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SCOTTISH BORDERS COUNCIL
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Please find attached the Ironside Farrar Report in respect of Item 11 on the agenda for the above meeting

11.	**Supplementary Guidance on Renewable Energy** (Pages 3 - 212) Accompanying Ironside Farrar report.	20 mins

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Scottish Borders COUNCIL

Wind Energy Consultancy

Update of Wind Energy Landscape Capacity and Cumulative Impact Study

IronsideFarrar
111 McDonald Road
Edinburgh
EH7 4NW

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8558

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EXECUTIVE SUMMARY

Study Purpose and Objectives

The purpose of this study is to provide detailed technical assessment and guidance on landscape, visual and cumulative development matters for Scottish Borders' Wind Energy Supplementary Guidance; part of the Borders Local Development Plan. This study follows on from the Wind Energy Consultancy study of July 2013 which provided detailed information on landscape and visual; economic and public opinion matters. Specifically, it updates the landscape, visual and cumulative situation in the context of current wind energy development and changes to Scottish Planning Policy in 2014.

The main objectives of the study brief are:

- *Updating the study to take cognisance of turbines approvals since January 2013, adopting new turbine size typology ranges as follows: 15m –<35m, 35m –<50m, 50m –<80m, 80m –<120m, 120m+ to allow more detailed consideration of greater turbine heights which are becoming more prevalent.*
- *Inclusion of a "How to Use this Guidance" at the front as a simple to follow guide of the main parts of the study and where they can be found*
- *Updating of the landscape capacity and guidance summary tables; including turbine distribution maps accompanying the analysis of Regional Landscape Areas and landscape analysis and guidelines for each landscape character area*
- *Consideration and guidance given to repowering and extension opportunities for large scale commercial wind farm sites*
- *Update and appraisal of cumulative impact issues, taking cognisance of updated approvals. Reference to be made emphasising support for development around the more appropriate sites.*
- *Consider the potential to protect particular areas from inappropriate development*
- *Give further clarity as to how the boundaries of potential cumulative capacity areas have been identified within the relevant figures.*

The following is a summary of the key findings and recommendations of the study.

Approach to the Study

This study considers the capacity of the Scottish Borders landscape to accommodate onshore wind energy development. The landscape capacity assessment is based on an assessment of landscape sensitivity and value of the different landscape character types and areas in Scottish Borders. The key stages and outputs are:

- *Carrying out an assessment of the key landscape characteristics within the Scottish Borders using a robust methodology identifying sensitivity criteria;*
- *Setting out a clearer vision for onshore wind farm development and allowing better understanding of the opportunities and constraints on wind energy in the Scottish Borders and how these can or should be addressed;*
- *Determining the thresholds of acceptable change and identifying critical factors which are likely to present an eventual limit to development;*
- *Identifying areas most suitable for wind energy development and areas which are less suitable.*
- *Identifying where remaining capacity for development lies*

This strategic-level study is based on the premise that, given current renewable energy targets, there will be a need to both acknowledge and manage future landscape change and effects on visual amenity resulting from wind energy development, and to identify where change is acceptable and where it is not acceptable. In applying the assessment process, the study has addressed a number of concepts and issues that affect the perceived significance and acceptability of cumulative changes caused by multiple wind energy developments in the landscape.

Landscape Character

Scottish Borders covers a large area of south east Scotland to the south of Edinburgh. At its core is a series of river valleys, including the River Tweed, flowing eastwards into a broad undulating lowland area that has the Lammermuir and Moorfoot Hills to the north and northwest, the Central Southern Uplands to the west and south and the Cheviot Hills to the south and south east. To the east the study area borders the North Sea in a dramatic coastal zone. The border with England, Northumberland and the Northumberland National Park is to the south east and south. The majority of the medium sized regionally significant settlements are either found within sheltered valleys surrounded by upland landscapes or within the broad flatter lowland landscapes.

Scottish Borders is divided into 30 distinctive landscape character types, most of which are subdivided into further geographically separate landscape character areas (LCAs), as detailed in the Borders Landscape Assessment*. These LCAs have been assessed for their sensitivity to wind energy development and their capacity to accommodate wind turbines.*

Landscape Capacity and Cumulative Development

This study resolves landscape capacity with levels of cumulative development and involves three stages:

- *Firstly identifying the underlying capacity of the Scottish Borders landscape to accommodate wind turbine development;*
- *Secondly, assessing the degree of cumulative change resulting from operating and consented wind turbines in the study area and in specific areas of Scottish Borders;*
- *Thirdly, assessing the level of further development that could acceptably be accommodated within areas of Scottish Borders thereby identifying remaining capacity.*

The underlying capacity for different sizes of turbine across the landscape character types of the Scottish Borders is shown in detail in figures 6.1 a - e. Extensive upland areas such as the Moorfoot and Lammermuir Hills and parts of the Southern Uplands tend to have the highest underlying landscape capacity for the largest size turbines and windfarm developments. This reflects the suitable characteristics of scale, simplicity of

landform and lack of small scale built development. Nevertheless, many smaller or more topographically distinctive upland areas, such as the Pentland Hills, have greater prominence and visibility in the landscape or have national or local designations in recognition of their intrinsic scenic, cultural or recreational qualities, greatly limiting underlying capacity. Other areas, including much of the Central Southern Uplands and Cheviot Hills have combinations of scenic, recreational and/or wildness qualities, often recognised by designation, which also limit underlying capacity.

Upland Fringe areas are suitable for more modest levels of development including smaller windfarms or single turbines. Lowland areas are most suitable for smaller turbines, singly or in smaller groupings. Extensive areas, including river valleys, prominent hills, highly visible escarpments and the coastline, have little or no capacity for wind energy development.

Consented Developments at July 2016

The emerging pattern of development in and around the Scottish Borders reflects the wider pattern of Scottish wind energy development, where the majority of windfarms and turbines are located in upland areas, with smaller developments in lowland areas.

There are, at July 2016, a total of 479 operational or consented turbines of 15m or greater height and 128 in planning or S36 applications awaiting a decision in Scottish Borders area. Of those turbines consented, a significant proportion (50%) are 80m or more to blade tip, and 22% are below 35m in height. In the applications the vast majority of proposed turbines (96%) are 80m or more in height. This represents an increase from the 2013 study in which 311 turbines of 25m+ height were recorded, even accounting for inclusion of turbines between 15m and 25m.

At or before July 2016 there are also very significant numbers of operational, consented and proposed wind turbines within 15km of Scottish Borders (Approximately 600 existing/consented and 74 proposed). This is particularly due to parts of the Crystal Rig/ Aikengall cluster extending into East Lothian; and Clyde windfarm and extension on the boundary with South Lanarkshire and significant developments in Dumfries and Galloway. Most of these turbines are 80m or taller to blade tip.

The majority of turbines are located within windfarms north of the River Tweed in the Upland landscapes, with small groups or individual turbines in the agricultural lowlands and river valleys. Most of the largest turbines are located in the Dissected Plateau Moorland areas of the Lammermuir and Moorfoot Hills and Plateau Grasslands of Lauder Common. Two windfarms with larger turbines also lie in the Upland Fringe and Coastal Moorland landscape character types. The largest windfarm fully within the Scottish Borders is at Dun Law (comprising 61 turbines). There are only two existing relatively small sized windfarms in the Southern Uplands, south and west of the River Tweed, with one more consented at Windy Rig in the south.

In areas adjacent to Scottish Borders there are two clusters that introduce significant landscape and visual impacts into the Scottish Borders: Clyde Windfarm in South Lanarkshire and the Crystal Rig/Aikengall development which straddle the Scottish Borders/ East Lothian boundary.

There are currently no wind turbines in the Cheviot Hills or Upper Tweed and Teviot Valleys and only minimal turbine development within the majority of the Southern Uplands. However, there is and has been development pressure from applications in or near these areas.

Analysis of Capacity and Cumulative Development

The current levels of development have led to a landscape in which wind turbines are a key landscape feature developing across the Lammermuir and Moorfoot Hills Region Uplands in the north of the Borders, from Lauder Common through to the northern edge of the Lammermuirs and southeast into the Upland Fringes and Coastal Zone, with a smaller area in the Central Southern Uplands on the western boundary with South Lanarkshire. Within these areas there are some locations with very high concentrations of turbines that can be considered as wind turbine dominated landscapes.

A wider area in which wind turbines are occasional landscape features has developed around and south of this and into the coastal area and Tweed Lowlands and west into the northern edge of the Moorfoot Hills. A small area of wind turbine dominated landscape lies in the Coastal Zone. Smaller areas with wind turbines as key landscape features have developed around smaller concentrations of turbines elsewhere in the Borders.

The study has identified the potential for wind energy development in the Borders through the detailed sensitivity and capacity assessments carried out for each landscape character area. This has identified that parts of upland areas in the north, extreme west and southwest have the highest capacity, being able to accommodate larger scale turbines in large commercial scale windfarms.

Much of the rest of Scottish Borders has limited capacity for smaller scale developments, ranging from small clusters of turbines to single turbines.

Significant areas, including much of the wilder more distinctive upland areas, prominent hills and scenic or small scale river valleys and the coastline, have little or no capacity for development without causing severe impacts on landscape character.

By comparing existing and potential future levels of development the study has identified areas in which there is remaining capacity for development and areas in which current cumulative development limits the capacity for further development.

Conclusions

The assessment indicates that there is most remaining capacity for further wind energy developments within areas of the Moorfoot Hills, and forested southern areas of the Central Southern Uplands and western Cheviot Hills. Conversely, there are also areas in the Lammermuirs, Coastal Zone and western Southern Uplands where current cumulative development is close to, or exceeds capacity and impacts limit further development. Further development across Scottish Borders needs careful consideration if undue levels of landscape change are to be avoided.

1.0 INTRODUCTION

1.1 Background

Supplementary Guidance and Capacity Studies in Scottish Borders

Scottish Borders Council has been proactive in supporting the national policy for the positive provision for the development of onshore wind energy in locations where the technology can operate efficiently and environmental and cumulative impacts can be satisfactorily addressed.

Scottish Borders Council in preparation of planning policy and decision making on planning applications for developments must strike a balance between the objectives of conserving the environmental qualities of the area and the capture of renewable energy resources. SPG for wind energy was reviewed in 2011 in the light of increased proposals for wind energy projects, particularly single or small groupings of turbines as a result of the introduction of the Feed in Tariff.

Scottish Borders Council also commissioned research into economic impacts, public perception and the implications of further wind turbine development on the landscape. In 2013, Ironside Farrar Ltd carried out a robust independent assessment of the current and potential landscape impacts of future turbine development to inform the development of planning policy for onshore wind energy in the new Local Development Plan.

The 2013 landscape capacity study[1] assessed the capacity for different scales of wind energy development across Scottish Borders; based on analysis of landscape character, sensitivity and value and an assessment of significance of landscape change resulting from different potential scales of development. The study identified areas with capacity for different scales and levels of development. It also identified areas where the cumulative impacts of existing development limit the potential for further development.

The 2013 capacity study is a background paper informing the Local Development Plan and consultation process, and has also been used to inform Council decisions on onshore wind energy applications. The LDP is now adopted and therefore it is a material consideration to the planning decision-making process, as recognised within the new Renewable Energy policy ED9.

2016 Update to the Capacity Study

This update to the landscape capacity study for wind energy in Scottish Borders has been prepared in the light of policy changes detailed in the June 2014 Scottish Planning Policy (SPP 2014) and to address the continuing development pressure for wind energy in the local authority area. The study is prepared in line with the requirements of SPP 2014 and strategic guidance provided by SNH[2]. While taking a similar approach to the 2013 study, it is more detailed and nuanced taking changes to policy, national guidance and the wind energy baseline into account. It will supersede the 2013 capacity study and inform supplementary guidance for renewable energy.

Changes to SPP

SPP 2014 continues to emphasise the importance of accommodating renewable energy development. Paragraph 155 states that:

> *'Development plans should seek to ensure an area's full potential for electricity and heat from renewable sources is achieved, in line with national climate change targets, giving due regard to relevant environmental, community and cumulative impact considerations'.*

Paragraph 161 states that planning authorities should set out in the development plan a spatial framework identifying those areas that are likely to be most appropriate for onshore wind farms as a guide for developers and communities, following the approach set out in Table 1 of the document. Figure 1.1 below is an extract of Table 1 from SPP, showing the specific designations and other key factors to be mapped and considered in the spatial framework. Development plans are also required to indicate the minimum scale of onshore wind development that their spatial framework is intended to apply to.

Figure 1.1: Extract from Scottish Planning Policy on Spatial Frameworks

Table 1: Spatial Frameworks

Group 1: Areas where wind farms will not be acceptable: National Parks and National Scenic Areas.		
Group 2: Areas of significant protection: Recognising the need for significant protection, in these areas wind farms may be appropriate in some circumstances. Further consideration will be required to demonstrate that any significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation.		
National and international designations: • World Heritage Sites; • Natura 2000 and Ramsar sites; • Sites of Special Scientific Interest; • National Nature Reserves; • Sites identified in the Inventory of Gardens and Designed Landscapes; • Sites identified in the Inventory of Historic Battlefields.	**Other nationally important mapped environmental interests:** • areas of wild land as shown on the 2014 SNH map of wild land areas; • carbon rich soils, deep peat and priority peatland habitat.	**Community separation for consideration of visual impact:** • an area not exceeding 2km around cities, towns and villages identified on the local development plan with an identified settlement envelope or edge. The extent of the area will be determined by the planning authority based on landform and other features which restrict views out from the settlement.
Group 3: Areas with potential for wind farm development: Beyond groups 1 and 2, wind farms are likely to be acceptable, subject to detailed consideration against identified policy criteria.		

[1] Ironside Farrar (2013) *Scottish Borders Wind Energy Consultancy: Landscape Capacity and Cumulative Impact*

[2] SNH (June 2015) *Spatial Planning for Onshore Wind Turbines – natural heritage considerations guidance*

Paragraph 162 of SPP states that both strategic and local planning authorities should identify where there is strategic capacity for windfarms, and areas with greatest potential for wind development, considering cross-boundary constraints and opportunities. Development plans are also required to set out the criteria that will be considered in deciding *all* applications for wind farms of different scales – including extensions and re-powering – taking account of detailed considerations.

Paragraph 169 sets out a list of considerations for wind energy developments to be assessed against, which includes cumulative impacts and landscape and visual impacts:

- *'cumulative impacts – planning authorities should be clear about likely cumulative impacts arising from all of the considerations below, recognising that in some areas the cumulative impact of existing and consented energy development may limit the capacity for further development;'* and
- *'landscape and visual impacts including effects on wild land,'*[3].

1.2 Consultancy Appointment

Ironside Farrar has been appointed by Scottish Borders Council to carry out the update to the 2013 study. The key objectives and outputs of this study are:

- Updating the study to take cognisance of turbine approvals since January 2013
- Adopting new turbine size typology ranges as follows: 15m –<35m, 35m –<50m, 50m –<80m, 80m –<120m, 120m +. The first three ranges mirror those identified within the Berwickshire study[4], linking the two studies. The last two typology ranges allow more detailed consideration of greater turbine heights which are becoming more prevalent.
- Inclusion of a "How to Use this Guidance" at the front as a simple to follow guide of the main parts of the study and where they can be found
- Updating of the landscape capacity and guidance summary tables; including turbine distribution maps accompanying the analysis of Regional Landscape Areas and landscape analysis and guidelines for each landscape character area
- Consideration and guidance given to repowering opportunities for all large scale approved commercial wind farm sites
- Cumulative impact issues considered, taking cognisance of updated approvals. Text reference made emphasising support for development around what are considered to be the more appropriate sites.
- Appraisal of the potential to consider particular areas for non-development
- Further clarity as to how the boundaries of potential cumulative capacity areas have been identified within the relevant figures.

It is intended that the final study will be agreed by Scottish Borders Council as part of the updated SG on Wind Energy. In order for the Guidance to gain elevated status within the decision making process it is intended that it will ultimately be referred to the Scottish Government in order that it can formally become part of the Development Plan as Supplementary Guidance.

1.3 National and Local Policy

National and local planning policies in Scotland encourage the development of onshore wind energy. However, it is accepted that there are limitations imposed by environmental sensitivities and the capacity of areas to accept cumulative development. Therefore, the acceptability of multiple windfarms and turbines and the cumulative landscape and visual impacts of development has to be considered in the light of national and development plan policy. **Appendix 1** reviews current national policy and guidance including SPP 2014, SESPlan SDP 2013, SBC LDP 2016 and Supplementary Guidance.

1.4 The 2018 Capacity Study

In the light of the current SPP this landscape capacity study does not assess, but makes reference to, the specific designations and interests highlighted in Groups 1 and 2 of the Spatial Framework, mapping of which is a separate process. The study concentrates on landscape and visual capacity through assessing:

- the capacity of the landscape and visual environment of Scottish Borders to accommodate *all scales* of wind energy development; and
- cumulative impacts of existing and consented wind energy development in the light of the capacity assessment.

These issues are highlighted by paragraph 169 of SPP and are applicable to all areas of Scottish Borders, including areas lying within Groups 1 and 2 of the Spatial Framework, where they occur.

Critical to the current assessment is the fact that Scottish Borders already has a large number of operating and consented wind energy developments including several large commercial windfarms and a considerable number of smaller, mainly non-commercial developments. This has created more extensive areas of cumulative wind turbine development since the 2013 assessment, and ongoing consents and construction of schemes will continue to require assessment.

[3] (SNH 2015 Draft Guidance provides guidance on landscape capacity studies - refer to paragraph 1.6.2)

[4] Alison Grant & Carol Anderson (2012) *Landscape and Visual Guidance on Single and Small Groups of Wind Turbine Developments in Berwickshire, Scottish Borders*

1.5 Landscape Capacity and Cumulative Impacts

This study informs the Council on the issues of landscape capacity and cumulative impact. Accordingly, it comprises three main themes:

- A strategic landscape capacity study, investigating the underlying capacity of landscapes within Scottish Borders to accommodate wind energy development of all but the smallest domestic scale. This is reflected in detailed capacity maps for the five turbine size ranges listed in 1.2 above. This has a wider size range and is a more finely grained assessment than in the 2013 study, reflected in more detailed guidance and more geographically specific capacity mapping;
- A cumulative assessment examining the level of cumulative development of operating, consented and proposed wind turbines and wind farms in Scottish Borders, updating the database to July 2016;
- Guidance on remaining development capacity and on the size and types of wind energy development throughout Scottish Borders that would be acceptable in landscape terms, taking into account the first two considerations. This includes the potential for extension or repowering of currently operational sites.

This study specifically assesses landscape capacity and the impact of cumulative wind energy development in order to determine where there is existing capacity and where limitation of further development may be required through the development management process. The study addresses these requirements through a staged assessment process described in sections 2.0 to 6.0 of this report.

It is emphasised that this is a strategic level landscape and visual study, providing a context for considering the capacity for, and the cumulative effects of, existing and potential future wind turbine developments in Scottish Borders. No site specific conclusions should be drawn from it in relation to current, proposed or future wind energy schemes.

As a strategic landscape and visual study this does not address specific localised impacts such as effects on individual residential receptors or other sensitive receptors. All wind energy proposals should be considered on their own unique locational and design characteristics as well as their strategic context. All proposals should be subject to landscape, visual and cumulative impact assessment including (if required) a full environmental assessment, taking due cognisance of up to date guidance on the landscape and visual assessment and design of wind energy schemes.

2.0 CUMULATIVE IMPACT AND CAPACITY ASSESSMENT METHOD

2.1 Purpose of Assessment

The purpose of the following assessment is to determine the landscape capacity of Scottish Borders to accommodate wind energy development and to determine the levels of cumulative development that would be acceptable across the local authority area. The assessment takes into account current cumulative development within and around Scottish Borders and is based on the premise that current renewable energy policies will lead to a future level of landscape change within Scottish Borders that requires careful management.

The key objectives of the study are outlined in Chapter 1. The methodology serves these objectives through a clear assessment of landscape and visual sensitivity and capacity across Scottish Borders; together with an assessment of the cumulative effects of current consented wind energy development and the potential for accommodating future development, including extension or repowering of currently operating schemes.

Nevertheless, it is recognised in guidance that the assessment of landscape capacity and cumulative impacts is not a straightforward exercise. The background considerations and detailed methodology for this process are detailed in **Appendix 2** of this report. The following summarises the methodology and explains how the findings and recommendations are presented.

2.2 Study Stages

The assessment is a staged process comprising:

1) Define study area and characterise landscape and visual baseline and scope of wind energy types to be included in the strategic study.

2) Assess landscape sensitivity based on landscape character types (LCTs) and landscape character areas (LCAs) in Scottish Borders. This assessment considers landscape character sensitivity, visual sensitivity and landscape value.

3) Assess the capacity of the Scottish Borders landscape to accommodate wind energy development of different types and scales based on the assessment of sensitivity and value of the LCAs and LCTs. This is an assessment of the *underlying* landscape without taking the effects of existing or consented wind turbines into account.

4) Record the current type and extent of operational and consented wind energy development in Scottish Borders and the surrounding local authorities.

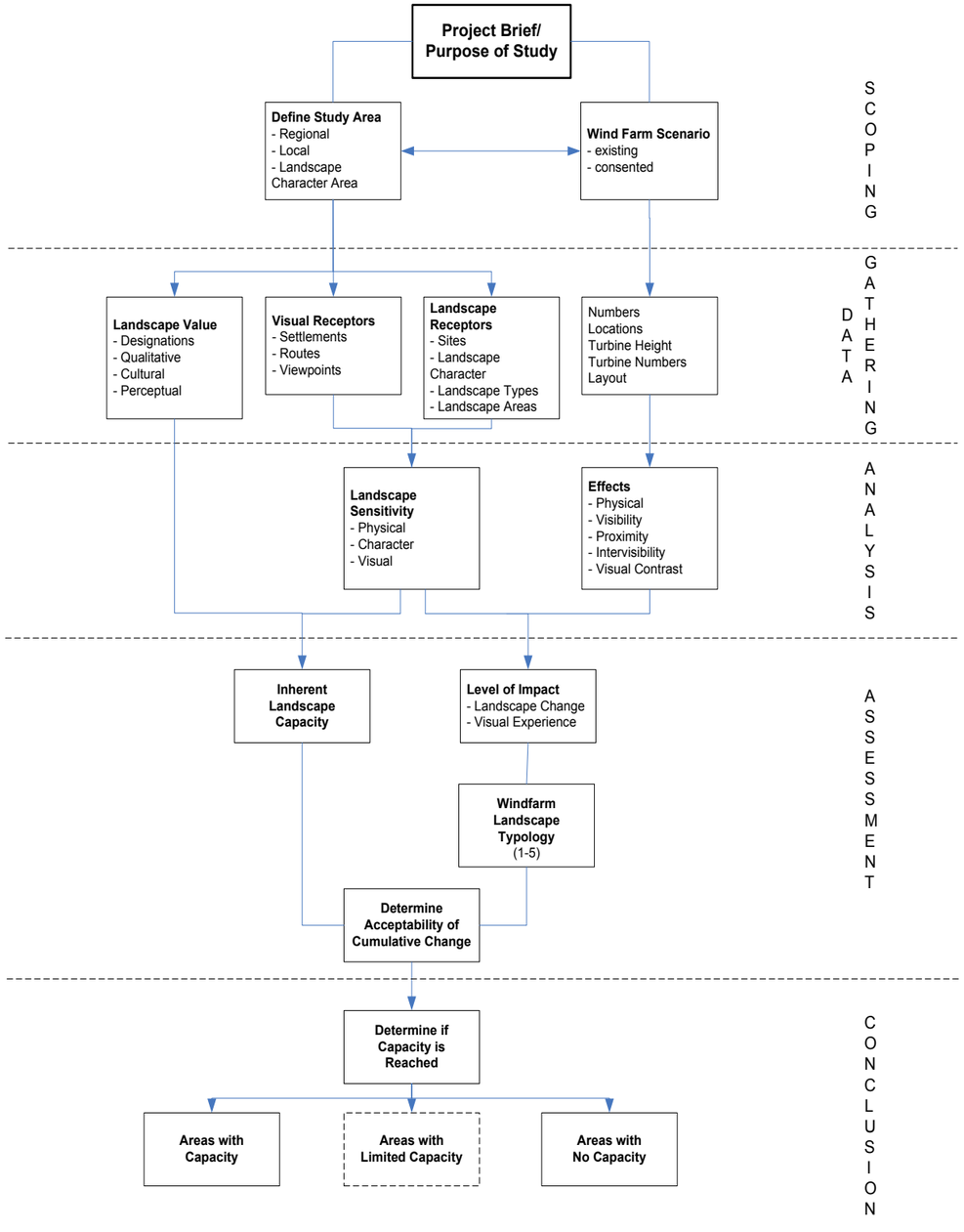
5) Determine the extent to which cumulative consented development has occupied the underlying capacity of the landscape to accommodate wind energy developments.

6) Further to the assessment of landscape capacity and cumulative development, identify areas in which:
   - there is no underlying landscape capacity for wind energy development;
   - cumulative consented development limits landscape capacity for further wind energy development.
   - there is remaining landscape capacity for wind energy development.

The assessment process is summarised as a flow chart in Figure 2.1 below.

FIG 2.1 METHODOLOGY FLOWCHART FOR CUMULATIVE ASSESSMENT

Figure 2.1. Cumulative Impact and Landscape Capacity Assessment Flowchart



The resulting spatial strategy is supported by guidance on appropriate types and levels of wind energy development for the areas in which there is capacity, taking note of the potential limitations imposed by already consented development.

2.3 Scope of Assessment

2.3.1 Area Covered

The study focuses primarily on the local authority area of Scottish Borders. However, an area of a minimum 15km beyond the boundary is considered, because of the potential landscape and visual effects on Scottish Borders of wind energy developments in neighbouring landscape areas.

2.3.2 Wind Energy Development Types

The study considers all sizes of turbines and wind energy developments operating, consented or proposed, as well as potential future scenarios where appropriate. This refines the 2013 assessment which used fewer size categories.

The height categories of wind turbines reflect those used in the Berwickshire Landscape Capacity study[5], with an additional category for turbines of greater than 120m, reflecting the wider scope of this assessment for the whole Scottish Borders.

Table 2.1. Turbine Size Categories

Blade Tip Height	**Typical Use** (in a Scottish context)
15m to <30m	Typically used for domestic and farm FiT schemes
30m to <50m	Typically used for farm and industrial FiT schemes
50m to <80m	Single turbine FiT schemes and smaller turbines used in commercial schemes
80m to <120m	Many current commercial windfarms and some single turbines
120m and greater	Many current and most proposed commercial windfarms

Turbines less than 15m to blade tip are not considered to have the same qualities of scale, prominence and widespread visibility that lead to the wider cumulative impacts of larger turbines with a blade tip higher than 15m. Assessment and guidance for turbines less than 15m to blade tip is limited to localised generic siting and design considerations.

2.3.3 Use of Geographical Information Systems

The study has used the GIS application; Arcview 10.3.1. It is emphasised that this application is used only as a tool to manage, map and illustrate spatial data. The capacity assessment process is not based on GIS and is described in the following sections.

2.4 Landscape and Visual Baseline

The landscape baseline assessment includes a description and classification of landscape character and records of designations and other features that contribute to landscape value.

The **landscape character assessment** is based on landscape character types (LCTs) and landscape character areas (LCAs) in Scottish Borders described in section 3.2 and Table 3.1 of this report. These are based on the SNH landscape character assessment[6].

Landscape value is determined partly through landscape designations. There are two nationally designated areas in Scottish Borders. Local landscape designations have recently been reviewed and cover extensive parts of the local authority area. There are also many Historic Gardens and Designed Landscapes throughout Scottish Borders. Related designations that can contribute to landscape value and character are recorded. These include natural and cultural heritage designations, recreational/ visitor facilities and core paths. Other factors affecting perceptions of value include wildness which has recently been assessed across Scotland, with a Wild Land Area within the study area.

The **visual baseline** assessment is detailed in **Chapter 4**. It involves a computer-based intervisibility assessment based on turbine heights and receptor types. This helps to identify areas where wind turbines of different heights are most likely to be visible to receptor groups, or areas where they could be more easily concealed. This approach should not be considered in isolation from other factors determining capacity, such as landscape character.

2.5 Method for Determining Landscape Sensitivity and Capacity

The method for determining landscape sensitivity and capacity is detailed in **Appendix 2**. This involves consideration of the two main elements discussed in 2.4 above:

[5] Alison Grant & Carol Anderson (2012) *Landscape and Visual Guidance on Single and Small Groups of Wind Turbine Developments in Berwickshire, Scottish Borders*

[6] *Borders Landscape Assessment* (ASH Consulting Group for SNH, 1998)

1) The sensitivity of the landscape fabric and character to turbine development, which includes landscape features, elements and characteristics and its visual sensitivity, including intervisibility and affected receptor types.

2) The value of the landscape as determined by stakeholders. This may include national or local recognition by landscape designation or cultural association, or value to a community of interest such as local residents or an interest group.

Appendix 2 describes a breakdown of the physical and perceptual characteristics that contribute to landscape character, visual sensitivity and value. Each criterion is described and evaluated in terms of its sensitivity to wind energy development. An overall assessment of **high, medium** or **low** is derived from a composite of all the criteria. There is no consistent relative weighting of criteria as, in the case of each landscape type or area, different criteria are likely to be critical in the sensitivity assessment.

Following the above assessment, an overall professional judgement on capacity for developments of different types is made on the basis of sensitivity and value. Landscape capacity is rated according to the degree to which wind turbines may be accommodated without significant and/or adverse effects on sensitivity and value. The descriptive criteria below for **high, medium** and **low** describe the main thresholds on a continuum between no capacity and high capacity:

Low Capacity: A landscape that is both sensitive to wind turbine development and has a high value, where only a slight level of change can be accommodated without significantly affecting any of the key defining criteria

Medium Capacity: A landscape that has some sensitivity to wind turbine development and has some aspects of value, where a moderate level of change can be accommodated which may significantly affect some of the defining criteria

High Capacity: A landscape that has low sensitivity to wind turbine development and has low value, and can accommodate change that significantly affects most of the key defining criteria

Broadly speaking there is an inverse relationship between landscape sensitivity/value and capacity. However, this is not a simple relationship that can be expressed in a matrix: a balance of judgement is made in each case as landscape value may be a more important factor than sensitivity in some cases; and vice versa in others.

Turbine height and the size and layout of types of turbine development may relate better to some LCTs than others and the geographical extent of LCAs within some otherwise suitable LCTs may limit capacity for development.

2.6 Defining Landscape Change and Cumulative Capacity

An understanding of cumulative impacts and change in the landscape is key to determining acceptable levels of development and whether or not areas have reached cumulative capacity. This is discussed below and in further detail in **Appendix 2**.

2.6.1 Cumulative Change

Appendix 2, section 2.7 discusses in detail the issues involved in determining cumulative change thresholds and the acceptability of these changes. It refers to SNH siting and design guidance[7] and cumulative guidance for onshore wind energy developments[8]. Key factors that affect the perception of cumulative change include:

- the distance between individual windfarms and/or turbines;
- the distance over which they are visible;
- the overall character of the landscape and its sensitivity to windfarms;
- the siting and design of the windfarms and/or turbines themselves (particularly turbine height and windfarm size); and
- the way in which the landscape is experienced.

In determining an acceptable level of development, it is necessary to clearly define what differing levels of development actually entail. The methodology therefore sets out, in Table 2.1 opposite, defined levels of change to the landscape and visual environment that might occur or be experienced depending on the size, number and location of turbines to be built within an area.

The descriptions in Table 2.2 set out a gradated landscape typology that defines increasing levels of cumulative landscape and visual impact of turbines by describing their effect on landscape character and the experience of those living in or travelling through the landscape. These descriptions are used without prejudice as a tool to illustrate cumulative landscape change to all parties involved in planning wind energy development.

Further generic illustration of the concept is provided in Section 4 of SNH's 2014 siting and design guidance (paragraphs 4.5 and 4.6 and illustrative sketches, reproduced in Figure 2.2 below Table 2.1). The extent of current and potential future wind turbine landscape types in Scottish Borders is described in detail in chapter 6 and illustrated in Figures 6.2 and 6.3.

[7] SNH (2017). *Siting and Designing Windfarms in the Landscape v3a*

[8] SNH (2012) *Assessing the cumulative impact of onshore wind energy developments: March 2012*

2.6.2 Determining Acceptable Levels of Change

SNH's siting and design guidance identifies three broad levels of cumulative change in the landscape that may be set by local authorities depending on landscape sensitivity and value and local policy objectives:

- **Landscape Protection:** Maintain existing landscape character.
- **Landscape Accommodation:** Accept a degree of change providing this does not fundamentally alter key landscape characteristics and visual resources.
- **Landscape Change:** Accept large amounts of change that may fundamentally alter key landscape characteristics and visual resources.

The descriptions in Table 2.2 provide a basis on which to understand and determine levels of change. However, it is the collective decision of stakeholders including local authorities and their population that ultimately determines the levels of cumulative landscape change, that are acceptable across their area, and thereby the capacity.

2.7 How to Use the Assessment Findings and Guidance

The study assessment, findings and guidance are presented in the following chapters which also refer to figures, tables and appendices:

Chapter 3: Landscape Baseline

This chapter defines and describes the study area, including the geographical extent and landscape character of Scottish Borders and its surroundings. It also reviews other relevant information including landscape-related constraints, such as wildness, natural heritage and cultural heritage designations.

The assessment of landscape capacity and cumulative landscape change is based on the six Regional Landscape Areas further divided into Landscape Character Areas (LCAs). These are based on thirty Scottish Borders Landscape Character Types (LCTs) which are represented across the Regional Landscape Areas as detailed in the published Scottish Borders Landscape Character Assessment.

The information in chapter 3 informs the assessment of the sensitivity and value of each landscape character type and areas detailed in chapter 6.

Chapter 4: Visual Baseline

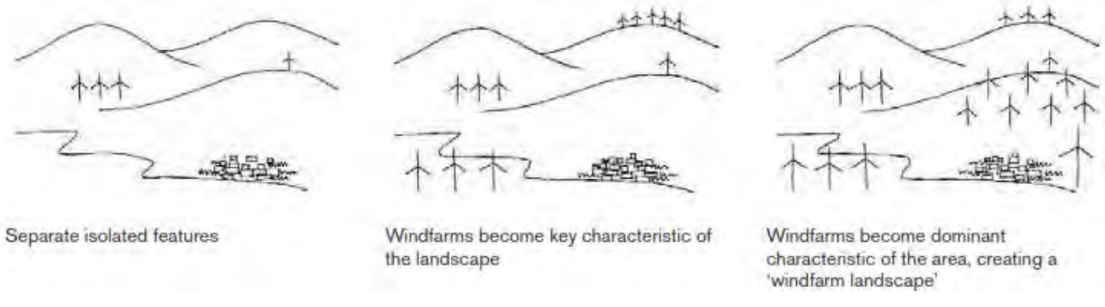
This chapter details the analysis carried out to establish the relative visibility and visual sensitivity of different parts of Scottish Borders. This involves a computer-based intervisibility assessment, based on different turbine heights and receptor types. The resulting maps are shown in **Appendix 3.**

The information in chapter 4 informs the assessment of landscape sensitivity as detailed in Chapter 6.

Table 2.2: Description of Levels of Cumulative Wind Turbine Development

Landscape Type	Landscape Character	Visual Experience
Landscape with no Wind Turbines	A landscape type or area in which no, or a minimal number/size of wind turbines is present, or clearly visible from neighbouring areas.	There would be no, or negligible, effects on visual receptors.
Landscape with Occasional Wind Turbines	A landscape type or area in which windfarms or wind turbines are located and/or are close to and visible. Turbines are not of such a size, number, extent or contrast in character that they become one of the defining characteristics of the landscape's character.	Visual receptors would experience very occasional close-quarters views of a windfarm or turbines and more frequent background views of windfarms or turbines. Some of the turbines would not be perceived as being located in the landscape character type or area. No overall perception of wind turbines being a defining feature of the landscape.
Landscape with Wind Turbines	A landscape type or area in which a windfarm, windfarms or wind turbines are located and/or visible to such an extent that they become *one* of the defining characteristics of the landscape character. However, they are clearly separated and not the single most dominant characteristic of the landscape.	Visual receptors would experience frequent views of windfarms or wind turbines as foreground, mid-ground or background features, affecting their perception of the landscape character. However there would be sufficient separation between windfarms and turbines and sufficient areas from which wind turbines are not visible such that they would not be seen as dominating the landscape over all other landscape features.
Wind Turbine Landscape	A landscape type or area in which windfarms or wind turbines are extensive, frequent and nearly always visible. They become the dominant, defining characteristic of the landscape. Nevertheless there is a clearly defined separation between the principal developments.	Visual receptors would experience views of windfarms and wind turbines as foreground, mid-ground and background features, to the extent that they are seen as the most dominant aspect of landscape character. Few areas would be free of views of wind turbines, although the principal groupings would appear separated.
Windfarm	Landscape fully developed as a windfarm with no clear separation between groups of turbines. Few if any areas where turbines not visible.	Visual receptors would always be close to and nearly always in full view of wind turbines, with no clear separation between groups of turbines.

Figure 2.2: Illustrative Sketches of Wind Turbine Development (from SNH)



Chapter 5: Wind Turbines in the Study Area

This chapter describes the operating, consented and proposed wind turbine developments in Scottish Borders at **July 2016**, and the wider study area at July 2016 or earlier. There is a detailed breakdown of numbers and sizes of turbines and windfarms in Scottish Borders and the surrounding study area. Locations of turbines are illustrated in Figures 5.1 and 5.2. There is also an analysis of turbine size ranges and distribution in relation to landscape character.

Appendix 4 reviews the factors involved in wind turbine location, size, design and distribution that affect landscape, visual and cumulative impacts.

Details of individual developments are given in **Appendix 5**

Chapter 6: Assessment of Landscape Capacity and Cumulative Change

This chapter analyses and assesses the information in the previous chapters to determine the landscape and visual impacts of, and capacity for, wind energy development across Scottish Borders. The assessment is summarised in **Table 6.1** and **Figures 6.1 to 6.3.** The capacity assessment is informed by the detailed assessment of landscape sensitivity and value in **Appendix 6**. A desk and field based assessment was carried out. The assessment informs the subsequent spatial strategy and includes guidance on turbine size and distribution. Further details of how to use Table 6.1 together with the figures are given at the start of Chapter 6.

This assessment is carried out for each of the six main regional landscape areas of Scottish Borders. The assessment includes each of their component LCAs. The capacity assessment and current level of development for the LCAs is combined to come to an overall assessment of capacity and cumulative effects in each regional area.

Finally the regional assessments are combined to make an assessment for the whole local authority area. Further spatial guidance regarding areas with restricted capacity and areas with capacity for further development are given at the end of Chapter 6**.**

2.8 Detailed Guidance

Chapter 6 also gives guidance on turbine sizes, cluster sizes and separation between groups of turbines for each landscape type and/or area that would limit cumulative development to the proposed acceptable level. This relates to turbines of 15m and taller. As highlighted in 2.3.2, guidance on small turbines below 15m to blade tip applies at a local level and is generic.

Appendix 4 of this report contains detailed discussion of how turbine size, group size and group separation affects perceptions of wind energy and landscape character. Further guidance is given in SNH's siting and designing guidance[9]. Chapter 6 also briefly outlines the main considerations in developing the specific guidance.

2.9 Potential Opportunities and Constraints

The main spatial findings of the detailed assessment are summarised on a map in **Figure 6.4.** This shows the distribution of the following areas:

- Areas with the highest underlying landscape capacity
- Areas with some underlying landscape capacity
- Areas with little or no underlying landscape capacity
- Areas of significant cumulative development (which may overlap with parts of some or all of the above areas)

Finally, it is emphasised that this assessment is focused on landscape and visual issues. Areas which have been identified as suitable on this basis may be restricted by other unrelated factors such as impacts on wildlife, impact on residential amenity, tourism and recreation, aviation restrictions or effects on the water environment. These issues are not the subject of this assessment and guidance across the full range of environmental categories is provided in the Council's Renewable Energy Supplementary Guidance.

[9] SNH (August 2017). *Siting and Designing Windfarms in the Landscape v3a*

3.0 LANDSCAPE BASELINE

The following section defines and describes the study area, including the geographical extent and landscape character of the Scottish Borders and its surroundings. It also reviews other relevant information including landscape-related designations, natural heritage and cultural heritage constraints. Most of these constraints are identified in Stages 1 and 2 of the spatial framework. However, it is the extent to which may have a bearing on landscape character and value that is the primary consideration in this cumulative impact study.

3.1 Study Area

The study area for this assessment is shown in Figure 3.1. The Scottish Borders covers southeast Scotland to the south of Edinburgh. The local authority area comprises extensive uplands to the north, west and south draining into the central lowlands of the River Tweed, which itself drains east into the North Sea. The majority of settlements are either found within sheltered valleys surrounded by upland landscapes or within the broad lowland landscapes. East, Mid- and West Lothian and Edinburgh lie on the northern border of the Scottish Borders area. To the west is South Lanarkshire, to the south west is Dumfries & Galloway. The English border and Northumberland are to the south east.

The study focuses on the local authority area of Scottish Borders Council for the purposes of determining landscape capacity. Nevertheless, there are a number of existing, consented and proposed wind energy schemes in neighbouring authority areas. Some consideration has been given to these, due to the extensive visual influence exerted by most wind turbines. The study area therefore includes a 15km buffer around its boundary.

3.2 Baseline Landscape Character Assessment

3.2.1 Landscape Context

The Scottish Borders area is predominantly an inland landmass with a comparatively short coastal zone. The total land area is 4,732Km² and has a population of approximately 113,870 (2011). There are no large urban areas in the Scottish Borders; the landscape comprising extensive areas of farmland and sparsely populated upland areas supporting moorland and forestry.

The landscape of the Scottish Borders is diverse with the extensive upland environments enclosing narrow valleys that open onto the agricultural lowland basin. The variety of landscapes within the Scottish Borders is illustrated in Figure 3.3 and 3.4.

- To the north lies the elevated incised plateau landscape of the Lammermuir and Moorfoot Hills.
- To the northwest the landscape takes in part of the broad MidlandValley, rising up to the ridge line summit of the Pentland Hills.
- To the west and south west lie the Southern Uplands
- To the south/ south east lies the Cheviot Hills upland landscape.

Within the central area surrounded by the uplands lies the broad lowland landscape of the Tweed Valley; this landscape character continues across the River Tweed into the lowland area of Northumberland towards Berwick-upon-Tweed and the North Sea Coast.

To the north and west the Lammermuir and Moorfoot Hills and the Southern Uplands are formed from folded resistant Sandstones, Limestones, Shales, Grits and Greywackles. The Eastern Cheviot massif in contrast is of volcanic origin. The lowland Merse is underlain by limestones and sandstones. The Merse landscape is interrupted by igneous intrusions that have been weathered into prominent landmarks such as the Eildon Hills, and features rounded glacial Drumlins in the east.

The upland landscapes are contiguous within the neighbouring council areas of East Lothian, Midlothian and West Lothian to the north to north west; South Lanarkshire to the west and Dumfries and Galloway to the south west. The Cheviot Hills upland landscape is contiguous with the upland landscape within Northumberland and the Northumberland National Park to the south and south east.

The majority of Scottish Borders is drained by the extensive River Tweed catchment, which captures the Teviot, Yarrow, Leader, Whiteadder and many other rivers draining the uplands. However, the Liddel water drains the southern extremity towards the Solway and Irish Sea to the south west. The Eye Water is also a separate and smaller watershed to the Tweed, draining the north east into the North Sea at Eyemouth.

Throughout Scottish Borders there are important strategic transport corridors, most notably the A1/ east coast mainline along the eastern area. Secondary, slightly less important routes between England and Scotland passing through the Scottish Borders includes the A697, A68 and the A7.

3.2.2 Landscape Character

The *Borders Landscape Character Assessment* (ASH Consulting Group 1998), published by SNH, identifies 6 regional landscape character areas which are primarily determined by elevation, landform, land use and proximity to the coast. These are:

i. **Midland Valley**
ii. **Lammermuir and Moorfoot Hills**
iii. **Central Southern Uplands**
iv. **Cheviot Hills**
v. **Tweed Lowlands**
vi. **Coastal Zone**

The 6 regional character areas have been divided into 5 regional landscape character types (**Uplands, Upland Fringe, River Valley, Lowlands**, and **Coastal**) with further subdivisions into 30 local landscape character types (LCTs) as set out in Table 3.1 below.

Most of the types are subdivided further into geographically separated landscape character areas (LCAs). Regional and local landscape character types and areas are shown in Figures 3.3 and 3.4.

