

# EXMOOR NATIONAL PARK AUTHORITY

January 2016

## LANDSCAPE SENSITIVITY STUDY FOR WIND AND SOLAR ENERGY DEVELOPMENT

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B : High Wooded Coast, Combes and Cleaves

C : Low Farmed Coast and Marsh

D : Open Moorland

E : Farmed and Settled Vale

F : Enclosed Farmed Hills with Commons

G : Incised Wooded Valleys

H : Plantation (with Heathland) Hills

I : Wooded and Farmed Hills with Combes

###### Detailed assessments of landscape sensitivity to solar PV development

A : High Coastal Heaths

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# 1. INTRODUCTION

This study provides an assessment of the sensitivity of the Exmoor National Park landscape to onshore wind turbines and ground-mounted solar photovoltaic arrays. It was written by specialists within Exmoor National Park Authority with expertise in environmental planning, design and land management.

Based on the findings of the sensitivity assessment this study offers a tool to help understand the relationship between wind turbines/solar photovoltaic arrays and the landscape and provides advice on how the landscape can accommodate these types of development.

For the purpose of the study, the following size turbines (height to blade tip) have been assessed;

Very small (15-25m)
Small (26-50m)
Medium (51-75m)
Large (76-110m)

and the following size PV arrays have been assessed.

Very small (<1ha)
Small (>1-5ha)
Medium (>5-10ha)
Large (>10-15ha)
Very large (>15-20ha)

## 2. FINDINGS

### 2.1. OVERALL FINDINGS

**The study concludes that, away from Open Moorland and Coastal Heath landscapes, the Exmoor Landscape has a moderate to high sensitivity to very small wind turbines (between 15-25m in height) and very small solar PV development (of less than 1 ha). The whole landscape is highly sensitive to wind turbines above 25m in height and solar development greater than 1ha in size.**

**In relation to very large, large, medium and small size wind turbines,** the study concludes that:

- all landscape types within Exmoor National Park have a high sensitivity to wind turbines taller than 25m;
- some landscape types including; A High Coastal Heaths and D Open Moorland landscape types have a high sensitivity to very small wind turbines, less than 25m in height; and
- all other landscape types have a moderate – high sensitivity to very small turbines. Turbines would need to be similar in scale to existing buildings and trees, located in close association with dwellings/ farmsteads and be in locations where the turbine would not be seen against the skyline.

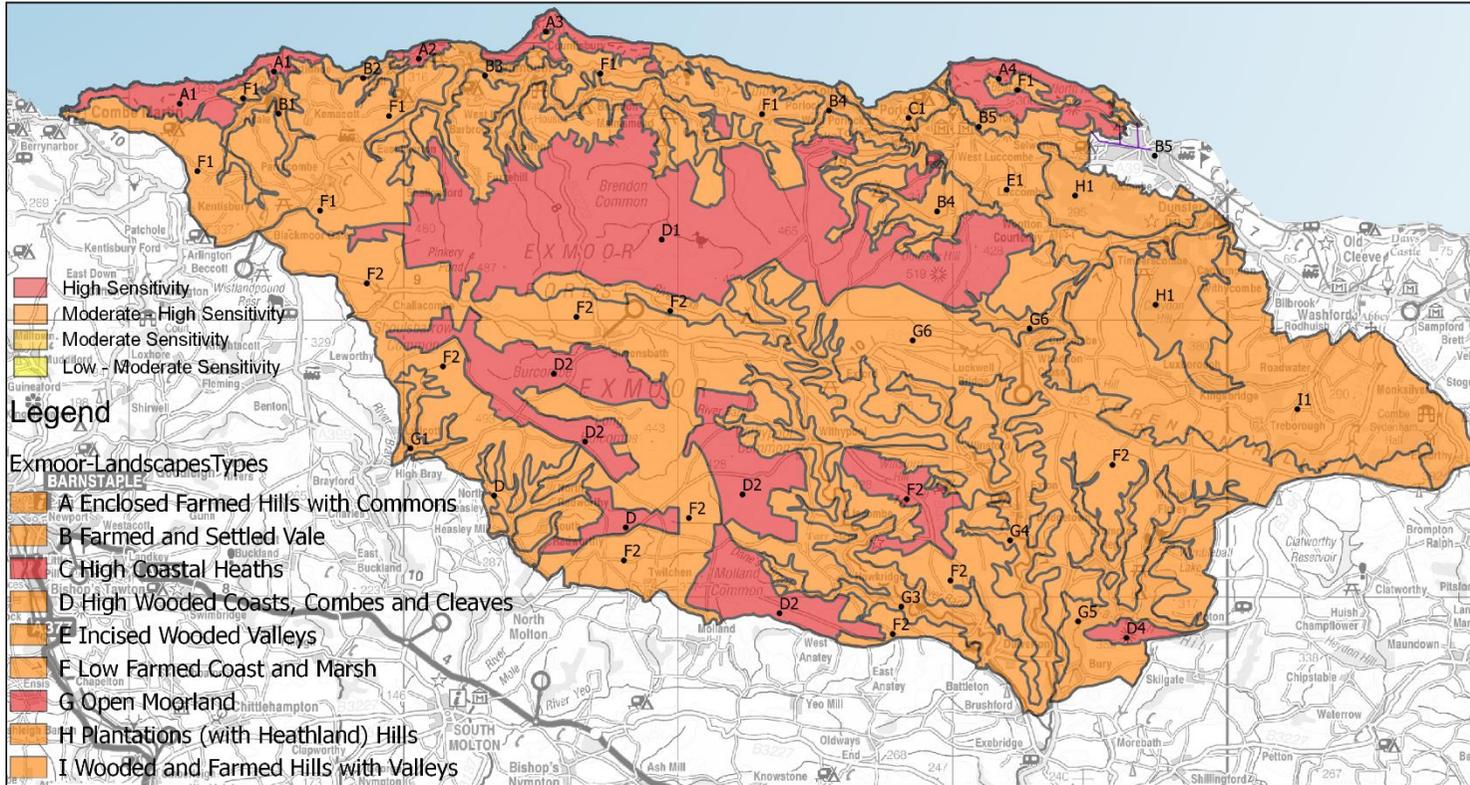
**In relation to very large, large, medium and small size solar PV development,** the study concludes that:

- all landscape types within Exmoor National Park have a high sensitivity to very large, large, medium and small solar PV development;
- some landscape types including; A High Coastal Heaths and D Open Moorland landscape types have a high sensitivity to very small solar PV; and
- all other landscape types have a moderate – high sensitivity to very small solar PV. Solar PV development would need to be clearly associated with the buildings they are intended to serve.

