge at coves; open windswept plateau affords expansive views north and south along the coast and from the Beacon inland; almost unbroken extent of coastal heathland - the heathland clad summit of the Beacon is framed and defined by an encircling network of green pastures; many remnants of the former mining industry including engine houses, chimneys, spoil heaps and shafts including the Wheal Coates Engine House poised on the edge of the coastal slope above the cove at Chapel Porth, seen against the expansive coastal views beyond (an iconic view of the Cornish Coast); rectilinear fields of improved pasture; numerous diminutive fields of historic miners smallholdings; Cornish hedges typically of rubble stone local killas often incorporating unweathered mineralised mine spoil; old mining tracks providing a network of informal access; a marked absence of trees in exposed areas with scrub and woodland developing alongside streams in the valleys; lime-loving flowering plants at Porthtowan, small villages and isolated cottages which once housed miners and their families shelter in the coastal valleys; local building materials include killas walling, granite detailing and slate roofs; visible historic remains including bronze age cairns on the beacon, an Iron Age Cliff Castle at Tubby's Head and more recently on the cliff tops east of Trevellas are the crumbling taxiways and dispersal points of a World War two airfield now used for civilian flying.

Qualities that may particularly be affected by wind energy development are the large scale of the cliffs, views north and south along the coast, the prominence of features of the mining industry, the view of Wheal Coates Engine House poised on the edge of the coastal slope above the cove at Chapel Porth, seen against the

expansive coastal views beyond (an iconic view of the Cornish Coast); the prominence and skylines of visible historic remains including cairns and cliff castles.

Qualities that may particularly be affected by solar PV development are the views north and south along the coast, coastal heathland, and the green pastures encircling the beacon.

- 3.16 Godrevy to Portreath** - high cliffs of unstable slates sculpted into small coves, islets and numerous rocky stacks allowing panoramic views along the coast and inland; low craggy outcrop of Godrevy Island with its landmark lighthouse and spectacular seal colonies; broad plateau behind the cliff, sloping downward toward the valley of the Red River which is sheltered and secluded with mixed woodland; large recent rectangular fields enhance the impression of expansive openness close to the cliff tops; anciently enclosed land (much smaller fields with sinuous boundaries) toward the mouth of the Red River; low stone Cornish hedges are clothed by rough vegetation; coastal heath interspersed with other coarse vegetation enhances the wildness of the abrupt cliff edge; partially ancient Sessile Oakwoods of Tehidy spectacularly carpeted with bluebells in spring; colourful flora on the stabilised sand dunes at Godrevy; important archaeological features including vestiges of prehistoric settlements and fortifications and that significant early industrial archaeology along the Red River; sparse settlement limited to scattered dwellings and a few farmhouses; small quiet lanes and tracks; designed ornamental landscape with deer parks and drives at Tehidy.

Qualities that may particularly be affected by wind energy development are the scale of the cliffs, views along the coast, the prominence of the Godrevy lighthouse as a landmark, the wildness of the cliff edge, and the small quiet lanes and tracks.

Qualities that may particularly be affected by solar PV development are the panoramic views along the coast, the expansive openness close to the cliff tops, and the wildness of the cliff edge.

- 3.17 West Penwith** - hard granite coastline with headlands punctuated by occasional small coves and cut by substantial chasms locally known as “Zawns”; beach at Whitesand bay, east of Sennen where extensive white sandy beaches are backed by partially stabilised dunes; elevated coastal plateau with a narrow shelf-like coastal plateau along the north coast between Morvah and Rosewall Hill rising to the Penwith Downs which form an arced spine of rounded, elevated and exposed moorland tracing an undulating horizon punctuated by prominent heavily weathered granite outcrops; network of tiny irregular pasture fields bounded by massive granite Cornish hedges, that are prehistoric in origin; Cornish hedges have a construction markedly different from elsewhere in Cornwall - large granite boulders, or “grounders”, as a foundation for irregular coursing of varying sizes of weathered granite taken straight from the surface of the moor they support little vegetation other than perhaps a sparse turf topping; remains of now mostly abandoned tiny terraced bulb fields on coastal slopes; mixed arable, pastoral and horticultural use including potato and daffodil production with their distinctive seasonal patterns and colours in the south; picturesque coves around the West and South coasts; extensive coastal heathland and moorland with breathtaking seasonal variation in colour; few trees; incised

valleys with developing scrub and woodland along open stream courses and extensive mature broadleaved woodland in the deep shelter of valleys; great time depth with visible remains covering millennia of unbroken human occupation (standing stones, tombs, fougous, fortifications and ancient settlements such as the well preserved examples at Chycauster and Carn Euny); impressive and numerous surviving remains and structures of the formerly extensive mining industry including along the west coast – including vertical accents of chimneys and ruined engine houses; medieval wayside granite crosses in the west and south; dispersed settlement pattern typical of the Celtic west with scattered farmstead groups as at Zennor and Rosemergy related strongly to the ancient field pattern; in the west the strong influence of mining overlays this earlier settlement pattern e.g. terraced granite mining cottages at Pendeen and Boscawell; local fishing coves as at Lamorna and Penberth; upland areas almost devoid of settlement; buildings and structures are almost exclusively of local granite with slate roofing; Minack Theatre is set into the granite cliffs host near Porthcurno; small lanes edged with Cornish Hedges or cut into the ground from centuries of continuous use.

Qualities that may particularly be affected by wind energy development are the scale of the cliffs, the exposed moorland of the Penwith Downs and the skyline of granite outcrops, picturesque coves, the prominence and skylines of mining structures, and absence of buildings and structures on the uplands.

Qualities that may particularly be affected by solar PV development are the network of tiny irregular pasture fields, the seasonal patterns and colours resulting from arable, pastoral and horticultural use including potato and daffodil production, the extensive coastal heathland and moorland, and the absence of buildings and structures on the uplands.

3.18 South Coast – Western (Lizard to Marazion & Helford River):

- **St Michael's Mount to Halzephron Cliff:** complex geology adds variety to the coastline; granite outcrops including St Michael's Mount forming a distinctive silhouette visible across all of Mounts Bay; stretches of popular gently sloping south facing sandy beaches; broad shingle Loe Bar separating the sea from the Cornwall's largest fresh water lake the Loe Pool with extensive waterside reed beds; subtly rolling gentle landscape interspersed with bold rounded valley; extensive sweeping views around the broad arc of Mounts Bay focussed on the elemental qualities of the coastline; inland, gentle visual enclosure mixes with broader views across the wider landscape; permanent greens of improved pasture are interspersed with considerable arable use lending great seasonal variation; pattern of small to medium sized fields with irregular boundaries; bare stone faces of Cornish hedges; broad fringe of heathland and scrub along cliffs; linear woodlands occur along valleys; historic engine houses cling to the cliff slopes at Trewavas and Rinsey; mostly rural settlement pattern of farmsteads and hamlets; local building materials of granite and killas.

Qualities that may particularly be affected by wind energy development are the distinctive silhouette of St Michael's Mount visible across all of Mounts Bay, and the prominence and skyline of historic engines houses on the cliffs.

Qualities that may particularly be affected by solar PV development are the extensive waterside reedbeds, the elemental qualities of the coastline as seen across Mount's Bay, the permanent greens of improved pasture, and the field pattern.

- **The Lizard Peninsula:** spectacular coastline of majestic high cliffs affording wide ranging views across the open seas of the English Channel, punctuated throughout by attractive sandy beaches tightly enclosed by rocky headlands; inland gently undulating plateau with an overriding impression of general flatness; abundant variety in the scenery of the Lizard with an undulating north overlying soft Devonian Rocks, flat central plateau at the heart of the peninsula over Serpentine and Gabbro and Hornblende Schists in the east generating a gently rolling landscape; small streams etch narrow valleys; unenclosed downland plateau with strong sense of isolation and exposure; a widespread pattern of intricate small fields with irregular boundaries with even smaller unevenly shaped fields of prehistoric origin in the south-east; significant and extensive tracts of open unenclosed rough downland; Cornish hedges with a rubble construction; extensive reed beds along the wet valley bottoms inland of Church and Poldhu coves; vegetated sand dunes at Kennack Sands and at Church Cove where; great time depth - numerous visible prehistoric features including Bronze Age barrows and other ceremonial features along with enigmatic vestiges of Iron Age coastal fortifications; prominent twin towers of the still used historic lighthouse at Lizard Point; large round dishes of the Goonhilly earth station; sparse pattern of farmsteads with ancient Cornish names; winding narrow local roads, many now little used and overgrown; distinctive Serpentine stiles often polished from decades of constant use; raised footpaths along the tops of especially broad Cornish hedges around Lizard village; traditional local fishing with colourful small boats.

Qualities that may particularly be affected by wind energy development are the majestic scale of the cliffs, the strong sense of isolation, the prominence and skyline of the Lizard lighthouse, and the winding narrow roads.

Qualities that may particularly be affected by solar PV development are the unenclosed downland plateau with strong sense of isolation and exposure and the intricate field pattern.

- **Helford River and Estuary** - the main estuary the Helford dominates with changing light and character as the tidal waters ebb and flow; enclosing steep slopes extend to a rolling topography of convex slopes incised by the steep valleys of the innumerable small streams that drain to the creeks; ancient Sessile Oak woodland extending right down to the waters edge; stately mature ornamental pines around the mouth of the river; vast stretches of open river; low sloping cliffs covered in coastal heathland; small fields bound by winding Cornish Hedges, many supporting trees; the densely wooded Frenchman's Creek (made famous by Daphne du Maurier's novel); numerous almost concealed small quays; extensive lush ornamental landscapes of Trebah, Glendurgan and Trelowarren on south facing shores; earthworks of prehistoric enclosed farmsteads on the slopes above the Helford Estuary; settlement pattern of villages clustered at the heads of creeks ; local buildings of characteristically small white cottages bunched

together; small leisure boats find sheltered moorings in the river add occasional activity and interest.

Qualities that may particularly be affected by wind energy development are the prominence and skyline of earthworks above the estuary, and the scale of the features identified as contributing to the interest of the landscape.

Qualities that may particularly be affected by solar PV development are the ancient woodland, coastal heathland and pattern of small fields.

3.19 **South Coast – Central (Mylor & the Roseland to Porthpean):**

- **The Fal Ria** – an extensive flooded river valley estuary landscape; internationally important sheltered deep water harbour capable of receiving large ocean going vessels; a winding network of intertwining creeks and river valleys set amongst a landscape of steep sided small twisting valleys between rounded ridges creating a setting of strongly rolling topography; low rocky cliffs and headlands between which are sheltered sandy beaches where the mouth of the Carrick Roads blends with the coast; daily cyclical rhythm of changing character – at high tide reflective water laps against low banks of exposed rock catching the colours of the sky, at low tide extensive mud and sand banks edge the remaining winding ribbon of water; views over the immense expanse of water at the Carrick Roads; mature often dense Sessile Oak woodland cloaking the slopes along the waters edge; rich and productive farmland of the slopes and ridges (mix of pastoral and extensive arable uses giving considerable seasonal changes in colour); strong framework of Cornish hedges - some bare stone faces, others well vegetated and lined with mature trees; small to medium irregular fields of medieval origin with some larger recently enclosed straight sided fields; semi-natural wetland habits including tidal saltmarsh, intertidal mudflats, reed beds, and fens; heathland and scrub reinforce the rugged undomesticated openness of the coastal margins; many distinctive landmarks and subtle historic remains – including castles at St.Mawes and its counterpart at Pendennis Castle and St.Anthony's lighthouse; villages clustered at the heads of creeks; estates and ornamental parklands notably at Treliwick and Tegothnan; small lanes densely edged on both sides with mature trees creating enclosed leafy tunnels; strong visual presence of many small craft moored in sheltered locations or moving slowly across the water.

Qualities that may particularly be affected by wind energy development are the prominence and skyline of distinctive landmarks and historic remains including castles at St.Mawes and its counterpart at Pendennis Castle and St.Anthony's lighthouse, and the small lanes densely edged on both sides with mature trees creating enclosed leafy tunnels.

Qualities that may particularly be affected by solar PV development are the Sessile Oak woodland cloaking the slopes, the seasonal changes in colour provided by the mix of pastoral and extensive arable uses, the strong framework of Cornish hedges, and the rugged undomesticated openness of the coastal margins.

- **The Roseland** - a coastline of sweeping and extensive bays with majestic high cliffs rising above rocky shores, sandy beaches and small coves; distinctive rocky promontories; subtly rolling inland plateau; far reaching

panoramic views from the rugged cliff tops; medieval fields small in scale with irregular boundaries bounded by bare low stone walls near the exposed coasts to being broad and well vegetated in the sheltered valleys; outlines of early strip field systems are preserved in the current field patterns; woodlands on steep valley sides, alongside streams and in valley bottoms in combination with other valuable wetland habitats such as fens and rush pasture; coastal rough ground including scrub and bracken on wild cliff tops; a tranquil landscape relatively free of man made land marks or structures; rich in discernable pre-historic features from the largest Bronze Age burial mound in Cornwall at Carne Beacon to the County's largest prehistoric enclosure at the Iron Age cliff castles at Dodman; estates and ornamental parklands notably at Caerhays and Heligan taking advantage of the sheltered valleys; attractive coastal villages sheltered in the coves at stream mouths or around picturesque small harbours as at Mevagissey and Gorran Haven; sparse settlement – an even distribution of hamlets and farmsteads linked by narrow winding lanes with high hedges and blind corners; traditional black and white painted metal finger signs.

Qualities that may particularly be affected by wind energy development are the majestic scale of the cliffs, far reaching panoramic views from the rugged cliff tops, the wild character of the cliff tops, and the prominence and skyline of pre-historic features from the largest Bronze Age burial mound in Cornwall at Carne Beacon to the County's largest prehistoric enclosure at the Iron Age cliff castles at Dodman, and the narrow winding lanes with high hedges and blind corners.

Qualities that may particularly be affected by solar PV development are the outlines of early strip field systems are preserved in the current field patterns, the coastal rough ground including scrub and bracken on wild cliff tops.