Table 3.1. Landscape Character Areas in Scottish Borders (based on *Borders Landscape Assessment* (ASH Consulting Group for SNH, 1998)**)**

Regional Character Areas	Regional Landscape Character Types	Local Landscape Character Types
THE MIDLAND VALLEY		
	Uplands	***1*** *Dissected Plateau Moorland*
	Upland Fringe	***8*** *Rolling Farmland*
		11 *Grassland with Hills*
LAMMERMUIR & MOORFOOT HILLS		
	Upland	***1*** *Dissected Plateau Moorland*
		2 *Plateau Grassland*
	Upland Fringe	***13*** *Poor Rough Grassland*
		12 *Undulating Grassland*
		8 *Rolling Farmland*
		14 *Upland Fringe Moorland*
		11 *Grassland with Hills*
		9 *Platform Farmland*
	River Valley	***26*** *Pastoral Upland Fringe Valley*
		28 *Wooded Upland Fringe Valley*
		24 *Upland Valley with Farmlands*
		23 *Pastoral Upland Valley*
		25 *Upland valley with Woodland*
CENTRAL SOUTHERN UPLANDS		
	Upland	***3*** *Plateau Outliers*
		4 *Southern Uplands with Scattered Forests*
		5 *Southern Uplands Forest Covered*
	Upland Fringe	***11*** *Grassland with Hills*
		10 *Grassland with Rock Outcrops*
		8 *Rolling Farmland*
	River Valley	***22*** *Upland valley with Pastoral Floor*
		25 *Upland Valley with Woodland*
		27 *Upland Fringe Valley with Settlements*
		28 *Wooded Upland Fringe Valley*
		26 *Pastoral Upland Fringe Valley*
CHEVIOT HILLS		
	Upland	***5*** *Southern Uplands Forest Covered*
		7 *Cheviot Foothills*
		6 *Cheviot Uplands*
	Upland Fringe	***11*** *Grassland with Hills*
		8 *Rolling Farmland*
	River Valley	***28*** *Wooded Upland Fringe Valley*
		26 *Pastoral Upland Fringe valley*
TWEED LOWLANDS		
	River Valley	***29*** *Lowland valley with Farmland*
	Lowland	***17*** *Lowland Margin Platform*
		18 *Lowland Margin with Hills*
		16 *Rolling Lowland Margin*
		15 *Lowland with Drumlins*
		16 *Rowling lowland Margin*
COASTAL ZONE		
	Coastal	***19*** *Coastal Farmland*
		21 *Coastal Moorland*
		20 *Coastal Pasture*
	River Valley	***30*** *Coastal Valley*

3.3 Landscape Designations

Landscape designations are an indication of landscape value as determined by society. Landscape designations form part of the baseline for both the assessment of landscape capacity, and the preparation of a spatial framework. Landscape designations within the study area are noted below, and are shown in Figure 3.5, in relation to landscape character areas.

3.3.1 National Designations

Within the Scottish Borders area there are two National Scenic Areas (NSAs). Within the study area but outwith the Scottish Borders region there is the Northumberland National Park which borders an eastern section of the Cheviot Uplands area.

3.3.2 National Scenic Areas

The two NSAs within the Scottish Borders are located along the River Tweed. The westernmost, Upper Tweeddale NSA, is located to the west of Peebles to an area of hills surrounding the upper Tweed. The Eildon and Leaderfoot NSA is centred on the confluence of the Leader Water and River Tweed, extending east along the Tweed to Melrose and Darnick, the Eildon Hills and south to the outskirts of Newtown St Boswells. Recent legislation defines a NSA as an area *"of outstanding scenic value in a national context "*. The purpose of a NSA designation is to identify the finest scenery within Scotland and to ensure it is protected from inappropriate development.

3.3.3 Local Landscape Designations

Within Scottish Borders there are nine Special Landscape Areas (SLAs) as illustrated within the Supplementary Planning Guidance[10]:

1) Tweedsmuir Uplands SLA;

[10] SBC Supplementary Planning Guidance: Local Landscape Designations August 2012

2) Tweed Valley SLA;

3) Tweed, Ettrick and Yarrow Confluences SLA;

4) Tweed Lowlands SLA;

5) Teviot Valleys SLA;

6) Lammermuir Hills SLA;

7) Berwickshire Coast SLA;

8) Cheviot Foothills SLA;

9) Pentland Hills SLA.

There are a number of local landscape designations within the surrounding areas that are contiguous with Scottish Borders SLAs. The Pentlands SLA is contiguous with local designations in West Lothian, Midlothian and South Lanarkshire; The Lammermuir Hills SLA with an SLA to the north into East Lothian; The Cheviot Hills SLA is contiguous with the Northumberland National Park over the English border to the east and south; The Tweedsmuir Uplands SLA is contiguous with an area to the south into Dumfries & Galloway and to the west with an SLA in South Lanarkshire. The coastal zone SLA within the Scottish Borders continues north along the coast into East Lothian.

3.3.4 Historic Gardens and Designed Landscapes

There are 31 Inventory-listed Gardens and Designed Landscapes (GDL) within the Scottish Borders area and a total of 33 within the whole study area. Whilst not a statutory designation, it is a factor that contributes to the assessment of landscape character and value (as well as being a Spatial Framework Group 2 consideration). Furthermore, there are an identified 186 designed landscapes (including the 31 identified in the Inventory) within the Scottish Borders. While the majority of these are not on the Inventory, they nevertheless contribute to landscape value and character.

3.3.5 Wild Land Areas

SNH has recently completed an assessment of relative wildness across Scotland[11]. The assessment uses a detailed analysis of four main attributes (Perceived naturalness; rugged/ challenging terrain; remoteness from roads and lack of human artefacts) to establish relative wildness across Scotland which is expressed as a map.

This mapping has been used to identify the largest areas of wild land, which have been selected as Wild Land Areas (WLAs), of which there are 42 in Scotland, mainly in the Highlands and Islands[12]. Wild Land Areas are in Group 2 of the Spatial Framework

[11] *SNH's Mapping of Scotland's Wildness and Wild Land: Non–technical Description of the Methodology (June 2014)*

[12] *SNH's Wild Land Areas Map (June 2014)*

There is one WLA partly within Scottish Borders; Area 2: Talla - Hart Fell in the southwest, which extends into Dumfries and Galloway. The wild land mapping also highlights a number of higher and more remote areas of Scottish Borders as having relatively high wildness values. This is shown in Figure 3.6, together with the WLA.

The relative wildness maps and WLA have been factored into the assessment of sensitivity and capacity for the LCAs (see Appendix 6 tables).

3.4 Other Designations

There are a number of designations that, whilst not solely landscape related, clearly indicate landscape value and inform the assessment process. These are shown in Figures 3.5 & 3.7. Many of these areas are likely to be significant constraints in themselves, but are not part of the landscape capacity assessment. Nevertheless, the most extensive and sensitive areas are highlighted in the detailed analysis. This is not a systematic exercise and is undertaken only order to inform users of the guidance that, where there is landscape capacity, other constraints may apply.

3.4.1 Countryside Around Towns

Countryside around towns (CAT) has been created within a core area of Central Borders, this has been created around the settlements of Galashiels, Tweedbank, Melrose, Gattonside, Dingleton, Newtown St Boswells and St Boswells. The designation seeks the protection and enhancement of this area and recognises the importance of this area as a landscape and recreational resource for the settlements. The central Borders has a number of settlements separated by short distances and the designation seeks to prevent any further or potential visual or physical coalescence of these settlements and supports the NSA in the protection and enhancement of this area.

3.4.2 Regional Park

The Pentlands Regional Park is not located within the Scottish Borders. However it is located within Midlothian, City of Edinburgh and West Lothian to the north, northeast and northwest of the Scottish Borders Midland Valley area. This designation is partly related to scenic quality and partly to recreation and contributes to landscape value in this area.

3.4.3 Historic and Cultural Designations

Scheduled Ancient Monuments (SAMs) are primarily a historic or archaeological designation. However, they can be of landscape significance in their own right and contribute to the character and value of a landscape. Furthermore, effects on their setting can be a consideration for neighbouring development proposals e.g. Castles, Monuments and Cairns.

Conservation Areas are primarily an urban designation. Nevertheless, the appearance of a settlement can be a key feature contributing to the surrounding rural landscape and equally the setting of a Conservation Area can be affected by developments in the surrounding countryside.

There are a total of 43 conservation areas within the Scottish Borders; these are concentrated throughout the sheltered valleys and agricultural lowlands within the historic population centres.

Listed Buildings feature throughout the urban and rural areas. The greatest concentrations are located within settlements found within the sheltered valleys and broad fertile farmland areas. Listed buildings contribute to landscape character and value and effect on their setting is a consideration for neighbouring development proposals.

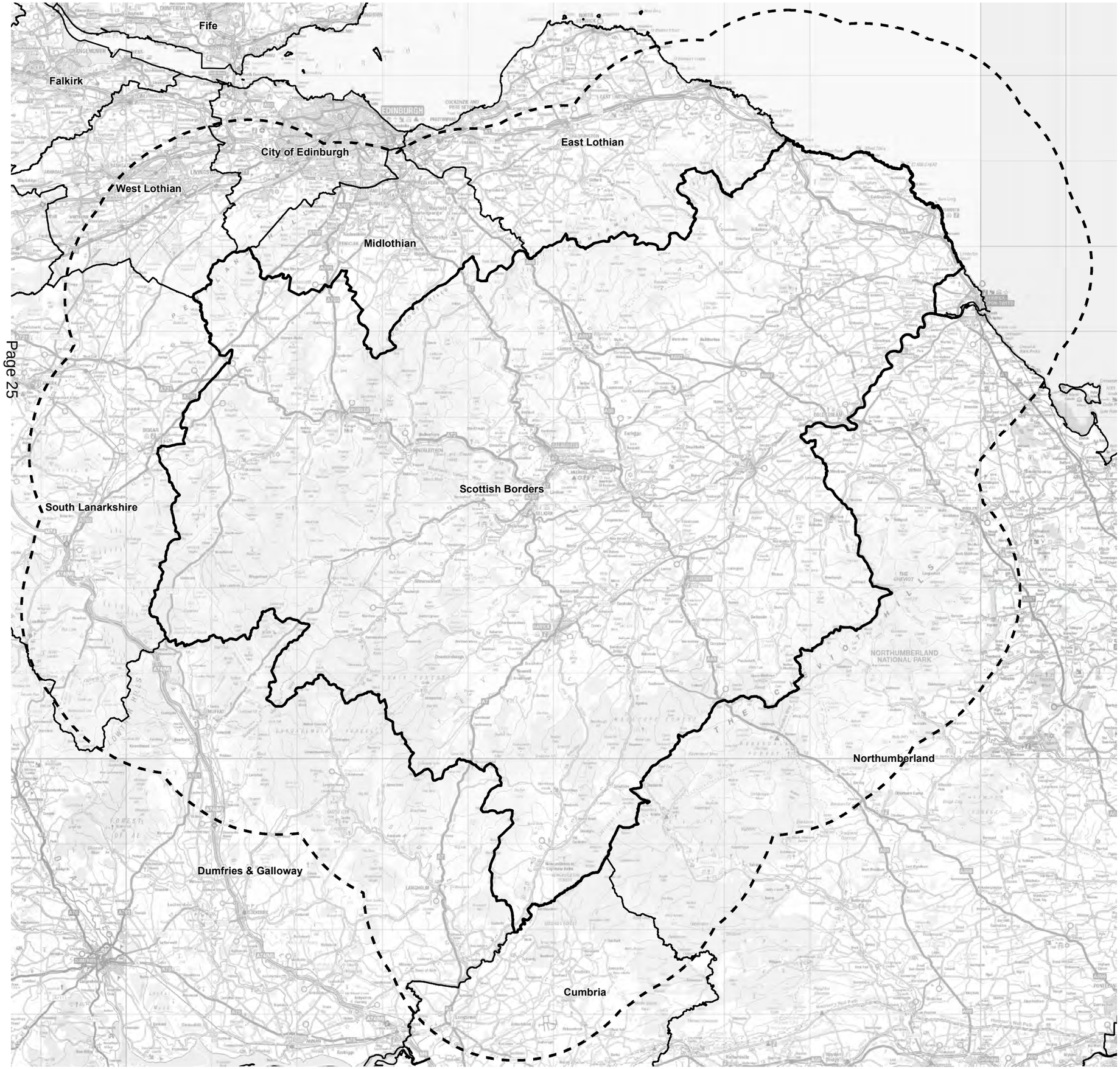
3.4.4 Nature Conservation Designations

Areas designated for their nature conservation interest and importance include SPAs SACs, Ramsar Sites, SSSIs and National Nature Reserves (NNRs). All are national or international designations and are a Group 2 Spatial Framework consideration. Whilst these constraints are primarily related to nature conservation interests, such designated areas often contribute to the character and value of a landscape through its relatively undisturbed natural features and potential visitor interest.

In Scottish Borders, these designations are found throughout the region. The main rivers and tributaries, including the River Tweed, are SSSI's and SACs. Within the upland areas of the Moorfoot Hills and Southern Uplands there are larger areas designated as SSSIs and SACs. There is a large SPA and SSSI that is partly within the Scottish Borders and partly within Dumfries and Galloway in the southern area of the Scottish Borders region.

3.5 MOD Eskdalemuir Seismological Array

The Eskdalemuir seismological array is an MOD facility located within Dumfries and Galloway within the Eskdale Forest in the valley of the White Esk. This facility has no bearing on landscape quality or sensitivity. However, it is currently surrounded by a 10km exclusion zone within which no turbine development can occur. This exclusion zone comes into Scottish Borders area occupying a large area of the *Southern Uplands Forest Covered* (*Craik Forest) LCA*. A further consultative area of 50km extends from the facility in which turbine development is limited to a 'noise budget' that has already been reached. Applications for turbine developments in this area are subject to mitigation measures that must be agreed with the MOD/ Eskdalemuir seismological array to reduce/ eliminate noise that would interfere with the seismological array. The location and zones are shown in Figure 3.8.



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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries

Figure 3.1

Study Area

N

0 5 10 20 30 Km

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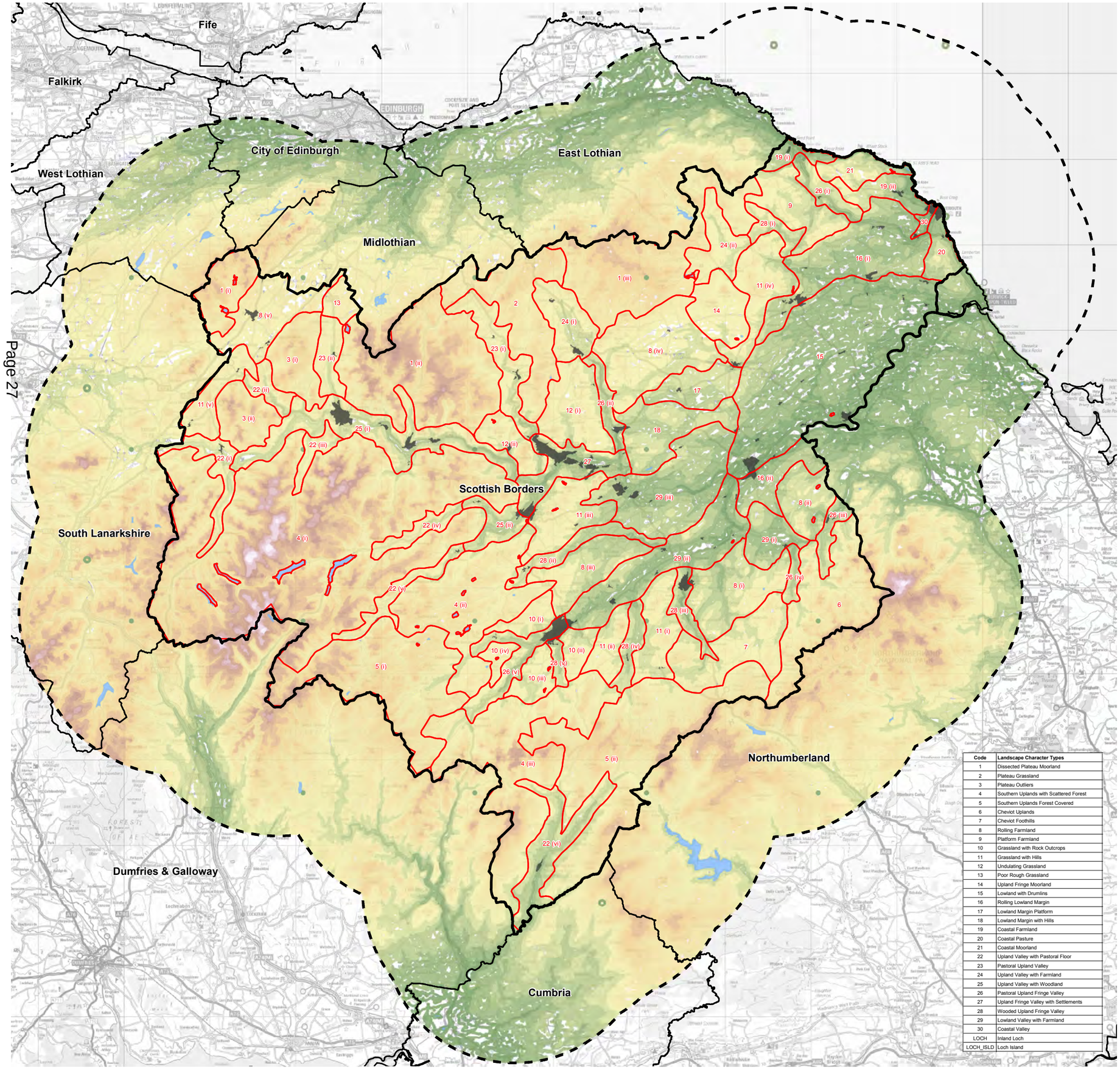

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
5	Southern Uplands Forest Covered
6	Cheviot Uplands
7	Cheviot Foothills
8	Rolling Farmland
9	Platform Farmland
10	Grassland with Rock Outcrops
11	Grassland with Hills
12	Undulating Grassland
13	Poor Rough Grassland
14	Upland Fringe Moorland
15	Lowland with Drumlins
16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Scottish Borders Council

Scottish Borders Updated Wind Energy Capacity Study

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas
- Settlements

Elevation

- 800 - 850mAOD Contours
- 750 - 800mAOD Contours
- 700 - 750mAOD Contours
- 650 - 700mAOD Contours
- 600 - 650mAOD Contours
- 550 - 600mAOD Contours
- 500 -550mAOD Contours
- 450 - 500mAOD Contours
- 400 - 450mAOD Contours
- 350 - 400mAOD Contours
- 300 - 350mAOD Contours
- 250 - 300mAOD Contours
- 200 - 250mAOD Contours
- 150 - 200mAOD Contours
- 100 - 150mAOD Contours
- 50 - 100mAOD Contours
- 0 - 50mAOD Contours

Figure 3.2

Topography

N

0 5 10 20 30 Km

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(i) Midland Valley

(ii) Lammermuir & Moorfoot Hills

(iii) Central Southern Uplands

(iv) Cheviot Hills

(v) Tweed Lowlands

(vi) Coastal Zone

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Legend

- Regional Landscape Areas
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries

Regional Landscape Character Types

- Upland
- Upland Fringe
- Lowland
- Costal
- River Valley

Figure 3.3

Regional Landscape Character Types

N

0 5 10 20 Km

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Legend

SBC Local Authority Boundary
Local Authority Boundary 15km Buffer
Other Local Authority Boundaries

1 - Dissected Plateau Moorland
1 (i) Western Pentlands
1 (ii) Moorfoot Plateau
1 (iii) Lammermuir Hills

2 - Plateau Grassland
2 Lauder Common

3 - Plateau Outliers
3 (i) Eddleston / Lyne Interfluve
3 (ii) Broughton Heights

4 - Southern Uplands with Scattered Forest
4 (i) Broadlaw Group
4 (ii) Dun Knowe Group
4 (iii) Cauldcleuch Head Group

5 - Southern Uplands Forest Covered
5 (i) Craik
5 (ii) Wauchope / Newcastleton

6 - Cheviot Uplands
6 Cocklaw Group

7 - Cheviot Foothills
7 Falla Group

8 - Rolling Farmland
8 (i) Oxnam
8 (ii) Lempitlaw
8 (iii) Minto Hills
8 (iv) Westruther Platform
8 (v) West Linton Synclinal Belt

9 - Platform Farmland
9 Eye Water Platform

10 - Grassland with Rock Outcrops
10 (i) Whitehaugh
10 (ii) Midgard
10 (iii) Allan Water
10 (iv) Chisholme

11 - Grassland with Hills
11 (i) Bonchester / Dunion
11 (ii) Rubers Law
11 (iii) Eildon Hills
11 (iv) Knock Hill
11 (v) Skirling

12 - Undulating Grassland
12 (i) East Gala
12 (ii) West Gala

13 - Poor Rough Grassland
13 Leadburn

14 - Upland Fringe Moorland
14 Greenlaw Common

15 - Lowland with Drumlins
15 Lower Merse

16 - Rolling Lowland Margin
16 (i) Eye Water lowlands
16 (ii) Maxwellheugh

17 - Lowland Margin Platform
17 Gordon Platform

18 - Lowland Margin with Hills
18 Black Hill / Hume Crags

19 - Coastal Farmland
19 (i) Cockburnspath
19 (ii) Coldingham

20 - Coastal Pasture
20 Lamberton Moor

21 - Coastal Moorland
21 Coldinham Moor

22 - Upland Valley with Pastoral Floor
22 (i) Upper Tweed / Biggar Water
22 (ii) Lyne Water
22 (iii) Manor Water
22 (iv) Upper Yarrow
22 (v) Upper Ettrick
22 (vi) Liddel Water

23 - Pastoral Upland Valley
23 (i) Gala Water
23 (ii) Eddleston Water

24 - Upland Valley with Farmland
24 (i) Upper Leader
24 (ii) Upper Whiteadder

25 - Upland Valley with Woodland
25 (i) Middle Tweed
25 (ii) Lower Ettrick / Yarrow

26 - Pastoral Upland Fringe Valley
26 (i) Eye Water
26 (ii) Lower Leader
26 (iii) Bowmont Water
26 (iv) Kale Water
26 (v) Upper Teviot / Bothwick Water

27 - Upland Fringe Valley with Settlements
27 Tweed / Gala / Ettrick Confluence

28 - Wooded Upland Fringe Valley
28 (i) Middle Whiteadder
28 (ii) Ale Water
28 (iii) Jed Water
28 (iv) Rule Water
28 (v) Slitrig Water

29 - Lowland Valley with Farmland
29 (i) Lower Kale
29 (ii) Lower Teviot
29 (iii) Lower Tweed

30 - Coastal Valley
30 Lower Eye Water

Figure 3.4

Landscape Character Areas

N
0 5 10 20 Km

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Legend

- SNH Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas
- National Scenic Area:
  1. Upper Tweedsdale
  2. Eildon and Leaderfoot
- Regional Park
- Country Parks
- Countryside Around Towns Area
- SBC Designed Landscapes
- Historic Gardens and Designed Landscapes
- Special Landscape Areas
- Landscape Designations outside SBC
- National Park

Code	Landscape Character Types
1	Dissected Plateau Moorland
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23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 3.5

Landscape Designations & Landscape Character Areas

N

0 5 10 20 30 Km

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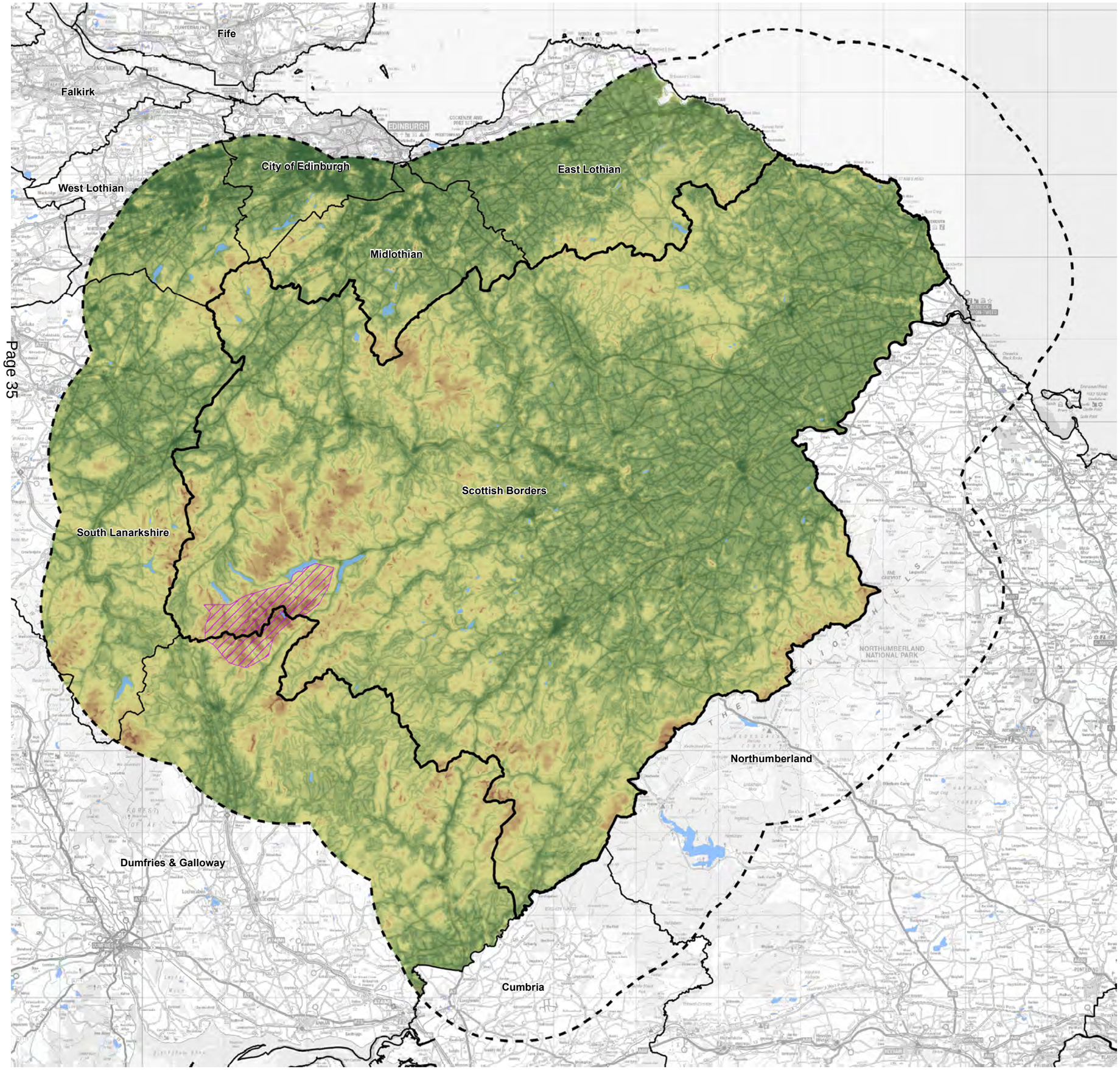

Scottish Borders COUNCIL

Scottish Borders Updated Wind Energy Capacity Study

May 2016 8558_GIS_106

Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Talla - Hart Fell Wildland Area
- Lochs

Level of Wildness

- High
- Low

Figure 3.6

Scottish Borders: Relative Wildness

N

0 5 10 20 30 Km

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Scottish Borders COUNCIL

Scottish Borders Updated Wind Energy Capacity Study

May 2016 8558_GIS_107

Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas
- Listed Buildings
- Special Areas of Conservation
- Sites of Special Scientific Interest
- RAMSAR Sites
- National Nature Reserve
- Special Protected Areas
- Scheduled Ancient Monuments
- Conservation Area
- Ancient Woodland Inventory
- Inventory of Historic Battlefields

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
5	Southern Uplands Forest Covered
6	Cheviot Uplands
7	Cheviot Foothills
8	Rolling Farmland
9	Platform Farmland
10	Grassland with Rock Outcrops
11	Grassland with Hills
12	Undulating Grassland
13	Poor Rough Grassland
14	Upland Fringe Moorland
15	Lowland with Drumlins
16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 3.7

Natural and Cultural Designations

N

0 5 10 20 30 Km

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Scottish Borders COUNCIL

Scottish Borders Updated Wind Energy Capacity Study

May 2016 8558_GIS_108

Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas
- MoD EKA Seismological Array
- MoD EKA Seismological Array 10km Exclusion Zone
- MoD EKA Seismological Array 50km Statutory Safeguard Area

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
5	Southern Uplands Forest Covered
6	Cheviot Uplands
7	Cheviot Foothills
8	Rolling Farmland
9	Platform Farmland
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15	Lowland with Drumlins
16	Rolling Lowland Margin
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18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 3.8

MoD EKA Seismological Array

N

0 5 10 20 30 Km

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4.0 VISUAL BASELINE

The following section details the analysis that was carried out to establish the relative visibility and potential visual sensitivity of different parts of Scottish Borders.

4.1 Visual Receptors

In a study of landscape capacity and cumulative landscape impacts, it is important to consider visibility, and the effects of cumulative impact on visual receptors. This not only feeds into the assessment of landscape sensitivity and capacity (see Section 2.2), but also builds up a picture of where visual receptors in and around Scottish Borders would perceive wind turbines within the landscape.

The types of potentially sensitive visual receptors within the Scottish Borders are broadly categorised into three groups:

- Residents (dwellings and settlements)
- Travellers (roads, railway)
- Visitors (visitor destinations, viewpoints, recreational footpaths and cycle routes)

Whilst there are working receptors in the Scottish Borders, these have not been included, as people at work are considered to be lower sensitivity visual receptors.

Based on desk study and site analysis, three groups of receptors were identified as proxies:

- Settlements, representing concentrations of residential receptors;
- Routes, representing travelling receptors, and including the main A roads, promoted tourist routes, railways, and long-distance footpaths and cycleways;
- Viewpoints, representing visitors and residents, selected from popular walking destinations and long distance footpaths, visitor attractions, and viewpoints identified on OS maps. Selected in consultation with officers of Scottish Borders Council.

The locations of the settlements, routes, and viewpoints are illustrated on Figure 4.1. The assessment includes receptors in the study buffer area up to 15km beyond the Scottish Borders boundary.

Individual residential properties are not included in the visibility mapping although notice is taken of the frequency and distribution of dwellings in the analysis of each landscape character type.

4.2 Visibility Analysis

An assessment of visibility was made from the settlements, routes and viewpoints illustrated in Figure 4.1. This was carried out using a computer based technique in which the intervisibility between receptors and topography, or objects of specific heights on the landform, is determined. The more intervisibility, the greater the visibility from receptors is likely to be. The method is described in more detail in **Appendix 2.**

The extent of the visibility assessment was limited to a 15km radius from the receptors. In our experience, this is the distance within which the great majority of significant impacts from wind farms are likely to occur. Whilst it is recognised that impacts occur beyond this distance, up to 35km and beyond, as recognised by EIA best practice, this is not an EIA assessment and the results are considered to adequately distinguish between locations of potentially greater or lesser sensitivity.

Results of the visibility analysis are illustrated in Figures 4.3 a-e, 4.4 a-e & 4.5 a-e (in **Appendix 3**). The colours show the differences in visual sensitivity across the Scottish Borders area. Red colours indicate areas that are most visible from the greatest number of receptors, grading through orange, yellow and green to blue/ purple areas that are seen by fewest receptors and uncoloured areas that would not be seen at all.

4.2.1 Settlements

Figures 4.3 a-e show that the areas most likely to be seen from settlements are located in the northern edge of the Pentland and Moorfoot Hills overlooking the Midland Valley; the Tweed lowlands and isolated landmark hills such as the Eildon Hills and Black Hill. These areas have visibility from the highest number of receptors due to elevation and proximity to centres of population. For all heights of turbine the most sensitive locations within Scottish Borders would be the Eildon Hills, Black Hill and the Scott's View area above the River Tweed. Turbines located around Hawick, Peebles, Kelso and Coldstream as well as the central Galashiels to Melrose cluster of settlements would also be more highly exposed to resident populations. Any height of turbine located on the Eildon Hills, Black Hill and the northern exposed slopes of the Moorfoot and Pentland Hills would be relatively more visible. The areas of least visibility from settlements are located within the core of upland areas including the Lammermuir Hills, Moorfoot Hills, Lauder Common, Southern Uplands and Cheviot Hills. The outer slopes of upland areas have a higher visibility than the core areas, reflecting the screening benefits of topographical containment as well as a much lower population density.

In terms of landscape character areas the most visually exposed to settlements are the Upland landscapes to the south of Edinburgh (*Upland and Upland Fringe*) and the central isolated hills (*Rolling Farmland* and *Lowland Margin with Hills*), followed by the slopes above settlements in the Upper Tweed and Teviot Valley's and the rolling Lowland landscapes of the Lowland with Drumlins around Kelso and Coldstream. These areas are visible from Edinburgh and the concentration of settlements within the Tweed Valley.

4.2.2 Routes

The routes (Figures 4.4 a-e) show a similar pattern of intervisibility as settlements, but with the areas of highest visibility shifting from the Moorfoot and Pentland Hills to the central lowland areas of Scottish Borders and much less area with no visibility. In particular the area around the Eildon Hills and Black Hill are highlighted. However, there are additional highly visible areas from Peniel Heugh to the area south of Kelso (Bowmont Forest), Dunion Hill (to the west of Jedburgh) and along the coastal border area around Ayton Hill

elevated above the A1. The Merse area also has a relatively high intervisibility. This visibility mapping reflects the concentration of important routes through the Scottish Borders, especially the A68, A7, A697 and the coastal A1 route. The mapping also takes account of the East Coast Mainline railway and the Borders Railway alongside the A7 between Edinburgh and Galashiels.

The landscapes types most visible from settlements are again the prominent isolated hills within the central *Lowlands* and *River Valleys* seen prominently from many roads and railway lines. However, there are areas within the uplands landscapes, especially on the northern border between East Lothian at the Lammermuir Hills either side of the A68 and the area of the Moorfoot Hills bordering Mid Lothian either side of the A7 and the A703. Areas of the Southern Uplands east of Biggar also have a higher visibility and sensitivity.

The areas of least visibility are in the core of more elevated upland areas including the Moorfoot and Lammermuir Hills (south of the Mid- and East Lothian boundaries), the Southern Uplands and the Cheviot Hills. Nevertheless, there is a small pocket of higher visibility around the Carter Bar England/ Scotland border through which the A68 passes.

4.2.3 Viewpoints

The viewpoints (Figures 4.5 a-e) show a similar story to that shown by the Settlements and Routes visibility mapping. Visibility from viewpoints is similar to the previous visibility mapping due to the topography of the central lowlands surrounded by *Upland Fringe* and *Upland Landscapes* roughly extending either side along the Tweed Valley.

There are however differences in the visibility within the Cheviot Hills area. This area has a higher visibility and sensitivity than the previous visibility mapping due to the location of the Pennine Way along the England/ Scotland Border and the number of viewpoints along this route looking onto the landscape. This includes the Carter Bar Viewpoint on the A68 England/ Scotland border which allows for a wide panoramic view over the Scottish Borders and provides a first impression of Scotland to visitors.

The central area between Selkirk and Jedburgh, south of Galashiels and Melrose is again of the highest visibility and sensitivity, this area includes the Eildon Hills and Black Hill. The higher ground either side of the A72 between Peebles and Selkirk has a higher visibility and sensitivity, due to the number of elevated viewpoints along the Southern Upland Way and the promoted viewpoints elevated above settlements in this area. There is again an area of higher visibility within the Lowland Merse area, coastal areas including Coldingham Moor and the area around Ayton Hill west of the A1 corridor.

On the basis of the viewpoints selected the areas with the least visibility are located in the upland areas of the Moorfoot Hills and Southern Uplands areas. This is closely followed by areas within the Lammermuir Hills and Pentlands.

4.2.4 Analysis of Visibility

The visibility analysis confirms empirical observations of visual sensitivity across Scottish Borders, i.e. that it is the central areas close to populated areas that have the highest visual sensitivity as well as the northern escarpments of the Moorfoot and Pentland Hills facing the Midland Valley. However this analysis gives a more refined and nuanced assessment, determining which geographical areas are likely to be the most and least visually sensitive.

Based on the computer assessment and on observation, the following areas are likely to be of highest visual sensitivity, a factor that will have a bearing on their capacity for wind turbine development:

- The summits and northern slopes of the Pentlands and Moorfoot Hills overlooking the Midland Valley;
- The Central lowlands between Selkirk and Jedburgh to the south of Galashiels and Melrose;
- Prominent landmark hills fringing the central lowland areas including the Eildon Hills and Black Hill around Melrose, Peniel Heugh and Dunion Hill by Jedburgh;
- The higher coastal land to the west of the A1 north of the England – Scotland border;
- The coastal zone bound by the A1 and East Coast Mainline;
- There are also smaller pockets of medium visual sensitivity within the Cheviot Hills, along the A7 between Selkirk and Peebles on the elevated land framing the valley and the higher land within the Scottish Borders north east of Biggar.

The areas likely to be least visually sensitive include:

- A large area of the Southern Uplands in the south west of the study area bordering South Lanarkshire in the west and Dumfries and Galloway in the south west;
- Areas of the Lammermuir and Moorfoot Hills bordering Midlothian and East Lothian.

Other smaller areas are also less sensitive but are not large enough to be considered on a strategic scale.

Scottish Borders COUNCIL

Scottish Borders Updated Wind Energy Capacity Study

May 2016 8558_GIS_109

Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Settlements

Viewpoints

- Within SBC Boundary
- Outwith SBC Boundary
- National Cycle Network and Borders Loop
- Long Distance Footpaths

Road Classifications

- Motorway
- Primary Road
- A Road
- Existing Railway

Figure 4.1

Transport Routes, Settlements & Viewpoints

N 0 5 10 20 30 Km

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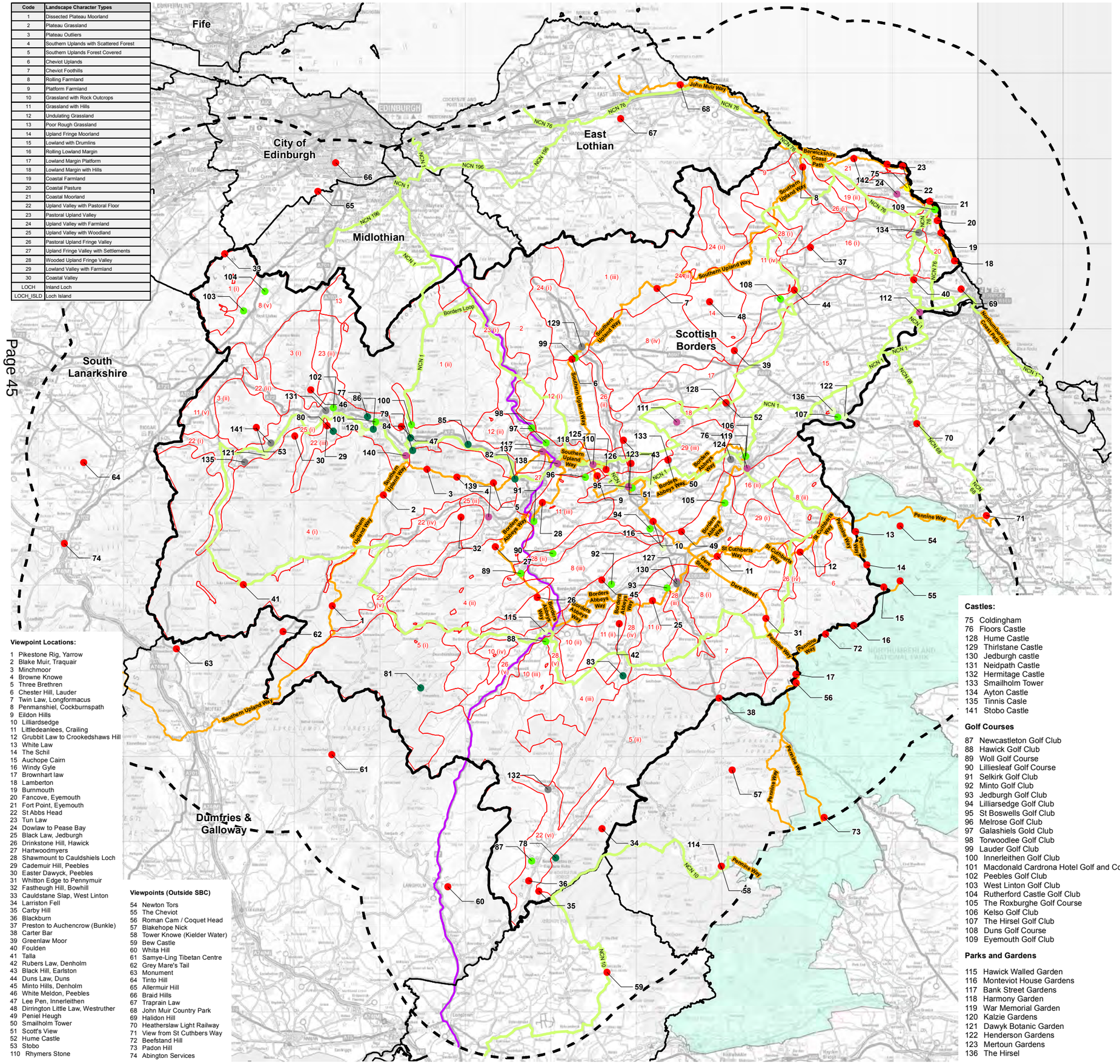

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
5	Southern Uplands Forest Covered
6	Cheviot Uplands
7	Cheviot Foothills
8	Rolling Farmland
9	Platform Farmland
10	Grassland with Rock Outcrops
11	Grassland with Hills
12	Undulating Grassland
13	Poor Rough Grassland
14	Upland Fringe Moorland
15	Lowland with Drumlins
16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Viewpoint Locations:

1 Pikestone Rig, Yarrow
2 Blake Muir, Traquair
3 Minchmoor
4 Browne Knowe
5 Three Brethren
6 Chester Hill, Lauder
7 Twin Law, Longformacus
8 Penmanshiel, Cockburnspath
9 Eildon Hills
10 Lilliardsedge
11 Littledeanlees, Crailing
12 Grubbit Law to Crookedshaws Hill
13 White Law
14 The Schil
15 Auchope Cairn
16 Windy Gyle
17 Brownhart law
18 Lamberton
19 Burnmouth
20 Fancove, Eyemouth
21 Fort Point, Eyemouth
22 St Abbs Head
23 Tun Law
24 Dowlaw to Pease Bay
25 Black Law, Jedburgh
26 Drinkstone Hill, Hawick
27 Hartwoodmyers
28 Shawmount to Cauldshiels Loch
29 Cademuir Hill, Peebles
30 Easter Dawyck, Peebles
31 Whitton Edge to Pennymuir
32 Fastheugh Hill, Bowhill
33 Cauldstane Slap, West Linton
34 Larriston Fell
35 Carby Hill
36 Blackburn
37 Preston to Auchencrow (Bunkle)
38 Carter Bar
39 Greenlaw Moor
40 Foulden
41 Talla
42 Rubers Law, Denholm
43 Black Hill, Earlston
44 Duns Law, Duns
45 Minto Hills, Denholm
46 White Meldon, Peebles
47 Lee Pen, Innerleithen
48 Dirrington Little Law, Westruther
49 Peniel Heugh
50 Smailholm Tower
51 Scott's View
52 Hume Castle
53 Stobo
110 Rhymers Stone

Viewpoints (Outside SBC)

54 Newton Tors
55 The Cheviot
56 Roman Cam / Coquet Head
57 Blakehope Nick
58 Tower Knowe (Kielder Water)
59 Bew Castle
60 Whita Hill
61 Samye-Ling Tibetan Centre
62 Grey Mare's Tail
63 Monument
64 Tinto Hill
65 Allermuir Hill
66 Braid Hills
67 Traprain Law
68 John Muir Country Park
69 Halidon Hill
70 Heatherslaw Light Railway
71 View from St Cuthbers Way
72 Beefstand Hill
73 Padon Hill
74 Abington Services

Castles:

75 Coldingham
76 Floors Castle
128 Hume Castle
129 Thirlstane Castle
130 Jedburgh castle
131 Neidpath Castle
132 Hermitage Castle
133 Smailholm Tower
134 Ayton Castle
135 Tinnis Casle
141 Stobo Castle

Golf Courses

87 Newcastleton Golf Club
88 Hawick Golf Club
89 Woll Golf Course
90 Lilliesleaf Golf Course
91 Selkirk Golf Club
92 Minto Golf Club
93 Jedburgh Golf Club
94 Lilliarsedge Golf Club
95 St Boswells Golf Club
96 Melrose Golf Club
97 Galashiels Gold Club
98 Torwoodlee Golf Club
99 Lauder Golf Club
100 Innerleithen Golf Club
101 Macdonald Cardrona Hotel Golf and Country Club
102 Peebles Golf Club
103 West Linton Golf Club
104 Rutherford Castle Golf Club
105 The Roxburghe Golf Course
106 Kelso Golf Club
107 The Hirsel Golf Club
108 Duns Golf Course
109 Eyemouth Golf Club

Parks and Gardens

115 Hawick Walled Garden
116 Monteviot House Gardens
117 Bank Street Gardens
118 Harmony Garden
119 War Memorial Garden
120 Kalzie Gardens
121 Dawyk Botanic Garden
122 Henderson Gardens
123 Mertoun Gardens
136 The Hirsel

Forests and Woodlands:

77 Glentress Forest
78 Newcastleton
79 Caberston Forest
80 Cademuir Forest
81 Craik Forest
82 Yair Forest
83 Craigbank Wood
84 Innerleithen
85 Thornielee Forest
86 Cardrona Forest
114 Kielder Water & Forest Park

Historic Buildings and Homes

111 Mellerstrain House & Gardens
112 Paxton House, Gallery & Country Park
124 Kelso Abbey
125 Melrose Abbey
126 Dryburgh Abbey
127 Jedburgh Abbey
137 Gala House
138 Abbotsford House
139 Bowhill
140 Traquair House
142 Coldingham Prioiry

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May 2016 8558_GIS_110

Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas
- Northumberland National Park
- Borders Historic Route
- Major Promoted Paths
- National Cycle Network and Borders Loop
- Viewpoint
- Castles
- Forests & Woodlands
- Parks & Gardens
- Historic Buildings & Homes
- Golf Courses
- Beach

Figure 4.2

Tourism Infrastructure

N

0 5 10 20 Km

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5.0 WIND TURBINES IN THE STUDY AREA

The following section describes the operating, consented and proposed wind turbine developments in Scottish Borders at July 2016 and rest of the study area according to available databases.

