South Ayrshire Landscape Wind Energy Capacity Study

Main Study Report

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Summary

Background

This study aims to inform strategic planning for wind energy development in line with Scottish Planning Policy and to also provide guidance on the appraisal of individual wind farm and wind turbine proposals in South Ayrshire.

The study considers the sensitivity of 20 landscape character types within South Ayrshire to a range of wind turbine developments. Four development typologies were considered in the sensitivity assessment, these principally categorised on the basis of turbine height. The assessment considers key sensitivities related to landscape character and visual amenity. Potential cumulative issues associated with existing and consented wind farm developments are also considered in the assessment.

Constraints and opportunities for wind energy development are set out for each landscape character type and guidance is given on location. Further generic guidance on the siting of small turbines below 50m height is also provided in the study.

Main findings

- Existing wind farm developments are largely located in upland landscapes and these have relatively limited visibility from the more settled lowlands, coasts and valleys of South Ayrshire.

- There is some scope to site additional wind farm development with turbines above 50m height within some upland areas of South Ayrshire although this will be limited by potential cumulative and other landscape and visual constraints including effects on adjacent smaller scale settled valleys, coastal and lowland landscapes.

- There is no scope to accommodate turbines above 50m height within the smaller scale, well-settled lowlands, coasts and valleys due to their increased landscape sensitivity to tall turbines, including potential cumulative effects with wind farm development in adjacent upland areas.

- Narrow incised and diverse valleys, the coastal edge and the Loch Doon and Carrick Forest area are highly sensitive to most forms of turbine development.

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.
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INTRODUCTION

1.1 Policy context

The Scottish Government is committed to increasing the amount of electricity generated from renewable sources. The current target is to meet 100% of Scotland’s electricity requirement from renewable sources by 2020. Most of this capacity is likely to be met from hydro-electric and on-shore wind power, but in due course there is expected to be a wider range of productive renewable technologies, including off-shore wind power as well as biomass, solar, energy from waste and landfill gas and wave and tidal power.

Most of the energy generated to meet these targets will come from large scale, commercial developments under the Renewables Obligation which requires electricity suppliers to source a specified percentage of their energy from renewable technologies. However, the Government is also keen to encourage communities and small businesses to invest in renewable energy projects. Initiatives such as the Community and Renewable Energy Scheme and the ‘Clean Energy Cashbacks’, most commonly known as the ‘Feed in Tariff’ (for generators up to 5 MW) are examples of Government support to encourage the development of these smaller scale initiatives.

Scottish Planning Policy 2010 (SPP) seeks to support the initiatives set out above. It provides for a planned approach to delivering the target through setting the overall policy for preparing spatial frameworks, including the safeguarding of areas designated for their national and international natural heritage value. It gives a clear role to local authorities in relation to local interests and designated areas, in the identification of areas of search for developments over 20MW and in setting policy criteria. It however allows local planning authorities to make the decision whether to provide spatial guidance on wind farms below 20MW. SPP 2010 also recognises that there will be limits to the capacity of some areas to accept the cumulative impacts of multiple wind farm developments.

SPP 2010 expects planning authorities to ‘support the development of a diverse range of renewable energy technologies, guide development to appropriate locations and provide clarity on the issues that will be taken into account when specific proposals are assessed’. They are also expected to clearly set out...‘the factors that will be taken into account in decision making on all renewable generation developments’ within their development plans, or within supplementary guidance.

Recent policy updates to SPP 2010 (August 2012) on spatial frameworks and onshore wind turbines recommend that if a spatial framework for onshore wind farms over 20MW has been prepared, updates, or an additional spatial framework, could provide further guidance on where there is greatest potential for wind farms below 20MW. It is suggested that locally developed planning guidance for smaller developments below 5MW may also be useful in lowland and more populated areas where the Feed-In Tariff Scheme has increased interest in this scale of development.
1.2 Ayrshire Joint Structure Plan

Wind energy policy is set out in the Ayrshire Joint Structure Plan which was approved in 2007. ‘An Addendum to the Ayrshire Joint Structure Plan Technical Report TR03/2006 – Guidance on the location of windfarms in Ayrshire’ (hereafter called the ‘Structure Plan Addendum’) provides further information on the location of wind farms and turbines and is intended to provide greater clarity for developers and to assist in the determination of development proposals.

The 2004 Ayrshire and Clyde Valley Wind Farm Landscape Capacity Study carried out by Land Use Consultants (hereafter called the 2004 LUC Capacity Study) informed the 2007 wind energy policy and the technical addendum to the Joint Structure Plan. This 2004 capacity study assessed the relative sensitivity of broad landscape character types to wind energy development and concluded that a planned approach, based on the concentration of a smaller number of larger wind farms, would help reduce the overall level of landscape and visual impact. Two broad areas of search were identified in South Carrick and the Whitelee Forest area. The methodology and key findings of the 2004 LUC Capacity Study are outlined within Annex A to this report.

1.3 Background to the study

Since the issue of the Structure Plan Addendum on Wind Farm Development (and the 2004 LUC landscape capacity which informed it), interest in single and smaller turbines has significantly increased in South Ayrshire, largely as a result of the Feed-In Tariff. The majority of proposals for single and smaller turbines lie within the lowlands, along the coast and on the upper valley sides at the transition with the upland areas.

This current capacity study provides more detailed assessment and guidance within South Ayrshire. It considers sensitivity to both larger wind farm developments as well as single and small groups of wind turbines of varying sizes and updates earlier assessment in terms of potential cumulative landscape and visual effects given the greater number of operational and consented developments now in existence.

1.4 Study objectives

The study provides guidance on the sensitivity of the landscapes of South Ayrshire to different types of wind farm and wind turbine development. In summary, it will provide:

- A landscape and visual sensitivity assessment for wind farms and wind turbine developments within different landscape character types in South Ayrshire.
- Production of a report which defines clear spatial principles as to what height of turbine would be appropriate, in landscape and visual terms, within the different landscape character types considered in the study.
- Provision of design and siting guidance for use by the Council and applicants to promote good practice in locating and siting individual and small groups of lower height turbines.
1.5 Structure of the report

This report initially sets out the methodology adopted for the study together with the landscape character types and turbine development typologies considered in detail in the study. Operational and consented wind farm and turbine developments which form the baseline for the study are also identified.

Landscape and visual sensitivity assessments have been produced for 20 landscape character types within South Ayrshire. These are summarised in this Main Study Report. Detailed assessment tables set out in tabular form considering sensitivity against identified landscape and visual criteria for four turbine development typologies are contained in a separate Appendix Report. Guidance is provided on cumulative issues, opportunities and constraints and on siting and design for each landscape character type.

1.6 How to use the study

The study aims to inform both strategic spatial planning for wind energy developments above and below 20MW and to provide guidance on the appraisal of individual wind farm and wind turbine proposals.

The sensitivity assessments have been undertaken on the basis of defined landscape character types. Landscape character types often have ‘fluid’ boundaries where a gradual transition can occur between adjacent character types with some similar characteristics. Wind turbines are also tall structures likely to have an influence on adjoining landscape character types. It is therefore recommended that when considering individual proposals, both the landscape character type that the development lies in and immediately adjoining character types are reviewed as wider sensitivities may apply.

This study considers the ability of landscape character types to accommodate wind turbines as a landscape characteristic which can be repeatedly and consistently accommodated across each landscape character type. The recommendations and guidance on capacity for each character type reflect the potential of the landscape to accommodate turbines as a landscape characteristic, either as multiple single features or multiple small groups within the landscape character type.

In terms of guidance, the study indicates that where a landscape character type is identified as being of High sensitivity rating overall for any typology, it is the opinion of the consultants that the typology cannot be accommodated in the landscape character type without significant adverse landscape and/or visual effects arising across a wide range of key landscape and visual sensitivities.

Landscape character types found to be of High-medium sensitivity will have a number of significant constraints to wind farm/turbine development. While some characteristics (usually found in limited parts of these landscapes) may relate better to such development, significant adverse landscape/visual effects are likely to occur on other key characteristics. We consider that there is either no scope or very limited scope for development in a small part of these character types only.
The study considers the sensitivity of landscape character types to a limited number of pre-determined turbine typologies, principally based on height. We consider that it is not practical to consider a wide range of turbine typologies in a capacity study as it becomes too complicated in the field assessment but also in clearly presenting findings on sensitivity. Individual applications therefore need to be considered on a case-by-case basis with some flexibility on turbine heights being applied within close range of the upper height threshold used in the assessment. Where turbines are slightly above the height threshold or proposed within more sensitive landscapes, they 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.
2 STUDY METHODOLOGY

The study methodology is based on landscape and visual capacity assessment, which uses sensitivity assessment to determine the ability of the landscape character and visual amenity to accommodate changes brought about by new development.

2.1 Background to landscape capacity

Landscape capacity is described as ‘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’\(^1\)

There is currently no formally agreed approach or methodology for assessing the sensitivity or capacity of different landscapes to wind energy development. Scottish Natural Heritage (SNH) has issued guidance on good practice in landscape capacity studies. More detailed guidance is also provided by SNH in Siting and Designing Wind Farms in the Landscape which includes advice on strategic planning for wind farms, and in the Siting and Design of Single and Groups of Small Turbines of between 15 and 50 metres in height (2012). A full list of the reference material used in the study is set out in Annex B.

Most landscape capacity studies are based on landscape character units and identify key characteristics of each landscape area or type potentially sensitive to any given development. The particular characteristics defined as key sensitivity criteria may change according to the nature of the development being considered, although the methodological approach between studies is generally similar. Visibility and views may be considered as a separate issue or may form part of the assessment of landscape sensitivity as a criterion together with key landscape characteristics.

2.2 Definition of terms

The following definitions of terms apply to this study:

**Landscape character**

Landscape relates not only to the physical attributes of the land but also to the experience of the receptor. Landscape character is made up of the physical characteristics such as landform, land cover and settlement pattern (which exist whether anyone sees them or not) plus a range of experiential and perceptual responses to that landscape.

**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. In this study, sensitivity is

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assessed by considering the effect of different heights of wind turbine development on the physical, experiential and perceptual characteristics of landscapes. Landscapes that are highly sensitive are at risk of having their key characteristics fundamentally altered by the wind turbine typology under consideration in the assessment.

**Landscape capacity**
This relates to how far a landscape can accommodate development without significant adverse impacts on its character. Landscape character and sensitivity are part of this, but in this study capacity also includes an assessment of visual sensitivity. In this study, values related to landscape designations and other recognised interest, have not been accounted for in the sensitivity assessment.

### 2.3 General approach to the study
Our approach to the study has been informed by guidance on the potential impacts and landscape sensitivities associated with wind energy development and on the practical application of methodologies used in recent landscape capacity studies we have undertaken for wind energy development. It involves the following key tasks:

- Field review of the landscape character types identified in the Ayrshire Landscape Assessment (LUC, 1998) published by Scottish Natural Heritage (SNH) and identification of any sub-divisions or boundary alterations necessary for the purposes of this sensitivity assessment.
- Identification of existing and consented wind farm developments in South Ayrshire and within adjoining authorities to inform the baseline for this study and understand development trends.
- Identification of the wind turbine development typologies to be assessed in the study.
- Definition of landscape and visual sensitivity criteria to be used in the assessment.
- Field work to assess the sensitivity of different landscape character types to the agreed development typologies using identified sensitivity criteria.
- Guidance on the siting of smaller turbines (<50m high), principally informed by field work undertaken across Ayrshire.
- Provision of an overview of landscape and visual sensitivities across the study area and recommendations on strategic landscape and visual considerations for wind farms and single and smaller wind turbines, providing further detail to the 2006 Structure Plan Addendum and the 2004 LUC Capacity Study.

### 2.4 Operational and consented wind farms and turbines
Operational and consented wind farms and turbines within South Ayrshire and neighbouring authorities as at 31st July 2012 formed the baseline for the assessment when considering cumulative landscape and visual effects. These are shown in Figures 1 and 2.
2.5 Baseline landscape character

This capacity study has been informed by the landscape characterisation set out in the Ayrshire Landscape Assessment (LUC 1998). The landscape character types set out in the 1998 study have been reviewed in the field. Some minor changes have been made to the boundaries of some landscape character types and this is explained in the introduction to each of the sensitivity assessments set out in the following sections of this report. In addition, a new landscape character type has been classified in the area centred on Loch Doon and the Carrick Hills and called the Rugged Uplands, Lochs and Forest (21). The character types considered in this study are shown on Figure 3.

A new numerical referencing system has been adopted for the areas of landscape character considered in this study. Appendix C provides a table listing the original 1998 landscape character types and the new names and references used in this study.

2.6 Development typologies

2.6.1 Smaller typologies

The height of turbines relative to other structures in the landscape is a key consideration in terms of landscape ‘fit’. Different sensitivities come into play once turbines exceed the height of other common landscape features, for example trees and small wood pole lines.

Turbines below 15m height to blade tip have been excluded from the detailed sensitivity assessment undertaken for character types within South Ayrshire. This is because turbines of this size can be successfully accommodated within most landscapes subject to careful siting and design. Landscape and visual issues associated with turbines of this size are however generally considered within the sensitivity assessments and within the guidance on the siting of smaller turbines contained in section 24 of this report.

We have categorised smaller turbines as being those under 50m height to blade tip. We have found during our field assessments (and observations of existing smaller turbines in the landscape) that there is a noticeable ‘threshold’ at around 30-35m height to blade tip where over this height a turbine will quickly become a dominant feature in many lowland/more settled landscapes. Two ‘smaller’ typologies have therefore been assessed in detail in the study based on turbines 15-30m and 30m-50m height to blade tip.

2.6.2 Larger typologies

In terms of larger developments (turbines 50m +) we have principally considered the height of turbine within the sensitivity assessment as this is a critical factor in determining landscape and visual sensitivity. We have not specifically considered pre-determined numbers of turbines within the typologies assessed although some indication is given of the likely extent of development that may be accommodated where the sensitivity assessment indicates some capacity within the guidance set out for each landscape character type. The assessment therefore is applicable to
both single, small groups and larger groups of turbines comprising ‘wind farm’ developments.

2.6.3 Summary of development typologies considered

We have considered the following development typologies in the study:

<table>
<thead>
<tr>
<th>Typology</th>
<th>Height to blade tip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>15-30m</td>
</tr>
<tr>
<td>Small/medium</td>
<td>30-50m</td>
</tr>
<tr>
<td>Medium</td>
<td>50-70m</td>
</tr>
<tr>
<td>Large</td>
<td>70m+</td>
</tr>
</tbody>
</table>

The study has focussed on assessing the relationship between the height of the turbine and the sensitivity criteria. In undertaking this analysis, single turbines and small groups of turbines have been considered and the assessment also considers scope for multiple developments located across the character type. The number of turbines that can be accommodated within a wind farm development will be determined by the relative extent of the landscape character type (or less sensitive part of a landscape character type) and potential effects on key landscape and visual constraints outlined in the assessment.

In addition, extensions to existing wind farm developments have been considered in the guidance provided within each sensitivity assessment with recommendations given on the appropriate height of turbines and the general extent of development that could be accommodated.

2.7 The sensitivity assessment

The capacity study considers the sensitivity of key characteristics of each landscape character type or sub-type to different types of wind farm or turbine development. The assessment process uses a range of sensitivity criteria to do this based on key landscape and visual characteristics. The sensitivity assessment combines landscape sensitivity, visual amenity and existing cumulative effects. Landscape designations and other recognised interests such as the Dark Skies initiative, Inventory designed landscapes and Search Areas for Wild Land are not considered in the sensitivity assessment. These are however likely to form another layer of information considered in strategic planning for wind farm/turbine development in South Ayrshire.

2.7.1 Landscape and visual sensitivity criteria

The sensitivity assessment considers the following criteria in assessing the potential effects of wind turbines and associated infrastructure on the landscape character types:

- Landscape context
- Scale and openness
- Landform
- Land cover pattern
- Built environment
- Perceptual qualities
- Visual amenity
A detailed description of the factors considered within the sensitivity assessment is explained in table 1 below.

**Table 1: Sensitivity criteria to be used in the assessment**

<table>
<thead>
<tr>
<th>Sensitivity criteria</th>
<th>Factors considered and relevance of criteria to wind turbines</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Landscape context</strong></td>
<td>The role of adjacent character types in contributing to the overall character of the type being assessed. This includes consideration of where adjacent types may provide containment, increase or reduce the experience of scale or complexity or combine to provide a notably scenic whole. Assessment of the potential effects of development on adjacent character types and vice versa. This includes an assessment of inter-visibility. Landscape types that are more closely juxtaposed and contrast strongly with surrounding landscapes may be especially sensitive. Landscape types which are large in extent, or which have similar scale or vegetation pattern to neighbouring landscapes may have more scope for larger typologies.</td>
</tr>
<tr>
<td><strong>Scale and openness</strong></td>
<td>Consideration of the scale of the landscape taking into account the degree of relief, amount of topographical containment, degree of openness and enclosure and the extent of land visible. Identification of areas of containment and factors that create enclosure where scale reduces. Identification of features against which the size of a turbine might be easily referenced. Consideration of how the size of the development might impact on the understanding of scale of the landscape. Assessment of how the development would relate to the scale of the landscape including whether they would be likely to dominate or appear compatible in scale in terms of the relative scale of landform, landscape pattern and individual features, including buildings, in the landscape. Consideration of how development would affect expansiveness and the sense of distance. In general, the more open the landscape and the larger the scale of the landscape the greater the ability to relate to larger development typologies.</td>
</tr>
<tr>
<td><strong>Landform</strong></td>
<td>Consideration of the overall topographical shape and the degree of complexity of landform including identification of any distinct ‘landmark’ features. Assessment of how development, including ancillary works, would impact on or relate to landform and whether it would intrude or detract if close to distinctive landform features. In general the simpler and more gently graded the landform the better the visual relationship with the simple form of turbines, and more gentle gradients are likely to better accommodate the platforms and roads associated with larger turbines.</td>
</tr>
</tbody>
</table>
| **Landscape pattern** | Consideration of the degree of complexity and diversity of land cover pattern (field enclosure, woodlands, water courses and lochs) and whether pattern is strong or distinctly repeated, displays integrity or where it is fragmented.  
Assessment of the degree of diversity, and the importance of this in informing the distinctiveness of the landscape character.  
Assessment of how development could relate to pattern; whether it would disrupt or dominate strong pattern or undermine well balanced diversity, interrupt or fragment integrity of pattern, fit with areas where pattern is more simple or increase visual confusion where pattern is very fragmented.  
Consideration of potential effects on landmark features, such as hill top copses, designed landscapes and features, water bodies. |
|----------------------|---------------------------------------------------|
| **Built environment** | Consideration of the pattern, density and character of settlement, its relationship to topography or other natural features and its setting, roads and other built structures.  
Consideration of historic features and sites and their setting.  
Assessment of how development might impinge on these characteristics; where there may be scope to attain some visual separation to minimise effects on settlement setting and avoid fragmentation of the pattern of built development and its association with topography or other natural features.  
Where larger scale industrial buildings and built structures such as pylons, masts and existing wind farms are present, the relationship of additional turbine development to these will be considered.  
Historic and archaeological features which contribute to landscape character are assessed in terms of any potential effects on setting. |
| **Perceptual qualities** | Consideration of the degree of modification by human intervention (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 or historic features can give a strong sense of history or ‘timelessness’.  
Identification of opportunities related to more developed and modified landscapes. |
| **Visual amenity** | The extent of likely visibility (including considerations of whether the landscape is well settled and easily accessible, for example, or not) and types of viewpoints.  
The degree of openness or enclosure which influences visibility, including the amount of screening created by topography and woodland. |
The type of views, including elevated, extensive views which are sustained, framed views to focal points or glimpse views, or views experienced as part of a sequence or as revealed views creating a sense of arrival into the landscape type. The significance of skylines and visual horizons. Key vistas associated with historic landscapes or other features.

**Cumulative effects**
Consideration of existing operational and consented wind farms or turbines within the landscape character type and in the surrounding area. Identification of any constraints to further development in relation to cumulative visual or landscape effects. This includes consideration of sequential and simultaneous visual effects, as well as height, siting and design considerations informed by the presence of existing wind turbines.

### 2.7.2 Site assessment
The sensitivity assessments have been informed by extensive field work. Computer-generated visualisations from relevant Environmental Statements were used, where available, to inform the assessment of potential cumulative visual issues. A number of computer-generated ‘photo wire’ visualisations illustrating a range of turbine heights from identified viewpoints were also produced to inform the sensitivity assessment in the field.

### 2.8 Sensitivity levels
We have used a five point scale of ‘scoring’ in the assessment of each sensitivity criterion. This is also adopted in the overall sensitivity ‘scores’ accorded to each landscape character type. This is interpreted in the following table relating to overall sensitivity ratings:

**Table 2: Explanation of Sensitivity Ratings**

<table>
<thead>
<tr>
<th>Overall Sensitivity rating</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>The majority or all of the key landscape characteristics are vulnerable to change. Development would conflict with key aspects of landscape character and visual amenity with widespread and significant adverse impacts likely to arise.</td>
</tr>
<tr>
<td>High-medium</td>
<td>A number of key landscape characteristics are vulnerable to change. Development would undermine some important defining aspects of landscape character and/or visual amenity.</td>
</tr>
<tr>
<td>Medium</td>
<td>Some key landscape characteristics or aspects of visual amenity are sensitive but there is still some ability to accommodate development in some situations without significant character change or visual impact; the development typology relates to some aspects of landscape character.</td>
</tr>
<tr>
<td>Medium - low</td>
<td>Some limited sensitivities although there are opportunities to accommodate the development</td>
</tr>
</tbody>
</table>
The development typology relates well to key landscape characteristics and change is able to be accommodated without significant adverse impacts on landscape character or visual amenity.

We have considered ratings for all landscape and visual sensitivities in the assessment to arrive at overall sensitivity ratings for each typology in each landscape character type. The overall sensitivity level is judged by considering the combined weight of evidence on landscape and visual sensitivity rather than using a numerical scoring system for each sensitivity criterion.

2.9 Cumulative issues and overall capacity assessment

There are two outputs from the assessments in relation to cumulative landscape and visual assessment.

2.9.1 Cumulative effects

We have firstly considered cumulative effects in the sensitivity assessments. This is one of the criteria listed in the detailed sensitivity assessments, and considers the implications of existing and consented turbines and wind farms within the landscape character type and nearby.

2.9.2 Potential cumulative issues

We have also identified potential cumulative landscape and visual issues. These are more speculative potential impacts, and reflect what might happen depending on the number and type of developments which might be introduced into the landscape character type which is the subject of the assessment. These potential issues are listed prior to identifying opportunities and constraints to different development typologies within the sensitivity assessments undertaken for each landscape character type.

Potential landscape and visual cumulative impacts considered include:

- Change in landscape character – i.e. where an addition to existing and consented wind farms and turbines is likely to result in wind turbines becoming a recognisable and consistent characteristic associated with a specific landscape character type, rather than a one off feature (this may not necessarily be a negative impact);
- Significant alteration to a defining characteristic of that landscape character – i.e. a characteristic which is recognised as contributing to the distinctive identity of the character of a type is likely to be lost or significantly diminished by the addition of one or more wind farms or multiple wind turbines to multiple existing and consented wind farms or turbines;
- Loss of recognisable development pattern – i.e. where wind farms or turbines are introduced into a landscape where existing wind farms or turbines already create a recognisable pattern of development which complements the existing character, but additional development diminishes the integrity and robustness of the pattern leading to fragmentation of landscape character
- Visual dominance – i.e. where wind farms or turbines become a visually dominant feature because of their combined presence as multiple or merged
developments affecting a skyline as viewed from a significant viewpoint, or encountered sequentially as a series of focal points from a road or stretch of coast which is a definable journey

- Visual clutter – where different types of turbines, including different heights and styles of design, come together to create a muddled visual distraction from the landscape or key features.

2.10 Overall sensitivity ratings and defining ‘Areas of Search’

It is recommended that Areas of Search should be identified for larger turbines >50m high only.

We advise that there is no scope for development within landscape character types concluded to have a High overall sensitivity.

Within landscape character types found to be of High-medium sensitivity, we consider that there is either no scope or very limited scope for development in a small part of the character type only. It is recommended that these landscapes should not form Areas of Search due to the number/degree of landscape and visual constraints identified. Within these High-medium sensitivity landscapes, it is recommended that developers should be required to demonstrate how they have dealt with the identified constraints in the siting and design of wind farm developments.

We consider that there is some scope for development where a Medium or lower sensitivity is identified in the study and it is recommended that these landscapes should be considered in the identification of Areas of Search for larger turbines. Medium and lower sensitivity landscapes are not without constraints however and developers should be required to take note of these in the siting and design of wind energy proposals.

2.11 Guidance for siting smaller turbines

Guidance on the siting of wind turbines below 50m height is provided in section 24 of this report. This work supplements SNH’s published guidance Siting and Designing Windfarms in the Landscape (2009) and Siting and Designing of Small Scale Wind Turbines of between 15 and 50 metres in height (2012).
3 SENSITIVITY ASSESSMENT OF LANDSCAPE CHARACTER TYPES

Sensitivity assessments have been undertaken for 20 landscape character types lying within South Ayrshire. These landscape character types are shown on Figure 3. More detailed maps, showing each landscape character type and their immediate context, are contained within each of the sensitivity assessments.