3.20 **South Coast – Eastern (Par Sands to Looe):**

- **The Fowey ria** - network of creeks dissect the land between high exposed rounded landforms with a strong sense of enclosure; daily changes along the waters edges; a coastline of low cliffs of silvery slatey rocks enclosing small beaches; spectacular promontory of Gribben Head with a prominent beacon and panoramic views along the coast and inland across the Fowey estuary; spectacular and well wooded Menabilly Valley penetrating deep inland; expanses of Sessile Oak woodland, much of it ancient; higher slopes with small to medium sized mixed arable and pasture fields with irregular boundaries indicating medieval origins; Cornish hedges support belts of trees that extend like fingers up the slopes from the main valley woodlands; vineyards add a new texture amongst the more traditional agricultural uses; coast and Gribben Head fringed by rough ground and scrub emphasising their exposed rugged character; picturesque settlement pattern of Fowey, Polruan and Bodinnick.

Qualities that may particularly be affected by wind energy development are the spectacular promontory of Gribben Head with its prominent beacon, and the panoramic views along the coast and across the Fowey Estuary.

Qualities that may particularly be affected by solar PV development are the spectacular and well wooded Menabilly Valley, the medieval field patterns, the

vineyards visible amongst the more traditional agricultural uses, and the exposed rugged character of the coast and Gribben Head.

- **The coast around Polperro** - strongly chamfered cliffs form an even coastline with a few small headlands; a rocky shelving shoreline displays the local silvery slates interspersed with occasional small patches of sand, mostly accessible only by boat; well rounded rolling slopes clothed in a network of mostly small fields of medieval origin with irregular boundaries formed by well vegetated Cornish hedges constructed of the local slate, incised by small valleys; numerous short local streams emerge at the coast through deeply cut rocky coombes; small enclosed lanes form a winding network between the dispersed farmsteads and isolated dwellings; the picturesque village of Polperro packed tightly around its attractive historic fishing harbour; slopes of the valley stretching around and inland from Polperro clothed in rough ground and patches of mixed deciduous woodland; elsewhere exposed an character with few trees.

Qualities that may particularly be affected by wind energy development are the small enclosed lanes form a winding network.

Qualities that may particularly be affected by solar PV development are the medieval field patterns, the rough ground and patches of mixed deciduous woodland on the slopes of the valley stretching around and inland from Polperro, and the exposed character.

- 3.21 **Rame Head** - a rocky shore punctuated by popular sandy beaches; distinctive rounded landmark of Rame Head with its medieval chapel on top forming a prominent landmark with a widely visible and distinctive silhouette; varied panoramic views from the cliffs and the ridge top take in the coast, the open sea of the English Channel, the Tamar Valley and the vast urban expanse of Plymouth across the estuary with its cranes, naval shipyards and marine activity; sheltered valley behind the Rame headland forms an intimate and enclosed setting for Cawsand and Kingsand; sense of open exposure, exaggerated at Penlee Point by the large rectilinear fields recently enclosed from former coastal rough ground; smaller irregular fields of medieval origin, almost without trees, with mixture of green pastures and changing crops on arable fields adding seasonal variation in colour and texture; low hedges clothed in rough vegetation with occasional windswept scrubby trees and bushes; Mount Edgcumbe House and Country Park; rugged and wild steeply sloping cliffs with mixed heathland and rough vegetation; sheltered coast between Cawsand and Penlee Point; visible military fortifications in particular from the 18th, 19th and 20th centuries; a quiet landscape typified by sparse settlement of farms and hamlets linked by mostly small winding rural roads.

Qualities that may particularly be affected by wind energy development are the prominent landmark and distinctive silhouette of the medieval chapel on Rame Head, the rugged and wild coast, the prominence of the visible military fortifications in particular from the 18th, 19th and 20th centuries, and the small winding rural roads.

Qualities that may particularly be affected by solar PV development are the sense of exposure, the small irregular field pattern, the variation in colour and texture of the farmland, and the rugged and wild coast.

3.22 **Bodmin Moor** - a gently undulating elevated moorland plateau with the imposing summit of Brown Willy, the highest point of land in Cornwall; 'Tors' such as the nearby Rough Tor are surmounted by ragged crests of dramatically eroded granite creating a distinctive horizon recognisable from afar; many small streams and rivers in shallow valleys across the moor, with incised valleys and picturesque cascades and low waterfalls on reaching the softer killas rock; bleak sweeping landforms creating an impression of endless empty vastness and huge scale in complete contrast with the intimacy of the surrounding lower valleys; extensive unenclosed high moorland grazed by hardy weather beaten cattle and ponies according to historic laws governing common land, maintaining the distinctive openness of this landscape; anciently enclosed farmland of smaller fields with irregular boundaries in sheltered folds at lower levels (semi-improved pasture for livestock grazing); a fascinating texture of intermingling pockets of commons and enclosures; Cornish hedges and retaining banks constructed of the ubiquitous ever-present weathered local granite taken directly from the surface of the moor (high up the hedges are often of bare stone whilst at lower sheltered locations they support dense walls of mature Beech and native broadleaved trees such as Sessile Oak, and Hazel); deep river valleys around the edges of the moor support luxuriant broadleaved woodland adding to the enclosed intimacy of these locations; stately mature Beech trees characteristic of the Fowey valley; isolated modern conifer plantations add a dark and sombre contrast to the open rough ground; gorse and bracken add to the roughness of the unimproved acid grassland; a rich and interesting patchwork of fens, wetlands and blanket bogs at the heads of streams; extensive visible remains of historic landscapes giving a tangible perception of a deep and continuous history of occupation (early Neolithic tor enclosures, bronze age domestic remains including roundhouse settlements, fields systems and from the same period often in separate locations ceremonial features such as barrows, standing stone circles); abandoned medieval settlements and their associated vestiges of long abandoned fields systems and relic Cornish hedges; holy wells and stone crosses are poignant reminders of the enduring importance of religion in the history of the Bodmin Moor's communities; former china clay workings; engine houses and mining structures especially in the South East of the moor near Caradon Hill and the Minions; bleak central hamlet of Bolventor (named after a "Bold Venture" to recover Tin from moorland streams) is home to the Jamaica Inn made world famous by the writings of Daphne du Maurier; the most sparsely settled landscape in the Cornwall AONB; lonely farmsteads huddled below hill tops to take advantage of any available shelter; clusters of farms and houses hug the slopes or exploit sheltered hollows on the fringes of the moor; occasional nucleated villages are named after Saints indicating their medieval churchtown origins; buildings constructed of local granite with slate used on roofs and hung on walls for weather protection; no tracks and few footpaths across the open moor emphasising its remoteness; lower down is a widespread network of small winding lanes, open and characteristically unenclosed as they cross the open moorland, but enclosed and secluded amongst the lower lying land and valleys; the A30 follows the line of an ancient prehistoric ridgeway.

Qualities that may particularly be affected by wind energy development are the imposing nature of the summit of Brown Willy (the highest point of land in Cornwall), the distinctive ragged horizon recognisable from afar, the prominence of the tors, the prominence of the engine houses and mining structures, the sense of remoteness and lack of tracks across the open moor, and the small winding lanes on the edges of the moor.

Qualities that may particularly be affected by solar PV development are the distinctive ragged horizon recognisable from afar, the distinctive openness and endless empty vastness, the sense of remoteness and lack of tracks across the open moor, the pattern of ancient fields with irregular boundaries around the moor (semi-improved pasture for livestock grazing), and the patchwork of fens, wetlands and blanket bogs at the heads of streams.

Tamar Valley AONB

3.23 The AONB Management Plan (2009-2014)¹² contains a 'Statement of Significance' which includes the following summary points:

- Land management practices have preserved the pattern of small farms, woodland and human settlement on a scale that in the most part remains complementary to the landscape and retains essential structural elements.
- Several large estates have dominated and controlled the land use within the area. This has prevented wholesale landscape change much land has only changed ownership two or three times in the last millennium. The farmed countryside still retains much of its medieval structure.
- Several historical time-limited episodes of intensive activity have enriched the landscape. These have left important legacies; particularly from 19th century mining and 20th century market gardening.
- The area has remained isolated from major transport routes and not been subjected to large-scale road improvement. Until the building of the Saltash road bridge in the 1960s there had been no new road bridges since medieval times.

3.24 The Plan also provides more detail on the reasons for the Tamar Valley's designation as an AONB, including:

- **A rare valley and water landscape:** an unspoiled valley and water landscape, a classic English lowland river system.
- **A landscape of high visual quality:** the visual quality of the landscape in the Tamar Valley AONB at an intimate or panoramic scale is exceptional. From the network of ancient deeply incised lanes, high hedge banks and small fields to the expansive estuarine vistas of the river valley and green patchworks of fields and hedges seen from vantage points such as Kit Hill or Hingston Down.
- **A unique wildlife resource:** including an internationally important estuary complex, extensive semi-natural woodlands, remnants of

¹² Tamar Valley AONB Management Plan 2009-2014: Consultation Draft
[<http://www.tamarvalley.org.uk/about/howwework/>]

lowland heathland, disused mine workings, species-rich hedges and traditional orchards.

- **A remarkable heritage:** from medieval and post-medieval fields, lanes and bridges, to 19th century mining heritage features (part of a World Heritage Site) and the legacy of a once thriving market gardening industry.
- **A landscape of artistic and public appeal:** inspiration to writers and artists throughout the centuries, a strong identity and sense of place arising from the area's traditional land-based industries, long-enjoyed opportunities for enjoyment and recreation (e.g. fly-fishing and shooting).

Qualities of the Tamar Valley AONB that may particularly be affected by wind energy development are the 'unspoiled' nature and visual quality of this classic English lowland river system, the network of ancient deeply incised lanes, and the prominence of the 19th century mining remains.

Qualities of the Tamar Valley AONB that may particularly be affected by solar PV development are the 'unspoiled' nature and visual quality of this classic English lowland river system, the green patchworks of fields and hedges seen from vantage points such as Kit Hill or Hingston Down, the medieval structure of the farmed countryside, and the legacy of a once thriving market gardening industry.

- 3.25 It will be important that these 'special qualities' are conserved when siting renewable energy development.

Heritage Coast

- 3.26 Heritage Coasts represent stretches of the most beautiful, undeveloped coastline, which are managed to conserve their natural beauty and, where appropriate, to improve accessibility for visitors. Heritage Coasts are 'defined' rather than designated, as there is no statutory designation process like that associated with National Parks and AONBs. Definition is formalised by agreement between the relevant maritime local authorities and Natural England. Most Heritage Coasts fall within the boundaries of National Parks or AONBs – this is true within Cornwall where almost all heritage coasts fall within the Cornwall AONB, except for an area in south Penwith where the heritage coast extends further inland than the AONB (around St Buryan) and around St Agnes where the heritage coast extends further inland to include part of the settlement of St Agnes. Heritage Coasts in Cornwall are shown in **Figure 3.4**.

Areas of Great Landscape Value (AGLVs)

- 3.27 Areas of Great Landscape Value (AGLV) were first defined in Cornwall in the original Cornwall County Development Plan of 1952. These were subsequently mapped precisely in 1985 and then reviewed (with some boundaries modified or extended) to inform the Cornwall Structure Plan in 1995. Mapped boundaries and accompanying descriptions of the AGLVs are contained in the Cornwall Structure Plan's Topic Paper 7: *A County-Wide Reassessment of the Areas of Great Landscape Value* (November 1995). Since AGLVs are regarded by Cornwall Council as representing some of the most

valued landscapes in Cornwall outside of AONB designation, the information which describes their value has been considered in the landscape sensitivity assessment. The boundaries of AGLVs provided to LUC by Cornwall Council in GIS format are shown in **Figure 3.4**. Note that these GIS boundaries are slightly different to the boundaries shown on the hard copy maps in the 1995 Topic Paper as follows:

- Trenowth AGLV - mapped as a separate area in GIS but included as part of the Fal Valley AGLV in the 1995 Structure Plan
- St Clement AGLV - mapped as a separate area in GIS but included as part of the St. Erme AGLV in the 1995 Structure Plan
- Nancecuke AGLV - mapped as a separate area in GIS but included as part of the Portreath AGLV in the 1995 Structure Plan
- St Clement - mapped as a separate area in GIS but included as part of the St Erme AGLV in the 1995 Structure Plan
- South East Caradon - mapped as a separate area in GIS but included as part of the Looe and Seaton Valleys and South East Cornwall AGLV in the 1995 Structure Plan
- Kilkhampton - mapped as a separate area in GIS but included as part of the Goodeham to Launcells AGLV in the 1995 Structure Plan
- Gweek and Constantine – not mapped in the GIS

- 3.28 These differences affect character areas: 1, 4, 10, 11, 13, 14, 15, 16, 18, 22, 25, 33 and 40.
- 3.29 Cornwall Structure Plan's Topic Paper 7 sets out what was considered to be 'beautiful' by the assessment team in 1995. The following sets out the features that contribute to the 'beauty' of each of the areas (interpreted from the 1995 report):
- 3.30 **St Buryan** - the small to medium scale of the fields, the stone faced hedgebanks, St Buryan church tower as a dominant feature of the area, the sense of openness, and being 'at one' with the sea.
- 3.31 **Halsetown and St Ives Bay** - the wild nature of the dunes, the semi-natural habitats between St Ives and Halsetown, the small green fields surrounded by stone hedges, wooded area around Trevethoe House, the coastal strip which forms part of the coastal panorama across St Ives Bay.
- 3.32 **Godolphin and Tregonning** - the prominence of the hills when looking south from Townshend.
- 3.33 **Carn Brea, Carnmenellis and Carn Marth** - mining areas, engine houses and stone walls, the prominence of Carn Brea as a landmark.
- 3.34 **Portreath (including Nancecuke)** - the wild and spectacular nature of the coastal cliffs and the Portreath valley woodlands.
- 3.35 **Gweek and Constantine** - the high hedges and semi-natural woodlands.
- 3.36 **St Erme (including St Clement)** - the Cornish hedges, narrow wooded valleys.