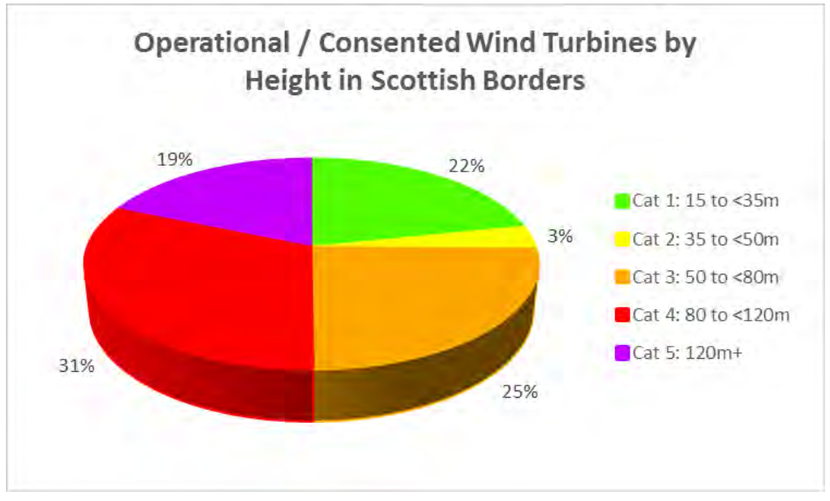
5.1 Turbine Numbers and Distribution

The study area, for the purposes of visibility, landscape and visual impacts of turbines includes the Scottish Borders region, plus a 15km buffer around its boundary, taking in the majority of East Lothian and Midlothian, the southern area of Edinburgh City Council, the eastern area of West Lothian and South Lanarkshire and the north eastern area of Dumfries and Galloway. The study area also extends into northern England and includes the northern tip of Cumbria and the north western area of Northumberland. The extents of the study area are illustrated on Figure 3.1.

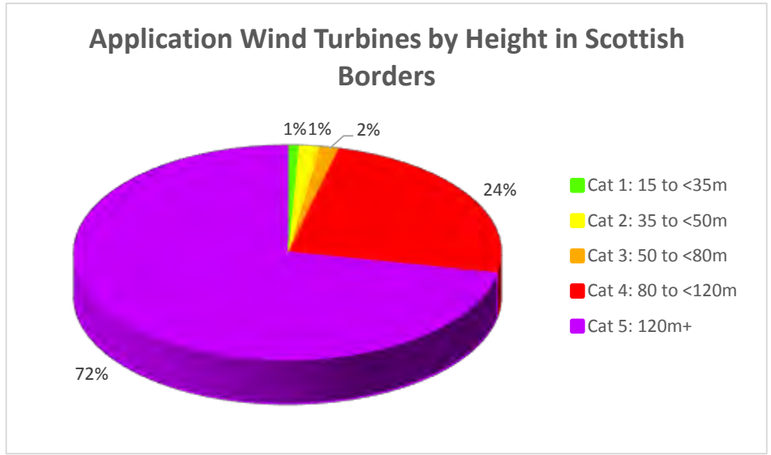
Consented and proposed wind energy developments within the study area are listed, together with details (where available) of location, number and height of turbines, etc, in Appendix 5. The locations are shown in Figure 5.1 (Scottish Borders) and 5.2 (whole study area).

At **July 2016** there were, within Scottish Borders, a total of 479 operational or consented turbines of 15m or greater height and 128 in planning or S36 applications awaiting a decision. Turbine numbers are according to the height categories listed in Chapter 2, Table 2.1.

Of those turbines consented, a significant proportion (240 or 50%) are in the two largest height categories, being 80m or more to blade tip, and 104 are in the smallest height category, below 35m in height. The following chart shows the distribution of sizes.



In the applications the vast majority of proposed turbines (123 or 96%) are 80m or more in blade height, as the following chart shows.



At or before July 2016 there are also very significant numbers of operational, consented and proposed wind turbines in the 15km buffer (Approximately 600 existing/consented and 74 proposed). This is particularly due to parts of the Crystal Rig/ Aikengall cluster extending into East Lothian; and Clyde windfarm and extension on the boundary with South Lanarkshire and significant developments in Dumfries and Galloway. Most of these turbines are 80m or taller to blade tip.

5.2.1 Operating and Consented Wind Turbines

Scottish Borders, but particularly the wider study area, has a high number of windfarms with larger sized turbines when compared to many areas of Scotland. The largest windfarm within the study area and 15km buffer is Clyde Windfarm, (152x125m turbines) and Clyde Extension (54x125-142m turbines) located to the west of Scottish Borders, mainly within South Lanarkshire but three turbines within Scottish Borders. Of the consented and operational windfarms well within Scottish Borders, the two largest windfarms have over 50 turbines:

- Dun Law; 26x67.5m and 25x75m contiguous with two smaller windfarms (Pogbie and Keith Hill totalling 11 turbines) in East Lothian
- Crystal Rig/ Aikengall windfarm development cluster straddling the Scottish Borders and East Lothian boundary in total comprises 127 turbines, with 48 turbines of between 100 and 125m within Scottish Borders

There are four windfarms with between 20 and 50 turbines:

- Fallago Rig (48x110/125m)
- Bowbeat windfarm (24x80m)
- Black Hill windfarm; 22x78m
- Drone Hill Windfarm; 22x76m

There are six medium sized windfarms with between 9 and 20 turbines:

- Quixwood Farm, 13x115m
- Penmanshiel Farm, 14x100m
- Toddleburn windfarm; 12x125m
- Long Park windfarm; 19x100m
- Glenkerie windfarm and extension; 17x100-125m
- Langhope Rig; 10x121.2
- Cloich Forest (18x115m),
- Windy Edge (7x125, 2x110)

There are three windfarms with three larger size turbines:

- Carcant windfarm; 3x107m
- Brockholes windfarm; 3x79m
- Hoprigshiels windfarm; 3x115m

A significant number of smaller non-commercial/FiT developments, single, 2 or 3 turbine developments, mainly with smaller turbines, are operational or are consented, particularly in the northeast and northwest of the study area.

5.2.2 Proposed Windfarms

There are several proposed windfarms or windfarm extensions within the Scottish Borders. The main proposals at July 2016 are:

- Aikengall IIA (19x125-145m) on the eastern edge of the Lammermuirs (partly in East Lothian)
- Fallago Rig extension (12x126.4m) in the central Lammermuirs
- Inch Moor (16x126.5m) on the southern fringes of the Lammermuirs, west of Duns
- Earlshaugh (22x125m) and Whitelaw Brae (14x113.5m) in the Southern Uplands south of Tweeddale
- Kilrubie (7x115m) in the *Plateau Outliers* west of Eddleston
- Longpark Extension (7x100-110m)
- Birneyknowe (15x132m) south of Rubers Law
- Highlee Hill (13x176m) in the Wauchope Forest south of Chesters.

Within the 15km radius the following main schemes are at application stage:

- Fernylea II (6x115m) just east of Aikengall II windfarm in East Lothian
- Harestanes Extension (7x127m) and Loganhead (13x130m) in Dumfries and Galloway

There are scattered smaller turbine applications mainly in the northeast and northwest of Scottish Borders.

5.3 Landscape Character of Turbine Locations

At July 2016 there were 462 turbines over 15m or taller operating, under construction or consented in Scottish Borders, with another 130 in application. Another 674 operational, consented and proposed turbines lie within 15km of the Scottish Borders boundary.

A clear pattern of wind energy development emerges, with the largest turbines and windfarms mainly located in the Uplands areas and the smaller schemes of three or fewer smaller size turbines located in Lowland and River Valley areas (see Fig 5.1 with reference to Fig. 3.3 Regional Landscape Character Types).

The operational windfarms are primarily in the Lammermuir and Moorfoot Hills regional landscape area to the north of the Tweed; although Clyde windfarm is located to the west of the Central Southern Uplands, just outside Scottish Borders. There are two mid-sized windfarms within the Central Southern Uplands, together with five further applications. In contrast, the Cheviot Hills regional area, predominantly Upland in character, is largely free of wind energy development.

There is also a significant concentration of consented smaller windfarms and small groups of larger turbines in the Upland Fringes south and east of the Lammermuirs extending into the neighbouring Coastal Zone.

The majority of smaller schemes, typically with 1-3 turbines below 50m, are found in the Upland Fringe and Lowlands. There are very few turbines within the River Valleys.

The tendency for windfarms and larger turbine development to be located within the Uplands and Upland Fringe landscapes is partly due to the large area of upland landscapes available, but mainly due to their scale and character. In landscape terms, Upland areas offer a larger-scale landscape, which can accommodate larger turbines, and it is rational to locate turbines in open and elevated areas to take advantage of higher wind speeds. Nevertheless, Upland areas are landscapes with a higher level of wildness characteristics and few overtly man-made features, in which wind turbines could be seen as an unwelcome industrial addition. Furthermore, some uplands have landforms of prominence, steepness or complexity which are unlikely to harmonise with large scale wind energy development.

Upland Fringe areas have lesser wildness characteristics, but are often of a relatively large scale and simplicity capable to some extent of accommodating larger schemes and turbines. However, within Scottish Borders there are notable landforms in some Upland Fringe areas, such as the Eildon Hills, that would not be suitable for wind energy development.

Coastal Zone landscape areas are often of larger scale, open, exposed, simple character comparable with the Uplands and Upland Fringe and capable of accommodating wind energy. Nevertheless in Scottish Borders the area is of limited size, with a complex and

scenic coastal edge and areas of more intimate settled character which can limit the scale of development to be accommodated.

In Lowland areas and River Valleys, the scale and pattern of the landscape is generally smaller, meaning that larger windfarms and turbines would appear incongruous, particularly given the greater array of “reference features” available such as trees, hedgerows and houses with which to compare them. Together with the proximity of settlements and properties there are clear landscape and visual sensitivities in such landscapes which would restrict their suitability for development. Nevertheless, a location within the lowland area better reflects the relationship between energy production and the consumer, as well as generally being easier to service in terms of both access and connection to the electricity grid.

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

Windfarm: Status, Height Category

- Operational / Consented, Cat 1: 15 to <35m
- Operational / Consented, Cat 2: 35 to <50m
- Operational / Consented, Cat 3: 50 to <80m
- Operational / Consented, Cat 4: 80 to <120m
- Operational / Consented, Cat 5: 120m+
- Application, Cat 1: 15 to <35m
- Application, Cat 2: 35 to <50m
- Application, Cat 3: 50 to <80m
- Application, Cat 4: 80 to <120m
- Application, Cat 5: 120m+

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
5	Southern Uplands Forest Covered
6	Cheviot Uplands
7	Cheviot Foothills
8	Rolling Farmland
9	Platform Farmland
10	Grassland with Rock Outcrops
11	Grassland with Hills
12	Undulating Grassland
13	Poor Rough Grassland
14	Upland Fringe Moorland
15	Lowland with Drumlins
16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 5.1

Existing, Consented & Proposed Wind Turbines in Scottish Borders (as July 2016)

N

0 5 10 20 Km

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Scottish Borders COUNCIL

Scottish Borders Updated Wind Energy Capacity Study

August 2016 8558_GIS_127

Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

Windfarm: Status, Height Category

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- Operational / Consented, Cat 2: 35 to <50m
- Operational / Consented, Cat 3: 50 to <80m
- Operational / Consented, Cat 4: 80 to <120m
- Operational / Consented, Cat 5: 120m+
- Application, Cat 1: 15 to <35m
- Application, Cat 2: 35 to <50m
- Application, Cat 3: 50 to <80m
- Application, Cat 4: 80 to <120m
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Code	Landscape Character Types
1	Dissected Plateau Moorland
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18	Lowland Margin with Hills
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20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 5.2

Existing, Consented & Proposed Wind Turbines in Study Area

N

0 5 10 20 30 Km

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6.0 ASSESSMENT OF LANDSCAPE CAPACITY AND CUMULATIVE CHANGE

6.1 Assessment Purpose and Process

The purpose of the following assessment is to determine the capacity of the Scottish Borders landscape to accommodate wind turbine development and to determine what levels of cumulative development could be considered acceptable across Scottish Borders. The assessment also takes into account the level of cumulative development that already exists within and around Scottish Borders and is based on the premise that current renewable energy policies have and will lead to an inevitable level of landscape change within Scottish Borders. SPP highlights that cumulative impacts may present a limit to the extent of onshore wind development and that there is a need to consider cumulative impacts in the decision making process.

This capacity assessment resolves landscape capacity with levels of cumulative development and involves three stages:

1) Firstly, identifying the *underlying* capacity of the Scottish Borders landscape to accommodate wind turbine development;

2) Secondly, assessing the degree of cumulative change resulting from operating and consented wind turbines in the study area and in specific areas of Scottish Borders;

3) Thirdly, assessing the level of further development that could acceptably be accommodated within areas of Scottish Borders thereby identifying *remaining* capacity.

An assessment methodology is given in chapter 2.0 and further detailed in **Appendix 2**. The conclusion of the assessment is set out in **Table 6.1(i)-(vi)** and illustrated in **Figures 6.1 to 6.4**, which show landscape capacity, landscape typology and opportunities and constraints for wind energy development.

The assessment of landscape capacity and cumulative landscape change is based on the 30 Scottish Borders landscape character types (LCTs) in the *Borders Landscape Character Assessment.* These are divided into further landscape character areas (LCAs). The location and extent of each LCT and the component LCAs is illustrated in maps in the following pages.

Detailed assessment of the sensitivity and value of each landscape character type is shown in a tabulated form in **Appendix 6** and summarised in left hand columns of Tables 6.1(i)–(vi) which are interleaved with the relevant LCT maps. This information is used to determine the capacity for accepting different turbine sizes, detailed in Table 6.1(i)-(vi) and as maps in Figures 6.1a – e. The maps are indicative, showing geographical location of each LCT/LCA and *overall* rating of capacity for a particular turbine size based on the assessed sensitivities. Capacity will vary across each of the areas and reference should be made to the detailed assessment and guidance in Table 6.1

This assessment accounts for the great range of turbine sizes and variations between areas of the same landscape character type as well as the underlying and remaining capacities. This is discussed further in 6.2.4 below.

An assessment is then made of the current level of cumulative change based on the distribution of operational and consented onshore wind energy developments, as listed in Table 5.1 and illustrated in Figures 5.1 and 5.2. The landscape character types are shown indicatively in Figure 6.2 as a map of areas of current wind turbine landscape typologies (based on types detailed in Table 2.2 of this report).

The proposed acceptable landscape capacity for development is detailed in Table 6.1 and illustrated indicatively in Figure 6.3 as a map of areas of proposed wind turbine landscape typologies (incorporating the current typologies illustrated in Figure 6.2).

Guidance on wind turbine sizes, numbers and distribution is given in the right hand side of Table 6.1(i)-(vi) for managing development to the appropriate level within each landscape type. Analysis of landscape and comments on landscape capacity are detailed in the right hand column.

This assessment is carried out for each of the 30 LCTs in Scottish Borders. Many of the LCTs appear as LCAs more than once across the following six main regional landscape areas of Scottish Borders:

i. Midland Valley;

ii. Lammermuir and Moorfoot Hills;

iii. Central Southern Uplands.

iv. Cheviot Hills;

v. Tweed Lowlands;

vi. Coastal Zone;

The LCTs and component LCAs are grouped into each regional area in which they appear and each LCA is given a separate assessment. Table 6.1 is split into the six regional groupings. This is followed in 6.3 by overall assessments of capacity and cumulative effects for each regional landscape area.

The assessment concludes with a summary for the whole local authority area (refer to section 6.4). Spatial guidance regarding areas with residual capacity for further development (refer to section 6.5) are given at the end of this chapter and schematically illustrated in Figure 6.4.

6.2 Guidance

Table 6.1 also gives guidance on turbine sizes, cluster sizes and separation between groups of turbines for each landscape type that would limit cumulative development to the proposed acceptable level. This relates to turbines of 15m to blade tip and greater (refer to Table 5.2). Further detail, with location maps for individual landscape character areas, is provided within Table 6.1. As highlighted in section 2.7 guidance on small turbines, below 15m to blade tip, applies at a local level.

Appendix 4 of this report contains detailed discussion of how turbine size, group size and group separation affects perceptions of wind energy and landscape character. Further guidance is given in SNH's *Siting and Designing Windfarms* publication. The following briefly outlines the main considerations in developing the specific guidance for this assessment given in Table 6.1.

6.2.1 Turbine Size

The height of turbines which can be accommodated within a particular landscape is influenced by its scale and openness. Landscape scale varies with the presence or absence of detailed features such as buildings, trees, walls and hedgerows which can provide a visual reference point to compare turbines with. In general, the larger the scale of the landscape and the more open and simple the landscape, the greater the ability to relate to larger development typologies.

Smaller size turbines are generally more suitably located in smaller scale landscapes with more complex patterns and smaller scale reference features. They may also be accommodated in the lower edges of large scale landscape types, although their proximity to larger size turbines within these areas would need to be carefully controlled and large groups of such turbines would not be appropriate.

The largest scale upland landscapes in Scottish Borders are extensive and many already accommodate extensive developments with larger scale turbines.

6.2.2 Turbine Group Size

Turbine group sizes relate to scale and complexity of the landscape, particularly to landform and pattern. In general, larger scale more simple landscapes with gentle landforms and simpler patterns can accommodate larger groups of turbines, subject to having the physical capacity (i.e. available area). In the case of Scottish Borders, there are some extensive areas with large scale and simple landform and pattern, comparable to the large scale uplands found elsewhere in Scotland, which accommodate the largest windfarms. However, there are also smaller isolated areas of upland of restricted extent and diverse river valley and lowland landscapes of generally small and intimate scale with very limited capacity for development of only smaller turbines, or sometimes none at all.

6.2.3 Separation between Turbine Groups

Turbine size and group size can be generically related to landscape character when applied to a single turbine or windfarm, or across a number of windfarms. However, separation between groups of turbines is the single most important factor in controlling cumulative effects. This is because of the high prominence and extensive visibility of most turbines, leading to effects on landscape character well beyond the turbines and between individual schemes, as discussed in detail in Appendix 4.

The guidance in Table 6.1 therefore gives approximate separation distances that should be applied between turbine groupings (including single turbines) in order to achieve the planned wind turbine landscape types as described in Table 2.2. Existing and proposed distribution of landscape types are shown in Figure 6.3.

The main factors controlling the proposed separation distance relate to the proposed wind turbine landscape type, turbine size, turbine group size and the character of the host landscape:

1) Proposed Turbine Landscape Typology: each proposed typology detailed in Table 2.2 requires a different separation distance between turbines or schemes to achieve the landscape and visual criteria described.

2) Turbine Size: due to their lesser prominence and visibility, smaller turbines would require closer spacing than larger turbines to achieve the defined landscape typology.

3) Group Size: smaller groups of turbines would be less dominant and require closer spacing to achieve the same landscape typology than would larger groups of the same size of turbine.

4) Underlying landscape character type: this has an effect on all the above criteria. More open, flatter landscapes are more easily affected by intervisibility of turbines and are likely to require greater separation distances between groups. Landscapes with significant topography and woodland cover have the potential to reduce intervisibility. Scale and pattern can have a more subjective effect, but in general smaller scale landscapes are more likely to be affected by wind energy development compared with larger scale landscapes. The presence of other tall objects such as electricity pylons also affects the perception of turbine development.

The distances given in Table 6.1 are approximate, relating primarily to (1) and (2) above. Landscape character including topography is also important: where landforms are capable of visually separating turbine groups the distance between landforms is a consideration in setting distances. For example:

- in the *Rolling Farmland* which is a proposed *Landscape with Occasional Turbines*, the separation distances are designed to ensure a degree of screening: a distance of 3-5km is the separation required to ensure that a significant landform separates groups of mid-sized turbines and 5-10km is the distance that the nearest larger size turbines, if seen above landforms, will become a minor feature in the view.

- In contrast *Plateau Grassland,* which is a proposed *Landscape with Turbines*, has undulating plateau like landforms and larger turbines in larger groups are separated by 5-10km, such that they are likely to be partially inter-visible but nevertheless clearly separated but recognisable as a 'cluster' of developments in one area.

In the case of landscape character areas of limited extent, the separation distances for larger turbines in particular mean that, in theory, only one grouping would be comfortably accommodated within the area. The separation distance may then apply between a development in that area and a similar size development in an adjacent landscape character area.

In the case of extensions to, or repowering of existing windfarms it will be necessary to assess the potential change to wind turbine landscape type that could result from increased turbine size, increased numbers within a group and/or the reduced separation between turbine groups.

As the recommended distances are an approximate range it is emphasised that separation distances between specific proposals should be considered in more detail on a case by case basis.

6.2.4 Windfarm Extensions

In some cases, it is more appropriate to extend an existing windfarm than to create a new focus of development with a new set of separation distances. The acceptability of such extensions depends upon the extent to which the original approved site has occupied the space available and whether additional turbines will push on to visually sensitive areas or sensitive landscapes. Extensions should fit harmoniously to form a single coherent composition with the previously existing windfarm. SNH's guidance highlights the need for compatibility of design between existing windfarms and extensions; as well as the possibility of the extension 'outliving' the existing windfarm and standing on its own[13].

6.2.5 Re-powering of Existing Windfarms

Re-powering involves the replacement of existing turbines with more modern and generally much larger turbines located within the site of an existing windfarm. In practice, this will involve new turbine positions and different turbine separation distances set for the new parameters. Effectively, it involves the creation of a new windfarm on the site of an old one. In assessing the acceptability of such developments, it will be necessary to assess the potential change to wind turbine landscape type that could result from increased turbine size, as the scaling relationships of larger turbines and the associated Zones of Theoretical Visibility may be radically different and may exceed an established landscape capacity. There is no current accepted practice as to whether the existing windfarm should form part of the visual baseline for assessment. SNH states in its latest guidance that it is preparing separate guidance on repowering applications, however, they recommend that the baseline panorama is shown with the existing windfarm removed but that a visualisation comparing the existing and proposed windfarm is also prepared[14].

6.2.6 Other Factors which Influence Guidance

The generic capacity assessment for some landscape types does not cover the variation found between or even within individual geographical units of that type. This is usually because of one or two key landscape factors which override the characteristics including:

- All or part of the character area is much more prominent and visible than the bulk of the area covered by the landscape type;
- A particularly small area is covered by the character area compared with the main areas of the landscape type;
- Some or all of the character area lies in an area designated to protect a landscape (eg. National Scenic Area) or the setting and amenity of a settlement;
- Close proximity to other more sensitive neighbouring character areas which would be significantly affected by wind energy proposals otherwise suitable for the host character area.
- Close proximity to other landscape types, settlements or industry which reduces the sensitivity of a host landscape character area or part area compared with the bulk of the area covered by the landscape type.

A combination of any of these factors might limit the ability of a specific landscape character area or part of an area to accommodate a level of development otherwise acceptable to the type. The main areas are identified in Table 6.1 and Figures 6.1 to 6.4. Nevertheless, any specific development should be considered in more detail and also assessed against local factors where appropriate.

Finally, it is emphasised that this assessment is focused on landscape and visual issues. Areas which have been identified as suitable on this basis may be restricted by other unrelated factors such as protection of wildlife, effects on residential amenity, tourism and recreation, aviation restrictions, lack of grid connection or within the exclusion zone/ consultation zone of the seismological array at Eskdalemuir. Where particular significant non-landscape issues are known, which may conflict with the conclusions on landscape capacity, they are highlighted in the table. However, these issues are not comprehensively covered as they are not the subject of this assessment; but they are covered in the Council's Renewable Energy Supplementary Guidance.

[13] SNH (August 2017). *Siting and Designing Windfarms in the Landscape v3a* paras 4.16-17

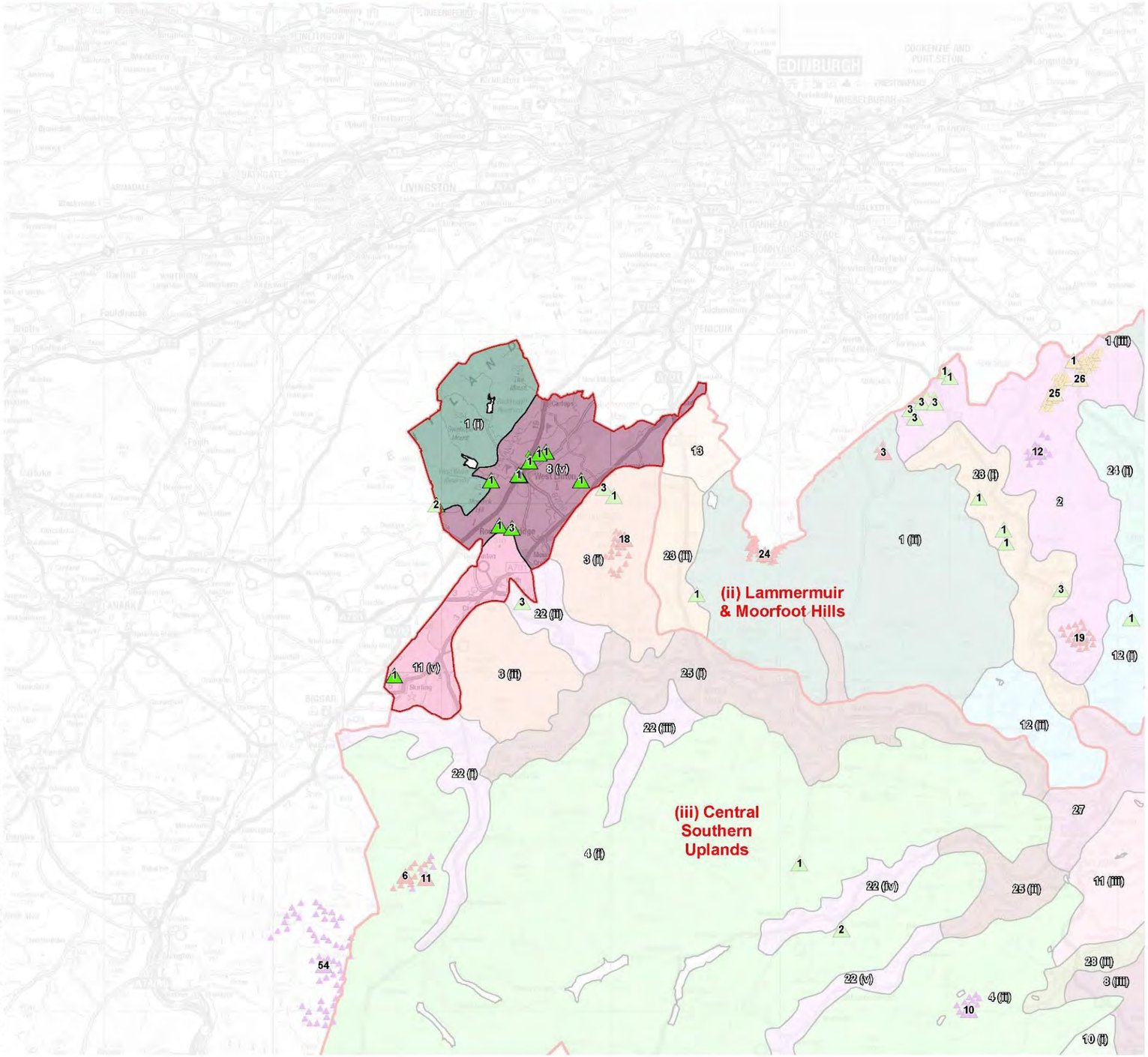
[14] SNH (Feb 2017). *Visual Representation of Wind Farms v2.2* section 6

Explanation of Table 6.1

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						**Analysis & Guidelines**
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<30m**	**30-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
Landscape Character Area: ***Name of Landscape Character Area/ Sub-Area***																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯			Brief description of consented wind energy developments (at time of report), including numbers size range, distribution, with key developments named.	Wind Turbine Landscape Type(s) within the area resulting from current consented levels of development (refer to **Table 2.1** for description of type and map in **Figure 6.2** for distribution of types across study area)	Proposed limits to future Wind Energy development expressed as a Wind Turbine Landscape Type (refer to **Table 2.1** for description of type and **Figure 6.3** for proposed distribution of types across the study area)	◯	◯	◯			**Landscape Analysis:** Brief description of key qualities and characteristics of the landscape character area/ sub-area affecting its capacity to accommodate different types of wind turbine development. **Development Capacity:** Brief comment on landscape capacity and on current developments and future proposals in relation to landscape capacity. **Where relevant, the most significant non-landscape constraints are highlighted for areas. As the study is focussed on landscape matters, details of these constraints are for information only and do not constitute a comprehensive list.**
											Max. Numbers in Group Suggested range/ maximum number of turbines in groupings, including for turbines in future extensions, to ensure capacity is not exceeded	*1-3*	*1-3*					
											Min Group Separation Distances (km) Suggested separation distance between turbine groupings to ensure capacity is not exceeded	*2-4*	*3-5*					
Assessment of landscape sensitivity and value of the landscape character area or sub-area (from detailed assessment in **Appendix 5**)				Assessment of landscape capacity for different turbine sizes derived from the sensitivity and value assessment and mapped in **Figures 6.1a-e**. This represents the 'underlying' capacity of the landscape and does not take into account the cumulative effects of existing/ consented wind energy development.							Residual landscape capacity for development of different turbine size categories. This is derived from the underlying landscape capacity and the proposed limits to future development by considering the extent to which current wind energy development already occupies the underlying landscape capacity							

Figure 6.1 (i) - Midland Valley Regional Area



Legend

- Regional Landscape Areas
- Landscape Character Areas

Windfarm: Status, Height Category

- Operational / Consented, Cat 1: 15 to <35m
- Operational / Consented, Cat 2: 35 to <50m
- Operational / Consented, Cat 3: 50 to <80m
- Operational / Consented, Cat 4: 80 to <120m
- Operational / Consented, Cat 5: 120m+

Landscape Character Areas:

1 - Dissected Plateau Moorland
(i) Western Pentlands

8 - Rolling Farmland
(v) West Linton Synclinal Belt

11 - Grassland with Hills
(v) Skirling

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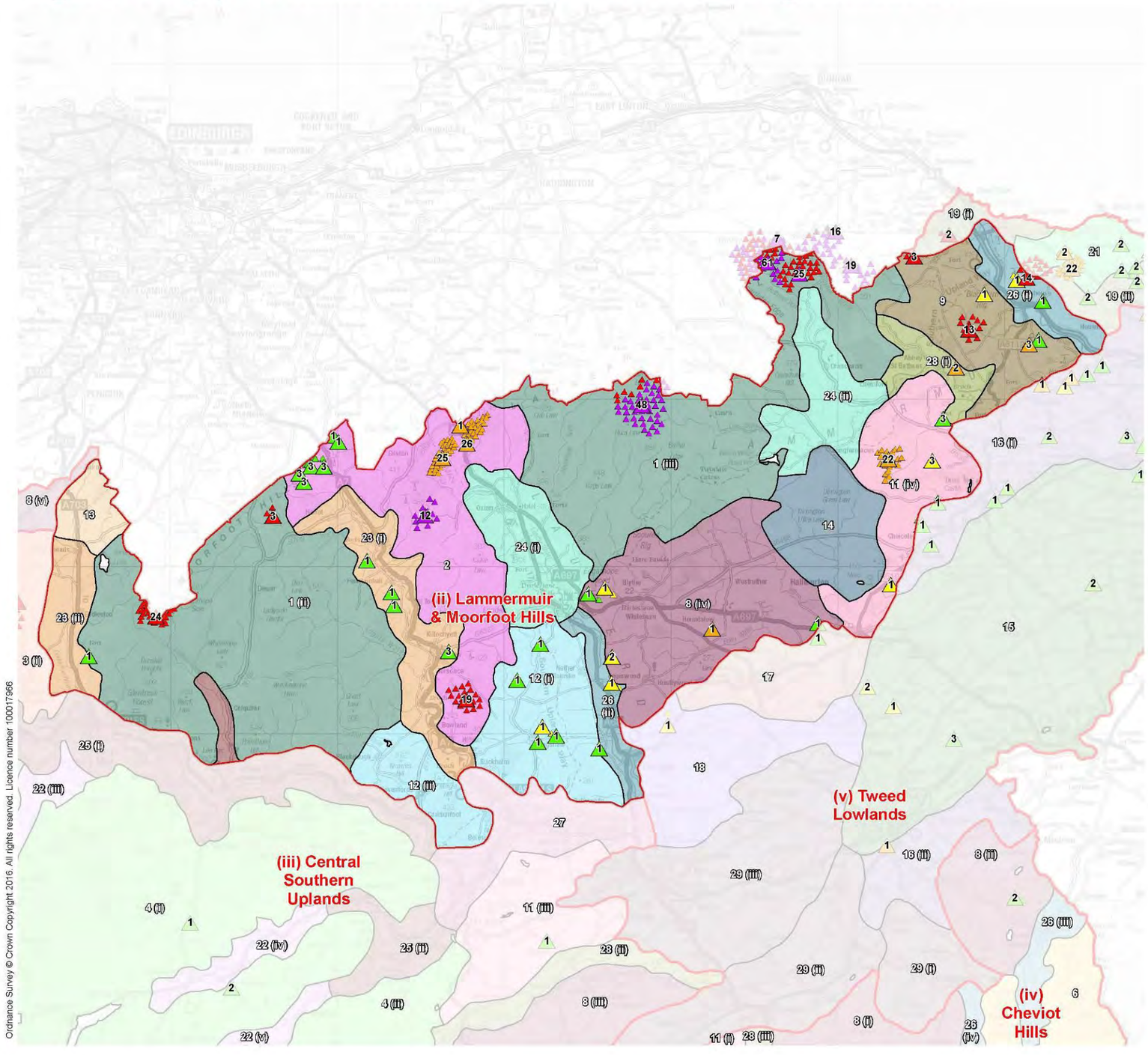
Table 6.1(i). Summary of Landscape Capacity and Cumulative Effects and Guidance for Future Wind Energy Development – Midland Valley

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
1. Dissected Plateau Moorland: *(i) Western Pentlands*																	
Med	Med/ High	**Med/ High**	**High**	◯	◯	◯	◯	◯	There are three turbines under 35m in adjacent *Rolling Farmland* and/or on the periphery of this LCA	***Upland with No Wind turbines/ Occ. Wind Turbines***	***Upland with No Wind turbines/ Occ. Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis:** The large scale and undulating landform of the Dissected Plateau Moorlands is generally suitable for larger scale wind energy development. However, the western slopes and highest hills of the Western Pentlands are distinctive prominent features visible from settlements and key transport routes in the Midland Valley. The Western Pentlands LCA has a higher value due to the Pentlands Regional Park to the immediate northeast, north and north west and the SLA designation covering this LCA in recognition of its scenic qualities. **Development Capacity:** Turbines should be kept well back from the most prominent summits. This LCA is only suitable for single or paired turbines below 35m height, visually associated with farmsteads in lower elevated/ peripheral areas.
											Max. Numbers in Group	*1-2*					
											Min Group Separation Distances (km)	*2-4*					
8. Rolling Farmland: *(v) West Linton*																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	There are up to a dozen turbines under 35m within or immediately adjacent to this LCA.	***Upland Fringe with Occ. Wind Turbines***	***Upland Fringe with Occ. Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis:** Medium scale farmland and small settlements set between hills. The southwestern part is predominantly enclosed farmland, whereas the northeastern rises to higher ground with forestry, towards Auchencorth Moss. The western part of the LCA is part of the Pentlands SLA and influenced by the Pentlands Regional Park outwith the SBC area. **Development Capacity:** The area has medium capacity for single or small groups up to 3no. Turbines below 35m height and low capacity for single turbines below 50m height. Turbine development would be better accommodated in this LCA if visually associated with farmsteads and small settlements, although there is scope for the larger turbines in the larger scale landscape of the northeastern part.
											Max. Numbers in Group	*1-3*	*1*				
											Min Group Separation Distances (km)	*1-2*	*4*				
11. Grassland with Hills: *(v) Skirling*																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	There are 5 turbines under 35m within or immediately adjacent to this LCA.	***Upland Fringe with Occ. Wind Turbines/ no Wind Turbines***	***Upland Fringe with Occ. Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis:** Medium scale improved hilly pastureland with occasional small settlements. Hills of modest scale, 100-150m higher than surroundings. The area is visible from a number of local high points including the Pentland Hills and the regional landmark/ viewpoint of Tinto Hill. The south eastern area of this LCA is part of a larger SLA. **Development Capacity:** This LCA has a low capacity for individual turbines up to 50m high. Turbines should be sited to avoid negative impacts on the SLA. Turbine development would be better accommodated in association with farmsteads and read as part of agricultural development, although the largest turbines may be best located near the forested area
											Max. Numbers in Group	*1-3*	*1*				
											Min Group Separation Distances (km)	*1-2*	*4*				

Figure 6.1 (ii) - Lammermuir & Moorfoot Hills Regional Area



Legend

- Regional Landscape Areas
- Landscape Character Areas

Windfarm: Status, Height Category

- Operational / Consented, Cat 1: 15 to <35m
- Operational / Consented, Cat 2: 35 to <50m
- Operational / Consented, Cat 3: 50 to <80m
- Operational / Consented, Cat 4: 80 to <120m
- Operational / Consented, Cat 5: 120m+

Landscape Character Areas:

1 - Dissected Plateau Moorland
(ii) Moorfoot Plateau
(iii) Lammermuir Hills

2 - Plateau Grassland
2 Lauder Common

8 - Rolling Farmland
(iv) Westruther Platform

9 - Platform Farmland
9 Eye Water Platform

11 - Grassland with Hills
(iv) Knock Hill

12 - Undulating Grassland
(i) East Gala
(ii) West Gala

13 - Poor Rough Grassland
13 Leadburn

14 - Upland Fringe Moorland
14 Greenlaw Common

23 - Pastoral Upland Valley
(i) Gala Water
(ii) Eddleston Water

24 - Upland Valley with Farmland
(i) Upper Leader
(ii) Upper Whiteadder

25 - Upland Valley with Woodland
(i) Middle Tweed

26 - Pastoral Upland Fringe Valley
(i) Eye Water
(ii) Lower Leader

28 - Wooded Upland Fringe Valley
(i) Middle Whiteadder

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Table 6.1(ii). Summary of Landscape Capacity and Cumulative Effects and Guidance for Future Wind Energy Development – Lammermuir and Moorfoot Hills

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
1. Dissected Plateau Moorland: *(ii) Moorfoot Plateau*																	
Low/ Med	Med	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	The Moorfoot Plateau is relatively undeveloped, there are two windfarms: Bowbeat has 24x86m turbines and Carcant has 3x110m. There is also one consented turbine under 35m high.	***Upland with No Wind turbines/ Occ. Wind Turbines***	***Uplands with Wind Turbines/ with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis:** The Moorfoots are a range of large scale rolling and undulating moorland hills dissected by steep sided valleys. Largely unforested except to the south. They form a prominent escarpment and skyline above the Esk valley seen from Edinburgh and the Midlothian towns to the north and form the backdrop to the Tweed valley and its settlements to the south. The range is divided into western and eastern halves by a steep sided cleft containing the B709 road to Innerleithen. The southern edge of the Moorfoot Hills lie in the Tweed Valley SLA and the northern escarpment is locally designated in Midlothian.
											Max. Numbers in Group	*3*	*1*	*25*	*25*	*10*	**Development Capacity:** The LCA could accommodate further larger scale wind energy development. Turbines of 120m+ could be accommodated in smaller numbers where topography aids screening. Careful design consideration should be given to extensions/ repowering of existing developments. Turbine developments should not adversely encroach onto the visually prominent escarpment and skyline facing Edinburgh or the setting of the Tweed Valley to the south. There is capacity for smaller sized turbines in lower areas, best accommodated in association with farmsteads and dwellings and visually read as domestic/ farm scale generation.
											Min Group Separation Distances (km)	*1-2*	*2-4*	*5-10*	*5-10*	*10*	**Significant non Landscape Constraint: The large Moorfoot Hills SSSI and SAC in the eastern area, designated for birds, blanket peat and heath.**
1. Dissected Plateau Moorland: *(iii) Lammermuir Plateau*																	
Low/ Med	Med	**Med**	**High**	◯	◯	◯	◯	◯	Extensive large scale windfarm development within and adjacent to this area. There is an extensive cluster of windfarms (Crystal Rig/ Aikengall) on the border of ELC and SBC in the east of the LCA with 127 turbines between 100 and 145m tall operating or consented. Fallago Rig windfarm has 48 turbines at 110/125m. Dun Law windfarm with 61 turbines of 67-75m and Pogbie and Keith Hill (11 turbines) are located	***Wind Turbine Landscape/ Uplands with Wind Turbines /Occasional Wind Turbines***	***Wind Turbine Landscape/ Uplands with Wind Turbines /Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis:** The Lammermuir Hills is an extensive area of undulating heather moorland plateau with deeply-riven valleys straddling Scottish Borders and East Lothian between the A68 and the coastal fringes of the North Sea. The northern and eastern escarpments form a backdrop with wide undulating skylines to the surrounding lowland and coastal areas. The vast majority of this LCA is covered by local landscape designation in Scottish Borders and East Lothian. The long distance Southern Upland Way runs along the south of this LCA in Scottish Borders. Extensive large scale wind energy developments are located within and adjacent to the LCA: the northern part of the LCA on the boundary with East Lothian is reaching capacity and becoming a *Landscape with Wind Turbines* with areas of *Wind Turbine Landscape* around Crystal Rig/Aikengall and Fallago Rig.
											Max. Numbers in Group	*3*	*1*	*10*	*50-100*	*50-100*	**Development Capacity:** The Lammermuir Plateau has been subject to extensive windfarm development and much of its underlying capacity is occupied. There is capacity for limited additional development of larger turbines provided this is associated with existing windfarms. Extensions should maintain significant separation between the established wind energy clusters, taking advantage of areas with topographical containment and lower intervisibility to avoid increasing the overall prominence of existing windfarms beyond the LCA. There is capacity for smaller sized turbines in
											Min Group Separation Distances (km)	*1-2*	*2-4*	*5-10*	*5-10*	*10*	

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
									immediately to the west and have some visual influence on the LCA.								peripheral areas or valleys where sited alongside farmsteads and dwellings, and read as domestic/agricultural generation, well separated from the larger developments in the highest areas.
2. Plateau Grassland: ***Lauder Common***																	
Med	Med	**Med**	**Low/ Med**	◯	◯	◯	◯	◯	Currently 61 turbines of 67-75m at Dun Law in the north of the LCA and Pogbie and Keith Hill (11 turbines) are located immediately to the north in East Lothian. To the south/ south west of this there are 12x125m turbines at Toddleburn and in the south of this LCA Long Park has 19x110m turbines. There is also a cluster of approximately 14no turbines under 35m in the north west along the border with Midlothian.	***Uplands with Wind Turbines/ Uplands with Occasional Wind Turbines. Wind Turbine Landscape in the north***	***Uplands with Wind Turbines/ Wind Turbine Landscape in the north.***	◯	◯	◯	◯	◯	**Landscape Analysis:** This is the only area of *Plateau Grassland* in Scottish Borders. It forms a broad ridge of gently rolling hills separating the Gala and Leader Waters between the Lammermuir and Moorfoot Hills, and forming a prominent northern escarpment at Soutra Hill. This is a large scale landscape but is lower than the surrounding *Dissected Plateau Moorland* and of significantly lesser extent. There is limited heather moorland and a much greater proportion of grassland, much of which is enclosed and improved with surrounding coniferous shelterbelts and plantations. There are scattered farms around the edges. The area east of the A68 lies on the edge of the Lammermuir Hills SLA, otherwise there are no landscape designations.
											Max. Numbers in Group	*1-3*	*1-3*	*50*	*25*	*25*	
											Min Group Separation Distances (km)	*1-2*	*2-4*	*5-10*	*5-10*	*10*	**Development Capacity:** This landscape could accommodate limited additional windfarm development. However, given existing developments, overall cumulative impact and potential 'saturation' of underlying capacity is a major consideration. Larger scale wind energy development should be well-separated from other clusters and located away from sensitive locations including around the B6362 Lauder-Stow road and the visually prominent outer slopes, taking advantage of the topographical containment in wider sections of the elevated plateau. Smaller turbines could also be accommodated, but in more limited group sizes more closely associated with farmsteads and enclosed fields. Cumulative considerations also apply and smaller turbines should be located away from areas with larger turbines. Repowering or further extension of the Dun Law cluster would need to take very careful account of existing turbine sizes and the visual sensitivity of the skyline in views from north or south.
8. Rolling Farmland: ***(iv) Westruther Platform***																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	There are several single/ paired turbines under 35m or 50m located mainly on the western fringes of this LCA, with one 67m turbine centrally located.	***Upland Fringe with Occ./ no Wind Turbines***	***Upland Fringe with Occ. Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis:** Medium scale rolling farmland and small settlements set between the Lammermuir Hills to the north and the Tweed Lowlands to the south. Some more prominent hills to the west and occasional small scale valleys. The northern edge rises to meet the *Dissected Plateau* of the Lammermuirs.
											Max. Numbers in Group	*3*	*2*				**Development Capacity:** Due to the undulating upland fringe, settled farmland character of this landscape there is limited capacity only for turbines below 50m, with no capacity for larger turbines due to scale issues and the potential for wide visibility. Capacity is locally constrained by a number of landscape and visual sensitivities: • the presence of numerous individual farmsteads and small settlements • more prominent landforms such as Boon and Knock Hill and smaller scale valleys draining west • in the west by the presence of important transport routes (A68 just outwith the LCA) and the SuW that increase visual sensitivity and recreational value.
											Min Group Separation Distances (km)	*1-2*	*2-4*				