# Maps to illustrate the findings

## Landscape Sensitivity to Wind Turbine Development

**VERY SMALL**



Scale

Compiled by pbryan  
 on 11/4/2016

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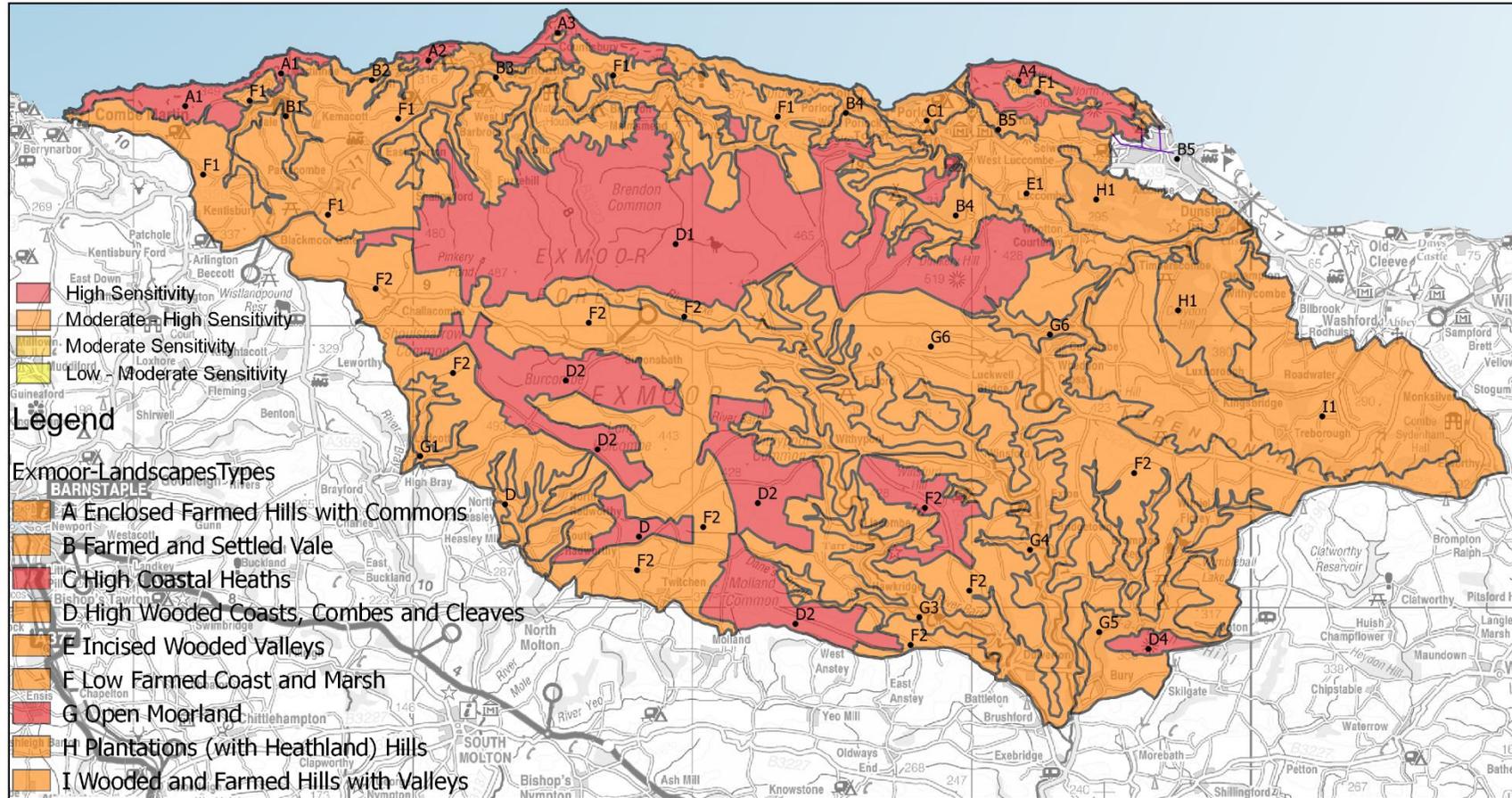
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# Exmoor National Park Authority

## Landscape Sensitivity to Solar PV Development

# VERY SMALL



Scale

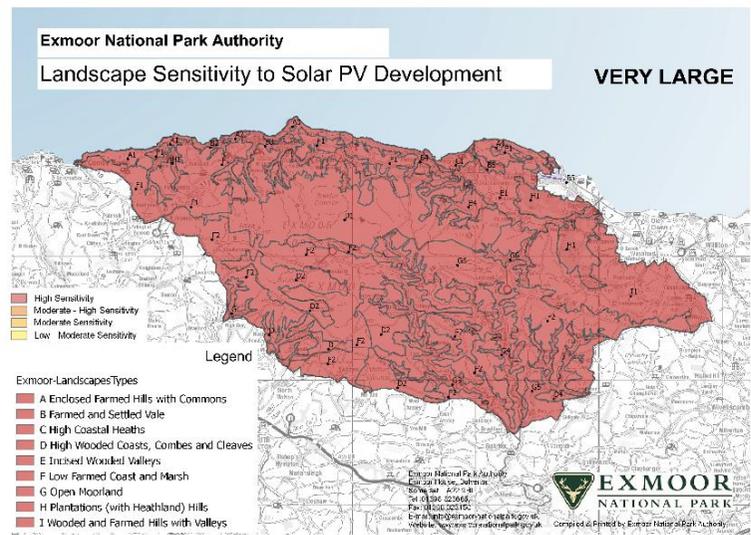
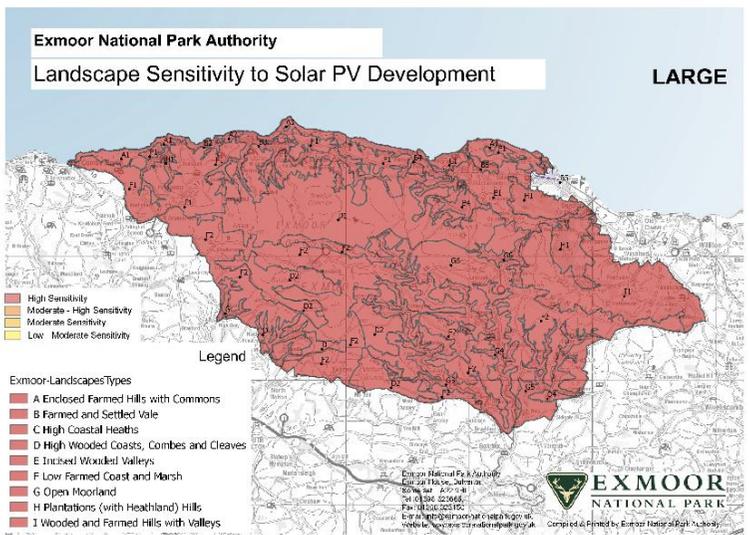
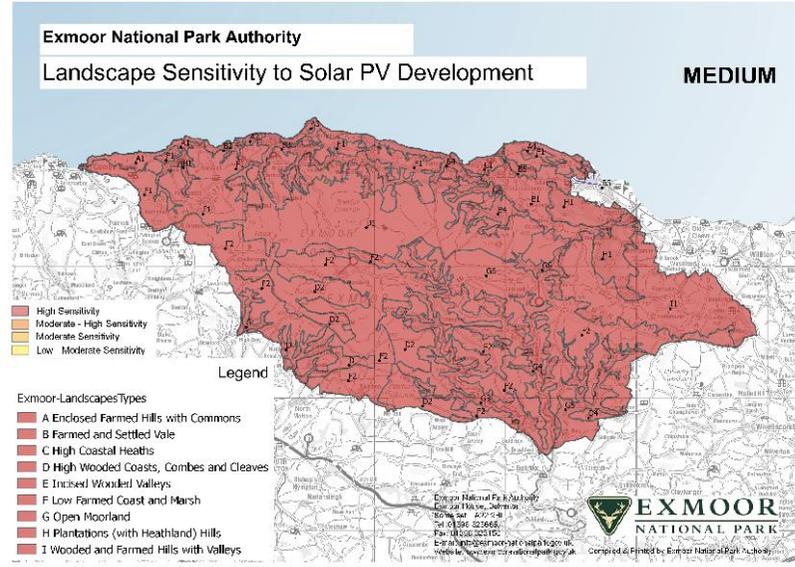
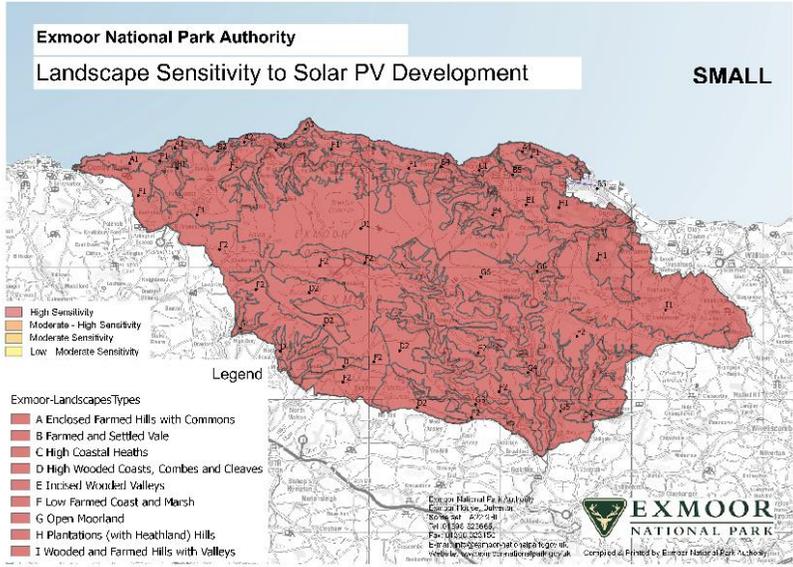
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## 2.2 Overall Results Of Assessment Of Landscape Sensitivity To Wind And Solar Development - Findings By Landscape Character Type.