- 3.37 **Devoran/Killiw** - the mature woodlands, hedges and historic parklands of Killiw, Killiganon and Tregye.
- 3.38 **St Gluvias** - the Kennall Vale woodland, and estate beech plantings.
- 3.39 **Fal Valley (including Treonowth)** - the inaccessible and 'unspoilt' nature of the valley, the woodland and thick hedgerows, the ornamental landscapes around Trewithen, the peaceful character in areas of coppice, and the dramatic viaducts.
- 3.40 **Perranporth and Holywell** - the integrity of the front of the sand dunes, the semi-natural and impressive nature of the cliffs (particularly at Pentire Point), the entrance to the inlet of the Gannel, and the wooded valley around the old mining area of Treamble.
- 3.41 **Watergate and Lanherne** - the dominance of the headlands of Beryls Point, Griffins Point and Trenance Point, the marshes and trees in the Vale of Lanherne, the woodland at old Carnanton Estate.
- 3.42 **Camel and Allen Valleys** - the ancient woodland, small meadows and wetlands of the Camel and Allen Valleys, parkland landscape around Pencarrow.
- 3.43 **Helman Tor and Luxulyan Valley** - boggy woodland, marsh, wetland vegetation and heaths at Helman Tor/Redmoor, the dominance of Helman Tor as a landmark feature, the woodlands within the Luxulyan Valley, the dominance of the Treffry Viaduct as a landmark within the Luxulyan Valley, and the ornamental character of the landscape at Prideaux.
- 3.44 **Boconnoc** - Restormel Castle as a prominent feature, the ornamental parkland character of the Boconnoc Estate.
- 3.45 **Caradon Hill** - the dominance of Caradon Hill, relicts of the mining industry, and the wooded valleys.
- 3.46 **Mid-Fowey** - the enclosed and wooded character of the Fowey Valley, the water meadows on the valley floor, the designed landscapes of Glynn House and Lanhydrock.
- 3.47 **Looe and Seaton Valleys and South East Cornwall (including South East Caradon)** - the strong field pattern provided by thick hedges, the native woods within valleys, the coastal ridge and rocky cliffs, and the rias line with thick oak woodland.
- 3.48 **Lynher Valley** - the 'quiet' and 'unspoilt' nature of the valley, and the valley side woodlands.
- 3.49 **Inny Valley and Lawhitton** - the high hedges, the oak woodland in the valley bottoms and clumps of trees as hilltop features.
- 3.50 **North Petherwin to St Clether** - the heavily wooded and enclosed character of the valleys.
- 3.51 **Upper Tamar** - the parkland character and mature trees on the floodplain, the designed character of the landscapes at Werrington and Ogbeare Hall, the ancient woodland and hedges.

- 3.52 **Week St Mary** - the sinuous hedges, 'lumpy' nature of the topography, the native trees and woodlands in the valley bottom.
- 3.53 **Bude Coast** - the open character of the coastal strip.
- 3.54 **Gooseham to Launcells (including Kilkhampton)** - the hedges and woodland within the valleys.
- 3.55 It will be important that these 'special qualities' are conserved when siting renewable energy development.

The Cornwall and West Devon Mining Landscape World Heritage Site (WHS)

- 3.56 The Cornwall and West Devon Mining Landscape World Heritage Site (WHS) covers parts of Cornwall and the Tamar Valley which were mined for copper and tin in the period 1700 to 1914 (see **Figure 3.5**). The World Heritage Site's website states that *'this cultural landscape is a testament to the profoundly important process of pioneer metal mining, to its industrialisation, and to the innovations which occurred here and had a fundamental influence on the mining world at large during the nineteenth century'*.
- 3.57 The WHS is divided into ten areas:
- (A1) St Just Mining District
 - (A2) The Port of Hayle
 - (A3) Tregonning and Gwinear Mining District with Trewavas
 - (A4) Wendron Mining District
 - (A5) Camborne and Redruth Mining District
 - (A6) Gwennap Mining District with Devoran and Perran and Kennal Vale
 - (A7) St Agnes Mining District
 - (A8) The Luxulyan Valley and Charlestown
 - (A9) Caradon Mining District
 - (A10) Tamar Valley Mining District with Tavistock
- 3.58 The landscape's 'Outstanding Universal Value' (OUV) was recognised by UNESCO's World Heritage Committee in 2006 when it was designated. It underpins the management of the site, which comprises both underground and above ground remains. The underground workings include the mines which reveal some of the earliest worked portions of mineral deposits and may contain important archaeology and mineralogical exposures.
- 3.59 Above ground remains include the mine sites including the **shafts** leading to the underground components and the **Cornish engine houses**, which are among the most distinctive industrial buildings in the world and represent the largest concentration of such technological monuments anywhere in the world; the **remains of the transport network** including an internationally significant group of late eighteenth- and early nineteenth-century industrial ports such as Morwellham Quay and Charlestown together with the tramways, railways and canals which connected them to the mines; structures associated with **ancillary industries** including smelters, foundries and

engineering works in towns and ports e.g. in the new industrial towns of Hayle, Charlestown and Camborne, in Tavistock, Redruth and in the Kennall Valley on the edge of the Gwennap Mining District; **Methodist chapels** which are a highly visible manifestation of nineteenth-century industrial society; **miners' smallholdings**; and **great houses and estates** created and embellished by revenue from the mining industry.

- 3.60 Wind energy and solar PV developments could potentially damage the 'Integrity' of the site as a result of direct damage to features associated with the exploitation of metalliferous minerals, or interference with the appreciation of the mining landscape (for example if areas of disturbed land were to be obscured by solar arrays, or if important views of engine houses were to be complicated by wind turbines).
- 3.61 Wind energy and solar PV developments could potentially damage the 'Authenticity' of the site if development is not informed by sufficient regard to the historic character of the landscape. This might include the introduction of inappropriate and unsympathetic materials and forms to the site or to the loss of legibility of characteristic patterns of enclosure, settlement or industrial activity. Particularly vulnerable HLC types might include areas of Recently Enclosed Land (where those correspond to the development of smallholdings); industrial and post industrial land; Ornamental landscapes created by capitalists involved in industry; and to settlement areas where those settlements were developed in parallel with industrial immigration. Direct damage to buried and upstanding archaeological heritage relevant to the OUV would also affect the authenticity of the site.
- 3.62 The management plan sets out some of the key issues associated with the management of the sites¹³. Most threats identified are direct impacts on the features of the sites, for example poorly planned development in urban centres such as Hayle and Camborne-Pool-Redruth, unsympathetic new facilities for ports and harbours, unsympathetic conversion of historic buildings, lack of maintenance and neglect of historic fabric, and visitor pressures. However, the plan also makes reference to threats resulting from changes in land use affecting historic character (e.g. scrub growth obscuring and damaging historic features, energy crops obscuring and damaging historic mine sites and changing its historic character, and planting of new woodland changing the character of the landscape).
- 3.63 It will be important that the OUV of the WHS is conserved when siting renewable energy development.

¹³ Cornwall and West Devon Mining Landscape World Heritage Site Management Plan 2005-2010 [available to download from <http://www.cornish-mining.org.uk/pdf/downloads.htm#Management%20Plan%20Downloads>]

4 Method for Undertaking the Landscape Sensitivity Assessment

SPATIAL AND DESCRIPTIVE FRAMEWORK

- 4.1 As explained in the previous Chapter, the county's 40 Landscape Character Areas and accompanying descriptions form the evidence base for the Landscape Sensitivity Assessment. Other key sources of information used to inform the assessment include:
- The 1994 Cornwall Landscape Assessment and Historic Landscape Character (HLC) Assessment.
 - Cornwall Council's Historic Landscape Character and Sensitivity Mapping for Wind Farm and Solar PV installations (December 2010).
 - The AONB Landscape Assessments for Cornwall, and the Tamar Valley (Cornwall AONB: 1997; Tamar Valley AONB, 1992).
 - The special 'scenic qualities' and spatial boundaries of the AONBs, as outlined in their Management Plans.
 - The Outstanding Universal Value (OUV) and Management Plan (2005) for the Cornish Mining World Heritage Site.
 - The descriptions of Cornwall's Areas of Great Landscape Value (AGLVs), derived from the November 1995 Technical Paper (No.7) of the Cornwall Structure Plan.
 - Historic and nature conservation designations such as SACs, SSSIs, Scheduled Monuments, Registered Parks and Gardens, and Conservation Areas.
 - Ordnance survey base maps (1:250K, 1:50K and 1:25K) and aerial photographs.
 - Field survey to check results on the ground (taken place in January 2011).

DEVELOPMENT TYPES CONSIDERED

Wind turbines

- 4.2 This sensitivity assessment applies to all forms of turbines, although it has been based on the most common horizontal axis three-bladed turbine, as described and illustrated in Chapter 2.
- 4.3 The assessment considers the suitability of different turbine heights and cluster sizes, based on bandings that reflect those that are most likely to be put forward by developers (now and in the future). The following height and cluster sizes are referred to in the assessment:

Turbine heights¹⁴

- **Very small turbines** (approx. 18-25 metres to tip, excludes roof mounted turbines);
- **Small sized turbines** (approx. 26-60 metres to tip);
- **Medium sized turbines** (approx. 61-99 metres to tip);
- **Large turbines** (approx. 100-150 metres to tip).

Turbine cluster sizes

- **Single turbine**
- **Small scale clusters** (up to 5 turbines)
- **Medium scale clusters** (6-10 turbines)
- **Large scale clusters** (11-25 turbines)
- **Very large scale clusters** (>26 turbines)

- 4.4 In order to visualise how these different turbine heights relate to other tall structures in Cornwall **Table 4.1** sets out some existing landmark features:

Table 4.1: Tall structures present in Cornwall

Structure	Height
Domestic buildings	6-10m
Mature deciduous trees (depending on species)	10-25m
Standard lattice tower 'pylons'	25-50m
Goonhilly Earth Station (diameter of the main communications dishes)	'Arthur': 26m 'Merlin': 35m
Wolf Rock Lighthouse	41m
Bodmin Beacon (monument)	44m
Bishop Rock Lighthouse (off the Isles of Scilly)	49m
Original wind turbines at Delabole	50m (<i>to tip</i>)
Truro Cathedral tower / spire	74m
Repowered Cornish wind farms (Delabole and Goonhilly)	99.5m and 107m (<i>to tip</i>)
Four Lanes Telecommunications Mast (Redruth)	152m
Caradon Hill Telecommunications Mast	238m

Large-scale solar PV developments

- 4.5 This assessment considers the sensitivity of Cornwall's landscapes to large-scale solar PV developments consisting of 'arrays' of PV panels, around three metres in height and mounted on aluminium/ stainless steel frames, with associated infrastructure as described and illustrated in Chapter 2. It does not include solar PV in domestic gardens or roof mounted.

¹⁴ Note that these heights are indicative and transitions between bandings are gradual. Also the proportion of rotor diameter to tower height is an important consideration when considering landscape and visual effects – short blades on a tall tower or long blades on a short tower may look unbalanced.

- 4.6 The assessment considers the suitability of different sizes of solar PV developments, based on bandings that reflect those that are most likely to be put forward by developers (now and in the future). The following sizes of development are referred to in the assessment (the figures indicate areas taken up by PV panels in each case):
- **Very small:** < 1 ha (2.5 acres)
 - **Small:** >1 to 5 ha (2.5 to 12.4 acres)
 - **Medium:** >5 to 10 ha (12.4 to 25 acres)
 - **Large:** >10 to 15 ha (25 to 37 acres)
- 4.7 These size bandings have been based both on the range of schemes that have already been proposed in Cornwall (with the maximum size relating to the 5MW capacity set by the feed-in tariffs, which would typically be produced by solar PV developments of less than 15 hectares in size).
- 4.8 In order to visualise how these different solar PV development sizes relate to other features in Cornwall **Table 4.2** sets out a number of features of the Cornish landscape which cover similar areas as potential solar PV developments.:

Table 4.2: Area of typical features in Cornwall

Feature	Size
Average field size on West Penwith (western edge)	0.5-1 ha
Football pitch	0.6-0.8 ha
Mediterranean biome (Eden Project)	1 ha
Tropical biome (Eden Project)	1.56 ha
Average field size on the fringes of Bodmin Moor	1.5-2ha
Polytunnels in a field near Godolphin Cross / Leedstown (see Figure 4.1 below)	2.7 ha
Average field size for areas in Cornwall where planning applications for solar farms have been submitted	3.5 ha
Wheal Jane settlement lagoons, Truro	3.88 ha
St Michael's Mount (National Trust property)	9 ha
Truro Park and Ride (Threemilestone)	9.9 ha
Trebah Gardens, Falmouth	10 ha
Truro College	13.5 ha
Eden Project (whole pit)	15 ha
Lanhydrock Estate	350 ha

Figure 4.1: Aerial photograph of polytunnels occupying an area of 2.7 hectares (near Godolphin Cross / Leedstown)



EVALUATING LANDSCAPE SENSITIVITY

4.9 There is currently no published method for evaluating sensitivity of different types of landscape. However, the approach taken in this study builds on current guidance published by the Countryside Agency and Scottish Natural Heritage including the Landscape Character Assessment Guidance¹⁵ and Topic Paper 6 that accompanies the Guidance¹⁶, as well as LUC's considerable experience from previous and ongoing studies of a similar nature.

4.10 Paragraph 4.2 of Topic Paper 6 states that:

'Judging landscape character sensitivity requires professional judgement about the degree to which the landscape in question is robust, in that it is able to accommodate change without adverse impacts on character. This involves making decisions about whether or not significant characteristic elements of the landscape will be liable to loss... and whether important aesthetic aspects of character will be liable to change'

4.11 In this study the following definition of sensitivity has been used:

Landscape sensitivity is the extent to which the character and quality of the landscape is susceptible to change as a result of wind energy/large scale solar PV development.

Assessment Criteria

4.12 In line with the recommendations in Topic Paper 6, this landscape sensitivity assessment is based on an assessment of landscape character using carefully defined criteria. Criteria for determining landscape sensitivity to wind energy and PV development are based on attributes of the landscape most likely to be affected by each development type. **Table 4.3** sets out the criteria used for the assessment for wind energy development; **Table 4.4** for solar PV developments. These were informed by our review of other studies, as well as feedback from the Steering Group and comments made at the first stakeholder workshop held on 3 November 2010 and the online consultation held in January 2011.

4.13 In Cornwall many landscapes have a large scale landform overlaid by a small scale field or landcover pattern. In order to understand landscape sensitivity it is therefore important to understand both the shape and scale of the underlying landform and the nature and scale of the overlying landscape pattern. The former is covered by the first criterion and the latter by the second. The sensitivity assessment is not influenced existing development which predates the study.

¹⁵ Countryside Agency and Scottish Natural Heritage (2002) Landscape Character Assessment: Guidance for England and Scotland CAX 84

¹⁶ The Countryside Agency and Scottish Natural Heritage (2002) Landscape Character Assessment Guidance for England and Scotland. Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity.