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
																	• The southern area of the LCA (south of the A697) also has a higher intervisibility. Larger turbines should be located in areas with a degree of containment and away from prominent landforms and escarpments to reduce their wider visibility.
9. Platform Farmland: ***Eye Water Platform***																	
Med/ High	Med/ High	**Med/ High**	**Med**	●	●	●	◯	◯	3nr consented 115m turbines at Hoprigshiel at the northern edge; 3nr 79.5m turbines at Brockholes towards the SE. One consented windfarm of 13x100m turbines at Quixwood in the middle of the LCA. 7 further consented <80m turbines within/ adjacent. The north of this LCA is very close to the consented 19x140m turbines of Akingall II, an extension to the existing Crystal Rig/ Aikengall. Operational Drone Hill and consented Pen-manshiel windfarms are visible to the east	***Upland Fringe with Wind Turbines***	***Upland Fringe with Wind Turbines***	●	◯	◯	◯	◯	**Landscape Analysis:** Medium to large scale farmland with gently undulating landform and scattered dwellings set between two narrow valleys; transitional between the Lammermuir Hills to the northwest and the Tweed Lowlands to the south. Although there are scattered shelterbelts, there would be high intervisbility for tall structures across the area and around the edges. A small area in the north west is part of the Lammermuir Hills SLA and the Southern Upland Way passes through in a south west to north east direction between St Bathan and Penmanshiel Wood. The important transport routes along the eastern coastal area and higher intervisibility of the eastern outer slopes and southern area create areas not suitable for significant turbine development in the eastern to southern extents of the LCA. **Development Capacity:** Due to the medium-large scale and settled landuse of this landscape there is no underlying capacity for the largest scale of turbine. There is limited underlying capacity for turbines up to 120m. However, due to the central location of Quixwood windfarm, presence of Hoprigshiels in the north and proximity of Aikengall II extension, capacity has been substantially utilised, leaving very limited capacity only for separate developments of up to 3 turbines under 50m tall.
											Max. Numbers in Group	*3*	*3*				
											Min Group Separation Distances (km)	*1-2*	*2-4*				
11. Grassland with Hills: ***(iv) Knock Hill***																	
Med	Med/ High	**Med/ High**	**Med/ High**	●	●	●	◯	◯	There is currently one windfarm of 22x78m turbines at Black Hill approximately in the north of this LCA, and a cluster of 3no. mid-sized turbines to the east of this. Within the north, located on the boundary there are three existing 15-35m turbines and one 35-50m turbine in the south.	***Upland Fringe with Occasional Wind Turbines***	***Upland Fringe with Occasional Wind Turbines***	●	◯	◯	◯	◯	**Landscape Analysis:** A medium to large scale landscape with broad sloping pastureland accentuated by groups of steeper hills. Extensive shelterbelts and valley woodlands in the lower areas, with scattered small-scale settlement. A transition between the Lammermuir Hills to the north and the Tweed Lowlands to the south. The Southern Upland Way passes through the northern edge of this landscape and the GDL of Duns Castle lies in the east. The northeastern edge has a prominent hillfort overlooking the narrow Whiteadder valley, Edin's Hall broch and Abbey St Bathans (see 28(i) below). **Development Capacity:** There is no underlying capacity for the largest scale of turbine. There is underlying medium capacity for turbines up to 80m. However, due to presence of Black Hill windfarm there is very limited remaining capacity in this LCA. Individual or small groups of turbines up to 50m will be more easily accommodated especially if associated with farmstead developments and in areas well separated from
											Max. Numbers in Group	*3*	*3*				
											Min Group Separation Distances (km)	*1-2*	*2-4*				

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
																	Black Hill. If additional windfarms are added to this landscape it is at risk of becoming a *Landscape with Wind turbines*. Additional turbine development within this LCA should be sited to minimise cumulative effects on the Southern Upland Way and effects on the setting of Cockburn Law hillfort, Edin's Hall Broch and Abbey St Bathans.
12. Undulating Grassland: *(i) East Gala*																	
Med	High	**Med/ High**	**Med/ High**	●	◯	◯	◯	◯	Currently there are 5no. 15-30m and one 30-50m turbine. The 19 turbines of Long Park windfarm lie within 1-3km in *Plateau Grassland* to the west.	***Upland Fringe with Occasional Wind Turbines***	***Upland Fringe with Occasional Wind Turbines***	●	◯	◯	◯	◯	**Landscape Analysis:** A medium to large scale landscape of undulating hills with steep sided valleys. Mainly comprising enclosed grazing land with drystone dykes, shelterbelts and small areas of forestry. Small settlements and farmsteads linked by minor roads. The eastern area forms the northern backdrop to Galashiels and the southern backdrop to Lauder. The southeastern corner overlaps with the Eildon Hills & Leaderfoot NSA and the Southern Upland Way passes north through the area. **Development Capacity:** There is no underlying capacity for larger turbines or commercial windfarms due to proximity to settlements and the area having a higher visual sensitivity. There is limited capacity for individual turbines below 50m tall within the more isolated or rural areas of the LCA, sited away from settlements and the Southern Upland Way and outside the NSA.
											Max. Numbers in Group	*3*	*1*				
											Min Group Separation Distances (km)	*1-2*	*2-4*				
12. Undulating Grassland: *(ii) West Gala*																	
Med	High	**Med/ High**	**Med/ High**	●	◯	◯	◯	◯	There are currently no wind turbines or windfarms within the West Gala LCA. The closest turbines are at Long Park, some 3km to the northeast.	***Upland Fringe with Occasional Wind Turbines***	***Upland Fringe with Occasional Wind Turbines***	●	◯	◯	◯	◯	**Landscape Analysis**: See above. The western area is smaller than the east and contains the village of Clovenfords. It forms the western backdrop to Galashiels. The southern and southeastern parts lie in the Tweed, Ettrick and Yarrow Confluence SLA and the Fairnilee GDL. The SUW passes across the southeastern end. **Development Capacity:** Areas in the northwest and centre of West Gala have capacity for individual or small clusters of turbines below 50m tall, associated with farms and relating to agricultural landuse patterns. Care should be taken with the settings of Galashiels, Clovenfords, Fairilee and the Southern Upland Way.
											Max. Numbers in Group	*3*	*1*				
											Min Group Separation Distances (km)	*1-2*	*2-4*				
13. Poor Rough Grasslands: *Leadburn*																	
Med	Med/ High	**Med**	**Low/ Med**	●	●	◯	◯	◯	There are currently no wind turbines or windfarms within or near this LCA.	***Upland Fringe with No Wind Turbines***	***Upland Fringe with Occasional Wind Turbines***	●	●	◯	◯	◯	**Landscape Analysis**: Much of this area is a large scale simple upland fringe landscape. However it is constrained in area and has smaller scale landscape references in terms of tree belts, farms and smaller topographic features in the west. It lies between two visually sensitive hill ranges of the Pentlands and Moorfoots and close to settlements. **Development Capacity:** This landscape has the scale and landform to accommodate larger size turbines. However it is constrained by limited area and visual sensitivities. There is scope for smaller size turbines (up to 50m) but very limited capacity for larger turbines below the height of 80m without turbines beginning to dominate the area, as was determined by the dismissal of Mount Lothian windfarm appeal (9x102m turbines) in neighbouring Midlothian.
											Max. Numbers in Group	*5*	*5*	*1*			
											Min Group Separation Distances (km)	*1-2*	*2-4*	*3-5*			

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
14. Upland Fringe Moorland: ***Greenlaw Common***																	
Low/ Med	Med/ High	**Med**	**Med/ High**	◯	◯	◯	◯	◯	There are currently no wind turbines or windfarms within this LCA. Black Hill windfarm with 19x75m turbines lies within 1-3km to the northeast.	***Upland Fringe with No Wind Turbines***	***Upland Fringe with No/ Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: A large scale simple moorland landscape, but limited in area. The landform is tilted to the south and visibility across it is widespread. Most of the area is part of the extensive Lammermuir Hills SLA and is characterised by the two distinctive and prominent Dirrington Law hills. **Development Capacity:** This LCA could accommodate smaller sized turbines associated with farms close to roads and around the edges. Turbines should be sited close to individual farmsteads and properties to reflect the domestic scale. The area on and around the Dirrington Laws has very limited capacity due to the distinctive smooth rounded profile of these prominent hills and their limited height. **Significant Non Landscape Constraint. The large Greenlaw Moor SSSI south of the B6456, designated for geology, raised bog and birds.**
											Max. Numbers in Group	*3*	*1*				
											Min Group Separation Distances (km)	*1-2*	*3-5*				
23. Pastoral Upland Valley: ***(i) Gala Water***																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	3 turbines below 35m tall near Fountainhall and 3 near Stow. Toddleburn and Long Park windfarms in adjacent *Plateau Grassland* LCA are visible in parts of the valley.	***River Valley with Occasional/ No Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: A medium scale, flat bottomed, tightly meandering valley with rounded enclosing slopes. Well settled with villages and farms, enclosed farmland and many small woodlands and shelterbelts creating diverse framed views. The Gala Water LCA contains the A7 tourist route and the Borders Railway Line. The southernmost part of the LCA borders the town of Galashiels. **Development Capacity:** This LCA has limited capacity for smaller sized turbines as individuals or small groups of 3 or fewer. No capacity for larger commercial scale turbines or windfarms due to the modest scale of the landscape and its diverse character together with the sensitive A7 tourist route and Borders Railway. The steep valley sides can be highly prominent from the valley floor and turbines should be carefully and sparingly located.
											Max. Numbers in Group	*3*	*1*				
											Min Group Separation Distances (km)	*1-2*	*3-5*				
23. Pastoral Upland Valley: ***(ii) Eddleston Water***																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	There are currently no wind turbines or windfarms within this LCA. Bowbeat windfarm lies within 3km to the east but is only visible from higher areas.	***River Valley with No Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: A medium scale, flat bottomed valley with rounded enclosing slopes, steep on the eastern side and the south. Well settled with Eddleston village, large houses and farms, enclosed farmland and many small woodlands and shelterbelts. The Eddleston LCA contains the busy A703 and southernmost part lies within the Tweed Valley SLA close to the town of Peebles. **Development Capacity:** Limited capacity for smaller sized turbines as individual turbines or small groups of 3 or less turbines. There is no capacity for larger commercial scale turbines or windfarms due to the modest scale of the landscape and its diverse character together with the sensitive A7 tourist route and Borders Railway. The steep valley sides can be highly prominent from the valley floor and turbines should be carefully and sparingly located.
											Max. Numbers in Group	*3*	*1*				
											Min Group Separation Distances (km)	*1-2*	*3-5*				

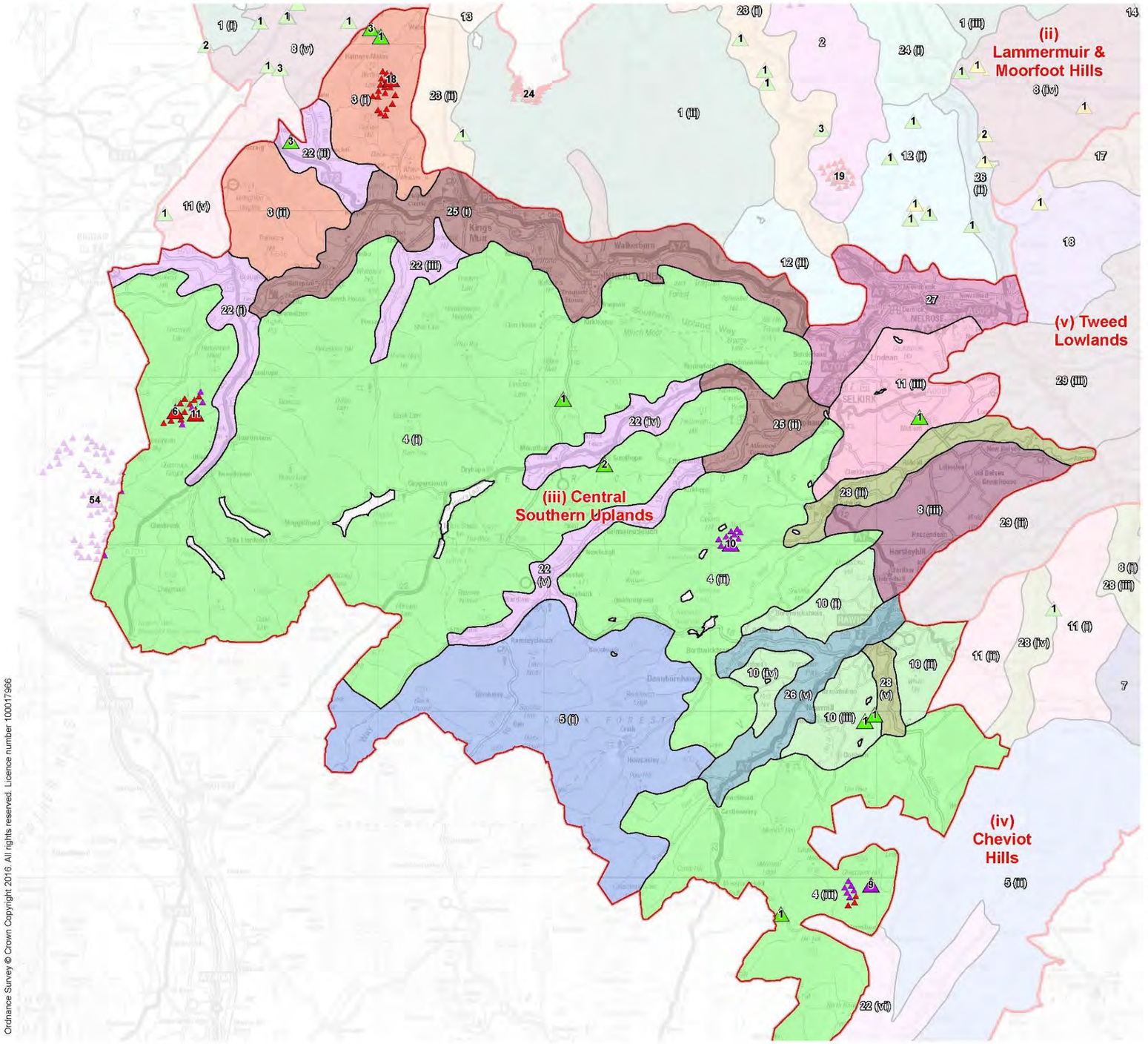
Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
24. Upland Valley with Farmland: *(i) Upper Leader*																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	There are currently no wind turbines or windfarms within this LCA. Dun Law windfarm lies within 1km to the north and Toddleburn 1.5km to the west. These are visible from northern areas.	***River Valley with No Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: A medium to large scale broad open valley with gently rounded enclosing slopes. Well settled with villages and farms and enclosed farmland with small woodlands and shelterbelts. The LCA contains the busy A68 and A697 roads. The eastern side lies within the edge of the Lammermuir Hills SLA and the southernmost part includes the town of Lauder and Thirlestane Castle. The southern area contains the Southern Upland Way **Development Capacity:** The central, wider less prominent areas of this valley LCA have capacity for individuals or groups of up to 3 smaller sized turbines. These will be better accommodated if the turbines are visually associated with agricultural patterns, farmsteads and individual properties or with existing settlement. Siting of turbines in the north should avoid the potential for cumulative effects with the neighbouring windfarms and care should be taken with the settings of Oxton and Lauder.
											Max. Numbers in Group	*3*	*1*				
											Min Group Separation Distances (km)	*1-2*	*3-5*				
24. Upland Valley with Farmland: *(ii) Upper Whiteadder*																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	There are currently no wind turbines or windfarms within this LCA. Crystal Rig windfarm lies within 1km to the north and turbines of this and Black Hill are visible from higher areas.	***River Valley with No Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Two (Whiteadder and Dye) medium scale open valleys with rounded enclosing slopes. Settled with villages, farms and enclosed farmland with small woodlands and shelterbelts. The LCA contains B and minor roads. Almost all lies within the Lammermuir Hills SLA and the southernmost part includes the village of Longformacus. The southern area of this LCA contains the Southern Upland Way **Development Capacity:** These valleys are of a smaller scale and width than the Upper Leader and less busy. There is capacity for individuals or groups of up to 3 smaller sized turbines; best accommodated if visually associated with agricultural patterns, farmsteads or individual properties. Turbines in the north and south of the LCA should be sited to avoid the potential for cumulative effects with the neighbouring Crystal Rig and Black Hill windfarms and care should be taken with the setting of Longformacus.
											Max. Numbers in Group	*3*	*1*				
											Min Group Separation Distances (km)	*1-2*	*3-5*				
25. Upland Valley with Woodland: *(i) Middle Tweed (Leithen Water)*																	
High	High	**High**	**High**	◯	◯	◯	◯	◯	There are currently no wind turbines or windfarms within or near this part of the LCA.	***River Valley with No Wind Turbines***	***River Valley with No/ Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: The Leithen Water is a side valley to the Tweed (see Figure 6.1(iii) and table below for main area). Small scale meandering valley set in *Dissected Plateau Moorland* hills with steep rounded enclosing slopes. Occasional farms and enclosed farmland with shelterbelts and plantations. The LCA contains B709 to Edinburgh. Southern end is within the River Tweed SLA **Development Capacity:** the intimate enclosed scale of the valley means capacity is restricted to individual turbines up to 20m tall, visually associated with agricultural patterns, farmsteads and individual properties.
											Max. Numbers in Group	*1*					
											Min Group Separation Distances (km)	*2-3*					

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
26. Pastoral Upland Fringe Valley: *(ii) Lower Leader*																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	There are currently one <35m and three 35-50m wind turbines within or near this LCA.	***River Valley with No/ Occasional Wind Turbines***	***River Valley with No/ Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Medium scale well settled pastoral valley set between low grassland hills with shallow enclosing slopes. The Lower Leader LCA contains A68 to Edinburgh and the southern end lies within the Leader and Eildon Hills NSA. The settlement of Earlston lies just north of the NSA. **Development Capacity:** This LCA has limited capacity for individual smaller turbines only. There is no capacity for commercial scale developments. Capacity is reduced by the important transportation links between England and Scotland (A68) increasing visual sensitivity of this area. The southern area of the LCA has no capacity due to the NSA designation.
											Max. Numbers in Group	*1*	*1*				
											Min Group Separation Distances (km)	*2-3*	*3-5*				
26. Pastoral Upland Fringe Valley: *(i) Eye Water*																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	One <35m and one 35-50m wind turbine within this LCA. Three 100m turbines of Penmanshiel windfarm lie within the northeastern edge and others have a visual influence.	***River Valley with No/ Occasional Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Medium scale well settled pastoral valley with shallow enclosing slopes set between low grassland hills. The LCA contains the A1 trunk route and West Coast mainline to Edinburgh and the northern end lies within the Berwickshire Coast SLA and is crossed by the Southern Upland Way. **Development Capacity:** This LCA has limited capacity for individual or small groups of smaller turbines only. There is no capacity for commercial scale developments. Capacity is reduced by the important transportation links between England and Scotland, increasing visual sensitivity of this area and by the potential for cumulative effects with nearby Penmanshiel windfarm.
											Max. Numbers in Group	*1-3*					
											Min Group Separation Distances (km)	*2-3*					
28. Wooded Upland Fringe Valley: *(i) Middle Whiteadder*																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	Two consented 54m wind turbines within upper edges of this LCA. Three 19.5m turbines lie just to the southwest.	***River Valley with No/ Occasional Wind Turbines***	***River Valley with No/ Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Small scale narrow meandering valleys (Monynut Water and Middle Whiteadder) with steep densely wooded enclosing slopes. Set between the eastern slopes of the Lammermuir Hills and rounded farmland hills. Two small settlements at Abbey St Bathans and Ellemford. The LCA overlaps with the Lammermuir Hills SLA and is crossed by the Southern Upland Way. There are a number of hillforts and brochs in or adjacent to the area, including Edin's Hall and Cockburn Law. **Development Capacity:** This small scale intimate sheltered character of this LCA has limited capacity for individual smaller turbines only. Turbines should be located on the outer edges of the LCA to minimise effects on the valley floor. There is no capacity for commercial scale developments. The setting of the settlements hillforts/ brochs should be respected.
											Max. Numbers in Group	*1*					
											Min Group Separation Distances (km)	*2-3*					

Figure 6.1 (iii) - Central Southern Uplands



Legend

- Regional Landscape Areas
- Landscape Character Areas

Windfarm: Status, Height Category

- Operational / Consented, Cat 1: 15 to <35m
- Operational / Consented, Cat 2: 35 to <50m
- Operational / Consented, Cat 3: 50 to <80m
- Operational / Consented, Cat 4: 80 to <120m
- Operational / Consented, Cat 5: 120m+

Landscape Character Areas:

3 - Plateau Outliers
(i) Eddleston / Lyne Interfluve
(ii) Broughton Heights

4 - Southern Uplands with Scattered Forest
(i) Broadlaw Group
(ii) Dun Knowe Group
(iii) Cauldcleuch Head Group

5 - Southern Uplands Forest Covered
(i) Craik

8 - Rolling Farmland
(iii) Minto Hills

10 - Grassland with Rock Outcrops
(i) Whitehaugh
(ii) Midgard
(iii) Allan Water
(iv) Chinsholme

11 - Grassland with Hills
(iii) Eildon Hills

22 - Upland Valley with Pastoral Floor
(i) Upper Tweed / Biggar Water
(ii) Lyne Water
(iii) Manor Water
(iv) Upper Yarrow
(v) Upper Ettrick

25 - Upland Valley with Woodland
(i) Middle Tweed
(ii) Lower Ettrick / Yarrow

26 - Pastoral Upland Valley Fringe
(v) Upper Teviot / Bothwick Water

27 - Upland Fringe Valley with Settlements
27 Tweed / Gala / Ettrick Confluence

28 - Wooded Upland Fringe Valley
(ii) Ale Water
(v) Slitrig Water

8558_GIS_204.mxd

Table 6.1(iii). Summary of Landscape Capacity and Cumulative Effects and Guidance for Future Wind Energy Development – Central Southern Uplands

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
3. Plateau Outliers: *(i) Eddleston/ Lyne Interfluve*																	
Med	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	Cloich Forest (18x115m consented by appeal.4no. consented 15-35m turbines in the north eastern part of the LCA.	***Uplands with Wind Turbines/ No Wind Turbines***	***Uplands with Wind Turbines/ Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis:** A compact range of large scale rolling hills separated from the main upland areas by steep sided river valleys. Settlement and enclosed land is located around the edges with internal areas open grazing or forestry. The southeastern corner is designated as an SLA and Upper Tweeddale NSA, providing the setting for Peebles and the Tweed Valley. All sides are surrounded by main roads and the northwestern edge is visible from the main roads between Edinburgh and the Clyde Valley. **Development Capacity:** Due to higher visual sensitivity and landscape value, the Eddleston/ Lyne Interfluve area has a low underlying capacity for turbines at the lower end of the 50-80m range in small groups within the central areas of the LCA. However, the consent of Cloich Forest windfarm has occupied all capacity for larger turbines; this being underlined by the simultaneous dismissal of nearby Hag Law windfarm. Turbines <50m should be sited around the edges, where they are well removed from the consented windfarm and can be visually associated with farmsteads, individual properties and small settlements or where they follow agricultural patterns in the landscape. No turbines in the southeastern corner due to landscape designations and distinctive fortified hills.
											Max. Numbers in Group	*1-3*	*1-3*				
											Min Group Separation Distances (km)	*1-2*	*3-5*				
3. Plateau Outliers: *(ii) Broughton Heights*																	
Med	Med/ High	**Med/ High**	**High**	◯	◯	◯	◯	◯	There are no turbines or windfarms within the Broughton Heights LCA.	***Uplands with No Wind turbines***	***Uplands with Occasional Wind Turbines/ No Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis:** Similar to Eddleston/ Lyne Interfluve but with higher hills and less forestry. All of the LCA is designated: as part of the Tweedsmuir Uplands SLA in the north and Upper Tweeddale NSA in the south. The John Buchan Way passes through the LCA. All sides are surrounded by main roads and the northwestern edge is visible from the main roads between Edinburgh and the Clyde Valley. **Development Capacity:** Due to higher visual sensitivity and high landscape value, Broughton Heights has no capacity for larger scale turbines and only low capacity for turbines under 50m, due the SLA and NSA designations and prominent outer slopes forming the skyline from lower elevations around the LCA. The outer slopes are prominent and visible from the valleys below, especially to the south and west of the LCA where they form the skyline of the NSA to the south and from the lower elevations to the west. These more prominent areas have no capacity for turbine development.
											Max. Numbers in Group	*1-3*	*1-3*				
											Min Group Separation Distances (km)	*1-2*	*3-5*				
4. Southern Uplands with Scattered Forest: *(i) Broadlaw Group*																	
Med	**Med/ High**	**Med**	**High**	◯	◯	◯	◯	◯	Currently Glenkerie windfarm (11x100/115m operational turbines and 6x125m consented) located within the	***Uplands with Occasional Wind Turbines and Uplands with no Wind Turbines (small***	***Mostly Uplands with No Wind Turbines. Small area in west Uplands with Wind Turbines and Wind***	◯	◯	◯	◯	◯	**Landscape Analysis**: A large scale rolling hill landscape with steep sided valleys and scattered coniferous forest. Several lochs/ reservoirs. The north eastern area of this LCA contains part of a NSA, the vast majority is covered by the extensive Tweedsmuir Uplands SLA and there is the Talla-Hart Fell Wild Land Area. The Southern Upland Way passes through the central/ eastern area of the LCA.

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
									western area of the LCA near the border with South Lanarkshire to the north of Tweedsmuir. Clyde and extension windfarm lies on the western boundary with 3 turbines lying within Scottish Borders. 3nr 15-35m turbines above the Yarrow Valley in the east.	***western area of Landscape with Wind Turbines)***	***Turbine Landscape***						**Development Capacity:** The western edge of this LCA is a *Landscape with Wind Turbines/ Wind Turbine Landscape* influenced by Clyde windfarm lying mainly outwith the SBC area. The majority of the internal area has topographical containment created by a large upland area and as a result has lower intervisibility. However, spur like landforms between river valleys increases prominence of eastern areas, with visual sensitivity increased by the presence of the Southern Upland Way. Extensive landscape designations, wild land qualities, prominent hilltops and recreational use reduces the capacity of this landscape for windfarm development, as demonstrated by the refusals on appeal of the Minch Moor and Broadmeadows proposals between the Tweed and Yarrow valleys. This large area with no windfarms or turbines should remain as a largely undeveloped gap between clusters of upland turbine development to the west and in the north and east of Scottish Borders. Capacity for the largest turbines only exists to the west of the A701 where these would be seen as an extension to the existing Clyde windfarm cluster within South Lanarkshire. The remaining area has very limited capacity for smaller size turbines as individuals or small groups associated with lower ground at farmsteads, individual properties and small groupings of properties. **Significant Non Landscape Constraints:** • **The southern tip of the LCA lies within the Eskdalemuir EKA Seismological Array 10km exclusion zone and the rest lies in the Statutory Safeguard Area** • **The large Tweedsmuir Hills SSSI lies east of the upper Tweed**
											Max. Numbers in Group	*1-3*	*1-3*	*1-3*	*5-10*	*5-10*	
											Min Group Separation Distances (km)	*1-2*	*3-5*	*3-5*	*5-10*	*5-10*	
4. Southern Uplands with Scattered Forest: ***(ii) Dun Knowe Group***																	
Med	**Low/ Med**	**Med**	**Med**	◯	◯	◯	◯	◯	Currently one medium sized windfarm consisting of 10x121m turbines to the west of Hawick (Langhope Rig).	***Central area of Uplands with Occasional Wind Turbines surrounding area is Uplands with No Wind Turbines***	***Uplands with Wind Turbines/ Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: This LCA, while extensive open hill country, is considerably lower and less wild or dramatic than Broad Law LCA. Most of the forest is concentrated centrally and highest hills to the west. There are no designations or long distance footpaths and there is little human settlement within and nearby. **Development Capacity:** The Dun Knowe Group has limited existing turbine development and could accommodate additional development with larger size turbines. The surrounding topography provides a degree of topographical containment for the largest turbines and intervisibility within the area is generally fairly low. However significant separation from Langhope Rig and careful siting would be required to avoid the cumulative issues leading to the dismissal of the Barrel Law application. Forestry removal should be mitigated, preferably through compensatory planting. Smaller scale turbines can be accommodated as individual turbines or as small groups or 3 or less and should be located alongside farmsteads and residential properties and associated with farm/domestic generation. **Significant Non Landscape Constraint: The LCA lies within the Eskdalemuir EKA Seismological Array Statutory Safeguard Area**
											Max. Numbers in Group	*1-3*	*1-3*	*1-3*	*5-10*	*5-10*	
											Min Group Separation Distances (km)	*1-2*	*3-5*	*3-5*	*5-10*	*5-10*	

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
4. Southern Uplands with Scattered Forest: *(iii) Cauldcleuch Head Group*																	
Med	**Low/ Med**	**Med**	**Med**	◯	◯	◯	◯	◯	Windy Edge windfarm (7x125m/ 2x110m) has been consented on appeal.	***Uplands with Wind Turbines/ No Wind Turbines***	***Uplands with Occasional Wind Turbines, western area Uplands with Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: This LCA is extensive open hill country with rolling hill landform and steep sided valleys. The hills are more defined and taller than in Dun Knowe LCA, However, they are of a significantly lesser scale than Broad Law LCA. There is relatively little forestry, with extensive areas visible in neighbouring LCAs. There are no designations or long distance footpaths and there is little human settlement within or nearby. The area has a low intervisibility. **Development Capacity:** There is remaining capacity for larger turbines in the more elevated upland areas well separated from Windy Edge windfarm and where topographical containment reduces intervisibility. However, the steepness of landforms may restrict the potential for successfully accommodating larger groups and for turbines >120m. Particular consideration must also be given to the setting of Hermitage Castle. There is capacity for smaller scale turbines as individual turbines or small groups of 3no or less sited alongside farmsteads and individual properties in lower areas, to be seen as domestic or farm scale energy generation. **Significant Non Landscape Constraints:** • **The area south of Hermitage contains a large SSSI/ SPA** • **The southern tip of the LCA lies within the Eskdalemuir EKA Seismological Array 10km exclusion zone and the rest lies in the Statutory Safeguard Area**
											Max. Numbers in Group	*1-3*	*1-3*	*1-3*	*5-10*	*5-10*	
											Min Group Separation Distances (km)	*1-2*	*3-5*	*3-5*	*5-10*	*5-10*	
5. Southern Uplands Forest Covered: *(i) Craik*																	
Med	**Low/ Med**	**Low/ Med**	**Med/ High**	◯	◯	◯	◯	◯	No wind turbines lie within or close to this area.	***Uplands with No Wind Turbines***	***Uplands with Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: LCA is extensive area of rolling hill landform and steep sided valleys cloaked with commercial coniferous forestry. There are no designations or long distance footpaths and there is little human settlement, although the Southern Uplands Way passes along the northwestern edge. The area has a low internal intervisibility, although the edges are visible from surrounding hill areas. **Development Capacity:** This LCA contains no landscape designations, low internal intervisibility and is a sparsely populated area of the Scottish Borders. Due to these factors there is capacity for groups of larger turbines. Forestry removal should be mitigated, preferably through compensatory planting. Smaller sized turbines should be sited alongside individual farmsteads and properties and visually be read as domestic/ farm scale power generation. Larger turbines can be accommodated in the larger scale elevated upland areas and take advantage of the topographical containment created by the landscape and screening by trees. The presence of the Southern Upland Way reduces capacity in the western part of this LCA. **Significant Non Landscape Constraint: The eastern half of the LCA lies within the Eskdalemuir EKA Seismological Array 10km exclusion zone and the rest lies in the Statutory Safeguard Area**
											Max. Numbers in Group	*1-3*	*1-3*	*1-3*	*5-10*	*5-10*	
											Min Group Separation Distances (km)	*1-2*	*3-5*	*3-5*	*5-10*	*5-10*	

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
8. Rolling Farmland: *(iii) Minto Hills*																	
Med/ High	**Med/ High**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	No wind turbines lie within or close to this area.	***Upland Fringe with No Wind Turbines***	***Upland Fringe with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Medium scale farmland with undulating topography and large rectilinear fields enclosed by walls or hedges. Boundary trees, shelterbelts and small woodlands. Distinctive Minto Hills on SE edge are part of the Teviot Valley SLA. Network of lanes, tracks and scattered farms and houses. The A7 tourist route passes through the western edge. **Development Capacity:** Due to the medium scale, open and relatively elevated lowland/ upland fringe character of this LCA there is no capacity for larger wind energy schemes. Occasional smaller turbines could be accommodated as individuals or small groups, especially when associated with a farmstead. There is no capacity for turbines in the vicinity of the distinctive Minto Hills
											Max. Numbers in Group	*1-3*	*1-3*				
											Min Group Separation Distances (km)	*1-2*	*3-5*				
10. Grassland with Rock Outcrops: *(i) Whitehaugh*																	
Med	**Med**	**Med**	**Med**	◯	◯	◯	◯	◯	No wind turbines lie within or close to this area.	***Upland Fringe with No Wind Turbines***	***Upland Fringe with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: These LCAs together with their separating valleys provide a setting for Hawick, lying between the town and larger scale upland areas. Medium scale farmland of diverse character with small scale enclosed areas between ridges and knolls. Landform has characteristic angular ridged and rocky undulations. Varied size fields of mainly improved pasture enclosed by stone dykes, fences and hedgerows. Field boundary trees, shelterbelts and small woodlands. Crossed by often winding lanes. Scattered farms and hamlets. The Whitehaugh LCA lies north and west of Hawick. It is more open and rocky than the other LCAs and has views south over Hawick and Teviotdale to the Southern Uplands and The Cheviot. The area is crossed by an electricity transmission line. **Development Capacity:** There is medium capacity for smaller turbines individually or as small groups. There is less capacity on the prominent and open south eastern slopes above Hawick and turbines should have a visual connection with a farmstead or dwelling. Avoid proximity of turbines to the transmission line. Due to high intervisibility within this LCA there is no capacity for larger turbines.
											Max. Numbers in Group	*1-3*	*1-3*				
											Min Group Separation Distances (km)	*1-2*	*3-5*				
10. Grassland with Rock Outcrops: *(ii) Midgard*																	
Med	**Med**	**Med**	**Med**	◯	◯	◯	◯	◯	No wind turbines lie within or close to this area.	***Upland Fringe with No Wind Turbines***	***Upland Fringe with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis:** See above for type description The Midgard LCA lies southeast of Hawick. It is more tree covered and has more pronounced rock outcrops and knolls than the other *Grassland with Rock Outcrop* LCAs. It has a high number of hillforts. Teviot Valley SLA designation overlaps the northern corner of the LCA. **Development Capacity:** There is medium capacity for smaller turbines in the central, eastern and southern area of this LCA in areas with less external visibility, away from
											Max. Numbers in Group	*1-3*	*1-3*	*1*			

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
											Min Group Separation Distances (km)	*1-2*	*2-3*	*3-5*			the more prominent slopes facing Hawick. On the outer slopes above valleys capacity is lower and turbines should have a visual connection with a farmstead or dwelling. The central area could accommodate smaller turbines in small groups or the very occasional larger single turbine. There is no capacity for windfarm developments due to the scale and diversity of the landscape and intervisibility from Hawick.
10. Grassland with Rock Outcrops: *(iii) Allan Water*																	
Med	**Med**	**Med/ Low**	**Med**	◯	◯	◯	◯	◯	2nr 15-35m wind turbines lie in the east of this area.	***Upland Fringe with No Wind Turbines***	***Upland Fringe with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: See above for type description The Allan Water LCA lies south of Hawick. It is more rolling with fewer pronounced rock outcrops and knolls than the other *Grassland with Rock Outcrop* LCAs. It is characterised by a number of reservoirs and grades into an upland area to the south. **Development Capacity:** The more central and southern areas of this LCA have a lower intervisibility from Hawick, transport routes and viewpoints, and therefore have capacity for turbines below 80m in a smaller sized windfarm. Large windfarms would not be suitable. The northern, eastern and western outer slopes of this LCA have low capacity for individual smaller sized turbines only. These would be best accommodated in the landscape if associated with individual properties or farmsteads. Capacity here is reduced by the greater intervisibility from settlements and traffic routes in the valleys below.
											Max. Numbers in Group	*1-3*	*1-3*	*1-5*			
											Min Group Separation Distances (km)	*1-2*	*2-3*	*5-10*			
10. Grassland with Rock Outcrops: *(iv) Chisholme*																	
Med	**Med**	**Med/ High**	**Med**	◯	◯	◯	◯	◯	No wind turbines lie within or close to this area.	***Upland Fringe with No Wind Turbines***	***Upland Fringe with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: See above for type description. The Chisholme LCA lies southwest of Hawick. It is the smallest of the *Grassland with Rock Outcrops* areas and lies between two river valleys. **Development Capacity:** There are no landscape designations within this LCA and only the occasional individual farmstead development present. The north eastern slopes are more prominent to Hawick but a sufficient distance from Hawick to accommodate individual smaller turbines. These should be sited to reduce visual impacts and be visually connected to farmsteads.
											Max. Numbers in Group	*1*					
											Min Group Separation Distances (km)	*2-3*					
11. Grassland with Hills: *(iii) Eildon Hills*																	
High	**High**	**High**	**High**	◯	◯	◯	◯	◯	There is one 15-35m turbine lying between Selkirk and St Boswells	***Upland Fringe with No Wind Turbines***	***Upland Fringe with No Wind Turbines/ Occasional Wind Turbines in SW***	◯	◯	◯	◯	◯	**Landscape Analysis**: A diverse landscape type characterised by varied landforms from lightly populated improved pastureland with smooth undulations or elongated ridges to occasional prominent conical hills. The triple coned Eildon Hills are regionally prominent landmarks and viewpoints and recognised for scenic qualities by NSA designation. Most of the rest of the area is undesignated, although the northwestern edge lies in the Tweed Ettrick and Yarrow Confluence SLA and the northern edge in a Countryside Around Towns area. The Borders Abbey Way travels through the more
											Max. Numbers in Group	*1-3*	*1-3*				

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
											Min Group Separation Distances (km)	*2-3*	*3-5*				open undulating areas of the LCA and the St Cuthberts Way through the Eildon Hills. An electricity transmission line passes through the middle of the LCA, close to the NSA. **Development Capacity:** There is no capacity for development on or around the NSA due to the designation. However, there is limited capacity for individual and small groups of smaller turbines across the rest of the area; particularly towards the south and west Turbines will be better accommodated in this landscape if situated alongside farmsteads and individual properties and sited to reduce impacts. Avoid proximity of turbines to the transmission line or in the line of key views to the Eildon Hills.
22. Upland Valley with Pastoral Floor: *(i) Upper Tweed/ Biggar Water*																	
Med/ High	**Med/ High**	**Med/ High**	**High**	◯	◯	◯	◯	◯	There are no turbines within the valley, although the turbines of Glenkerie windfarm are visible less than 1km to the west of the Tweed valley.	***River Valley with No Wind Turbines***	***River Valley with No Wind Turbines/ with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Medium to small scale valleys strongly enclosed with steep sides of rough pasture grading into uplands; with flat floors of enclosed improved pasture. Well settled with farms, houses and occasional villages. Some are important transport corridors. The Upper Tweed/ Biggar Water is broader and more open than most of the type at the Biggar Water end but becomes narrower and more dramatically enclosed at the southern end of the Tweed. The central part, including the village of Broughton, lies in the Upper Tweeddale NSA and most of the rest within the Tweedsmuir Uplands SLA. **Development Capacity:** This area has very limited capacity for only the smallest scale of single turbine development below 20-25m due to the openness of the landscape, views from Tinto Hill and due to the scenic qualities as recognised by designation as part of a larger SLA and NSA. Turbines should be associated with farms or dwellings.
											Max. Numbers in Group	*1*					
											Min Group Separation Distances (km)	*3-4*					
22. Upland Valley with Pastoral Floor: *(ii) Lyne Water*																	
Med/ High	**Med/ High**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	Three 15-35m turbines at western end of Scotstoun Bank.	***River Valley with No Wind Turbines/ Occasional Wind Turbines in W.***	***River Valley with Occasional Wind Turbines/ southern section No Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: see above for type description. The Lyne valley is broader than some others at the northern but becomes narrow and enclosed at the southern end, which lies in the Upper Tweeddale NSA. The slopes south of the A72 lie within the Tweedsmuir Uplands SLA. **Development Capacity:** This area has no capacity in the southern area for turbines due to the NSA designation. However the northern area has capacity for individual or small groups of smaller turbines where these are visually read as part of a farmstead development.
											Max. Numbers in Group	*1-3*					
											Min Group Separation Distances (km)	*2-3*					
22. Upland Valley with Pastoral Floor: *(iii) Manor Water*																	
Med/ High	**Med/ High**	**Med/ High**	**High**	◯	◯	◯	◯	◯	No turbines within this area.	***River Valley with No Wind Turbines***	***River Valley No Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: see above for type description. This valley is narrower and much more enclosed by the surrounding hills. It has only a

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
											Max. Numbers in Group						minor dead end road and the valley ends amongst steep hills. It lies mainly within the Upper Tweeddale NSA designation, the remaining areas within the Tweedsmuir Uplands SLA.
											Min Group Separation Distances (km)						**Development Capacity:** This area has no capacity for turbines of 15m and over due to the NSA designation covering most of its extent.
22. Upland Valley with Pastoral Floor: *(iv) Upper Yarrow and (v) Upper Ettrick*																	
Med/ High	**Med/ High**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	No turbines within these areas, although two 15-35m turbines lie in uplands close to the Upper Yarrow.	***River Valley with No Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: see above for type description. These valleys are narrow and enclosed by the surrounding hills, although with occasional wider areas and longer views afforded up and down the valley. The northern side of the Upper Yarrow LCA is part of the large Tweedsmuir Uplands SLA. **Development Capacity:** These areas have very limited capacity for smaller turbines below 20-25m, in wider locations where these are visually read as part of a farmstead development and back-clothed against larger scale hillsides.
											Max. Numbers in Group	*1*					
											Min Group Separation Distances (km)	*2-3*					
25. Upland Valley with Woodland: *(i) Middle Tweed*																	
High	**High**	**High**	**High**	◯	◯	◯	◯	◯	No turbines lie within or close to this area.	***River Valley with No Wind Turbines***	***River Valley with Occasional/ No Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: A meandering river valley strongly enclosed by rounded upland hills, with a flat valley floor of varied width. Characterised by extensive woodland, settlements and estate land with country mansions and tower houses. The Middle Tweed valley contains the significant settlements of Peebles and Innerleithen and a number of smaller settlements and numerous individual dwellings and farmsteads. The valley floor also contains the busy A72 trunk road, from which mid to long distance views are afforded up and down the valley and onto the prominent slopes that overlook the valley. The valley west of Peebles lies within the Upper Tweeddale NSA and the rest within the Tweed Valley and Tweed, Ettrick and Yarrow Confluences SLA. To the east the valley is narrow and steep sided in places. **Development Capacity:** The western area of this LCA has no capacity due to the NSA designation There is low capacity within wider parts of the flat/ gently sloping valley floor for individual smaller turbines where these can be visually associated with farmsteads or, where appropriate, other developments. Turbines should be sited to minimise visual impacts. The valley slopes have capacity only for carefully sited turbines, avoiding prominent spurs. There is no capacity in the eastern end which is narrow and crossed by the Southern Upland Way via the Fairnilee designed landscape.
											Max. Numbers in Group	*1*					
											Min Group Separation Distances (km)	*2-3*					
25. Upland Valley with Woodland: *(ii) Lower Ettrick/ Yarrow*																	
High	**High**	**High**	**Med/ High**	◯	◯	◯	◯	◯	No turbines lie within or close to this area.	***River Valley with No Wind Turbines***	***River Valley with Occasional/ No Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: See above for description of type. The Lower Ettrick/ Yarrow is a confluence of the two valleys just west of Selkirk. A key feature is the designed landscape and house of Bowhill. Other estate landscapes also