Landscape Character Type	Landscape Sensitivity to Wind Turbine Development		Landscape Sensitivity to Solar PV Development	
<b>A : High Coastal Heaths</b>	Very small (15-25m)	High	Very small (<1ha)	High
	Small (26-50m)	High	Small (1<5ha)	High
	Medium (51-75m)	High	Medium (5<10ha)	High
	Large (76-110m)	High	Large (10<15ha)	High
	Very large (111-150m)	High	Very large (15<20ha)	High
Landscape Character Type	Landscape Sensitivity to Wind Turbine Development		Landscape Sensitivity to Solar PV Development	
<b>B : High Wooded Coast, Combes and Cleaves</b>	Very small (15-25m)	Moderate to High where the turbine is closely associated with a farmstead or group of buildings.	Very small (<1ha)	Moderate to High -where site is within the curtilage of a property or closely connected to buildings that they serve. High – in areas outside the curtilage property or not closely associated with the buildings it is intended to serve.
	Small (26-50m)	High	Small (1<5ha)	High
	Medium (51-75m)	High	Medium (5<10ha)	High
	Large (76-110m)	High	Large (10<15ha)	High
	Very large (111-150m)	High	Very large (15<20ha)	High
Landscape Character Type	Landscape Sensitivity to Wind Turbine Development		Landscape Sensitivity to Solar PV Development	
<b>C : Low Farmed Coast and Marsh</b>	Very small (15-25m)	Moderate to High -where the turbine is closely associated with a farmstead.	Very small (<1ha)	Moderate to High -where site is within the curtilage of a property or closely connected to buildings that they serve. High – in areas outside the

				curtilage property or not closely associated with the buildings it is intended to serve.
	Small (26-50m)	High	Small (1<5ha)	High
	Medium (51-75m)	High	Medium (5<10ha)	High
	Large (76-110m)	High	Large (10<15ha)	High
	Very large (111-150m)	High	Very large (15<20ha)	High

Landscape Character Type	Landscape Sensitivity to Wind Turbine Development		Landscape Sensitivity to Solar PV Development	
<b>D : Open Moorland</b>	Very small (15-25m)	High/	Very small (<1ha)	High
	Small (26-50m)	High	Small (1<5ha)	High
	Medium (51-75m)	High	Medium (5<10ha)	High
	Large (76-110m)	High	Large (10<15ha)	High
	Very large (111-150m)	High	Very large (15<20ha)	High
<b>Variations/ issues relevant to separate Landscape Character Areas</b>				

Landscape Character Type	Landscape Sensitivity to Wind Turbine Development		Landscape Sensitivity to Solar PV Development	
<b>E : Farmed and Settled Vale</b>	Very small (15-25m)	Moderate to High where the turbine is closely associated with a farmstead or group of buildings.	Very small (<1ha)	Moderate to High -where site is within the curtilage of a property or closely connected to buildings that they serve. High – in areas outside the curtilage property or not closely associated with the buildings it is intended to serve.
	Small (26-50m)	High	Small (1<5ha)	High
	Medium (51-75m)	High	Medium (5<10ha)	High

	Large (76-110m)	High	Large (10<15ha)	High
	Very large (111-150m)	High	Very large (15<20ha)	High

Landscape Character Type	Landscape Sensitivity to Wind Turbine Development		Landscape Sensitivity to Solar PV Development	
<b>F : Enclosed Farmed Hills with Commons</b>	Very small (15-25m)	Moderate to High where the turbine is closely associated with a farmstead or group of buildings.	Very small (<1ha)	Moderate to High -where site is within the curtilage of a property or closely connected to buildings that they serve. High – in areas outside the curtilage property or not closely associated with the buildings it is intended to serve.
	Small (26-50m)	High	Small (1<5ha)	High
	Medium (51-75m)	High	Medium (5<10ha)	High
	Large (76-110m)	High	Large (10<15ha)	High
	Very large (111-150m)	High	Very large (15<20ha)	High

Landscape Character Type	Landscape Sensitivity to Wind Turbine Development		Landscape Sensitivity to Solar PV Development	
<b>G : Incised Wooded Valleys</b>	Very small (15-25m)	Moderate to High where the turbine is closely associated with a farmstead or group of buildings.	Very small (<1ha)	Moderate to High -where site is within the curtilage of a property or closely connected to buildings that they serve. High – in areas outside the curtilage property or not closely associated with the buildings it is intended to serve.
	Small (26-50m)	High	Small (1<5ha)	High
	Medium (51-75m)	High	Medium (5<10ha)	High
	Large (76-110m)	High	Large (10<15ha)	High

	Very large (111-150m)	High	Very large (15<20ha)	High
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Landscape Character Type	Landscape Sensitivity to Wind Turbine Development		Landscape Sensitivity to Solar PV Development	
	<b>H : Plantation (with Heathland) Hills</b>	Very small (15-25m)	Moderate to High where the turbine is closely associated with a farmstead or group of buildings.	Very small (<1ha)
Small (26-50m)		High	Small (1<5ha)	High
Medium (51-75m)		High	Medium (5<10ha)	High
Large (76-110m)		High	Large (10<15ha)	High
Very large (111-150m)		High	Very large (15<20ha)	High

Landscape Character Type	Landscape Sensitivity to Wind Turbine Development		Landscape Sensitivity to Solar PV Development	
	<b>I : Wooded and Farmed Hills with Combes</b>	Very small (15-25m)	Moderate to High where the turbine is closely associated with a farmstead or group of buildings.	Very small (<1ha)
Small (26-50m)		High	Small (1<5ha)	High
Medium (51-75m)		High	Medium (5<10ha)	High
Large (76-110m)		High	Large (10<15ha)	High
Very large (111-150m)		High	Very large (15<20ha)	High

### 3. Methodology and Assessment Criteria

#### Methodology

The method of approach is based on similar work carried out for North Devon District Council by Land Use Consultants (LUC) in 2014, - adapted to suit Exmoor's unique character, however similar enough to illustrate a consistent approach.