Table 4.3: Criteria for Assessing Landscape Sensitivity to Wind Energy Development

Landform and scale				
<p>A smooth, convex or flat landform is likely to be less sensitive to wind energy development than a landscape with a dramatic rugged landform, distinct landform features (including prominent headlands and cliffs, and the outer facing tips and landforms associated with the China Clay industries) or pronounced undulations and larger scale landforms are likely to be less sensitive than smaller scale landforms - because turbines may appear out of scale, detract from visually important landforms or appear confusing (due to turbines being at varying heights) in the latter type of landscapes.</p> <p>Information sources: Key landscape characteristics, 'Description' and 'Topography' sections of the Cornwall LCA; Ordnance Survey basemaps; Topography data (Ordnance Survey Panorama).</p>				
Examples of sensitivity ratings				
Lower sensitivity		↔		Higher sensitivity
e.g. an extensive lowland flat landscape or elevated plateau, often a larger scale landform	e.g. a simple gently rolling landscape, likely to be a medium-large scale landform	e.g. a landscape with distinct convex hills, perhaps also incised by valleys, likely to be a medium scale landform.	e.g. a landscape with distinct landform features, and/or irregular in topographic appearance (which may be large in scale), or a smaller scale landform.	e.g. a landscape with a rugged landform or dramatic landform features (which may be large in scale), or a small scale landform.
Land cover pattern and presence of human scale features				
<p>Simple, regular landscapes with extensive areas of consistent ground cover are likely to be less sensitive to wind energy development than landscapes with more complex or irregular land cover patterns, smaller field sizes and landscapes with frequent human scale features¹⁷. This is because smaller scale and / or complex landscapes with a variety of land cover patterns may be more difficult to incorporate wind turbines into without significant effects on landscape character, than larger scale landscape patterns and simple landscapes.</p> <p>Information sources: 'Key Landscape Characteristics', 'Land Cover', 'Land Use' and 'Field and Woodland Pattern' sections of the Cornwall LCA; Google Earth (aerial photography).</p>				
Examples of sensitivity ratings				
Lower sensitivity		↔		Higher sensitivity
e.g. an unenclosed landscape of uniform groundcover lacking in human scale features	e.g. a landscape with large scale fields, little variety in land cover and occasional human scale features such	e.g. a landscape with medium sized fields, some variations in land cover and presence of human scale features such	e.g. a landscape with irregular small-scale fields, variety in land cover and presence of human scale features such as	e.g. a landscape with a strong variety in landcover and small-scale / irregular in appearance

¹⁷ Human scale features are aspects of land cover such as stone walls, hedges, buildings which give a 'human scale' to the landscape

	as trees and domestic buildings	as trees, domestic buildings	trees, domestic buildings	containing numerous human scale features
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Tracks / transport pattern

Landscapes that are devoid of tracks will be particularly sensitive to wind energy development because it will be more difficult to absorb tracks into the landscape without change to character in these areas

In addition, if an LCA has a rural road network which contributes to landscape character (e.g. winding narrow lanes bounded by high Cornish hedges or sunken lanes), this aspect of character may be affected by access works to enable HGVs carrying turbines to access a site. This characteristic therefore also influences sensitivity.

Information sources: 'Transport Pattern' section of the Cornwall LCA; Ordnance survey basemaps showing presence of tracks.

Examples of sensitivity ratings


Lower sensitivity				Higher sensitivity
e.g. a landscape containing existing roads and vehicular tracks, and no restrictions in terms of narrow hedged lanes	e.g. a landscape containing existing roads and vehicular tracks, and few restrictions in terms of narrow hedged lanes	e.g. a landscape containing some existing roads and vehicular tracks, including some restrictions in terms of narrow hedged lanes	e.g. a landscape containing few lanes or vehicular tracks, or a landscape with predominantly narrow lanes bounded by Cornish hedges	e.g. a landscape devoid of roads or vehicular tracks


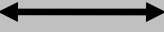
Skylines

Prominent undeveloped or distinctive skylines, or skylines with important landmark features that are identified in the Cornwall LCA, are likely to be more sensitive to wind energy development because turbines may detract from these skylines as features in the landscape, or draw attention away from existing landform or landmark features on skylines. These include the skylines of elevated coastlines and coastal headlands and the skylines of the outer boundary tips and landforms of the China Clay area. Important landmark features on the skyline might include historic features or monuments.

Information sources: 'Key Landscape Characteristics', Topography' and 'Historic Features' sections of the Cornwall LCA.

Examples of sensitivity ratings

Lower sensitivity				Higher sensitivity
e.g. a flat or plateau landscape where skylines are not prominent and/or there are no important landmark	e.g. a landscape with low skylines and/or very few landmark features on the skyline – other skylines in adjacent	e.g. a landscape with some prominent skylines, but these are not particularly distinctive and/or some landmark	e.g. a landscape with some prominent skylines that may form an important backdrop to views from settlements or	e.g. a landscape comprising prominent undeveloped or distinctive skylines and/or with

features on the skyline.	LCA's are more prominent	features on the skyline	important viewpoints, and/or many landmark features on the skyline	particularly important landmark features on the skyline
Perceptual qualities				
<p>Landscapes that are relatively remote or tranquil (due to freedom from human activity and disturbance as well as factors such as perceived naturalness) tend to increase levels of sensitivity to wind energy development than man-made landscapes or landscapes that contain signs of human activity and development because the development will introduce new and uncharacteristic features to the former remote or tranquil landscapes.</p> <p>Information sources: 'Aesthetic and Sensory' and 'Settlement Pattern' sections of the Cornwall LCA; CPRE's Tranquillity and Intrusion mapping; Ordnance Survey basemaps (presence / absence of development, settlement, structures).</p>				
Examples of sensitivity ratings				
Lower sensitivity				Higher sensitivity
e.g. a man-made landscape with much human activity and development such as industrial area or a port.	e.g. a rural man-made landscape with much human activity and development.	e.g. a rural man-made landscape with some development and human activity.	e.g. a rural landscape that may include more remote areas such as upland or coastal, unenclosed landscapes with little signs of human activity / development.	e.g. a remote or 'wild' landscape with little or no signs of current human activity and development.
Historic Landscape Character				
<p>Landscapes comprising historic landscape types that are considered to have a high vulnerability to wind energy development (using the 'Vul 2' criterion in Cornwall Council's Historic Environment Service's (HES) 2010 mapping of sensitivity of the County's HLC Types to wind energy development) will be more sensitive to wind energy development than landscapes comprising historic landscape types that are considered to have a low vulnerability to wind energy development.</p> <p>Information sources: Cornwall Council HES Sensitivity Mapping for Solar PV Installations (2010).</p>				
Examples of sensitivity ratings				
Lower sensitivity				Higher sensitivity
e.g. majority of the landscape covered by HLC Types scoring '0' (low) in the HES assessment	e.g. majority of the landscape covered by HLC Types scoring '1' (low-moderate) in the HES assessment (or combinations of	e.g. majority of the landscape covered by HLC Types scoring '2' (moderate) in the HES assessment (or combinations of	e.g. most of the landscape covered by HLC Types scoring '3' (moderate-high) in the HES assessment (or combinations of	e.g. the majority of the landscape covered by HLC Types scoring '4' (high) in the HES assessment.





	lower and higher).	lower and higher).	lower and higher).	
Distinctive landscape features				
<p>A landscape with certain types of distinctive landscape features will be more sensitive to wind energy development than landscapes without because wind turbines could draw attention away from these features. Distinctive landscape features that are sensitive to wind energy development include natural and cultural heritage features including designed landscapes, the distinctive outer boundary tips and landforms of the China Clay area, woodlands, historic features such as viaducts, tramways, engine houses, daymarks and lighthouses.</p> <p>Information sources: 'Distinctive features' section of the Cornwall LCA.</p>				
Examples of sensitivity ratings				
Lower sensitivity				Higher sensitivity
e.g. absence of sensitive landscape features	e.g. a few sensitive landscape features or features would not be adversely affected by development	e.g. some sensitive landscape features.	e.g. a large number of sensitive landscape features	e.g. a high concentration of sensitive landscape features
Scenic quality				
<p>Landscapes that have a high scenic quality (which may be recognised as a Heritage Coast or as designation as an AONB or AGLV) and whose scenic qualities or natural beauty are likely to be affected by wind energy development will be more sensitive than landscapes of low scenic quality or whose special scenic qualities are not likely to be affected by wind energy development. This is because wind energy development has the potential to affect views and scenic quality that are valued in a landscape because of the absence of modern man-made features.</p> <p>Information sources: 'Aesthetic and Sensory' section of the Cornwall LCA; AONB 'Statements of Significance' from the Management Plans; AGLV descriptions (from Technical Paper No. 7 of the 1995 Structure Plan); GIS boundaries for AONBs, Heritage Coast and AGLVs.</p>				
Examples of sensitivity ratings				
Lower sensitivity				Higher sensitivity
e.g. area has low scenic quality such as an industrial area or despoiled land	e.g. area has low-medium scenic quality and is unlikely to have a scenic quality designation	e.g. area has a medium scenic quality (may be represented by the presence of AGLVs)	e.g. area has a medium-high scenic quality (may contain part of an AONB or Heritage Coast, or a combination of AONB/ Heritage Coast/AGLV)	e.g. area has a high scenic quality (much of the area is likely to be in an AONB/ Heritage Coast)

Table 4.4: Criteria for Assessing Landscape Sensitivity to Solar PV Development

Landform				
<p>A flat or gently undulating lowland landscape is likely to be less sensitive to solar PV development than an upland landscape or a landscape with prominent landforms and visible slopes, including coastal headlands. This is because arrays of solar PV panels will be less easily perceived in a flat landscape than on a slope.</p> <p>Information sources: 'Description' and 'Topography' sections of the Cornwall LCA; contours from the Ordnance Survey basemaps; Topography data (Ordnance Survey Panorama).</p>				
Examples of sensitivity ratings				
Lower sensitivity			Higher sensitivity	
e.g. a lowland flat landscape.	e.g. a gently undulating lowland landscape	e.g. an undulating landscape with hidden areas as well as some visible slopes	e.g. a landscape with many prominent, visible slopes or an upland landscape	e.g. very steep landform and exposed, visible slopes
Sense of openness / enclosure				
<p>A landscape with a strong sense of enclosure (e.g. provided by landcover such as woodland or high hedges) is likely to be less sensitive to solar PV development than an open and unenclosed landscape because the development will be less easily perceived in an enclosed landscape.</p> <p>Information sources: 'Key Landscape Characteristics', 'Land Cover', 'Land Use' and 'Field and Woodland Pattern' sections of the Cornwall LCA; Google Earth / aerial photographs.</p>				
Examples of sensitivity ratings				
Lower sensitivity			Higher sensitivity	
e.g. an enclosed landscape with high levels of enclosure provided by woodland and thick hedges with frequent hedgerow trees	e.g. a landscape with some enclosure, such as that provided by frequent hedges and trees belts	e.g. a landscape with some open and some more enclosed areas – likely to be a rural landscape with hedges and tree belts	e.g. an open landscape with little sense of enclosure (low, few or no hedges, few trees)	e.g. an extremely open landscape such as an unenclosed plateau with no field boundaries or trees
Field pattern and scale				
<p>Landscapes with small-scale, more irregular field patterns are likely to be more sensitive to the introduction of solar PV development than landscapes with large, regular scale field patterns because of the risk of diluting or masking the characteristic landscape patterns. This would be particularly apparent if development takes place across a number of adjacent fields where the field pattern is small and intricate (bearing in mind that the height of panels could exceed that of a Cornish hedge).</p>				

Information sources: 'Key Landscape Characteristics', 'Land Cover' and 'Field and Woodland Pattern' sections of the Cornwall LCA; Cornwall Historic Landscape Characterisation; Ordnance survey 1:25K basemap (showing field patterns); Google Earth (aerial photography).

Examples of sensitivity ratings

Lower sensitivity		↔		Higher sensitivity
e.g. a landscape with large scale, regular fields of mainly modern origin, or a landscape that is unenclosed	e.g. a landscape which is mainly defined by large, modern fields or unenclosed land.	e.g. a landscape with a mixture of large scale, modern fields, unenclosed land and some smaller, more historic enclosure	e.g. a landscape dominated by ancient, small-scale field patterns with a few isolated areas of modern enclosure / open land	e.g. a landscape characterised by small scale, ancient field patterns

Landcover

Since PV panels can look similar to poly tunnels, landscapes containing arable land or large scale horticulture (or brownfield sites) are likely to be less sensitive to solar PV development than semi-natural landscapes or those under permanent pasture.

Information sources: 'Land Cover' section of the Cornwall LCA; Google Earth (aerial photography).

Examples of sensitivity ratings

Lower sensitivity		↔		Higher sensitivity
e.g. an arable or 'brownfield' landscape	e.g. a largely arable or 'brownfield' landscape with some pasture or semi-natural landcover present	e.g. a mixed pastoral and arable landscape, perhaps with some brownfield sites and some semi-natural landcover	e.g. a landscape dominated by permanent pasture but with some arable land present, or with areas of semi-natural landcover	e.g. a landscape dominated by semi-natural landcover, perhaps with some permanent pasture

Perceptual qualities

Man-made landscapes or landscapes that contain signs of human activity and development are likely to be less sensitive to solar PV development than landscapes that are relatively remote or tranquil (due to freedom from human activity and disturbance, and factors such as perceived naturalness) because the development will introduce new and uncharacteristic features to these latter remote or tranquil landscapes.

Information sources: 'Aesthetic and Sensory' and 'Settlement Pattern' sections of the Cornwall LCA; CPRE's Tranquillity and Intrusion mapping; Google Earth (aerial photography); Ordnance Survey basemaps (e.g. presence / absence of development and industry).

Examples of sensitivity ratings

Lower sensitivity		↔		Higher sensitivity
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e.g. a man-made landscape with much human activity and development such as industrial areas or business parks.	e.g. a man-made rural landscape with much human activity and development such as an intensive arable landscape	e.g. a man-made rural landscape with some human activity such as an area of mixed or pastoral farmland	e.g. a more naturalistic landscape which has less human influence and development, for example an upland unenclosed landscape	e.g. a remote or 'wild' landscape with little or no signs of current human activity and development
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Historic Landscape Character

Landscapes comprising historic landscape types that are considered to have a high vulnerability to solar PV development (using the 'Vul 3' criterion in Cornwall Council's Historic Environment Service's (HES) 2010 mapping of sensitivity of the County's HLC Types to solar PV installations) will be more sensitive to solar PV development than landscapes comprising historic landscape types that are considered to have a low vulnerability to solar PV development.