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
											Max. Numbers in Group	*1*					characterise the hillsides. The valleys contain smaller settlements and numerous individual dwellings and farmsteads and are traversed by roads passing west. The valleys afford medium distance views along the valley floor and lie mainly within the Tweed, Ettrick and Yarrow Confluence SLA. **Development Capacity:** Due to the SLA designation and presence of designed landscapes capacity is limited to individual smaller turbines. These should be located on the valley floor where they can be associated with individual farmsteads and must be sited to reduce visual impacts, there is no capacity for turbine development on the more elevated slopes or within the Yarrow Valley due to increased prominence and the more enclosed nature of the Yarrow valley.
											Min Group Separation Distances (km)	*2-3*					

26. Pastoral Upland Fringe Valley: *(v) Borthwick Water/ Upper Teviot*

Med/ High	**Med/ High**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	No turbines lie within or close to this area.	***River Valley with No Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Medium scale well settled pastoral valley set between low grassland hills with shallow enclosing slopes. The Teviot contains the town of Hawick and the busy A7 trunk road to Carlisle, as well a high voltage overhead line. The Borthwick contains a minor road and is quieter, more enclosed and less developed. There are no landscape designations. **Development Capacity:** There is limited capacity for individual smaller sized wind turbines within the broader simpler areas of the valley landscape. There is no capacity for turbines on the more prominent steeply sided slopes of the valley or within the more enclosed areas of the Borthwick Water Valley. Turbines should be sited in the landscape so they are associated with a farmstead or individual property. Care should be taken to avoid cumulative effects with the overhead lines.
											Max. Numbers in Group	*1*					
											Min Group Separation Distances (km)	*2-3*					

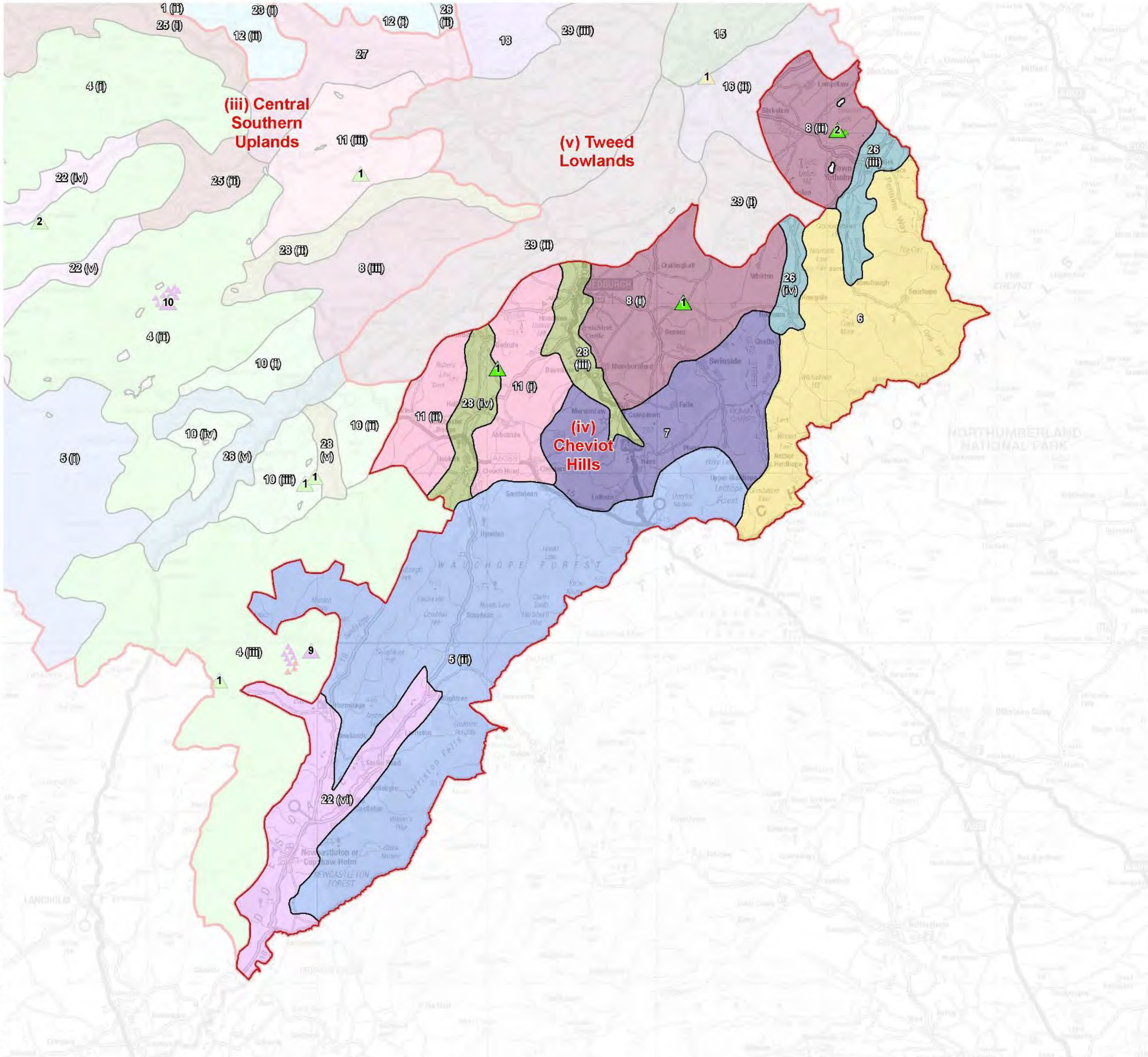
27. Upland Fringe Valley with Settlements: *Tweed/ Gala/ Ettrick Confluence*

High	**Med/ High**	**Med/ High**	**High**	◯	◯	◯	◯	◯	No turbines lie within or close to this area.	***River Valley with No Wind Turbines***	***River Valley with Occasional/ No Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Medium to large scale densely settled flat bottomed enclosed by the slopes of grassland hills and is a well ordered patchwork of settlement, mixed farmland and woodland. It is the central population, transport and river drainage hub for the Borders. The eastern area lies within the Eildon and Leaderfoot NSA and part of the west within the Tweed, Ettrick and Yarrow Confluence SLA. Several long distance paths including the Southern Upland Way pass through and the area is overlooked by the Eildon Hills and Scott's View. **Development Capacity:** Due to the amount of settlement, landscape designations and views within and across this broad valley landscape, there is only very limited capacity for smaller sized wind turbines. For these reasons the area has only very limited capacity for individual smaller turbines located outside the NSA. Turbine development will be best accommodated alongside industrial/ business facilities or farmsteads and avoiding the narrowest parts of the valleys such as the Tweed at Fairnilee.
											Max. Numbers in Group	*1*	*1*				
											Min Group Separation Distances (km)	*2-3*	*3-5*				

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
28. Wooded Upland Fringe Valley: *(ii) Ale Water*																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	No turbines lie within or close to this area.	***River Valley with No Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Small scale often narrow meandering valley with enclosing slopes increasingly shallow as the Ale Water drains from the Southern Uplands to the Tweed Lowlands. Valley floor is small to medium scale farmland with extensive tree cover on steeper slopes and by the river. Set between rounded grassland and farmland hills. Small settlements at Ashkirk, Lilliesleaf and Ancrum. The LCA has no landscape designations although there are a number of designed landscapes.
											Max. Numbers in Group	*1-3*	*1*				**Development Capacity:** This small scale intimate sheltered character of this LCA has limited capacity for individual or small groups of smaller turbines only. Turbines should be located away from the smallest scale most intimate valley floor areas and away from the more prominent sideslopes. The area around and west of the A7 is of a particularly intimate scale and well settled. Turbines should not exceed 20-25m. There is no capacity for commercial scale developments. The setting of the settlements and designed landscapes should be respected.
											Min Group Separation Distances (km)	*2-3*	*3-5*				
28. Wooded Upland Fringe Valley: *(v) Slitrig Water*																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	No turbines lie within or close to this area, but 2nr 15-35m lie to the west.	***River Valley with No Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Small scale narrow meandering valley with particularly steep enclosing slopes to the east. Valley floor is small to medium scale farmland with extensive tree cover on steeper slopes and by the river. Set between rocky grassland hills. There are numerous individual farmsteads and properties and the landscape is tightly meandering with spurs and trees interrupting views. There are no settlements except for the southern end of Hawick at the lower end. The LCA has no landscape designations although there are a number of core paths and cycle routes, including an abandoned railway.
											Max. Numbers in Group	*1-3*					**Development Capacity:** The small scale tightly enclosed character of this LCA has limited capacity for individual smaller turbines only. Turbines should be located away from the smallest scale most intimate valley floor areas and away from the more prominent sideslopes. There is no capacity for commercial scale developments. The setting of the settlements and designed landscapes should be respected.
											Min Group Separation Distances (km)	*2-3*					

Figure 6.1 (iv) - Cheviot Hills



Legend

- Regional Landscape Areas
- Landscape Character Areas

Windfarm: Status, Height Category

- Operational / Consented, Cat 1: 15 to <35m
- Operational / Consented, Cat 2: 35 to <50m
- Operational / Consented, Cat 3: 50 to <80m
- Operational / Consented, Cat 4: 80 to <120m
- Operational / Consented, Cat 5: 120m+

Landscape Character Areas:

5 - Southern Uplands Forest Covered
(ii) Wauchope / Newcastleton

6 - Cheviot Uplands
6 Cockslaw Group

7 - Cheviot Foothills
7 Falla Group

8 - Rolling Farmland
(i) Oxnam
(ii) Lempitlaw

11 - Grassland with Hills
(i) Bonchester / Dunion
(ii) Rubers Law

22 - Upland Valley with pastoral Floor
(vi) Liddel Water

25 - Upland Valley with Woodland
(i) Middle Tweed
(ii) Lower Ettrick / Yarrow

26 - Pastoral Upland Fringe Valley
(iii) Bowmont Water
(iv) Kale Water

28 - Wooded Upland Fringe Valley
(iii) Jed Water
(iv) Rule Water

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Table 6.1(iv). Summary of Landscape Capacity and Cumulative Effects and Guidance for Future Wind Energy Development – Cheviot Hills

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
5. Southern Uplands Forest Covered: *(ii) Wauchope/ Newcastleton*																	
Med	**Low**	**Low/ Med**	**Med**	◯	◯	◯	●	◯	No wind turbines lie within or close to this area.	***Uplands with No Wind Turbines***	***Uplands with Wind Turbines/ Occasional Wind Turbines/ No Wind Turbines near Carter Bar***	◯	◯	◯	●	◯	**Landscape Analysis**: An extensive area of large scale rolling or undulating hill landform and occasional small valleys cloaked with commercial coniferous forestry. Occasional prominent conical hill landforms. There is little human settlement and two or three minor roads together with the A68 in the east. Most of the area is not designated although the eastern end is part of the Cheviot Foothills SLA, the border crossing of Carter Bar and is adjacent to the Northumberland National Park. The area has a low internal intervisibility, although the edges are visible from surrounding hill areas.
											Max. Numbers in Group	*1-3*	*1-3*	*1-3*	*5-15*	*5-15*	**Development Capacity:** Much of this LCA has the potential to accommodate occasional well-separated windfarms with larger turbines due to the upland topography creating containment, a sparse population and a lower degree of intervisibility from settlements, transport routes and viewpoints. There is also limited scope for siting individual or small groups of smaller sized turbines alongside individual farmsteads. This should not become predominantly a *Landscape with Wind Turbines*, therefore individual windfarms and turbines should be well separated. Care should be taken to avoid siting next to prominent hilltop landforms or viewpoints. The eastern part has a much more limited capacity due to its SLA designation and its location relatively close to the Northumberland National Park. The Carter Bar Border viewpoint has a much higher local sensitivity with no capacity in the area immediately in the vicinity of this iconic viewpoint or in the short to mid-range view looking north. In the south, there are tourism related sensitivities along the border near the Kielder area. Finally, significant windfarm development would require extensive felling of forestry, which would require compensatory planting.
											Min Group Separation Distances (km)	*1-3*	*1-3*	*3*	*5-10*	*5-10*	**NB. The LCA lies within the Eskdalemuir EKA Seismological Array Statutory Safeguard Area**
6. Cheviot Uplands: *Cocklaw Group*																	
Low/ Med	**Med/ High**	**Med/ High**	**High**	◯	◯	◯	◯	◯	No wind turbines lie within or close to this area.	***Uplands with No Wind Turbines***	***Uplands with Occasional Wind Turbines/ No Wind Turbines in higher or northern areas***	◯	◯	◯	◯	◯	**Landscape Analysis**: Large scale distinctive dome and cone shape hill ranges, often with rugged peaks and rocky sides, dissected by small steep sided valleys and drainage lines, rising to the English border. Land cover is mainly rough grassland with patches of bracken and scrub, with occasional blocks of woodland. There is scattered settlement and only minor dead end roads. The area falls entirely within the Cheviot Foothills SLA, is adjacent to Northumberland National Park and the regional high point of The Cheviot. The most northern section of the Pennine Way passes through the northern end.
											Max. Numbers in Group	*1*	*1*				**Development Capacity:** There is no capacity within any part of this LCA for larger turbines or a windfarm. This is due to the distinctive nature of the landform, the

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
											Min Group Separation Distances (km)	*3-5*	*3-5*				proximity of Northumberland National Park and key visual receptors including the Pennine Way, The Cheviot Hill and the nearby Carter Bar viewpoint on the A68 England – Scotland border which provide popular panoramic viewpoints over this area. There is however limited capacity for smaller sized turbines. This capacity is very much restricted to the lower enclosed land where these would be associated with individual farmsteads and properties and read as small scale local energy generation.
7. Cheviot Foothills: ***Falla Group***																	
Med/ High	**Med/ High**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	No wind turbines lie within or close to this area.	***Uplands with No Wind Turbines***	***Uplands with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Large scale undulating/ rolling landscape with occasional prominent dome shape hills and rocky outcrops. Land cover is mainly grassland with a mixture of enclosed improved pasture separating hills of open and rough pasture. There are also large blocks of forestry. There is scattered settlement and mainly minor roads, although the A68 passes through ascending to Carter Bar. The southeastern area falls within the Cheviot Foothills SLA and the western tip within the Teviot Valleys SLA. This relatively open landscape has high internal and external visibility. The Carter Bar viewpoint has an open panoramic view across the area. **Development Capacity:** There is only low capacity for smaller turbines, individually or in small groups. Turbines should be sited away from distinctive steeper landforms and sensitive visual receptors around the approach to Carter Bar. Turbines should be sited in areas with lower intervisibility and associated with individual farmsteads and dwellings where they can be read as small scale local energy generation.
											Max. Numbers in Group	*1-3*	*1*				
											Min Group Separation Distances (km)	*2-3*	*3-5*				
8. Rolling Farmland: ***(i) Oxnam***																	
Med/ High	**Med**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	One 15-35m wind turbine lies within this area.	***Upland Fringe with No Wind Turbines***	***Upland Fringe with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Medium scale farmland with undulating/ rolling topography and large rectilinear fields of mixed agriculture enclosed by fences and/or hedges. Tree cover comprises conifer shelterbelts and plantations. Network of lanes, tracks and scattered farms, houses and hamlets. Eastern area is higher and more open with few houses, larger fields and poorer pasture. Limited internal visibility but the area is overlooked by higher ground to the south and the edges are seen from surrounding valleys. Largely undesignated although western edge overlaps the Teviot Valleys SLA, overlooking Jeburgh and the Jed Water valley. **Development Capacity:** Due to the medium scale, open and relatively elevated lowland/ upland fringe character of this LCA there is no capacity for larger wind energy schemes. Smaller turbines could be accommodated as individuals or small groups, especially when associated with a farmstead. Occasional larger turbines, below 80m height, could be accommodated in the higher, larger scale areas to the east. However, further to the refusal of the proposed Whitton windfarm (5x110m) there is no capacity for a commercial size scheme. There is very limited scope for siting anything more than the smallest turbines on the outer edges of this area where the landform is more complex and they could affect the setting of settlements.
											Max. Numbers in Group	*1-3*	*1-3*	*1-3*			
											Min Group Separation Distances (km)	*1-2*	*3-5*	*5-10*			

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
8. Rolling Farmland: *(ii) Lempitlaw*																	
Med/ High	**Med**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	Two 15-35m wind turbines lie within this area.	***Upland Fringe with No Wind Turbines***	***Upland Fringe with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Medium scale farmland with undulating/ rolling topography and large rectilinear fields of mixed agriculture enclosed by fences and/or hedges. Tree cover comprises conifer shelterbelts and deciduous boundary trees. Network of lanes, tracks and scattered farms, houses. Two natural waterbodies. Southeastern area towards Yetholm is higher and more distinctively rolling than the northwestern, with distinctive Yetholm Law. Limited internal visibility but the area is overlooked by higher ground to the south and the edges are seen from surrounding valleys. Largely undesignated although southern corner overlaps the Cheviot Foothills SLA and the Northumberland National Park lies 2km to the east. **Development Capacity:** This area has limited capacity for smaller sized turbines only as individual turbines or as small groups of turbines. There is no capacity for wind farms or for larger turbines. Capacity is reduced in the southeast due to the more distinctive landforms and proximity of settlements and landscape designations.
											Max. Numbers in Group	*1-3*	*1-3*				
											Min Group Separation Distances (km)	*1-2*	*3-5*				
11. Grassland with Hills: *(i) Bonchester/ Dunion*																	
Med/ High	**High**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	There is one 15-35m turbine lying on the western fringe.	***Upland Fringe with No Wind Turbines***	***Upland Fringe with Occasional Wind Turbines/ No Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: A diverse landscape type characterised by varied landforms from elongated ridges to occasional prominent round or conical hills. Dunion Hill provides part of the setting to Jedburgh and Bonchester Hill to Bonchester Bridge. Landuse is mainly pasture, varying from improved enclosed pasture on lower ground to open semi-improved on the highest hills and poorly drained areas. Occasional conifer plantations and shelterbelts. Settlement is mainly scattered houses and farms linked by small roads, although the A6088 and the hamlet of Chesters lie in the southern end. There is high visibility across and to this area. The majority of this area, excepting the southern end, is within the Teviot Valleys SLA. **Development Capacity:** Larger turbines and windfarms are not suitable to this landscape as they will be visible from Jedburgh, the Teviot and Rule Valleys. There is low capacity for individual or small groups of smaller turbines, visually associated with farmsteads and individual dwellings and sited sensitively away from prominent slopes and hilltops to reduce visual impacts.
											Max. Numbers in Group	*1-3*	*1-3*				
											Min Group Separation Distances (km)	*2-3*	*3-5*				
11. Grassland with Hills: *(ii) Rubers Law*																	
High	**High**	**High**	**High**	◯	◯	◯	◯	◯	There are no wind turbines within or close to this area	***Upland Fringe with No Wind Turbines***	***Upland Fringe with No Wind Turbines /Occasional Wind Turbines in fringes and south***	◯	◯	◯	◯	◯	**Landscape Analysis**: Simpler and less diverse than most of the type; comprising an undulating plateau to the south and the single, regionally prominent, conical hill of Rubers Law in the north. Landuse is mainly pasture, varying from large rectilinear fields of improved pasture on lower ground around Rubers Law to open unimproved areas on Rubers Law and poorly drained plateau to the south. Occasional conifer plantations

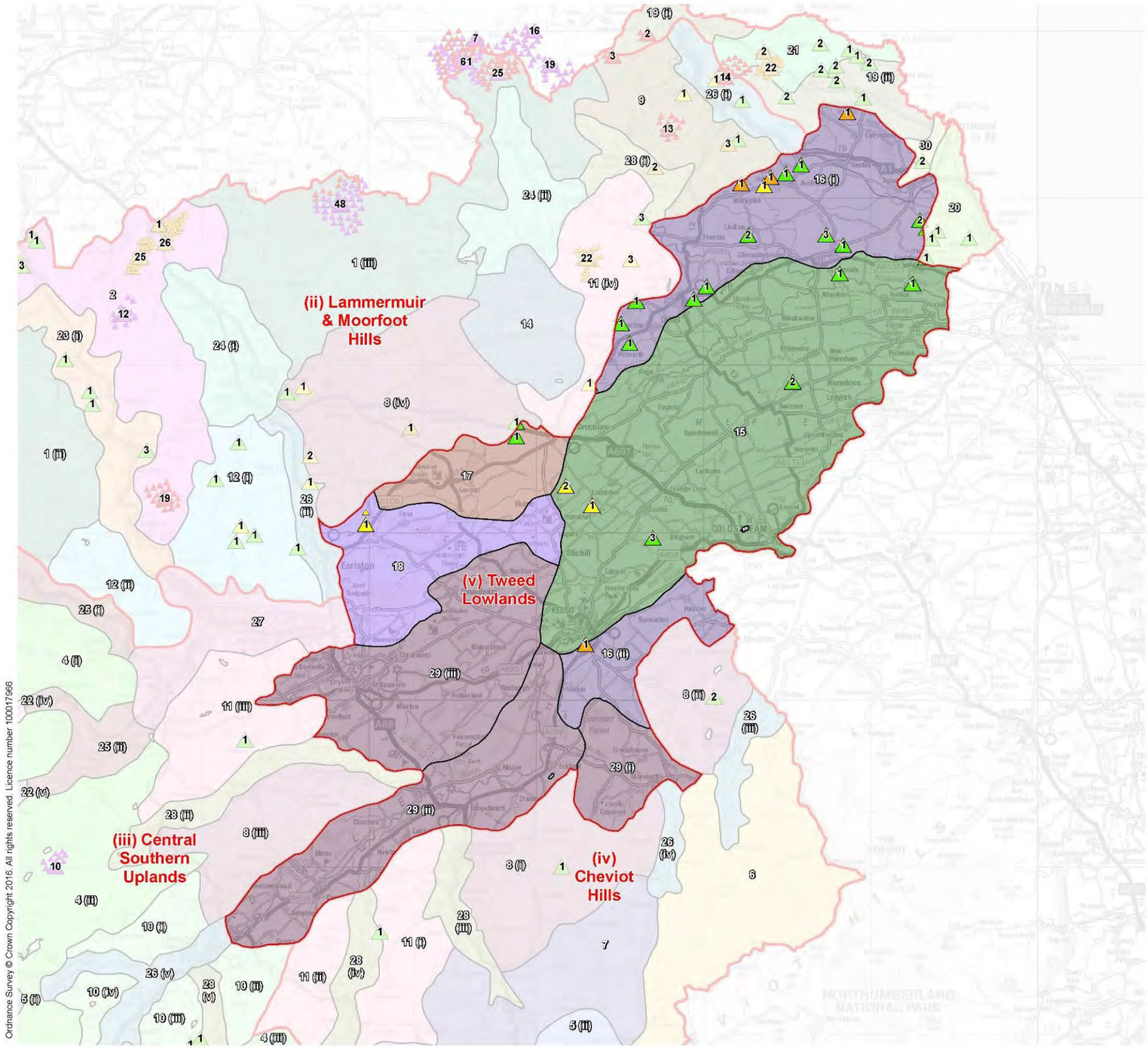
Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
											Max. Numbers in Group						and shelterbelts. Settlement is very sparsely distributed houses and farms linked by small roads. The A6088 crosses the southern end. High visibility across and towards this area, particularly Rubers Law. The area north of the A6088 is within the Teviot Valleys SLA. **Development Capacity:** Turbines and windfarms are not suitable to this landscape character area as they will be highly visible from all surrounding areas and will be seen in the context of Rubers Law.
											Min Group Separation Distances (km)						
22. Upland Valley with Pastoral Floor: *(vi) Liddel Water*																	
Med/ High	**Med/ High**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	There are no turbines within or close to this area.	***River Valley with No Wind Turbines***	***River Valley with No Wind Turbines/ with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Medium scale valley enclosed with steep sides of rough pasture grading into uplands; with flat floors of enclosed improved pasture. Well settled with farms, houses and occasional villages. Some are important transport corridors. The Liddel Water is broader and more open with shallower, low gradient enclosing slopes than most of the type at the southern end but becomes narrower and more dramatically enclosed in its upper reaches and tributaries. Views from valley sides are open and long but are restricted by trees on the floor. Newcastleton is a distinctive village in the lower reaches and the upper reaches of the Hermitage Water are the setting for Hermitage Castle. There are no landscape designations. **Development Capacity:** This area has limited capacity for only the smallest scale of turbine development due to the openness of the landscape and shallow enclosing slopes in lower reaches. Turbines should be associated with farmsteads. The setting of Hermitage Castle should be respected.
											Max. Numbers in Group	*1-3*					
											Min Group Separation Distances (km)	*3-4*					
26. Pastoral Upland Fringe Valley: *(iii) Bowmont Water*																	
High/ Med	**High/ Med**	**High/ Med**	**Med/ High**	◯	◯	◯	◯	◯	No turbines lie within or close to this area.	***River Valley with No Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Medium scale well settled pastoral valley set between grassy hills. Broad and open at the northern end, providing a setting for Yetholm; with increasingly steep enclosing slopes as it penetrates south into the Cheviot Uplands. Minor roads. The areas south and east of Yetholm lies within the Cheviot Foothills SLA. The Northumberland National Park abuts the northern end and the Pennine Way finishes in Kirk Yetholm. **Development Capacity:** There is limited capacity for individual smaller sized wind turbines within the broader simpler areas of the valley landscape. There is no capacity for turbines on the more prominent steep side slopes or within the more enclosed areas. Turbines should be sited in the landscape so they are associated with a farmstead or individual property. Protect the setting of the two villages and sensitive visual receptors.
											Max. Numbers in Group	*1*					
											Min Group Separation Distances (km)	*2-3*					

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
26. Pastoral Upland Fringe Valley: *(iv) Kale Water*																	
Med/ High	**Med**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	No turbines lie within or close to this area.	***River Valley with No Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Medium to small scale well settled pastoral valley set between grassy hills. Broad and open at the northern end, providing a setting for Morebattle; with increasingly steep enclosing slopes as it penetrates south into the Cheviot Uplands. The hamlet of Hownam lies at the southern end, enclosed by hills. A minor road passes through. The east side lies within the Cheviot Foothills SLA. **Development Capacity:** There is limited capacity for individual smaller sized wind turbines within the broader simpler areas of the valley landscape. There is no capacity for turbines on the more prominent steep side slopes or within the more enclosed areas. Turbines should be sited in the landscape so they are associated with a farmstead or individual property. Protect the setting of the two villages and sensitive visual receptors.
											Max. Numbers in Group	*1*					
											Min Group Separation Distances (km)	*2-3*					
28. Wooded Upland Fringe Valley: *(iii) Jed Water*																	
Med/ High	High	**Med/ High**	**High**	◯	◯	◯	◯	◯	No turbines lie within or close to this area.	***River Valley with No Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Small scale meandering valley with undulating enclosing slopes. Highly varied scenery: valley floor is small to intimate scale farmland with extensive tree cover on steeper slopes and by the river. Distinctive sandstone cliffs cut along the river Set between rounded grassland and farmland hills. Jedburgh dominates the northern end, with other small settlements/ farms/ houses throughout. All but the southern end lies within the Teviot Valleys SLA. **Development Capacity:** The small scale intimate sheltered character of this LCA includes the setting of the historic town of Jedburgh and distinctive riverside cliffs. Due to the scale and character and designations there is no capacity for wind turbines over 15m.
											Max. Numbers in Group						
											Min Group Separation Distances (km)						
28. Wooded Upland Fringe Valley: *(iv) Rule Water*																	
Med/ High	Med/ High	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	One 15-35m turbine lies on the eastern edge of this area.	***River Valley with No Wind Turbines***	***River Valley with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Small scale meandering valley with varied character; broader and more open in the middle. Set between rocky grassland hills. Enclosing slopes varied but typically not steep although overlooked by distinctive hills: Rubers Law west and Bonchester Hill to the east. There are numerous individual farmsteads and properties, with the small settlements of Bedrule and Bonchester Bridge. The area north of Bonchester Bridge lies within the Teviot Valley SLA and there are a number of non-inventory designed landscapes. The Borders Abbey Way passes through the north. **Development Capacity:** This LCA has a small scale intimate character. There is no capacity for wind turbines over 15m.
											Max. Numbers in Group						
											Min Group Separation Distances (km)						

Figure 6.1 (v) - Tweed Lowlands



Legend

- Regional Landscape Areas
- Landscape Character Areas

Windfarm: Status, Height Category

- Operational / Consented, Cat 1: 15 to <35m
- Operational / Consented, Cat 2: 35 to <50m
- Operational / Consented, Cat 3: 50 to <80m
- Operational / Consented, Cat 4: 80 to <120m
- Operational / Consented, Cat 5: 120m+

Landscape Character Areas:

15 - Lowland with Drumlins
15 Lower Merse

16 - Rolling Lowland Margin
(i) Eye Water Lowlands
(ii) Maxwellheugh

17 - Lowland Margin Platoon
17 Gordon Platform

18 - Lowland Margin with Hills
18 Black Hill / Hume Crags

29 - Lowland Valley with Farmland
(i) Lower Kale
(ii) Lower Teviot
(iii) Lower Tweed

Table 6.1(v). Summary of Landscape Capacity and Cumulative Effects and Guidance for Future Wind Energy Development – Tweed Lowlands

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
15. Lowland with Drumlins: ***Lower Merse***																	
Med/ High	**Med/ High**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	Several existing/ consented wind turbines varying in height from 15- to 80m lie within or close to this area.	***Lowlands with Occasional Wind Turbines***	***Lowlands with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Extensive, mainly open lowland landscape of large horizontal and limited vertical scale. A strongly rectilinear pattern of arable fields separated by a grid-like network of roads and lanes imposed on a series of uniformly directional but gently undulating parallel ridges and hollows, broken up by the meandering more intimate scale courses of the Blackadder and Tweed. Shelterbelts and woodlands are infrequent and low, leaving wide open views across from the Lammermuir fringes in the north to the Cheviot in the south. Occasional small settlements and many scattered farms and houses, with a number of significant settlements on the margins. There are a number of inventory and other designed landscapes. The area is crossed by a number of overhead electricity lines. **Development Capacity:** Due to the openness and limited vertical scale of this undulating landscape there is capacity only for smaller turbines. These should be sensitively sited at separation distances sufficient to prevent the LCA becoming a *Landscape with Turbines*, taking advantage of subtle landform differences and tree belts to reduce visibility. Turbines would be best accommodated if visually associated with farmsteads and settlements. Siting should avoid adverse effects on settlements and designed landscapes in and around the edges of this large area and avoid cumulative effects with overhead lines.
											Max. Numbers in Group	*1-3*	*1-3*				
											Min Group Separation Distances (km)	*2-3*	*3-5*				
16. Rolling Lowland Margin: ***(i) Eye Water Lowland***																	
Med/ High	**Med/ High**	**Med/ High**	**Med**	◯	◯	◯	◯	◯	Approximately 20 wind turbines from 15m to 80m lie within or close to this area.	***Lowlands with Occasional Wind Turbines/ with Wind Turbines***	***Lowlands with Occasional Wind Turbines/ with Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: A large scale, undulating, open landscape of mixed agriculture, with a northern escarpment rising gently to the upland fringes. Scattered shelterbelts and relatively few trees. Panoramic views to the south from higher areas. Scattered settlements including Duns, linked by a number or roads, including the busy A1 road to England. The East Coast railway also passes through this area. **Development Capacity:** This LCA has limited remaining capacity for smaller sized turbine development and currently risks exceeding capacity on the northern margin due to the established July 2016 baseline. Capacity is limited to the occasional well sited turbine as individual turbines or small groups, not exceeding 3no. The south western area of this LCA has more limited capacity due to the settlement of Duns and a higher degree of intervisibility. Care should also be taken when siting in areas close to the A1/ East Coast railway corridor in the north.
											Max. Numbers in Group	*1-3*	*1-3*				
											Min Group Separation Distances (km)	*2-3*	*3-5*				
16. Rolling Lowland Margin: ***(ii) Maxwellheugh***																	
Med/ High	**Med/ High**	**Med/ High**	**Med**	◯	◯	◯	◯	◯	One consented 50-80m wind turbine in Kelso lies close to this area.	***Lowlands with Occasional Wind Turbines***	***Lowlands with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: See above for description of type. A much smaller area, rising distinctly above the Tweed to the south of Kelso. Panoramic views N over the Merse to Lammermuir fringes. Settlements including the

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
											Max. Numbers in Group	*1-3*	*1-3*				edge of Kelso, is mainly along the edge of the Tweed floodplain. Elsewhere farms and houses are linked by a grid of lanes. The A688 road to England passes the western end. **Development Capacity:** Capacity for turbines in this LCA is limited due to the open exposed character and the topography allowing long distance views to and from the settlement of Kelso and the flat farmland to the north. Larger turbines can be sited to the southeastern edges of this area to avoid the prominent north facing escarpment above the Tweed.
											Min Group Separation Distances (km)	*2-3*	*3-5*				
17. Lowland Margin Platform: ***Gordon Platform***																	
Med/ High	**Med/ High**	**Med/ High**	**Med**	◯	◯	◯	◯	◯	A few wind turbines between 15 and 50m lie in or close to this area.	***Lowlands with no/ Occasional Wind Turbines***	***Lowlands with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Large scale undulating landscape of mixed agriculture with large fields divided by stone dykes and widely dispersed mixed woodland blocks and shelterbelts. Similar to surrounding areas of Rolling Farmland and Lowland Margin with Hills, but without distinctive hills. Mainly scattered farms and houses but centred on the village of Gordon and traversed by the A6105. Two overhead electricity lines traverse the southern part. **Development Capacity:** Due to the openness and limited vertical scale of this undulating landscape there is capacity only for smaller turbines. These should be sensitively sited at separation distances sufficient to prevent the LCA becoming a Landscape with Turbines, taking advantage of subtle landform and tree belts to reduce visibility. Turbines would be best accommodated in association with farmsteads. Siting should avoid adverse effects on the settlement of Gordon and avoid cumulative effects with overhead lines
											Max. Numbers in Group	*1-3*	*1-3*	*1-3*			
											Min Group Separation Distances (km)	*2-3*	*3-5*	*5-10*			
18. Lowland Margin with Hills: ***Black Law/ Hume Crags***																	
Med/ High	**High**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	One 35-50m wind turbine lies in this area and 2 just to the east	***Lowlands with no/ Occasional Wind Turbines***	***Lowlands with Occasional Wind Turbines/ no Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Large scale undulating landscape of mixed agriculture with large fields divided by stone dykes/ hedges and widely dispersed mixed woodland blocks and shelterbelts. Similar to surrounding areas of Rolling Farmland and Lowland Margin Platform but with distinctive rocky hills. Western edge above the Tweed lies in the Eildon and Leaderfoot NSA and the southwestern edge in Tweed Lowlands SLA. Extensive designed landscape of Mellerstain House occupies middle of the LCA. A number of the hills are characterised by hillforts, with Hume Castle prominent at the eastern end. An overhead electricity line crosses the northern edge of this area. **Development Capacity:** Due to the undulating open landscape character there is limited capacity for individual or small groups of smaller turbines only. There is no capacity along the west edge of the LCA due to the NSA and capacity is also limited by the designed landscape designation. Turbines should not be placed close to the prominent but modest scale rock outcrops and distinctive hills. In particular, turbines should not adversely affect the setting of the key landscape feature of Hume Castle.
											Max. Numbers in Group	*1-3*					
											Min Group Separation Distances (km)	*2-3*					

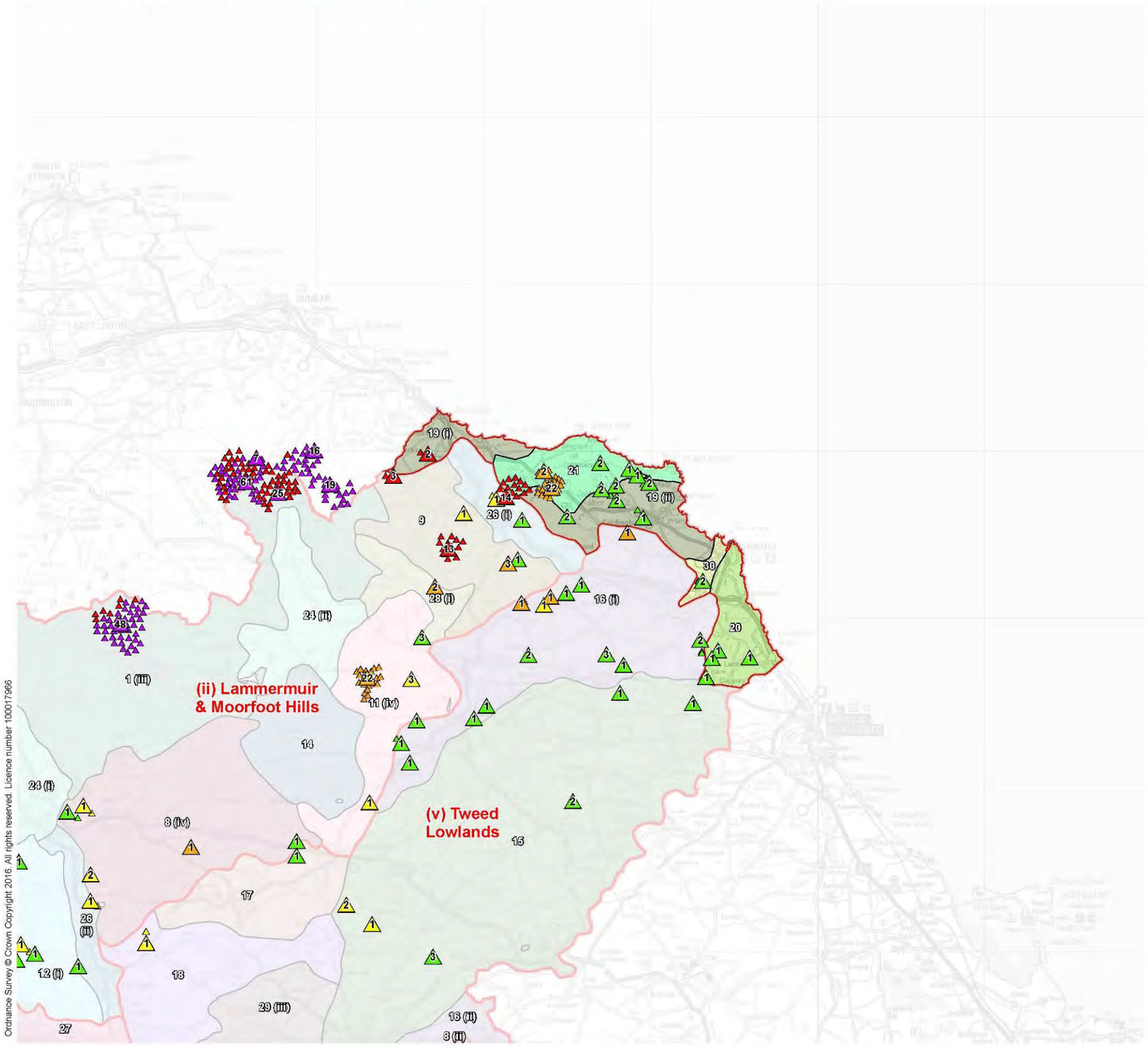
Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
29. Lowland Valley with Farmland: *(i) Lower Kale*																	
High	**Med/ High**	**High**	**Med/ High**	◯	◯	◯	◯	◯	There are no wind turbines within or close to this area.	***Lowlands with no Wind Turbines***	***Lowlands with Occasional Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Medium to large scale broad lowland valley landscapes, originating from between hills to converge and drain into the Merse. Undulating valley sides of mixed agriculture with large fields divided by hedges and occasional predominantly broadleaf tree belts and woodland blocks. Flat valley floor floodplain with meandering river. Overlooked by occasional prominent hills and bluffs. Well populated with small towns, villages and farms and traversed by a network of roads. Due to the open, lowland valley character of this landscape type it has no capacity for larger wind turbine or windfarm developments. The Kale LCA is the smallest of the areas; draining west from the Cheviot Uplands through a wide flat-floored basin into the Teviot. There are no landscape designations. **Development Capacity:** The Lower Kale, due to lack of designation and its open undulating nature has limited capacity for smaller size turbines, as smaller groups or single. These should be associated with farmsteads on the valley sides as the flat valley floor is often smaller scale with characteristic terrace formations.
											Max. Numbers in Group	*1-3*	*1*				
											Min Group Separation Distances (km)	*2-3*	*3-5*				
29. Lowland Valley with Farmland: *(ii) Lower Teviot*																	
High	**High**	**High**	**High**	◯	◯	◯	◯	◯	There are no wind turbines within or close to this area.	***Lowlands with no Wind Turbines***	***Lowlands with Occasional Wind Turbines/ no Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: See above for description of type. The Lower Teviot LCA is the longest of the areas; draining northeast from the Southern Uplands and Hawick, through a wide straight valley to join the Tweed at Kelso. The lower section is overlooked by Rubers Law, the Minto Hills and the rocky bluff of Cleuchhead. It is traversed by the A698 and contains several settlements. Most of this LCA is designated under the Teviot Valleys SLA and there are several designed landscapes including the inventory listed Monteviot. **Development Capacity:** The Lower Teviot has limited capacity for smaller size turbines, as smaller groups or single. Capacity is more limited in the extensive designated areas and near characteristic prominent landforms. Turbines should be associated with farmsteads on the valley sides or business/ industrial areas on the edge of settlements, as the flat valley floor is often smaller scale.
											Max. Numbers in Group	*1-3*	*1*				
											Min Group Separation Distances (km)	*2-3*	*3-5*				
29. Lowland Valley with Farmland: *(iii) Lower Tweed*																	
High	**High**	**High**	**High**	◯	◯	◯	◯	◯	There are no wind turbines within or close to this area.	***Lowlands with no Wind Turbines***	***Lowlands with Occasional Wind Turbines/ no Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: See above for description of type. The Lower Tweed LCA drains east from the St Boswells, through a broad valley with wide undulating sides to join the Teviot at Kelso. The upper section is overlooked by the Eildon Hills and there are occasional prominent skyline features such as Smailholm Tower. It is traversed by the A699 and contains several settlements. The western end of this SLA lies within the Eildon Hills and Leaderfoot NSA and most of the rest of the area is designated under the Lower Tweed SLA. There are several designed
											Max. Numbers in Group	*1-3*	*1*				

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
											Min Group Separation Distances (km)	*2-3*	*3-5*				landscapes including the inventory listed Bemeyerside, Dryburgh, Mertoun, Newton and Floors Castle. **Development Capacity:** The Lower Tweed has limited capacity for smaller size turbines, as smaller groups or single turbines. There is no capacity in the NSA and designed landscapes. Turbines should be associated with farmsteads on the valley sides or business/ industrial areas on the edge of settlements, as the flat valley floor tends to be a focal corridor for views. Care should be taken to ensure key views towards the Eildon Hills are not affected

Figure 6.1 (vi) - Coastal Zone



Legend

- Regional Landscape Areas
- Landscape Character Areas

Windfarm: Status, Height Category

- Operational / Consented, Cat 1: 15 to <35m
- Operational / Consented, Cat 2: 35 to <50m
- Operational / Consented, Cat 3: 50 to <80m
- Operational / Consented, Cat 4: 80 to <120m
- Operational / Consented, Cat 5: 120m+

Landscape Character Areas:

19 - Coastal Farmland
(i) Cockburnspath
(ii) Coldingham

20 - Coastal Pasture
20 Lamberton Moor

21 - Coastal Moorland
21 Coldinham Moor

30 - Coastal Valley
30 Lower Eye Water

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Table 6.1(vi). Summary of Landscape Capacity and Cumulative Effects and Guidance for Future Wind Energy Development – Coastal Zone

