6. Summary of findings and recommendations

Introduction

6.1 This section of the report summarises the key findings of the sensitivity assessment undertaken as part of the study. It addresses the landscape and visual issues associated with wider strategic planning of wind farm and turbine developments in Moray and outlines recommendations for a landscape strategy.

Key findings of the sensitivity assessment

6.2 The landscape capacity study for wind farms and turbines has considered the sensitivity of landscape character types within Moray to wind turbines up to 130m (blade tip) height. While the landscape character types used in the study were informed by the Moray and Nairn landscape assessment (1998), the boundaries of character types have been more robustly defined at a detailed level and the characterisation in this capacity study also fills in gaps arising from changes made to local authority boundaries since 1998. A number of the character types defined in the Moray and Nairn landscape assessment have also been sub-divided and some reclassified to better reflect local character and context and also potential issues in relation to operational and consented wind farm developments for the purposes of this study. This is explained in detail in section 3 of this report.

6.3 The sensitivity assessment considered sensitivities related to landscape character, with key characteristics of landscape context, scale, landform, landscape pattern, built environment, perceptual qualities, visual amenity and cumulative effects with existing and consented wind farm developments forming the key assessment criteria. More general potential cumulative issues that could arise with multiple developments of all scales were additionally considered in the assessment findings.

6.4 The following development typologies were considered in the sensitivity assessment:

- ***Large:*** Turbines between 80m to 130m height to blade tip
- ***Medium:*** Turbines between 50m and 80m height to blade tip
- ***Small-medium:*** Turbines between 35-50m height to blade tip
- ***Small:*** Turbines between 20-35m height to blade tip.

6.5 Operational and consented wind farm developments within Moray are listed in section 2 of this report. Those either sited within each landscape character type or within the surrounding area are described in the related sensitivity assessment, set out in the detailed tables within the Appendix Report and summarised in this Main Study Report. Cumulative effects likely to arise with operational and consented wind farm/turbine developments and any potential cumulative issues that may additionally apply, are considered in relation to each landscape character type. The guidance following the summary of sensitivity provides recommendations for siting different development typologies in the landscape and, where relevant, potential constraints for development where there is a context of operational, consented and proposed wind farms.

6.6 Sensitivity to different development typologies was scored on a five point scale of High, High-medium, Medium, Medium-low and Low against a range of different

landscape and visual criteria. An overall sensitivity rating for each landscape character type was then reached using professional judgement in considering the weight of evidence in terms of the sensitivities identified in the assessment rather than a numerical scoring system.

6.7 The following tables set out the overall findings on sensitivity for large and medium typologies within all landscape character types situated in Moray.

Large typology (80m-130m high turbines)	
Sensitivity	**Character type**
High	*Coastal margin (1-3), Coastal farmland with rolling hills (4a), Rolling farmland and forests (5), Rolling farmland and forests with valleys (5a), Rolling farmland and forests with low hills (5b), Narrow wooded valley (6), Broad farmed valley (7), Upland farmland (8), Valleys within upland farmland (8b), Open uplands with steep slopes (10a)*
High-medium	*Coastal farmland (4), Broad forested hills within upland farmland (8a), Open uplands (10), Open uplands with settled glens (10b)*
Medium	*Upland moorland and forestry (9)*
Medium-low	-
Low	-

Medium typology (50m-80m high turbines)	
Sensitivity	**Character type**
High	*Coastal margin (1-3), Coastal farmland with rolling hills (4a), Rolling farmland and forests (5), Rolling farmland and forests with valleys (5a), Rolling farmland and forests with low hills (5b), Narrow wooded valley (6), Broad farmed valley (7), Upland farmland (8), Valleys within upland farmland (8b),*
High-medium	*Coastal farmland (4), Open uplands (10), Open uplands with steep slopes (10a)*
Medium	*Broad forested hills within upland farmland (8a), Upland moorland and forestry (9), Open uplands with settled glens (10b)*
Medium-low	-
Low	-

6.8 The following tables set out overall sensitivity to the small-medium and small development typologies. It should be noted that detailed assessment of these smaller typologies has not been undertaken for sparsely settled upland character types (8a, 9, 10 and 10a), as explained in section 2 of this report.