#### Spatial and descriptive framework

Exmoor Landscape Character Types (LCTs) form the spatial framework and primary evidence base for this Landscape Sensitivity Assessment. A desk-based study, drawing on other sources of spatial and descriptive information about the landscape, was carried out by Exmoor National Park's Landscape Specialist, using professional judgment to produce the landscape sensitivity assessments.

#### Development types considered

##### Wind turbines

This Landscape Sensitivity Assessment has been based on the most common horizontal axis three-bladed turbine of the following sizes (height to blade tip), as described in the DLPG Guidance Note

Very small (15-25m)
Small (26-50m)
Medium (51-75m)
Large (76-110m)

##### Field-scale solar photovoltaics (PV)

In terms of solar PV developments, the assessment is based on field scale developments, also described in the DLPG Guidance Note.

Very small (<1ha)
Small (>1-5ha)
Medium (>5-10ha)
Large (>10-15ha)
Very large (>15-20ha)

## Assessment Criteria

In line with the recommendations in [Topic Paper 6](#) (Techniques and Criteria for Judging Capacity and Sensitivity, published jointly by the Countryside Agency and Scottish Natural Heritage), 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 field-scale PV development are taken from the Devon Landscape Policy Group [Advice Note No. 2](#)<sup>1</sup>. These criteria are based on attributes of the landscape most likely to be affected by each development type. The tables below sets out the criteria that have been used for the assessment of landscape sensitivity to the principle of wind energy development (of any size) and solar PV development (of any size). It includes guidance and examples for applying the criteria, which are then verified through professional judgement and field verification to apply to the particular landscape in question.

Table 1 Criteria and guidance for assessing landscape sensitivity to wind energy

<b>Landform and scale</b>				
A smooth gently sloping 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) or pronounced undulations. 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 visually confusing (due to turbines being at varying heights) in the latter types of landscapes.				
<b>Examples of sensitivity ratings</b>				
<b>Lower sensitivity</b>			<b>Higher sensitivity</b>	
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. an undulating landscape, 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	e.g. a landscape with a rugged landform or dramatic landform features (which may be large in scale), or a small scale or intimate

<sup>1</sup> Devon Landscape Policy Group Advice Note No. 2: Accommodating Wind and Solar PV Developments in Devon's Landscape. Guidance on minimising harm to the distinctive character and special qualities of Devon's landscape through sensitive siting and design. Prepared by LUC June 2013

			smaller scale landform	landform
<b>Land cover pattern and presence of human scale features</b>				
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 and / or irregular field sizes and landscapes with frequent human scale features that are traditional of the landscape, such as stone farmsteads and small farm woodlands. This is because large features such as wind turbines may dominate smaller scale traditional features within the landscape.				
<b>Examples of sensitivity ratings</b>				
<b>Lower sensitivity</b>			<b>Higher sensitivity</b>	
e.g. a very large-scale landscape with uniform groundcover and lacking in human scale features	e.g. a landscape with large-scale fields, little variety in land cover and occasional human scale features such as trees and domestic buildings	e.g. a landscape with medium sized fields, some variations in land cover and presence of human scale features such as trees, domestic buildings	e.g. a landscape with irregular small-scale fields, variety in land cover and presence of human scale features such as trees, domestic buildings	e.g. a landscape with a strong variety in land cover and small-scale / irregular in appearance containing numerous human
<b>Tracks / transport pattern</b>				
Landscapes that are devoid of tracks will be particularly sensitive to wind energy development because it will be more difficult to absorb permanent new tracks into the landscape without change to character in these areas. In addition, if a Landscape Character Type has a rural road network which contributes to landscape character (e.g. winding narrow lanes bounded by high hedgebanks or sunken lanes), this aspect of character may be affected by access works to enable HGVs carrying turbines to a site. This characteristic therefore also influences sensitivity.				
<b>Lower sensitivity</b>			<b>Higher sensitivity</b>	
e.g. a landscape containing existing roads and vehicular tracks, and no restrictions in terms of narrow hedged lanes	a landscape containing existing roads and vehicular tracks, and few restrictions in terms of narrow hedged lanes	a landscape containing some existing roads and vehicular tracks, including some restrictions in terms of narrow hedged lanes	a landscape containing few lanes or vehicular tracks, and these are predominantly narrow lanes bounded by high hedgebanks	a landscape devoid of roads or vehicular tracks

**Skylines**

Prominent and distinctive and/or undeveloped skylines, or skylines with important landmark features, 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. Important landmark features on the skyline might include historic features or monuments.  
 Information sources: Exmoor Landscape Character Assessment; fieldwork.

**Examples of sensitivity ratings**

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

**Perceptual qualities**

Landscapes that are relatively remote or tranquil (due to freedom from human activity and disturbance and having a perceived naturalness or a strong feel of traditional rurality with few modern human influences) tend to increase levels of sensitivity to wind energy development compared to landscapes that contain signs of modern development (as the development will introduce new and uncharacteristic features which may detract from a sense of tranquillity and or remoteness/ naturalness).  
 Information sources: Exmoor Landscape Character Assessment; Dark Sky Reserve and Dark Sky Buffer, CPRE’s Tranquillity and Intrusion mapping; Ordnance Survey base maps (presence / absence of development, settlement, structures).

**Examples of sensitivity ratings**

Lower sensitivity		Higher sensitivity		
e.g. a major settlement in	e.g. a minor	e.g. a small historic	A remote farmstead well	e.g. a landscape remote

which there is a considerable amounts of activity, traffic and noise throughout the day. Contains are range of building styles and periods, contains signage. Well lit at night time.	settlement containing a range of modern and historic buildings, with a moderate amount of activity and noise. Traffic passes through the settlement at regular intervals throughout the day.	settlement with a minor highway and small amounts of activity or occasional activity.	away from the highway in a quiet location.	from habitation and highways from which elements of manmade activity are totally absent. Dark night time sky free from light spill from outside.
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### Historic Landscape Character

Due to intrinsic historic landscape character significance, or potential for preserved archaeological evidence, historic landscape types (HLTs) such as rough ground with earlier remains, prehistoric fields, watermeadows, and fields with a medieval historic character type such as strip fields, enclosures (strips) and enclosures – medieval have a higher sensitivity to larger scale wind energy development due to their strong historic qualities. Some more recent but discrete enclosed landscapes may also be sensitive, such as ‘barton’ fields. Lower sensitivity landscapes include industrial landscapes, coniferous plantations, airfields, and post medieval/modern enclosures. Information sources: Devon Landscape Character Assessment; Devon HLC.