Information sources: Cornwall Council HES Sensitivity Mapping for Solar PV Installations (2010)

Examples of sensitivity ratings

Lower sensitivity		↔		Higher sensitivity
e.g. majority of the landscape covered by HLC Types scoring '0' (low) in the HES assessment.	e.g. majority of the landscape covered by HLC Types scoring '-1' (low-moderate) in the HES assessment (or combinations of lower and higher).	e.g. majority of the landscape covered by HLC Types scoring '-2' or '-3' (moderate) in the HES assessment (or combinations of lower and higher).	e.g. most of the landscape covered by HLC Types scoring '-4' (moderate-high) in the HES assessment (or combinations of lower and higher).	e.g. the majority of the landscape covered by HLC Types scoring '-5' (high) in the HES assessment.

Distinctive landscape features

A landscape with certain types of distinctive landscape features will be more sensitive to PV development than landscapes without because solar PV development could obscure these features, or their settings. Distinctive landscape features that are sensitive to PV development include natural and cultural heritage features including designed landscapes, woodlands, and coastal heaths.

Information sources: 'Distinctive features' section of the Cornwall LCA.

Examples of sensitivity ratings


Lower sensitivity		↔		Higher sensitivity
e.g. absence of sensitive landscape features	e.g. a few sensitive landscape features, or features would not be adversely affected by development	e.g. some sensitive landscape features	e.g. a large number of sensitive landscape features	e.g. a high concentration of sensitive landscape features

Scenic quality

Landscapes that have a high scenic quality (which may be recognised as a Heritage Coast or as designation as an AONB or AGLV) and whose special scenic qualities are likely to be affected by solar PV development will be more sensitive than landscapes of low scenic quality or whose special scenic qualities are not likely to be affected by solar PV development. This is because solar PV development has the potential to affect scenic quality that is dependent upon the absence of modern man-made features.

Information sources: 'Aesthetic and Sensory' section of the Cornwall LCA; AONB 'Statements of Significance' from the Management Plans; AGLV descriptions (from Technical Paper No. 7 of the 1995 Structure Plan); GIS boundaries for AONBs, Heritage Coast and AGLVs

Examples of sensitivity ratings

Lower sensitivity				Higher sensitivity
e.g. area has low scenic quality such as an industrial area or despoiled land	e.g. area has low-medium scenic quality and is unlikely to have a scenic quality designation	e.g. area has a medium scenic quality (may be represented by the presence of AGLVs)	e.g. area has a medium-high scenic quality (may contain part of an AONB or Heritage Coast, or a combination of AONB/ Heritage Coast/AGLV)	e.g. area has a high scenic quality (much of the area is likely to be in an AONB/ Heritage Coast)

Judging Overall Landscape Sensitivity

- 4.14 Once the criteria have been assessed individually, a judgement on overall landscape character sensitivity is made.
- 4.15 If all criteria contribute equally to landscape character all criteria are treated equally to come to a judgement on overall sensitivity.
- 4.16 If one criterion has a particularly large influence on landscape character it is given a greater weight in the judgement of overall landscape character sensitivity (an example might be skylines in a landscape character area with prominent/ dominant skylines, or perceptual qualities in a particularly remote landscape character area).
- 4.17 In any given LCA there may be criteria that produce conflicting scores. For example, when considering sensitivity to wind energy development, a settled landscape, while containing greater human influence (indicating a lower sensitivity), will also include more human scale features that could be affected by large scale wind turbines (indicating a higher sensitivity). Conversely, a more remote landscape will lack the human scale features but may have a higher sensitivity from a perceptual point of view. When considering solar PV development, a landscape with a very small scale field pattern and with a high sense of enclosure might score lower sensitivity for 'sense of enclosure/openness' but higher for 'field pattern and scale'.
- 4.18 The assessment aims to set out these details and to come to a balanced overall judgement (a professional opinion) on overall sensitivity.
- 4.19 Sensitivity has been judged on a five-point scale as shown in **Table 4.5**

Table 4.5: Sensitivity levels and definitions

Sensitivity Level	Definition
High	The key characteristics and qualities of the landscape are highly sensitive to change from the type of renewable energy being assessed.
Moderate-high	The key characteristics and qualities of the landscape are sensitive to change from the type of renewable energy being assessed.
Moderate	Some of the key characteristics and qualities of the landscape are sensitive to change from the type of renewable energy being assessed.
Low-moderate	Few of the key characteristics and qualities of the landscape are sensitive to change from the type of renewable energy being assessed.
Low	Key characteristics and qualities of the landscape are robust and are less likely to be adversely affected by the type of renewable energy development being assessed.

5 Approach to Capacity Assessments/ Landscape Strategies for each LCA

- 5.1 Once the landscape sensitivity of each LCA has been analysed it is possible to determine an appropriate landscape strategy for each LCA, based on the analysis of sensitivity of each LCA and the following overriding considerations for Cornwall:
- Maintaining diversity of landscapes across Cornwall (ie ensuring that the design of any scheme responds to the landscape character);
 - Retaining areas of undeveloped landscape (in the most undeveloped areas of Cornwall, and especially along the undeveloped coast);
 - Maintaining stretches of undeveloped coast;
 - Allowing experience of the character of the landscape in-between wind energy and large-scale photovoltaic developments when travelling through the landscape;
 - Maintaining the natural beauty of AONBs¹⁸;
 - Minimising overall impact on the landscape by maximising efficiency of energy generation (for example by developing fewer numbers of larger turbines than a greater number of smaller turbines in the larger scale landscapes of Cornwall).
- 5.2 While the landscape sensitivity analysis gives an indication as to the comparative sensitivity of different landscape character areas to renewable energy development, the strategy gives an indication of the relative amounts of development that might be accommodated. Each LCA is given one of four broad landscape strategies:
- **A ‘landscape without wind energy/solar PV development’** is considered to be an LCA within which no wind energy/ solar PV developments are located. There may, however, be views of wind energy/large scale solar PV developments located in clearly different types of landscape, which may be perceptible under conditions of good visibility. Some landscapes in this category may be able to accommodate very small scale turbines associated with farm buildings or some very occasional very small scale PV installations – this is clearly set out where this is the case.
 - **A ‘landscape with occasional wind energy/solar PV development’** is considered to be an LCA within which one or more wind energy/ solar PV developments are located. In this landscape, the wind energy/ solar PV developments are usually clearly separated and whilst each wind energy/ solar PV development influences the perception of the landscape at close proximity, they do not have a

¹⁸ PPS7 states that the conservation of the natural beauty within National Parks, the Broads and AONBs should be given great weight in planning policies and development control decisions and that major development within these areas should not take place, except in exceptional circumstances. NE254 states that “the presence of statutory protected landscapes will substantially reduce the degree to which wind energy development can be accommodated”.

defining influence on the overall experience of the landscape (developments would not result in a significant cumulative impact on the LCA as a whole). The LCA would not be dominated by wind turbines/ solar PV development.

- **A ‘landscape with wind energy/solar PV development’** is considered to be an LCA within which several wind energy/ solar PV developments are located, and where the landscape may be perceived as having wind energy/ solar PV developments visible in more than one direction, and where wind energy/ solar PV developments have a strong influence on the character of the landscape but are not the overwhelming influence on landscape character. It will still be possible to appreciate the character of the landscape without wind farms/ solar PV developments dominating every view within that LCA.
- **A ‘wind farm/solar PV landscape’** is considered to be an LCA where turbines/solar PV panels are the overwhelming influence on the landscape character of the area. All other landscape features are seen in the context of extensive wind energy/solar PV development.

- 5.3 The historic precedence of wind energy development in Cornwall that pre-dates this assessment has not influenced the landscape strategies. The landscape strategies are ‘visions’ for how wind and PV energy generation should be deployed within the landscape and new applications for re-powering of existing developments should be considered afresh in the light of this assessment and landscape strategy.
- 5.4 The scale and spatial pattern of development that might be accommodated *within* an LCA will be informed by the guidance set out in the Annexes (both specific guidance for each LCA in **Annex 1** and generic guidance in **Annexes 2 to 4**) and will be dependent on other constraints.
- 5.5 Each landscape strategy applies to an LCA in isolation. However, the relationship between developments in different LCAs will also need to be taken into account through the guidance on designing for multiple developments (**Annexes 2 and 3**) and guidance on assessing the cumulative impact of developments (**Annex 4**).
- 5.6 The landscape strategies set out in this study have been developed with the Steering Group, and in consultation with a range of stakeholders.

6 Presentation of the Results

FORMAT OF THE ASSESSMENTS

- 6.1 The assessments for each of the landscape character areas (LCAs) are presented in tabular format in **Annex I**. The following gives a breakdown of the content of the tables:

The Landscape Sensitivity Assessment tables provide

- a summary description of the LCA against each of the assessment criteria, giving a landscape sensitivity assessment 'score' for each (on a coloured five-point scale);
- an overall judgement of landscape sensitivity for the LCA as a whole, summarising the findings from the separate criteria-based assessment and indicating which locations/ landscape features (where relevant) would be particularly sensitive to development;
- an assessment of the landscape sensitivity of the LCA to different scales of development:
 - Turbine heights and cluster sizes (for wind energy development);
 - Solar PV development sizes.

The Landscape Strategy and Guidance tables provide

- a landscape strategy¹⁹ for deploying wind energy development and solar PV development in each landscape character area;
- bullet-pointed guidance notes including LCA-specific information to help inform the appropriate siting of development. Generic siting and design guidance is provided in **Annexes 2 and 3** of this report.

LIMITATIONS

Scope of the Landscape Sensitivity Assessment

- 6.2 While this Landscape Sensitivity Assessment provides an initial indication of the relative landscape sensitivities of different areas to wind energy and solar PV development, it should not be interpreted as a definitive statement on the suitability of a certain location for a particular development. It is not a replacement for detailed studies for specific siting and design. It is also unrelated to any Government targets for renewable energy development or studies of technical potential.
- 6.3 This Landscape Sensitivity Assessment is based on an assessment of landscape character using carefully defined criteria. As with all analyses based upon data and information which is to a greater or lesser extent subjective, some caution is required in its interpretation. This is particularly to avoid the

¹⁹ The landscape strategy indicates the type and pattern of development that might be accommodated from a landscape point of view – obviously other issues (including technical and environmental) will influence the actual deployment of each technology type.

suggestion that certain landscape features or qualities can be absolutely associated with certain sensitivities – the reality is that landscape sensitivity is the result of a complex interplay of often unequally weighted variables (or ‘criteria’). We have sought to address this issue in our summary of overall landscape sensitivity given for each LCA – which considers how the criteria-based assessments combine to give an overall sensitivity result for the landscape as a whole. Because of the complexity of the criteria, and their subtle interrelationships with each other, we have purposefully not used a numeric scoring system in expressing sensitivity. The assessments are based on professional judgement, taking account of the interplay between criteria, as well as those which might be more important [to landscape character] in a particular LCA.

- 6.4 It is also worth noting that the assessment does not cover specific ecological issues associated with nature conservation designations or, in the case of wind turbines, bird flight paths; or specific cultural heritage/archaeological issues associated with individual designated heritage assets (including the World Heritage Site) and their settings²⁰; or visual amenity issues - these are all issues that will also need to be taken into account in site selection and will need to be reported at the time when individual proposals are being put forward – i.e. through the Environmental Impact Assessment (EIA) process.

Landscape Character Areas

- 6.5 The landscape character areas (LCAs) in Cornwall are relatively large encompassing a number of types of landscape within them. They are also crossed by AONB boundaries which often do not relate to landscape character boundaries. As a result there are often areas of higher and lower sensitivity within them. The study has identified where there are significant variations on the level of sensitivity across a LCA and it is important to take note of the content of the individual LCA evaluations which include these details. Consideration of natural beauty in AONBs will be prime importance in AONBs.

Consideration of Seascape

- 6.6 The study area for this assessment includes all onshore areas of Cornwall, some of which is AONB designated or defined as Heritage Coast. It does not consider offshore wind energy development. Although siting wind and solar PV development on-shore may have an indirect effect on the perceptual qualities of the seascape off the coast, without defined seascape units and baseline information on seascape character it is not possible for this sensitivity assessment to consider the impact of wind energy development on seascape character. Nevertheless, for Landscape Character Areas with an inherent relationship with the coast and sea, sensitivity of the coastline has been considered through the following criteria:
- landform and scale (for wind turbines) or landform (for solar PV);
 - skylines (for wind turbines);

²⁰ Reference should be made to PPS 5 and English Heritage’s guidance on the setting of heritage assets (2010).

- perceptual qualities;
- scenic quality.

6.7 If, in the future, a seascape character assessment is undertaken for the coast around Cornwall, the information in that assessment would be used alongside this study to inform decisions.

RESULTS OF THE LANDSCAPE SENSITIVITY ASSESSMENT

- 6.8 **Figures 6.1 and 6.2** provide an overview of the overall landscape sensitivity assessment of all 40 LCAs. The results are summarised in **Table 6.1** below. The individual assessments (which show the individual criteria assessments) are provided in **Annex I**. It is important that these assessments are viewed in combination with the mapping.

Observations on Landscape Sensitivity Across LCAs

- 6.9 Generally the landscapes across Cornwall are relatively small scale (compared to other parts of the country), rural in character and the features they contain are relatively small in scale (historic buildings, church towers, small scale fields, wind blown trees). As a result sensitivity to wind energy development and large scale solar PV development tends to be fairly high across many parts of the County. There are no landscapes in Cornwall that score 'low' (such landscapes would have to score 'low' on the majority of individual criteria that make up the overall sensitivity score²¹).
- 6.10 Many of the LCAs (outside the AONBs) score a 'moderate' sensitivity to both wind energy development and solar PV development. One of the reasons for this is that LCAs in Cornwall are relatively large in extent and often contain areas of higher and lower sensitivity within them - it is therefore important to take note of the content of the individual LCA evaluations which include details as to where these variations occur. In these middle scoring areas it is critical that the right development is in the right place – the landscape strategies and guidance should help to achieve good siting and design.
- 6.11 Cornwall contains a significant proportion of land nationally recognised for its scenic quality as Areas of Outstanding Natural Beauty (AONBs). Sensitivity tends to be higher within AONBs due to the high scenic quality of these areas. This is in line with Natural England's view that the presence of statutory protected landscapes (England's National Parks and Areas of Outstanding Natural Beauty) will substantially reduce the degree to which wind energy development can be accommodated²².
- 6.12 Some areas (e.g. the Newlyn Downs, St Breock Downs and parts of the Delabole Plateau) have a slightly lower sensitivity to wind energy development due to their relatively large scale landform, large scale simple land cover patterns, simple skylines and presence of human influence.
- 6.13 The LCA boundaries often do not equate to sudden changes of character on the ground – therefore there can be some 'merging' of sensitivity scores on the edges of some LCAs. The exceptions to these are LCAs with more sudden changes in character, such as the boundaries between CA12/CA14,

²¹ Examples of low sensitivity landscapes might be the large scale flat man-made landscapes in the east of England.