Small-medium typology (35m-50m high turbines)	
Sensitivity	**Character type**
High	*Coastal margin (1-3)*
High-medium	*Coastal farmland with rolling hills (4a), Rolling farmland and forests (5), Rolling farmland and forests with valleys (5a), Rolling farmland and forests with low hills (5b), Narrow wooded valley (6), Broad farmed valley (7), Upland farmland (8), Valleys within upland farmland (8b)*
Medium	*Coastal farmland (4), Upland farmland (8)*
Medium-low	*Open uplands with settled glens (10b)*
Low	-

Small typology (20m-35m high turbines)	
Sensitivity	**Character type**
High	-
High-medium	*Coastal margin (1-3),*
Medium	*Coastal farmland with rolling hills (4a), Rolling farmland and forests (5), Rolling farmland and forests with valleys (5a), Rolling farmland and forests with low hills (5b), Broad farmed valley (7), Valleys within upland farmland (8b)*
Medium-low	*Coastal farmland (4), Narrow wooded valley (6), Upland farmland (8),*
Low	*Open uplands with settled glens (10b)*

6.9 Turbines below 20m relate better to the scale of woodlands, mature trees and buildings in more settled landscapes, and there are therefore fewer constraints associated with this typology in general.

How to interpret the sensitivity scores

6.10 Caution is needed in interpreting the combined sensitivity scores set out in the tables above as these represent an average across landscape character types. Considerable variation can occur across these landscapes and the detailed sensitivity assessments should therefore be read and fully reviewed in terms of specific constraints and opportunities when considering individual development proposals. The assessment identifies constraints in analysis at a strategic scale and potential developers would need to demonstrate how they have dealt with potential effects on the constraints identified in the sensitivity assessment when preparing proposals.

6.11 Landscapes with a 'High' combined score will present major landscape and visual constraints to the specific development typology assessed, with significant adverse impacts likely to occur in relation to the majority of key sensitivity criteria. A 'High-medium' combined sensitivity indicates a landscape where the constraints are such that there would be likely unavoidable significant adverse impacts on some key criteria despite other criteria being potentially less sensitive to the development typology or where there is only limited scope for development in only a relatively small part of the landscape character type.

6.12 A landscape accorded 'Medium' sensitivity would have increased opportunities for wind farm/turbine development, although there would still be some constraints (including any cumulative effects) which would be likely to restrict the geographic scope for development and/or the ability to accommodate multiple developments. 'Medium-low' sensitivity landscapes would have fewer constraints and therefore present greater scope for accommodating multiple developments, although careful siting and design would still be necessary to mitigate impacts on more sensitive landscape features or limit visual intrusion in some instances. No landscapes with a low sensitivity to any of the development typologies considered in the study were identified in the assessment.

6.13 The findings on landscape and visual sensitivity set out for each landscape character type are based on the present situation with operational and consented wind farms and turbine development taken into account. As additional wind farm and turbine

developments occur in future within Moray, sensitivities may change and periodic monitoring of the cumulative landscape and visual situation is therefore essential.

Strategic Landscape Issues

Introduction

6.14 The sensitivity assessment identifies constraints and opportunities within each character type/sub-type. Although landscape context is considered as one of the key sensitivity criteria, the assessment essentially relates to specific landscapes and any effect on immediately adjacent types in isolation. It is important to also take into account the experience and appreciation of the landscape of Moray as a whole and to 'stand back' from individual assessments and consider the wider implications of the combined conclusions of the individual assessments. The text which follows provides this landscape overview, summarises current issues relating to wind farm development and also addresses strategic cumulative landscape and visual effects of wind farm and turbine development before listing key strategic landscape recommendations.

Key features of the Moray landscape

6.15 We have identified a number of distinctive landscape features which recur across Moray (these are generally spread across landscape character types) and have highlighted these in the sensitivity assessments of each landscape character type in this study. We have focused on landscape features which could potentially be significantly and adversely affected by wind energy development. These features are briefly described in the following text and their location is indicated on Figure 3.

6.16 There are a number of well-defined, steep-sided hills which form prominent 'landmark' features seen across Moray. These are Knock Hill, Bin of Cullen, Meikle Balloch, Ben Rinnes (together with Little Conval and Meikle Conval), The Buck, Ben Aigan, Romach Hill, Mill Buie, Carn Kitty, Roy's Hill, Carn na Cailliche, Brown Muir, the Knock of Braemoray and Carn Biorach but also the smaller hills of Binn Hill, Tappoch and Quarry Wood which stand out within the low-lying 'Coastal Farmland' (4). Views of these hills recur across Moray. They are both highly visible and easily recognisable landmarks. Many also form visual 'buffers' to less prominent upland areas, or form the backdrop to settlements, small scale valleys and the coast. These landmark hills are highly sensitive to wind turbine development sited on or near them as this would be visually prominent in views from roads and settlement within adjacent well-settled landscapes and would detract from their distinct form and character.