The sensitivity assessments consider the sensitivity of each character type to four different wind energy typologies, based on the height of the turbines taken to blade tip. Summary sensitivity assessments only are contained in this Main Study Report. The full sensitivity assessments, which include detailed tables and photographs, are contained within an accompanying Appendix Report and these should be reviewed particularly when considering specific proposals.

An introduction to each landscape character type is set out in the summary sensitivity assessments that follow. Operational and consented wind turbine developments, whether located within the landscape character type or in the surrounding area (and clearly visible from the character type which is being assessed) are briefly listed.

The sensitivity scores outlined in the summary of sensitivity are made on the basis of a five-point scale: High, High-Medium, Medium, Medium-Low and Low. These assessments consider and combine landscape sensitivity and visual sensitivity against a number of criteria including cumulative effects associated with existing and consented wind energy developments. Further detail on the method of assessment is included in Section 2 of this report.

Potential cumulative issues and key constraints and opportunities to development are set out for each landscape character type and the sensitivity assessment concludes with recommendations related to the scope of capacity and guidance on siting of wind turbine development.
4 CHARACTER TYPE 1C: RAISED BEACH COAST WITH FLAT FIELDS AND HEADLANDS

4.1 Introduction
The Raised Beach landscape character type identified in the Ayrshire landscape character assessments forms a narrow margin along parts of the coast of mainland Ayrshire and Arran.

Five sub-divisions of this character type have been identified, reflecting the diversity of the coastal landscape in Ayrshire. These are:
- North Ayrshire Raised Beach Coast (1a)
- Arran Raised Beach Coast (1b)
- Raised Beach Coast with Flat Fields and Headlands (1c)
- Raised Beach Coast with Rocky Shore (1d)

This section of the report is the landscape sensitivity assessment which has been undertaken for the sub-type Raised Beach Coast with Flat Fields and Headlands (1c), which extends along the entire length of the coast between Ayr and Ballantrae, except where it is interrupted by the Coastal Valley with Policies (5) and the Lower Dale (11).

The detailed assessment considers both larger and smaller development typologies.

4.1.1 Existing/consented wind farms
Only one operational wind farm was identified in this character type. This is a small single turbine near Drumshang (south east of Dunure), which is located at the transition with the lower hill slopes of the Coastal Headlands: Brown Carrick Hills (4b). A consented single turbine, 77m high to blade tip, will be located at Dowhill Farm near Turnberry at the transition between this character type and the adjacent Maybole Foothills (17d).

A single operational turbine at Girvan hospital (47.4m to blade tip) is located in the adjacent Lower Dale (11).

4.2 Summary of sensitivity
The Raised Beach Coast with Flat Fields and Headlands (1c) alternates between small, cultivated fields enclosed by the steep faces of raised beaches and more rugged, less accessible cliffs and headlands. It is linear and limited in extent. While the fertile and farmed flat coastal plain is the focus for development, including small settlements, golf courses and a busy A class road, the headlands and cliffs are more secluded, with rocky fragmented shorelines battered by the sea. This character type is characterised by the small scale of the landscape, reinforced by the low relief and the enclosure created by the raised beaches. However, the higher cliffs and headlands appear higher than they are, and the sense of vertical scale is a key sensitivity which also creates a sense of visual drama. There are small settlements and buildings on the coastal plain, often tucked against the raised beaches and sometimes close to accessible, sandy beaches. There are a
number of archaeological features associated with the higher ground. The profiles of the raised beaches and the headlands, often seen against the sky or standing out as an interim skyline against higher land, are very prominent. They can be viewed from both land and sea, with views from the road and the Ayrshire Coastal Path as well as settlements and accessible shorelines.

The narrowness and limited extent of this character type, the small scale of the landform, the relatively low relief and the sense of enclosure which further reduces scale of the landscape, the well settled stretches of coast and the contrasting secluded and often dramatic headlands as well as the high visibility of this coast all combine to increase sensitivity to turbine developments. There would be a High sensitivity to the large, medium and the small-medium typology (turbines above 30m high). Sensitivity to the small typology (turbines 15m-30m) would be High-medium.

4.2.1 Potential cumulative issues
Potential cumulative effects with the single wind turbine at Girvan hospital could occur, especially terms of sequential visibility when travelling along the coast. Any development of larger typologies in the Lower Dale (11), the Maybole Foothills (17d) and the Coastal Foothills (17e) character types should be clearly set back within these character types, to limit cumulative visual sequential effects on views from the A77.

4.2.2 Constraints
- The narrowness and limited extent of this character type which limits scope for larger and multiple turbine developments to be physically accommodated without impinging on neighbouring landscape character types
- The small scale and enclosure of this character type, reinforced by the containment provided by the raised beaches.
- The low relief and the dramatic verticality of the raised beaches, cliffs and headlands, all of which are very sensitive to any development which reduces the perceived height and the drama of the vertical scale.
- The abrupt profile of the raised beaches, with their pronounced skylines and the more complex landform of the headlands
- The sense of seclusion along the less accessible stretches of coast at the Heads of Ayr and Bennane Head
- The small scale of some of the buildings – for example the houses at Lendalfoot – and the setting of settlements, which is associated with dips in the raised beach where rivers flow into the sea. The sensitivity of setting of some buildings is reinforced if they are tucked against the raised beach, making the skyline even more sensitive to development
- The visual prominence of the skyline of the raised beaches and the rounded mass of the Heads of Ayr and Bennane Head, when viewed both from along the coast and from the sea
- The lack of development between the road and the coast, which often allows uninterrupted views of the sea and Ailsa Craig.
- The attraction of the south Ayrshire coast for recreation, increasing sensitivity to turbines which could be seen from roads, golf courses, sandy
stretches of beach and the Ayrshire Coastal Path, and which would impinge on key views to Ailsa Craig.

- Views form the sea, especially from recreational boats which come and go from Girvan, including day trips to Ailsa Craig.
- The setting of archaeological features and castles

4.2.3 Opportunities

- There are very limited opportunities for the small typology to be accommodated within this character type only.
- The occasional stretches of more undulating landform on the landward side of the coast road where development could be sited away from the prominent skyline of the raised beaches and associated clearly with the lower slopes of adjacent higher hill character types

4.3 Guidance for development

There is very limited scope for occasional, single turbines of the small typology only (turbines 15-30m high). The key sensitivities for this typology are potential impacts on the perceived height of the vertical scale of the raised beaches and steep headlands and the visual impacts of turbines ‘perched’ on higher ridges and skylines. Therefore no opportunities were identified in this assessment for even this height of turbine on the raised beaches and more complex landforms or along the prominent skylines of the headlands.

Opportunities are limited to the hinterland areas which merge with higher land, along the lower fringes of the Maybole Foothills (17d) and the Coastal Foothills (17e) and the lower hill slopes of the Brown Carrick Hills, on the landward side of the A77. Even here, scale may be a sensitivity and the size of turbines could be a constraint, with a preference for the smaller turbines towards the lower height band of this typology.

Small turbines below 15m high could also be accommodated but should be sited where they can be clearly associated with existing built development to minimise visual clutter. Detailed siting and design should accord with the guidance set out in section 24 of this report.
5 CHARACTER TYPE 1D: RAISED BEACH COAST WITH ROCKY SHORE

5.1 Introduction
The Raised Beach landscape character type identified in the 1998 Ayrshire Landscape Assessment forms a narrow margin along parts of the coast of mainland Ayrshire and Arran.

Five sub-divisions of this character type have been identified, reflecting the diversity of the coastal landscape in Ayrshire. These are:
- North Ayrshire Raised Beach Coast (1a)
- Arran Raised Beach Coast (1b)
- Raised Beach Coast with Flat Fields and Headlands (1c)
- Raised Beach Coast with Rocky Shore (1d)

This section of the report is the landscape sensitivity assessment which has been undertaken for the sub-type Raised Beach Coast with Rocky Shore (1d), which extends south of Ballantrae to Finnarts Bay and Glen App.

The detailed assessment considers both larger and smaller development typologies.

5.1.1 Existing/consented wind farms
No operational or consented wind turbines are located in this character type.

No operational wind farm and turbine developments located in other landscape character types within Ayrshire and neighbouring Dumfries and Galloway are visible from this character type.

5.2 Summary of sensitivity
The Raised Beach with Rocky Shore character type (1d) is the most remote stretch of coastline in mainland Ayrshire. Its precipitous slopes rise to slumped cliffs and rounded bluffs, as well as the pronounced landmark summits of Downan Hill and Finnarts Hill. The dramatic sense of height along the coast is partly a perception created by the lack of features against which the actual height can be gauged. Inland, this type merges with the undulating landform and farmland of the Glenapp Coastal Farmland and Policies (22) character type. The sense of remoteness is emphasised by the natural processes and elemental quality of the sea, which batters the rocky shoreline, as well as its lack of accessibility. The coast is most easily reached from land by the Ayrshire Coastal Path. The vegetation immediately adjacent to the coast is rough grazing with occasional scrub, although cultivated grassland fields extend to the tops of the steep slopes where the terrain is more undulating. Settlement is very sparse, with occasional farms accessed by long farm roads along the landward side of this type. The northern stretch of this coast is highly visible from Ballantrae, where Downan Hill forms part of the wider settlement setting. This coast is also visible from the sea, especially from the ferry link from Northern Ireland, which arrives at Cairn Ryan.
The narrowness and limited extent of this character type, the remote and dramatic coastal experience, the perceived height of the cliffs and headlands and the presence of the landmark hills combines to increase sensitivity to turbine developments. There would be a High sensitivity to the large, medium and the small-medium typology (turbines above 30m high). Sensitivity to the small typology (turbines 15m-30m) would be High-medium.

5.2.1 Potential cumulative issues
Potential cumulative effects could occur with any development located in this character type and any developments located within the neighbouring Glenapp Coastal Farmland and Policies (22). There could also be cumulative effects experienced from hill tops in this character type and the wider surrounding area (for example from Knockdolian or Beneraird Hills which are popularly accessed by walkers) where the large scale operational Arecleoch wind farm is visible in close proximity and where further large scale wind farm development may be sited in the Plateau Moorland with Forestry and Wind Farms (18c) character type. Views to the coast and Firth of Clyde form the key focus of views from these hills.

5.2.2 Constraints
- The narrowness and limited extent of this character type restricts scope for larger and multiple turbine developments to be physically accommodated without impinging on neighbouring landscape character types
- The dramatic verticality of the precipitous slopes, cliffs and headlands, all of which are very sensitive to any development which reduces the perceived height and the drama of the vertical scale.
- The sense of remoteness, which is emphasised by the perceived naturalness of the area, the integrity of the long length of undeveloped coast and the sense of exposure and relative wildness of the sea.
- The pronounced skylines formed along the top of the steep slopes and headlands, especially where these are seen against the sky when viewed both from along the coast and from the sea.
- The landmark hills of Downan Hill and Finnarts Hill and the contribution made by Downan Hill to the setting of Ballantrae.
- The sense of arrival to Cairn Ryan and Scotland from the Northern Ireland ferry, which passes close to the southern section of this coast.
- Views from this most remote stretch of the Ayrshire Coastal Path
- The setting of archaeological features and castles

5.2.3 Opportunities
- There are very limited opportunities for the small typology to be accommodated within this character type only.
- The more undulating landform on the landward side of this LCT, where development could be sited away from the remote stretches of coast and the prominent skylines and where turbines can be strongly associated with undulating landform and with the farmed interior.

5.3 Guidance for development
There is very limited scope for occasional, single turbines of the small typology (turbines 15-30m high) only. The key sensitivities for this typology are potential...
impacts on the sense of remoteness, on the perceived height of the vertical scale of the seaward slopes and the visual impacts of turbines ‘perched’ on higher ridges, landmark hills and skylines. Therefore no opportunities were identified in this assessment for even this height of turbine along the immediate coastal edge, more secluded coasts and the upper slopes of more prominent landmark hills. Opportunities are limited to the hinterland areas which merge with the landward, inland undulating farmland and more simple unimproved grassland areas associated with the Coastal Rolling Farmland and Policies (22).

Small turbines below 15m high could also be accommodated but should be sited only where they can be clearly associated with existing built development to minimise visual clutter. Even this size of turbine should be resisted in areas of remote character and along prominent skylines.

Turbines should not be sited on the top of cliffs, knolls, ridges, promontories or above abrupt steep slopes where they would be likely to be more prominent. They should also take into account the setting of landmark hills. Detailed siting and design should accord with the guidance set out in section 24 of this report.
6 CHARACTER TYPE 2B: COASTAL EDGE

6.1 Introduction
The Coastal Edge character type occurs intermittently between Saltcoats to Ayr, its continuity broken by the settlements of Irvine, Troon and Prestwick. This character type forms a narrow coastal margin defined for the purposes of this study as a sub-type within the Lowland Coast character type identified in the 1998 Ayrshire Landscape Character Assessment.

The detailed assessment considers both larger and smaller development typologies.

6.1.1 Existing/consented wind farms
There are no operational or consented turbines in this character type.

A development of 3 turbines (110m high) has been consented at the Glaxo Smith Kline industrial plant within the Coastal Lowlands with Industry (2a) and would lie approximately 2km at the nearest point to this landscape.

The operational Kelburn, Ardrossan, Dalry and Millour Hill wind farms are located in the southern uplands of the Clyde Muirshiel Park approximately 5km north of this character type at the nearest point. Together, these wind farms comprise 41 turbines between 100 and 125m high. Visibility of these wind farms is fairly limited from much of the Coastal Edge, particularly where dunes inland offer a degree of containment.

A single turbine (75m high) has been consented at Ailsa Hospital, Ayr and would lie approximately 9km from this character area. Views of this turbine from the Coastal Edge are likely to be screened by urban development.

6.2 Summary of sensitivity
This character area forms the open coastal margin of the Firth of Clyde from Saltcoats to Ayr and also includes part of the Garnock estuary. The coastal settlements of Irvine, Troon and Prestwick interrupt the continuity of this coastal edge. Although the coastal edge is modified in places by golf courses and isolated built development, it generally has an open and naturalistic character, comprising sandy beaches, dunes and dune slack and lagoon areas. A complex estuarine landscape is found where the Rivers Irvine and Garnock meet at the coast forming a natural harbour sheltered behind Irvine Bar. The beach and dune area is well-used for recreation and is highly visible from the Ayr-Glasgow railway. Dunes often restrict views from beaches inland to nearby housing, industry and airport development, with the sea and Arran forming the key focus of views from this character area.

The naturalistic beaches and sand dunes of this character type would be highly sensitive to all typologies of wind farm development due to their rarity and importance in separating, and providing a landscape setting to, the coastal settlements. This landscape provides a valuable recreational resource within a
densely settled area and intrusion on views across the Firth of Clyde to Arran is a key constraint. There would be a High sensitivity to the large, medium and the small-medium typology (turbines above 30m high). Sensitivity to the small typology (turbines 15m-30m) would be High-medium.

6.2.1 Potential cumulative issues
The operational wind farms of Kelburn and Ardrossan, which are sited close to the coast within the Clyde Muirshiel uplands of North Ayrshire, are already highly visible in views from the Firth of Clyde including from the Ardrossan-Arran and Troon-Belfast ferries. Cumulative effects could occur from the Firth of Clyde if wind turbines were sited along the Coastal Edge (2b) but also within the small hills backing the Ayrshire Coast, including the Brown Carrick Hills (4b) and Lowland Hills (16) and within the Coastal Lowlands with Industry (2a) and the western part of the South Ayrshire Lowlands (7d). The consented single wind turbine at Ailsa Hospital, Ayr and other consented tall turbines within the Coastal Lowlands with Industry (2a) in North Ayrshire would contribute to these effects.

6.2.2 Constraints
- The narrowness and limited extent of this character type which limits scope for larger and multiple turbine developments to be physically accommodated without impinging on neighbouring landscape character types.
- The low relief and complexity of sand dunes backing beaches which would be dominated by all turbine typologies.
- The naturalistic character of these open stretches of coast, comprising sandy beaches, dunes and dune slack and lagoon areas and a complex estuarine landscape at the confluence of the Rivers Irvine and Garnock.
- The setting these stretches of open and naturalistic coastline provide to the towns of Saltcoats, Irvine, Troon, Prestwick and Ayr and their role in providing separation and open space between settlements within the densely populated Ayr Bay area.
- The well-used beaches, golf courses and footpaths, including the Ayrshire Coastal Path, and the Glasgow-Ayr railway accommodated within this coastal landscape which increase visual sensitivity.
- Dramatic views from this coast across the Firth of Clyde to Arran and views from the sea to this coastal edge, including those from the Ardrossan-Arran and Troon-Belfast ferries.

6.2.3 Opportunities
- There are some limited opportunities for turbines <15m to be accommodated provided they were closely associated with existing buildings such as clubhouses or beach facilities to minimise clutter in these open stretches of coast and intrusion on sea-ward views.

6.3 Guidance for development
No scope has been identified for turbines >15m high to be accommodated in the Coastal Edge (2b) in this assessment.
Small turbines below 15m high could be accommodated but should be sited where they can be clearly associated with existing built development to minimise visual clutter and avoid intrusion on views to the sea and Arran.

Turbines should not be sited on the top of more pronounced and complex dunes and should be set well back from the edge of beaches where they would be likely to be more prominent. Special care is needed to ensure that only well-designed turbines are used in this highly sensitive coastal landscape with limits on the range of designs used in order to minimise cumulative landscape and visual effects.

This landscape is highly sensitive to intrusion from any larger turbine typologies sited in adjacent character types, and care should be taken to avoid larger turbines appearing ‘over the skyline’ from low level views along the coast or intruding on the focus provided by the Brown Carrick Hills (4b) and the Heads of Ayr in views along the coast.

Detailed siting and design should accord with the guidance set out in section 24 of this report.
7 CHARACTER TYPE 4B: COASTAL HEADLANDS - CARRICK HILLS

7.1 Introduction
This character type only occurs in a single area in Ayrshire. It comprises a compact group of small hills which overlook the Firth of Clyde and Ayr and rise above the Maybole Foothills (17d) to the south.

The detailed assessment considers both larger and smaller development typologies.

7.1.1 Existing/consented wind farms
No existing or consented wind turbines are sited within this area.

One single small operational wind turbine was identified at the transition with the adjacent Raised Beach with Flat Fields and Headlands character type (1c). This is a small single turbine near Drumshang (south east of Dunure).

The Hadyard Hill wind farm is located approximately 13km from this character type within the Foothills with Forestry and Wind Farm (17c) character type. This development comprises 52 turbines, a maximum of 111m high. A single 75m high turbine at Ailsa Hospital Ayr within the South Ayrshire Lowlands (7d) has been consented.

7.2 Summary of sensitivity
The Coastal Headlands – Carrick Hills (4b) character type is a cluster of rugged, prominent landmark hill summits which are easily recognisable and widely visible over Ayrshire and the outer Firth of Clyde. It provides the immediate backdrop to a number of smaller scale and lower lying character types, including the Raised Beach Coast with Flat Fields and Headlands (1c), the Coastal Valley with Policies (5) and the River Doon Lowland River Valley (9). It also provides the backdrop to Ayr and contributes to the setting of Culzean castle. The hills are perceived to be higher than they are, and the prominence of the three masts near the summit, bear this out. The landform is rugged and can be complex, with varied interlocking terrain, shallow valleys and steep slopes. The vegetation pattern ranges from open wet moor and occasional conifer woodland on the upper slopes to semi-natural broadleaved woodland, enclosed fields, riparian woodland and, to the east, policies associated with larger houses overlooking the Doon valley. Only the lower hill slopes and more sheltered inland valleys are settled, with small settlements as well as farms and single houses connected by a network of narrow roads.

The importance of this group of landmark hills in an Ayrshire wide context, their wide visibility and contribution to the setting of adjacent character types and nearby settlements, their height, which is small relative to their perceived scale, and the complexity of landform, as well as the settled character of the lower slopes combine to increase sensitivity especially to larger typologies. There would be a High sensitivity to the large and medium typologies (turbines >50m). Sensitivity would be High-medium for the small-medium typology (turbines 30-50m) and Medium to the small typology (turbines 15-30m).
7.2.1 Potential cumulative issues
The following issues may arise in connection with any possible development situated in this and adjacent landscapes:

- Close inter-visibility between turbines which are likely to be located in the adjacent Maybole Foothills (17d) and smaller turbines at the transition with the adjacent Raised Beach Coast with Flat Fields and Headlands (1c).
- Variations in the type and size of single and small groups of small turbines proposed along the lower slopes of these Coastal Headlands and the adjacent Maybole Foothills (17d).
- Possible sequential landscape and visual effects on the experience of the A77.
- Possible visual effects related to cumulative effects of turbines on prominent headlands and coastal hills when experienced from the Firth of Clyde.

7.2.2 Constraints

- The landmark hill status of this easily recognisable hill group which is visually widely prominent across Ayrshire and the Firth of Clyde.
- The extent and configuration of this character type which although moderate in size is a series of outward-facing slopes which radiate from the summits, which limits scope for larger and multiple turbine developments to be physically accommodated without impinging on neighbouring landscape character types.
- The height of the hills, which although in absolute terms is relatively small, appear larger due to their visual prominence.
- The small scale of some of the more complex areas of landform, and the steepness of some of the seaward flanks.
- The often more diverse landcover on the lower slopes which reduces the landscape scale.
- The setting of the settlement along the lower slopes, including a number of estate houses with designed landscapes.
- The visual prominence of the skyline which contributes to the setting of Ayr and the nearby Culzean castle, and views from the Castle, as well as to and from Ayr.
- The sense of seclusion which can be experienced in the more rugged and semi-natural upland areas.
- Views from the A77, the Ayrshire Coastal Path and a number of nearby settlements, including Ayr and Maybole.

7.2.3 Opportunities

- The transition between the more simple uplands and the cultivated lower hill slopes, away from prominent skylines and where turbines will not intrude into the setting of smaller scale landscapes, views from Culzean Castle and the setting of Ayr.

7.3 Guidance for development
No scope for any turbines taller than 50m was identified in this assessment.
This assessment found there to be limited scope for the small-medium typology (turbines 30m-50m high) and some scope for the small typology (turbines 15-30m high) to be accommodated in this landscape. The key constraint is potential impacts on the profile of these landmark hills and their contribution to the setting of nearby Ayr and Culzean Castle, as well as their widely visible skylines.

All turbines should be set back from prominent skylines and from smaller scale landscape types or features which might be found in the neighbouring Doon River Lowland River Valley (9) or the Raised Beach Coast with Flat Fields and Headlands (1c). They should also be sited away from designed landscapes and avoid intrusion on the setting of settlements and historic buildings.

Opportunities are most likely to be found in the more gently graded slopes, dips in less prominent ridges, gentle bowls and lower hill slopes where there is less likelihood of impacting on prominent skylines. The limited scope for turbines 30m-50m high is most likely to be found on the gentle lower hill sides overlooking the Maybole Foothills (17d).

Small turbines below 15m high could also be accommodated but should be sited where they can be clearly associated with existing built development to minimise visual clutter.

All turbine developments should avoid significant impact on areas with perceived qualities of seclusion. Turbines should not be sited on the top of knolls or skyline ridges. Limiting the range of heights and designs used will minimise cumulative landscape and visual effects. Detailed siting and design should accord with the guidance set out in section 24 of this report.
8 CHARACTER TYPE 5: COASTAL VALLEY WITH POLICIES

8.1 Introduction
This coastal landscape character type lies only in South Ayrshire, where it extends across the grounds and wider policies of Culzean. To the north it is overlooked by the Coastal Headlands of the Brown Carrick Hills (4b) while the Maybole Foothills (17d) rise up to contain the southern edge of this character type.

The detailed assessment considers both larger and smaller development typologies.

8.1.1 Existing/consented wind farms
No operational or consented wind turbines are located in this character type.

8.2 Summary of sensitivity
The Coastal Valley with Policies (5) occupies the wide mouth of a valley contained by higher hills to the north and south and tucked between headlands of adjacent Raised Beach coastal landscape types. It is an extensively wooded landscape, from semi-natural woodland along the dramatic raised beaches on the foreshore, to formal policies providing the setting to the extensive grounds of Culzean Castle and lines of trees framing the fields. This landscape is a pronounced contrast to the less wooded stretches of adjacent coast. The landform is small scale and often complex, underpinned by river deposits, while the pattern of small spaces and the enclosure of the woodland reinforce a small scale, often contained landscape. The settlement pattern is sparse, but there is consistency in the estate type buildings, and the prominent Culzean castle is the structural focus for the extensive designed landscape and a visual focus more widely. The Castle grounds and their setting, extending out into the wider pattern of fields and shelterbelts, creates a landscape of considerable integrity and historic landscape value. This can be experienced from within the designed landscape, a key visitor attraction, from the A719 and the Ayrshire Coastal Path.