²² Natural England (2010) Making Space for Renewable Energy: Natural England's Approach to Assessing On-Shore Wind Energy Development (Catalogue Code: NE254), table 2, page 11.

CA23/CA22, CA24/CA22, CA27/CA29 and CA35/CA36 – at these boundaries sensitivity may change more suddenly.

Table 6.1: Summary of Landscape Sensitivity to Wind Energy and Solar PV development across LCAs

Landscape Character Area	Overall Landscape Sensitivity to Wind Energy Development	Overall Landscape Sensitivity to Solar PV Development
1 West Penwith South (Land's End to Newlyn) (48% in the Cornwall AONB)	Moderate-high outside AONB High within AONB	Moderate-high outside AONB High within AONB
2 West Penwith (North and West Coastal Strip) (90% in the Cornwall AONB)	High	High
3 Penwith Central Hills (68% in the Cornwall AONB)	High	High
4 Mount's Bay (1.5% in the Cornwall AONB)	Moderate (the coastline around St Michael's Mount, its immediate hinterland and St Michael's Mount itself, would be particularly sensitive) High within AONB.	Moderate (the undeveloped and undeveloped coastal strip and its immediate hinterland would be particularly sensitive) High within AONB
5 St Ives Bay (under 1% in the Cornwall AONB)	Moderate Moderate-high within the AONB (the landscape's remaining areas of undeveloped, wild sand dunes would be particularly sensitive)	Moderate Moderate-high within the AONB (the landscape's remaining areas of undeveloped, wild sand dunes would be particularly sensitive)
6 Mount's Bay East (23% in the Cornwall AONB)	Moderate Moderate-high within AONB (the undeveloped coast and its immediate hinterland would be particularly sensitive)	Moderate Moderate-high within AONB (the landscape's open and undeveloped coastline and its immediate hinterland and prominent hill slopes of Godolphin and Tregonning Hills would be particularly sensitive)
7 South Lizard Peninsula (100% in the Cornwall AONB)	Moderate-high (the landscape's 'wild' and dramatic coastline and its immediate hinterland, and areas of rough ground would be particularly sensitive to	Moderate-high (the large, open tracts of heathland on the plateau and undeveloped coast and its immediate hinterland would be particularly sensitive)

Landscape Character Area	Overall Landscape Sensitivity to Wind Energy Development	Overall Landscape Sensitivity to Solar PV Development
	the development of wind turbines. The least sensitive parts of the LCA are the larger scale landscapes of recently enclosed land to the north of the LCA, away from the coast and outside the areas of unenclosed heath)	
8 North East Lizard Peninsula (100% in the Cornwall AONB)	Moderate-high (the undulating and undeveloped coastline and its immediate hinterland would be particularly sensitive)	Moderate-high (the open tracts of rough ground along the coast and its immediate hinterland would be particularly sensitive)
9 Helford Ria (74% in the Cornwall AONB)	Moderate-high (the hills between the valleys outside the AONB have a lower sensitivity and the valley system and undeveloped coast and its immediate hinterland have a higher sensitivity)	Moderate-high (the landscape's prominent and pastoral valley slopes, and undeveloped coastal edge and its immediate hinterland would be particularly sensitive)
10 Carnmenellis (less than 2% in the Cornwall AONB)	Moderate Moderate-high within AONB (the distinctive hill summit of Carn Brea would be particularly sensitive)	Moderate-high (areas of rough ground would be particularly sensitive)
11 Redruth, Camborne and Gwennap (less than 2% in the Cornwall AONB)	Moderate Moderate-high within AONB (the undeveloped coastal edge and its immediate hinterland would be particularly sensitive while the larger scale plateau to the north around the airfield would be less sensitive)	Moderate Moderate-high within AONB (the open undeveloped coastal edge and its immediate hinterland, steep slopes and areas of regenerating natural landscapes in former mining areas would be particularly sensitive)
12 St Agnes (42% in the Cornwall AONB)	Moderate-high (the remote and open coastline, steep sided naturalistic valleys and prominent and distinctive beacon would be particularly sensitive)	Moderate-high (the landscape's open coastline with unbroken tracts of heathland, prominent slopes of St Agnes Beacon and steep-sided naturalistic valleys would be particularly sensitive)
13 Fal Ria, Truro and Falmouth	Moderate Moderate-high within	Moderate Moderate-high within

Landscape Character Area	Overall Landscape Sensitivity to Wind Energy Development	Overall Landscape Sensitivity to Solar PV Development
(41% in the Cornwall AONB)	AONB (the landscape's intimate wooded creeks, undeveloped estuary edges and undeveloped coastal edge and its immediate hinterland would be particularly sensitive)	AONB (the landscape's upper slopes, undeveloped estuary edges and undeveloped coastal edge and its immediate hinterland would be particularly sensitive)
14 Newlyn Downs (under 1% in the Cornwall AONB)	Low-moderate Moderate-high within the AONB (areas of lowland heathland and the coastal edge and its immediate hinterland would be particularly sensitive)	Moderate Moderate-high within the AONB (areas of lowland heathland and the coastal edge and its immediate hinterland would be particularly sensitive)
15 Newquay and Perranporth Coast (under 1% in the Cornwall AONB)	Moderate-high (moderate in areas close to urban edges and the airport) (the wild and undeveloped coastal edge and its immediate hinterland would be particularly sensitive)	Moderate-high (the open undeveloped coastal edge and its immediate hinterland would be particularly sensitive)
16 Mid Fal Plateau (19% in the Cornwall AONB)	Moderate Moderate-high within the AONB	Moderate Moderate-high within the AONB (the more elevated areas and slopes will be more sensitive than the more enclosed lower lying parts of the LCA)
17 St Austell or Hensbarrow China Clay Area (none in AONB)	Moderate (the natural granite outcrops of Roche and St Dennis and the outer boundary tips and landforms of the area would be particularly sensitive)	Moderate (the natural granite outcrops of Roche and St Dennis and the areas of unenclosed heath would be particularly sensitive)
18 St Breock Downs (none in AONB)	Low-moderate	High
19 Trevoze Head and Coastal Plateau (40% in the Cornwall AONB)	Moderate-high (the coast and its immediate hinterland would be particularly sensitive)	Moderate-high (the open coastline and its immediate hinterland, and areas of historically important medieval strip fields would be particularly sensitive)
20 Mid Cornwall Moors (none in AONB)	Moderate (the undeveloped moorland	Moderate (the undeveloped moorland

Landscape Character Area	Overall Landscape Sensitivity to Wind Energy Development	Overall Landscape Sensitivity to Solar PV Development
	landscapes and the skyline of Castle-an-Dinas would be particularly sensitive)	landscapes and the prominent slopes of the hills in the north (including the medieval stripfield systems around Belowda) would be particularly sensitive)
21 Fowey Valley (23% in the Cornwall AONB)	Moderate-high (the landscape's steep wooded valley slopes would be particularly sensitive)	Moderate-high (the landscape's steep wooded valley slopes and river banks would be particularly sensitive)
22 South East Cornwall Plateau (11% in the Cornwall AONB; under 1% in the Tamar Valley AONB)	Moderate Moderate-high within the AONB (the undeveloped and naturalistic coastal edge and its immediate hinterland would be particularly sensitive)	Moderate-high (the undeveloped coastal edge and its immediate hinterland and upper slopes would be particularly sensitive)
23 Looe Valley Rivers (none in AONB)	Moderate-high (the upper open rolling slopes of the northern tip are less sensitive than the dramatic valleys in the south)	Moderate – high (visible slopes would be particularly sensitive)
24 Seaton River Valley (none in AONB)	Moderate-high (the upper open rolling slopes of the northern tip are less sensitive than the dramatic valleys in the south)	Moderate – high (the steep valley sides to the south of the A38 would be particularly sensitive)
25 Lynher and Tiddy River Valleys (under 2% in the Cornwall AONB; 25% in the Tamar Valley AONB)	Moderate-high (the landscape's undeveloped estuary edges and its immediate hinterland would be particularly sensitive)	Moderate-high (the steep valley slopes and undeveloped estuary edges and its immediate hinterland would be particularly sensitive)
26 East Cornwall and Tamar Moorland Fringe (6% in the Cornwall AONB, 12% in the Tamar Valley AONB)	Moderate Moderate-high within the AONB	Moderate Moderate-high within the AONB
27 Lower Tamar and Tavy Rivers (93% in the Tamar Valley AONB)	Moderate-high (the winding ribbon of river with wetland habitats would be particularly sensitive)	High
28 North Coast – Reskeage	Moderate-high	Moderate-high

Landscape Character Area	Overall Landscape Sensitivity to Wind Energy Development	Overall Landscape Sensitivity to Solar PV Development
Downs (50% in the Cornwall AONB)		
29 Middle Tamar Valleys (under 2% in the Cornwall AONB; 48% in Tamar Valley AONB)	Moderate-high	Moderate-high (the steep-sided valleys in the southern stretches of the LCA and flood plains would be particularly sensitive)
30 Kit Hill (55% in the Tamar Valley AONB)	Moderate – high (the distinctive form of Kit Hill would be particularly sensitive)	Moderate - high (the steeper slopes and areas of open heathland would be particularly sensitive)
31 Upper Tamar and Ottery Valleys (less than 1% in the Cornwall AONB, less than 1% in the Tamar Valley AONB)	Moderate outside AONB Moderate-high within the AONB (the tranquil floodplain of the Tamar would be particularly sensitive)	Moderate-high (the steep valley sides would be particularly sensitive)
32 Bodmin Moor (75% in the Cornwall AONB)	High	High
33 Camel and Allen Valleys (2% in the Cornwall AONB)	Moderate outside AONB Moderate-high within the AONB (the smaller scale valley systems would be particularly sensitive)	Moderate-high
34 Camel Estuary (35% in the Cornwall AONB)	Moderate outside AONB Moderate-high within AONB (the landscape's undeveloped coastal edge, estuary/creek edges and their immediate hinterland would be particularly sensitive)	Moderate-high (the landscape's undeveloped coastal edge and undeveloped estuarine edges and its immediate hinterland would be particularly sensitive)
35 Kellan Head to Millook Haven Coast (99% in the Cornwall AONB)	High	High
36 Delabole Plateau (38% in the Cornwall AONB)	Low-moderate on the plateau (which generally lies outside the AONB) Moderate-high within the AONB The north-western edge of	Moderate-high (the north-western facing slopes forming a backdrop to the coast and its immediate hinterland would be particularly sensitive)

Landscape Character Area	Overall Landscape Sensitivity to Wind Energy Development	Overall Landscape Sensitivity to Solar PV Development
	the ridge directly above Beeny and Rusey Cliffs would be particularly sensitive to wind energy development	
37 Western Culm Plateau (19% in the Cornwall AONB)	Moderate outside AONB Moderate-high within the AONB (the intimate steep wooded valleys dramatic scenic coastline and its immediate hinterland would be particularly sensitive)	Moderate outside AONB Moderate-high within the AONB (the exposed upper slopes and scenic coastline and its immediate hinterland would be particularly sensitive)
38 Bude Basin (16% in the Cornwall AONB)	Moderate outside AONB Moderate-high within the AONB (the undeveloped coastal edge and its immediate hinterland would be particularly sensitive)	Moderate outside AONB Moderate-high within the AONB (the open and undeveloped coastline and its immediate hinterland would be particularly sensitive to solar PV development)
39 St Austell Bay and Luxulyan Valley (15% in the Cornwall AONB)	Moderate outside AONB Moderate-high within the AONB (the undeveloped coast and its immediate hinterland, wooded valleys and upland rough ground would be particularly sensitive)	Moderate outside AONB Moderate-high within the AONB (the coastal edge and its immediate hinterland and areas of rough ground would be particularly sensitive)
40 Gerrans, Veryan and Mevagissey Bays (52% in the Cornwall AONB)	Moderate outside AONB Moderate-high within the AONB (the coast and its immediate hinterland is particularly sensitive)	Moderate outside AONB Moderate-high within the AONB (the coast and its immediate hinterland is particularly sensitive)

RESULTS OF THE CAPACITY ASSESSMENT/ LANDSCAPE STRATEGY FOR DEPLOYING WIND ENERGY AND SOLAR PV DEVELOPMENT

- 6.14 **Figures 6.3 and 6.4** provide an overview of the landscape strategies for each LCA. It is critical that these maps are viewed in combination with the details set out in the LCA assessments at **Annex I**. The results are summarised in **Table 6.2** below. The landscape strategies indicate the amount and type of development that might be accommodated in each LCA from a landscape point of view – obviously other issues (including technical and environmental) will influence the actual deployment of each technology type and the spatial pattern will be directed by the guidance and other constraints. The landscape strategies set out in this study have been developed with the Steering Group, and in consultation with a range of stakeholders.

Observations on Deploying Wind Turbines and Solar PV Across LCAs

- 6.15 The results above indicate that the most common landscape strategy for deploying wind energy or solar PV is for occasional developments within an LCA. For wind energy the guidance suggests that this should take the form of generally single or small clusters of turbines in a balanced composition (details will vary across LCAs) and for PV this should generally take the form of very small, small or medium scale developments located in sheltered folds in the agricultural landscape or on brownfield sites, away from the coast.
- 6.16 Although there is nowhere that is considered to be suitable as a ‘wind farm landscape’, the individual landscape strategies indicate that some LCAs may be able to accommodate more wind energy development (e.g. parts of the Newlyn Downs, St Breock Downs and Delabole Plateau) while other areas should remain free of development (e.g. the unenclosed moorland areas or rugged and undeveloped coastlines). There is nowhere that is considered to be suitable as ‘a landscape with solar PV development’ although there are a number of areas that could accommodate occasional well sited developments.
- 6.17 In AONBs wind energy development should generally be limited to occasional very small scale single turbines linked to existing buildings (eg farm buildings) and solar PV development limited to very occasional very small scale PV arrays. This is to ensure conservation of the natural beauty for which these areas are nationally recognised.