6.17 The coast and wider seascape of the Moray Firth is another key landscape feature. The coast includes extensive stretches of natural coastline and also features a distinctive pattern of historic fishing settlements. Although influenced in places by MOD development, the 'Coastal Margin' (1-3) strongly contrasts with other more modified farmed landscapes in Moray and the diversity and scale of intricate coastal landform, the often strong sense of naturalness associated with sections of the coast and the setting of historic settlements were defined as significant constraints to all the main development typologies considered in the assessment. The coastal forests are also important features being semi-natural, well-used for recreation and in the screen they provide to the coast so that adjacent beaches feel relatively remote. It is recommended

Id	Name
1	The Buck
2	Knock Hill
3	Bin of Cullen
4	Meikle Balloch
5	Ben Rinnes
6	Little Conval
7	Meikle Conval
8	Ben Aigan
9	Carn na Cailliche
10	Roys Hill
11	Carn Kitty
12	Knock of Braemoray
13	Carn Biorach
14	Romach Hill
15	Mill Buie
16	Brown Muir
17	Binn Hill
18	Tappoch
19	Quarry Wood

Figure 4: Key landscape features

Legend

- LCA Moray Study Area
- Landmark Hills
- Key scenic approaches to Moray

that the integrity of the coast is preserved by avoiding development of turbines over 20m high.

6.18 The extensive estate forests found in the western part of Moray are well-managed and notable for their diverse and naturalistic character. They are often complemented by diverse policy woodland associated with the deeply incised valleys of the Findhorn and Divie. These densely wooded valleys create a distinctive and highly scenic approach to Moray experienced from the A939, strongly contrasting with the open expansiveness of Dava Moor to the south. Development of larger typologies within parts of the 'Open Upland' (10), the western fringes of the 'Upland Moorland and Forestry' (9), the 'Narrow Wooded Valley' (6) and the 'Rolling Farmland and Forest with Low Hills' (5b) could significantly affect views from the A939 and in doing so would additionally detract from the special character of this approach to Moray.

6.19 There is also a strong sense of arrival into Moray from Aberdeenshire when travelling on the A941 and from the A920 over high passes from the east. This dramatic experience is enhanced by panoramic views which are revealed when cresting the high passes. The view from the A941 over the Cabrach will significantly alter when the consented Dorenell wind farm is constructed, and this has increased sensitivity in terms of visual cumulative effects in this area.

Analysis of the existing pattern of wind farm development

6.20 Large operational and consented wind farm developments are largely associated with the more expansive upland areas within Moray. These developments include the Rothes, Paul's Hill, Berryburn and Dorenell wind farms. The Hill of Towie wind farm (which comprises turbines of a similar height to these other developments) is located within a lower and more geographically confined area of upland plateau, and this generally increases the visual impact of this wind farm on adjacent more settled areas.

6.21 Some single and small groups of operational turbines over 50m high are located within the 'Upland Farmland' (8) character type. Further consents for individual turbines over 50m high are also located within this character type and also within the 'Rolling Farmland and Forests with Valleys' (5a), the 'Rolling Farmland and Forests with Low Hills' (5b) and the 'Broad Farmed Valleys' (7). There is a concentration of applications in a broad corridor between Keith and west of Aberlour. These operational and consented developments contrast with the established pattern of larger turbines associated with larger scale upland landscapes and generally incur more significant impacts on landscape character and on visual amenity because of their location.

6.22 Smaller operational turbines below 50m high (and most commonly up to 30m high to blade tip) are predominantly sited within the 'Upland Farmland' (8) and 'Coastal Farmland' (4) character types. The majority of applications for single or small groups of turbines below 50m high also occur within these character types but also within the 'Broad Farmland Valley' (7). Turbines below 30m high generally have limited landscape and visual impacts although they can have cumulative impacts when sited close to larger typologies.