### **Examples of sensitivity ratings**

Lower sensitivity		Higher sensitivity		
e.g. majority of the landscape covered by least sensitive HLTs	e.g. majority of the landscape covered by lower sensitivity HLTs, but may include some small areas of higher sensitivity	e.g. majority of the landscape covered by medium sensitivity HLTs or a mixture of higher and lower sensitivity HLTs	e.g. majority of the landscape covered by higher sensitivity HLTs, but may include some small areas of lower sensitivity	e.g. the majority of the landscape covered by higher sensitivity HLTs

### Scenic and special qualities

Landscapes that have a high scenic quality (which may be recognised as a National Park, Heritage Coast or AONB) will be more sensitive than landscapes of low scenic quality. This is particularly the case where their special qualities (as recorded in the Landscape

Character Assessment or designation documents) are likely to be affected by wind energy development. Scenic and special qualities may relate to landscapes that are not designated as well as landscapes designated for their natural beauty. Information sources: National Park 'special qualities' and AONB 'Statements of Significance' in Management Plans; Landscape Character Assessment 'special qualities and features' information.

**Examples of sensitivity ratings**

<b>Lower sensitivity</b>		<b>Higher sensitivity</b>		
landscape has low scenic quality such as an industrial area or despoiled land– special qualities will not be affected by solar PV development	landscape has low-medium scenic quality, or special qualities are unlikely to be affected by solar PV development	landscape has a medium scenic quality and some of the special qualities may be affected by solar PV development	landscape has a medium-high scenic quality – most of the special qualities are likely to be affected by solar PV development	area has a high scenic quality (likely to be recognised as National Park/ AONB/ Heritage Coast) and the scenic qualities will be affected by solar PV development

Table 2 Criteria and guidance for assessing landscape sensitivity to solar PV development

<b>Landform</b>				
A flat or gently undulating lowland landscape or extensive plateau is likely to be less sensitive to solar PV development than 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, especially higher slopes.				
<b>Examples of sensitivity ratings</b>				
<b>Lower sensitivity</b>			<b>Higher sensitivity</b>	
e.g. a lowland flat landscape or extensive plateau	e.g. a gently undulating lowland landscape or plateau	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
<b>Sense of openness / enclosure</b>				
A landscape with a strong sense of enclosure (e.g. provided by land cover such as woodland or high hedgebanks) is likely to be less sensitive to solar PV development than an open and unenclosed landscape because the development will be less easily perceived, especially at a distance, in an enclosed landscape.				
<b>Examples of sensitivity ratings</b>				
<b>Lower sensitivity</b>			<b>Higher sensitivity</b>	
e.g. a very well enclosed landscaped – perhaps provided by thick, high hedgebanks and hedgerows, tree belts and woodland	e.g. relatively high levels of enclosure provided by hedgebanks and thick hedgerows with frequent hedgerow trees	e.g. a landscape with some open and some more enclosed areas – likely to be a rural landscape with some hedgebanks and hedgerows and tree belts	e.g. an open landscape with little sense of enclosure (low, few or no hedgebanks or hedgerows, few trees)	e.g. an extremely open landscape such as an unenclosed plateau with no field boundaries or trees
<b>Land cover</b>				

Since PV panels introduce a new land cover (of built structures) , landscapes containing existing hard surfacing or built elements (e.g. urban areas, brownfield sites or large-scale horticulture) are likely to be less sensitive to field-scale solar PV development than highly rural or naturalistic landscapes.

**Examples of sensitivity ratings**

Lower sensitivity		Higher sensitivity		
e.g. an urban or 'brownfield' landscape	e.g. an area of large scale horticulture	e.g. a rural landscape, perhaps with some brownfield sites or urban influences	e.g. a rural landscape , perhaps with some areas of semi-natural land cover	e.g. a landscape dominated by semi-natural land cover

**Perceptual qualities**

Landscapes that are relatively remote or tranquil (due to freedom from human activity and disturbance and having a perceived naturalness or a strong feel of traditional rurality with few modern human influences) tend to increase levels of sensitivity to solar PV development compared to landscapes that contain signs of modern development (as the development will introduce new and uncharacteristic features which may detract from a sense of tranquillity and or remoteness/ naturalness).

**Examples of sensitivity ratings**

Lower sensitivity		Higher sensitivity		
e.g. a major settlement in which there is a considerable amounts of activity, traffic and noise throughout the day. Contains are range of building styles and periods, contains signage. Well lit at night time.	e.g. a minor settlement containing a range of modern and historic buildings, with a moderate amount of activity and noise. Traffic passes through the settlement at regular intervals throughout the day.	e.g. a small historic settlement with a minor highway and small amounts of activity or occasional activity.	A remote farmstead well away from the highway in a quiet location.	e.g. a landscape remote from habitation and highways from which elements of manmade activity are totally absent. Dark night time sky free from light spill from outside.

**Historic Landscape Character**

Due to intrinsic historic landscape character significance, or potential for preserved archaeological evidence, historic landscape types (HLTs) such as rough ground with earlier remains, prehistoric fields, water meadows, and fields with a medieval historic character type such as strip fields, enclosures (strips) and enclosures – medieval have a higher sensitivity to larger scale solar PV development due to their strong historic qualities. Some more recent but discrete enclosed landscapes may also be sensitive, such as ‘barton’ fields. Lower sensitivity landscapes include industrial landscapes, coniferous plantations, airfields, and post medieval/modern enclosures.

***Examples of sensitivity ratings***

<b>Lower sensitivity</b>		<b>Higher sensitivity</b>		
e.g. majority of the landscape covered by least sensitive HLTs	e.g. majority of the landscape covered by lower sensitivity HLTs, but may include some small areas of higher sensitivity	e.g. majority of the landscape covered by medium sensitivity HLTs or a mixture of higher and lower sensitivity HLTs	e.g. majority of the landscape covered by higher sensitivity HLTs, but may include some small areas of lower sensitivity	e.g. the majority of the landscape covered by higher sensitivity HLTs

**Scenic and special qualities**

Landscapes that have a high scenic quality (which may be recognised as a National Park, Heritage Coast or AONB) will be more sensitive than landscapes of low scenic quality. This is particularly the case where their special qualities (as recorded in the Landscape Character Assessment or designation documents) are likely to be affected by solar PV development. Scenic and special qualities may relate to landscapes that are not designated as well as landscape designated for their natural beauty.

***Examples of sensitivity ratings***

<b>Lower sensitivity.</b>		<b>. Higher sensitivity</b>		
landscape has low scenic quality such as an industrial area or despoiled land– special qualities will not be affected by solar PV development	landscape has low-medium scenic quality, or special qualities are unlikely to be affected by solar PV development	landscape has a medium scenic quality and some of the special qualities may be affected by solar PV development	landscape has a medium-high scenic quality – most of the special qualities are likely to be affected by solar PV development	area has a high scenic quality (likely to be recognised as National Park/ AONB/ Heritage Coast) and the scenic qualities will be affected by solar PV development

## The discussion on landscape sensitivity

Once the criteria have been assessed individually, the results are drawn together into a summary discussion on landscape sensitivity to the principle of the renewable energy development for that LCT.