The containment of the valley, the small scale of the landform and the pattern of spaces and woodland, fine quality and integrity of the extensive policies and setting for Culzean Castle and its important visual focus combine to increase sensitivity of this landscape character type. There would be a High sensitivity to the large, medium and the small-medium typology (turbines above 30m high). Sensitivity to the small typology (turbines 15m-30m) would be High-medium.

8.2.1 Potential cumulative issues
Key considerations for any future potential cumulative effects include the need to consider inter-visibility with turbines along the lower hill slopes of the Coastal Headlands of the Brown Carrick Hills (4b) and the adjacent Maybole Foothills (17d) and cumulative visual sequential effects on views from the A719.
8.2.2 Constraints

- The small extent of this character type which limits scope for larger and multiple turbine developments to be physically accommodated without impinging on neighbouring landscape character types
- The small scale of the landform and spaces enclosed by woodland within this character type
- The low relief, interlocking arrangement and complexity of the landform, as well as the abrupt upper edge of the raised beach
- The sense of seclusion along the coast and also within some of the more extensive policy woodland areas
- The fine quality, extent and integrity of the designed landscape and its wider setting
- The visual focal point of Culzean Castle, which is a structural focus for the designed landscape, but also a visual feature more widely
- Views to and from Culzean castle and a wide range of features within the well visited castle grounds
- The setting of the conical landmark hill of Mochrum Wood
- Views from the A77 the Ayrshire Coastal Path and the setting of the Electric Brae, an additional visitor attraction in this area.

8.2.3 Opportunities

- There are very limited opportunities for the small typology only.
- The occasional stretches of larger scale and more simple landform along the lower hill slopes at the transition of neighbouring more upland type landscapes on the landward side of the A77, especially as the valley extends inland away from the sensitive coastal and policy character.

8.3 Guidance for development

There is very limited scope for occasional, single turbines of the small typology only (turbines, 15-30m high). The key sensitivities for this typology are potential impacts on the integrity and quality of the designed landscape and its wider setting, the visual focus of Culzean castle, views from and to Culzean and features in its grounds, the seclusion of the coast and the small scale and complexity of some of the landform. Therefore no opportunities were identified in this assessment for even this height of turbine on the coast, within the designed landscape and its setting or within the small scale fields and complex topography enclosed by woodland within the lower valley.

Opportunities are limited to the hinterland areas which merge with higher land, along the lower hill slopes of the Brown Carrick Hills (4b) and the lower fringes of the Maybole Foothills (17d). Even here, scale may be a sensitivity, as is the setting of the landmark hill of Mochrum Wood and the size of turbines could be a constraint, with a preference for turbines towards the lower height band of the small typology (<20m).

Small turbines below 15m high could be accommodated in this character type, but only where they do not intrude into the designed landscape or setting of Culzean Castle or other key features, or views to and from key features. Turbines should be
located where they should be sited where they can be clearly associated with existing built development to minimise visual clutter.

All turbine developments should avoid coastal areas with perceived qualities of seclusion and be sited well away from the prominent raised beaches, more complex small scale landforms and the tops of small hillocks or interlocking ridges. Turbines should also not be sited between the A719 and the coast on the north side of the valley, to avoid intrusion on dramatic views to the sea and Culzean Castle. Special care is needed to ensure that only well-designed turbines are used in this highly sensitive landscape with limits on the range of designs used in order to minimise cumulative landscape and visual effects. Detailed siting and design should accord with the guidance set out in section 24 of this report.

This landscape is highly sensitive to intrusion from any larger turbine typologies sited in the adjacent character types of the Maybole Foothills (17d) and the Carrick Hills Coastal Headland (4b).
9 CHARACTER TYPE 7D: SOUTH AYRSHIRE LOWLANDS

9.1 Introduction

This landscape character type occurs extensively across Ayrshire where it covers most of the Ayrshire Basin. This assessment considers the part of the Ayrshire Lowlands which occur within South Ayrshire only.

The Coastal Lowlands landscape character type identified in the 1998 Ayrshire Landscape Character Assessment which lie between Troon and Ayr within South Ayrshire have been reclassified as the South Ayrshire Lowlands (7d) and as a new character type, the Coastal Edge (2b), for the purposes of this study.

This assessment considers both smaller and larger development typologies in detail.

9.1.1 Existing/consented wind farms

Some smaller turbines <30m high are operational across this character type. A single 75m high turbine at Ailsa Hospital, Ayr has been consented.

Although the large scale wind farm developments of Hadyards, Whitelee and the developments sited within the Clyde Muirshiel uplands of North Ayrshire are visible from more open and elevated parts of the South Ayrshire Lowlands, the generally low-lying and rolling landform of this landscape, its containment by the higher Foothills and Foothills with Forestry (17c) to the south and the distance from these developments generally limits their influence on character and views.

9.2 Summary of sensitivity

The South Ayrshire Lowlands have a variable landform which although gently undulating, forming low ridges and valleys, can be more complex and rolling in some areas with some locally prominent small hills. The landform becomes more folded at the edge of the Lowland River Valley (9) where small interlocking hills form prominent skylines, particularly seen from the Ayr and Doon valleys. This is a diverse landscape with small pastures, enclosed by intact hedgerows, small woodlands and field trees and a regular pattern of small farms enriching the overall composition. Occasional small estates surrounded by wooded policies lie at the foot of the Lowland Hills (16) and the Craigs of Kyle and are more widely dispersed across the remainder of this landscape. Higher, more open hills occur to the south-east in the Craigs of Kyle area at the transition with the larger scale East Ayrshire Lowlands (7c) and Foothills with Forestry and Opencast Mining (17a). This landscape becomes more fragmented by larger scale built infrastructure where it abuts the settlements of Ayr, Prestwick and Kilmarnock.

The generally small to medium scale of this landscape which is influenced by the dense pattern of evenly distributed small farms, trees and woodlands, increases sensitivity to larger development typologies. There would be a High sensitivity to the large typology (turbines 70m+) and the medium typology (turbines 50-70m). Sensitivity to the small-medium typology (turbines 30m-50m) would be Medium and Medium-low for the small typology (turbines 15-30m) reflecting increased
opportunities for these smaller typologies to fit better with the scale of this well-settled landscape and to avoid significant cumulative effects associated with multiple turbines.

9.2.1 Potential cumulative issues

Potential cumulative issues may include the following:

- Close inter-visibility between any turbines sited on the southern fringes of this character type at the transition with the more extensive upland landscapes of the Foothills with Forestry and Opencast Mining (17a) and the East Ayrshire Lowlands (7c) which may in future accommodate larger wind farm developments.
- Larger typologies sited in this settled small scale landscape would be contrary to the established association of turbines >100m high with more simple and expansive upland landscapes.
- Multiple turbines >30m associated with the majority of land holdings would have significant cumulative landscape and visual effects due to the relatively dense spacing of small farms characteristic of this landscape, quickly becoming a dominant feature. A greater number of turbines <30m could be accommodated in this landscape due to their ability to fit more comfortably with the size of buildings, woodlands and trees and be partially contained by landform and vegetation.
- Variations in the type and size of single and small groups of small turbines proposed within the landscape type

9.2.2 Constraints

- The predominantly small to medium scale of this landscape where the rolling landform and woodlands provide containment and the density of closely spaced small farms and settlements provide ready scale references and increase potential for cumulative effects associated with multiple turbines.
- Occasional more complex areas of rolling landform and more defined prominent small hills, diverse areas of policy woodlands, field and road-side trees and small pastures with a strong enclosure pattern of hedgerows.
- The smaller scale Lowland River Valleys (9) of the Ayr and Doon which cut into the South Ayrshire Lowlands and feature diverse policy woodlands and historic settlements and buildings which would be sensitive to intrusion by larger turbines seen on the skyline of often complex containing ridges above the valley.
- The role this landscape plays in providing a simple rural landscape setting to Troon and the foreground to views to the Firth of Clyde and Arran from roads and settlements and also from the adjacent Lowland Hills (16) in this area.
- The fragmented pattern of large buildings, roads, transmission lines and other infrastructure on the fringes of Ayr, Prestwick and Kilmarnock which could be exacerbated by turbines (and particularly multiple larger typologies) increasing visual clutter and intrusion.
9.2.3 Opportunities

- The less densely settled and more open long gentle northern hill slopes of the Craigs of Kyle which lie in the south-eastern part of the South Ayrshire Lowlands at the transition with more expansive and simple upland landscapes and where the small-medium typology could be located providing intrusion on the setting of designed landscapes and small lochs was minimised.
- The more fragmented urban fringes around Kilmarnock, Ayr and Prestwick where the landform is often less rolling, the field enclosure and woodland pattern weaker and where the small-medium typology would fit better with the scale of industrial and other larger buildings provided they were limited in number and sited close-by to minimise the spread of clutter.
- The regular pattern of farms which are often located on low hills and ridges where the small typology (turbines <30m) could be sited so visually associated with buildings thus emphasising this existing pattern and relationship to landform and minimising clutter.
- The rolling landform and often dense pattern of hedgerows, woodlands and roadside trees which could provide intermittent screening of smaller turbines.

9.3 Guidance for development

This study has found there to be no scope for the large and medium typologies (turbines >50m) to be accommodated in this landscape.

There are limited opportunities for the small-medium typology (turbines 30-50m) to be accommodated in the south-eastern fringes of this character type in the more open and less densely settled Craigs of Kyles area. Potential cumulative effects with any future larger scale wind farm developments that may be proposed in the adjacent Foothills with Forestry and Opencast Mining (17a) character type should be considered when evaluating proposals for this height of turbine in this area. Turbines sited in this area should avoid intruding on the setting of Martnaham Loch and associated wooded policies and the more rugged rocky summit of the Craigs of Kyle.

The small-medium typology could also be associated with larger buildings on the fringes of Kilmarnock, Ayr and Prestwick although the number and range of turbines would need to be limited to avoid significant cumulative effects and exacerbation of the fragmented nature of these urban fringes.

There are increased opportunities to locate multiple turbines of the small typology (15-30m) to minimise cumulative effects as turbines of this size could be sited to be partially back-dropped by low hills and would be additionally screened in places by woodland and trees. Turbines <15m should be visually associated with existing farms and other buildings to emphasise the existing settlement pattern and its relationship to landform and minimise clutter in this relatively densely settled landscape.
All turbines should be sited to avoid intrusion on sensitive skylines seen from the Ayr and Doon valleys. They should also be sited to avoid significant impacts on the setting of Troon and views to the Firth of Clyde and Arran.

Detailed siting and design should accord with the guidance set out in section 24 of this report.
10 CHARACTER TYPE 9: LOWLAND RIVER VALLEYS

10.1 Introduction

This landscape character type occurs across Ayrshire where it covers the lower valleys of the Garnock, Annick Water, Irvine, Ayr and Doon, together with a number of smaller tributaries of these rivers. The lower section of the Irvine valley west of Kilmarnock (identified in the Ayrshire Landscape Assessment (1998) as a ‘Lowland River Valley’) has been subsumed into the adjoining North/East Ayrshire Lowlands (7a, 7c) and the Coastal Lowlands with Industry (2a) character types for the purposes of this study.

The detailed assessment considers both larger and smaller development typologies.

10.1.1 Existing/consented wind farms

No operational wind farms or larger wind turbines are sited within this character type. A single 80m high turbine has been consented within the Ayr valley near Sorn. A consented single 48m high turbine is located at the Moorfield Industrial Estate, south-west of Kilmarnock and within the East Ayrshire Lowlands (7c). A number of smaller turbines (<20m) are located near Galston and close to the Irvine valley.

The operational/consented Whitelee wind farm development and the consented Sneddon Law wind farm (a total of 230 turbines, 110m-130m high) lie about 4km to the north of the Irvine valley.

10.2 Summary of sensitivity

The Lowland River Valleys (9) predominantly form narrow valleys which merge gradually with the adjacent gently rolling Ayrshire Lowlands (7a, 7c and 7d). These valleys are incised and often feature steep side slopes and a complex contorted course of main river and tributaries which is seen in elevated views from settlement and roads. The Doon, Ayr, Lugar Water and Water of Coyle are particularly well-wooded with a mix of semi-natural riparian woodland and extensive wooded policies associated with the many large estates sited on lower slopes. These woodlands, together with small rolling hedged fields on side slopes, more open floodplain pastures, individual trees, parkland and small buildings, contribute to the intimate scale of these river valleys. The Lowland River valleys are well settled and contain a number of architecturally interesting settlements and historic built features.

The predominantly intimate scale and diverse landform of these well-settled Lowland River Valleys, together with their rich diversity of land cover and built heritage, comprise major constraints to larger typologies. There would be a High sensitivity to the large typology (turbines >70m), the medium typology (turbines 50-70m) and the small-medium typology (turbines 30-50m). Sensitivity would be Medium for the small typology (turbines 15-30m) but with preference for turbines <20m.
10.2.1 Potential cumulative issues

The following issues may arise in connection with any possible developments situated in this and adjacent landscapes:

- Inter-visibility between larger turbines which are more likely to be located in the surrounding upland areas and any smaller turbines sited in these valleys.
- Potential location of larger turbines within the Plateau Moorland (18a) which could result in significant cumulative effects on the Irvine valley (in combination with the operational/consented Whitelee I and II and Sneddon Law wind farms) which may limit scope for even the small typology (turbines 15-30m) to be accommodated in the Irvine valley.
- Any larger turbines which may be sited in the adjacent Ayrshire Lowlands (7a, 7c and 7d) and could be visible on sensitive containing skylines seen from these Lowland River Valleys.

10.2.2 Constraints

- The strongly enclosed and confined nature of these valleys and the small farms and houses, areas of woodlands and enclosed farmland which provide ready scale references.
- Small interlocking hills which form complex skylines particularly within the Ayr and Doon valleys, rolling side slopes and the strongly meandering rivers which create spurs, cliffs and small arcs of flat floodplain in places.
- The intricate pattern of mixed policy woodlands covering steep side slopes, semi-natural riparian woodlands, small rolling pastures enclosed by hedges and occasional field trees and occasional areas of parkland.
- The setting these valleys provide to historic buildings, settlements and designed landscapes, including the more extensive estates of Sorn Castle, Dumfries House, Auchencruive and Loudoun Castle and the rich policy landscapes of the lower Doon valley.
- The often open and elevated views over and across these valleys from settlement and roads sited on upper valley sides.
- The close proximity of the Irvine valley to operational and consented wind farm developments within the East Ayrshire Plateau Moorlands with Forestry and Wind Farms (18b).

10.2.3 Opportunities

- The broader and more open Irvine valley, and less richly patterned sections of other valleys (which are very limited in extent) where the small typology (turbines 15-30m) could be accommodated to minimise effects on designed landscapes and cumulative effects with operational/consented wind farm development.
- More gently sloping upper valley sides where turbines <20m could be associated with farms and other buildings to minimise clutter and intrusion on the more dramatically incised and wooded valleys.
10.3 **Guidance for development**

This study has found there to be no scope for the large, medium or small-medium typology (turbines >30m high) to be accommodated in this landscape.

There are *limited* opportunities for the small typology (turbines 15-30m) to be sited in the broader and more open sections of the Lowland River Valleys. Turbines below 15m high only could be accommodated within the narrower and more richly patterned of these valleys but should be closely associated with farms and other buildings which are often located on upper valley sides to minimise intrusion.

All turbines should be sited to avoid impact on designed landscapes and areas with a more diverse landform and land-cover pattern, particularly evident within the Lugar Water, Ayr and Doon valleys but also within some sections of the other valleys of this character type. Turbines should not be sited on containing skylines prominent in views from settlement, roads and footpaths within the lower valley and the tops of small knolls should also be avoided.

Detailed siting and design should accord with the guidance set out in section 24 of this report.
11 CHARACTER TYPE 11: LOWER DALE

11.1 Introduction

This character type only occurs in a single area in Ayrshire. It comprises the broad gently undulating valley of the Water of Girvan from just east of Old Dailly to the coast at Girvan.

The detailed assessment considers both larger and smaller development typologies.

11.1.1 Existing/consented wind farms

There is an operational single turbine at Girvan hospital (47.4m high to blade tip) at the eastern end of this character type.

The operational Hadyard Hill wind farm is located within the adjacent Foothills with Forestry and Wind Farm (17c) which lies to the south of this character type within South Ayrshire. This development comprises 52 turbines, a maximum of 111m high. This wind farm is visible from the northern side of the dale.

11.2 Summary of sensitivity

The Lower Dale (11) of the Water of Girvan is a moderately broad but well contained valley, framed by the Maybole and Coastal Foothills (17d and 17e) and, where it extends to the coast, merges with the Raised Beach Coast with Flat Fields and Headlands (1c). The sometimes flat, but often gently undulating valley floor extends to more complex lower hill slopes which lie beneath rounded hill forms to the north and more irregular, rugged upper hill slopes and summits to the south. The diverse vegetation pattern reflects the fertility of this river valley, with a well defined field pattern enclosed by numerous hedges and shelter woods, and some small areas of policy woodland related to larger houses. The relatively small extent and high degree of containment, as well as the small scale of some of the landforms, the low relief and the enclosure pattern contribute to creating a landscape of relatively small to moderate scale. Dispersed farms and houses make up the settlement pattern but larger buildings are also associated with an industrial estate and distillery and this landscape contributes to the setting for the coastal town of Girvan. While the coast can be experienced as relatively secluded, inland the landscape is cultivated and accessible, and there are existing wind turbines which influence its character.

The small to medium scale of this well-settled landscape with its well defined enclosure pattern and sense of containment, the high visibility of this landscape and the presence of nearby operational large wind turbines increase sensitivity to larger development typologies. There would be a High sensitivity to the large and medium typologies (turbines >50m). Sensitivity would be High-medium for the small-medium typology (turbines 30-50m) and Medium to the small typology (turbines 15-30m).
11.2.1 *Potential cumulative issues*

The following issues may arise in connection with any possible development situated in this and adjacent landscapes:

- Close inter-visibility between larger turbines which are more likely to be located in the adjacent more extensively scaled and less settled Foothills character types and smaller turbines in this character type, including potential cumulative effects with the Hadyard Hill wind farm, the single turbine at Girvan hospital and the smaller turbines already located in this landscape.
- Variations in the type and size of single and small groups of small turbines proposed within the Lower Dale.
- Possible sequential landscape and visual effects on the experience of the A77.
- Possible visual effects related to cumulative effects of turbines on prominent headlands and coastal hills when experienced from the Firth of Clyde.

11.2.2 *Constraints*

- The predominantly small to medium scale of this landscape where rolling landform and belts of woodland provide containment and the presence of farms and other settlement provides ready scale references and also increases potential for cumulative effects associated with multiple turbines >30m.
- More complex rolling landform and small knolls on lower valley sides and steeper slopes and more rugged landform on the southern side of the valley.
- The integrity and consistency of the well-defined field pattern, which is reinforced by the hedges and woodland, including occasional policy woodland and which reinforces the small scale and diverse character of this type.
- The seclusion and setting of the coast, which merges with the sensitive Raised Beach Coast (1c), and views from the sea.
- The setting of Girvan and other smaller settlements, as well as a number of historic features and castles.
- The potential for significant cumulative effects to arise with the existing Hadyard Hill wind farm, the single turbine at Girvan hospital and a number of small turbines set within the valley floor.
- Views from settlements and roads, including the A77, the railway and the sea.

11.2.3 *Opportunities*

- Less settled but still gently graded and open upper slopes where a simpler and broader character occurs at the transition with the more extensive Foothills.
- The context of larger buildings and industrial areas which provides opportunities for appropriately sized turbines.
11.3 **Guidance for development**

This assessment found no scope for the large and medium typologies (turbines >50m) to be accommodated within the Lower Dale landscape character type.

This assessment found there to be *very limited* scope to site the small-medium typology (turbines 30m-50m tall) and *some limited* scope for the small typology (turbines 15-30m tall) to be accommodated in this landscape. The key constraints are the enclosure of the valley which combined with the small scale landforms and diverse land use pattern create a relatively small scale landscape, and the high visibility of this landscape especially when taking into account the potential for cumulative effects.

Larger turbines (turbines >20m) should be set well away from the more complex landforms and most diverse landuse patterns of the valley floor and instead focus on the more simply graded and most open landscapes where scale is more extensive. There is some scope for the small-medium typology to be associated with larger groupings of industrial buildings. Small turbines (<20m) should be located where they can form clusters of development, associated with farms, farm buildings and other industrial buildings as appropriate to their size.

All turbines should avoid the coast and impacts on the adjacent Raised Beach Coast (1c) character type, and should not impinge upon the setting of small buildings and historic or archaeological sites. Attaining a consistency of design between turbines will be important given the openness and high visibility of the western part of this landscape and the proximity of the operational turbine at Girvan hospital. Detailed siting and design should accord with the guidance set out in section 24 of this report.
12 CHARACTER TYPE 12: MIDDLE DALE

12.1 Introduction
This character type only occurs in a single area in Ayrshire. It comprises the broad undulating valley of the Water of Girvan between Old Dailly and Straiton.

The detailed assessment considers both larger and smaller development typologies.

12.1.1 Existing/consented wind farms
No existing or consented wind farms are sited within this area.

The operational Hadyard Hill wind farm is located within the adjacent Foothills with Forestry and Wind Farm (17c) character type which lies to the south of this character type within South Ayrshire. This development comprises 52 turbines, a maximum of 111m high. This wind farm is visible from more open parts of the Middle Dale within 1km at the closest point. No other wind farms or large turbines are visible from this character type.

12.2 Summary of sensitivity
The Water of Girvan is accommodated in a broad valley which is strongly contained by the Foothills (17b, 17c and 17d) character types. A narrow floodplain within the valley floor is covered with farmland, woodlands and parkland associated with the many designed landscapes that are a key feature of this landscape. Lower valley sides are more complex and rolling and are often well-wooded. Strongly enclosed small fields and mature field trees contribute to the diverse and often intricate land-cover pattern of this landscape. A rich built heritage is evident in the many castles, mansion houses and clustered or planned settlements including Kirkmichael and Straiton and small traditional farms also regularly pattern valley sides. The Foothills which contain this landscape vary in character, generally forming higher, more pronounced hills to the east and south which provide a rugged backdrop to small settlements and designed landscapes. Less settled upper valley sides generally have a simpler landform and land-cover at the transition with these upland landscapes.

The small to medium scale of this well-settled and often intricately patterned landscape and its built heritage increase sensitivity to larger development typologies. There would be a High sensitivity to the large and medium typologies (turbines >50m). Sensitivity would be High-medium for the small-medium typology (turbines 30-50m) and Medium to the small typology (turbines 15-30m).

12.2.1 Potential cumulative issues
The following issues may arise in connection with any possible development situated in this and adjacent landscapes:

- Close inter-visibility between larger turbines which are more likely to be located in the adjacent more extensively scaled and less settled Foothills.
(17b and 17c) character types and smaller turbines in this character type, including potential cumulative effects with the Hadyard Hill wind farm.

- Variations in the type and size of single and small groups of small turbines proposed within the Middle Dale which could affect the strong integrity of this landscape.

12.2.2 Constraints

- The predominantly small to medium scale of this landscape where rolling landform and woodlands provide containment and the density of small farms and other settlement provides ready scale references and also increases potential for cumulative effects associated with multiple turbines >30m.
- Pockets of more rolling landform and small knolls on lower valley sides where all typologies would detract.
- The often intricate land-cover pattern, especially evident within the valley floor and lower side slopes, where mixed policy woodlands, parkland, strongly enclosed small pastures and mature field and road trees contribute to the richly diverse character of this landscape.
- The rich architectural heritage of this landscape which features many mansion houses/castles and their designed landscapes and also attractive small settlements sensitive to intrusion on their setting.
- The potential for significant cumulative effects to arise with the existing Hadyard Hill wind farm and any potential larger turbines sited in adjacent upland areas of the Foothills with Forestry west of Doon Valley (17b) and the Foothills with Forestry and Wind Farm (17c).
- Views from settlements and roads but also from key viewpoints within the adjacent Foothills including those from the Craigengower Monument at Straiton and Kildoon Hill near Maybole.

12.2.3 Opportunities

- Less settled upper slopes where a simpler and broader character occurs at the transition with the more extensive Foothills with Forestry west of Doon Valley (17b) and the Foothills with Forestry and Wind Farm (17c) and which are often hidden from lower roads and settlements.

12.3 Guidance for development

The assessment found no scope for the large and medium typologies (turbines >50m) to be accommodated within the Middle Dale landscape character type.

While the small-medium typology (turbines 30-50m) could in principle relate to the simpler landform and increased scale of sparsely settled upper hill slopes at the transition with the southern part of the Foothills with Forestry west of Doon Valley (17b) and the Foothills with Forestry and Wind Farm (17c), these areas are very limited in extent and the potential of these adjacent upland landscapes to accommodate larger turbines could result in significant cumulative impacts. It is therefore recommended that there is no scope for this typology within this assessment.