6.23 Operational wind farms and larger turbines sited within landscapes adjoining Moray have been considered in the study. To date, operational and consented developments only occur in Aberdeenshire although there are applications for wind farm developments within Highland in the Dava Moor, Ardclach and Tomatin area west of Moray. Inter-visibility between Moray and Aberdeenshire to the east between Cullen and the A96 is contained to some extent by a series of ridges and hills on the boundary, limiting views of operational wind farm development located in both regions from low level roads, settlement and coasts. There are however more open views down and across the River Deveron plain where the Hill of Towie wind farm is visible. There are no wind farms or turbines over 30m high located within the Cairngorms National Park.

Current trends and issues related to wind farm development

6.24 The following trends and issues have been taken into account in considering an appropriate landscape strategy for Moray:

- Demand for larger single turbines within more settled lowland areas, particularly within the 'Coastal Farmland' (4), 'Broad Farmed Valley (7) and the 'Upland Farmland' (8) and for multiple single and clusters of turbines <50m across Moray.
- Pressure for wind farms comprising >10 turbines in upland landscapes lying close to more settled and complex lowland landscapes thereby potentially increasing landscape and visual impact.
- Potential demand for extensions to existing wind farms that could encroach on more sensitive landscapes and could also affect the design integrity and landscape setting of the original development.
- Potential cumulative landscape and visual impacts between operational, consented and proposed larger wind farms but also with single and small groups <5 of large turbines sited in adjacent more settled landscapes.

Scope for larger turbines over 50m high

6.25 We recommend that landscapes with a combined sensitivity of medium and lower offer greatest scope to accommodate the large and medium development typologies while minimising significant impact on key landscape and visual sensitivities. This therefore excludes landscape character types with a combined High or High-medium sensitivity where constraints are likely to result in significant adverse landscape and visual impacts on key characteristics or where scope for development is limited to a small part of the character type. This capacity study has found that there is very limited scope to accommodate further large scale wind turbine development in Moray in landscape and visual terms. Only one landscape character type has been identified with a medium sensitivity to the large and medium development typologies considered within the study and this is 'Upland Moorland and Forestry' (9). The 'Broad Forested Hills within Upland Farmland' (8a) and 'Open Uplands with Settled Glens' (10b) were concluded to have a medium sensitivity to the medium typology only.

6.26 The 'Broad Forested Hills within Upland Farmland' (8a), the 'Upland Moorland and Forestry' (9) and the 'Open Uplands with settled Glens' (10b) already feature operational and consented wind farm developments. While development in these

landscapes would consolidate the association of existing large wind farm development with extensive, sparsely settled landscapes with a predominantly simple landform and land cover, cumulative impacts are a potential, sometimes significant, constraint and these are considered in further detail below.

Broad Forested Hills within Upland Farmland (8a)

6.27 The 'Broad Forested Hills within Upland Farmland' (8a) are not extensive upland areas and this, together with their proximity to adjacent more settled and diverse landscapes, limits scope for additional large typologies. Potential cumulative effects may occur with the operational Hill of Towie wind farm which is located within this character type but also with the large single and small groups of turbines located in the north-eastern part of the adjacent 'Upland Farmland' (8) character type. These single and small groups of turbines range between 70 and 92 metres high and they are likely to constrain opportunities for additional development within nearby parts of the 'Broad Forested Hills within Upland Farmland' (8a) due to the potential cumulative effects that could occur on the B9018 and on views principally from the 'Upland Farmland' (8).

Upland Moorland and Forestry (9)

6.28 The operational Rothes wind farm sited within this character type is inter-visible in close views with the Berry Burn and Paul's Hill wind farm from the minor road between Knockando and Dallas and from parts of the Spey valley but also in more distant views from the 'Coastal Farmland' (4) to the north. Opportunities for additional development within this character type is constrained by the need to avoid the 'landmark' hills of Brown Muir, Mill Buie and Carn na Cailliche and also to avoid intrusion on smaller, more diverse, adjoining landscapes by setting developments well back into the core of this upland area. Significant cumulative issues could occur where additional development was located close to the minor Knockando/Dallas road and created an overwhelming 'corridor' effect of turbines seen much more close-by than the operational and consented Paul's Hill, Rothes and Berryburn developments from this route. While dense woodland cover limits visibility from the 'Rolling Farmland and Forest with Low Hills' (5b) to the north of this character type, significant cumulative effects could occur in the more open Dallas area and may also limit scope for additional development in the 'Upland Moorland and Forestry' (9) character type.