If one criterion has a particularly strong influence on landscape sensitivity this is drawn out in the discussion (an example might be a landscape with prominent/ dominant skylines, or particularly high levels of tranquillity or remoteness).

In any given LCT 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 is likely to present 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'. These issues are brought out in the overall discussion on landscape sensitivity.

The sensitivity assessment is not influenced by existing renewable energy developments in the landscape which pre-date this study.

## Judging landscape sensitivity to different sizes of development

The next stage of the assessment is to come to a judgement on landscape sensitivity to different sizes/scales of development (height of wind turbines and size of solar PV development). In the case of wind turbines, notes are also provided in relation to sensitivity to different turbine cluster sizes.

Sensitivity is judged on a five-point scale as shown in the table below. These sensitivity ratings can apply to any landscape in England – they are not specific to Exmoor.

### Sensitivity levels and definitions

Sensitivity Level	Definition
<b>High (H)</b>	The key characteristics and qualities of the landscape are highly sensitive to change from the type and scale of renewable energy being assessed
<b>Moderate-High (M-H)</b>	The key characteristics and qualities of the landscape are sensitive to change from the type and scale of renewable

	energy being assessed
<b>Moderate (M)</b>	Some of the key characteristics and qualities of the landscape are sensitive to change from the type and scale of renewable energy being assessed.
<b>Low-Moderate (L-M)</b>	Few of the key characteristics and qualities of the landscape are sensitive to change from the type and scale of renewable energy being assessed.
<b>Low (L)</b>	Key characteristics and qualities of the landscape are robust

### Presentation of results

The full landscape sensitivity assessments for each of the landscape character types (LCTs) are presented in tabular format and a summary of the results of the landscape sensitivity assessment is also presented.

# Detailed assessments of landscape sensitivity to wind energy and solar PV development by Landscape Type

## A : High Coastal Heaths

	Low		Moderate		High
<b>Landform and scale</b>					x
	Pockets of coastal heath set along the Exmoor coast with rounded tops and steep sloping sides running down to the sea. Medium scale, open and undulating.				
<b>Land cover pattern / presence of human scale features</b>					x
	Mostly unenclosed. Coastal heath vegetation comprising; patchy matrix of heather, gorse, bracken and scrub. Little to no human habitation.				
<b>Tracks / transport pattern</b>					x
	Some minor roads and tracks, however, much of the land is inaccessible.				
<b>Skylines</b>					x
	Extremely prominent skyline, visible from within the character type and from the wider landscape. Visible from the sea, Wales and the Quantock Hills AONB.				
<b>Perceptual qualities</b>					x
	Tranquil landscape with some areas evoking a wild and remote character. Appreciated by visitors for views out, isolation and wilderness experience.				
<b>Historic landscape character</b>					x
	Mostly unenclosed. Common land or part of large estates. Visible evidence of ancient habitation.				
<b>Scenic and special qualities</b>					x
	Heritage coast, National Park, south west coast path				

<b>Discussion on Sensitivity to wind turbines</b>					x
	This character type is highly sensitive to wind energy development of all sizes				
<b>Sensitivity to different turbine heights</b>	Very small (15-25m)				H
	Small (26-50m)				H
	Medium (51-75m)				H
	Large (76-110m)				H
	Very large (111-150m)				H
<b>Discussion on Sensitivity to solar PV development</b>	This character type is highly sensitive to solar PV development of all sizes.				
<b>Sensitivity to different size solar PV development</b>	Very small (<1ha)				H
	Small (1<5ha)				H
	Medium (5<10ha)				H
	Large (10<15ha)				H
	Very large (15<20ha)				H

## B : High Wooded Coast, Combes and Cleaves

	Low		Moderate		High
<b>Landform and scale</b>					x
	Wooded coastal cliffs and river valleys. Dramatic landform with steep convoluted coastal slopes and deeply-incised narrow valleys and combes				
<b>Land cover pattern / presence of human scale features</b>			x		x
	Dominated by tree cover with continuous tracts of predominantly deciduous woodland, much of which is Ancient Woodland				
<b>Tracks / transport pattern</b>			x		
	Primary and secondary roads following watercourses or snaking up hill sides.				
<b>Skylines</b>					x
	In some parts, extremely prominent skyline, visible from within the character type and the wider landscape. Seen from the sea, Wales and the Quantock Hills AONB, Skyline usually clothed in tree cover.				
<b>Perceptual qualities</b>					x
	Away from the larger coastal villages and busy road, the landscape has an overriding tranquil character. The character area B4 which incorporates the wooded slopes west of Porlock is noted for its association with the poet Samuel Coleridge and in particular with his well known work "Kublai Khan"				
<b>Historic landscape character</b>					x
	Small-scale field pattern, interspersing the woodland, reflecting medieval enclosure of the landscape (although some boundaries have been modified from the 17th century onwards)				
<b>Scenic and special qualities</b>					x
	Heritage coast, National Park,				

<b>Discussion on Sensitivity to wind turbines</b>					x
	The landscape is considered to be sensitive to all size turbines, however in exceptional circumstances, in some locations, very small turbines may be justified where they can be made to appear to be in close association with existing development.				
<b>Sensitivity to different turbine heights</b>	Very small (15-25m)				M/H
	Small (26-50m)				H
	Medium (51-75m)				H
	Large (76-110m)				H
	Very large (111-150m)				H
<b>Discussion on Sensitivity to solar PV development</b>	This character type is sensitive to solar PV development in the open landscape, however, where development can be closely associated to buildings they are intended to serve and where the development has no adverse visual effects, very small scale solar PV developments may be justified.				
<b>Sensitivity to different size solar PV development</b>	Very small (<1ha)				M/H
	Small (1<5ha)				H
	Medium (5<10ha)				H
	Large (10<15ha)				H
	Very large (15<20ha)				H

### C: Low Farmed Coast and Marsh

	Low		Moderate		High
<b>Landform and scale</b>			x		
	Open coastal marsh, giving way to enclosed, strikingly flat farmland. Farmland defined by small fields				
<b>Land cover pattern / presence of human scale features</b>				x	
	Treeless salt marshes. Inland, enclosed farmland of improved pastures and some cereal cropping.				
<b>Tracks / transport pattern</b>			x		
	Primary and secondary roads. Parallel drove roads lead to the marsh.				
<b>Skylines</b>					x
	From within the character type, looking north, the landscape forms the Skyline.				
<b>Perceptual qualities</b>					x
	The landscape is not remote, however it has a tranquil character.				
<b>Historic landscape character</b>					x
	Small-scale field pattern, interspersing the woodland, reflecting medieval enclosure of the landscape (although some boundaries have been modified from the 17th century onwards). Porlock Manor Estate.				
<b>Scenic and special qualities</b>					x
	Heritage coast, National Park. Southwest Coast Path. Conservation Areas of Porlock Weir and Bossington.				