This assessment found there to be some scope for the small typology (turbines 15-30m high) to be accommodated in this landscape. Turbines should be set back
from more open parts of the valley floor instead favouring either lower hill slopes where landform and woodland would reduce prominence or the more extensive and open upper slopes. They should however be sited away from designed landscapes and avoid intrusion on the setting of settlements and historic buildings. Turbines <15m high should be located where they can reinforce the pattern of existing development, being associated with farms and buildings which provide a framework of built development-related spot features. It is important that turbines have a consistency of design in order to minimise potential cumulative effects on this landscape which has strong integrity. Detailed siting and design should accord with the guidance set out in section 24 of this report.
13 CHARACTER TYPE 13: INTIMATE PASTORAL VALLEYS

13.1 Introduction
This character type applies to the Stinchar Valley, its tributary the Duisk Water Valley and the upper reaches of the Water of Girvan Valley in South Ayrshire. This character type also occurs in North Ayrshire but is considered separately in the sensitivity assessment.

13.1.1 Existing/consented wind farms
No existing or consented wind farms are sited within these valleys.

The operational Hadyard Hill wind farm is located within the adjacent Foothills with Forest and Wind Farm (17c) character type which lies to the north of the upper Stinchar Valley. This development comprises 52 turbines, a maximum of 111m high.

The operational Arecleoch wind farm (60 turbines, 120m high) and Mark Hill wind farm (28 turbines, 110m high) are located within the South Ayrshire Plateau Moorland with Forest and Wind Farms (18c) character type which lies either side of the Duisk Valley.

13.2 Summary of sensitivity
The Stinchar, Girvan and Duisk Valleys are strongly contained by adjacent upland landscapes. These include the Foothills (17b, 17c and 17e) and the Rugged Uplands, Lochs and Forest (21) which feature steep-sided, well-defined ‘landmark’ hills on the fringes of the upper Girvan and along much of the Stinchar valleys. The Plateau Moorland with Forest and Wind Farms (18c) forms more simple and even skylines to the lower Stinchar and the Duisk valleys. Valley sides are often complex with steep craggy slopes and knolls constricting the valley floor in places - the upper valley of the Stinchar and Girvan are particularly dramatic being hemmed in by the steep slopes of adjacent uplands. Gently sinuous rivers are accommodated within an open floodplain of varying width, patterned by enclosed lush green pastures and some riparian woodland. Small rolling fields extend onto lower valley sides and are interspersed with semi-natural woodlands on steeper slopes and small mixed woodlands, some of these comprising estate policies. Occasional avenue and field trees, and areas of scrub and rougher pasture on upper slopes, contribute to the diverse and often intricate land-cover pattern of these valleys. A rich built heritage is evident in the many castles, mansion houses and small historic settlements such as Barr, Barrhill and Colmonell and the small farms which regularly pattern lower hill slopes.

The small to medium scale of this well-settled and often intricately patterned landscape and its built heritage increase sensitivity to larger development typologies. Cumulative impacts with existing wind farm development sited in adjacent upland landscapes are a key limitation. There would be a High sensitivity to the large and medium (turbines >50m). Sensitivity would be High-medium to the small-medium typology (turbines 30-50m) and Medium sensitivity to the small typology (turbines 15-30m) reflecting increased opportunities for turbines under
30m to fit better with the often confined scale of these valleys and to minimise cumulative impacts with operational wind farms located in adjoining upland areas and visible in close proximity.

13.2.1 Potential cumulative issues
The following issues may arise in connection with any possible development situated in this and adjacent landscapes:

- Close inter-visibility between larger turbines which are more likely to be located in the adjacent more extensively scaled Foothills and Plateau Moorland with Forest and Wind Farms (18c) character types and smaller turbines in this character type.
- Potential extensions to the existing wind farms of Hadyard Hill, Mark Hill and Arecleoch and/or new wind farm developments located in adjacent uplands which could extend visibility and intrusion of turbines on sensitive skylines which contain the Intimate Pastoral Valleys (13).
- Variations in the type and size of single and small groups of small turbines proposed within these valleys which could be very inter-visible along more open linear stretches from roads and could affect the strong integrity of this landscape.

13.2.2 Constraints

- The small scale of these valleys which are relatively narrow and strongly contained by adjacent uplands and where rolling landform, woodlands, enclosed pastures and the density of small farms and other settlement provides ready scale references.
- More complex knolly landform, steep-valley sides and well-defined ‘landmark’ hills including the craggy-topped Knockdolian, Craig and Bargain Hills and Craig of Dalwine along the Stinchar valley and the Big Hill of the Baing, Kildoach Hill and Genoch Hill on the edge of the upper Girvan valley.
- The rim of high, steep-sided hills lying on the north-western edge of the upper Stinchar valley, including Auchensoul, Mill of Miljoan and Daldowie Hills, which form a prominent and scenic backdrop to this valley but are also important in providing a degree of visual containment of the operational Hadyard Hill wind farm.
- The often intricate land-cover pattern, especially evident on lower hill slopes and on the edge of the valley floor, where mixed policy woodlands, strongly enclosed small pastures and mature field and road trees contribute to the diverse character of this landscape.
- The rich architectural heritage of this landscape which features many mansion houses/castles and their designed landscapes and also attractive historic small settlements sensitive to intrusion upon their landscape setting.
- Views from roads and settlement along more open sections of these valleys and from popularly accessed hills and where the skyline of containing uplands and ‘landmark’ hills are key visual foci.
- The potential for significant cumulative effects to arise with the existing wind farm developments of Hadyard Hill, Mark Hill and Arecleoch wind farms (and any further large turbine development which may be located in these adjacent uplands).
13.2.3 **Opportunities**

- Less settled upper slopes where a more open character occurs at the transition with the simpler and more extensive Plateau Moorlands with Forestry and Wind Farms (18c).

13.3 **Guidance for development**

The assessment found **no scope** for the large and medium typologies (turbines >50m) to be accommodated within the Intimate Pastoral Valley (13) landscape character type.

While the small-medium typology (turbines 30-50m) could in principle relate to the simpler landform and increased scale of sparsely settled upper hill slopes at the transition with the Plateau Moorland with Forest and Wind Farms (18c) either side of the Duisk Valley the potential for significant cumulative impacts to arise with existing wind farm developments is a key limitation. There may be some very **limited** scope for single and small groups (<5) of this size of turbine to be sited on broader upper valley sides at the transition with less pronounced upland areas provided intrusion on smaller scale settlement and features within lower reaches of these valleys is minimised and significant cumulative effects with existing large scale wind farm developments are avoided. The use of turbines towards the lower height band of this typology is likely to minimise impacts.

The assessment found there to be **some limited scope** for the small typology (turbines 15-30m high) with increased opportunities for multiple turbines to be better accommodated in this character type. Turbines should avoid the open floor of these valleys, instead being sited on gentler slopes and broader terraces on valley sides. Smaller turbines (<15m) should be associated with farms and other buildings to minimise visual clutter within these scenic valleys. The more extensive and open upper valley sides offer scope for turbines between 20-30m.

All turbines should be sited away from designed landscapes and avoid intrusion on the setting of settlements and historic buildings. Turbines of this size should be located where they can reinforce the pattern of existing development, being associated with farms and buildings which provide a framework of built development-related spot features. It is important that turbines have a consistency of design in order to minimise potential cumulative effects on this landscape which has strong integrity. Detailed siting and design should accord with the guidance set out in section 24 of this report.
14 CHARACTER TYPE 14: UPLAND GLEN

14.1 Introduction
There are three Upland Glens within Ayrshire, Glen Afton in East Ayrshire and Glen App and Glen Tig in South Ayrshire. All these Upland Glens are considered in this sensitivity assessment.

The detailed assessment considers both larger (turbines >50m) and smaller (turbines <50m) development typologies.

14.1.1 Existing/consented wind farms
There are no existing or consented wind farms or turbines located in these Upland Glens.

The Hare Hill operational wind farm (20 turbines, 63.5m high) is located within the adjacent East Ayrshire Southern Upland (20a) character type, approximately 1.5km to the east of Glen Afton and is visible in close proximity on the skyline of the middle section of this glen. The Windy Standard I operational wind farm (36 turbines, 53.5m high) and its consented extension (30 turbines, up to 120m high) is also located within the same Southern Uplands character type but within neighbouring Dumfries and Galloway. Although this wind farm lies within 1.5km to the west of Glen Afton, views to it are restricted from the floor of this glen by steep side slopes and forestry.

The operational Arecleoch wind farm (60 turbines, 135m high) and the Mark Hill wind farm (28 turbines, 110m high) are located in the South Ayrshire Plateau Moorland with Forest and Wind Farms (18c). There are close views of the Arecleoch wind farm from Glen Tig. There are no views of the Arecleoch wind farm from roads and settlement within Glen App.

14.2 Summary of sensitivity
The Upland Glens of Glen App, Glen Tig and Glen Afton are narrow and strongly enclosed, predominantly contained by steep sides which rise to form often irregular and highly prominent ridgelines. A number of well-defined hills on the edge of these glens form landmark features and are especially dramatic where these glens are contained by the high ground of the Southern Uplands (20a, 20b) character type. Land-cover is diverse with riparian woodlands and small walled pastures covering the valley floor and lower slopes and more extensive mixed policy woodlands and coniferous plantings, interspersed with semi-improved pastures and heather-flecked grass moorland, on steep upper slopes. The narrowness and enclosure of these glens create a small scale landscape, accentuated by the presence of small buildings, woodlands and fields. Encircling ridgelines are particularly sensitive to any form of built development seen on the skyline and a number of wind farm developments are already visible in close proximity from Glen Afton and Glen Tig.
There would be a **High** sensitivity to the Large, Medium and Small-medium typologies (turbines >30m) and a **Medium** sensitivity to the small typology (turbines 15-30m).

### 14.2.1 Potential cumulative issues

The following issues may arise in connection with any possible developments situated in this and adjacent landscapes:

- Inter-visibility of turbines sited in these glens and the larger turbines of operational and any future extensions/new developments within the adjacent Southern Uplands (20a and 20b) and South Ayrshire Plateau Moorland with Forest and Wind Farm (18c) character types which may be visible on sensitive skylines formed by the encircling hills containing these glens.
- Variations in the size and design of smaller turbines which would be appreciated in close view from settlement and roads due to the confined extent of these glens.

### 14.2.2 Constraints

- The small scale and narrow extent of these glens which would be quickly dominated by turbines (and especially multiple turbines) over 30m high and also by smaller but poorly sited turbines.
- The dramatic forms of steep-sided hill flanks and ridges and the high rugged peaks of well-defined hills including Beneraird, Milljoan Hill and Carlock Hill in Glen App and Blackcraig and Craigbraneoch Hills in Glen Afton where turbines and access tracks would significantly detract.
- The upper edge of the glens where the irregularly shaped enclosing ridgeline is visually prominent against the sky when viewed from within the glen.
- The heads of the glens which are often the focal point in views from roads.
- The predominantly open glen floor which contrasts with more wooded and coarse textured hill sides, where turbines (and particularly multiple turbines) sited in these areas would be detractive and interrupt linear views from roads which are channelled along the glen.

### 14.2.3 Opportunities

- Lower side slopes where small terraces and other landform features, the pattern of settlement and small side valleys/tributary watercourses offer opportunities for turbines < 20m to be sited where they can be associated with these features in the landscape, building up a consistent pattern of development able to optimise successful accommodation of multiple turbines.
- More gently graded lower hill slopes on the west side of Glen Afton and at the junction between Glen Tig and the Intimate Pastoral Valley (13) of the Stinchar Valley where turbines >20m would be less likely to detract from dramatic steep slopes present in the more deeply incised sections of the Upland Glens.
14.3 Guidance for development

This assessment found there to be no scope for turbines >30m high to be sited within the Upland Glens.

There is some limited scope for the small typology (turbines 15-30m) to be accommodated within parts of these glens. Turbines should be sited where they can reinforce the pattern of existing development, being associated with farms located at the edge of the glen floor or lower side slopes, above existing built development or along the head dyke. Turbines above 20m height should be located on more gently graded side slopes where the scale of the glen is perceived as being broader.

Turbines should avoid intrusion on key views to the often dramatic heads of the glens and should not interrupt the irregular ridges which contain these glens and form prominent skylines. The flat and predominantly open glen floor should be avoided. They should also not be sited close-by operational wind farm developments sited in adjacent upland landscapes in order to minimise cumulative effects. Detailed siting and design should accord with the guidance set out in section 24 of this report.

The Upland Glens are highly sensitive to intrusion from large wind turbines sited in the adjacent Southern Uplands (20a and 20b) and South Ayrshire Plateau Moorland with Forest and Wind Farm (18c) character types. The wind farms of Hare Hill and Arecleoch are visible from some of these Upland Glens and care should be taken to avoid any exacerbation of existing intrusion when considering extensions to existing developments, or any new proposals, in adjacent upland areas.
15 CHARACTER TYPE 16: LOWLAND HILLS

15.1 Introduction
The Lowland Hills character type is identified in a single area within the Ayrshire Landscape Assessment (1998). These low hills lie within South Ayrshire, rising from the lower-lying farmlands of the Ayrshire Lowlands and providing a backdrop to the coastal towns of Troon and Prestwick.

15.1.1 Existing/consented wind farms
No operational wind turbines are located within this character type although there are a number of consented developments for small turbines generally below 20m high to blade tip.

Elevated roads within these small hills allow open views to existing wind farm developments in the Clyde Muirshiel uplands of North Ayrshire and to the Whitelee wind farm towards the north-eastern border of East Ayrshire. The distance (>18km) of these developments from this character type lessens their landscape and visual influence.

The consented Glaxo Smith Kline (GSK) turbines at Irvine (3 turbines, 106m high) will lie approximately 1.5km from the northern edge of this character type.

15.2 Summary of sensitivity
This landscape character type is small in extent, forming an area of low hills lying relatively close to the coast and surrounded by the lower-lying South Ayrshire Lowlands (7d). Landform can be complex, with small scale knolly hills and narrow valleys occurring in places, although smoother gently graded hill slopes are also present particularly to the east where these hills gradually merge with the undulating farmland of the South Ayrshire Lowlands (7d). Despite their relatively low relief, these small hills form a prominent feature especially when seen from the M77 and the coastal town of Troon where the steep slopes of Wardlaw Hill form a distinctive backdrop. This is a well-settled landscape with a regular dispersal of farms, houses and small settlements and patterned by small woodlands and enclosed pastures. It is also rich in archaeological and historic features.

The small-medium scale of this landscape, the prominence of these hills together with potential for cumulative impacts to arise with consented wind turbine development within the Coastal Lowlands with Industry (2a) character type in North Ayrshire increase sensitivity, particularly to larger wind turbines. There would be a High sensitivity to the large and medium typologies (turbines above 50m) and a High-medium sensitivity to the small-medium typology (turbines 30m-50m). Sensitivity to the small typology (turbines 20-30m) would be Medium reflecting increased opportunities to site this typology to avoid intrusion on prominent ridges and skylines and minimise adverse effects on the scale of this landscape.
15.2.1 Potential cumulative issues

Potential cumulative impacts could occur if turbines were associated with the majority of farms within this well-settled landscape. Cumulative effects would be exacerbated if there were variations in the type and size of turbines.

15.2.2 Constraints

- The very limited extent of this landscape and its visual prominence particularly from the densely settled coastal edge which increases sensitivity in relation to effects on adjoining landscape character types.
- The low relief of ridges and hills, the small scale of narrow valleys and occasional more complex knolly landform and the regular dispersal of small buildings, trees and woodlands which provide ready scale references.
- The setting of the many archaeological features and historical buildings located in this character type including Dundonald Castle and the Wallace Monument and other features of interest at Barnweil.
- The sensitive skyline and steep slopes of Wardlaw Hill at the north-western end of this character type which forms the backdrop and setting to Dundonald and Troon.
- Potential cumulative effects with the GSK wind turbines site in the adjacent Coastal Lowland with Industry (2a) character type within North Ayrshire.

15.2.3 Opportunities

- Gentler hill slopes set down from the higher ridgeline and hill tops where the small typology (turbines <30m) could be sited to avoid intrusion on sensitive skylines.

15.3 Guidance for development

No scope has been identified in this assessment for turbines above 30m height within this character type in this assessment.

The small typology (turbines 15m-30m) could be accommodated but should avoid breaking the skyline formed by the undulating ridgeline of these small hills. Turbines under 15m height should be visually associated with farms and other buildings in order to reduce clutter. Turbines over this height should be sited on gentler lower hills avoiding areas of more complex small scale landform and the setting of archaeological features and historic buildings which would be sensitive to intrusion by all turbine developments. Detailed siting and design should accord with the guidance set out in section 24 of this report.
16 CHARACTER TYPE 17B: FOOTHILLS WEST OF THE DOON VALLEY

16.1 Introduction

The ‘Foothills’ and ‘Foothills with Forest’ landscape character types occur in 7 different areas within South and East Ayrshire. Due to the differences in character and context within these landscapes, the following areas are considered separately in the sensitivity assessments undertaken for this study:

- The ‘Foothills with Forest and Opencast Mining‘ (17a) that lie east of Dalmellington within East Ayrshire.
- The ‘Foothills with Forest West of the Doon Valley’ (17b).
- The ‘Foothills with Forest and Wind Farm’ (17c) which lie between the Girvan Water and Stinchar valleys in South Ayrshire and include the operational wind farm of Hadyard Hill.
- The ‘Maybole Foothills’ (17d) which form a ‘stand-alone’ outcrop of settled and farmed hills to the north-west of the Girvan Water valley in South Ayrshire.
- The ‘Coastal Foothills’ (17e) which lie close to the coast between the settlements of Girvan and Ballantrae in South Ayrshire.

This assessment is for the ‘Foothills with Forest West of the Doon Valley‘ (17b) which occurs in both East and South Ayrshire. This is a sparsely settled upland landscape and the detailed assessment therefore considers larger development typologies (turbines >50m) with key constraints and opportunities for smaller turbines briefly outlined in the summary and guidance section.

16.1.1 Existing/consented wind farms

There are no existing or consented wind turbines sited in this character type.

The operational Hadyard Hill wind farm is located within the ‘Foothills with Forest and Wind Farm‘ (17c) character type. This development comprises 52 turbines, a maximum of 111m high, and lies approximately 11 km from this character type.

The Mark Hill and Arecleoch wind farms lie at distances over 20km to the south-west of this character type within the ‘South Ayrshire Plateau Moorland with Forest and Wind Farms‘ (18c) character type. The Hare Hill and Windy Standard operational wind farms and the consented extension to Windy Standard lie at distances over 16km to the east of this landscape within the ‘Southern Uplands with Forestry‘ (20c) within East Ayrshire and Dumfries and Galloway.

16.2 Summary of sensitivity

The ‘Foothills with Forest west of the Doon Valley‘ (17b) character type forms a gently undulating, relatively narrow upland band lying between the ‘Upland River Valley’ (10) of the Doon Valley and the ‘Middle Dale’ (12) of the Girvan Water valley. This character type also provides the backdrop to the highly scenic ‘Intimate
Pastoral Glen’ (13) of the upper Girvan Water. The landform of these uplands is generally simpler to the north, comprising a lower, gently undulating plateau with indistinct rounded hills and shallow basins which are largely masked by forestry. A number of more pronounced hills lies on the outer fringes of the southern part of these foothills however and these form ‘landmark’ features seen from the adjacent well-settled valleys of the Girvan Water and Doon Valley. Land cover is simple, with coniferous forestry dominating the northern plateau and heather and grass moorland and enclosed pastures on outward-facing hill slopes on the more open hills to the south. This landscape is very sparsely settled although the B741 is aligned through the hills and there are popular hill walks to Auchenroy Hill and the Craigengower Monument on the periphery of these uplands.

Although the scale and generally simple landform and land cover of these uplands could relate in principle to some larger turbine typologies, the limited extent of this landscape, and the prominence of ‘landmark’ hills on the periphery of these Foothills in providing the backdrop to the adjacent well-settled smaller scale Girvan and Doon Valleys, increases sensitivity. There would be a High-medium sensitivity to the large typology (turbines >70m) and a Medium sensitivity to the medium typology (50-70m).

16.2.1 Potential cumulative issues

The following issues may arise in connection with any possible development situated in this and adjacent landscapes:

- Inter-visibility between larger turbines which are more likely to be located in this upland landscape character type and smaller turbines (<50m) sited in the adjacent more settled Upland River Valley (10) and Middle Dale (12).
- Simultaneous and sequential views of the operational Hadyard Hill wind farm and any additional wind turbine developments located in the ‘Foothills with Forest and Wind Farm’ (17c) with any developments sited in this character type seen principally from the ‘Middle Dale’ (12).
- Dominant effects on the Doon Valley, including on the setting of settlements such as Dalmellington and Bellsbank, that would arise if wind farm development was located in this character type but also in the Foothills with Forest and Opencast Mining (17a) and the Southern Uplands with Forestry (20c) character types and prominent on containing skylines.

16.2.2 Constraints

- The more prominent steep-sided hills with well-defined summits which occur on the outer edges of these foothills and include Auchenroy Hill, Big Hill of the Baing and Kildoach Hill. These ‘landmark’ hills form a scenic backdrop to the settled and smaller scale Middle Dale (12), Intimate Pastoral Valley (13) and Upland River Valley (10).
- Potential effects on the setting of designed landscapes sited within the adjacent Middle Dale (12) and the Upland River Valley (10) including the Inventory listed Craigengillan and Blairquhan.
• Potential effects on the setting of settlements such as Dalmellington, Bellsbank, Patna and Straiton sited in the adjacent Doon and Girvan Valleys.
• The limited extent of these foothills which increases sensitivity, particularly to the large typology (turbines >70m) in terms of potential effects on adjacent well-settled, smaller scale settled valleys.
• Views from the Craigengower Monument above Straiton and from Auchenroy Hills which are popular with walkers.

16.2.3 Opportunities
• The simpler, less visually prominent densely forested lower hills and shallow basins to the north which may provide opportunities to accommodate the medium typology to reduce effects on adjacent landscapes and on the setting of designed landscapes and settlements.

16.3 Guidance for development

No scope for the large typology (>70m) has been identified in this sensitivity assessment.

There is some limited scope for the medium typology (50-70m) as turbines of this size may be more able to be contained by landform thus minimising intrusion on adjacent small-scale settled valleys. It would be preferable to site turbines at the core of the simpler, more even forested plateau lying to the north of the B741 to reduce effects on views from popularly accessed hills and on more diverse and sensitive skylines which backdrop the Doon and upper Girvan Valleys. Turbines should also be sited to avoid significant impacts on key views to and from designed landscapes.

The detailed assessment considers larger typologies only. Smaller turbines <50m would be likely to have significant cumulative effects with any larger typologies which may be located within the core of this landscape due to the limited extent of these foothills. There would however be some scope to site them at the transition with the Middle Dale (12), Upland River Valley (10) and Maybole Foothills (17d) in association with settled lower, more gentle hill slopes but set well away from the more pronounced 'landmark' hills. Detailed siting and design of smaller typologies should accord with the guidance set out in section 24 of this report.
17 CHARACTER TYPE 17C: FOOTHILLS WITH FOREST AND WIND FARM

17.1 Introduction
The ‘Foothills’ and ‘Foothills with Forest’ landscape character types occur in 7 different areas within South and East Ayrshire. Due to the differences in character and context within these landscapes, the following areas are considered separately in the sensitivity assessments undertaken for this study:

- The ‘Foothills with Forest and Opencast Mining’ (17a) that lie east of Dalmellington within East Ayrshire.
- The ‘Foothills with Forest West of the Doon Valley’ (17b)
- The ‘Foothills with Forest and Wind Farm’ (17c) which lie between the Girvan Water and Stinchar valleys in South Ayrshire and include the operational wind farm of Hadyard Hill.
- The ‘Maybole Foothills’ (17d) which form a ‘stand-alone’ outcrop of settled and farmed hills to the north-west of the Girvan Water valley in South Ayrshire.
- The ‘Coastal Foothills’ (17e) which lie close to the coast between the settlements of Girvan and Ballantrae in South Ayrshire.

This sensitivity assessment considers the Foothills with Forest and Wind Farm (17c). The detailed tabular assessment is for larger development typologies (turbines >50m) only with key constraints and opportunities for smaller turbines briefly outlined in the summary and guidance section.

17.1.1 Existing/consented wind farms
The Hadyard Hill wind farm (52 turbines, up to 111m high) is located within this character type.

The Mark Hill and Arecleoch wind farms lie between approximately 8 and 11 km respectively to the south and south-west of this character type within the ‘South Ayrshire Plateau Moorland with Forest and Wind Farms’ (character type 18c). The Windy Standard I wind farm and its consented extension and the Hare Hill wind farm are located beyond 15km to the east/north-east of this landscape. These developments are only likely to be visible from higher summits within this landscape character type.