Open Uplands with Settled Glens (10b)

6.29 The consented Doronell wind farm is sited within this character type, and the consented Clashindarroch wind farm lies within Aberdeenshire immediately adjacent to this character type. Extensions to Doronell are likely to be difficult to accommodate without creating visual confusion due to the size and arrangement of the consented proposal. The narrow extent of the limited remaining upland landscapes with the characteristics most likely to be able to accommodate large turbines is a further constraint. This indicates that it is likely to be difficult to accommodate additional turbines in this area without creating significant visual cumulative effects. As noted in the assessment, it may be possible to site medium sized turbines (especially those at the lower size range), without incurring cumulative visual effects.

Landscapes where capacity is close to being reached

6.30 There are few areas of upland unaffected by wind farm development left in Moray. The operational and consented wind farms of Paul's Hill and Berry Burn lie within the 'Open Uplands' (10) found in the west of Moray. The sensitivity assessment concluded that there were severe constraints to accommodating further development in this character type due to the need to avoid significant effects on landmark hills, on views from the Dava Way, the A939 and A940 and on the sensitive Dava Moor/Lochindorb area within adjacent Highland. Scope for additional development is likely to be restricted only to very small extensions to existing wind farms although these would need to be carefully assessed to ensure that the design integrity of the original development was retained. Cumulative visual effects were identified as a significant constraint on the Open Uplands with Steep Slopes (10a), where views from Ben Rinnes are a key factor. In this landscape character type, potential visual confusion and extent of turbines visible in conjunction with the consented Dorenell windfarm are a significant constraint to further development. In Open Uplands with Settled Glens (10b), the consented Dorenell and Clashindarroch (the latter on the border in neighbouring Aberdeenshire), combine to limit scope for additional development which does not directly intrude on nearby smaller scale landscapes, or create significant cumulative visual effects experienced from the bowl of the Cabrach.

Scope for smaller turbines below 50m high

6.30 The sparsely settled upland landscapes are less likely to be attractive for the development of turbines below 50m and the majority of current applications focus on more settled farmed landscapes. The sensitivity assessment concluded that the small-medium typology (turbines 35-50m high) could be accommodated in the 'Coastal Farmland' (4), the 'Rolling Farmland and Forests with Low Hills' (5b) and the 'Upland Farmland' (8). Many of these settled landscapes have an even dispersal of relatively small farms and other developments and capacity would be quickly reached if even a small number of these were to feature a turbine of this height, with multiple turbines in close proximity likely to overwhelm landscape features. Periodic monitoring of potential cumulative effects arising from smaller turbines is likely to be necessary. Consideration should also be given to the detailed design of smaller turbines in order to achieve compatibility where widely varying designs could lead to visual clutter in some more open landscapes.

A recommended landscape strategy

- ***Protect the landmark hills and their setting*** Views of these hills recur across Moray where they form highly visible and easily recognisable landmarks. Many also form visual 'buffers' to less prominent upland areas, or the backdrop to settlements, small scale valleys and the coast. Wind farm development on or near these hills would be visually prominent and would detract from their distinct form and character.
- ***Maintain the distinctive western threshold to Moray experienced from the A940*** where attractive woodlands, deeply incised intimate valleys, landmark hills and moorland provide a richly scenic landscape. Visual intrusion by larger

development typologies would detract from the strong 'sense of arrival' to Moray experienced from this route.

- ***Maintain the rugged scenery and setting to more dramatic uplands around Ben Rinnes*** by directing wind farm development away from these areas and avoiding developments that could impact on the wider landscape setting and appreciation of these landscapes. Cumulative landscape and visual effects of wind farm development in surrounding landscapes will need to be carefully considered in terms of potential effects on the perception of wildness and on views from popularly accessed hills.
- ***Protect the special qualities of the coast and its associated historic settlements*** by resisting development of turbines >20m high where they could intrude on views from roads, settlement and recreational areas and also affect the setting of historic settlements and the sense of remoteness and naturalness experienced within the coastal forests and adjacent beaches.
- ***Ensure that any further development of larger typologies is clearly associated with less sensitive upland landscapes*** where their more extensive scale can better accommodate, and provide an appropriate wider setting, to large developments. Impacts on adjacent more sensitive smaller scale settled landscapes should be minimised by setting development well back into the upland interior and also considering limitations in the height of turbines. This strategy consolidates the established association of larger typologies with a particular landscape character, minimising cumulative impacts that could occur where different sizes and designs of turbines are sited in all landscapes.
- ***Ongoing review of cumulative landscape and visual effects of multiple wind turbine developments*** will be necessary to ascertain when capacity is close to being reached. This will particularly apply to the upland areas where some scope has been identified for larger typologies but also to the settled lowland landscapes where multiple smaller turbines could quickly result in cumulative effects.