<b>Discussion on Sensitivity to wind turbines</b>					x
	The landscape is considered to be sensitive to all size turbines, however in exceptional circumstances, in some locations, small turbines could be justified where they can be made to appear to be in close association with existing development.				
<b>Sensitivity to different turbine heights</b>	Very small (15-25m)				M/H
	Small (26-50m)				H
	Medium (51-75m)				H
	Large (76-110m)				H
	Very large (111-150m)				H
<b>Discussion on Sensitivity to solar PV development</b>	This character type is sensitive to solar PV development in the open landscape, however, where development can be located within the curtilage of an existing development and where the development has no adverse visual effects, there may be some capacity.				
<b>Sensitivity to different size solar PV development</b>	Very small (<1ha)				M/H
	Small (1<5ha)				H
	Medium (5<10ha)				H
	Large (10<15ha)				H
	Very large (15<20ha)				H

## D: Open Moorland

	Low		Moderate		High
<b>Landform and scale</b>					x
	Vast, open, upland landscape. Large scale, broad, gently undulating plateau and rounded hilltops. Cut into by deeply carved moorland valleys.				
<b>Land cover pattern / presence of human scale features</b>					x
	Predominantly heather and grass with scrub in some the valleys. Often wet. General absence of settlement with the exception of individual farm holdings. Rough grazing using Exmoor ponies, sheep and cattle.				
<b>Tracks / transport pattern</b>					x
	Some minor roads and tracks. Much is inaccessible.				
<b>Skylines</b>					x
	Extremely prominent skyline, visible from within the character type and the wider landscape. The highest parts of Exmoor visible from the Quantock Hills AONB, Dartmoor National Park and the Blackdown Hills AONB.				
<b>Perceptual qualities</b>					x
	Tranquil landscape with some areas, evoking a wild and remote character. Appreciated by visitors for views out, isolation and wilderness experience. Particularly well-used sites include, Haddon Hill, Dunkery Beacon, Simonsbath, Winsford Hill, Shilstone Hill and Brendon Common.				
<b>Historic landscape character</b>					x
	Mostly unenclosed. Common land or part of large estates; Exmoor Forest; Holnicote Estate; Molland				

	Estate and Pixton Estate. Visible evidence of ancient habitation.				
<b>Scenic and special qualities</b>					x
	National Park.				
<b>Discussion on Sensitivity to wind turbines</b>					
	This character type is highly sensitive to wind energy development of all sizes				
<b>Sensitivity to different turbine heights</b>	Very small (15-25m)				H
	Small (26-50m)				H
	Medium (51-75m)				H
	Large (76-110m)				H
	Very large (111-150m)				H
<b>Discussion on Sensitivity to solar PV development</b>	This character type is highly sensitive to solar PV development of all sizes.				
<b>Sensitivity to different size solar PV development</b>	Very small (<1ha)				H
	Small (1<5ha)				H
	Medium (5<10ha)				H
	Large (10<15ha)				H
	Very large (15<20ha)				H

## E. Farmed and Settled Vale

	Low		Moderate		High
<b>Landform and scale</b>				x	
	A medium scale landscape with a variable landform incorporating a flat floodplain and undulating high vale with occasional small hills or hummocks. The landscape is enclosed within surrounding hills of plantations and moorland.				
<b>Land cover pattern / presence of human scale features</b>				x	
	Agriculture is a mix of arable and pasture grazed by sheep, cattle and horses. Well-treed character. Tall hedgebanks. Much of the landscape has been within the ownership of one estate for many centuries resulting in a unified approach to building and landuse management over a large area and creating a distinctive character. Largely free of modern development.				
<b>Tracks / transport pattern</b>				x	
	The often-busy A39 coast road from Minehead to Lynton passes through the landscape along with minor roads, lanes, tracks and footpaths.				
<b>Skylines</b>			x		
	The surrounding hills, plantations and moorland form the skyline along with the small hillocks and higher parts of the high vale.				
<b>Perceptual qualities</b>				x	
	Rich and fertile farmland managed in a traditional way, with a strong sense of history Very little modern development. Now much of the land is in the ownership of the National Trust.				
<b>Historic landscape character</b>					x
	Mostly enclosed traditional agriculture. Much forming part of the Holnicote Estate with some land around Dunster within the Lutrell estate. Many historic villages, settlements and farmsteads.				
<b>Scenic and</b>					x

<b>special qualities</b>	National Park, National Trust owned estate. Many Conservation Areas. A landscape that is viewed from the surrounding high ground as well as from within the character type. Popular with large numbers of visitors. Many public car parks and viewpoints				
<b>Discussion on Sensitivity to wind turbines</b>				x	
	The landscape is considered to be sensitive to all size turbines. In some locations however, where the turbine can be made to appear to be in close association with existing development and where effects on visual amenity are limited, it may be possible to accommodate very small turbines.				
<b>Sensitivity to different turbine heights</b>	Very small (15-25m)				M/H
	Small (26-50m)				H
	Medium (51-75m)				H
	Large (76-110m)				H
	Very large (111-150m)				H
<b>Discussion on Sensitivity to solar PV development</b>	This character type is sensitive to solar PV development in the open landscape, however, where development can be closely associated to the building it will serve and has no adverse visual effects, it may be possible to accommodate very small solar PV developments.				
<b>Sensitivity to different size solar PV development</b>	Very small (<1ha)				M/H
	Small (1<5ha)				H
	Medium (5<10ha)				H
	Large (10<15ha)				H
	Very large (15<20ha)				H

## F. Enclosed Farmed Hills with Commons

	Low		Moderate		High
<b>Landform and scale</b>					x
	A medium scale landscape defined by broad rolling terrain (of hills and ridges) Fields become noticeably smaller towards valleys. Fields on higher ground are more geometric in shape.				
<b>Land cover pattern / presence of human scale features</b>					x
	Permanent pasture enclosed by beech hedge banks. Areas of open commons occur with fields demarcated by post and wire fencing.  Agricultural land use defined by pasture for sheep and cattle - horses are also present. There are some areas of arable land but these are very much the exception. Villages and hamlets are, for the most part, located within the valley landscapes.				
<b>Tracks / transport pattern</b>					x
	Narrow rural lanes				
<b>Skylines</b>					x
	Strong influence of adjacent landscapes of Open Moorland, Incised Wooded Valleys and High Wooded Coast, Combes and Cleaves. Tall beech hedges create a strong sense of enclosure, restricting views. Slopes visible.				
<b>Perceptual qualities</b>					x
	Tranquil, expansive landscape – covering a larger area of the National Park, as such, it is a very familiar landscape scene on Exmoor.				
<b>Historic landscape character</b>				x	
	Fields divided during the 18th to 21st centuries. Much enclosure associated with the Knight Family estate in Simonsbath.				
<b>Scenic and</b>					x

<b>special qualities</b>	National Park, a number of Conservation Areas				
<b>Discussion on Sensitivity to wind turbines</b>					x
	The landscape is considered to be sensitive to all size turbines. In some locations however, where the turbine can be made to appear to be in close association with existing development and where effects on visual amenity are limited, it may be possible to accommodate very small turbines.				
<b>Sensitivity to different turbine heights</b>	Very small (15-25m)				M/H
	Small (26-50m)				H
	Medium (51-75m)				H
	Large (76-110m)				H
	Very large (111-150m)				H
<b>Discussion on Sensitivity to solar PV development</b>	This character type is sensitive to solar PV development in the open landscape, however, where development can be closely associated to the building it will serve and has no adverse visual effects, it may be possible to accommodate very small solar PV developments.				
<b>Sensitivity to different size solar PV development</b>	Very small (<1ha)				M/H
	Small (1<5ha)				H
	Medium (5<10ha)				H
	Large (10<15ha)				H
	Very large (15<20ha)				H