17.2 Summary of sensitivity
The South Ayrshire Foothills with Forestry and Wind Farm (17c) character type forms a gently undulating upland plateau separating the Middle Dale (12) and Intimate Pastoral Valleys (13) of the Stinchar and Girvan Water valleys. These foothills are larger in extent to the east but form a relatively narrow band of hills between the valleys to the west. Although landform is generally gently undulating
with indistinct rounded hills and lower-lying basins characterising the core of this landscape, a number of more pronounced, higher hills lies on the outer fringes of these foothills and form ‘landmark’ features seen from the adjacent well-settled valleys of the Stinchar and Girvan Water. Land cover is simple, dominated by extensive coniferous forestry and grass moorland. This landscape is very sparsely settled although a number of minor public roads, one of these designated as National Cycle Route 7, cross the core of these hills. The operational wind farm of Hadyard Hill is located in a shallow basin within a relatively narrow band of foothills in the west of this character type.

Although the large scale and simple landform and land cover of these uplands could relate in principle to larger turbine typologies, the narrowness of parts of this landscape and its proximity to the well settled Stinchar and Girvan valleys and the sensitive Rugged Hills, Lochs and Forest (21) are key constraints. There would be a **High-medium** sensitivity to the large typology (turbines >70m) and a **Medium** sensitivity to the medium typology (50-70m).

### 17.2.1 Potential cumulative issues

The following issues may arise in connection with any possible development situated in this and adjacent landscapes:

- Inter-visibility between larger turbines which are more likely to be located in this upland landscape character type and smaller turbines sited in the adjacent more settled and smaller scale Intimate Pastoral Valley (13) and Middle Dale (12).
- Simultaneous and sequential views of the operational Hadyard Hill wind farm together with any additional larger wind turbine developments located in other parts of this character type and the South Ayrshire Plateau Moorland with Forest and Wind Farm (18c) character type seen on containing skylines from the small scale and well-settled Stinchar Valley.
- Simultaneous and sequential views of the operational Hadyard Hill wind farm together with any additional wind turbine developments located in other parts of this character type and in the Foothills with Forest West of Doon Valley (17b) seen from the smaller scale, well-settled and richly diverse Middle Dale (12) of the Girvan Valley.
- Potential cumulative effects associated with any further wind farm development sited in this character type and the South Ayrshire Plateau Moorland with Forest and Wind Farm (18c) on the sense of wildness and on views from popularly accessed hills within the Rugged Hills, Lochs and Forest (21) character type.
- Potential effects on the design rationale of the operational Hadyard Hill wind farm which is set within a shallow basin contained by a rim of higher hills which limits the visual intrusion of this development from parts of the Stinchar and Girvan valleys, Girvan and the coast. Turbines sited on these higher hills would diminish the integrity of this wind farm and result in cumulative effects.
17.2.2 Constraints

- The more prominent steep-sided peripheral hills with well-defined summits which occur on the outer edges of these foothills and include Barony, Hadyard, and Maxwellton hills lying on the southern edge of the Girvan Water, Genoch Inner Hill in the upper Girvan valley and Craig of Dalwine, Auchensoul and Kirkland Hills on the north side of the Stinchar valley. These ‘landmark’ hills form a backdrop to the settled and smaller scale Intimate Pastoral Valley (13) and Middle Dale (12) of the Stinchar and Girvan Water valleys and, in some cases, also visually contain the operational wind farm of Hadyard Hill from these valleys.
- The landmark hill of Glenalla Fell which forms a prominent high top seen from the Carrick Forest Drive and from parts of the Middle Dale (12) and Genoch Inner Hill whose steep, rugged slopes form the backdrop to the Intimate Pastoral Valley (13) at the head of the Water of Girvan.
- The narrowness of the western part of these foothills which increases sensitivity in terms of potential effects on adjacent smaller scale settled valleys.
- The proximity of the dramatic Rugged Uplands, Lochs and Forest (21) which lie to the south and east of this character type and have a distinct sense of seclusion and relatively unmodified character and are also popular for recreation.
- Cumulative effects with the operational Hadyard Hill wind farm which is seen in close proximity from the Barr area within Intimate Pastoral Valley (13) of the Stinchar Valley and from parts of the Middle Dale (12) of the Girvan Valley to the north.

17.2.3 Opportunities

- The generally simple landform and land cover of this upland landscape.
- Less visually prominent densely forested lower hills and shallow basins within the eastern core of these uplands which could provide a degree of visual containment for wind turbine development (although some of these areas may be technically unviable for wind energy development).

17.3 Guidance for development

There is very limited scope for the large typology (turbines >70m) to be accommodated within this landscape. Turbines should be well set back from the more sensitive outer edge of these foothills to avoid significant impact on the ‘landmark’ hills which form highly visible containing edges to the smaller-scale settled Stinchar and Girvan Water valleys and to reduce cumulative effects on these valleys. The adjacent Rugged Uplands, Lochs and Forest character type (21) is also highly sensitive and some impact on the character and views from this landscape is likely to be unavoidable if development were located in the broader eastern basin of these foothills. There is likely to be little scope for multiple wind farm developments to be accommodated due to its often limited extent and
narrowness of these foothills and the need to avoid the higher, more defined hills on the edges of this landscape.

There may be some limited scope for the medium typology (50-70m) to be located in this landscape as turbines of this size may be more able to be contained by landform in the eastern part of these foothills, thus minimising visibility from adjacent valleys. This typology would still be likely to impact on landmark hills and intrude on views from adjacent valleys if sited close to the outer fringes of these foothills however.

All turbines should be sited to avoid intrusion on views from the minor public road/National Cycle Route 7 to the south to the Carrick Hills and the dramatic pass of the Nick of the Balloch.

The detailed assessment considers larger typologies only. Smaller turbines <50m would have significant cumulative effects with any larger typologies which may be located within the core of this landscape although there would be some limited scope to site the small-medium typology (turbines 30-50m) on broader shoulders and more gentle upper hill slopes at the transition with the Middle Dale (12) and the Intimate Pastoral Valley (13) of the upper Girvan valley and away from the setting of ‘landmark’ hills. The potential for cumulative effects to arise with any further wind farm development sited in these foothills is a key limitation and should be considered carefully when reviewing applications however.

The small typology (15-30m) should only be sited in association with built development which lies on the fringes of this character type. Detailed siting and design should accord with the guidance set out in section 24 of this report.
18 CHARACTER TYPE 17D: MAYBOLE FOOTHILLS

18.1 Introduction
The ‘Foothills’ and ‘Foothills with Forest’ landscape character types occur in 7 different areas within South and East Ayrshire. Due to the differences in character and context within these landscapes, the following areas are considered separately in the sensitivity assessments undertaken for this study:

- The ‘Foothills with Forest and Opencast Mining’ (17a) that lie east of Dalmellington and within East Ayrshire.
- The ‘Foothills with Forest West of the Doon Valley’ (17b)
- The ‘Foothills with Forest and Wind Farm’ (17c) which lie between the Girvan Water and Stinchar valleys in South Ayrshire and include the operational wind farm of Hadyard Hill.
- The ‘Maybole Foothills’ (17d) which form a ‘stand-alone’ outcrop of settled and farmed hills to the north-west of the Girvan Water valley in South Ayrshire.
- The ‘Coastal Foothills’ (17e) which lie close to the coast between the settlements of Girvan and Ballantrae in South Ayrshire.

This sensitivity assessment is for the Maybole Foothills (17d) only. The detailed assessment considers both larger and smaller development typologies.

18.1.1 Existing/consented wind farms
There are no operational turbines sited within this character type. A single 77m high turbine has been consented at Dowhill Farm near Turnberry close to the Maybole Foothills.

The operational Hadyard Hill wind farm (52 turbines, a maximum of 111m high) is located within the Foothills with Forest and Wind Farm (17c) character type. This development is intermittently seen from more elevated south-western parts of the Maybole Foothills at distances of around 6 km.

The operational Arecleoch (60 turbines, 120m high) and Mark Hill wind farms (28 turbines, 110m high) are located within the Plateau Moorland with Forest and Wind Farms (18c) character type and lie over 15km from the Maybole Foothills. This distance, combined with intervening screening by higher ground, is likely to restrict visibility of these developments from this landscape.

18.2 Summary of sensitivity
The Maybole Foothills comprise a ‘stand-alone’ band of relatively low hills. These hills form highly visible backdrops and skylines to the coast (including Culzean Castle and its extensive policies) and the richly diverse Doon and Girvan valleys. Although this landscape is generally gently undulating with long ridges cut by valleys, a number of ‘landmark’ hills occur on the periphery of these foothills – the
most distinctive of these being the steep-sided basalt outcrops of Mochrum and Kildoon hills. Landform becomes notably more complex in the north-east, forming drumlin-like small interlocking hills separated by pockets of flatter ground. Lower hill slopes and valleys are farmed with pastures enclosed by hedges and with roadside trees, small woodlands and shelterbelts contributing to an often rich land cover pattern. Some large coniferous plantations occur within broader elevated basins and a number of hill tops feature more semi-natural heathy moorland, gorse and bracken with rough walled pastures on upper slopes. This landscape is relatively well-settled with dispersed farms sited across much of the area apart from the wetter more elevated basins lying at the core of these hills. Maybole lies on elevated south-facing slopes at the heart of this landscape and is surrounded by the rolling hills of these foothills and the nearby Brown Carrick Hills (4b).

The presence of well-settled and often richly diverse lower slopes and valleys and the backdrop these hills provide to the coast, including Culzean Castle and its policies, and to the Doon and Girvan valleys increase sensitivity. There would be a High sensitivity to the large typology (turbines $>70$m) and a High-medium sensitivity to the medium typology (50-70m). Sensitivity would be reduced for the small-medium typology (30-50m) to Medium and was concluded to be Medium-low for the small typology (15-30m).

18.2.1 Potential cumulative issues
The following issues may arise in connection with any possible development situated in this and adjacent landscapes:

- Variations in the type and size of single and small groups of smaller turbines proposed along the lower slopes of the Maybole Foothills (17d) at the transition with adjacent coast and valleys which are relatively well-settled and where multiple turbines associated with a number of land holdings may be seen in close proximity.
- Possible cumulative effects with any larger turbines sited within the Coastal Foothills (17e) experienced from the A77 and from the Firth of Clyde.

18.2.2 Constraints

- The prominent steep-sided, craggy basalt Mochrum and Kildoon Hills which form key landmark features and other hills with pronounced summits on the north side of the Girvan valley, including Craigfin, Kirk Hill and High Craighead.
- The backdrop and prominent skylines the Maybole Foothills provide to Culzean Castle and its extensive designed landscape, to the diverse Doon and Girvan valleys and to the coast and Firth of Clyde.
- The relatively low relief of the landform which could easily be dominated by taller turbines.
- More rolling landform in the north-eastern part of this landscape where drumlin-like small interlocking small hills combine with a relatively dense pattern of regularly spaced small farms and houses to reduce scale.
- The relatively well-settled nature of much of these foothills where small farms, woodlands and hedged fields provide ready scale references on lower hill slopes and within valleys.
- Dramatic views from popularly accessed hills such as Kildoon and Mochrum and from minor roads and settlement within these foothills to the coast, the Firth of Clyde, Alisa Craig and Arran.
- Key views from the A719 south of the Electric Brae to Culzean Castle and its designed landscape where these foothills (and particularly Mochrum Hill) forms an integral part of its wider setting.
- The openness and relatively unmodified character of these Coastal Foothills which are not affected by large scale wind farm development unlike other more extensive uplands within South Ayrshire.

18.2.3 Opportunities
- Gentler basins which are sparsely settled and partly contained by higher hills where turbines could be sited to minimise intrusion on sensitive skylines and the more prominent landmark hills.

18.3 Guidance for development
There is no scope for the large typology (turbines 70m+) to be accommodated within this landscape.

There is very limited scope for turbines towards the lower height band of the medium typology (50-70m) to be located in this landscape as turbines of this size may be more able to be contained by landform minimising visibility from adjacent valleys. The setting of landmark hills, Culzean Castle and its extensive policies and skylines overlooking the coast and smaller scale valleys remain highly sensitive and turbines should be set well back within the core of these foothills to avoid intrusion. The limited extent of simpler, sparsely settled upland basins lying within the core of these foothills will restrict scope for multiple turbines of this size.

There is some limited scope for the small-medium typology (30-50m) and the small (15-30m) typology to be accommodated in this landscape. These smaller turbines could have cumulative effects with any larger typologies which may be located within the core of this landscape. There is increased scope to accommodate the small typology (15-30m) on lower hill slopes to avoid intrusion on prominent skylines and to minimise inter-visibility.

Turbines should not be sited on or nearby the landmark hills and should avoid prominent ridges and knolls, instead being set down to benefit from a backdrop of rising ground to reduce prominence. They should also be sited away from designed landscapes and avoid intrusion on the setting of settlements, historic buildings and archaeological features. Opportunities are most likely to be found in the more gently graded slopes, dips in less prominent ridges, gentle bowls and lower hill slopes where there is less likelihood of impacting on prominent skylines.
Small turbines below 15m high could also be accommodated but should be sited where they can be clearly associated with existing built development to minimise visual clutter. Detailed siting and design should accord with the guidance set out in section 24 of this report.
19 CHARACTER TYPE 17E: COASTAL FOOTHILLS

19.1 Introduction
The ‘Foothills’ and ‘Foothills with Forest’ landscape character types occur in 7 different areas within South and East Ayrshire. Due to the differences in character and context within these landscapes, the following areas are considered separately in the sensitivity assessments undertaken for this study:

- The ‘Foothills with Forest and Opencast Mining’ (17a) that lie east of Dalmellington within East Ayrshire.
- The ‘Foothills with Forest West of the Doon Valley’ (17b)
- The ‘Foothills with Forest and Wind Farm’ (17c) which lie between the Girvan Water and Stinchar valleys in South Ayrshire and include the operational wind farm of Hadyard Hill.
- The ‘Maybole Foothills’ (17d) which form a ‘stand-alone’ outcrop of settled and farmed hills to the north-west of the Girvan Water valley in South Ayrshire.
- The ‘Coastal Foothills’ (17e) which lie close to the coast between the settlements of Girvan and Ballantrae in South Ayrshire.

This sensitivity assessment is for the Coastal Foothills (17e) only. The detailed assessment considers both larger and smaller development typologies.

19.1.1 Existing/consented wind farms
The operational Hadyard Hill wind farm is located within the Foothills with Forest and Wind Farm (17c) character type which lies adjacent to this character type. This development comprises 52 turbines, a maximum of 111m high. It is visible from higher hills and minor roads in the northern part of this character type.

The operational Arecleoch (60 turbines, 120m high) and Mark Hill wind farms (28 turbines, 110m high) are located within the Plateau Moorland with Forest and Wind Farms (18c) character type. These developments lie at distances of between 7km and 9km respectively from this character type and are visible from higher hills and roads.

19.2 Summary of sensitivity
The Coastal Foothills comprise a narrow band of relatively small hills set between the Raised Beach Coast (1c) and the Intimate Pastoral Valley (13) character types. The northern hills directly overlooking the coast form a highly scenic ridge of sheer-sided craggy hills. Similarly well-defined hills also arise on the outer inland edges of this character type close to the Stinchar valley and include Knockdolian and Bargain Hill while the steep slopes of the group of hills centred on Troweir Hill forms a prominent backdrop to Girvan. The landform of these foothills is more gently undulating elsewhere with some broader valleys and basins occurring in the south-
eastern area; these covered with a mix of grass moorland and coniferous forestry. Farming is more intensive on the gentle hill slopes and lower plateaux within the tapering south-western area of these Coastal Hills. Settlement is tucked down into the narrow valleys which cut through these hills and on the lower hill slopes to the south-west.

There would be a **High-medium** sensitivity to the large typology (turbines >70m) and to the medium typology (50-70m) principally due to the prominence of these coastal hills in providing scenic backdrops to smaller scale settled valleys and coasts and the cumulative effects which may occur with existing wind farm developments. Sensitivity would be reduced for the small-medium typology (30-50m) to **Medium** and was concluded to be **Medium-low** for the small typology (15-30m).

19.2.1 **Potential cumulative issues**

The following issues may arise in connection with any possible development situated in this and adjacent landscapes:

- Simultaneous and sequential views of the operational wind farms of Arecleoch, Hadyard Hill and Mark Hill together with any further wind turbine developments located in the Foothills with Forest and Wind Farm (17c) and within the Plateau Moorland with Forest and Wind Farms (18c) character types seen from the small scale and well-settled Stinchar and Duisk Valleys and seen sequentially from key roads such as the A714.
- Potential cumulative effects of multiple wind farms seen increasingly close to the coast from the Firth of Clyde and Ailsa Crag which is a popular destination for excursions from Girvan.
- Multiple turbines of varying sizes and designs located in these Coastal Foothills which could have cumulative effects on views from surrounding valleys and popularly accessed hills.

19.2.2 **Constraints**

- The more prominent steep-sided peripheral hills with well-defined summits which generally occur on the outer edges of these foothills and include Knockdolian and Bargain Hill and the band of craggy hills between Pinbain and Byne Hill. These hills form ‘landmark’ features in views from the Stinchar and the lower Duisk valleys, along the coast and in views from the sea.
- The backdrop and scenic skylines these Coastal Foothills provide to the settled and smaller scale Intimate Pastoral Valley (13) of the Stinchar valley and the Raised Beach Coast with Flat Fields and Headlands (1c) and the often limited relief of these hills appreciated in key views from settlement and roads which increases sensitivity to larger typologies.
- The prominent arc of steep-sided hills which include Byne Hill and the group of hills centred on Troweir Hill which are an important component of the setting to Girvan and are highly visible in views from the A77, the Lower Dale (11) and from the sea.
• The relative narrowness of these foothills, particularly in the south-west, which increases potential for intrusion on more sensitive small scale and highly scenic adjacent valleys and coasts.
• Lower hill slopes and valleys within these uplands which are farmed and settled and have a smaller scale.
• Elevated views from hills such as Knockdolian and Byne Hill which are particularly popular with walkers.
• The openness and relatively unmodified character of these Coastal Foothills which are not affected by extensive forestry and large scale wind farm development unlike other more extensive uplands within South Ayrshire and which, together with their rugged appearance and coastal context, give a heightened sense of naturalness.
• Cumulative effects with the Hadyard Hill, Arecleoch and Mark Hill operational wind farm developments on the Stinchar, Girvan and Duisk valleys.

19.2.3 Opportunities
• Lower-lying basins and gentle hill slopes within the broader part of these hills where there may be very limited scope for turbines >50m provided intrusion on smaller scale valleys, Girvan and the coast was minimised.
• More gently sloping ground away from sensitive skylines and prominent ‘landmark’ hills where smaller turbines (<50m) could be accommodated to avoid intrusion on adjacent highly sensitive coasts and valleys and to also minimise cumulative effects with existing wind farm developments.

19.3 Guidance for development
There may be very limited scope for the large and medium typology (turbines 50-70m+) to be accommodated in the Coastal Foothills. Lower-lying basins and gentle hill slopes set within the broader parts of this landscape provide opportunities for larger turbines although they should be set well back from the more sensitive edges of these foothills to avoid significant intrusion on smaller scale well-settled valleys, the setting of Girvan and the coast and to also minimise cumulative effects with existing wind farm developments. Turbines should not be sited on, or close-by landmark hills.

Turbine height will be critical in minimising effects on adjacent landscapes and also cumulative effects with operational wind farms seen principally from the Stinchar valley and from the A714. The limited extent of areas with a less complex landform in the core of these uplands is likely to severely restrict the number of turbines of this size that can be accommodated. There is likely to be little scope for multiple wind farm developments of turbines >50m to be sited in this landscape due to the relative narrowness of these foothills which increases potential for intrusion on sensitive smaller scale valleys and the coast.

There is some limited scope for the small-medium (turbines 30-50m) to be accommodated. This typology is most likely to be located within more settled/farmed areas where turbines should be sited on lower, gentler hill slopes,
lower ridges and natural terraces or close to the head-dyke at the transition between enclosed pasture and more open hill land. Turbines should be set well away from landmark hills and should avoid intrusion on prominent hills and skylines seen from the coast and the Stinchar and Girvan valleys. Single and small groups <3 of this size of turbine could be accommodated although significant cumulative effects could be associated with multiple turbines of this size and also arise with any larger wind farm development sited in this character type and periodic review would be necessary.

There is increased scope for the small typology (turbines 15-30m high) to be accommodated in this landscape. Turbines should be set back from prominent skylines and the landmark hills. Turbines <20m high should be associated with existing buildings to minimise clutter. Detailed siting and design should accord with the guidance set out in section 24 of this report.
20 CHARACTER TYPE 18C: PLATEAU MOORLANDS WITH FORESTRY AND WIND FARMS

20.1 Introduction
This upland landscape character type is found in two areas on the southern edge of South Ayrshire and extending into neighbouring Dumfries and Galloway. Other areas of this same character type lie in East Ayrshire although these have a different context so a separate sensitivity assessment has been undertaken as part of this study.

The 1998 Ayrshire landscape assessment identifies some additional small areas of the Plateau Moorland character type lying on the fringes of the Plateau Moorlands with Forestry character type. The higher less settled parts of these areas of Plateau Moorland have been incorporated into the South Ayrshire Plateau Moorlands with Forestry and Wind Farms (18c) while the lower hill slopes are included in the adjacent Intimate Pastoral Valley (13) character type where they form containing skylines to these smaller scale settled landscapes.

The detailed assessment considers larger development typologies (turbines >50m) with key constraints and opportunities for smaller turbines briefly outlined in the summary and guidance section only.

20.1.1 Existing/consented wind farms
The operational Arecleoch windfarm (60 turbines, 120m high) and Mark Hill wind farms (28 turbines, 110m high) are located within this character type. The Hadyard Hill wind farm (52 turbines, 111m high) lies approximately 4km distance from the northern-most area of this character type.

The operational Artfield Fell (22 turbines, 74-80m high) and the consented Glenchamber wind farms (11 turbines, 126m high) are situated within this same character type but within neighbouring Dumfries and Galloway.

20.2 Summary of sensitivity
This landscape forms an expansive upland plateau which extends into neighbouring Dumfries and Galloway to the south. It has a simple landform of broad rounded hills and flatter basins which form a low, even and generally indistinct backdrop to smaller scale settled valleys and glens within South Ayrshire. Land cover is dominated by coniferous forestry with small areas of open moorland and moss occurring on lower ‘edge’ slopes at the transition with the Duisk and Stinchar valleys and with very small pockets of rolling farmland, wooded policies, lochs and settlement found in the south-eastern part of this landscape. Extensive operational wind farm development is accommodated within the two largest tracts of this character type which lie either side of the Duisk Valley. This landscape is very sparsely settled with few roads.
The large scale and simple landform and land cover of these uplands could relate in principle to larger turbine typologies. The presence of operational wind farms also reduces sensitivity in terms of the effect this development already has on views and character. A key constraint, however, is the need to avoid significant intrusion on the smaller scale Duisk and Stinchar valleys, Glen App and Glen Tig. There would be a Medium-low sensitivity to the large typology (turbines >70m). Sensitivity would increase to Medium to the medium typology (50-70m) as this typology could have cumulative effects with existing wind farm developments.

20.2.1 Potential cumulative issues

The following issues may arise in connection with any possible development situated in this and adjacent landscapes:

- Inter-visibility between larger turbines which are more likely to be located in this landscape character type and smaller turbines which may be proposed on more settled lower hill slopes and small pockets of farmland within this character type and on the upper slopes of the Stinchar and Duisk Valleys, potentially increasing clutter in the landscape.
- Cumulative impacts on the setting and views to and from the Galloway and Carrick Forest Hills where additional wind farm developments could combine with the existing wind farms of Artfield Fell, Arecleoch and Mark Hill to form a more concentrated band of development potentially contributing to an ‘encircling’ effect on key hills such as Merrick.

20.2.2 Constraints

- The outer edges of this upland plateau which form the immediate skyline to the smaller scale settled Duisk and Stinchar valleys and to the dramatic and strongly contained Glen App.
- Small pockets of farmland and lochs in the Drumlamford and Corwar area where small farms and houses, woodlands and rolling enclosed pastures provide ready scale references and a valuable contrast with extensive forestry.
- Steeper hill slopes and higher ground present in the north and east at the transition with the ‘Rugged Hills, Lochs and Forest’ (21) character type.
- Dramatic views to the Galloway Hills suddenly revealed when travelling south-east on the designated tourist route of the A714 as dense forest cover opens up in the Corwar area.
- The high, rugged Galloway Hills focused on Merrick within Dumfries and Galloway and the Carrick Forest Hills which are popular with walkers, offering a strong experience of wildness that could be diminished by development lying close-by and/or incrementally encircling these hills.
- Potential cumulative effects with the existing wind farm developments of Hadyard Hill, Arecleoch and Mark Hill, particularly on landscape character and views from the Stinchar and Duisk Valleys.
• Views from Loch Ryan and the Rhinns of Galloway where turbines sited within the south-western area of this character type could intrude on views to the intriguing cleft of Glen App.

20.2.3 Opportunities
• The generally simple landform, expansive scale and uniform land cover of commercial coniferous forestry and the sparsely settled interior of this landscape where large turbines could be sited to minimise effects on adjacent smaller-scale valleys and glens.