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
19. Coastal Farmland *(i) Cockburnspath*																	
Med/ High	**Med/ High**	**Med/ High**	**Med/ High**	●	◯	◯	◯	◯	There are several larger wind turbines within or close to this area: two 110m turbines at Neuk Farm, three 115m at Hoprigshiels, two 76m at Fernylea. The western end is influenced by the extensive Aikengall II windfarm on Monynut Edge.	***Coastal Zone with Wind Turbines/ No Wind Turbines***	***Coastal Zone with Wind Turbines/ No Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Rolling mixed farmland landscape of diverse character; lowland character inland but with a coastal influence terminating in dramatic rocky coastline with secluded sandy bays. Predominantly large scale but more intimate secluded areas. Shelterbelts and woodlands concentrated in some areas but also leaving wide open views. Occasional small settlements and many scattered farms and houses. The Cockburnspath area is characterised by the transition from the high Lammermuir skyline in the west to the coast in the northeast. The two areas are separated by the settlement and the transport corridor of the A1 and West Coast mainline. The inventory designed landscape of Dunglass lies along the northwestern boundary and the coastal area is covered by the Berwickshire Coast SLA. The Southern Upland Way ends at Cove and Pease Bay is a holiday facility. The western end of the LCA is crossed by an overhead electricity line and characterised by a number of larger wind turbines within and adjacent to the LCA. **Development Capacity:** This LCA has limited underlying capacity for wind turbine development. Capacity is reduced by the openness of the landscape, designations and sensitive visual receptors. Remaining capacity is limited by potential for cumulative impacts with existing and consented wind turbines in or close to the LCA. Cumulative impact issues are a concern for larger scale turbines, but the smallest sized turbines could be accommodated if associated with built development. Turbines should be set well back from the coastal margin.
											Max. Numbers in Group	*1-3*					
											Min Group Separation Distances (km)	*2-3*					
19. Coastal Farmland *(ii) Coldingham*																	
Med/ High	**Med/ High**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	There are several 15-30m wind turbines within or close to this area and one 50-80m turbine just to the south. At the western end a number of larger turbines of Drone Hill and Penmanshiel windfarms are either within the LCA or adjacent.	***Coastal Zone with Wind Turbines/ No Wind Turbines***	***Coastal Zone with Wind Turbines/ No Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: see above for description of type. The Coldingham area is less influenced by transport. It is a transition from Coldingham Moor to the coast, with the highest areas over 200m AOD being rough pasture. The area north of the A1107 is covered by the Berwickshire Coast SLA and includes the village of Coldingham and the fishing port of St Abbs. The western end is characterised by the influence of Drone Hill and Penmanshiel windfarms within/ adjacent to the LCA. **Development Capacity:** This LCA has underlying capacity for smaller scale wind turbine development, including mid-size turbines in the higher western areas. Capacity is limited elsewhere by the coastal views, designations and sensitive visual receptors including settlements. Remaining capacity is limited by potential for cumulative impacts with existing and consented windfarms in the west. Proposals for larger scale turbines will require careful assessment for cumulative effects. The smallest sized turbines could be accommodated if associated with built development and similar established smaller turbines located away from the windfarms in the west. Turbines should be set well back from the coastal margin and respect the setting of the main settlements.
											Max. Numbers in Group	*1-3*	*1*				
											Min Group Separation Distances (km)	*2-3*	*3-4*				

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
20. Coastal Pasture ***Lamberton Moor***																	
Med/ High	**Med/ High**	**Med/ High**	**Med/ High**	●	◯	◯	◯	◯	There are six 15-30m wind turbines within or close to this area.	***Coastal Zone with Occasional Wind Turbines / No Wind Turbines***	***Coastal Zone with Occasional Wind Turbines/ No Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Predominantly pastoral farmland landscape of diverse character; lowland on the west side but with a strong coastal influence on the east facing side. Characteristic hummocky landforms. Predominantly large scale but more intimate secluded areas. Shelterbelts and woodlands concentrated on the west side but the east side is more open with large fields or rough hilly pasture. A small flatter area of mainly arable land lies between the A1 and Eyemouth. Wide open views over surrounding lower ground or the sea. Occasional small settlements and scattered farms and houses. The A1 and west coast mainline pass across the north and east. The areas beyond this lie in the Berwickshire Coast SLA. **Development Capacity:** This LCA has underlying capacity for smaller scale wind turbine development, particularly in the higher rough pasture areas and possibly the arable area. Capacity is reduced elsewhere by the coastal views, designations and sensitive visual receptors including settlements and transport corridors. Turbines should be set well back from the coastal margin, respect the setting of the main settlements and avoid sensitive skylines. In higher areas existing subtle variations in landform and tree belts should be used to reduce visibility.
											Max. Numbers in Group	*1-3*	*1*				
											Min Group Separation Distances (km)	*2-3*	*3-5*				
21. Coastal Moorland ***Coldingham Moor***																	
Med/ High	**Med/ High**	**Med/ High**	**Med/ High**	◯	◯	◯	◯	◯	At the western end a number of larger turbines of Drone Hill and Penmanshiel windfarms are either within the LCA or adjacent. There are six further 15-30m wind turbines within or close to this area.	***Coastal Zone with Wind Turbines/ Occasional Wind Turbines / No Wind Turbines***	***Coastal Zone with Wind Turbines/ Occasional Wind Turbines / No Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: An exposed coastal plateau landscape of diverse character; with a strong coastal influence on the north edge which is girt by tall cliffs. Undulating landform falling away around the northern edges towards coastal cliffs. Large scale pasture and grass ley fields and areas of unimproved moorland pasture. Low tree cover concentrated in plantation woodlands. Open views contained by landform inland but panoramic over the sea and to the northeast. Occasional small settlements and scattered farms and houses. Traversed by the A1107 but few roads especially towards the coast. Most of this area lies in the Berwickshire Coast SLA. **Development Capacity:** This LCA has underlying capacity for smaller scale wind turbine development below 80m tall, particularly in the undulating plateau area. Capacity is reduced elsewhere by the coastal cliffscape and views and sensitive visual receptors including the Berwickshire coastal path. Remaining capacity in the west is limited by the existing windfarms at Drone Hill and Penmanshiel. Turbines should be set well back from the coastal margin, avoid sensitive skylines and significant adverse cumulative effects with the existing windfarms. Existing subtle variations in landform should be used to reduce wider visibility.
											Max. Numbers in Group	*1-3*					
											Min Group Separation Distances (km)	*2-3*					

Key: ◯ **No Capacity** ◯ **Low Capacity** ◯ **Medium Capacity** ◯ **High Capacity**

UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)									**CURRENT CONSENTED DEVELOPMENT**		**PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)**						
Landscape Sensitivity to Wind Energy Development				**Landscape Capacity** (Related to turbine size)					**Existing/ Consented Developments (July 2016)**	**Current Wind Energy Landscape Type(s)**	**Future Wind Energy Landscape Type(s)**	**Remaining Landscape Capacity** (Relt'd to turbine size)					**Analysis & Guidelines** (Refer to Detailed Guidance for Further Information on Siting and Design)
Landscape Character Sensitivity	Visual Sensitivity	**Landscape Sensitivity**	**Landscape Value**	**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**				**15-<35m**	**35-<50m**	**50-<80m**	**80-<120m**	**Over 120m**	
30. Coastal Valley ***Lower Eye Water***																	
High	**Med**	**Med/ High**	**High**	◯	◯	◯	◯	◯	There are two 15-30m wind turbines within this area.	***Coastal Zone with Occasional Wind Turbines / No Wind Turbines***	***Coastal Zone with Occasional Wind Turbines/ No Wind Turbines***	◯	◯	◯	◯	◯	**Landscape Analysis**: Small scale enclosed valley landscape of mixed farmland with high broadleaved tree cover. Rolling landform surrounding a meandering watercourse. Views in and out well contained. The A1 passes across the south. Well populated: the northern part is dominated by Eyemouth village and the south includes Ayton and Ayton Castle with designed landscape. **Development Capacity:** This LCA has very limited underlying capacity for wind energy due to its intimate scale. Only occasional smallest scale wind turbines, preferably under 20m height can be accommodated. Turbines should be set well back from the coastal margin, respect the setting of the two main settlements and the designed landscape. Subtle variations in landform and tree belts should be used to reduce visibility.
											Max. Numbers in Group	*1-2*					
											Min Group Separation Distances (km)	*2-3*					

6.3 Landscape Capacity and Cumulative Development

This section summarises capacity and cumulative effects for the main regional landscape areas of Scottish Borders shown in Figure 3.3. Refer to Figure 6.2 for a map of current cumulative wind turbine landscape types and Figure 6.3 for a map illustrating the proposed future limit to wind turbine landscape types, as described in Table 6.1 above and summarised in the sections below.

6.3.1 Landscape Character, Sensitivity and Capacity

The landscape of the Scottish Borders is highly varied and complex consisting of a wide range of landscape types; most but not all of which are found in other parts of Scotland. It is a complex blend of lowland, upland and coastal landscapes predominantly based around the drainage of peripheral upland areas in the west, north and south into the east flowing River Tweed. The main population centres within the Scottish Borders are concentrated throughout the more sheltered lowlands and main river valleys where key infrastructure routes pass and join. There are significant numbers of moderate or small sized settlements within the Tweed and other valleys as well as the central and eastern agricultural lowlands where these rivers join and flow towards the North Sea.

6.3.2 Midland Valley: Summary of Capacity and Cumulative Development

The Midland Valley regional landscape area in the northwest comprises three LCTs; one Upland and two Upland Fringe, falling into three LCAs. The area is peripheral to the main upland areas, but is the one part of the Pentland Hills that drains southeast into the Tweed. All three landscape character areas have only limited capacity for wind energy development. There are some highly sensitive areas where no development is recommended.

Rolling Farmland near West Linton. There is scope for smaller turbines, up to 50m tall in this LCA. Larger turbines or windfarms would overwhelm the landform and features

Within the upland landscape character area, *Dissected Plateau Moorlands* there is a limited area contained by topography with low capacity for smaller sized turbines below 50m. The north western edge of this LCA has no capacity due to skyline prominence seen from Edinburgh and West Lothian and surrounding hilltops. The core areas also have a higher wildness value and recreational use. The Upland Fringe landscape types of *Rolling Farmland* and *Grassland with Hills* have a low to medium capacity for smaller turbine developments below 50m only. This is due to the medium scale, settled landscape character and visual sensitivity of settlements and roads.

In 2016 there was relatively little consented wind energy development in this area; comprising several 15-<35m turbines mainly located in the upland fringe LCAs, a trend that continues south into South Lanarkshire. The landscape varies between a *Landscape with Occasional Wind Turbines* and *No Turbines*.

There is therefore remaining capacity for wind turbine development below 50m tall in the areas with underlying capacity in the *Rolling Farmland, Grassland with Hills* and the topographically contained areas of *Dissected Plateau Moorland*.

6.3.3 Lammermuir and Moorfoot Hills: Summary of Capacity and Cumulative Development

The Lammermuir and Moorfoot Hills regional area forms most of the northern border, overlooking the Lothians and mainly drains south into the Tweed. It comprises thirteen LCTs divided into eighteen LCAs.

The two most extensive upland areas; *Dissected Plateau Moorland* LCAs of the Lammermuir and Moorfoot Hills have a low underlying capacity for smaller turbines below 50m, a medium capacity for turbines of 50-<120m and a low capacity for turbines of 120m+.

Areas with very limited capacity for any size of turbine are located on prominent hill crests and peripheral escarpments with high visibility from surrounding populated areas; including the Moorfoots escarpment overlooking Midlothian; areas overlooking the main valleys such as the Eddleston, Gala, Leader and Whiteadder Waters and the Tweed Valley. Other areas with more limited capacity include the southern part of the *Lammermuir Hills LCA,* due to the presence of the Southern Upland Way and greater visibility of south facing slopes from populated areas to the south.

The *Plateau Grassland LCA*, although an upland LCT, is less extensive and lower with more improved and enclosed farmland areas. Nevertheless, the larger scale more contained areas on this spine have capacity for larger scale wind energy development; with medium capacity for turbines of 50-<120m and low capacity for turbines over 120m. There is capacity for smaller sized turbines as individuals or small groups associated with farmsteads on the periphery of this LCA. Hills at the southern end of this area have a high prominence and intervisibility and therefore no capacity for turbines.

The areas of capacity within each LCA decrease in size as the height of turbine increases, due to the greater impacts larger sized turbines will have and the reduction in ability for topographical containment. Capacity for turbines over 120m is greatest in core areas of these LCAs, with simple large scale landscape character, minimal population, and lower intervisibility due to topographical containment. The majority of the *Moorfoot Plateau* LCA has a non – landscape designation (SSSI) that could potentially limit turbine development.

The Upland Fringe LCAs; *Poor Rough Grasslands (Leadburn), Undulating Grassland (East Gala* and *West Gala), Rolling Farmland (Westruther Platform), Upland Fringe Moorland (Greenlaw Common)* and *Grassland with Hills (Knock Hill)* all have low to medium landscape capacity for turbines below 50m, although the Middle Tweed (Leithen Water) only has capacity for turbines of below 35m.

There is limited capacity for turbines under 80m in the less prominent eastern areas of the *Rolling Farmland LCA (Westruther Platform)*, northern area of the *Grassland with Hills (Knock Hill)* and the eastern area of *Poor Rough Grasslands (Leadburn).* The western area of the *Platform Farmland (Eye Water Platform)* potentially has low capacity for turbines below 120m. Capacity within these LCAs extends to the larger turbine type for reasons including the scale and pattern of the landscape, lower visual sensitivity and/or value.

67m turbine at Bassendeanhill in the Westruther Platform LCA. This location was considered unsuitable by SBC, but subsequently granted on appeal

Areas of no capacity within upland fringe LCAs have greater intervisibility and prominence. Some specific areas have greater recreational use (e.g. Southern Upland Way), form prominent skylines and will be visible from more populated less elevated areas (e.g. Eildon Hills or Rubers Law).

The River Valley LCAs *Pastoral Upland Valley (Gala Water* and *Eddleston Water), Upland Valley with Farmland (Upper Leader), Pastoral Upland Fringe Valley (Lower Leader* and *Eye Water)* and *Wooded Upland Fringe Valley (Middle Whiteadder)* are all smaller scale more enclosed settled landscapes, with more complex landforms and landscape patterns and often with a concentration of sensitive receptors. There is no capacity for larger scale wind energy development. However, some have areas of low capacity for small groups or single smaller turbines below 50m or 35m. These LCA also have areas of no capacity for turbine development due to designations and/or areas with greater scenic and recreational value and greater visual sensitivity.

The majority of wind energy development in Scottish Borders at July 2016 is located in this regional landscape area. This includes the following principal developments as well as approximately 50 other turbines between 15 and 80m height in developments of 3 or fewer:

- In the Lammermuirs: the windfarm at Crystal Rig in the eastern Lammermuirs (46 turbines from 99m to 125m), which is in a larger regional cluster extending into the East Lothian side of the Lammermuir Plateau and Fallago Rig (48x110/125m) in the centre of the LCA;
- In the Plateau Grassland just west of the Lammermuirs, Dun Law (26x67.5m and 35x75m), Toddleburn (12x125m) and in the south Long Park (19x100m), with Dun Law adjacent to two much smaller windfarms (Pogbie and Keith Hill) located on the East Lothian side of the Lammermuirs
- In the Moorfoot Hills Carcant (3x107m) and Bowbeat (24x80m);
- In the *Platform Farmland* Quixwood (13x100/115m) and Hoprigshiels (3x115m); and
- In the *Grassland with Hills*, Black Hill (22x78m)

This has created extensive areas of *Landscape with Wind Turbines* across the Lammermuirs and extending both east into the Coastal Zone and west into the *Plateau Grassland*. The largest clusters at Crystal Rig/ Aikengall and Dun Law/ Toddleburn are in effect Wind Turbine Landscapes.

Crystal Rig (above) and Fallago Rig (below) in the Lammermuir Hills LCA: windfarms seen in opposite directions are largely contained within topographic bowls but seen together contribute to a *Landscape with Wind Turbines* across the Lammermuirs

The Lammermuirs area is now close to capacity as any further separate development between the three main windfarm clusters at Crystal Rig, Fallago Rig and Dun Law (each with separation gaps of ca. 7-8km) would be likely to create extensive areas of *Wind Turbine Landscape* in which the character of the plateaus would be dominated by wind turbines. A similar scenario exists in the *Plateau Grasslands* between the Gala and Leader Waters, where any significant development between Toddleburn and Long Park (separated by ca. 9km) may create a *Wind Turbine Landscape* unless carefully sited.

There is also the potential for a *Wind Turbine Landscape* to extend east from the Lammermuirs across the *Platform Farmland* and *Coastal Farmland* due to consents for windfarms or small turbine clusters at Aikengall II, Quixwood, Hoprigsheils, Fernylea and Neuk Farm.

Eye Water Platform and Lammermuirs LCAs: Quixwood windfarm (under construction) in the foreground with Aikengall 2 and Crystal Rig in the background and Hoprigshiels just visible to the far right

In contrast the Moorfoot Hills and surroundings are a *Landscape with Occasional Wind Turbines* or *No Wind Turbines* and there is the potential for a further significant development to be located in the eastern part of these hills, if carefully sited and designed to take advantage of topographic screening to contain visibility and visual coalescence.

In contrast to most of the Upland areas, much of the underlying capacity in the Upland Fringe LCAs remains unused, although this is much more limited than in the Uplands. The exceptions to this are the *Platform Farmland* and *Grassland with Hills* where current operational and consented developments, within and adjacent to the LCAs, limit the potential for siting further significant wind energy schemes.

There is remaining capacity in some of the river valley LCAs, but this is limited to turbines below 50m or 35m in height.

6.3.4 Central Southern Uplands Summary of Capacity and Cumulative Development.

The Central Southern Uplands is the most extensive of the regional landscape areas, covering much of the western boundary with South Lanarkshire and Dumfries & Galloway and extending eastwards into the heart of the Borders. It comprises eleven LCTs divided into twenty-two LCAs, which include the highest upland areas and the upper and mid sections of the main river systems draining eastwards.

The main Upland LCAs of *Southern Uplands with Scattered Forest* and *Southern Uplands Forest Covered* have underlying capacity for larger scales of turbine including 120m+ due to the large scale of landscape, simple landform/ pattern and extensive area. However, this is limited in the extensive *Broad Law Group* LCA for a variety of reasons, including scenic quality, as underlined by national and local landscape designations, wildness (including part of a Wild Land Area) and recreational use (including the Southern Upland Way and the highest summits in the Borders). In this LCA capacity for larger turbines is limited to the western edge, adjacent to South Lanarkshire and the extensive Clyde Windfarm, where additional turbines would appear as an extension to the existing development.

Landscape capacity for larger turbines is less constrained in the other areas including *Dun Knowe Group, Caldcleuch Head Group* and *Craick* LCAs, where there are fewer designations, lower wildness and in the latter two LCAs, greater commercial forest cover. These areas have medium capacity for turbines of 50-<120m and low capacity for turbines of 120m+.

All the Southern Upland LCAs have low or very low underlying capacity for smaller developments with turbines below 50m or 35m in lower valley areas around their fringes. Here there are smaller scale landscape references, and small turbine groupings can be associated with built development and upland edge agriculture.

The two Upland LCAs in the north of the Central Southern Uplands: *Plateau Outliers (Eddleston/ Lyne Interfluve* and *Broughton Heights),* are both limited in area and have a smaller scale than the main upland areas to the south. They are also very visible from surrounding transport routes and settlements and especially in the case of Broughton heights, parts are covered by SLA and NSA designations. Underlying capacity is limited to low for turbines below 50m, with potential for a small group of 50-<80m turbines in the centre of the *Eddleston/ Lyne Interfluve.* Sensitive designated areas have no capacity for wind energy.

Upland Fringe LCAs have varied underlying capacity for wind turbines, with a height of less than 80m. *Grassland with Hills (Eildon Hills)* and *Rolling Farmland (Minto Hills)* both have low capacity for smaller sized turbines below 50m and areas of no capacity for medium sized turbines. Areas with no capacity are due to landscape sensitivities including the distinctive landmark Eildon and Minto Hills, and the NSA.

The *Grassland with Rock Outcrops* LCAs surrounding Hawick have varied capacity between and within areas. *Midgard, Allan Water* have medium capacity for turbines below 50m and low capacity for turbines below 80m with *Allan Water* potentially able to accommodate a windfarm of up to 5 turbines. *Whitehaugh* and *Chisholme LCAs* are more restricted in capacity due to their greater visual sensitivity and landscape characteristics. *Chisholm* is the smallest of the areas and has low capacity for turbines below 35m only. All of these areas have restricted capacity on slopes overlooking Hawick, the Teviot and other river valleys.

River Valley LCAs in the Central Southern Uplands mainly have low or no capacity for turbines and no capacity for turbines of greater than 50m. This is due to their smaller scale, more varied, settled landscapes; and in most cases landscape designations.

Much of the Central Southern Uplands has no wind energy development located within it. There are currently two operational windfarms: Langhope Rig (10x100m) in the *Dun Knowe Group* LCA and Glenkerie and extension (11x105/120m; 6x100m) in the west of the *Broad Law Group*. The latter is located close to the extensive Clyde windfarm and extension in South Lanarkshire; some turbines of which are located within Scottish Borders. Two further windfarms have recently been consented following appeals: Cloich (18x115m) in the *Eddleston/ Lyne Interfluve* LCA and Windy Edge (9x125/110m) in the Caldcleugh Head Group LCA. The former in particular exceeds the guidance in Table 6.1. Other wind energy development is limited to 15-<35m turbines located on lower ground in the north and east.

Langhope Rig windfarm in Dun Knowe LCA: Further to the Barrel Law decision, another windfarm development in this area would require significant separation by distance and topography to avoid creating an area of *Wind Turbine Landscape*

Remaining capacity for larger wind energy development lies within the southern and eastern parts of the Central Southern Uplands, as the *Broad Law Group* has limited underlying capacity which has largely been occupied by Glenkerie and Clyde. There is capacity for wind turbines up to and over 120m in height in most of the *Dun Knowe Group* LCA the southeastern part of *Craik* LCA and parts of the *Caldcleugh Head* LCA. Within these general areas there are localised sensitive receptors which limit capacity for larger turbines: including the Southern Upland Way, the A7 Tourist Route, the setting of Hermitage Castle and prominent hills.

Most of the underlying capacity for turbines under 50m remains. The main constraints being the NSA, the Wild Land Area and the scale and height of many hills and ridges in the centre of these areas being more appropriate to the larger scale of turbine.

6.3.5 Cheviot Hills: Summary of Capacity and Cumulative Development

The Cheviot Hills, contiguous with the Southern Uplands in the west and rising to the south of the Tweed Lowlands forms the upland border with England. It comprises eight LCTs divided into twelve LCAs.

The largest upland area, *Wauchope/ Newcastleton* LCA, has much the greatest capacity for larger scale wind energy development due to its large scale, gently rolling landform with extensive areas of uniform forest cover and lack of settlement. The central area has capacity for all sizes of turbine and well separated windfarms of up to 15 turbines in some locations. Capacity is restricted by some sensitivities including the Carter Bar border crossing and viewpoint in the northeast, the setting of the Scotland-England border and the Liddel Water valley and Hermitage Castle in the southwest.

Wauchope/ Newcastleton LCA from the northeast. The forested hills have potential capacity to accommodate significant wind energy development if it is suitably designed and located

The *Cheviot Uplands (Cocklaw Group)* LCA has a very different landscape character, with much steeper distinctive hills and ridges dissected by steep sided valleys. This area lies almost entirely within the Cheviot Foothills SLA, borders the Northumberland National Park and hosts the final section of the Pennine Way. These sensitivities restrict the area to a low underlying capacity for turbines below 50m. The *Cheviot Foothills (Falla Group)* LCA has a similarly low capacity due partly to prominent landforms and landscape designations; but also due to its visual sensitivity, being overlooked by the Carter Bar viewpoint and surrounding uplands.

The Upland Fringe LCAs *Rolling Farmland (Oxnam* and *Lempitlaw*) and *Grasslands with Hills (Bonchester/ Dunion)* have low underlying capacity for turbines below 50m and *Oxnam* has low capacity for 50-<80m turbines as small groups in areas of larger scale simpler landform. However, capacity is constrained in some parts of the Upland Fringe LCAs for reasons which include prominent landforms (e.g. Rubers Law and Bonchester Hill) and skylines and slopes overlooking sensitive visual receptors in surrounding valleys (e.g. Bonchester Bridge and Jedburgh).

Some River Valley LCAs in the Cheviot Hills have low underlying capacity for wind energy schemes; being restricted to turbines below 35m height. This is due to smaller scale and complexity in these landscapes as well as a greater concentration of visual receptors with a number of small to medium size settlements and key transport routes. *Jed Water* and Rule Water LCAs have no underlying capacity for turbines over 15m height.

There is at July 2016 minimal wind energy development in the Cheviot Hills area, there being a total of four 15-<35m turbines. Remaining capacity is therefore similar to underlying capacity.

Liddel Water LCA, Hermitage Castle: This is one of the more sensitive parts of the LCA. The setting of this area was one of the issues highlighted in the Windy Edge windfarm appeal, and the consented windfarm is screened from the main views of the castle

6.3.6 Tweed Lowlands: Summary of Capacity and Cumulative Development

The Tweed Lowlands regional landscape area spans the Scottish Borders from the centre to the northeast and forms the lowland boundary of the English Border. It comprises six LCTs divided into eight LCAs. All are of lowland character, focused around the River Tweed and its tributaries.

All of the LCAs have underlying capacity for turbines of less than 50m and the *Gordon Platform* for turbines of 50<-80m. None of the areas has capacity for larger turbines or windfarm developments as they are settled lowland landscapes with lower height landforms, trees and many domestic scale features, as well as a higher density of visual receptors. In most cases the underlying capacity for any size of turbine is low. However, the extensive *Lowland with Drumlins (Lower Merse)* LCA has medium capacity for turbines under 35m height and low capacity for 35-<50m as the area is extensive and the rhythm of drumlin landform and occasional tree belts can in places successfully screen smaller turbines.

There are areas within all the LCAs that are unsuitable for turbine development. This includes prominent landforms and the western edges of *Black Law/Hume Crags* and *Lower Tweed* LCAs which lie in the Eildon Hills and Leaderfoot NSA.

There is fairly extensive small scale turbine development in the Tweed Lowlands, north of Kelso. The northern margin of the *Eye Water Lowlands* has several turbines of varying size between 15 and <80m, with several other 15-<35m turbines scattered across other parts of the LCA. Other turbines are scattered across the *Lower Merse, Black Law/Hume Crags* and *Gordon Platform* LCAs, but not in the extensive *Lowland Valley with Farmland* LCAs

Remaining capacity in the *Eye Water Lowlands* is limited by existing wind energy development. In particular, it will be important to avoid creation of a *Wind Turbine Landscape* on the northern escarpment area. In other areas remaining capacity is much the same as underlying capacity.

6.3.7 Coastal Zone: Summary of Capacity and Cumulative Development

The Coastal Zone is the smallest regional landscape area, and occupies the relatively limited coastal margin in the northeast of Scottish Borders. It is a varied and often spectacular landscape comprising four LCTs divided into five LCAs.

All LCAs have underlying capacity for turbines under 50m height, except the small and intimately scaled *Coastal Valley* of the *Lower Eye Water* LCA which is limited to turbines below 20m. Higher parts of the *Coastal Moorland (Coldingham Moor)* and *Coastal Farmland (Coldingham)* LCA have underlying capacity for small groups of 50-<80m turbines. There is no capacity for larger scales of wind energy development. In all cases the coastal edge of clifftops and beaches has no capacity for any size of turbine due to scenic value and sensitive receptors on the Berwickshire Coastal Path.

There is in July 2016 extensive operational and consented wind energy development of all scales within this area; the main focus of development being the *Coastal Moorland* and *Farmland* areas in which two windfarms are located: Drone Hill (22x76m) and Penmanshiel (14x100m). In addition, the *Cockburnspath* LCA has two 110m turbines at Neuk Farm and is bordered by the three 115m Hoprigshiels and two 76m Fernylea turbines and is influenced by the 19x145m Aikengall II turbines on the Monynut Edge 2km to the southwest.

Hoprigshiels and Fernylea (above) to the west, and Penmanshiel/ Drone Hill (below) to the east, seen from the same location above Ecclaw. Aikengall 1 and 2 is also visible behind Hoprigshiels in clearer conditions

Existing development has curtailed underlying capacity in most of the LCAs, particularly *Cockburnspath* and *Coldingham Moor*. However, there is still capacity for smaller turbines, either below 35m or 50m in parts of all areas.

6.4 Overall Assessment of Capacity and Cumulative Development

6.4.1 Scottish Borders Summary: Landscape Character, Sensitivity and Capacity

The regional summaries above describe a landscape that has highly varied capacity to accommodate wind energy development; from extensive windfarms to single small turbines, as well as areas which have no capacity to accommodate wind turbines without affecting key characteristics, receptors and/or designations to an undue extent.

The LCTs with the greatest underlying capacity for development are the upland areas in the northern, western and southern edges of Scottish Borders; principally the *Dissected Plateau Moorland*, *Plateau Grassland, Southern Uplands with Scattered Forest* and *Southern Uplands Forest Covered*. These landscapes are of a larger scale and have a simple form and landcover, with fewer reference features of human scale such as houses and groups of trees. There are fewer visual receptors and some areas have a lower visibility due to intervening topography. The uplands also comprise the most extensive regional landscape type in Scottish Borders. The uplands are generally suited to larger scale turbines and windfarm developments.

Differences in capacity within upland areas are dependent on differences in topography, visual sensitivity and landscape value. Some areas have a more defined hill topography, unsuited to the largest scale of blanket windfarm development, such as seen at Crystal Rig/ Aikengall. Other areas have a high landscape value due to designations, scenic qualities, higher wildness values or their popularity for recreation. Upland areas with more limited capacity include the *Plateau Outliers* and *Dissected Plateau Moorland (Western Pentlands)* LCA in the northwest which are of limited extent; *Southern Uplands with Scattered Forest (Broadlaw Group)* LCA in the west and centre and the *Cheviot Uplands and Cheviot Foothills* LCTs in the southeast which have distinctive character and high landscape value.

As described in 6.3 above, the upland landscape types have been extensively developed or are consented for development, and their capacity for further development is thus limited.

The Upland Fringe LCTs have a more limited capacity for development than Upland LCTs for various reasons. This includes a transitional character between upland, lowland and river valley landscapes; more settled nature; visibility to population centres and transport routes and generally more limited extent. Some larger scale upland fringe areas may accommodate turbines below 80m height in small groups. However, some types, such as *Grassland with Hills* and *Upland Fringe Moorland*, include landmark hills unsuited for wind energy development, such as the Eildon Hills, Rubers Law and Dirrington Laws.

The extensive River Valley LCTs are generally only suited to smaller scale wind energy development of turbines below 50m height at most, and some have no underlying capacity. This is due to their often smaller scale and more complex landscape patterns; extensive settlement and transport routes leading to potential visual sensitivities. Some river valleys are also subject to extensive landscape designations including two National Scenic Areas along the Tweed and many inventory listed designed landscapes.

The lowland landscapes around the Tweed in the north east are generally of a large scale. However, they have a lower capacity than the uplands due to their limited vertical scale, more varied and patterned landscape and presence of human scale references such as buildings, hedges and tree belts. They are also more visually sensitive, having settlements and main transport routes. They are better suited to smaller scale developments and smaller turbines below 50m, although limited areas may accommodate turbines of 50-<80m singly or in small groups.

The coastal landscapes are in some ways a microcosm of the rest of the Borders landscapes of uplands, lowlands and valleys, but much less extensive and with a strong coastal influence. This limits their capacity to small groups of turbines below 50m height in most areas, but with some areas able to accommodate small groups of turbines of 50-<80m.

The following sections summarise the underlying landscape capacity for wind energy development throughout Scottish Borders and cumulative issues associated with current (**July 2016**) levels of development. Four categories of area are discussed, with analysis of landscape resource and current capacity:

1) **Areas with Highest Underlying Landscape Capacity**: landscapes whose characteristics would most easily accommodate extensive, large scale wind energy development without unduly adverse effects.

2) **Areas with Limited Underlying Landscape Capacity**: landscapes whose characteristics would accommodate a more modest and less extensive scale of wind energy development without incurring unduly adverse effects.

3) **Areas with Little or No Underlying Landscape Capacity**: landscapes which, due to their sensitive characteristics and value, can accommodate only the smallest scale of wind energy development, or none at all.

4) **Areas of Significant Cumulative Development**: areas overlapping all of the above categories in which there is a significant level of operational or consented development relative to capacity, which limits future capacity for development

Reference should be made to the summary diagram in Figure 6.4 in which the four types of area are shown. Detailed analysis of LCTs and LCAs within these areas and guidance for proposed developments is given in Table 6.1 above.

6.4.1 Areas with Highest Underlying Capacity.

Areas in Scottish Borders with the highest underlying capacity for wind energy development are potentially able to accommodate windfarms with larger turbine sizes. This may vary from relatively small windfarms with 5-10 turbines below 80m, to extensive windfarms with scores of turbines over 120m in height. Proposals in these strategic areas

will need to respond to the landscape's pattern and scale, take account of screening and visibility and areas of higher complexity and landscape pattern. The main strategic areas are:

- Areas of *Dissected Plateau Moorland* within the Lammermuir Hills where there is a large scale undulating landform, a simple landscape pattern and topographic screening and lower visibility within and beyond the LCA. This area is designated as an SLA and is limited to the south by the Southern Upland Way long distance route.

- The core of the *Plateau Grassland* of Lauder Common, lying between the Gala and Leader Waters, using topography to help screening from the two valleys and the Lothians to the north and avoiding effects on the publicly accessed area around the B6362 between Lauder and Stow.

- An area of *Dissected Plateau Moorland* within the central Moorfoot Hills with lower intervisibility from receptors, sited away from settlements and areas of local landscape designations. Screened and topographically contained by the upland landscape, this area could be capable of accommodating a mid to large size windfarm with turbines under 120m or a smaller number of turbines over 120m. (NB. Although not a landscape designation a large area of the Moorfoot Hills has been designated as SSSI and SAC that could restrict turbine development).

- The western edge of the *Southern Uplands with Scattered Forest (Broadlaw Group)* adjacent to Clyde Windfarm in South Lanarkshire. The windfarm area could extend into this part of the Scottish Borders which has extensive forest cover, accommodating turbines of more than 120m height. Limitations include the environs of the prominent Culter Fell to the north and more sensitive parts of the Central Southern Uplands to the east where there is a Wild Land Area and several of the highest and most popular hill summits. The A701 and Upper Tweed Valley should act as a natural boundary to eastward turbine development.

- Within the southeastern area of the Central Southern Uplands there are strategic areas. The area west of the A7 extends from the Dumfries and Galloway border north and lies mainly within two LCAs: *Southern Uplands Forest Covered: (Craik)* and *Southern Uplands with Scattered Forest (Dun Knowe)*. The area east of the A7 lies mainly within the *Southern Uplands with Scattered Forest (Caldcleuch Head Group)*. These strategic areas have lower intervisibility, limited human settlement, no landscape designations and are simpler landscapes with relatively little diversity and would be capable of accommodating turbines of over 120m height in smaller or mid-sized windfarms. (NB. Although not a landscape designation these areas are partly within the Eskdalemuir EKA Seismological Array exclusion and statutory safeguard zones, that are likely to have an impact on potential for wind energy developments).

- Within the Cheviot Hills there is a strategic area in the *Southern Uplands Forest Covered (Wauchope/Newcastleton) LCA*. This area has large scale gently rolling landform, uniform forest cover and a low population. Areas benefit from topographic screening and would be capable of accommodating turbines of over 120m height in smaller or mid-sized windfarms. Limitations include views from more sensitive locations on and around the Scotland-England Border and some more prominent landforms.

6.4.2 Areas with Limited Underlying Capacity

Areas with limited underlying capacity could accommodate small groupings of carefully located turbines under 80m or, in some cases, under 50m height. In some locations this may amount to a small scale windfarm, but in others only single or lower height turbines could be accommodated. The larger developments would best be accommodated in the largest scale areas of Upland Fringe or Lowland areas with simple landform and lower population. The smaller developments would in most cases be better accommodated in enclosed farmland, industrial/ business areas or other built development and in many cases be limited to turbines under 50m height. Areas with limited underlying capacity include:

- Areas of the Midland Valley Upland and Upland Fringe landscape character types. Development should respond positively to the existing scale, settlement patterns and complexities found within the landscape.

- The lower elevations of the *Middle Tweed Valley* landscape but only within the less sensitive areas with lower intervisibility, avoiding prominent spurs.

- The less prominent, but not peripheral, southern slopes of the Moorfoot Hills and peripheral areas of Lauder Common and the Lammermuir Hills. Siting should avoid the most exposed peripheral areas and escarpments due their prominence and the visual or landscape sensitivity of their surroundings.

- The transitional area between the Upland Fringe of the Lammermuir Hills and the Tweed Lowlands. This area has limited capacity in undesignated undulating farmland landscapes with sparsely distributed smaller settlements, individual farmsteads and a lower intervisibility.

- The undulating landscape of the Merse area also has capacity for smaller turbines in locations with lower intervisibility.

- Areas within the Cheviot Hills, Upland Fringe and River Valleys: within the more contained areas screened from the Northumberland National Park and key viewpoints and within less complex open areas with fewer settlements and lower intervisibility.

- The outlying areas, but not the more prominent slopes of the Southern Uplands; Uplands, Upland Fringe and River Valley landscapes. There is some capacity here due to the lower intervisibility and larger scale less complex landscapes/ landforms and simpler patterns in the landscape.

- River Valley landscapes of the Gala Water, Leader Water and Eye Water. The limited capacity within these landscapes is due to the smaller scale landscape character, settlement and transport patterns and the more complex landscape patterns and processes within them.

When assessing the acceptability of large and very large turbine proposals in neighbouring landscape character areas, proximity to these sensitive areas should be taken into account.

Gala Water LCA. There is limited scope for appropriately sited turbines up to 50m tall in this upland valley

6.4.3 Areas with Very Limited or No Underlying Capacity

Significant areas of Scottish Borders have a high sensitivity and/or value and thus very limited or no capacity for wind turbine developments. These areas can only exceptionally accommodate well separated single turbines below 50m or 35m. Some areas are not suitable for wind energy development. These areas are:

- The upland areas of the Pentland Hills in the Midland Valley area. The skyline and escarpment of these hills is highly prominent to a large population to the north and the area has a high recreational value.
- A large area of the *Upper Tweed Valley* and prominent escarpment slopes of the Central Southern Uplands, *Broughton Heights* and *Moorfoot Hills* due to national and local landscape designations, settlement pattern and a higher degree of visibility from sensitive receptors.
- The core of the Central Southern Uplands in the *Broadlaw Group* LCA, which has the highest summits, most dramatic scenery and highest wildness value within Scottish Borders and is consequently a scenic and recreational asset.
- River valleys within the Southern Uplands due to settlement patterns, smaller scale landscapes, local and national landscape designations. Intervisibility from the valleys to the upland areas would also be higher.
- Areas within the Cheviot Hills. This is due to various landscape character, visual and landscape value reasons. This includes a steep and complex landform, proximity to the Northumberland National Park and the summit of the Cheviot, the Pennine Way, local landscape designations and important recreational usage including tourism and the setting of the panoramic Carter Bar viewpoint on the England – Scotland border.
- A large central area of the *Middle* and *Lower Tweed Valley*, including upland fringe and Tweed Lowland landscapes. This is due to local and national landscape designations, a substantial population and settlement pattern within the lowlands and river valleys as well as prominence, smaller scale landscapes with more complex patterns and processes and a higher degree of intervisibility within this area of the Scottish Borders.
- The southern fringes of the Lammermuir Hills consisting of Upland, River Valley and Upland Fringe landscapes. This is due to local landscape designations, long distance recreational routes and a higher degree of intervisibility.
- A number of prominent landmark hills in Upland and Upland Fringe areas including the Eildon Hills, the Dirrington Laws, Rubers Law, the Minto Hills and Maiden Paps. These characteristic and widely visible landforms fall mostly within designated landscapes and cannot accommodate wind turbines on their slopes or immediate surroundings without undue effects.
- The coastal edge of the Coastal Zone also has no capacity for turbine development due to scenic value, visual sensitivity and local landscape designations.

It is recommended that these landscape areas remain sparsely developed or undeveloped to protect their character and to provide gaps between clusters of development.

Rubers Law is one of the most prominent landforms in the Borders and is not suitable for wind turbine development

6.4.3 Areas of Significant Cumulative Development

SPP recommends that planning authorities are clear about likely cumulative impacts arising from the considerations set out at paragraph 169, which may limit the capacity for further development. One of the development management considerations at paragraph 169 is cumulative landscape and visual impacts.

Figure 6.4 identifies areas where, in **July 2016**, there is significant cumulative operational and consented wind turbine development. The cumulative areas overlap with landscapes

of varied underlying capacity for development, and simply reflect that there is significant cumulative development relative to this underlying capacity. Four *Areas of Significant Cumulative Development* are identified. These areas do not in themselves specify capacity or a limit to development; however, a broader area of potential constraint is indicated by wider *Areas Where Cumulative Impacts Limit Development* encompassing the cumulative areas and their surroundings.

Table 6.2 below describes the areas in more detail and key criteria for locating further development and assessing cumulative effects. Capacity and guidance is also detailed for the coincident LCTs and LCAs in Table 6.1. This should be taken into consideration when assessing residual capacity for further wind energy development within the areas shown, or in adjacent landscapes.

The boundaries shown in Figure 6.4 are indicative. Development proposals require to address detailed criteria in Table 6.2 to ensure that landscape capacity within, or adjacent to, these areas is not exceeded as a result of adding further to existing and consented cumulative development.

The *Areas of Significant Cumulative Development* detailed in Figure 6.4 and Table 6.2 are based on the most up to date information on operational and consented schemes available at a time prior to its completion (i.e. July 2016). However, the database has changed in the intervening period between July and this November publication, with the addition of newly consented schemes including small scale and single turbine proposals as well as larger wind farms. The baseline will continue to change in future. Cumulative effects are therefore likely to extend, or occur outwith the areas shown in the report, as new developments come forward. It is therefore possible that in future other areas not currently detailed in Figure 6.4 and Table 6.2 could meet the definition of *Areas of Significant Cumulative Development.*

The capacity study therefore represents a 'snapshot' in time at July 2016. As is the case with all cumulative assessments, proposed schemes will require to be assessed on the basis of available up-to-date information on consented and operational schemes at the time of application.

Elsewhere there are much more limited extents of development and the guidance in Table 6.2 is intended to steer future development to an acceptable level.