Identification of Areas of Search

6.32 It is a requirement of SPP that areas of search for wind farm developments over 20MW are defined by local authorities. This study has defined landscape character types with a lower landscape and visual sensitivity to wind turbines over 50m height which may aid in the identification of areas of search. Landscape character types with a lower sensitivity are shown on Figures 4 and 5 although these maps should be used with caution as the overall sensitivity rating is indicated uniformly for each landscape character type without key constraints identified in the sensitivity assessment being accounted for. It is therefore essential that the full sensitivity assessment set out in the Appendix Report is reviewed when considering Areas of Search or specific developments.

6.33 Any wind farm/turbine developments proposed within more sensitive landscapes should be subject to careful and thorough consideration with the developer being requested to demonstrate how they have dealt with potential effects on the constraints identified in the sensitivity assessment at a more detailed level.

No	Landscape Character Type
1-3	Coastal margin
4	Coastal Farmland
4a	Coastal Farmland with Rolling Hills
5	Rolling Farmland & Forests
5a	Rolling Farmland & Forests with Valleys
5b	Roling Farmland & Forests with Low Hills
6	Narrow Wooded Valleys
7	Broad Farmed Valleys
8	Upland Farmland
8a	Broad Forested Hills within Upland Farmland
8b	Valleys within Upland Farmland
9	Upland Moorland & Forestry
10	Open Uplands
10a	Open Uplands with Steep Slopes
10b	Open Uplands with Settled Glens

Figure 5: Landscape Character Types with lower sensitivity to the large typology

Legend

Landscape Character Types

Landscape character type with lower sensitivity to the large typology.

No	Landscape Character Type
1-3	Coastal margin
4	Coastal Farmland
4a	Coastal Farmland with Rolling Hills
5	Rolling Farmland & Forests
5a	Rolling Farmland & Forests with Valleys
5b	Roling Farmland & Forests with Low Hills
6	Narrow Wooded Valleys
7	Broad Farmed Valleys
8	Upland Farmland
8a	Broad Forested Hills within Upland Farmland
8b	Valleys within Upland Farmland
9	Upland Moorland & Forestry
10	Open Uplands
10a	Open Uplands with Steep Slopes
10b	Open Uplands with Settled Glens

Figure 6: Landscape Character Types with lower sensitivity to the medium typology (turbines 50-80m high)

Legend

Landscape Character Types

Landscape character types with lower sensitivity to the medium typology (turbines 50-80m high).

Appendix A: References

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Various *Environmental Statements for wind farm developments* including those for the Rothes extension, Berry Burn and Dorenell developments

Appendix B: Glossary of terms

Landscape character
The distinct and recognisable pattern of elements that occurs consistently in a particular type, and how this is perceived by people.

Landscape Character Type
An area with a distinct and recognisable pattern of key elements in terms of landform, vegetation cover, land use and settlement pattern. Landscape Character Types are generic and are therefore repeated although in Moray they may have different geographic contexts which influences sensitivity.

Landscape sensitivity
Sensitivity relates to landscape character and how vulnerable this is to change. In this study change relates to wind energy development and any findings on landscape sensitivity are restricted to this. Landscapes may have different sensitivities to other forms of change or development. Landscapes which are highly sensitive are at risk of having their key characteristics fundamentally altered by a specified development. Sensitivity is assessed by considering the physical and perceptual characteristics of landscapes.

Landscape capacity
'Landscape capacity refers to 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 likely to vary according to the type and nature of change being proposed.' [5] Capacity can also include visibility assessment and consideration of any values placed on the landscape (usually in the form of designations).

Landscape impacts
Changes in the physical landscape that give rise to changes in its character and how it is experienced, and may in turn affect the value attached to a landscape. Landscape impacts may be beneficial (for example where a characteristic feature is restored) or adverse (for example where a characteristic feature is damaged or lost).

Visual impacts
Changes in the appearance or perceptions of a particular area or view as a result of development or other change. Visual impacts can be beneficial (for example where a new view is opened up) or adverse (for example where an existing view is affected by the addition of an intrusive feature).

Cumulative impacts
The combined impacts that occur, or may occur, as a result of more than one project being constructed, giving rise to accumulating landscape and visual changes where developments are seen simultaneously (at the same place, in the same field of view), in succession (at the same time, but not in the same field of view) or in sequence (on travelling through an area).