20.3 Guidance for development
There is some scope for the large typology to be accommodated within this landscape with turbines >100m high fitting with the size of existing wind farm developments. Both ‘stand-alone’ new wind farms and extensions to existing wind farm developments could be accommodated provided they were sited within the simpler basins and low hills lying at the core of this upland plateau and set well back from adjacent smaller scale settled valleys and glens to avoid exacerbating the intrusion already associated with operational wind farm development. The dramatically narrow and strongly contained Glen App would be highly sensitive to any intrusion of turbines visible on the skyline. The setting of the high rugged Galloway and Carrick Forest Hills is a key constraint to siting turbines in the eastern part of this character type.

The medium typology (turbines 50-70m) would have cumulative effects if sited close-by existing wind farm developments although there may be some very limited opportunities to site single and small groups (<5) of turbines towards the lower height band of this typology on lower, sparsely settled open hill slopes providing they do not significantly impact on views from the Stinchar and Duisk Valleys and are not visible from Glen App. Rare small pockets of more diverse farmland and settlement in the south-eastern part of this character type should also be avoided.

There is potential for wind farm development to accelerate positive change to existing commercial forestry within this character area. Any proposals for wind farm development should aim to improve the composition, age structure and design of existing forestry in accordance with current guidance. A high proportion of broadleaves species should be restocked on the fringes of moorland and pastures to ameliorate often geometric hard margins.

On-going review of potential cumulative effects should be undertaken in this landscape to ascertain scope for additional wind farm developments given the high levels of interest by developers and proposals in the planning system.

The detailed assessment considers larger typologies only. While the small-medium typology (turbines 30-50m) could be accommodated on the sparsely settled lower
hill slopes and within larger pockets of open farmland within this densely forested plateau, the small typology (turbines 15-30m) would be less likely to incur significant cumulative effects with existing wind farm development which is often clearly visible in close proximity from these fringing areas. Detailed siting and design should accord with the guidance set out in section 24 of this report.
21 CHARACTER TYPE 20B: SOUTH AYRSHIRE SOUTHERN UPLANDS

21.1 Introduction
There are four areas of the Southern Uplands character type identified across Ayrshire in the 1998 Ayrshire Landscape Assessment. This sensitivity assessment is for the South Ayrshire Southern Uplands character type (20b) which lies in a single area close to Glen App. A separate sensitivity assessment has been prepared for the two areas of this character type which lie close to New Cumnock within East Ayrshire. An area of the Southern Uplands character type lying in the Galloway Forest Park within South Ayrshire has been amalgamated with a number of other landscape character types to form a new character type called the ‘Rugged Uplands with Lochs and Forest’ (21) which is assessed separately in this study.

The detailed assessment considers larger development typologies (turbines >50m) with key constraints and opportunities for smaller turbines briefly outlined in the summary and guidance section only.

21.1.1 Existing/consented wind farms
The operational Arecleoch (60 turbines, 120m high) and Mark Hill wind farms (28 turbines, 110m high) are located within the adjacent South Ayrshire Plateau Moorland with Forestry and Wind Farms (18c) character type. These wind farms lie approximately 2km and 12km respectively from the South Ayrshire Southern Uplands (20b) character type.

The operational Artfield Fell (22 turbines, 74-80m high) and the consented Glenchamber wind farms (11 turbines, 126m high) are located within the similar ‘Plateau Moorland with Forestry’ character type within neighbouring Dumfries and Galloway. These developments lie at distances over 20km from this character type. The operational North Rhins wind farm (11 turbines, 100m) is located approximately 19km to the south of these hills.

21.2 Summary of sensitivity
This landscape comprises a small area of the Southern Uplands character type which extends into neighbouring Dumfries and Galloway. The Southern Uplands in this area form steep-sided open hills with confined rounded summits covered with heather-flecked grassland. These hills are higher than the extensive gently undulating plateau moorlands which abut them to the south and east. The hill of Beneraird lies close to the historic route between Ballantrae and Stranraer and is popular with walkers. Fine views across the outer Firth of Clyde to Ailsa Craig are possible from its summit. These hills are unsettled and little modified although operational wind farm development and extensive commercial forestry is located close-by.
These hills are important in visually containing extensive lower-lying upland plateaux (and the operational wind farm development of Arecleoch) in both South Ayrshire and neighbouring Dumfries and Galloway. Their open character and well-defined form are also valuable in a context where extensive forestry strongly influences these adjacent upland landscapes. There would be a **High** sensitivity to the large and medium typologies (turbines >50m).

### 21.2.1 Sensitivity to smaller typologies <50m

There is unlikely to be a significant demand for smaller typologies within this unsettled upland area. The small-medium typology (30-50m) would have similar adverse effects on landform, visual amenity and cumulative effects as larger typologies (turbines >50m). The small typology (15-30m) would appear out of scale in relation to the size and openness of these unsettled uplands.

### 21.2.2 Potential cumulative issues

These Southern Uplands are important in visually containing an extensive lower-lying upland basin lying to the south within Dumfries and Galloway (where there is current interest in wind farm development) providing a ‘buffer’ preventing intrusion on more sensitive smaller scale settled landscapes within South Ayrshire including the Upland Glen (14) of Glen App and the Glen App Rolling Farmland and Policies (22). Development on these hills would introduce turbines into views from more sensitive settled landscapes to the north-west. It would also increase the extent of turbine development seen on containing (and more prominent) skylines from the lower Stinchar valley and from elevated roads and hill tops within the Coastal Foothills (17e).

### 21.2.3 Constraints

- The strong containment provided by this narrow band of steep-sided hills to the dramatically incised Glen App – although the summits of these hills are rarely visible from the Upland Glen (14) of Glen App and the Glen App Rolling Farmland and Policies (22), large turbines sited on their summits and upper slopes would be likely to be seen above sensitive containing skylines.
- The shapely interlocking landform of the steep-sided hills of Beneraird and Milijjoan which have confined summits and are deeply cut by valleys.
- Extensive commercial forestry and large scale wind farm development within adjacent upland areas both in South Ayrshire and Dumfries and Galloway which increases the value of these more diverse, open and little modified hills.
- The historic route between Ballantrae and Stranraer which passes close to Beneraird and provides a popular access route for walkers to this hill who experience fine views of the sea and Ailsa Craig from its summit.
- The importance of these hills in providing a rim of higher ground containing lower-lying plateau moorlands to the south within Dumfries and Galloway and thus limiting visibility of any wind farm development that may be sited in future in this more expansive and simple upland landscape.
• The established association of the operational Arecleoch and Mark Hill wind farms sited in the adjacent Plateau Moorland with Forestry and Wind Farms (18c) with an extensive, simple and relatively low-lying landscape, avoiding higher more prominent hills – turbines sited on these hills would be contrary to this design rationale and affect the integrity of these developments leading to significant cumulative effects.

21.2.4 Opportunities

• There are no opportunities to accommodate wind turbines in this character type.

21.3 Guidance for development

It is recommended that there is no scope for any size of turbine to be accommodated in this landscape.
CHARACTER TYPE 21: RUGGED UPLANDS WITH LOCHS AND FOREST

22.1 Introduction

This sensitivity assessment is for the Rugged Uplands with Lochs and Forests character type which lies in the Carrick Forest and Loch Doon area within East and South Ayrshire. This character type comprises an amalgamation of the ‘Rugged Granite Uplands’, ‘Rugged Granite Uplands with Forest’, the ‘Southern Uplands’, ‘Southern Uplands with Forestry’ and the ‘Foothills’ character types, defined in the 1998 Ayrshire Landscape Character Assessment. The craggy granite hills which lie at the core of this new character type form the northern extent of the ‘Rugged Granite Uplands’ which extend southwards into Dumfries and Galloway and culminate in the dramatic high hills of Merrick and the Rhinns of Kells.

This landscape is very sparsely settled and the detailed assessment therefore focuses on larger development typologies (turbines >50m) with key constraints and opportunities for smaller turbines briefly outlined in the summary and guidance section only.

22.1.1 Existing/consented wind farms

There are no operational or consented wind turbines within this character type.

The operational Windy Standard wind farm (36 turbines, 53.5m high) and its consented extension (30 turbines, up to 120m high) are located within the Southern Uplands with Forestry character type in neighbouring Dumfries and Galloway but lying close to the East Ayrshire boundary. Both these developments are/will be visible from the western side of Loch Doon.

The operational Mark Hill wind farm (28 turbines, 110m high) and the Arecleoch wind farm (60 turbines, 120m high) are located in the ‘South Ayrshire Plateau Moorland with Forest and Wind Farms’ (18c) character type, lying approximately 6km and 14km respectively to the south-west. The operational Hadyard Hill wind farm (52 turbines, 111m high) lies within 4km distance in the ‘Foothills with Forest and Wind Farm’ (17c) character type. These wind farms, and other wind farm developments sited within neighbouring Dumfries and Galloway, are visible from the higher hills within this character type.

22.2 Summary of sensitivity

This character type extends south into Dumfries and Galloway encompassing an extensive upland tract which includes the high hills of Merrick and the Rhinns of Kells. The dramatic craggy mountainous scenery, which is a feature of the granite hills lying at the core of this landscape, is enhanced by a band of smoother, more rounded but steep-sided hills lying to the west and the diverse Loch Doon and other smaller lochs which lie within a rough basin of moorland, wetland and forest to the east. The complex landform and land cover, including the varied pattern of lochs,
mature woodland and heather moor, is more reminiscent of a typically 'Highland' landscape and this character type is highly scenic and a popular destination for recreation. This landscape is also very sparsely settled and, although it features some commercial forestry and impounded lochs, a strong sense of seclusion and naturalness can be experienced, particularly within the rugged hills lying at its core.

These scenic and rugged hills, lochs and forests are important, particularly within the context of East Ayrshire, in providing a relatively little modified landscape. There would be an overall **High** sensitivity to both the large and medium wind turbine typologies (turbines >50m).

22.2.1 **Potential cumulative issues**

The following issues may arise in connection with any potential developments sited in adjacent landscapes:

- Incremental effects of multiple wind farm developments located in surrounding upland landscapes on key views from this character type, including those from the higher, popularly accessed hills including Cornish Hill and the Corbett hill of Shalloch on Minnoch and also from Loch Doon.

22.2.2 **Constraints**

- The strong enclosure provided by the complex craggy landform and the often small scale of landform features including narrow valleys, lochans, knolls and confined hill summits which reduce the scale of this landscape.
- The dramatic rugged hills of this landscape which form a scenic western backdrop to Loch Doon, the upper Doon Valley (including Craigengillan House and its designed landscape) and are also visible from the more open parts of the Foothill (17b and 17c) landscapes within South Ayrshire.
- The complexity of the topography which features craggy and steep-sided hills and an intricate pattern of lochs and diverse vegetation cover.
- Pronounced wildland qualities associated with the more difficult to access core hills and accentuated by the sparse settlement and naturalness of open rough ground and unmodified lochs (these qualities also contribute to the 'Dark Skies' designation).
- The popularity of this landscape for recreational pursuits including walking and cycling (which increase visual sensitivity) and its role in providing respite from nearby more developed landscapes, particularly within East Ayrshire.

22.2.3 **Opportunities**

- Smoother lower hill slopes on the outer fringes of this character type and within forest clearings where the small typology (turbines 15-30m) could be sited in association with existing buildings providing turbines did not intrude on key views.
22.3 Guidance for development

The study found there to be no scope for larger development typologies to be sited in this landscape.

The detailed sensitivity assessment considers larger typologies only. Smaller turbines <50m would not fit with the expansive scale of the higher hills of this landscape. They would also have a similarly detractive effect on the often complex landform and would impact on wildland qualities particularly experienced within the more rugged core hills. There would however be some very limited scope to site small turbines <20m so visually associated with occasional buildings sited on lower hill slopes. Turbines should avoid being sited between the public road and the shore of Loch Doon in order to minimise visual intrusion. Detailed siting and design should accord with the guidance set out in section 24 of this report.
23 CHARACTER TYPE 22: GLENAPP COASTAL FARMLAND AND POLICIES

23.1 Introduction
This character type only occurs in a single area in Ayrshire. It comprises the rolling coastal farmland and policies surrounding the Glenapp Estate in the south-western edge of South Ayrshire.

The detailed assessment considers both larger and smaller development typologies.

23.1.1 Existing/consented wind farms
No operational or consented wind turbines are located in this character type.

Limited but close views of the operational Arecleoch wind farm (60 turbines, 120m high) are possible from more elevated hill slopes in the northern part of this character type.

23.2 Summary of sensitivity
This landscape backs the rugged and wild Raised Beach Coast with Rocky Shore (1d), forming an elevated platform of rolling pastures and woodlands which rises from the coast to culminate in a narrow band of steep-sided, craggy-topped hills to the south-east. Rolling ridges are cut by deeply incised burns running down to the sea and the landform becomes more complex, forming interlocking small knolls and dips, at the transition with the coast and in the north-eastern part of this landscape. Downan and Finnarts Hills lie close to the coast and form highly visible landmark features and the band of hills on the south-eastern boundary of this coastal farmland are also prominent. Small to medium sized pastures are enclosed by fences and patterned with gorse in the more exposed coastal parts of this landscape while woodland cover is more extensive in the more sheltered north-east, accentuating the complexity of the rolling landform with its intricate pattern. The hills lying on the south-eastern boundary of this landscape are open and covered with heather-flecked grass moorland. The 19th century Glenapp Castle lies at the core of this landscape although it is not readily visible amongst densely wooded policies. Occasional mature field and roadside trees of beech and Scots pine and the ornamental plantings at the core of the Glenapp Castle designed landscape contribute to the diverse land-cover pattern of this landscape. Small farms and houses are dispersed across this landscape and are generally tucked down low into valleys and on lower hill slopes. This landscape forms the foreground to views to the sea from the A77 and is also prominent in views from Ballantrae.

The small to medium scale of this settled and often intricately patterned landscape, its complex landform and proximity to the highly sensitive rugged coast increase sensitivity to larger development typologies. There would be a High sensitivity to the large and medium typologies (turbines >50m). Sensitivity would be High-
**medium** for the small-medium typology (turbines 30-50m) and **Medium** to the small typology (turbines 15-30m).

### 23.2.1 Potential cumulative issues

The sensitivity assessment for the adjacent Raised Beach Coast with Rocky Shore (1d) found it to be of high sensitivity to all but the small typology (turbines 15-30m) but with this size of turbine only able to be accommodated at the transition with the Glenapp Coastal Farmland and Policies (22). While potential cumulative effects could occur with any development located in this character type and the Raised Beach Coast with Rocky Shore (1d), turbines would be likely to be of a compatible size limiting cumulative effects.

There could also be cumulative effects experienced from hill tops in this character type and the wider surrounding area (for example from Knockdolian or Beneraird Hills which are popularly accessed by walkers). The large scale operational Arecleoch wind farm is visible in close proximity and further large scale wind farm development may be sited in the Plateau Moorland with Forestry and Wind Farms (18c) character type. Larger turbines sited in the Glenapp Coastal Farmland and Policies (22) could add to the cumulative encroachment on panoramic views from these hills (and additionally intrude on views to the coast and Firth of Clyde which form the key focus of these views).

### 23.2.2 Constraints

- The proximity of this landscape to the highly sensitive Raised Beach Coast with Rocky Shore (1d) where turbines could affect the strong sense of wildness experienced.
- The narrow band of steep-sided and well-defined hills lying on the south-eastern boundary of this character type which also form prominent skylines seen from the sensitive Upland Glen (14) of Glen App.
- The predominantly small to medium scale of this landscape where rolling landform and woodlands provide containment and the presence of small farms and other settlement form ready scale references.
- Complex rolling landform and landmark hills including Finnart and Downan Hills lying along the coastal edge and the narrow band of craggy-topped hills which form the south-eastern boundary of this character type and include Carlock and Penderry Hills — these hills are widely visible along the coast and from the sea.
- The often intricate land-cover pattern, especially evident within the valley floor and lower side slopes, where mixed policy woodlands, strongly enclosed small pastures and mature field and road trees contribute to the richly diverse character of this landscape.
- The setting this landscape provides to Glenapp Castle and its designed landscape.
- The Ayrshire Coastal Path which is aligned within the south-western extremity of this landscape and provides elevated views across this landscape.
• Views from settlement and from more open sections of the A77 trunk road but also from popularly accessed hills including Knockdolian and Beneraird where dramatic open views to the sea are a key attraction.

23.2.3 Opportunities
• Less settled south-western hill slopes where landform and land-cover is simpler and where the rising slopes of the band of hills which form the south-eastern boundary of this LCT could provide a degree of visual containment and backdrop potentially reducing visual intrusion of smaller turbine typologies.

23.3 Guidance for development
The assessment found no scope for the large and medium typologies (turbines >50m) to be accommodated within the Glenapp Coastal Farmland and Policies (22) landscape character type.

While the small-medium typology (turbines 30-50m) could fit with the simpler landform and increased scale of more sparsely settled farmland and less complex hill slopes which occur in the south-western part of this character type, there are a number of key constraints. These include the proximity of the highly sensitive Raised Beach Coast with Rocky Shore (1d) and views from the Ayrshire Coastal Path, the A77 and from Ballantrae. There may be some very limited scope to accommodate a single or small group <3 turbines of this size in this landscape by setting turbines well back from the coast and utilising the visual containment and backdrop provided by rising hill slopes. It is recommended that applicants should carefully consider the siting and the possible selection of lower height turbines to minimise intrusion and demonstrate this through computer-generated visualisations from key viewpoints. It is unlikely that multiple developments of this size of turbine could be accommodated due to the limited extent of this landscape.

This assessment found there to be some limited scope for the small typology (turbines 15-30m high) to be accommodated in this landscape. All turbines should be set well back from the sensitive coastal areas and from the Ayrshire Coastal Path. They should not be sited on, or nearby landmark hills, and should avoid the tops of small knolls and areas with a more complex landform. Turbines should avoid intrusion on the Glenapp designed landscape and on key views from the Castle to the sea. They should also be sited to avoid intrusion on key views to the coast from the A77.

Turbines <20m, and below 15m height, should be located where they can reinforce the pattern of existing development, being associated with farms and buildings which provide a framework of built development-related spot features.

It is important that turbines have a consistency of design in order to minimise potential cumulative effects on this landscape which has strong integrity.
Detailed siting and design should accord with the guidance set out in section 24 of this report.
24 GUIDANCE ON THE MICRO-SITING OF SMALLER TURBINES

24.1 Introduction
The height of turbines relative to other structures in the landscape is a key consideration in terms of landscape ‘fit’. With this in mind, three types of ‘smaller’ turbines are considered in the guidance as follows:

- Micro-small wind turbine  Below 15m to blade tip
- Small wind turbine 15m – 30m to blade tip
- Small-medium wind turbine 30m – 50m to blade tip

24.2 Guidance for micro-small wind developments (up to 15m to blade tip in height)
The 15m ‘cut off’ for turbine height was selected because of the small size of many of the farm buildings in Ayrshire. Turbines up to 12m in height relate well to the size of existing buildings in the landscape, including smaller farm buildings. 12m high turbines are just over twice the height of a single storey house, while a two storey house is about 9m high to roof pitch. Some farm buildings are higher than this.

A well mature forest broadleaved or conifer tree will be about 15m in height. Turbines up to 15m in height will therefore generally relate well to the size of farm buildings and forest trees. They are also similar to small telephone masts and tall telegraph poles.

This size of turbine has not been considered in detail in the landscape sensitivity assessment although the appropriateness of this typology to some landscapes is noted, where relevant, in the guidance section of the assessments.

In Ayrshire, the following issues have been identified as being particularly influential in terms of detailed siting of this typology within character types identified as being appropriate for this typology:

- Turbine height in relation to the scale of the landscape
- Development pattern
- Visibility
- Potential cumulative issues

24.2.1 Turbine height in relation to the scale of the landscape
Understanding scale, and the relative proportions of features in the landscape, is important in siting this typology. Landscape scale is made up of two factors, the scale of the landform and the scale of the pattern of land use.

Assessing the scale of the landform involves assessing the perceived vertical height and horizontal expanse of the topography, as well as the degree of openness and containment created by topographical relief.
The pattern of land use creates an additional layer of possible enclosure, for example where woodland, hedges and field walls provide containment. Conversely, low-growing vegetation, such as moorland, can reinforce openness. In addition, while we often assess sense of scale relative to ourselves within the landscape, individual elements, from trees to pylons, can provide reference points against which the scale of the landscape or size of other elements is perceived and understood.

A single turbine of this height is most likely to be used to contribute to the energy needs of a residential house, farm or other rural based small business. The size means that it is relatively easy to accommodate in a settled landscape, if sited to be associated with such a building cluster. It is therefore likely that any assessment of landscape sensitivity will conclude that this size of turbine could be readily accommodated – perhaps, at the most, subject to siting considerations to encourage the turbines to be located where they can be visually seen to be part of a group of buildings, or clearly linked to an individual house, as shown in Image 1.

*Image 1: Scale in relation to buildings: A turbine illustrated at an indicative 2x the height of the house from this view. The turbine is well scaled in relation to the size of other individual features. It is also located on the side of the hill, rather than the hill top, where it can be ‘read’ in conjunction with the farm buildings. This forms a ‘cluster’ of development, which reduces landscape and visual impact.*

While generally, with careful siting, the landscapes of Ayrshire can accommodate this size of turbine, there are two key sensitivities to consider for siting this height of turbine:

- The first is that the tops of coastal features, such as raised beaches and headlands are as sensitive to this height of turbine as any other, due to the visual prominence of skylines of this type of landform.
- It is also recognised that turbines of up to 15m may have cumulative effects on the landscape, especially where farms are located close together.

Nevertheless, their general ability to be absorbed within the scale of the landscape means that they have been excluded from detailed assessment within the sensitivity assessments.
24.2.2 Development pattern

When siting turbines in a farmed landscape, such as the lowlands, valleys or the dales character types, it is desirable to support the existing pattern of built development. Turbines of a similar size should be consistently associated with a commonly occurring detailed landform or built features associated with the farms or small settlements in an area. Note that proximity to ‘regularly occupied’ buildings will also need to be balanced with a noise buffer zone.

**Image 2** – Poor relationship with settlement pattern: Here a turbine is located in between two farms, and is not associated with either. It appears to ‘drift’ unattached in the landscape as it does not reflect the existing pattern of built development. Instead, the turbine is setting up a new pattern of development which conflicts with the existing well-established pattern.

**Image 3** – Strong relationship with settlement pattern: The same landscape, with a turbine sited to each of the farms, close to the buildings, each of which now form ‘building clusters’. Here the turbines reflect the existing pattern of settlement, emphasising this, rather than starting a new built pattern which conflicts with the existing pattern. Micro-siting will need to balance creating a development cluster with the need to apply a recommended ‘noise buffer’ zone.
Image 4 – Settlement pattern on extensive low-lying farmed landscapes: Micro-small turbines can be located relatively close to buildings, to form ‘clusters of development’ consistently placed across more expansive farmland areas. Consistent siting and association with existing farms will limit negative cumulative landscape effects. Micro-siting will need to balance creating a development cluster with the need to apply a recommended ‘noise buffer’ zone.

24.2.3 Visibility

Unsurprisingly, these micro-small turbines are likely to be less visible than the larger ones over a wider area. Turbines which are 15m or less in height are more likely to be able to be screened or partially hidden by low ridges and more undulating landform. Tree cover, including sometimes extensive woodland, also limits visibility.

Hiding turbines per se is not more important than choosing a turbine of the right size in relation to landform or other landscape features, or than good micro-siting in relation to landform and settlement pattern. However, reducing sustained visibility of turbines helps limit potential cumulative visual impacts.

Siting turbines on the sides of ridges and low hills, rather than on their summits and high points overall reduces visual cumulative effects – turbines are partially screened from some viewpoints to the lee of the hill and slopes in these locations. If several turbines are visible in an area, broad consistency of turbine design, height and location can help mitigate potential visual impacts.

24.2.4 Potential cumulative issues

Given the current incentives, these micro-small turbines may become a frequent and common occurrence in farmed landscapes. Key cumulative issues for small turbines are likely to relate strongly to potential clutter in the landscape. Issues may include:
• Several individual, or small groups of turbines, could begin to dominate local character;
• The landscape could appear 'cluttered' if single or groups of turbines were associated with the majority of land holdings, especially where holdings are small and therefore closer together;
• Lack of a clear siting strategy could lead to fragmentation of an existing robust, recognisable, consistent and characteristic pattern of settlement, especially if turbines do not relate well to existing buildings and established pattern of built development;
• While one turbine breaching a skyline may be a focal point, a number of diverse structures, all spinning at different speeds – or even several of the same type of turbine – or appearing at irregular intervals along a prominent or important skyline will become a visual distraction from other landscape features or from perceived visual amenity, especially from key viewpoints;
• The variety of potential different types of wind turbines within the landscape could lead to clutter with different styles, sizes of structures and speeds of blade movement dotted across a landscape;
• There may be the added complication of increased visual clutter created by a wide range of different heights of turbine within a farmed landscape with micro-, small and small/medium sized turbines;
• Potential clutter may also be exacerbated if there are other masts, such as telecoms masts, overhead wires and pylons within the same vicinity.