A note on scale

- 6.18 As a result of the scale of the landscapes across Cornwall, most landscapes would be particularly sensitive to the largest scale turbines (i.e. those between 100m and 150m to tip height). Some of the larger scale landscapes may be able to accommodate the larger sized turbines (e.g. parts of Mount’s Bay East, Carnmenellis, Newlyn Downs, Mid Fal Plateau, St Austell China Clay Area, St Breock Downs, South East Cornwall Plateau, Delabole Plateau, Western Culm Plateau, St Austell Bay, Gerrans Veryan and Mevagissey Bays and the hills between the Camel and Allen Valleys), however it is likely that turbine sizes/rotor diameters at the lower end of the large scale rather than

the higher end of the large scale will be more appropriate since none of the landscapes in Cornwall are truly 'large scale' in the context of the UK.

- 6.19 There is generally lower sensitivity to small and very small scale turbines across the study – especially where these small scale turbines form part of farm complexes or businesses. However, there are some parts of Cornwall that remain highly sensitive to even the smallest scale turbines e.g. the open moorland on the Penwith peninsula and Bodmin Moor, and the undeveloped naturalistic coastal edge and its immediate hinterland.

Table 6.2: A Landscape Strategy for Deploying Wind Energy and Solar PV in LCAs across Cornwall

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
1 West Penwith South (Land's End to Newlyn) (48% in the Cornwall AONB)	Moderate-high (High within AONB)	Moderate-high (High within AONB)
	The landscape strategy is for a landscape with occasional single very small or small turbines in association with existing buildings, with no turbines along the rugged and wild coastal edge or its immediate hinterland. Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).	The landscape strategy is for a landscape with occasional solar PV developments (very small scale) outside the AONB, a landscape without solar PV development (except for very occasional very small scale well sited developments) within the AONB, and no solar PV development along the rugged and wild coastal edge or its immediate hinterland.
2 West Penwith (North and West Coastal Strip) (90% in the Cornwall AONB)	High	High
	The landscape strategy is for a landscape without wind farms with the exception of very occasional very small single turbines associated with existing buildings.	A landscape without solar PV developments (except for very occasional very small developments associated with existing buildings and settlement).
3 Penwith Central Hills (68% in the Cornwall AONB)	High	High
	The landscape strategy is for a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings) and no turbines in the unenclosed moorland.	The landscape strategy is for a landscape without solar PV developments (except for very small very occasional developments associated with existing buildings and settlement in the settled farmed areas in the south and east (LDU 282).
4 Mount's Bay (1.5% in the Cornwall AONB)	Moderate (High within AONB)	Moderate (High within AONB)
	The landscape strategy is for	The landscape strategy is for

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
AONB)	a landscape with occasional single turbines, or possibly small clusters, comprising turbines up to and including medium scale (or single very small turbines in areas of prehistoric fields) and no turbines along the coast around St Michael's Mount (and St. Michael's Mount itself).	a landscape with occasional solar PV developments up to medium size (size should relate to field scale which is smaller in the west) and no solar PV development along the undeveloped coastal edge and its immediate hinterland or on St. Michael's Mount (in the AONB).
5 St Ives Bay (under 1% in the Cornwall AONB)	Moderate (moderate-high within AONB)	Moderate (moderate-high within AONB)
	The landscape strategy is for a landscape with occasional single turbines or small clusters of turbines, comprising turbines up to and including 'medium' size, with no turbines in the remaining areas of undeveloped, wild sand dunes.	The landscape strategy is for a landscape with occasional very small or small solar PV developments located on lower slopes in more enclosed areas away from the coast and no PV development in the landscape's remaining areas of undeveloped, wild sand dunes.
6 Mount's Bay East (23% in the Cornwall AONB)	Moderate (moderate-high within AONB)	Moderate (moderate-high within AONB)
	The landscape strategy is for a landscape with occasional single turbines, or possibly small clusters of up to and including medium size (or large turbines at the lower end of the scale in the east - turbine size should relate to landscape scale which varies within the LCA), and no turbines along the undeveloped coastal edge. and its immediate hinterland Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).	The landscape strategy is for a landscape with occasional solar PV developments up to and including large scale (scale of development should relate to landscape scale which varies across the area)), with no solar PV development along the landscape's open and undeveloped coastline and its immediate hinterland or on prominent hill slopes (particularly Godolphin and Tregonning Hills). Within the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).
7 South Lizard Peninsula (100% in the Cornwall AONB)	Moderate-high	Moderate-high
	Since this LCA falls entirely within the Cornwall AONB the landscape strategy is for a landscape without wind	The landscape strategy is for a landscape without solar PV development (except for very occasional very

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
	<p>energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings), with no turbines along the undulating and undeveloped coastline and its immediate hinterland, or within unspoilt areas of open heathland. However, the sensitivity assessment indicates that areas of recently enclosed land in the northern part of the LCA may have a greater flexibility to accommodate turbines larger than domestic scale. Collectively turbines within the LCA should not have a defining influence on the overall experience of the landscape.</p>	<p>small scale well sited developments associated with existing buildings in more enclosed areas) and no solar PV developments along the undeveloped and open coastline and its immediate hinterland, or within unspoilt areas of open heathland.</p>
<p>8 North East Lizard Peninsula (100% in the Cornwall AONB)</p>	Moderate-high	Moderate-high
	<p>Since this LCA falls entirely within AONB the landscape strategy is for a landscape a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings), with no turbines along the undulating and undeveloped coastline and its immediate hinterland. The largest turbines capable of being accommodated within the LCA (i.e. within the tolerance set out in the overall sensitivity) might be sited in the least sensitive areas in the northern part of the LCA (in the large scale landscape away from the coast and outside the open heathland) - indeed there is an existing wind cluster here.</p>	<p>The landscape strategy is for a landscape without solar PV development (except for very occasional very small scale well sited developments associated with existing buildings in more enclosed areas and no solar PV developments along the undeveloped and open coastline and its immediate hinterland.</p>
<p>9 Helford Ria (74% in the Cornwall AONB)</p>	Moderate-high	Moderate-high
	<p>The landscape strategy is for a landscape with occasional single turbines or small clusters of turbines, up to the smaller end of the</p>	<p>The landscape strategy is for a landscape without solar PV development (except for very occasional very small scale well sited</p>

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
	medium size, on the hills between the valleys outside the AONB, a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings) within the AONB, and no turbines along the undeveloped coast and its immediate hinterland.	developments) with no solar PV development on the landscape's prominent and pastoral valley slopes, or along the undeveloped coastal edge and its immediate hinterland.
10 Carnmenellis (less than 2% in the Cornwall AONB)	Moderate (Moderate-high within AONB)	Moderate-high
	The landscape strategy is for a landscape with occasional single turbines or small clusters of turbines, comprising turbines up to the smaller end of the large size. Within the AONB development limited to occasional very small scale single turbines linked to existing buildings (eg farm buildings).	The landscape strategy is for a landscape with occasional small to medium size solar PV developments located in sheltered folds in the landscape (scale of development should relate to landscape scale which varies across the LCA). Within the AONB development limited to very occasional very small scale PV development.
11 Redruth, Camborne and Gwennap (less than 2% in the Cornwall AONB)	Moderate (Moderate-high within AONB)	Moderate (Moderate-high within AONB)
	The landscape strategy is for a landscape with occasional single or small clusters of turbines, comprising turbines up to the medium scale (less in areas close to small scale historic features) and no development on the undeveloped coastal edge and its immediate hinterland.	The landscape strategy is for a landscape with occasional PV developments (up to and including medium in size) and no development along the open undeveloped coastal edge and its immediate hinterland.
12 St Agnes (42% in the Cornwall AONB)	Moderate-high	Moderate-high
	The landscape strategy is for a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings, or perhaps some small turbines associated with larger scale development on the edges of St Agnes; with no turbines along the landscape's remote	The landscape strategy is for a landscape without solar PV development (except for very occasional very small scale well sited developments), and no solar PV development within the unbroken tracts of heathland, prominent slopes of St Agnes Beacon or on the steep-sided naturalistic valleys.

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
	and open coastline or on the prominent and distinctive beacon.	
13 Fal Ria, Truro and Falmouth (41% in the Cornwall AONB)	Moderate (Moderate-high within AONB)	Moderate (Moderate-high within AONB)
	<p>The landscape strategy is for a landscape with occasional single turbines or small to medium sized clusters of turbines, comprising turbines that may be up to and including medium scale outside the AONB with no turbines in the intimate wooded creeks, along undeveloped estuary edges or on the undeveloped coastal edge and its immediate hinterland.</p> <p>Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).</p>	<p>The landscape strategy is for a landscape with occasional very small or small solar PV developments with no solar PV development on upper slopes, along undeveloped estuary edges or on the undeveloped coastal edge and its immediate hinterland.</p> <p>Within the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).</p>
14 Newlyn Downs (under 1% in the Cornwall AONB)	Low-moderate (Moderate-high within AONB)	Moderate (Moderate-high within AONB)
	<p>The landscape strategy is for a landscape with wind energy development with small or medium clusters of turbines, comprising turbines up to the smaller end of the 'large' category, as well as smaller single turbines associated with farm buildings and businesses.</p> <p>Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).</p>	<p>The landscape strategy is for a landscape with occasional solar PV developments sited on lower slopes (up to and including large scale - size should relate to landscape scale which varies) and no solar PV development on areas of lowland heath or along the undeveloped coastal edge and its immediate hinterland.</p> <p>Within the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).</p>
15 Newquay and Perranporth Coast (under 1% in the Cornwall AONB)	Moderate-high	Moderate-high
	The landscape strategy is for a landscape with occasional single turbines or small clusters of turbines up to	The landscape strategy is for a landscape with occasional very small or small scale solar PV developments sited

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
	and including medium height, located away from the cliff edge and its immediate hinterland (turbine size should relate to landscape scale within the LCA).	in sheltered locations, located away from the undeveloped coastal edge and its immediate hinterland.
16 Mid Fal Plateau (19% in the Cornwall AONB)	Moderate (moderate-high within AONB)	Moderate (moderate-high within AONB)
	<p>The landscape strategy is for a landscape with occasional small clusters of turbines, or single turbines, comprising turbines up to the lower end of the 'large' scale (turbine size and cluster size should relate to landscape scale which varies within the LCA).</p> <p>Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).</p>	<p>The landscape strategy is for a landscape with occasional solar PV developments located on lower slopes and in sheltered folds in the landscape (up to and including large scale - scale of development should relate to landscape scale).</p> <p>Within the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).</p>
17 St Austell or Hensbarrow China Clay Area (none in AONB)	Moderate	Moderate
	<p>The landscape strategy is for a landscape with occasional wind energy development within the central part of the LCA - comprising small, medium or large clusters of turbines, comprising turbines up to and including the 'large' size (turbine size and cluster size should relate to landscape scale which varies within the LCA).</p>	<p>The landscape strategy is for a landscape with occasional solar PV developments (up to and including large scale on brownfield sites or up to and including medium scale in areas that have an intact field pattern).</p>
18 St Breock Downs (none in AONB)	Low-moderate	High
	<p>The landscape strategy is for a landscape with wind energy development comprising small or medium clusters of turbines up to the smaller end of the 'large' scale, located on the ridge where they relate to one another in terms of cluster size and turbine type.</p>	<p>The landscape strategy is for a landscape without solar PV developments (except for very small very occasional developments associated with existing buildings and settlement).</p>
19 Trevoze Head and Coastal Plateau	Moderate-high	Moderate-high
	The landscape strategy is for	The landscape strategy is for

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
(40% in the Cornwall AONB)	<p>a landscape with occasional single turbines and possibly small clusters of turbines, comprising turbines that may be up to and including medium scale with no turbines along the coastal edge/ coastal headlands and their immediate hinterland.</p> <p>Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).</p>	<p>a landscape with occasional solar PV developments (up to and including medium scale) with no PV development along the coastal edge/ coastal headlands and their immediate hinterland.</p> <p>Within the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).</p>
20 Mid Cornwall Moors (none in AONB)	Moderate	Moderate
	<p>The landscape strategy is for a landscape with occasional single turbines, or small clusters of turbines, comprising turbines up to and including a medium size (or small turbines in the small scale fields to the east) and no turbines in the undeveloped moorland landscapes or on the prominent skyline of Castle Downs (crowned by Castle-an-Dinas).</p>	<p>The landscape strategy is for a landscape with occasional PV developments in sheltered areas and lower slopes (up to and including large scale - size of development should relate to landscape scale which varies within the LCA) and no PV development on the undeveloped moorland landscapes or prominent slopes of the hills in the north.</p>
21 Fowey Valley (23% in the Cornwall AONB)	Moderate-high	Moderate-high
	<p>The landscape strategy is for a landscape with occasional single turbines, or small clusters, comprising turbines up to and including medium scale in the middle section of the LCA, and with occasional small turbines in the remainder of the valley system.</p> <p>Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).</p>	<p>The landscape strategy is for a landscape with occasional very small or small solar PV developments (or medium scale in areas of larger, rectilinear fields as long as they are sensitively sited).</p> <p>Within the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).</p>
22 South East Cornwall Plateau (11% in the Cornwall AONB;	Moderate (moderate-high within AONB)	Moderate-high
	The landscape strategy is for	The landscape strategy is for

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
under 1% in the Tamar Valley AONB)	<p>a landscape with occasional small or medium clusters of turbines, or single turbines, comprising turbines that may be up to sizes at the lower end of the 'large' category (turbine size and cluster size should relate to landscape scale which varies within the LCA) and no turbines along the undeveloped and undeveloped coastal edge and its immediate hinterland.</p> <p>Elsewhere in the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).</p>	<p>a landscape with occasional PV developments (up to and including large scale - size of development should relate to landscape scale which varies within the LCA) and no PV development along the undeveloped coastal edge and its immediate hinterland, or on upper slopes.</p> <p>Elsewhere in the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).</p>
23 Looe Valley Rivers (none in AONB)	Moderate-high	Moderate-high
	<p>The landscape strategy is for a landscape with occasional single turbines associated with existing buildings – comprising very small scale turbines in most of the LCA (possibly small scale in the less steep valleys north of Looe Mills).</p>	<p>The landscape strategy is for a landscape with occasional very small or small scale solar PV developments north of Looe Mills (size of development should relate to landscape scale) and a landscape without solar PV development south of Looe Mills (this may include very occasional very small PV developments associated with buildings/settlement).</p>
24 Seaton River Valley (none in AONB)	Moderate-high	Moderate-high
	<p>The landscape strategy is for a landscape with occasional single turbines associated with existing buildings – comprising very small scale turbines in most of the LCA (possibly small scale in the less steep valleys to the north of the LCA).</p>	<p>The landscape strategy is for a landscape with occasional very small or small scale solar PV developments north of the A38 (in farmed areas) and very occasional very small PV developments associated with buildings/settlement south of the A38.</p>
25 Lynher and Tiddy River Valleys (under 2% in the Cornwall AONB; 25% in the Tamar Valley AONB)	Moderate-high	Moderate-high
	<p>The landscape strategy is for a landscape with occasional single turbines or small clusters of turbines, comprising turbines that may be up to and including a</p>	<p>The landscape strategy is for a landscape with occasional very small or small scale solar PV developments and no solar PV development on the steepest valley slopes</p>