Table 6.2: Description and Guidance for Areas of Significant Cumulative Development: (see Figure 6.4 for locations)

1. Coastal Zone, Lammermuir Hills and Lauder Common	
Description	**Development Situation and Key Objectives**
This area lies in the Lammermuir & Moorfoot Hills regional landscape area, on the northern boundary of Scottish Borders extending into East Lothian and Midlothian. It includes the following LCAs and operational/ consented wind energy developments: • The Coastal Zone area of *Coastal Farmland (Cockburnspath)* southwest of Cockburnspath and the northern edge of the *Platform Farmland (Eye Water Platform)*; within or close to which lies the small schemes of Neuk Farm, Hoprigshiels, and Fernylea; • The Upland landscape of *Dissected Plateau Moorlands (Lammermuir Hills)* extending across the border into East Lothian and including the extensive developments at Aikengall/ Crystal Rig and Fallago Rig. • The northern edges of the River Valley Landscapes of *Wooded Upland Fringe Valley (Middle Whiteadder)* and *Upland Valley with Farmland (Upper Whiteadder)*. • The northern end of the Upland Landscape of *Plateau Grassland (Lauder Common)* extending across the boundary into East Lothian and including the extensive Dun Law/ Toddleburn cluster.	In July 2016 there are three main wind energy clusters and a number of smaller developments of 2-3 turbines. This has created a *Landscape with Windfarms* over the area as a whole, with Windfarm Landscape around each of the largest three clusters. The key objectives governing the area are: • Retaining sufficient spacing between individual windfarms and turbines so as not to exceed a *Landscape with Wind Turbines* typology outside the main *Wind Turbine Landscape* clusters of Crystal Rig/ Aikengall, Fallago Rig and Dun Law/Toddleburn; • To prevent visual coalescence with cumulative areas 2 and 3; • To prevent a proliferation of turbines visible from the A1 and East Coast Mainline Railway corridor; • To prevent the overdevelopment of the Upland landscape, *Plateau Grassland (Lauder Common) LCA* and to avoid this landscape from developing into a *Wind Turbine Landscape*; • To prevent the close proximity of larger turbines to settlements and individual dwellings in the surrounding Upland Fringe, Coastal Zone and River Valley areas; • To support an organised pattern of development within the Upland areas, promoting development in concentrated clusters whilst maintaining sufficient spacing between neighbouring clusters of developments; • To minimise visibility to sensitive receptors in surrounding areas; including to the north the more visually prominent areas of the northern escarpment of the Lammermuirs visible from population centres of Edinburgh and the Lothians and to the south from the Southern Upland Way.
2. Coldingham Moor	
Description	**Development Situation and Key Objectives**

This area lies largely within the Coastal Zone regional area. It includes the following LCAs and operational/ consented wind energy developments: • A small section of the A1 and East Coast Mainline Railway corridor, River Valley landscape *Pastoral Upland Fringe Valley (Eye Water);* • The Coastal Zone area of *Coastal Moorland (Coldingham Moor)* and *Coastal Farmland (Coldingham)* between the settlements of Cockburnspath and Coldingham; This area accommodates two adjacent windfarms; Drone Hill and Penmanshiel, as well as three other turbines adjacent to this cluster.	In July 2016 there is one wind energy cluster comprising two windfarms and closely associated smaller developments of 1 and 2 turbines. This has created a *Landscape with Windfarms* within a wider area of *Landscape with Wind Turbines*. The key objectives governing the area are: • Retaining sufficient spacing between individual windfarms and turbines to avoid significantly expanding the areas of *Wind Turbine Landscape* and maintain the *Landscape with Occasional Wind Turbines* typology over the wider area • To minimise visibility of turbines from the scenic coastline edge of the Berwickshire Coast SLA • To prevent visual coalescence with cumulative areas 1 and 3 • To prevent a proliferation of turbines visible from the A1 and East Coast Mainline Railway corridor • To prevent the unacceptable proximity of larger turbines to settlements and individual dwellings including Coldingham and Cockburnspath • To minimise visibility from sensitive receptors including the Southern Upland Way and Berwickshire Coastal Path
3. Eye Water Platform	
Description This area lies largely within the Upland Fringe of the Lammermuir & Moorfoot Hills regional landscape area. It includes the following LCAs and operational/ consented wind energy developments: • The Upland Fringe landscapes of the *Platform Farmland (Eye Water Platform)* • The southwestern edge of the A1 and East Coast Mainline Railway corridor, River Valley landscape *Pastoral Upland Fringe Valley (Eye Water)* • The northern edge of the River Valley Landscape of the *Wooded Upland Fringe Valley (Middle Whiteadder)* • The northwestern edge of the Lowland Landscape of *Rolling Lowland Margin (Eye Water Lowlands)*.	In July 2016 there is one windfarm and several smaller wind energy schemes within a *Landscape with Windfarms*. The key objectives governing the area are: • Retaining sufficient spacing between individual windfarms and turbines to maintain the *Landscape with Wind Turbines* and *Landscape with Occasional Wind Turbine* typology and avoid creating areas of *Wind Turbine Landscape*; • To prevent visual coalescence with cumulative areas 1 and 2 • To prevent a proliferation of turbines visible from the A1 and East Coast Mainline Railway corridor • To prevent the unacceptable proximity of larger turbines to settlements and individual dwellings • Retaining sufficient spacing between windfarm developments and the Southern Upland Way.
4. Western Central Southern Uplands	
Description This area lies within the Central Southern Uplands, on the western boundary of Scottish Borders, extending well into South Lanarkshire. It includes the following LCAs and operational/ consented wind energy developments: • The *Southern Uplands with Scattered Forest (Broadlaw Group)* LCA west of the Upland Valley with Pastoral Floor (Upper Tweed Valley) and the A701 and South of Culter Fell, extending well into the Southern Uplands of South Lanarkshire • The area to the west is dominated by the more than 200 turbines of Clyde windfarm and extension, which is primarily in South Lanarkshire; with Glenkerie and extension 5km to the northeast within Scottish Borders	**Development Situation and Key Objectives** At July 2016 the western part of this area is a *Wind Turbine Landscape*, with a *Landscape with Wind Turbines* extending northeastwards. It is surrounded by an extensive area of *Landscape with No Wind Turbines* extending across the *Broadlaw Group* and *Upper* and *Middle Tweed Valley* LCAs. The key objectives governing the area are: • Promote the contained development of a wind farm cluster, using the strong landscape feature of the Tweed Valley and A701 as a barrier to limit development spreading east across the Southern Uplands • To maintain the Broadlaw Group LCA to the east of the Tweed Valley as a *Landscape with No Wind Turbines,* creating a gap between wind energy clusters • To prevent visual coalescence of any other wind energy schemes with Clyde windfarm • To prevent unacceptable proximity of larger turbines to visually sensitive locations including the Southern Upland Way, the Devil's Beeftub viewpoint and popular hill summits including Culter Fell, Hart Fell and Broad Law • To prevent adverse effects on the Talla-Hart Fell Wild Land Area

6.5 Capacity for Further Development

This assessment has demonstrated that the landscape of Scottish Borders has the underlying capacity to accommodate a significant amount of wind energy development; of appropriate types and extents according to the varied characteristics of the landscapes and the visual sensitivities across the region.

At current levels of development there is remaining capacity for further appropriate wind energy development in much of the Scottish Borders. However, cumulative development limits this in some areas.

The following section highlights the areas with remaining capacity. However, Tables 6.1 and 6.2 should be consulted for detailed guidance.

6.5.1 Areas with Most Remaining Capacity

The greatest scope for further development lies within Upland LCTs in the north, west and south that have been identified firstly as having underlying capacity for larger turbines and windfarms and secondly cover significant areas:

- The core of the *Moorfoot Hills* has the landscape capacity to accommodate a windfarm with turbines of 80-<120m or a smaller number of turbines at 120m+.
- Areas of *Craik, Dun Knowe, Caldcleuch Head* and *Wauchope/ Newcastleton* could accommodate windfarms with larger turbines including 120m+

6.5.2 Areas with Limited Remaining Capacity

Areas with limited remaining capacity include areas with underlying capacity for larger turbines that are limited by cumulative development and windfarms, and areas with underlying capacity for smaller windfarms and/or smaller types of turbine development that remain undeveloped:

- The *Lammermuir Hills* could accommodate additional larger turbines but only as extensions to existing windfarms
- *Lauder Common* could accommodate additional larger turbines as a carefully sited additional development or possibly by extending an existing windfarm
- The *Broadlaw Group* west of the A701 could accommodate further carefully designed and sited extension to Clyde windfarm
- Some of the Upland Fringe LCTs and smaller Upland LCTs have areas of the scale and simplicity of landscape pattern to accommodate turbines below 80m and most 80m, although some in the northeast are close to cumulative capacity.
- Some of the larger scale River Valley LCTs can accommodate turbines of below 50m and none of these has reached capacity
- Most of the Lowland LCTs are of a large enough scale and simple pattern to accommodate turbines below 50m, or in some cases 80m, although some areas in the northeast are close to cumulative capacity.
- Limited areas of the Coastal LCTs have remaining capacity for turbines below 50m or 35m.

There may be limited scope for extension of larger operational windfarms in Upland LCTs as an alternative to locating new smaller windfarms in lowland or upland fringe areas. However, the siting of additional turbines must avoid physical or visual coalescence with windfarms and concentrations of turbines in neighbouring landscapes, or the crossing of boundaries blurring the distinction between landscape types.

6.5.3 Other Landscape Areas and Urban Areas

Within many of the remaining LCAs of Scottish Borders there is very limited remaining capacity for small wind energy development below 35m or occasionally 50m. Many parts of these areas have effectively no capacity, for reasons including landscape character, visual sensitivity and/or landscape value. These areas include:

- The two nationally designated landscapes
- Areas with a high scenic quality and/or wildness value that are also popular with visitors including much of the *Broad Law* LCA
- Distinctive landforms and their settings such as the Eildon Hills, Rubers Law or the Dirrington Laws
- The highest hilltop viewpoints such as Broad Law, Culter Fell and Hart Fell
- Inventory listed designed landscapes
- Narrow, steep, small scale river valleys
- Locations critical to the setting of settlements

Whilst it is recognised that some parts of urban areas may be able to accommodate wind turbines, and indeed do, this study does not assess the capacity of urban areas. Consequently urban areas have not been included in the maps in 6.1 - 6.4 and the guidance in Table 6.1. Factors specific to townscape and urban planning are likely to guide location; however the effects of larger turbines on adjacent rural LCTs and cumulative areas should be taken into account.

6.6 Existing Developments: Extensions and Repowering

SPP para 170 states that *'Areas identified for wind farms should be suitable for use in perpetuity'* and refers in paras 161 and 174 to repowering of existing sites and extensions to existing windfarms. Implicit in this is the need to ensure at the outset that sites are

suitable for development and that windfarms are sited and designed to minimise impacts and to protect amenity. Para 161 states:

'Development plans should also set out the criteria that will be considered in deciding all applications for wind farms of different scales – including extensions and re-powering – taking account of the considerations set out at paragraph 169'.

The study has taken into consideration the likelihood that existing schemes in Scottish Borders may in future be extended, or in the longer term repowered (see 6.2.4 and 5 above and remarks in relation to specific schemes made in Table 6.1).

The guidance addresses the landscape, visual and cumulative criteria listed in para 169 of SPP. It should be applied as equally to extensions to, and repowering of, existing windfarms as it is to newly proposed wind energy developments. However, some specific considerations relating to the nature of extensions or repowering will apply:

- The design of extensions and repowering schemes should take into account the scale and context of existing wind energy development in the surrounding area that will be added to, replaced and/or operational during the lifetime of the proposed extension/ repowering scheme.
- In the case of extensions, the location and design of extensions relative to the original scheme is critical. This should take account of turbine size and layout, remaining capacity for extension without unduly extending effects, and the remaining lifespan of the original scheme.
- Particularly in the case of repowering, opportunities for mitigating adverse effects of earlier, less well designed, schemes should be grasped. This may include more harmonious turbine arrangements or reducing the developed area as more energy can now be delivered by fewer, larger turbines.

The nature of future proposals will be affected by the wider changes to onshore wind energy driven by advances to technology and changing economic circumstances. Currently the main anticipated change is the greater size of, and spacing between, modern commercial turbines. In essence, applications for repowering should be considered *de novo*.

6.7 Guidance for Single/Small Turbine Developments

This cumulative assessment and capacity study has detailed the current distribution of all sizes of wind turbines of 15m or above when determining capacity for further development. This is because the smallest turbines (less than 15m), being of a similar height to built structures and trees found commonly throughout the landscape, do not have the same eye-catching prominence and extensive visibility of larger turbines. They do not therefore have the same issues of wide scale cumulative effects across extensive landscape areas.

The issues relating to design and siting of small turbines concern mainly their localised effects on the area in which they are sited rather than wider cumulative effects on landscape character. Small wind turbines should be judged on their own merits, assessed against the criteria that apply to most other domestic or farm scale built structures. Landscape and visual considerations may include the following:

- Effects on designations including landscape quality designations, Scheduled Ancient Monuments, listed buildings, conservation areas;
- Location in relation to scenic viewpoints;
- Relationship to skylines and seascapes;
- Relationship to other structures and buildings;
- Location in relation to approaches to and setting of settlements;
- Proximity to residential properties;
- Localised cumulative effects including potential for visual confusion or cluttering areas with significant numbers of small turbines and/or close proximity to other similar larger structures including taller wind turbines and electricity pylons.

Larger wind turbines are more often than not seen against the sky. The approach to colouring has been to adopt a neutral light grey colour relating to the sky colour most likely to be encountered as a backdrop. Small wind turbines are often fully or partially backclothed against landforms and/or trees, giving a closer relationship to the ground than the larger structures. It may therefore be appropriate to consider colouring small wind turbines a darker grey, green or brown to reduce their visibility when seen against backdrops, or close to buildings.

Further guidance on the siting of smaller wind turbines is given by SNH[15] .

[15] SNH (March 2012) *Siting and Design of Small Scale Wind Turbines of between 15 and 50 metres in height*

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Legend

- Regional Landscape Areas
- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

Landscape Capacity (15 to <35m)

- High
- Medium
- Low
- None

Note:
The shaded areas show an indicative level of capacity and its extent within and across different landscape character areas. These areas should not be interpreted as a hard boundary and reference should be made to the detailed capacity assessment and locational guidance given in Table 6.1.

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
5	Southern Uplands Forest Covered
6	Cheviot Uplands
7	Cheviot Foothills
8	Rolling Farmland
9	Platform Farmland
10	Grassland with Rock Outcrops
11	Grassland with Hills
12	Undulating Grassland
13	Poor Rough Grassland
14	Upland Fringe Moorland
15	Lowland with Drumlins
16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 6.1a

15 - <35m Turbines Underlying Landscape Capacity

N

0 5 10 20 Km

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(i) Midland Valley

(ii) Lammermuir & Moorfoot Hills

(iii) Central Southern Uplands

(iv) Cheviot Hills

(v) Tweed Lowlands

(vi) Coastal Zone

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
5	Southern Uplands Forest Covered
6	Cheviot Uplands
7	Cheviot Foothills
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15	Lowland with Drumlins
16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

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Legend

- Regional Landscape Areas
- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

Landscape Capacity (35 to <50m)

- High
- Medium
- Low
- None

Note:
The shaded areas show an indicative level of capacity and its extent within and across different landscape character areas. These areas should not be interpreted as a hard boundary and reference should be made to the detailed capacity assessment and locational guidance given in Table 6.1.

Figure 6.1b

35 - <50m Turbines
Underlying Landscape Capacity

N

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(i) Midland Valley

(ii) Lammermuir & Moorfoot Hills

(iii) Central Southern Uplands

(iv) Cheviot Hills

(v) Tweed Lowlands

(vi) Coastal Zone

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
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18	Lowland Margin with Hills
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21	Coastal Moorland
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23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

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Legend

- Regional Landscape Areas
- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

Underlying Landscape Capacity (50 to <80m)

- High
- Medium
- Low
- None

Note:
The shaded areas show an indicative level of capacity and its extent within and across different landscape character areas. These areas should not be interpreted as a hard boundary and reference should be made to the detailed capacity assessment and locational guidance given in Table 6.1.

Figure 6.1c

50 - <80m Turbines
Underlying Landscape Capacity

N

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(i) Midland Valley

(ii) Lammermuir & Moorfoot Hills

(iii) Central Southern Uplands

(iv) Cheviot Hills

(v) Tweed Lowlands

(vi) Coastal Zone

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
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9	Platform Farmland
10	Grassland with Rock Outcrops
11	Grassland with Hills
12	Undulating Grassland
13	Poor Rough Grassland
14	Upland Fringe Moorland
15	Lowland with Drumlins
16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

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Legend

- Regional Landscape Areas
- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

Underlying Landscape Capacity (80 to <120m)

- High
- Medium
- Low
- None

Note:
The shaded areas show an indicative level of capacity and its extent within and across different landscape character areas. These areas should not be interpreted as a hard boundary and reference should be made to the detailed capacity assessment and locational guidance given in Table 6.1.

Figure 6.1d

80 - <120m Turbines
Underlying Landscape Capacity

N

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(i) Midland Valley

(ii) Lammermuir & Moorfoot Hills

(iii) Central Southern Uplands

(iv) Cheviot Hills

(v) Tweed Lowlands

(vi) Coastal Zone

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
5	Southern Uplands Forest Covered
6	Cheviot Uplands
7	Cheviot Foothills
8	Rolling Farmland
9	Platform Farmland
10	Grassland with Rock Outcrops
11	Grassland with Hills
12	Undulating Grassland
13	Poor Rough Grassland
14	Upland Fringe Moorland
15	Lowland with Drumlins
16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

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Legend

- Regional Landscape Areas
- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

Underlying Landscape Capacity (120m+)

- High
- Medium
- Low
- None

Note:
The shaded areas show an indicative level of capacity and its extent within and across different landscape character areas. These areas should not be interpreted as a hard boundary and reference should be made to the detailed capacity assessment and locational guidance given in Table 6.1.

Figure 6.1e

120m+ Turbines
Underlying Landscape Capacity

N

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Legend

Windfarm: Status, Height Category

- Operational / Consented, Cat 1: 15 to <35m
- Operational / Consented, Cat 2: 35 to <50m
- Operational / Consented, Cat 3: 50 to <80m
- Operational / Consented, Cat 4: 80 to <120m
- Operational / Consented, Cat 5: 120m+
- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- SNH Landscape Character Areas

Typology

- Wind Turbine Landscape
- Landscape with Wind Turbines
- Landscape with Occasional Wind Turbines
- Landscape with No Wind Turbines

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
5	Southern Uplands Forest Covered
6	Cheviot Uplands
7	Cheviot Foothills
8	Rolling Farmland
9	Platform Farmland
10	Grassland with Rock Outcrops
11	Grassland with Hills
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13	Poor Rough Grassland
14	Upland Fringe Moorland
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16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 6.2

Current Wind Turbine Landscape Typology: Operational & Consented Windfarms

N

0 5 10 20 Km

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Code	Landscape Character Types
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5	Southern Uplands Forest Covered
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12	Undulating Grassland
13	Poor Rough Grassland
14	Upland Fringe Moorland
15	Lowland with Drumlins
16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

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Legend

Windfarm: Status, Height Category

- Operational / Consented, Cat 1: 15 to <35m
- Operational / Consented, Cat 2: 35 to <50m
- Operational / Consented, Cat 3: 50 to <80m
- Operational / Consented, Cat 4: 80 to <120m
- Operational / Consented, Cat 5: 120m+
- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- SNH Landscape Character Areas

Typology

- Wind Turbine Landscape
- Landscape with Wind Turbines
- Landscape with Occasional Wind Turbines
- Landscape with No Wind Turbines

Figure 6.3

Wind Turbine Landscape Typology: Proposed Maximum Development Capacity

N

0 4 8 16 24 Km

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Legend

- Regional Landscape Areas
- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- **Areas of Significant Cumulative Development:**
  1. Coastal Zone, Lammermuir Hills and Lauder Common
  2. Coldingham Moor
  3. Eye Water Platform
  4. Western Central Southern Uplands

  (see Table 6.2 for further details)
- Landscape Character Areas
- Areas Where Cumulative Impacts Limit Development

Capacity

- Areas with Highest Capacity
- Areas with Limited Capacity
- Areas with Very Limited Capacity or No Capacity

Note:
Areas shown are indicative and reference should be made to the detailed guidance in Table 6.1 and discussion in Section 6.4.

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
5	Southern Uplands Forest Covered
6	Cheviot Uplands
7	Cheviot Foothills
8	Rolling Farmland
9	Platform Farmland
10	Grassland with Rock Outcrops
11	Grassland with Hills
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14	Upland Fringe Moorland
15	Lowland with Drumlins
16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 6.4
Wind Turbine Development Opportunities and Constraints

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APPENDICES

APPENDIX 1: CURRENT POLICY AND GUIDANCE FOR ONSHORE WIND ENERGY

1.1 National Policy and Guidance

National policy in relation to renewable energy development is expressed in SPP 2014 and NPF3, with related web-based guidance. This reflects the Scottish Government's commitment to greatly increasing the amount of energy produced by renewable sources. Inevitably it focuses on wind power as, at least in the short term, the most available resource suitable for expansion.

SPP 2014 is thus very positively disposed to renewable energy production and directs all councils to create development plan policies that encourage renewable energy generation capacity, including onshore wind power.

SPP 2014 recognises that wind energy developments are likely to have significant impacts on the environment, including the landscape. It therefore underlines the need to ensure that developments have due regard for environmental, community and cumulative impact considerations. In this respect Government describes the need for development plans to set out a Spatial Framework for windfarms, which identifies areas where windfarms will not be acceptable (National Parks and National Scenic Areas) and areas of significant protection (areas defined by a number of national designations such as SPAs, SSSIs or Wild Land Areas). All other areas are likely to have capacity for windfarm development, subject to detailed consideration against specific policy criteria, including matters relating to landscape and visual impacts and cumulative effects. Scottish Government web based guidance also lists the criteria that should be considered in the location of windfarms.

Scottish Natural Heritage provides comprehensive guidance on most aspects of onshore wind energy development and the landscape:

- Assessment of landscape and visual impacts and visual representation of wind turbines;
- Siting and design guidance;
- Assessment of cumulative impacts.

The extensive range of guidance is available on SNH's website:

http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/

1.2 Development Plan Policies

Strategic Development Plan (SDP)

Scottish Borders SDP is covered by the plan for south east Scotland, produced by SESplan. The current plan was approved in June 2013 and covers the period to 2032. The consultation for SDP2 Main Issues Report was completed in 2015.

Policy 10 reflects SPP 2014 commitment to renewable energy targets.

POLICY 10
SUSTAINABLE ENERGY TECHNOLOGIES

The Strategic Development Plan seeks to promote sustainable energy sources. Local Development Plans will:

a. Support the future development and associated infrastructure requirements of Longannet and Cockenzie power stations in relation to their role as non-nuclear baseload capacity generators and the reuse of waste heat from these developments. Support Energy Park Fife at Methil and developments connected with offshore renewable energy at Leith and Rosyth; and

b. Set a framework for the encouragement of renewable energy proposals that aims to contribute towards achieving national targets for electricity and heat, taking into account relevant economic, social, environmental and transport considerations, to facilitate more decentralised patterns of energy generation and supply and to take account of the potential for developing heat networks.

Scottish Borders adopted Local Development Plan 2016

Renewable energy is a wide ranging subject and many LDP policies need to be considered during the application processing period. However, the most relevant is policy ED9 – Renewable Energy Developments.

Policy ED9 in essence is supportive of a wide range of renewable energy types provided that there are no unacceptable significant adverse impacts which cannot be mitigated. If there are, then development will only be approved if the Council is satisfied that the wider economic, environmental and other benefits of the proposal outweigh the potential damage arising from it. The adopted LDP can be viewed on the following link:

https://www.scotborders.gov.uk/info/20051/plans_and_guidance/121/local_development_plan.

Policy ED9 can viewed on pages 55 - 59 within Volume 1- Policies. "

Scottish Borders SPG

Scottish Borders Council produced Supplementary Planning Guidance Wind Energy (SPG) in 2011.

The SPG clarifies the spatial framework, identifies broad areas of search, identifies criteria for areas of significant constraint and also provides guidance for on-shore wind development. The May 2016 Adopted Local Plan commits to updating this to reflect SPP 2014, within one year of its adoption.

https://www.scotborders.gov.uk/directory_record/7454/wind_energy/category/28/approved_planning_guidance

Guidance for Wind Energy in Berwickshire

Scottish Borders Council provides guidance for small groups of turbines (single, 2 or 3) within Berwickshire, which was updated in January 2015. Guidance for LCAs within this part of Scottish Borders has been taken into account in the current study:

https://www.scotborders.gov.uk/directory_record/29067/landscape_and_visual_guidance_for_single_and_groups_of_2_or_3_wind_turbines_in_berwickshire/category/28/approved_planning_guidance

APPENDIX 2: CUMULATIVE IMPACT AND LANDSCAPE CAPACITY ASSESSMENT METHODOLOGIES

1.0 Background

Cumulative environmental impact is the impact that results from incremental changes caused by past, present or reasonably foreseeable actions. Scottish Government Guidance on wind energy states:

> *'Assessing the cumulative impact of a number of wind turbines or a number of wind farms involves considering the combined effects of siting proposals in proximity to each other'.*

Cumulative impact is a critical consideration in the case of landscape and visual impacts of onshore wind turbines and windfarms in Scotland due to the current number of existing and consented developments in the landscape, proposed developments in the planning system and the long term implications of national policy that encourages the development of onshore wind energy generation.

The characteristics of wind turbines that lead to cumulative impacts include:

- The large scale and striking visual appearance of wind turbines and windfarms in most landscapes;
- The great extent of their visibility and the potential for intervisibility between wind turbine developments and as seen by receptors;

The larger modern turbines are prominent, large scale, man-made features and there are few other precedents in terms of scale, height and appearance in most landscapes. Topography aside, they are much taller than any natural features such as trees or most buildings and other structures. Of similar built structures in rural landscapes, electricity pylons are significantly smaller than the largest turbines and although broadcasting masts are often taller they are usually singular and infrequent, whereas wind turbines are built in multiples, often in great numbers. Furthermore, most landscape features are static whereas wind turbines rotate. Smaller turbines may also present issues of scale and appearance in more localised contexts, as well as visual confusion when seen together with larger turbines.

This study on behalf of Scottish Borders Council requires the assessment of cumulative development and landscape capacity. However it is recognised in guidance that the determination of landscape capacity and cumulative impacts is not a straightforward exercise. The background and considerations involved in this process are detailed in this Appendix.

Definitions of the term 'capacity' applied to landscape generally refer to the ability to accept a development without a 'significant' or 'unacceptable' level of change to a landscape. This implies that criteria must be identified and thresholds must be determined to give meaning to the words 'significant' and 'unacceptable'.

Guidance on the assessment of cumulative impacts and landscape capacity is available from a number of sources, most particularly Scottish Natural Heritage *Assessing the cumulative impact of onshore wind energy developments (March 2012)* but also in UK guidance (eg. *Landscape Character Assessment Guidance for England and Scotland Topic paper 6: Techniques and Criteria for Judging Capacity and Sensitivity. SNH and The Countryside Agency, 2002*) and will be referred to in the following sections.

The determination of 'cumulative impacts' and 'capacity' is subject to debate. No clear guidance is given in the published information beyond the need for the individual impact assessor or Development Plans to determine what the assessment criteria and significance thresholds are. Reasoned argument applicable to the specific circumstances applies, rather than the establishment of an absolute or universal definition. Inevitably this approach is subject to differences of opinion, with thresholds of significance and views on acceptability often differing depending on the background or vested interests of those involved in the debate.

In the absence of any clearly stated or agreed criteria or thresholds and to progress this study some form of threshold or thresholds need to be defined. In order to do this a number of terms and concepts need to be clarified, defining exactly what is being assessed and how. The purpose of the following section is to focus the subsequent assessment and to provide guidance and a basis for decisions to be made by the appropriate authorities.

2.0 Defining Terms: Sensitivity, Significance, Capacity and Acceptability of Change

Topic Paper 6 of *Landscape Character Assessment: Guidance for England and Scotland (2002)* refers to the fact that the terms 'sensitivity' and 'capacity' have often been used in an interchangeable manner in landscape character assessment, essentially referring to the ability of a landscape to absorb change without a significant effect on its character. A landscape of high sensitivity is often considered to have a low capacity for change, and vice-versa. Furthermore sensitivity is used as a key criterion in determining both significance of impact and landscape capacity. In fact there are subtle but important differences between sensitivity and capacity. This section discusses the differences and interrelationships between sensitivity, capacity and significance in landscape character assessment and how the acceptability of change may be determined.

2.1 Landscape Sensitivity

The sensitivity of a landscape is a measure of its inherent vulnerability to potential changes and their effects on fabric and character. Vulnerability to change can be considered in two ways:

1) As an inherent part of the landscape's characteristics, regardless of possible types or scales of change that may occur; or

2) In relation to a specific proposed type and scale of change.

In the former case the assessment of sensitivity would be applied in landscape character assessment where no particular change is being contemplated or assessed, and the landscape is being considered in a resource planning context. In the latter case the assessment of sensitivity would typically be applied in an environmental impact assessment where specific changes are envisaged. In the EIA case the sensitivity of the receiving landscape would be assessed against the magnitude of change in order to determine impact significance.

2.2 Landscape Capacity

Landscape capacity is variously described as the ability of a landscape to accommodate (or absorb) change without a significant (or unacceptable) change in fabric or character. This is usually taken to mean whether or not one or more of the key defining characteristics of the landscape is changed such that the overall fabric or character of the landscape is changed, ie. a 'capacity threshold' is crossed. In the case of windfarms it is primarily landscape character that is being considered, particularly in cumulative assessments.

The determination of landscape capacity is closely related to landscape sensitivity and the determination of significance of impact. However assessment of capacity is a not necessarily based around the assessment of known development proposals, but rather the hypothetical ability to accommodate particular types of development, such as windfarms before a threshold or series of increasing thresholds are crossed.

According to *Topic Paper 6,* in determining capacity not only the sensitivity of the landscape to the particular type of development is considered but also the *landscape value* of the area concerned. Value may be determined in a number of ways, including by landscape designations (national, regional or local); cultural and historic associations and in terms of how it is valued by those who live in it or use it in some way.

The determination of capacity is primarily a planning tool rather than a reactive or assessment tool. Nevertheless the determination of capacity thresholds can also be used to assess existing levels of development or potential development scenarios such as is the case with windfarm developments in Scottish Borders.

2.3 Determination of Impact Significance

The principles involved in determining impact significance are the same whether a single or multiple developments are being considered. This involves assessing:

1) The sensitivity of the receptor to the type of change proposed; and

2) The magnitude of change that would result from the proposals.

Sensitivity and magnitude are considered in combination, leading to an overall assessment of impact. This informs a determination of whether the impact is significant in terms of the EIA regulations. In doing this the considerations about what exactly is being assessed should be taken into account and clearly delineated including baseline, types of impacts and specific developments.

The threshold at which significance is determined in relation to the EIA regulations should also be defined prior to assessment. However, this threshold is particularly open to debate and often subject to the perceptions of different groups of stakeholders.

2.4 The Nature of Impacts

The issue of whether impacts are positive, beneficial or neutral is also an important consideration when making decisions on the acceptability of impacts, regardless of their significance. If an impact were considered positive or neutral in nature it is likely that its level of significance would be considered less critical than were it considered negative. Most windfarm developers equivocate this issue by reference to public opinion polls indicating support for renewable energy and the division of public opinion that is apparent over most windfarm developments. This masks the underlying landscape issue that should be considered independently of a windfarm's primary function or other effects.

The purpose of a windfarm is to provide renewable energy involving low levels atmospheric carbon pollution. This accords with current policy and is considered positive and beneficial. Conversely, wind turbines are objects that are unprecedented in scale and appearance in most landscapes, especially the rural area s in which they are mainly located. Many published landscape character assessments of rural areas do not specifically mention wind turbines and windfarms, although increasingly there are guidelines relating to placing them within particular character types. Furthermore, whilst government policy and advice (eg. SPP, web based guidance, SNH guidance) and local authority policy (Development Plans) support their development, it is always with a precautionary note relating to balancing benefits and impacts.

The tone of most guidance is that of achieving a balance of impacts against the positive returns of renewable energy. For example SPP states in paragraph 187:

> *'Planning authorities should support the development of wind farms in locations where the technology can operate efficiently and environmental and cumulative impacts can be satisfactorily addressed.'*

and;

> *'The design and location of any wind farm development should reflect the scale and character of the landscape. The location of turbines should be considered carefully to ensure that the landscape and visual impact is minimised.'*

Web based guidance for onshore wind states:

> *'Wind turbines can impact upon the landscape by virtue of their number, size or layout, how they impact on the skyline, their design and colour, any land form change, access tracks and ancillary components anemometers, substations and power lines. The ability of the landscape to absorb development often depends largely on features of landscape character such as landform, ridges, hills, valleys, and vegetation'.*

and:

'As more areas of search are taken up and as more sites are proposed within or near sensitive landscapes, landscape protection and designing appropriate mitigation through conditions and/or legal agreements, will become a more routine consideration alongside maximising the potential of wind energy. In relation to landscape impact, a cautious approach is necessary in relation to particular landscapes which are rare or valued, such as National Scenic Areas and National Parks'.

Wind turbines are placed in the landscape for a specific purpose other than landscape change. Given this fact and the nature of Government advice, a precautionary approach should be taken in the assessment of impacts by concluding that in most cases the impacts are to some degree negative. The degree of negative impact and level of significance will of course depend on the characteristics of the landscape in which the windfarm is located. It is conceivable that in some degraded or industrial landscapes the construction of a windfarm could be considered a neutral or positive change.

In terms of visual impacts the issue of public opinion is more relevant, but a precautionary note applies in this case as well. Particularly the issue of positive responses to the provision of clean energy needs to be separated from the consideration of visual impact of turbines in the landscape.

2.5 Acceptability of Change

As discussed above there is published guidance on methods of assessment of cumulative landscape and visual impacts of windfarms (eg. SNH, 2012) and separate guidance on the factors that determine impact significance (eg. LI & IEMA, 2002). However, there is currently no generic guidance that defines how to determine the *acceptability* of impacts. Indeed, generic guidance on acceptability may be inappropriate as any judgement on this is contextual and often a case of weighing perceived impacts against perceived benefits. The impacts and benefits will often be different in type and the balance of judgement is to an extent subjective. The acceptability of change in any particular landscape will depend on the nature of the landscape, the significance of the impacts and the purpose of the change. The final judgement is often informed by and weighed against specific development plan policies and material considerations.

The determination of significant change should theoretically be a clearly defined stage in this process, similar to an impact assessment. Nevertheless, as previously discussed, significance in landscape and visual impact assessment is not universally defined and is open to debate. If the significance of change is open to interpretation, then 'acceptability' of change is a still less definable term that is often based on opinion and is open to debate.

What is acceptable to one individual or organisation may not be acceptable to another. What may be seen as unacceptable change in a narrow context (eg. landscape and visual impacts) may be seen as acceptable when considering the overall balance of positive and negative impacts (eg. provision of carbon-neutral energy). In a study of windfarms in the Western Isles (SNH, 2004) the idea of a predetermined 'carrying capacity' is questioned and the concept of *Limits of Acceptable Change* (LAC) is discussed:

'LAC is first and foremost a process through which decisions are made on the conditions which are acceptable and then prescriptions are made for the actions needed to protect or achieve those conditions. So the objective of the LAC process is not to prevent change but rather to control it and to decide on the actions required to maintain or achieve the desired conditions. Other key features of LAC are the use of indicators and a monitoring programme. As a process, LAC is always participatory and multi-disciplinary, and may or may not involve a wide range of stakeholders. Whilst the term capacity may still be used in LAC, (recreational) carrying capacity is not a simple, single, absolute value. It is the amount, kind and distribution of use that can occur without causing unacceptable impacts on either natural resources or the perceptions and experiences of the users'.

This concept requires qualitative judgements about what is important in a landscape or to people using that landscape and what level of change is acceptable (ie. what types and levels of change can take place before the landscape is considered to be critically or significantly changed). In the context of this study, acceptability of change will be related to cumulative landscape and visual impacts judged against landscape capacity as determined by structured a process of judgement; the provisions of criteria-based landscape policies; other material considerations and the wider Scottish picture of windfarm development. No account will be taken of the other potential impacts or benefits of windfarms. The resulting judgements of this study will need to be balanced against the other benefits or disadvantages of the proposals.

2.6 National and Local Policy

The acceptability of proposed windfarms and cumulative landscape and visual impacts of multiple windfarm development has to be considered in the light of national and development plan policy. National policies and Scottish Borders structure and local plan policies are described in Appendix 1 above.

2.7 Developing a Cumulative Impact Assessment Methodology

2.7.1 Cumulative Impacts

For the purposes of this study, cumulative impacts are taken to be those arising from more than one development of the same type, rather than the accumulation of changes making up one development. In the case of windfarms, cumulative studies concentrate on other windfarms. In practice, other features in the landscape or views (eg. communications masts or electricity pylons) should also be taken into account. Nevertheless, given the singular appearance of windfarms and their generally isolated rural locations, the potential for overlap of cumulative impacts with other developments is more limited.

2.7.2 Baseline

The baseline for a cumulative, or indeed any, assessment is usually taken to include the existing landscape and visual receptors in the study area at the time of assessment. The baseline should include all operating windfarms and, arguably, all consented windfarms as this is effectively the 'permitted landscape'. The assessment of change and significance of

impact should be carried out relative to this baseline whether carrying out a standard or cumulative assessment.

Nevertheless, a landscape capacity study leading to the determination of an 'acceptable' level of windfarm development requires consideration of a full picture of all the windfarms in the landscape: operating, consented and proposed, in order to determine the extent and acceptability of change. The fact that there are operating or consented windfarms in an area is not necessarily an indication that the landscape is less sensitive to further development and that capacity is available. Indeed, depending on the landscape type, degree of development and objectives of policy in relation to landscape character, it may mean that most or all of the capacity is already occupied. Therefore, despite the existing baseline, the development must also in effect be considered relative to the underlying landscape.

2.7.3 Types of Cumulative Impact

Landscape

The assessment of cumulative landscape impacts involves an assessment of change in the fabric and character of the landscape as a result of the combined changes of more than one development. The changes are assessed in relation to defined areas of landscape such as a project study area, landscape character area or designated landscape. As previously discussed, it is effects on landscape character that are the primary focus in relation to windfarms from which all other assessments are derived.

Visual

The assessment of cumulative visual impacts involves an assessment of the change in views and visual amenity as a result of combined changes of more than one development, as experienced by people at their homes and during recreation, travel or work. There are three types of cumulative impact in relation to visual receptors:

1) Combined: more than one development is seen from a single static viewpoint in one arc of view (ie. within the span of one view, without the receptor turning around). This would include particular directional viewpoints or the view from the principal aspect of a residential property.

2) Successive: more than one development is seen from a single static viewpoint by a receptor turning around to encompass more than one arc of view, up to 360^0. This includes high and open viewpoints, or views from all aspects of a residential property.

3) Sequential: more than one development is seen by a receptor visiting a series of viewpoints. This may involve travelling along a linear route or through an area in which views of the developments may be continuous or intermittent and different developments may be seen at different locations. This includes roads, railways, paths and other defined routes or could involve an area such as a designated landscape.

In practice most assessment will include all of these types of impact in order to gain a full picture of how cumulative impacts will be experienced by receptors.

2.7.4 Effect of Pattern of Development on Perception of Impact

Cumulative studies tend to focus on the number of windfarms, turbines or output capacities within a particular area as an indication of level of cumulative impact. Nevertheless, there is not necessarily a simple relationship between numbers, areas and cumulative impact. The pattern of windfarm and wind turbine development, in terms of size, layout and proximity may also affect the perception of cumulative impacts.

The effect of proximity of different windfarms and turbines to one another has a bearing on impacts. Whilst close proximity of two or more windfarms may reduce the total area visually affected, the level of perceived cumulative impact may be increased by juxtaposition of windfarms or turbines of significantly different appearance (due for example to differing turbine sizes or site layouts) leading to a jarring visual clash or an untidy, disorganised appearance.

Furthermore, studies and planning decisions have indicated that there is less resistance to expansion of existing windfarms than to creation of separate new windfarms. In particular, respondents to a survey on impacts of windfarms on tourism in Scotland (Glasgow Caledonian University and others, March 2008) showed little concern about views being affected by one windfarm compared with more than one windfarm being visible in the same view.

> *"A significant proportion of respondents (44%) agreed that they don't like to see several Wind farms in the same view. These results suggest that those respondents who have indicated having a neutral or even positive perspective on individual wind farm sites are less likely to have a similar opinion on a landscape that has several developments in view.*
>
> *This clear result compares with analysis in the previous section where there was a small increase in the negative response as the visual impact increased for an individual wind farm development. This suggests that people see one large scale development in an area as preferable to several smaller scale developments dotted on the landscape.*
>
> *On the other hand, both sets of results also confirm that a definite tipping point exists where wind farm development becomes untenable for a significant number of visitors".*

Current guidance and recent planning decisions are tending towards the concept of concentration of wind turbines into large clusters in certain areas. This is on the basis that this reduces the potential for a widespread dispersal of effects over a larger area and allows areas more sensitive to windfarm development to remain free of windfarm development. SNH guidance now highlights this issue and supports this type of approach where appropriate (*SNH, 2009*).

The policy may also offer advantages in terms of economies of scale for site servicing and electricity transmission. The disadvantages are likely to be that areas chosen for concentration of the turbines are likely to be significantly and adversely affected by development – this being effectively a 'sacrificial' landscape policy. Furthermore, this concept does not necessarily sit well with recent encouragement for smaller scale wind

energy development promoted by the Feed in Tariff where turbines are likely to relate to individual properties scattered across the landscape.

2.7.5 Setting Assessment Objectives

What exactly is being assessed depends on the purpose of the cumulative assessment. In the case of an EIA for a single development it is primarily the impacts of the proposal and its contribution to cumulative impacts that is being assessed. Such a study would therefore typically concentrate on areas in which the impact of the windfarm under consideration is significant and give only slight consideration to areas in which it is not, even if there were significant cumulative impacts from other windfarms.

In the case of a more broad-based cumulative study such as this, it is the overall impact of windfarm developments on a defined study area that is being assessed. Nevertheless this study requires a consideration of the both the full cumulative impact *and* the contribution that specific developments (proposed or operating) make to that impact, in order to inform decisions.

2.7.6 Defining Thresholds of Cumulative Development

The discussion above has defined the terminology and our approach to cumulative assessment. It has isolated the central issues that inform the assessment of acceptability of levels of change. The key requirement is to develop a methodology for defining thresholds of significance and acceptability that are clear and robust enough to be accepted by all sides of the debate. This study as a stage in the debate about acceptable levels of change in the landscape of Scottish Borders. Whilst we can describe and define what those levels of change might be it is difficult to enforce a universal view as to what levels of change are significant or acceptable.

Scottish Government Guidance underlines the landscape and visual issues associated with increasing levels of cumulative wind turbine development:

> *'In areas approaching their carrying capacity the assessment of cumulative effects is likely to become more pertinent in considering new wind turbines, either as stand alone groups or extensions to existing wind farms. In other cases, where proposals are being considered in more remote places, the thresholds of cumulative impact are likely to be lower, although there may be other planning considerations.*
>
> *In assessing cumulative landscape and visual impacts, the scale and pattern of the turbines plus the tracks, power lines and ancillary development will be relevant considerations. It will also be necessary to consider the significance of the landscape and the views, proximity and inter-visibility and the sensitivity of visual receptors.'*

SNH guidance Siting and Designing Windfarms in the Landscape (SNH, Dec 2009) lists the factors that affect the perception of cumulative impact of windfarm development:

> *'The cumulative impact of windfarm development on landscape and visual amenity is a product of:*
>
> *• the distance between individual windfarms (or turbines),*
> *• the distance over which they are visible,*
> *• the overall character of the landscape and its sensitivity to windfarms,*
> *• the siting and design of the windfarms themselves, and*
> *• the way in which the landscape is experienced.*
>
> *The combination of single turbines and small clusters of turbines can raise the same issues'.*

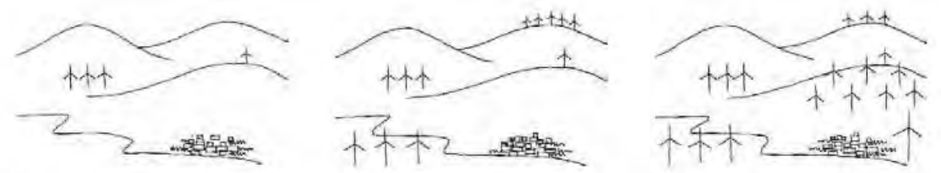
To this list might be added turbine height and windfarm size. In determining an acceptable level of development, it is necessary to clearly define what differing levels of development actually entail.

The SNH guidance identifies three broad levels of cumulative change in the landscape that may be set by local authorities depending on landscape sensitivity and value and local policy objectives:

- **Landscape Protection:** Maintain existing landscape character.
- **Landscape Accommodation:** Accept a degree of change providing this is not detrimental to key landscape characteristics and key visual resources.
- **Landscape Change:** Accept large amounts of change that may have detrimental effects on key landscape characteristics and visual resources.

In determining an acceptable level of development, it is necessary to clearly define what differing levels of development actually entail. The methodology therefore sets out defined levels of change to the landscape and visual environment that might occur or be experienced depending on the size, number and location of turbines to be built within an area.

The descriptions in Table 2.1 below set out a gradated landscape typology that defines the terms of reference for increasing levels of cumulative landscape and visual impact of turbines. It does this by describing their effect on landscape character and the experience of those living in or travelling through the landscape. Further generic illustration of this concept is provided in Part 1 section 5 of the SNH guidance:



Separate isolated features | Windfarms become key characteristic of the landscape | Windfarms become dominant characteristic of the area, creating a 'windfarm landscape'

The purpose of this approach is to address the gap between results of cumulative impact assessment and judgements on acceptability of change. It does not set thresholds of significance or acceptability but it does present a framework that describes levels of change in landscape character and the experience of visual receptors in the landscape. This can then be used to inform and shape the debate concerning the degree of change in a landscape and the acceptability of cumulative impacts and the *Limits of Acceptable Change*.

Table 1: Description of Levels of Cumulative Wind Turbine Development

Landscape Type	Landscape Character	Visual Experience
Landscape with no Wind Turbines	A landscape type or area in which no or very few wind turbines are present, and none are clearly visible from neighbouring areas.	There would be no discernible effects on visual receptors.
Landscape with Occasional Wind Turbines	A landscape type or area in which windfarms or wind turbines are located and/or are close to and visible. However they are not of such a size, number, extent or contrast in character that they become one of the defining characteristics of the landscape's character.	Visual receptors would experience occasional close-quarters views of a windfarm or turbine and more frequent background views of windfarms or turbines. Some of the turbines would not be perceived as being located in the landscape character type or area. No overall perception of wind turbines being a defining feature of the landscape.
Landscape with Wind Turbines	A landscape type or area in which a windfarm, windfarms or wind turbines are located and/or visible to such an extent that they become *one* of the defining characteristics of the landscape character. However, they are clearly separated and not the single most dominant characteristic of the landscape.	Visual receptors would experience frequent views of windfarms or wind turbines as foreground, mid-ground or background features, affecting their perception of the landscape character. However there would be sufficient separation between windfarms and turbines and sufficient areas from which wind turbines are not visible such that they would not be seen as dominating the landscape over all other landscape features.
Wind Turbine Landscape	A landscape type or area in which windfarms or wind turbines are extensive, frequent and nearly always visible. They become the dominant, defining characteristic of the landscape. Nevertheless there is a clearly defined separation between developed areas.	Visual receptors would experience views of windfarms as foreground, mid-ground and background features, to the extent that they are seen to dominate landscape character. Few areas would be free of views of wind turbines.
Windfarm	Landscape fully developed as a windfarm with no clear separation between groups of turbines. Few if any areas where turbines not visible.	Visual receptors would always be close to and nearly always in full view of wind turbines.