Periodic review will need to be undertaken to assess the cumulative situation in areas where there is a concentration of operational, consented and proposed turbine developments. Adherence to the siting principles set out in this guidance will minimise potential cumulative landscape and visual effects.
24.3  Guidance for small turbines (15m – 30m to blade tip)

The sensitivity of the landscape to this development scenario has been included in all assessments carried out in settled and farmed lowland, valleys, foothills and coastal character types.

Less settled upland landscape character types were not assessed for this size of development, as applications are unlikely to come forward for this size of turbine in areas where there are no farms or other settlement.

24.3.1  Background

In Ayrshire, the following issues have been identified as being particularly influential in terms of detailed siting of this typology within character types identified as being appropriate for this typology:

- Turbine height in relation to the scale of the landscape
- Landform shape
- Settlement and land use pattern and features
- Visibility
- Potential cumulative issues

24.3.2  Turbine height in relation to the scale of the landscape

Turbines of between 15m and 30m are going to be one of the tallest structures in most Ayrshire landscapes. They are going to be taller than many buildings and most trees. They are still, however, similar in height to some taller pylons and communications masts.

Understanding scale, and the relative proportions of features in the landscape, is important in siting this typology. Landscape scale is made up of two factors, the scale of the landform and the scale of the pattern of land use.

Assessing the scale of the landform involves judging the perceived vertical height and horizontal expanse of the topography, as well as the degree of openness and containment created by topographical relief.

The pattern of land use creates an additional layer of possible enclosure, for example where woodland, hedges and field walls provide containment. Conversely, low-growing vegetation, such as moorland, can reinforce openness. In addition, while we often assess sense of scale relative to ourselves within the landscape, individual elements, from trees to pylons, can provide reference points against which the scale of the landscape or size of other elements is perceived and understood.

24.3.3  Scale: Topography

In Ayrshire, the scale of the landform is a significant factor in defining landscape character. More enclosed and wooded river valleys, glens and smaller dales, small scale hummocky
landforms and very low hills, raised beaches as well as more complex landform along some of the foothills and valley sides, create areas of relatively small scale character.

More expansive slopes, medium sized hills, long undulating ridges and the foothills create a more medium scale landform, while sweeping plateaux and much higher relief create the larger scale of the upland areas.

Relatively expansive but undulating landscape, sometimes folded into more complex rounded landform of low relief, is more characteristic of the lowland farmed plains. These lowlands landscape types offer potential for this typology because of the overall expansiveness of the landscape, although some of the small rounded complex landforms may be sensitive even to this height of turbine.

Taller turbines within this typology are more likely to able to take advantage of the higher degree of relief along the broad slopes of foothills and lower fringes of upland areas, the lower side slopes of valleys or the sides of undulating ridges to be found in the dales character types. This is shown in Image 5 below.

\[\text{Image 5} – \text{Landscape scale and size of features: A taller turbine of the ‘small typology’ range located on a low-lying ridgeline set back from, but still associated with the pattern of settlement. In this location, the turbine is linked to the scale of the landform and there are no features in the immediate proximity against which to judge turbine height. It is sited at a slight dip in the ridge, and back-dropped in this view by higher ground. It is located away from the low farm buildings to avoid overwhelming the buildings in terms of scale.}\]

24.3.4 Scale: Farmland

Trees and woodland, field pattern, settlements and farms are located across the farmed lowlands and extend onto the lower fringes of the uplands. They are also a characteristic of the valleys and dales. The consistent and recurring presence of these elements creates a pattern that reduces the landscape scale in these areas, and the individual elements provide scale reference points against which height can be judged.
Care should be taken to site 15m – 30m high turbines where they do not dominate individual buildings, trees or other features, although some association with broad settlement pattern is still considered appropriate. Turbines in the lower range of this height (15m – 20m) are still likely to be small enough to be sited where they can be closely associated with larger buildings and trees to form the type of development cluster illustrated in Image 6 below.

![Image 6: Scale in relation to buildings: A turbine illustrated at an indicative 2x the height of the house from this view. The turbine is well scaled in relation to the size of other individual features. It is also located on the side of the hill, rather than the hill top, where it can be ‘read’ in conjunction with the farm buildings. This forms a ‘cluster’ of development, which reduces landscape and visual impact.]

As shown in Image 6 above, although they may sometimes be bigger than these elements, a turbine of this size is unlikely to be more than three times the size of any building or tree, and within a wider landscape setting, this size relationship can usually be accommodated unless there are site-specific scale sensitivities.

Taller turbines (20m – 30m) may require to be located further away from smaller buildings and trees, so that they do not overwhelm them in terms of size, as shown in Image 6. This is a particular issue in Ayrshire as many of the farm buildings are low.

24.3.5 **Scale: Coast**

On the coast, landform relief tends to be low. A particular feature are the low but well defined raised beaches that frequently form a backdrop to level fields, or the convex slopes of foothills hills forming a containing skyline. Views from the sea are a particular consideration on this busy sea. Even where higher cliffs, headlands and more pronounced landform is present, the scale is sensitive, as a turbine of any height can easily diminish the perceived sense of height and drama.

As a result, the landscape sensitivity assessments for the coastal character types conclude that there is only very limited scope for turbines of less than 30m to blade tip in the coastal character types. No opportunities were found for even these small turbines on raised beaches and more complex landforms, or along the prominent skylines of headlands.

All turbines should be set well inland from raised beaches, promontories, cliffs, headlands or other key landform features. They should avoid being located close to, or directly on, the
skyline. The visual drama of these topographical features often depends on their perceived scale, and this can easily be diminished by turbines sitting on top of these features.

Image 7 – Coastal landscapes: This turbine is poorly sited. It is perched on top of the raised beach and although it is quite small, instantly dominates the view and overlooks, or appears to 'hover above', the coast.

Image 8 – Coastal landscapes: This turbine is better sited. It is set back from the immediate coastal edge, associated with buildings and has a less intrusive impact on the coast.

To conclude, turbines of this height (15m – 30m to blade tip) are likely to be difficult to accommodate within very small scale and complex topography, areas of very low relief, or where there are small farm buildings or other small features.

The larger size of turbines in this range are better located where they can be accommodated by landform scale which is more evident in more open landscapes, or larger buildings.

For this typology, if there is doubt about the potential impact of a turbine on the scale of the landscape, a photomontage or wireline of the turbine taken from a key viewpoint will help the assessment of potential impacts.
24.3.6  **Landform shape**

Turbines of this height (15m – 30m) are most likely to be located within the farmed lowlands, lower hill slopes and valley floors. The narrow coastal plains are flat, while the more extensive lowlands are gently undulating, often with areas of more complex, interlocking rounded landform created by deposits which can also appear in the dales.

Turbines of this size are most easily accommodated on the more open side slopes of low hills or ridgelines and along the simple gradients along the sides of the dales or in the lowland hills and foothill types. Other opportunities include the rising ground which provides the transition between the uplands and the farmed lowland areas and river valleys, as the higher hills form a backdrop to the turbines.

Most landforms, including low hills, are gently rounded, and valley sides vary from convex slopes to more abrupt concave slopes along the coast. Valley sides can offer natural terraces and changes in gradient, often associated with deposits.

These terraces, narrow ledges, folds and subtle hollows and distinct changes in gradient associated with rising slopes or dips within undulations, have the potential to create natural platforms for siting turbines in this height range.

Turbines should not be located on the tops of low hills or knolls. Side slopes of low hill and ridges, and terraces or places where there is a marked change in gradient offer good opportunities.

*Image 9 – Turbines associated with change in gradient: These turbines are located where there is a change in gradient or ridge of rocky land – a landform feature which already exists on the side slopes of the hills*

Distinct changes in gradient associated with rising slopes, well defined dips within undulations or more expansive concave landforms, long ridges and interim hills along the lower edges of the foothills, as well as the edges of more expansive plateaux all provide potential opportunities for micro-siting turbines of this size.
24.3.7 Settlement and land use pattern and features

In Ayrshire, there is frequently a clear link between settlement and landform, for example, on the edges of the uplands, buildings may be located at a natural break in slope, the side slopes of the valleys and dales or associated with watercourses. Across the farmed lowlands, farm buildings may be relatively evenly dispersed across the landscape. The farm acreage is often small, and the steadings can be close together, creating quite a dense pattern of dispersed settlement, but with small buildings. Along the coast, farms and smaller settlements are often set back from the shore, although larger towns are clustered around harbours. A frequent location for housing is tucked against the raised beaches, but farms are more often set further inland, in sheltered locations. There are larger farm buildings and industrial buildings occasionally located in the lowlands and also on the fringes of larger towns or on the coast. These building groups can include tall stacks or other masts.

This height of turbine (15m – 30m height to blade tip) is larger than most buildings found in rural areas. They therefore should be sited where they can more readily be accommodated by landform scale, and avoid overshadowing or small fields and settlement, including the small farmsteads typical of some of the lowlands areas.

These small sized turbines are better accommodated if located on low ridges, the side slopes of hills and dales and set slightly apart from farms or settlements.
Developing a recognisable pattern of development – for example, locating turbines at a similar elevation, and/or on similar topographical features across a landscape type will help create a pattern of development which will appear less cluttered and will also develop a distinctive and consistent landscape characteristic over time. Proximity to ‘regularly occupied’ buildings will need to be balanced with a noise buffer zone.

*Image 11 – Developing a landscape pattern: These turbines are located at a similar elevation on this hillside between lowlands and hills. This similarity in size, location and elevation helps to maintain the unity of the landscape pattern. Consistent association with watercourses, side slopes of similar gradient, breaks in slope, head dykes or other features will help increase unity in the landscape and reduce negative cumulative landscape effects.*

It is important to assess and understand the existing settlement pattern at the outset, and consider how a number of turbines could be sited in a landscape. Careful and consistent siting will limit potential cumulative effects on landscape character.

24.3.8 Visibility

Small turbines, of between 15m and 30m in height, are likely to appear above trees and buildings. Clearly, the taller the turbine the more likely it is to be more widely visible.

Hiding turbines per se is not more important than choosing a turbine of the right size in relation to landform or other landscape features, or than good micro-siting in relation to landform and settlement pattern. However, reducing sustained visibility of turbines helps limit potential cumulative visual impacts.

Siting turbines on the sides of ridges and low hills, rather than on their summits and high points overall reduces visual cumulative effects – turbines are partially screened from some viewpoints to the lee of the hill and slopes in these locations. If several turbines are visible in an area, broad consistency of turbine design, height and location can help mitigate potential visual impacts.
24.3.9 Potential cumulative issues

Given the current incentives, these small sized turbines may become a frequent and common occurrence, especially in farmed landscapes. Key cumulative issues are likely to relate strongly to potential clutter in the landscape and the visual relationship with other wind turbines. Issues are similar to those identified in the analysis of micro-small wind turbines, but because of the larger size of these turbines the issues are likely to occur more quickly and may include:

- Several individual, or small groups of turbines, could begin to dominate local character;
- Lack of a clear siting strategy could lead to fragmentation of an existing robust and recognisable landscape pattern – where possible, it is important to site turbines on similar landforms, at similar elevations and with a similar relationship to the existing settlement pattern;
- Diverse designs of turbine, all spinning at different speeds – or even several turbines of the same type – strung along a prominent or important skyline could become a visual distraction from other landscape features or from perceived visual amenity, especially from key viewpoints;
- The larger the turbine, the harder it is likely to be to accommodate a number of them in a single view or recognisable tract of landscape without them becoming the dominant feature. It is also harder to accommodate the turbines in a sequence of views experienced, for example, when travelling along a road;
- The variety of potential different types of wind turbines within the landscape could lead to clutter with different styles, sizes of structures and speeds of blade movement dotted across a landscape;
- Potential clutter may also be easily created if there are other masts, such as telecoms masts, overhead wires and pylons within the same vicinity;
- There may be the added complication of increased visual clutter created by a wide range of different heights of turbine within a farmed landscape with micro-, small and small/medium sized turbines;
- An additional complication may be the visual interrelationship with larger wind farms of large and medium sized turbines, especially along the upper edge of farmland adjacent to upland character types.

Periodic review will need to be undertaken to assess the cumulative situation in areas where there is a concentration of operational, consented and proposed turbine developments. Adherence to the siting principles set out in this guidance will minimise potential cumulative landscape and visual effects.

24.3.10 Other landscape issues associated with this typology

Undergrounding electricity cables to a suitable off-site location to connect with the grid should also be undertaken in order to avoid a clutter of disparate built elements in the landscape.
24.4 Guidance for small-medium turbines (30m – 50m in height to blade tip)

The sensitivity of the landscape to this development scenario has been included in all assessments carried out in settled lowland landscape and coastal character types. Less settled upland landscape character types, however, were not assessed in detail for this size of development, as applications are unlikely to come forward in areas where there are no farms or other settlements.

24.4.1 Background

In Ayrshire, the following issues have been identified as being particularly influential in terms of detailed siting of this typology within character types identified as being appropriate for this typology:

- Turbine height in relation to the scale of the landscape
- Landform shape
- Settlement and land use pattern and features
- Visibility
- Cumulative issues

24.4.2 Turbine height in relation to the scale of the landscape

Turbines of between 30m and 50m are going to often be the tallest structures in any Ayrshire rural landscape. They are going to be taller than buildings and trees. They will also be taller than most communication masts and pylons, although there are some very tall structures associated with the coastal industrial developments at Hunterston and near Irvine.

Understanding scale, and the relative proportions of features in the landscape, is therefore important in siting this typology. Landscape scale is made up of two factors, the scale of the landform and the scale of the pattern of land use.

Assessing the scale of the landform involves assessing the perceived vertical height and horizontal expanse of the topography, as well as the degree of openness and containment created by topographical relief.

The pattern of land use creates an additional layer of possible enclosure, for example where woodland, hedges and field walls provide containment. Conversely, low-growing vegetation, such as moorland, can reinforce openness. In addition, while we often assess sense of scale relative to ourselves within the landscape, individual elements, from trees to pylons, can offer reference points against which the scale of the landscape or size of other elements is perceived and understood.

24.4.3 Scale: Topography

In Ayrshire, the scale of the landform is a significant factor in defining landscape character. More enclosed and wooded river valleys, glens and smaller dales, small scale hummocky landforms and very low hills, raised beaches as well as more complex landform along some of the foothills and valley sides, create areas of relatively small scale character.
More expansive slopes, medium sized hills, long undulating ridges and the foothills create a more medium scale landform, while sweeping plateaux and much higher relief create the larger scale of the upland areas.

Relatively expansive but undulating landscape, sometimes folded into more complex rounded landform of low relief, is more characteristic of the lowland farmed plains. These Lowlands types can accommodate some turbines of this height, but largely associated with the edge of the more level and open farmed areas and moor, avoiding more complex landform.

Low hills, and prominent landmark hills are sensitive to this typology, because their perceived scale can be diminished. The containment of the narrower glens, valleys and the dales is a further sensitivity for this typology, where only limited scope was identified.

Turbines of this height (30m – 50m) can therefore be accommodated most readily by relating the height of the turbines to the scale of the landform in those areas where landform is a more dominant feature than the landscape pattern.

If well sited, turbines of this size, even in small groups of up to three turbines, may be able to take advantage of the degree of relief created by medium scaled landforms. Examples include the broad slopes of larger scale foothills and fringes of extensive upland areas and plateaux or the transition between smaller scale farmed lowlands and the edge of larger scale upland landscapes of higher relief and simple vegetation pattern. This is shown in Image 12 below.

Image 12 – Landscape scale and topography: A ‘medium-small’ turbine located where it is readily associated with the scale of the landform rather than individual features within the low-lying farmland. This size of turbine is more easily accommodated if it is not located close to farms and trees, but can be seen in the context of landform and more simple vegetation pattern, such as moorland and larger woods, for example at the transition between upland and lowland landscapes. This turbine has also been placed where it avoids the hilltop, and at a break in slope along the ridgeline.
24.4.4 Scale: Farmland

Trees and woodland, field pattern, settlements and farms are located on the lower fringes of the uplands, within the glens and across the farmed plains. The consistent and recurring presence of these elements creates a pattern which reduces the scale in these areas, and the individual elements provide scale reference points against which height can be judged.

On more marginal farmed landscapes, buildings and tree cover are likely to be sparse and often are smaller in size than more fertile lowland farmlands. Trees may also be limited in height by exposure or poor soils and buildings are often low, either due to exposure, or due to the poorer quality farmland. In some lowland areas, there is a dense pattern of small farms, with buildings which are often one and a half, or sometimes a single storey high.

In settled and farmed landscape types, the relationship between small-medium turbines (30m – 50m) and individual smaller scale elements is likely to be very sensitive, as this size of turbines could easily overwhelm the size of individual elements, such as farms, other buildings, trees, small woods and policy features which are key characteristics of these landscapes.

Turbines of this height (30m – 50m) can therefore be accommodated most readily by relating the height of the turbines to the scale of the landform on more open areas, where fields are larger, or where simpler vegetation such as moorland dominates, where settlement pattern is more dispersed, well away from the immediate setting of farms, other buildings, trees and woodland. This can be found at the edges of farmed areas, where farmland forms a transition with the hill land such as shown in Image 12 above and in more open lowland areas, with larger, more simple field patterns and associated with lowland moor, as shown in Image 13 below.

Image 13 – Landscape scale in farmland: A ‘medium-small’ turbine located where it is readily associated with the scale of more simple land cover or vegetation pattern, such as large fields and the edge of moorland. There are fewer features, such as woodland, hedges and farms in this landscape.
For this typology, if there is doubt about the potential impact of a turbine on the scale of the landscape, a photomontage, wireline or photowire taken from a key viewpoint will help the assessment of potential impacts.

24.4.5 **Scale: Coast**

On the coast, landform relief tends to be low. A particular feature are the low but well defined raised beaches that frequently form a backdrop to level fields, or the convex slopes of foothills hills forming a containing skyline. Views from the sea are a particular consideration on this busy sea way. Even where higher cliffs, headlands and more pronounced landform is present, the scale is sensitive, as a turbine of any height can easily diminish the perceived sense of height and drama. As a result, the landscape sensitivity assessments for the coastal character types conclude that there is no scope for turbines of more than 30m to blade tip in this area.

24.4.6 **Landform shape**

This size of turbine (30m - 50m to blade tip) is likely to be more readily accommodated in medium scaled landscapes or the transition between farmed or settled landscapes and the edge of larger scale upland landscapes. In these locations, they are more likely to fit with the landscape if they are sited to clearly relate to a specific landform. Turbines of this size could be accommodated on the side slopes of low hills or ridgelines which provide the immediate backdrop to the farmed lowland areas, especially if they, too, are back-dropped by larger hills or more sweeping plateaux.

Distinct changes in gradient associated with rising slopes, well defined dips within undulations, natural terraces or more expansive concave landforms, long ridges, the side slopes of interim hills and foothills, as well as the edges of more expansive plateaux all provide potential opportunities for micro-siting turbines of this size.

*Image 14* - Landform shape: An indicative medium-small turbine located on a natural ledge of land at the transition between farmed land and steeper hillsides. The natural breaks in slope along this transition can be exploited to site turbines in the landscape. The more strongly a turbine of this size is associated with hillsides and simple vegetation pattern, the easier it will be to site it where it minimises possible impacts on landscape scale.
24.4.7 Settlement and land use pattern and features
Wherever possible, this size of turbine will 'fit' in the landscape more successfully if it is located away from small individual features such as small farms. This will mean locating this typology away from the immediate setting of individual farms and buildings and woodland features, although larger industrial buildings may offer a useful scale reference for the smaller size of this typology.

This size of turbine (30-50m) is most readily accommodated where the pattern of built development becomes sparse, for example in the upland fringe (see Image 14), or where farm holdings are large with very dispersed settlement pattern set within more open, large scale fields or lowland moors (see Image 13). Other opportunities include where the pattern of fields gives way to more extensive forestry, open hills and moorland, or in coastal foothills.

The alignment of tracks and location of other infrastructure, as well as the turbines themselves, are also more likely to be an issue than with smaller turbine sizes.

Developing a recognisable pattern of development – for example, locating turbines at a similar elevation, and/or on similar topographical features across a landscape type will help create a pattern of development which will appear less cluttered and will also develop a distinctive and consistent landscape characteristic over time.

24.4.8 Visibility
Turbines of this height are likely to be widely visible, as they are difficult to screen with smaller landform. Good siting is therefore very important, as the relationship with landform and wider landscape setting will be very visible.

24.4.9 Cumulative issues
Given the current incentives, these small-medium sized turbines may become a more common occurrence. Key cumulative issues are likely to relate strongly to potential clutter in the landscape and the visual relationship with wind farms of larger turbines or individual and small groups of small turbines. Cumulative issues may include:

- Several individual, or small groups of turbines, could begin to dominate local character;
- Diverse designs of turbine, all spinning at different speeds – or even several turbines of the same type – strung along a prominent or important skyline could become a visual distraction from other landscape features or from perceived visual amenity, especially from key viewpoints;
- Lack of a clear siting strategy could lead to fragmentation of an existing robust and recognisable landscape pattern – where possible, it is important to site turbines on similar landforms, at similar elevations and with a similar relationship to the existing settlement pattern;
- The larger the turbine, the harder it is likely to be to accommodate a number of them in a single view or recognisable tract of landscape without them becoming the
dominant feature. It is also harder to accommodate the turbines in a sequence of views experienced, for example, when travelling along a road;

- The variety of potential different types of wind turbines within the landscape could lead to clutter with different styles, sizes of structures and speeds of blade movement dotted across a landscape;
- Potential clutter may also be easily created if there are other masts, such as telecoms masts, overhead wires and pylons within the same vicinity – this is likely to be a bigger problem with these small turbines than larger ones;
- There may be the added complication of increased visual clutter created by a wide range of different heights of turbine within a farmed landscape with micro-, small and small/medium sized turbines;
- Other complications may be the visual interrelationship with larger wind farms of large and medium sized turbines, especially along the upper edge of farmland adjacent to upland character types.

Periodic review will need to be undertaken to assess the cumulative situation in areas where there is a concentration of operational, consented and proposed turbine developments. Adherence to the siting principles set out in this guidance will minimise potential cumulative landscape and visual effects.

24.4.10 Other landscape issues associated with this typology

More complex landform, such as the areas of small-scale deposits and knolls will be particularly sensitive to the construction of access tracks for this size of wind turbine development. The construction of new access tracks should be minimised by careful siting of turbines to use existing tracks and to avoid more difficult or steep terrain. Care should also be taken in the alignment and design of any access tracks to ensure that sensitive landform and vegetation is not adversely affected and that intrusion on key views is avoided.

Undergrounding electricity cables to a suitable off-site location to connect with the grid should also be undertaken in order to avoid a clutter of disparate built elements in the landscape.
SUMMARY OF FINDINGS AND RECOMMENDATIONS

25.1 Introduction

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 South Ayrshire and outlines recommendations for a landscape strategy.

The study has considered the sensitivity of 20 landscape character types within South Ayrshire to wind turbines between 15m and over 70m high to blade tip. While the landscape character types used in the sensitivity assessment were informed by the published Ayrshire Landscape Character Assessment (1998), a number of these landscape character types have been sub-divided and 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.

25.2 Key findings of the sensitivity assessment

The study considers the sensitivity of key landscape and visual criteria within each landscape character type/area to different turbine typologies. The turbine typologies assessed were principally determined on the basis of turbine height to blade tip and included the following:

- **Large**: Turbines 70m+
- **Medium**: Turbines between 50m-70m
- **Small-medium**: Turbines between 30m-50m
- **Small**: Turbines between 15m-30m

Sensitivity to each turbine typology was scored on a five point scale of High, High-medium, Medium, Medium-Low and Low against each of the 8 key landscape and visual criteria defined for the assessment. Key landscape and visual criteria included landform, landscape scale and visual amenity. Operational and consented wind farms and turbines as at 31st July 2012 formed the baseline for the assessment when considering cumulative landscape and visual effects.

An overall sensitivity rating for each landscape character type/area was then accorded using professional judgement in considering the weight of evidence in terms of the sensitivities identified in the assessment rather a numerical scoring system.