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
	<p>‘medium’ scale (turbine size should relate to landscape scale which varies within the LCA) and no turbines along the undeveloped estuary edge or its immediate hinterland.</p> <p>Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).</p>	<p>and undeveloped estuary edges and their immediate hinterland.</p> <p>Within the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).</p>
26 East Cornwall and Tamar Moorland Fringe (6% in the Cornwall AONB, 12% in the Tamar Valley AONB)	Moderate (moderate-high within AONB)	Moderate (moderate-high within AONB)
	<p>The landscape strategy is for a landscape with occasional small clusters of turbines comprising turbines that may be up to the lower end of the ‘large’ scale.</p> <p>Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).</p>	<p>The landscape strategy is for a landscape with occasional solar PV developments (up to and including medium scale) located on lower more enclosed slopes.</p> <p>Within the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).</p>
27 Lower Tamar and Tavy Rivers (93% in the Tamar Valley AONB)	Moderate-high	High
	<p>The landscape strategy is for a landscape with occasional a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings, located in farmed areas).</p>	<p>A landscape without solar PV developments</p>
28 North Coast – Reskeage Downs (50% in the Cornwall AONB)	Moderate-high	Moderate-high
	<p>The landscape strategy is for a landscape with occasional single or small clusters of turbines, comprising turbines that may be up to and including medium in size (turbine size and cluster size should relate to landscape scale which varies within the LCA) with no turbines on the rough ground along the coastal edge or its immediate</p>	<p>The landscape strategy is for a landscape with occasional very small or small solar PV developments located on lower slopes, within folds in the landscape and with no solar PV development on the rough ground along the coastal edge or its immediate hinterland.</p> <p>Within the AONB a</p>

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
	<p>hinterland.</p> <p>Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).</p>	<p>landscape without solar PV development (except for very occasional very small scale well sited developments).</p>
<p>29 Middle Tamar Valleys (under 2% in the Cornwall AONB; 48% in Tamar Valley AONB)</p>	Moderate-high	Moderate-high
	<p>The landscape strategy is for a landscape with occasional single very small or small turbines.</p> <p>Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).</p>	<p>The landscape strategy is for a landscape with occasional very small or small solar PV developments outside the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments) within the AONB, with no solar PV development on steep-sided valleys in the southern stretches of the LCA or on flood plains.</p>
<p>30 Kit Hill (55% in the Tamar Valley AONB)</p>	Moderate-high	Moderate-high
	<p>The landscape strategy is for a landscape with occasional single or small groups of wind turbines up to and including medium in size outside the AONB, a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings) within the AONB, and no wind energy development on the distinctive form of Kit Hill or on areas of open heathland.</p>	<p>The landscape strategy is for a landscape with occasional very small solar PV developments outside the AONB and a landscape without solar PV development (except for very occasional very small scale well sited developments) within the AONB, and no solar PV development on the steeper slopes and areas of open heathland.</p>
<p>31 Upper Tamar and Ottery Valleys (less than 1% in the Cornwall AONB, under 1% in the Tamar Valley AONB)</p>	Moderate (moderate-high within AONB)	Moderate-high
	<p>The landscape strategy is for a landscape with occasional small or medium clusters of turbines, or single turbines, comprising turbines that may be up to and including 'medium' scale (with smaller turbines in valleys).</p> <p>Within the AONB a</p>	<p>The landscape strategy is for a landscape with occasional solar PV developments (up to and including large scale - scale of development should relate to landscape scale) and no solar PV development on the steep valley sides or upper visible slopes.</p>

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
	landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).	Within the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).
32 Bodmin Moor (75% in the Cornwall AONB)	High	High
	The landscape strategy is for a landscape without wind energy development on the open moor and a landscape with occasional very small single wind turbines associated with farm buildings on the settled fringes of the moor.	The landscape strategy is for a landscape without solar PV development on the open moor and a landscape with very occasional very small PV developments in lower lying folds on the settled fringes of the moor.
33 Camel and Allen Valleys (2% in the Cornwall AONB)	Moderate (moderate-high within AONB)	Moderate-high
	The landscape strategy is for a landscape with occasional small or medium clusters of turbines (or single turbines) on the hills between the valleys (comprising turbines that may be up to the smaller end of the 'large' category) and only very small single turbines in the smaller scale stream valleys. Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).	The landscape strategy is for a landscape with occasional solar PV developments (up to and including medium size) on lower slopes. Within the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).
34 Camel Estuary (35% in the Cornwall AONB)	Moderate (moderate-high within AONB)	Moderate-high
	The landscape strategy is for a landscape with occasional single turbines or small clusters of turbines comprising turbines up to and including 'medium' size located inland outside the AONB with no wind energy development on the undeveloped coastal/estuary edges and their immediate hinterland. Elsewhere in the AONB a landscape without wind	The landscape strategy is for a landscape with occasional solar PV developments (up to and including medium scale) located on the lower slopes inland with no solar PV development on the undeveloped coastal/estuary edges and their immediate hinterland. Elsewhere in the AONB a landscape without solar PV development (except for very occasional very

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
	energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).	small scale well sited developments).
35 Kellan Head to Millook Haven Coast (99% in the Cornwall AONB)	High	High
	The landscape strategy is for a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings – ie no turbines on the rough ground along the coastal edge or its immediate hinterland.	The landscape strategy is for a landscape without solar PV development (except for very occasional very small scale well sited developments in the settled farmed areas)
36 Delabole Plateau (38% in the Cornwall AONB)	Low-moderate (moderate-high within AONB)	Moderate-high
	The landscape strategy is for a landscape with wind energy development on the ridge comprising small or medium clusters of turbines up to the smaller end of the 'large' category (including the western branch of the plateau around Delabole within the AONB). Within the remainder of the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).	The landscape strategy is for a landscape with occasional solar PV developments (up to and including large scale - scale will relate to landscape scale which varies across the LCA) in more sheltered locations and no solar PV development on the north-western facing slopes forming a backdrop to the coast. Within the remainder of the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments.
37 Western Culm Plateau (19% in the Cornwall AONB)	Moderate (moderate-high within AONB)	Moderate (moderate-high within AONB)
	The landscape strategy is for a landscape with occasional single or small groups of turbines comprising turbines that may be up to the smaller end of the 'large' scale on the inland southern plateau, single or small groups of turbines comprising turbines that may be up to and including	The landscape strategy is for a landscape with occasional solar PV developments (up to and including large scale - size of development should relate to landscape scale which varies within the LCA), with no solar PV development along the undeveloped coast or its immediate hinterland.

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
	<p>'medium' scale on the inland northern plateau, and no turbines along the undeveloped coast or its immediate hinterland.</p> <p>Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).</p>	<p>Within the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).</p>
38 Bude Basin (16% in the Cornwall AONB)	Moderate (moderate-high within AONB)	Moderate (moderate-high within AONB)
	<p>The landscape strategy is for a landscape with occasional single turbines or small clusters of turbines located inland away from the coastal edge and comprising turbines that may be up 'medium' size (turbine and cluster size should relate to landscape scale which varies within the LCA), and no wind energy developments along the undeveloped coastal edge or its immediate hinterland.</p> <p>Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).</p>	<p>The landscape strategy is for a landscape with occasional solar PV developments (up to and including medium size) on lower slopes and folds in the landscape, with no solar PV development along the open and undeveloped coastal edge/slopes or its immediate hinterland.</p> <p>Within the AONB a landscape without solar PV development (except for very occasional very small scale well sited developments).</p>
39 St Austell Bay and Luxulyan Valley (15% in the Cornwall AONB)	Moderate (moderate-high within AONB)	Moderate (moderate-high within AONB)
	<p>The landscape strategy is for a landscape with occasional single turbines or small to medium sized clusters of turbines (depending on scale of the landscape, which varies across the LCA), comprising turbines that may be up to the smaller end of the large scale category with no turbines on the undeveloped coast or its immediate hinterland, in the steep wooded valleys or on upland rough ground.</p>	<p>The landscape strategy is for a landscape with occasional very small or small solar PV developments (and possibly some 'medium' scale in the larger scale landscapes to the east) with no solar PV development along the coastal edge or its immediate hinterland or on areas of rough ground.</p> <p>Within the AONB a landscape without solar PV development (except for very occasional very</p>

Landscape Character Area	Landscape Strategy for Wind Energy Development	Landscape Strategy for Solar PV Development
	Within the AONB a landscape without wind energy development (except for occasional very small scale single turbines linked to existing buildings eg farm buildings).	small scale well sited developments.
40 Gerrans, Veryan and Mevagissey Bays (52% in the Cornwall AONB)	Moderate (moderate-high within AONB)	Moderate (moderate-high within AONB)
	The landscape strategy is for a landscape with occasional small clusters of turbines, or single turbines, comprising turbines up to the lower end of the 'large' scale, and with no turbines along the coastal edge or its immediate hinterland. Elsewhere within the AONB development limited to occasional very small scale single turbines linked to existing buildings (eg farm buildings).	The landscape strategy is for a landscape with occasional very small, small or medium solar PV developments, and with no PV development along the coastal edge or its immediate hinterland. Elsewhere within the AONB development limited to very occasional very small scale PV development.

A note on cumulative impacts

Although most landscapes will be able to accommodate some renewable energy development of some scale, most landscapes would become progressively more sensitive to development of a large number of turbines or solar PV developments. It is not possible to provide a generic limit on numbers or distances between turbines or solar developments and each proposal would need to consider cumulative impacts on a case by case basis. However, in relation to wind energy development, in some larger scale landscapes a smaller number of medium or large scale turbines may be more appropriate than developing a larger number of small turbines.

7 References/ Further Reading

Cornwall AONB Unit (2010) The Cornwall Area of Outstanding Natural Beauty Management Plan 2011 – 2016: DRAFT FOR PUBLIC CONSULTATION (AUGUST 2010) [<http://www.cornwall-aonb.gov.uk/management-plan/index.html>]

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Appendix I

Glossary

GLOSSARY OF TERMS

Table A1

Term	Definition
AGLV	Area of Great Landscape Value
AOD	Above Ordnance Datum (sea level).
AONB	Area of Outstanding Natural Beauty
Characteristic	A distinctive element of the landscape that contributes to landscape character for instance a particular hedgerow pattern or sense of tranquillity.
Cumulative effects	The summation of effects that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions.*
GIS	Geographic Information System.
Immediate hinterland (in relation to the coast)	The area required to be kept free of development to protect the special qualities of the coast. This may vary according to the type of development and the character/ special qualities of that particular stretch of coast.
Landscape character	The distinct, recognisable and consistent pattern of elements that occur in a particular landscape and how these are perceived. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement.
Landscape character areas	Single unique areas that are the discrete geographical area of a particular landscape type.
Landscape character types	Distinct types of landscape that are relatively homogenous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but share broadly similar combinations of geology, topography, drainage patterns, vegetation, historic land use and settlement pattern.
Landscape feature	A prominent eye-catching element, for example, wooded hilltop or church spire.*
Landscape sensitivity	The relative extent to which the character and quality of the landscape is susceptible to change as a result of a particular type of development.

Term	Definition
LCA	Landscape character assessment or landscape character area.
Mitigation	Measures, including any process, activity or design to avoid, reduce, remedy or compensate for adverse landscape and visual effects of a development project.+
PPS	Planning Policy Statement
Skyline	The outline of a range of hills, ridge or group of buildings seen against the sky.
Viewing distance	'Viewing Distance' is the distance between a viewer's eye and a printed image. The 'correct viewing distance' is the distance at which the perspective in the printed image most closely reconstructs the perspective of the landscape as it appears from the viewpoint.
Visualisation	Computer simulation, photomontage or other technique to illustrate the appearance of a development.*
Wirelines	Also known as 'wireframes' or 'computer generated line drawings'. These are computer generated line drawings based on digital terrain models (DTM), that illustrate the three-dimensional shape of the landscape in combination with additional elements.+
Zone of Theoretical Visibility, ZTV	This represents the area over which a development can theoretically be seen, based on digital terrain data. This information is usually presented on a map base (also known as the Zone of Visual Influence, ZVI).+

* As defined by the Landscape Institute and Institute of Environmental Management and Assessment (2002)

+ Taken from Scottish Natural Heritage (2006) Visual Representation of Windfarms: Good Practice Guidance

Appendix 2

User Guide

Stage 1 – Compliance with landscape strategy.

- Which Landscape Character Area (LCA) or Areas is the development in?
- Is the site characteristic of the wider LCA (as summarised in the key characteristics)?
- What is the sensitivity rating for the landscape character area(s) in which the proposal lies?
- What size development is proposed (number/height of turbines for wind energy development, or footprint for solar PV)?
- What is the landscape strategy for the LCA (or particular part of the LCA) in which the proposal lies?
- Is the number/height of turbines (for wind energy development) or footprint (for solar PV development) consistent with the LCA strategy (as set out in **Table 6.2** and the relevant LCA analysis in **Annex I**)?

If the site is characteristic of the wider LCA and the proposal is in line with the landscape strategy, the development is likely to be able to be accommodated in principal (from a landscape character point of view). However, the development will also need to accord with the generic guidance for that type of development and the specific guidance for the relevant landscape character area (see Stage 2 below).

Stage 2 – Detailed siting and design considerations

- Is the development in accordance with the specific siting and design guidance set out for the relevant LCA(s) in **Annex I**?
- Is the development in accordance with the generic guidance set out in **Annexes 2, 3, and 4**?
- If not, what aspects of the proposed development conflict with which parts of the guidance?
- If the development conflicts with the strategy and/ or any guidance, can the impacts be mitigated?

If the development does not adversely affect key landscape characteristics, and is in line with guidance, it is likely to be able to be accommodated in the landscape (from a landscape character point of view).

Stage 3 – Cumulative impact

- Will the proposed development have a significant cumulative impact with regard to other similar developments, existing, approved but not constructed, or currently in the planning process?
- Can these be reduced or mitigated?