[5] Swanick, Carys and Land Use Consultants (2002). *Landscape Character Assessment Guidance for England and Scotland.* Countryside Agency and Scottish Natural Heritage.

Appendix C: Landscape and Visual Sensitivity Criteria

The table below sets out the key landscape sensitivity criteria that have been considered in the assessment in relation to the two principal typology groups, large/medium and small to small/medium scale turbines:

Criterion	Large/medium turbines	Small and small-medium turbines
Landscape context	The assessment considers the role of adjacent character types in contributing to overall character including consideration of where they may provide containment, increase scale or complexity or combine to provide a notably scenic whole. Landscapes that are well-separated from contrasting landscapes and seascapes may be less sensitive than those with a more complex configuration or setting. For example, where very different types of landscape are closely juxtaposed the landscape may be especially sensitive. This sensitivity may be further heightened where there is a high degree of intervisibility between adjacent landscapes and/or seascapes. The assessment considers the potential effects of development sited in the character type which is the subject of the assessment on adjacent character types (including key landmark features) and wider scenic composition.	The role of adjacent character types in contributing to overall character including consideration of where they may provide containment, increase scale or complexity or combine to provide a notably scenic whole. Landscapes that are well-separated from contrasting landscapes and seascapes may be less sensitive than those with a more complex configuration or setting. For example, where very different types of landscape are closely juxtaposed the landscape may be especially sensitive. This sensitivity may be further heightened where there is a high degree of intervisibility between adjacent landscapes and/or seascapes. The assessment considers the potential effects of development sited in the character type which is the subject of the assessment on adjacent character types (including key landmark features) and wider scenic composition.
Scale and openness	Consideration of the size of the landscape taking into account horizontal and vertical scale and the degree of containment created by topography. The presence of relatively small scale features such as buildings and woodlands which can influence the scale of the landscape is also considered. Assessment of how the development would relate to the scale of the landscape including whether they would be likely to dominate the scale of other elements. Consideration of how development would affect expansiveness and the sense of distance. In general the larger the scale of the landscape the greater the ability to relate to larger development typologies.	Consideration of the size of the landscape taking into account horizontal and vertical scale and the degree of containment created by topography. The presence of relatively small scale features such as buildings and woodlands which can influence the scale of the landscape is also considered. Assessment of how the development would relate to the scale of the landscape, in particular the size of existing built structures, woodland or local landforms. Identification of where the development would be compatible in terms of its size in relation to landscape scale and openness.
Landform	Consideration of the overall shape and the degree of complexity of landform including identification of any distinct features. Assessment of how development would relate to landform and whether it would	Consideration of the shape, recurrence and degree of complexity of landform including identification of any distinct features. Assessment of how smaller turbines could relate to detailed landform, such

	intrude or detract if close to distinctive landform features. In general the simpler the landform the better the visual relationship with the simple form of turbines.	as terraces and slacker slopes and whether they would intrude or detract if sited close to distinctive landform features. In general, there is usually greater scope to relate smaller turbines (both number and height) to avoid impacts on more complex landform.
Landcover and landmark features	Consideration of the degree of complexity of land cover pattern (field enclosure, woodlands, water courses and lochs and whether pattern is strong or distinctly repeated or where fragmented. Assessment of how development could relate to pattern; whether it would disrupt or dominate strong pattern, fit with areas where it is weaker or increase visual confusion where pattern is very fragmented. Potential effects on landmark features, such as hill top copses, designed landscapes, water bodies, are also considered. Simple, regular, uncluttered landscapes with extensive areas of the same ground cover – for example forestry, moorland or open farmland – are likely to be less sensitive to wind energy development than areas with more complex, irregular or small scale landscape patterns.	Consideration of the degree of complexity of land cover pattern (field enclosure, woodlands, water courses and lochs) and whether pattern is strong or distinctly repeated or where it is fragmented. Assessment of how development could relate to pattern; whether it might strengthen robust and easily recognisable patterns, increase or introduce visual confusion, or develop a new pattern of development which complements the existing land cover framework. Potential effects on landmark features, such as hill top copses, designed landscapes, water bodies are also considered. Simple, regular, uncluttered landscapes with extensive areas of the same ground cover – for example forestry, moorland or open farmland – are likely to be less sensitive to wind energy development than areas with more complex, irregular or small scale landscape patterns.
Built environment	Consideration of the pattern and character of settlement and its relationship to the landscape. Identification of any large built structures including industrial development, masts and existing /consented wind farms. Archaeological features which make an appreciable contribution to landscape character are also noted. Assessment of how development might impinge on these characteristics; where there may be scope to attain some visual separation to minimise effects on the setting of settlement. Where larger scale industrial structures and existing/consented wind farms are present, potential impacts of form and pattern between the development typology and these existing features are also considered. Archaeological features are considered in respect of their contribution to landscape character and any potential effects on setting. Landscapes already affected by contemporary built structures such as wind turbines, masts, pylons, chimneys,	Consideration of the pattern and character of settlement and its relationship to the landscape. Identification of any large built structures including industrial development, masts and existing /consented wind farms. Archaeological features which make an appreciable contribution to landscape character is also noted. Assessment of how development might impinge on these characteristics; whether it is able to fit with the settlement pattern through association of built development or where visual separation may be required to minimise effects on settlement setting. Where larger scale industrial structures and existing/consented wind farms are present, potential impacts of form and pattern between the development typology and these existing features are also considered Archaeological features are considered in respect of their contribution to landscape character and any potential effects on setting.