## G. Incised Wooded Valleys

	Low		Moderate		High
<b>Landform and scale</b>				x	
	Dramatic valleys with steep-sloping sides and relatively narrow but open valley floors. Spaces are often small scale				
<b>Land cover pattern / presence of human scale features</b>			x		
	<p>The valley sides are cloaked in woodland – mixed, deciduous and coniferous. There is considerable Ancient Woodland coverage. The valley bottoms are lush with riparian vegetation flanking the rivers and ferns typifying woodland and woodland edge flora. Game plots on upper slopes.</p> <p>Settlement is small-scale and picturesque. Villages are typically nucleated and nestled in the shelter of the valley bottoms.</p>				
<b>Tracks / transport pattern</b>			x		
	Secondary and primary roads typically occur in the valley bottoms, following the course of the rivers.				
<b>Skylines</b>			x		
	The woodland cover and enveloping sides of the valleys forges a dark and enclosing landscape character. Upper slopes form the skyline.				
<b>Perceptual qualities</b>				x	
	Tranquillity is variable depending on proximity to the valley roads.				
<b>Historic landscape character</b>				x	
	Character greatly influenced by a culture of hunting and game shooting. Many estates including Pixton, and Miltons.				
<b>Scenic and special qualities</b>					x
	National Park. Many villages are Conservation Areas.				
<b>Discussion on Sensitivity to</b>					x
	The landscape is considered to be highly sensitive				

<b>wind turbines</b>	to all but very small turbines.	
	The landscape is considered to be of moderate / high sensitivity to very small turbines where these can be made to appear to be in close association with existing development and where effects on visual amenity are limited.	
<b>Sensitivity to different turbine heights</b>	Very small (15-25m)	M/H
	Small (26-50m)	H
	Medium (51-75m)	H
	Large (76-110m)	H
	Very large (111-150m)	H
<b>Discussion on Sensitivity to solar PV development</b>	The landscape is considered to be highly sensitive to all but very small scale solar PV developments.	
	The landscape is of moderate/high sensitivity to very small scale PV developments where these are closely associated with to the buildings they are intended to serve and where effects on visual amenity are limited.	
<b>Sensitivity to different size solar PV development</b>	Very small (<1ha)	M/H
	Small (1<5ha)	H
	Medium (5<10ha)	H
	Large (10<15ha)	H
	Very large (15<20ha)	H

## H. Plantations (with heathland) Hills

	Low		Moderate		High
<b>Landform and scale</b>				x	
	A series of interconnected, moderately high hills (balls) and ridges.				
<b>Land cover pattern / presence of human scale features</b>				x	
	Covered by dense, managed coniferous plantations and some mixed woodland. Some surviving pockets of heathland.				
<b>Tracks / transport pattern</b>			x		
	Minor country lanes and timber management tracks.				
<b>Skylines</b>			x		
	Highly restricted views generally, due to density of tree cover, although surviving open areas offer inland and coastal views and the landscape will form the skyline from these areas.				
<b>Perceptual qualities</b>				x	
	Tranquil landscape character – remote in places.				
<b>Historic landscape character</b>				x	
	Formerly an area of heather moor. There are a number of archaeological sites e.g. Bat's Castle and Gallox Hill. Dunster Deer Park.				
<b>Scenic and special qualities</b>					x
	National Park.				
<b>Discussion on Sensitivity to wind turbines</b>					x
	The landscape is considered to be highly sensitive to all but very small size turbines.  In some locations however, it may be possible to accommodate very small turbines. Appropriate sites would need to avoid the pockets of remaining heathland, the more remote / tranquil areas and the				

	skyline. The turbines would also need to appear to be in close association with existing development and in locations where they have no adverse effects on visual amenity.	
<b>Sensitivity to different turbine heights</b>	Very small (15-25m)	M/H
	Small (26-50m)	H
	Medium (51-75m)	H
	Large (76-110m)	H
	Very large (111-150m)	H
<b>Discussion on Sensitivity to solar PV development</b>	The landscape is considered to be highly sensitive to all but very small solar PV developments.  In some locations, it may be possible to accommodate very small solar PV developments. Appropriate sites would need to avoid the pockets of remaining heathland and the more remote / tranquil parts of the landscape. The development would also need to be closely associated with the buildings they intend to serve and have no adverse effects on visual amenity.	
<b>Sensitivity to different size solar PV development</b>	Very small (<1ha)	M/H
	Small (1<5ha)	H
	Medium (5<10ha)	H
	Large (10<15ha)	H
	Very large (15<20ha)	H

## I. Wooded and Farmed Hills with Combes

	Low		Moderate		High
<b>Landform and scale</b>				x	
	Interconnected rounded hills of the Brendons with steep valley sides and low-lying narrow combe valley floors.				
<b>Land cover pattern / presence of human scale features</b>				x	
	Rolling hillsides with a clear pattern of field enclosure. Fields are medium-sized and delineated by banked hedges. Linear hamlets and small villages are dispersed throughout the area. The landscape has significant woodland cover—deciduous, coniferous and mixed – ranging from geometric plantations to sinuous swathes.				
<b>Tracks / transport pattern</b>			x		
	The B3224 and B3190, support relatively heavy traffic flow at times. The secondary roads and rural lanes defining the road network typically follow the course of the waters and valleys.				
<b>Skylines</b>			x		
	Open hilltops offer extensive coastal and inland panoramas. Clear views beyond the National Park into West Somerset and across the Bristol Channel to Wales. The higher parts of the northern slopes landscape will form the skyline from these areas.				
<b>Perceptual qualities</b>				x	
	Tranquil away from B3190 and remote in places.				
<b>Historic landscape character</b>				x	
	Parkland character due to the Grade II listed Parks and Gardens surrounding Nettlecombe Court and Deer Park				
<b>Scenic and special qualities</b>					x
	National Park.				

<b>Discussion on Sensitivity to wind turbines</b>					x
	The landscape is considered to be sensitive to all size turbines. In some locations however, where the turbine can be made to appear to be in close association with existing development and where effects on visual amenity are limited, it may be possible to accommodate very small turbines.				
<b>Sensitivity to different turbine heights</b>	Very small (15-25m)				M/H
	Small (26-50m)				H
	Medium (51-75m)				H
	Large (76-110m)				H
	Very large (111-150m)				H
<b>Discussion on Sensitivity to solar PV development</b>	This character type is sensitive to solar PV development in the open landscape, however, where development can be closely associated with the buildings they intend to serve and where this has no adverse visual effects, it may be possible to accommodate very small solar PV developments.				
<b>Sensitivity to different size solar PV development</b>	Very small (<1ha)				M/H
	Small (1<5ha)				H
	Medium (5<10ha)				H
	Large (10<15ha)				H
	Very large (15<20ha)				H