Table 3 below, sets out the overall findings on the sensitivity of landscape character types for each of the turbine typologies considered in the study. It should be noted that detailed assessment of smaller typologies (turbines <50m) has not been undertaken for more sparsely settled upland character types although general guidance is given on accommodating this size of turbine.
### Table 3: Summary of landscape and visual sensitivity

#### Large Typology (turbines 70m+)

<table>
<thead>
<tr>
<th>Sensitivity</th>
<th>Character Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Raised beach coast, flat field and headlands (1c), South Ayrshire Coastal Edge (2b), Brown Carrick Hills (4b), Coastal Valley and Policies (5), South Ayrshire Lowlands (7d), Lowland River Valleys (9), Lower Dale (11), Middle Dale (12), Intimate Pastoral Valley (13), Upland Glens (14), Lowland Hills (16), Maybole foothills (17d), South Ayrshire Southern Uplands (20b), Rugged Uplands, Lochs and Forest (21), Coastal rolling farmland and policies (22).</td>
</tr>
<tr>
<td>High-medium</td>
<td>Foothills with Forest west of Doon Valley (17b), Foothills with forest and wind farms (17c), Coastal Foothills (17e).</td>
</tr>
<tr>
<td>Medium</td>
<td>-</td>
</tr>
<tr>
<td>Medium-low</td>
<td>Plateau Moorlands with forest and wind farms (18c)</td>
</tr>
<tr>
<td>Low</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Medium Typology (turbines 50m-70m)

<table>
<thead>
<tr>
<th>Sensitivity</th>
<th>Character Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Raised beach coast, flat field and headlands (1c), South Ayrshire Coastal Edge (2b), Brown Carrick Hills (4b), Coastal Valley and Policies (5), South Ayrshire Lowlands (7d), Lowland River Valleys (9), Lower Dale (11), Middle Dale (12), Intimate Pastoral Valley (13), Upland Glens (14), Lowland Hills (16), South Ayrshire Southern Uplands (20b), Rugged Uplands, Lochs and Forest (21), Coastal rolling farmland and policies (22).</td>
</tr>
<tr>
<td>High-medium</td>
<td>Maybole foothills (17d), Coastal Foothills (17e)</td>
</tr>
<tr>
<td>Medium</td>
<td>Foothills with Forest west of Doon Valley (17b), Foothills with Forest and wind farm (17c), Plateau Moorlands with Forest and wind farms (18c)</td>
</tr>
<tr>
<td>Medium-low</td>
<td>-</td>
</tr>
<tr>
<td>Low</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Small-medium Typology (turbines 30m-50m)

<table>
<thead>
<tr>
<th>Sensitivity</th>
<th>Character Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Raised beach coast, flat field and headlands (1c), Raised beach coast with rocky shore (1d), South Ayrshire Coastal Edge (2b), Coastal Valley and Policies (5), Lowland River Valleys (9), Upland Glens (14), South Ayrshire Southern Uplands (20b), Rugged Uplands, Lochs and Forest (21),</td>
</tr>
<tr>
<td>High-medium</td>
<td>Brown Carrick Hills (4b), Lower Dale (11), Middle Dale (12), Intimate Pastoral Valley (13), Lowland Hills (16), Coastal rolling farmland and policies (22).</td>
</tr>
<tr>
<td>Medium</td>
<td>South Ayrshire Lowlands (7d), Maybole Foothills (17d), Coastal Foothills (17e).</td>
</tr>
<tr>
<td>Medium-low</td>
<td>-</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>Character Type</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>High</td>
<td>Raised beach coast, flat field and headlands (1c), Raised beach coast with rocky shore (1d), South Ayrshire Coastal Edge (2b), Coastal Valley and Policies (5)</td>
</tr>
<tr>
<td>High-medium</td>
<td>Brown Carrick Hills (4b), Lowland River Valleys (9), Lower Dale (11), Middle Dale (12), Intimate Pastoral Valleys (13), Upland Glens (14), Lowland Hills (16), Coastal Rolling Farmland and Policies (22)</td>
</tr>
<tr>
<td>Medium</td>
<td>South Ayrshire Lowlands (7d), Maybole Foothills (17d), Coastal Foothills (17e).</td>
</tr>
<tr>
<td>Low</td>
<td>-</td>
</tr>
</tbody>
</table>

Turbines below 15m height 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.

25.2.1 *How to interpret the sensitivity scores*

Caution is needed in interpreting the sensitivity scores outlined in the above tables as these represent an average across landscape character types. Considerable variation can occur within these landscape 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 developers would need to demonstrate how they have dealt with potential effects on the constraints identified in the sensitivity assessment when preparing proposals.

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

A landscape accorded ‘Medium’ sensitivity would have increased opportunities for wind farm/turbines, 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 effects on more sensitive
landscapes or limit visual intrusion in some instances. No landscapes with a low sensitivity to any of the development typologies were identified in the assessment.

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 are constructed in future within South Ayrshire and surrounding authorities, sensitivities will be likely to change and periodic monitoring of the cumulative landscape and visual situation is therefore essential.

25.3 Strategic Landscape Issues

25.3.1 Introduction
The sensitivity assessment identifies constraints and opportunities within each landscape character type/area. 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 character types in isolation. It is important to also take into account the experience and appreciation of the landscape of South Ayrshire as a whole and to ‘stand back’ from the individual assessments to consider the wider implications of the judgements made on sensitivity. The following text provides a landscape overview, summarises current issues relating to wind farm and turbine development and also addresses strategic cumulative landscape and visual effects before outlining strategic landscape recommendations.

25.3.2 The South Ayrshire landscape
An extensive band of uplands lies on the southern and eastern boundaries of South Ayrshire. To the south these uplands form a relatively low-lying and gently undulating plateau which extends into Dumfries and Galloway. These uplands are more diverse in the east in the Carrick Forest area between East and South Ayrshire however, forming higher steep-sided and often craggy hills containing small lochs and narrow valleys. The sparse settlement and the ruggedness of this eastern upland area can instil a strong sense of wildness and it is a popular area for recreation. These uplands form dramatic complex skylines glimpsed from hill tops and distant views across lowland South Ayrshire.

Narrower upland bands contain the main valleys within the southern part of South Ayrshire and these often provide steep backdrops and often rugged skylines to the coast and more settled areas. These include the widely visible Brown Carrick Hills, which are important in providing the setting to Ayr and Culzean, the narrow band of small but rugged hills immediately backing the coast between Girvan and Ballantrae and the band of hills lying between the Girvan and Stinchar valleys. A number of well-defined hills, usually lying on the fringes of these upland areas, form landmark features and some are also important in providing containment to operational wind farm development.
The South Ayrshire coast extends from Ayr to Glen App and comprises a largely consistent narrow raised beach, interrupted by more dramatic headlands such as the Heads of Ayr. The Brown Carrick Hills and the small rugged hills backing the coast between Girvan and Ballantrae form an integral part of the character of the coast being highly visible both from the sea and the coastal edge. The South Ayrshire coast is enriched by the presence of Culzean Castle and its extensive policies and also includes a section of remoter coast to the south which is backed by the rolling farmland and policies of Glen App.

South Ayrshire features a number of richly diverse river valleys. These include the narrow and deeply incised sinuous valleys of the Ayr and Doon lying within the farmed lowlands of South Ayrshire, the Girvan valley which forms a broad undulating dale in its lower section but is increasingly constricted by steep-sided hills towards its head and the Stinchar and Duisk valleys which lie close to more extensive plateau uplands in the south. All these valleys are well-settled with small enclosed fields, extensive wooded policies, riparian woodlands and a rich architectural heritage evident in small settlements, castles, mansion houses and archaeological features.

25.3.3 Analysis of the existing pattern of wind farm development

The operational wind farms of Arecleoch and Mark Hill are located within an extensive and sparsely settled upland plateau. Both developments have relatively limited effects on adjacent smaller scale valleys and the coast although Arecleoch is more successful in its siting in relation to restricting visibility from the adjacent Stinchar valley. The Hadyard Hill wind farm is located in an upland area with a more limited extent and although its location in a shallow basin edged by higher hills reduces landscape and visual effects to some degree, this development is very intrusive in the Barr area within the Stinchar valley.

Although locally prominent, the single operational turbine at Girvan Hospital (47.4 m high) is clearly associated with a larger building on the edge of Girvan which reduces its impact on landscape character. A consented single 77m high turbine at Dowhill Farm near Turnberry will however be likely to have a significant effect on the small scale character of the raised beach coast and on views.

25.3.4 Current trends and issues related to wind farm/turbine development

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

- Demand for larger single turbines within the more settled lowland areas of South Ayrshire (although the majority of applications in these more settled areas are for turbines <20m high to blade tip, there are a number of proposals for turbines around 40-50m high and occasionally also for turbines >70m high).
- Pressure for wind farms comprising larger turbines within the Foothills with Forest west of the Doon Valley (17b), the Foothills with Forest and Wind...
Farms (17c) and the Coastal Foothills (17e) which comprise fairly narrow upland bands which lie close to more settled and smaller scale valleys within East Ayrshire and South Ayrshire thus increasing potential for landscape and visual impacts.

- Potential demand for extensions to operational wind farms that could exacerbate intrusion on adjacent more sensitive landscapes and could also affect the design integrity of the original development.
- Potential cumulative landscape and visual impacts between operational, consented and proposed larger wind farms sited in upland areas but also with single and small groups of turbines of all heights sited in adjacent more settled landscapes.

25.4 Areas of Search for wind farms/larger turbines

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 which will aid the identification of Areas of Search, which are assumed to comprise larger (>50m high) turbine developments.

We recommend that landscapes with a combined sensitivity of medium and lower offer greatest scope to accommodate the large and medium development typologies whilst minimising significant impact on key landscape and visual sensitivities. These include the Foothills with Forestry west of the Doon Valley (17b), the Foothills with Forest and Wind Farm (17c) and the South Ayrshire Plateau Moorlands with Forestry and Wind Farms (18c). These character types 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.

25.4.1 Wind farm/turbine developments in more sensitive landscapes

It may be possible to accommodate very limited wind farm development or single/small groups of larger turbines in some landscape character types judged to be of High-medium sensitivity to the large and medium typology. Due to the significant constraints likely to apply to larger developments and the very small parts of these landscapes where scope may exist, we do not recommend that these landscapes are included within potential search areas for wind energy development. The guidance section within the sensitivity assessment for each landscape character type provides a broad description of where there may be limited scope for development within these generally more sensitive landscapes.

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.
25.5 Scope for smaller turbines below 50m high

The sparsely settled upland landscapes are less likely to be attractive for the development of turbines below 50m and the majority of current applications for turbines of this size focus on the more settled farmed landscapes within South Ayrshire. The sensitivity assessment concluded that there was most scope to accommodate the small-medium typology (turbines 30-50m) within the South Ayrshire Lowlands (7d), the Maybole Foothills (17d) and the Coastal Foothills (17e) although some opportunities may also be present within limited parts of other landscape character types as well. Many of these more settled landscapes have an even dispersal of small farms and other buildings and landscape/visual capacity would be quickly reached if even a small number of these where to feature a turbine of this height with multiple turbines in close proximity likely to overwhelm landscape features.

Turbines <30m would fit more comfortably with the scale of the settled lowlands, farmlands and lower hill slopes of the foothill landscapes within South Ayrshire incurring fewer landscape and visual effects and allowing a greater number of turbines to be accommodated.

25.6 Key cumulative issues

The following key cumulative landscape and visual issues have been identified during the course of the study and are likely to additionally limit scope for development in some areas:

- Simultaneous and sequential cumulative visual effects experienced from the designated Tourist Route of the A714 where the large wind farm developments of Arecleoch and Mark Hill are already prominent in the more open and elevated sections of this route, south-east of Barrhill.
- Potential cumulative landscape and visual effects on the small-scale well-settled Stinchar Valley where the Mark Hill wind farm is prominent in the Poundland area and where the Hadyard Hill wind farm forms a dominant feature significantly affecting the setting of Barr and impacting on views in this part of the valley.
- Cumulative effects on the setting and on views from popularly accessed hills including Knockdolian, Beneraird and Byne Hill.
- Cumulative effects that could arise on the Girvan Valley if wind farm developments were to be located within the Foothills with Forest west of Doon Valley (17b), the Foothills with Forest and Wind Farm (17c) and the Maybole Foothills (17d) so visible on containing skylines.
- Cumulative effects on the character, setting and views to and from the dramatic rugged spine of high granite hills which focus on Merrick and extend northwards into South/East Ayrshire which could occur if further wind farm developments were located in eastern parts of the Plateau Moorlands with Forest and Wind Farms (18c) (and similar landscapes within
Dumfries and Galloway) and the Foothills with Forestry and Wind Farm (17c).

- Multiple developments of smaller turbines within the South Ayrshire Lowlands (7d), the lower hill slopes of the Maybole Foothills (17d), the Intimate Pastoral Valleys (13), the Lower Dale (11) and Middle Dale (12) which are fairly densely settled with small farms and where cumulative effects could quickly arise if turbines (and particularly turbines of varying sizes and designs) were associated with a number of land holdings.

25.7 A recommended landscape strategy

- **Protect the rugged and highly scenic coast** which is a key asset of South Ayrshire, featuring dramatic headlands, the extensive wooded policies of Culzean, more remote coastline in the south and breathtaking views over the Firth of Clyde to Arran and Ailsa Craig. Even small turbines could affect the character of the coast and intrude on views. Turbines in adjacent landscapes should also be sited to avoid being visible on containing skylines against the coast.

- Glen App forms the ‘threshold’ to Scotland experienced from the A77 when leaving the Northern Ireland ferries for many travellers and it is important to conserve the setting of this dramatically contained glen (by avoiding turbines visible on skylines) and the open views which are suddenly revealed across the Firth to Ailsa Craig from this road above the rolling farmland and wooded policies of the Glenapp Estate.

- **Maintain the rugged scenery and sense of wilderness associated with Loch Doon and the Carrick Hills** by directing wind farm development away from this landscape and ensuring that development sited in surrounding landscapes avoid significant impact on its setting and experiential qualities.

- **Protect the landmark hills and their setting** these steep-sided and well-defined hills generally lie on the edge of the more complex foothills and form highly visible backdrops and diverse skylines to the Girvan and Stinchar valleys and the South Ayrshire coast. Wind farm development on or near these hills would detract from their distinct form and character and would also be visually prominent from these sensitive coasts and valleys. These landmark hills are shown in Figure 6.

- **Protect the richly diverse valleys of the Ayr, Doon, Girvan, Stinchar and lower Duisk** Larger turbines situated in these valleys would dominate the small scale of these valleys and significantly detract from their richly diverse land cover pattern and built heritage. Turbines sited within adjacent upland landscapes should be set well back into the upland interior (and with thorough consideration of limitations in turbine height) to minimise intrusion on containing skylines and avoid significant cumulative impacts with operational wind farm developments.

- **Ensure that any further development of larger typologies (turbines >50m) is associated with less sensitive upland landscapes** where the more extensive scale of these landscapes 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 would consolidate the generally successful established association of larger turbines with a particular landscape character, minimising cumulative impacts that would be likely to occur where different sizes and designs of turbines are sited in all landscapes irrespective of character.

- **Retain the integrity of some of the more sensitive Foothill landscapes** by directing larger turbines/wind farm developments away from the Coastal Foothills (17e) and the Maybole Foothills (17d). There are less sensitive pockets of land within these foothills but these are limited in extent and visual intrusion will increase due to the relative proximity of these landscapes to more densely settled lowlands, valleys and coasts.

- **Ongoing review of cumulative landscape and visual effects** 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.
This figure indicates sensitivity on the basis of the whole landscape character type. It does not take account of the key constraints identified in the sensitivity assessment which will limit opportunities for development in parts of the landscape character type.
This figure indicates sensitivity on the basis of the whole landscape character type. It does not take account of key constraints identified in the sensitivity assessment which will limit opportunities for development in parts of the landscape character type.
Annex A: The Ayrshire and Clyde Valley windfarm landscape capacity study (Land Use Consultants, 2004)

The Ayrshire and Clyde Valley Windfarm Landscape Capacity Study was commissioned in 2004 by Scottish Natural Heritage (SNH), the Ayrshire Joint Structure Plan and Transportation Committee and Glasgow and the Clyde Valley Structure Plan Joint Committee and undertaken by Land Use Consultants (LUC). This study is henceforth called the ‘LUC capacity study’ in this report.

The LUC capacity study has been undertaken at a strategic level and covers an extensive area. It considers the sensitivity of the broad landscape character types defined in the SNH published landscape character assessments, including the Ayrshire Landscape Assessment (1998), to wind energy development. A caveat to the LUC capacity study is outlined in paragraph 1.15 of the study report which states that while the results of the study “…are useful in comparing different parts of the study area, they should not be used to consider single windfarms in isolation. More local landscape capacity studies, together with landscape and visual assessment are required for this”.

The LUC capacity study informed wind energy policy within the Ayrshire Joint Structure Plan (AJSP) approved in November 2007. A key conclusion reached from the LUC capacity study was that irrespective of the level of wind energy development ultimately achieved within the Ayrshire area, a planned approach, based on the concentration of development into a smaller number of larger wind farms would help reduce the overall level of landscape and visual impact. Two broad areas of search were consequently identified in the AJSP.

Landscape sensitivity was assessed through consideration of the effect of wind farm development on key characteristics such as the degree of complexity of landform and land-cover patterns and on settlement. Landscape value is also assessed and this takes account of the way a landscape is perceived and valued and involved consideration of factors such as rarity, remoteness and wild land qualities as well as the presence of designations, cultural associations and amenity and recreation value. The study aims were to define landscapes most sensitive to wind farm developments that should be conserved and landscapes that are less sensitive which could be considered as potential areas for wind farm development.

The sensitivities judged for the character areas located within South Ayrshire were as follows:
<table>
<thead>
<tr>
<th>Landscape character types in South Ayrshire²</th>
<th>Landscape character sensitivity</th>
<th>Landscape value</th>
<th>Combined score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raised Beach Coast</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Lowland Coast</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Coastal Headlands</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Coastal Valley with Policies</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Ayrshire Lowlands</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Lowland River Valleys</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Lower Dale</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
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<td>Middle Dale</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Intimate Pastoral Valley</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Upland Glen</td>
<td>3</td>
<td>2</td>
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</tr>
<tr>
<td>Lowland Hills</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Foothills</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>Foothills with Forest</td>
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<tr>
<td>Plateau Moorland</td>
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<td>Rugged Granitic Uplands</td>
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<td>3</td>
<td>6</td>
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<tr>
<td>Rugged Granitic Uplands with Forestry</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

The maximum score for landscape character sensitivity or value is 3 with this considered as being of the greatest sensitivity. There is no indication in the study report as to the specific wind farm development typologies considered in the sensitivity assessment (in terms of height and number of turbines). The maximum combined sensitivity score for landscape character and value is 6.

Visual sensitivity was calculated using a combination of digital modelling of wind farm development from sample locations to appraise the extent of visibility and population numbers. Visual effects beyond 5km were not considered in the study. The study also considers cumulative landscape and visual effects that might arise from multiple developments using a series of sample development scenarios located where individual landscape and visual sensitivity scores are low. The study does not make recommendations as to what might be considered an acceptable level of wind farm development within the broad study area.

² Based on the landscape character types identified in the 1998 Ayrshire Landscape Character Assessment
Annex B: References


Historic Scotland Inventory of Gardens and Designed Landscapes. Available at: http://www.historic-scotland.gov.uk/index/heritage/gardens/gardens-inventory.htm [Accessed: 10/11/12]


Land Use Consultants (2004). *Ayrshire and Clyde Valley Windfarm Landscape Capacity Study*. Scottish Natural Heritage, the Ayrshire Joint Structure Plan and Transportation Committee and Glasgow and the Clyde Valley Structure Plan Joint Committee


Scottish Natural Heritage (2009). *Siting and Designing windfarms in the landscape (version 1)*. Available at: [http://www.snh.gov.uk/docs/A337202.pdf](http://www.snh.gov.uk/docs/A337202.pdf).


Annex C: List of Landscape Character Types

<table>
<thead>
<tr>
<th>Original name and reference in 1998 Ayrshire Landscape Assessment</th>
<th>New Ref</th>
<th>Landscape character type used in current wind capacity study</th>
<th>Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Raised Beach Coast</td>
<td>1a</td>
<td>North Ayrshire Raised Beach Coast</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>1b</td>
<td>Arran Raised Beach Coast</td>
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</tr>
<tr>
<td></td>
<td>1c</td>
<td>Raised Beach Coast with Flat Fields and Headlands</td>
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</tr>
<tr>
<td></td>
<td>1d</td>
<td>Raised Beach Coast with Rocky Shore</td>
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</tr>
<tr>
<td>B. Lowland Coast</td>
<td>2a</td>
<td>Coastal Lowlands with Industry</td>
<td>NA</td>
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<tr>
<td></td>
<td>2b</td>
<td>Coastal Edge</td>
<td>NA/SA</td>
</tr>
<tr>
<td>C. Coastal Fringe with Agriculture</td>
<td>3a</td>
<td>Arran Coastal Fringe with Agriculture</td>
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<td>3b</td>
<td>Cumbraes Coastal Fringe with Agriculture</td>
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<td>3c</td>
<td>Rugged Island Core</td>
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<tr>
<td>D. Coastal Headlands</td>
<td>4a</td>
<td>Arran Coastal Headlands</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>4b</td>
<td>Brown Carrick Hills</td>
<td>SA</td>
</tr>
<tr>
<td>E. Coastal Valley with Policies</td>
<td>5</td>
<td>Coastal Valley with Policies</td>
<td>SA</td>
</tr>
<tr>
<td>F. Coastal Lowland Moor</td>
<td>6</td>
<td>Coastal Lowland Moor</td>
<td>NA</td>
</tr>
<tr>
<td>G. Ayrshire Lowlands</td>
<td>7a</td>
<td>North Ayrshire Lowlands</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>7b</td>
<td>Small Rolling Hills</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>7c</td>
<td>East Ayrshire Lowlands</td>
<td>EA</td>
</tr>
<tr>
<td></td>
<td>7d</td>
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<td>SA</td>
</tr>
<tr>
<td>H. Broad Valley Lowland</td>
<td>8a</td>
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<tr>
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<td>8b</td>
<td>Rolling Hill Slopes</td>
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<td>8c</td>
<td>South-western Rolling Hill Slopes</td>
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<td>I. Lowland River Valley</td>
<td>9</td>
<td>Lowland River Valley</td>
<td>NA/SA/EA</td>
</tr>
<tr>
<td>J. Upland River Valley</td>
<td>10</td>
<td>Upland River Valley</td>
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</tr>
<tr>
<td>K. Lower Dale</td>
<td>11</td>
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</tr>
<tr>
<td>L. Middle Dale</td>
<td>12</td>
<td>Middle Dale</td>
<td>SA</td>
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<tr>
<td>M. Intimate Pastoral Valley</td>
<td>13</td>
<td>Intimate Pastoral Valley</td>
<td>SA</td>
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<td>N. Upland Glen</td>
<td>14</td>
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<td>O. Upland Basin</td>
<td>15</td>
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<td>EA</td>
</tr>
<tr>
<td>P. Lowland Hills</td>
<td>16</td>
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<tr>
<td>Q. Foothills</td>
<td>17a</td>
<td>Foothills with Forest and Opencast Mining</td>
<td>EA</td>
</tr>
<tr>
<td></td>
<td>17b</td>
<td>Foothills with Forest west of Doon Valley</td>
<td>EA/SA</td>
</tr>
<tr>
<td></td>
<td>17c</td>
<td>Foothills with Forest and wind farm</td>
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</tr>
<tr>
<td></td>
<td>17d</td>
<td>Maybole Foothills</td>
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<tr>
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<td>17e</td>
<td>Coastal Foothills</td>
<td>SA</td>
</tr>
<tr>
<td>R. Plateau Moorlands</td>
<td>18a</td>
<td>East Ayrshire Plateau Moorlands</td>
<td>EA</td>
</tr>
<tr>
<td></td>
<td>18b</td>
<td>East Ayrshire Plateau Moorlands + Forestry + wind farms</td>
<td>EA</td>
</tr>
<tr>
<td></td>
<td>18c</td>
<td>South Ayrshire Plateau Moorlands/Forestry/wind farms</td>
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<tr>
<td>S. Rugged Moorland Hills+Valleys</td>
<td>19a</td>
<td>Loch Thom area</td>
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<tr>
<td></td>
<td>19b</td>
<td>Duchal Moor</td>
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<td>Upland Core</td>
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<tr>
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<td>19d</td>
<td>Blaehloch and the Crosbie Hills</td>
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<td>19e</td>
<td>Haupland Muir</td>
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<td></td>
<td>19f</td>
<td>Arran Rugged Moorland Hills+Valleys</td>
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<tr>
<td>T. Southern Uplands</td>
<td>20a</td>
<td>East Ayrshire Southern Uplands</td>
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<th>Character Type</th>
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</tr>
<tr>
<td>Southern Uplands + Forestry</td>
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<tr>
<td>U. Rugged Granitic Uplands</td>
<td>Rugged Uplands, Lochs and Forest</td>
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<td>SEA/SA</td>
<td>Arran Rugged Granitic Uplands</td>
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<tr>
<td>New character type</td>
<td>Glenapp Coastal Farmland and Policies</td>
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</table>

3 A small area of the ‘Southern Uplands and Forestry’ identified in South Ayrshire in the 1998 Ayrshire Landscape Assessment has been reclassified as the ‘South Ayrshire Plateau Moorlands with Forestry’ LCT.

4 This character type has been expanded to include an area of ‘Southern Uplands’, ‘Southern Uplands with Forestry’ and ‘Foothills’ identified in the 1998 Ayrshire Landscape Assessment and lying in the Loch Doon/Carrick Hills area.

5 This area was originally classified as ‘Plateau Moorland’ and ‘Southern Uplands’ in the 1998 Ayrshire Landscape Assessment.