	major transport infrastructure (or by influences such as quarrying or landfill) may be less sensitive to wind energy development, provided care is taken to avoid visual conflicts where any existing structures are seen in close proximity to turbines. Conversely areas with a more established, traditional or historic built character, are likely to be more sensitive.	Landscapes already affected by contemporary built structures such as wind turbines, masts, pylons, chimneys, major transport infrastructure (or by influences such as quarrying or landfill) may be less sensitive to wind energy development, provided care is taken to avoid visual conflicts where any existing structures are seen in close proximity to turbines. Conversely areas with a more established, traditional or historic built character, are likely to be more sensitive.
Perceptual qualities	Perceptual qualities relate to the experience of landscape (ref Guidelines for Landscape and Visual Impact Assessment, Landscape Institute 2002). Consideration of the degree of modification by man (such as roads, settlement, forestry, masts and wind turbines), consideration of how development could affect perceptions of naturalness and the degree of tranquillity experienced. Consideration of the sense of remoteness in terms of ease of access or seclusion (in the sense of the degree of containment that can be experienced rather than purely distance from roads and settlement) and whether and how development would alter these perceptions. Identification of landscapes where the number and distinctiveness of archaeological features can give a strong sense of history or 'timelessness'. Identification of opportunities related to more developed and modified landscapes The presence of a relatively wild and/or tranquil character (due to remoteness, freedom from human activity and disturbance, and factors such as openness and perceived naturalness) tends to make the landscape more sensitive to wind farm development. The introduction of wind turbines may alter perceptions of wildness and tranquillity, introducing movement, sound and light effects and possibly bringing a more industrial character to the affected landscapes.	Presence/absence and character of modification by man (such as roads, settlement, forestry, masts and wind turbines), consideration of how development could affect perceptions of naturalness and the degree of tranquillity experienced. Consideration of the sense of remoteness in terms of ease of access or seclusion and whether and how development would alter these perceptions. Identification of landscapes where the number and distinctiveness of archaeological features can give a strong sense of history or 'timelessness'. Identification of opportunities related to more developed and modified landscapes.
Visual amenity	The assessment considers the degree of openness or screening and the potential for views of development given the extent and location of settlement and key access routes. Notable features such as distinct skylines or uninterrupted horizons (both land and sea), focal features and key vistas are	The assessment considers the degree of openness or screening and the potential for views of development given the extent and location of settlement and key access routes. Notable features such as distinct skylines or uninterrupted horizons (both land and sea), focal features and

	considered and the potential effect of development on these assessed.	key vistas are considered and the potential effect of development on these assessed.
Cumulative effects	Consideration of operational and consented wind farm and turbine developments within the landscape character type and in the surrounding area. Identification of any constraints to further development in relation to cumulative effects on landscape character, on the siting and design of existing developments, and on sequential and simultaneous views.	Consideration of operational and consented wind farm and turbine developments within the landscape character type and in the surrounding area and identification of any constraints to further development in relation to cumulative effects on landscape character, including on the siting and design of existing developments, and on sequential and simultaneous views. Consideration of issues relating to different sizes and variety of designs of small turbines and also potential visual 'clutter' in relation to nearby larger turbines.