The above descriptions of levels of turbine development within a landscape are necessarily simple, factual and generic. They can be applied to any chosen scale of study area, from a region to a landscape type or a single landscape character area. They do not apply to any specific baseline landscape type or types: indeed the character of the landscape is likely to affect judgements on the assignation to a particular level of development. For instance, a large scale landscape may be less dominated and affected than a smaller scale landscape; or a more complex topography, or a densely wooded landscape may reduce the visibility of wind turbines within an area and hence affect the perception by visual receptors. A large landscape character area will require a greater extent and frequency of development than a smaller area to become affected by wind turbines. Furthermore, as discussed in Chapter 5 of this report, there are a number of design and siting factors that affect the perception of cumulative impacts. This includes not only size and number of turbines and windfarms in an area but also the juxtaposition of different layouts including turbine size, positioning and distribution.

The descriptions assume conditions of good visibility covering the 30-35km range that visibility studies and visual impact assessments of larger windfarms adopt as best practice. Clearly this exceeds the requirements for assessments of smaller turbines.

The descriptions are intended to be neutral in that they are purely descriptions of levels of development and the frequency or proximity at which wind turbines and windfarms may be seen. They do not attempt to define the levels of development as being good, bad, acceptable or unacceptable. This is a judgement that would be made when considering specific cases against the landscape type, its capacity for windfarm development, the development policy framework and other material considerations. In this case it is the determination of areas in which cumulative impact has reached the capacity of the landscape.

2.8 Capacity Assessment Method

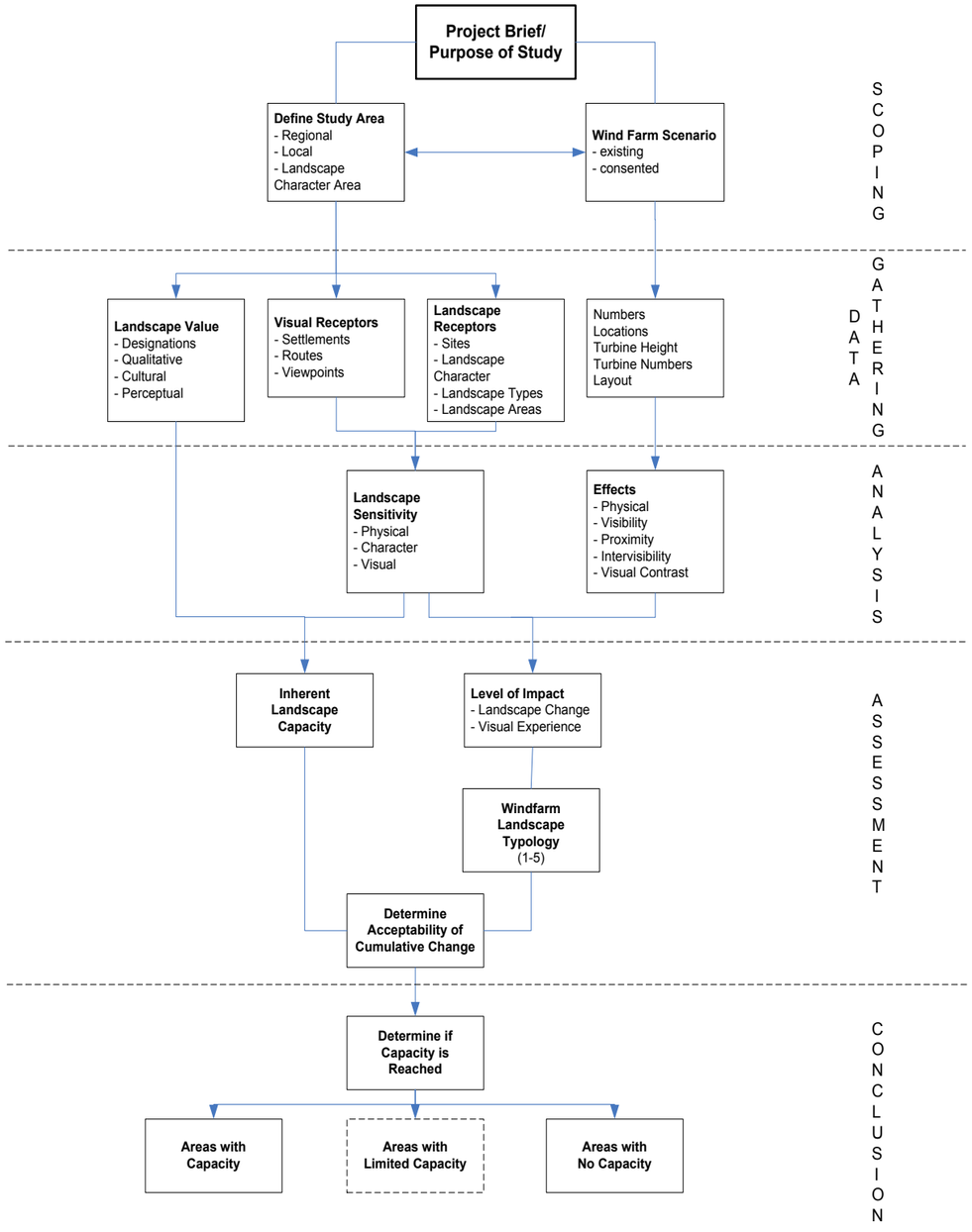
2.8.1 Assessment Process

The considerations discussed above have been taken into account in the staged methodology. This is illustrated by the flow diagram in Figure 1 overleaf. There are 5 stages in the process as shown in Table 2 below:

Table 2: Stages in Landscape Capacity Assessment

Scoping:	Define the purpose of the study, the study area and the wind energy development scenario that is to be assessed.
Data Gathering:	Gather information on receptors (visual and/or landscape); landscape designations and potential constraints; windfarms/ turbines (existing, proposed etc).
Analysis:	Determine landscape character sensitivity, visual sensitivity and landscape value. Determine visibility, direct and indirect landscape effects of the consented windfarms and turbines.
Assessment:	Determine landscape capacity from landscape sensitivity and value. Determine level of cumulative change caused by consented wind turbines, leading to a wind turbine landscape/ visual typology.
Conclusions:	Determine significance and/ or acceptability of existing and future potential cumulative change to the landscape and visual environment.

Figure 1: Cumulative Impact and Landscape Capacity Methodology Flowchart



This is a flexible framework which can be adapted to include the whole study area or focus on subdivisions of landscape, windfarm groupings or development scenarios as required. In this case local landscape character types have been considered, then building up to a picture of the whole of Scottish Borders.

The assessment for Scottish Borders includes:

1) Assessment of landscape capacity, cumulative change and acceptable limits of cumulative development in:

   - landscape character types and areas in Scottish Borders;
   - broad regional landscape character areas of Scottish Borders;
   - Scottish Borders as a whole.

The cumulative development in each case is expressed via the wind turbine landscape/ visual typologies described in Table 2.1.

The cumulative and capacity assessment for onshore wind energy in Scottish Borders considers:

1) Current wind turbine landscape typology resulting from operating and consented wind turbines, where there is a high degree of certainty in the cumulative assessment scenario.

2) The limits of acceptable cumulative change expressed in terms of the wind turbine landscape typologies (eg. acceptable level of development in an area might be judged as no more than a *Landscape with Occasional Windfarms*). This is based on a judgement considering landscape capacity but also including policy considerations, emerging guidance on wind turbine development and strategic landscape considerations in Scottish Borders.

3) The effects of consented wind turbines together with wind turbines currently under planning application – where there is a level of uncertainty regarding the potential cumulative scenario.

Further comment is made on the extent to which the current and proposed type and pattern of development (eg. turbine size, windfarm size and separation between developments) affects the cumulative impacts and, if appropriate, how the area should be developed in order to keep within an acceptable cumulative change.

This information is used to determine where existing development has reached or come close to reaching landscape capacity and further development should be limited. On a more strategic level it identifies areas where development should be limited to provide separation between concentrations of wind turbine development. It also allows the identification of areas where further development may be possible and, in these cases, what level of development would be acceptable.

The assessment is carried out on the basis of the structured methodology in line with SPP and Scottish Government web based guidance in combination with professional judgement, on the basis of a desk analysis of available information on the landscape, on wind turbine developments and through site visits.

The following sections detail the stages in determining landscape capacity.

2.8.2 Determining Landscape Character Sensitivity

The determination of landscape character sensitivity for a landscape character type involves a breakdown of the physical and perceptual characteristics that contribute to landscape character. Each criterion described below is evaluated in terms of **high, medium** or **low** for sensitivity to wind energy development. An overall assessment is derived from a composite of all the criteria. Whilst scale is often important, there is no consistent relative weighting for each criterion, as in each landscape type different criteria may to be critical to the ability to accommodate wind energy development.

Table 3. Determination of Landscape Character Sensitivity

Landscape Character Criteria	Factors affecting level of sensitivity
Scale (primarily in character but also in geographical size of area)	Consideration of horizontal and vertical scale. Larger scale landscapes are generally considered more able to accommodate commercial wind turbines, although a smaller size of turbine may reduce impacts. A larger physical area would be able to accommodate more development depending on other aspects determining capacity.
Landform	The relationship between wind turbines and landform is complex and also dependent on scale. Generally simple landforms: flat, undulating or gently rolling, are considered less sensitive and complex landforms more sensitive, especially if smaller scale. Landforms of sufficient scale may provide opportunities for screening or backgrounding turbines, reducing their visual sensitivity.
Pattern	The pattern of landcover (woodland, field boundaries, crops, roads, settlements etc). Degree of strength, regularity, fragmentation. Minimal or simple landscape patterns are considered less sensitive to wind turbine development. Again the relationship to scale is important.
Development	The degree of built or infrastructure development will affect suitability. In general a greater level of development is more suitable, particularly large scale industrial and extractive industries, or potentially large scale agriculture. Areas with small scale residential development would potentially be more sensitive. Undeveloped areas with remote or wilderness characteristics would also be more sensitive.
Quality	This is a measure of the condition and integrity of the landscape fabric and character. A landscape in good condition with a high degree of integrity is more likely to be sensitive to development. A landscape of poor quality may represent an opportunity to compensate for impacts.
Elements and Features	The elements that make up a landscape, such as woodlands, fields, hedges, buildings and landforms create its pattern but add to its distinctive composition and character. Prominent or distinctive focal features such as steep hills, towers, lochs add further distinctiveness. The relationship of wind turbines to these affects overall sensitivity.
Context	The characteristics of surrounding landscape areas provide a context that affects perception of a landscape and may affect how wind turbine developments are perceived. Landscapes acting as a backdrop or foreground to other areas are particularly sensitive.
OVERALL RATING	**High/ Medium/ Low**

The following definitions apply to the thresholds of low, medium and high landscape character sensitivity:

Low Sensitivity: A landscape type or area with key characteristics that would be capable of successfully accommodating or co-existing with wind energy development of all or most scales.

Medium Sensitivity: A landscape type or area with some key characteristics that would be capable of successfully accommodating or co-existing with wind energy development but also some characteristics that would be adversely affected and where scale of development may be a limiting factor.

High Sensitivity: A landscape type or area in which most or all key characteristics would be adversely affected by wind energy development and is not capable of successfully accommodating this type of change.

2.8.3 Determining Visual Sensitivity

The visual sensitivity of a landscape area is determined by who is likely to see it, (types and numbers of receptors) and how visible in general the area is. The assessment is made in relation to the visibility of tall structures.

2.8.4 Visibility Analysis

A systematic analysis of the relative visibility of areas of Scottish Borders has been undertaken. Three sets of visual receptors were determined as follows, and these are identified in Section 4:

- Settlements;
- Routes;
- Viewpoints

Each of the receptor types and locations is representative of locations frequented by people in Scottish Borders. The visibility analysis included each set of receptors, and generated visibility diagrams of different scenarios for different heights of objects in the landscape.

The analysis was carried out using a computer based technique in which the intervisibility between receptors and landforms, or objects of specific heights on the landforms, is determined. The more intervisibility, the greater the visual sensitivity is likely to be. In the case of area receptors (settlements) or linear receptors (routes) these are broken up into units of the same area or length such that this represents different population sizes or length exposed to view. No value judgement has been made as to relative sensitivity of receptors.

The extent of the visibility assessment was limited to a 15km radius from the receptors. In our experience, this is the distance within which the great majority of significant impacts from wind farms are likely to occur. Whilst it is recognised that impacts occur beyond this distance, up to 35km and beyond, as recognised by EIA best practice, this is not an EIA assessment and the results are considered to adequately distinguish between locations of potentially greater or lesser sensitivity.

Each receptor type was assessed at six different heights above ground level in order to distinguish between the potential visibility of windfarm infrastructure and turbines of differing height:

A receptor height of 2m was assumed.

- 0m representing objects at or near existing ground levels such as tracks and small buildings;
- 25m representing maximum height of small domestic and farm scale turbines;
- 50m representing blade tip height of typical farm scale turbines;
- 100m representing blade tip height of many commercial windfarm turbines and some single Feed in Tariff turbines.
- 150m representing blade tip height of the tallest commercial turbines currently in use

A receptor height of 2m was assumed.

Results of the visibility analysis are illustrated in Figures 4.2a-e to 4.4a-e. The colours show the differences in visual sensitivity across Scottish Borders. Red colours indicate areas that are most visible from the greatest numbers of receptors, grading through orange, yellow and green to blue areas that are seen by fewest receptors and uncoloured areas where objects of that height would not be seen at all from receptors.

The three key criteria which determine visual sensitivity are listed in Table 4 below. Each is rated in terms of high, medium or low and a composite rating derived based on professional judgement. The following definitions apply to the thresholds of low, medium and high visual sensitivity:

Low Visual Sensitivity: A landscape type or area which due to its location and characteristics has limited internal and/or external visibility and where wind energy developments would not be visible to many sensitive receptors.

Medium Visual Sensitivity: A landscape type or area which due to its location and characteristics has a moderate degree of internal and/or external visibility and where wind energy developments would be potentially visible to a wide range of receptors, some of which are sensitive.

High Visual Sensitivity: A landscape type or area which due to its location and characteristics has extensive internal and external visibility and where wind energy developments would be potentially visible to a wide range and number of sensitive receptors.

Table 4. Determination of Visual Sensitivity

Visual Sensitivity Criteria	Factors affecting level of sensitivity
Receptors	A greater number of potential receptors including higher population densities, visitor attractions or the presence of busy transport routes will lead to a higher visual sensitivity. The sensitivity and expectations of the receptors is also a contributory factor.
Internal Visibility	Views within a landscape area may be open or restricted by landform, vegetation or buildings. The greater the degree of openness and intervisibility the greater the sensitivity.
External Visibility	A landscape area that is visible from surrounding areas by virtue of its prominence or being overlooked is more visually sensitive than an area that is seldom seen.
OVERALL RATING	**High/ Medium/ Low**

The combination of landscape character and visual sensitivities leads to an overall assessment of landscape sensitivity for an area. Whilst landscape character is likely carry more weight in determining sensitivity, no consistent weighting is given to either factor as it is likely that different landscapes will express them to varying extents depending on their unique characteristics. Professional judgement is used in the case of each landscape type.

2.8.5 Determining Landscape Value

Landscape value reflects the value that society and individuals put on a landscape. This can be officially recognised by some form of local or national designation, or simply by its value to a 'community of interest' (this could be for example a local population, recreational users or conservation interest).

Other characteristics affecting value of a landscape include its historic and cultural associations, particularly if expressed by surviving features and patterns in the landscape. Finally there are more intangible characteristics generally valued by society, such as tranquillity remoteness and wilderness.

The key criteria which determine value are listed in Table 5 below. Each is rated in terms of high, medium or low and a composite rating derived based on professional judgement. The following definitions apply to the thresholds of low, medium and high landscape value:

Low Landscape Value: A landscape type or area which has no landscape designation; little apparent value to communities; no or few

cultural heritage designations or associations and has no distinctive or unusual perceptual values.

Medium Landscape Value: A landscape type or area which has at least in part local landscape or landscape related designations; value to local communities; some cultural heritage designations or associations and has some distinctive perceptual values.

High Landscape Value: A landscape type or area, all or much of which is covered by national landscape or landscape related designations; has value to local and wider communities; widely recognised cultural heritage designations or associations and has clearly distinctive and/or unusual perceptual values.

Table 5. Determination of Landscape Value

Landscape Value Criteria	Factors contributing to value
Designations	International, national, regional or local designations relating to landscape in particular, although ecological designations also contribute to the landscape value of an area.
Community value	An undesignated area may be particularly valued by a community of interest: local, or activity-based.
Cultural value	Valued landscapes will have historic associations, be rich in historic features and buildings and/or have literary or artistic associations.
Perceptual	Tranquillity, remoteness or wilderness are valued characteristics, whereas landscapes that are highly modified, developed and populated would have low value in this respect. Landscapes regarded as particularly scenic would also be more sensitive.
OVERALL RATING	**High/ Medium/ Low**

2.8.6 Determining Landscape Capacity

The final assessment of capacity combines sensitivity and value. The following definitions broadly define the relationship between landscape sensitivity/ value and capacity, as the main thresholds on a continuum between no capacity and high capacity:

Low Capacity: A landscape that is both sensitive to wind turbine development and has a high value, and where only a slight level of change can be accommodated without significantly affecting any of the key defining criteria.

Medium Capacity: A landscape that has some sensitivity to wind turbine development and has some aspects of value, and where a moderate level of change can be accommodated which may significantly affect some of the defining criteria

High Capacity: A landscape that has low sensitivity to wind turbine development and has low value, and can accommodate substantial change that significantly affects many of the key defining criteria

Broadly speaking there is an inverse relationship between capacity and landscape sensitivity and value. Nevertheless it is not a simple relationship and we have not employed the use of a matrix in this study: a balance of judgement is made in each case as landscape value may be a more important factor than sensitivity in some cases; and vice versa in others.

It should be noted that in landscapes where there is existing wind turbine development the capacity for turbines may be reduced. This is because the landscape would be approaching the maximum level of change that it can acceptably accommodate.

2.9 Determining Acceptability of Change

The final stage involves bringing together the cumulative impact assessment and the landscape capacity assessment in a reasoned judgement of the effects of windfarm development on the Scottish Borders landscape. As explained above, the likely acceptability of a proposed level of development may be determined by considering against the inherent capacity of the landscape. This should also be considered against policy criteria and objectives.

2.10 Scope of Assessment

The scope of the assessment can be varied according to the extent of the study area and the purpose of the study. It can also vary according to the depth and detail required to assess impacts within the defined study area. In the case of a detailed study the method should build up to the wider study area from smaller units.

The current study focuses primarily on the local authority area of Scottish Borders, although areas beyond the boundary are being considered in terms of the visual influence of nearby windfarms and neighbouring contiguous landscape types. Nevertheless the results of the study will be discussed in terms of Scottish Borders and its landscapes.

Wind Energy Development Types

The study considers all sizes of turbines and developments operating, consented or proposed, as well as potential future scenarios where appropriate. However the capacity assessment and guidance for smaller turbines (under 15m to blade tip) is limited to localised generic siting and design considerations. The smallest turbines are not considered to have the same qualities of scale, prominence and widespread visibility that lead to the wider cumulative impacts that characterise larger turbines.

APPENDIX 3: VISIBILITY ANALYSIS

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APPENDIX 3: VISIBILITY ANALYSIS

Scottish Borders COUNCIL

Scottish Borders Updated Wind Energy Capacity Study

May 2016 8558_GIS_111

Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
5	Southern Uplands Forest Covered
6	Cheviot Uplands
7	Cheviot Foothills
8	Rolling Farmland
9	Platform Farmland
10	Grassland with Rock Outcrops
11	Grassland with Hills
12	Undulating Grassland
13	Poor Rough Grassland
14	Upland Fringe Moorland
15	Lowland with Drumlins
16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 4.3a

Visibility from Settlements (0m high object)

N

0 5 10 20 Km

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Code	Landscape Character Types
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27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 4.3b

Visibility from Settlements (25m high object)

N

0 5 10 20 Km

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29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Figure 4.3c

Visibility from Settlements (50m high object)

N

0 5 10 20 Km

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26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Figure 4.3d

Visibility from Settlements (100m high object)

N

0 5 10 20 Km

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28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Figure 4.3e

Visibility from Settlements (150m high object)

N

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Code	Landscape Character Types
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30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 4.4a

Visibility from Transport Routes (0m high object)

N

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29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Figure 4.4b

Visibility from Transport Routes (25m high object)

N

0 5 10 20 Km

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LOCH	Inland Loch
LOCH_ISLD	Loch Island

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Figure 4.4c

Visibility from Transport Routes (50m high object)

N 0 5 10 20 Km

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Legend

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- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

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27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 4.4d

Visibility from Transport Routes (100m high object)

N

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27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
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30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Figure 4.4e

Visibility from Transport Routes (150m high object)

N

0 5 10 20 Km

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Code	Landscape Character Types
1	Dissected Plateau Moorland
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27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 4.5a

Visibility from Viewpoints (0m high object)

N

0 5 10 20 Km

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30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Figure 4.5b

Visibility from Viewpoints (25m high object)

N

0 5 10 20 Km

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Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Code	Landscape Character Types
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27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 4.5c

Visibility from Viewpoints (50m high object)

N

0 5 10 20 Km

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Scottish Borders Updated Wind Energy Capacity Study

May 2016 8558_GIS_124

Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

Code	Landscape Character Types
1	Dissected Plateau Moorland
2	Plateau Grassland
3	Plateau Outliers
4	Southern Uplands with Scattered Forest
5	Southern Uplands Forest Covered
6	Cheviot Uplands
7	Cheviot Foothills
8	Rolling Farmland
9	Platform Farmland
10	Grassland with Rock Outcrops
11	Grassland with Hills
12	Undulating Grassland
13	Poor Rough Grassland
14	Upland Fringe Moorland
15	Lowland with Drumlins
16	Rolling Lowland Margin
17	Lowland Margin Platform
18	Lowland Margin with Hills
19	Coastal Farmland
20	Coastal Pasture
21	Coastal Moorland
22	Upland Valley with Pastoral Floor
23	Pastoral Upland Valley
24	Upland Valley with Farmland
25	Upland Valley with Woodland
26	Pastoral Upland Fringe Valley
27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 4.5d

Visibility from Viewpoints (100m high object)

N

0 5 10 20 Km

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Scottish Borders COUNCIL

Scottish Borders Updated Wind Energy Capacity Study

May 2016 8558_GIS_125

Legend

- SBC Local Authority Boundary
- Local Authority Boundary 15km Buffer
- Other Local Authority Boundaries
- Landscape Character Areas

ZTV:

Highest Visibility

Lowest Visibility

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1	Dissected Plateau Moorland
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27	Upland Fringe Valley with Settlements
28	Wooded Upland Fringe Valley
29	Lowland Valley with Farmland
30	Coastal Valley
LOCH	Inland Loch
LOCH_ISLD	Loch Island

Figure 4.5e

Visibility from Viewpoints (150m high object)

N

0 5 10 20 Km

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APPENDIX 4: FACTORS AFFECTING LANDSCAPE AND VISUAL EFFECTS OF WIND TURBINES

4.1 Introduction

There are a number of overlapping and interacting factors which affect the potential landscape and visual effects of wind turbines. The three main turbine factors are:

- Size of turbine (also type/ design/ colour)
- Numbers of turbines (within groups and/ or single turbines spread across an area)
- Distribution of turbine groupings (spacing between groups and/or single turbines)

The effects of these factors will in turn differ depending on the character of the landscape in which the turbines are located.

4.2 Turbine Size

Turbine size is the first factor to consider in assessing the impacts of wind turbines. In particular, smaller turbines are considered to be more appropriate in lowland landscapes, which are usually smaller scale, more complex and varied than uplands, and where there are generally smaller scale features such as trees and buildings that provide a 'scale reference' against a turbine. Conversely, upland landscapes are generally simpler in character, larger in scale and there are fewer human scale reference features, meaning that larger turbines are more easily accommodated (refer to SNH guidance, *Siting and Designing Windfarms in the Landscape*, 2014).

Turbine size for installed or consented commercial onshore windfarms in Scotland varies from ca. 55m to blade tip at the original Hagshaw Hill to a current maximum of 147m at Calder Water (both in South Lanarkshire). Considerably smaller turbines are commonly installed for the non-commercial scale proposals typical of recent FiT schemes. In this study we have mapped five size categories which would have differing relationships with the scale and character of the landscape and with one another. These are listed in Table 5.2 below.

There is a significant range of available commercial turbines sizes. However even the smaller commercial turbines are very much larger than any other common vertical object in the landscape, such as a house or trees, with only electricity pylons (typically 25-50m tall) coming close in size. Even the mid size of turbine falls within this height bracket and is therefore much larger than most trees and buildings. Furthermore, by being kinetic structures, the visual prominence of turbines is increased relative to existing static features

The small domestic scale turbines (<15m) are however closer to the heights of common visual references such as houses and trees and their landscape and visual impacts tend to be much more localised due to localised screening and backclothing by landforms and trees.

Table 4.1. Turbine Size Categories

Blade Tip Height	Typical Use
15m to <30m	Typically used for domestic and farm FiT schemes
30m to <50m	Typically used for farm and industrial FiT schemes
50m to <80m	Single turbine FiT schemes and smaller turbines used in commercial schemes
80m to <120m	Most commercial windfarms and some single turbines
120m and greater	Current commercial windfarms

SNH considers that smaller turbines can be used to mitigate landscape impacts in a lowland situation with a smaller scale landscape pattern and scale indicators. As it has to be balanced against losses in output, size reduction should be used in specific cases where a clearly identified benefit can be achieved. The following are criteria by which this may be judged:

- mitigating significant landscape or visual impacts on a valued or sensitive receptor;
- avoiding an adverse scale relationship with a landform or other key landscape element or feature;
- allowing an intervening landform and/or forest to screen views of turbines from certain receptors; or
- achieving a significant reduction in overall visibility by virtue of relationship to surrounding landform and trees.

Where reduction in impact would be a matter of degree rather than a clear quantitative change the benefits are less clear cut.

SNH guidance (*Siting and Designing windfarms in the Landscape*, 2014) also recommends that where two or more developments are in close proximity to one another, turbines of a similar size and type should be used. The use of significantly different turbine sizes within a single windfarm or between two windfarms in close proximity can otherwise lead to adverse visual and scale effects which increase the appearance of clutter, or create odd perspectives when seen from certain viewpoints.

4.3 Turbine Design

Variations in size aside, the design of wind turbines can vary considerably. This is particularly the case with smaller turbines under ca. 50m in height. The main variations affecting appearance of wind turbines are:

- two or three bladed
- solid or lattice tower
- shape/ size of nacelle
- proportion of blade length to tower height
- hub faces into or away from the wind direction
- colour

Other factors such as tower and blade shape tend to be more subtle but in combination can lead to a significant difference in appearance, as the difference between the two turbines below demonstrates:

Enercon and Siemens turbines have different nacelles, blades and towers leading to significant differences in appearance

Colour is an issue that is a more important variable in smaller turbines. Colour choice for larger commercial turbines has settled on a neutral light grey with slight variations in lighter or darker shade between developments. It is generally agreed that this colour range is most likely to reduce the prominence of turbines when seen under the most prevalent atmospheric conditions.

In the case of smaller turbines there is more variation in colour and more likelihood of being seen against land rather than sky. In particular many small turbines are white, which increases their prominence when seen from a distance, particularly seen against land.

Choices of turbine design, including colour, are of potential significance when considering the effects of individual turbines or wider cumulative effects on the landscape.

A 47m high turbine seen from several kilometres distance reflects the evening light, contrasting with the dark backdrop of trees and grassland

4.4 Windfarm Size

There is no current 'accepted' classification of commercial windfarm sizes in Scotland. Existing and proposed onshore wind energy developments vary in turbine numbers and turbine sizes; from single small turbines to over 200 large turbines. Individual turbines vary in size from below 15m to more than 150m, with maximum outputs from a few kW to greater than 3MW.

Wind energy development in Scottish Borders covers the whole range of turbine sizes and development size range. The largest operational windfarm within the study area is Clyde Windfarm within South Lanarkshire with 152no. x 125m high turbines at 350MW installed capacity. This windfarm is within South Lanarkshire, however the visual impacts of this windfarm extend far into Scottish Borders. This very large windfarm has consent for an extension of 57no. x 142m high turbines, 7no. of which will be within or on the border with Scottish Borders. There are also some developments with only one or two turbines with height to blade tip ranging from 15m to over 100m.

4.5 Turbine Numbers and Landscape Impacts

Wind turbines considered out of their landscape context are usually simple, aerodynamic and functional structures that many consider to have a clear aesthetic of 'form following function' in their design. Landscape and visual impact issues relate primarily to their scale and potential incongruity in a landscape rather than to the aesthetics of the turbine design. In this case, the number of turbines in a wind energy development has a bearing on the

visual image of the development that extends well beyond the proportion of a landscape area that is covered:

- Small clusters of turbines still express the aesthetics of the individual turbines and the blade movement of each turbine is discernible. The cluster is seen as a discrete item within a landscape, becoming a significant feature but generally not dominating or changing the character of a large area.
- In large groupings of turbines there is area coverage of the landscape, rather than a discrete grouping. The individual turbines usually become lost in a mass, blade movements are perceived across the whole area and there is a more 'cluttered' appearance.
- As turbine numbers increase it is increasingly difficult to design a wind energy development such that overlap and clustered alignments are avoided when seen from surrounding viewpoints. Design mitigation can become a matter of avoiding excessive clutter, skylining and proximity to sensitive receptors rather than creating aesthetically balanced groupings of individual turbines. However the windfarm can be broken up into groups, each relating to their surroundings and appearing overall as more than one windfarm, as is the case with Clyde windfarm.

It is recognised that these qualities grade into one another depending on the exact size of development (eg. 3, 6, 12, 20, 50, 100+ turbines) and on how the turbines are grouped (eg. in mass groupings or in lines along ridges). Nevertheless, to the extent that they are more easily contained and definable, smaller windfarms would have a disproportionately lesser influence on the landscape than large windfarms and are less likely to dominate areas and blur boundaries between landscape types.

In small groupings, odd numbers of turbines (ie 1, 3 or 5) usually present a more balanced composition than even numbers, unless there is a strong regular pattern or line in the landscape to which the turbines can be related.

The study area of the Scottish Borders can be described as a central lowlands and major valleys surrounded by Uplands. There are Upland, Upland Fringe, River Valley, Lowland and Coastal landscape types, medium to large scale developments of larger turbines has to date been restricted to the Upland Landscapes, however planning applications containing larger turbines are increasingly being submitted for Upland Fringe areas, especially within the eastern area of Scottish Borders near the North Sea Coast.

4.6 Turbine Layout

Another factor to be considered is the layout of turbines within a windfarm. Whilst the optimum layout, including turbine separation distances and position in relation to the prevailing wind will relate to maximising output, there will be other practicalities. Thus turbine layout may vary according to turbine numbers, the availability of land, topography, access and numerous environmental constraints. Once these factors have been taken into consideration the overall aesthetic of the windfarm can be considered.

Layouts will relate to landforms and patterns in the landscape as well as the need to present a coherent image from the surrounding viewpoints. Thus in lowland landscapes with a strong geometric pattern the turbines may be organised in lines of a grid, whereas in the case of a distinct landform such as a ridge or coastline they may be arranged in a curved line following the landform. In upland landscapes turbines may be arranged in a more organic pattern, following ridgelines or clustered around rounded hilltops. Attention should be paid to the relationship of outer turbines in large groups ensuring that there are no 'outliers' creating an untidy or disorganised appearance.

When two or more developments are in close proximity or a windfarm is being expanded there can be cumulative issues relating to site layout if these are clearly contrasting (eg. a geometric layout adjacent to an organic layout). Such developments should be designed to achieve a harmonious layout and relationship.

4.7 Windfarm and Turbine Distribution

4.7.1 Pattern of Development

When considering cumulative impacts of turbines and windfarms it is not just the number of turbines in the landscape that affects impacts but also the pattern of development. This has an effect on the ability of the landscape to absorb change and on visual receptors. The dispersal of the turbines in small groups or defined areas has some advantages in that each grouping is less dominant within the landscape and presents a less cluttered visual image. There is also less likelihood of 'swamping' landscapes and blurring the boundaries between different landscape types and features if there are distinct gaps between clusters of wind turbines. However, the increased number of windfarms or turbine clusters also means that there is an increased likelihood of seeing a windfarm or turbine, and at closer proximity than if the turbines were concentrated into fewer locations.

The trend in Scotland has been for the concentration of wind turbines into fewer, larger, windfarms. This arises initially via large windfarm proposals and then through the later extension of many existing windfarms or new proposals following precedent. The pattern may also play out on a wider regional scale or 'clusters and spaces' where groups of windfarms lie within large areas separated by significant areas without turbines.

However, the cluster and space pattern described above has become diluted by the recent proliferation of smaller FiT schemes including single turbines which relate more to the location of small scale consumers than to regional landscape patterns.

The predominant pattern of existing and proposed development in Scottish Borders reflects the trend for larger windfarms and clusters with large areas free of turbines or windfarms. This is illustrated within Scottish Borders by the cluster of developments in the Upland areas of the Lammermuir and Moorfoot Hills and Lauder Common in contrast with the relatively undeveloped Southern Uplands. However, the pattern in some parts now reflects both trends: larger windfarms and clusters located in upland areas and scattered small groups or single turbines in upland fringe/ lowland areas. Particularly the Coastal area and some of the river valleys.

4.7.2 Separation Distances between Turbines and Windfarms

Separation distance between turbines and windfarms has a bearing on how they are perceived together and within the landscape, particularly in relation to defining the limits of cumulative development. Whilst a clear visual separation between two or more windfarms may be achieved by a certain physical distance, this distance would depend on the size and number of the turbines or windfarms, the type of landscape(s) in which they are located and the degree to which they affect the character of the landscape.

Considering this in simple terms, turbines have both a direct effect on the landscape in which they lie and an indirect effect on the surrounding area. Therefore, although two turbines or windfarms may be separated by some distance and seen as clearly separate, the landscape in which they lie may be considered to be characterised by turbines. Only when separated beyond a certain distance would the intervening landscape be considered to retain its original character, separating the two landscapes areas affected by turbines.

Table 2.1 in Chapter 2 of this report develops this concept further by considering the effects of multiple wind energy developments and describes cumulative development thresholds. Further to a capacity assessment, an acceptable level of development within a landscape area may be agreed (eg. *Landscape with Occasional Wind Turbines* or *Wind Turbine Landscape*). The capacity for development would then be utilised by a developing the accepted landscape type through a combination of turbine sizes, windfarm sizes and separation distances between groupings, relating to the scale and character of the landscape and of course the physical area which it occupies. As examples:

- A large scale upland plateau landscape accommodating a number of windfarms would be considered a *Wind Turbine Landscape* if the windfarms are large, the topography is subordinate in scale to the turbines and the windfarms are separated by distances less than their typical extents.

- If the topography has a relief that is clearly greater than the turbine heights, and/or the windfarms are smaller and the separation between the windfarms is clearly greater than their extents, the landscape may be considered a *Landscape with Wind Turbines*.

- A lowland landscape, smaller in scale with many small scale reference features, may easily be dominated by wind turbines. In this case the objective may be to limit development to a *Landscape with Occasional Wind Turbines* by allowing only small clusters of smaller turbines separated by substantial distances and with cumulative visibility reduced by localised tree or landform screening.

In each case different scales and patterns of landscape and development would require different turbine sizes, groupings and separation distances to lead to a particular windfarm landscape type. Such an approach has been adopted in this study and sizes and separation distances are recommended and explained in chapter 6.

4.7.3 Distribution in Relation to Landscape Type

As discussed above, some landscape types have less capacity for wind energy development than others. In this case it would be appropriate to consider the relative merits of guiding development to the areas most capable of accommodating development, or to directing different types and scales of development to the areas most suited to each. Subject to the specific impacts of any particular proposal, this would reduce the potential for the most significant and adverse landscape impacts. It would also restrict the wind turbine landscape typologies to a more narrowly defined range of landscapes, thereby reducing the perception of unplanned proliferation of wind farms throughout a local authority area.

In Scottish Borders operational and consented developments consisting of large and very large turbines have largely been located in Plateau Moorland areas and are mainly of a large to medium scale. Whilst large areas are free from turbine or windfarm development, there are significant proposals located within the Plateau Moorland areas. These proposed developments are encroaching into the Southern Uplands and Cheviot Hills within the southern, eastern and western areas of the Scottish Borders and proliferating within the north eastern area of the Scottish Borders near the coastal landscape character area.

The central lowland area to the east of Galashiels and Melrose also has a number of existing individual turbine/ small windfarm developments, however these are predominantly small or medium sized turbines in groups not exceeding 3no. turbines. This development pattern is continued within the turbine proposals currently at planning application stage.

The Coastal area has seen extensive development, with two closely spaced windfarms and other smaller developments with larger turbines in relatively close proximity to windfarms in Upland and Upland Fringe landscapes.

A large area of the Southern Uplands and Cheviot Hills to the south of the River Tweed, west of Galashiels and Kelso is free from or has very limited turbine or windfarm development. Currently this is in part due to the Eskdalemuir seismological array exclusion zone, not a landscape designation but impacting on turbine development and distribution within this area of the Southern uplands. The Northumberland National Park in northern England has also restricted the turbine and windfarm development within the Cheviot Foothills area of the Scottish Borders.

The landscape effects of the consented wind turbine developments in the Scottish Borders are further detailed in chapter 6 of this report. The distribution of windfarm landscape typologies (as described in Table 2.1) is shown in Figure 6.2.

In strategic terms the established and evolving pattern of development should be taken into consideration as it reflects a clear rationale driven partly by landscape, visual and amenity issues (sensitive or valuable landscapes, proximity to settlements and recreational areas) and partly by technical issues (available land, available grid capacity, wind speed and seismology array). The number, size and distribution of further development should be considered very carefully in order to maintain differences in character between the uplands, upland fringe, the river valleys, the lowlands and the coastal zone.

Also, in accordance with SNH guidance *Spatial Planning for Wind Turbines – Natural Heritage Considerations* (SNH, 2016), consideration should be given to identifying areas between development clusters in which no development is yet located or consented.

These can provide significant gaps between clusters of wind turbines in which their visual influence is minimal. This again will reinforce distinctiveness between landscapes.

APPENDIX 5: WIND TURBINES IN SCOTTISH BORDERS

Wind Turbine Database for turbines of 50m and taller at July 2016 showing turbine height bands (purple=>120m; red=80-<120m; orange=50-<80m) and host landscape character types (see Figs. 5.1 and 5.2 for locations)

Consented and Operational Turbine Developments in the Scottish Borders

Turbine Name	Number of Turbines	Tip Height	Landscape Character Type
Bassendeanhill Farm	1	67.00	Rolling Farmland
Black Hill	22	78.00	Grassland with Hills
Blackhouse Farm	1	74.00	Rolling Lowland Margin
Brockholes	3	79.00	Platform Farmland
Coldingham Moor (Drone Hill)	4	76.00	Coastal Farmland
Coldingham Moor (Drone Hill)	18	76.00	Coastal Moorland
Dun Law Phase 1	26	67.50	Plateau Grassland
Dun Law Phase 2	35	75.00	Plateau Grassland
Greenburn Farm	1	54.00	Rolling Lowland Margin
Huntershall	1	75.00	Plateau Grassland
Pinnaclehill Industrial Estate	1	70.00	Rolling Lowland Margin
Pressmains Farm	1	60.98	Rolling Lowland Margin
Shepherd's House	2	77.90	Coastal Moorland
Weirburn House	4	54.00	Wooded Upland Fringe Valley
Bowbeat	24	80.00	Dissected Plateau Moorland
Carcant	3	107.00	Dissected Plateau Moorland
Cloich Forest	18	115.00	Plateau Outliers
Crystal Rig 1&1A	25	100.00	Dissected Plateau Moorland
Crystal Rig 2&2A	8	110.00	Dissected Plateau Moorland
Fallago Rig Mark II	7	110.00	Dissected Plateau Moorland
Glenkerie	6	105.00	Southern Uplands with Scattered Forest
Glenkerie Extension	6	100.00	Southern Uplands with Scattered Forest
Hoprigshiels	1	115.00	Coastal Farmland
Hoprigshiels	2	115.00	Platform Farmland
Longpark	19	100.00	Plateau Grassland
Neuk	2	110.00	Coastal Farmland
Penmanshiel	11	100.00	Coastal Moorland
Penmanshiel	3	100.00	Pastoral Upland Fringe Valley
Quixwood Farm	3	100.00	Platform Farmland
Quixwood Farm	10	115.00	Platform Farmland
Clyde Extension (Addendum)	1	142.00	Southern Uplands
Clyde Extension (Addendum)	2	125.00	Southern Uplands with Scattered Forest
Crystal Rig 2&2A	13	125.00	Dissected Plateau Moorland
Fallago Rig Mark II	38	125.00	Dissected Plateau Moorland
Fallago Rig Mark II	1	125.00	Uplands
Glenkerie	5	120.00	Southern Uplands with Scattered Forest
Langhope Rig	10	121.20	Southern Uplands with Scattered Forest
Toddleburn	12	125.00	Plateau Grassland

Proposed Turbine Developments in the Scottish Borders

Turbine Name	Number of Turbines	Tip Height	Landscape Character Type
Kilrubie	7	115.00	Plateau Outliers
Longpark Extension	10	100.00	Plateau Grassland
Muircleugh	6	110.00	Plateau Grassland
Muircleugh	1	110.00	Undulating Grassland
Whitelaw Brae	14	113.50	Southern Uplands with Scattered Forest
Aikengall 2A	14	145.00	Dissected Plateau Moorland
Birneyknowe	12	132.00	Grassland with Hills
Birneyknowe	2	132.00	Grassland with Rock Outcrops
Birneyknowe	1	132.00	Southern Uplands with Scattered Forest
Cummings Hill	7	126.50	Cheviot Foothills
Earlshaugh	22	125.00	Southern Uplands with Scattered Forest
Fallago Rig Extension	12	126.40	Dissected Plateau Moorland
Highlee Hill	13	176.00	Southern Uplands Forest Covered
Inch Moor	16	126.50	Upland Fringe Moorland

APPENDIX 6: ASSESSMENT OF LANDSCAPE CAPACITY FOR LANDSCAPE CHARACTER TYPES

1. Dissected Plateau Moorlands

Landscape Character	Criteria /Thresholds
Scale	Large scale plateau like landscape with some more defined hills in the Western Pentlands area. **Low**
Landform	Gently undulating plateau landscape formed by the summits of level topped ridges and hills separated by steep sided valleys creating topographical containment within the central areas. Hills and steep valleys are more prominent in the West Pentlands area. **Low** (West Pentlands area. **Medium)**
Pattern	Simple landscape pattern with matrix of heather moorland and acid grassland with blanket bog on some higher elevations. Pockets of substantial woodland planting can also be found within this landscape character area creating woodland blocks within the landscape. **Low/ Medium** West Pentlands contains a number of farmsteads, reservoirs and agricultural farmlands. **Medium**
Development	Current settlement pattern is predominantly sparsely settled with individual farmsteads and dwellings. **Low**. West Pentlands area has slightly more development within it. **Medium**
Quality	Many areas are unaffected by development creating a wilderness exposed quality. **High**
Elements and Features	Distinctive and prominent rounded hills, the edges of which create a distinctive skyline within the vicinity when viewed from lower elevations. The Western Pentlands area also contains 2no. reservoirs. **Medium/ High**
Context	Surrounding landscapes are lowland agricultural valley landscapes with greater human habitation the outer slopes of these areas will be more visible than the interior. **Medium**
OVERALL RATING	**Low/ Medium** West Pentlands area **Medium**

Visual Sensitivity	Criteria
Receptors	Low number residential receptors within the Moorfoot Hills LCA, some minor roads cross this area. Low/ Medium The Southern Upland Way passes through the southern area of the Lammermuir LCA. The West Pentlands LCA is more accessible as a wilderness landscape to a larger number of receptors with local walking routes found within this LCA. **High/ Medium.**
Internal Visibility	Open unobstructed internal visibility from the high points of the plateau, internal visibility will decrease within valleys cutting into the plateau, outer slopes will have views looking down into the valleys. **Medium**
External Visibility	Peripheries will be widely visible from surroundings and potentially from a distance, internal areas will be less visible or not visible when viewed from outwith the LCA due to topographical containment created by the upland plateau landscape. **Medium** (West Pentlands area has a much greater external visibility due to it's proximity to Edinburgh and settlements within Midlothian and East Lothian. **High**)
OVERALL RATING	**Medium** Western Pentlands and Lammermuir Hills LCA has a **Medium/ High** rating

Landscape Value	Criteria
Designations	The Western Pentlands Character area is influenced by the Pentlands Regional Park, which is located to the north and north west of the LCA. The Lammermuir and Moorfoot Hills contain Scheduled Ancient Monuments, SLA and the non-landscape designation of a SSSI. **High**
Community value	Areas within the Lammermuir Hills, Midland Valley and Moorfoot Hills will all be used by the local population and by visitors as a recreational area. The Lammermuir Hills area includes the Southern Upland Way, the Moorfoot Hills area includes the NCN Route 1 and to the north east and north west lie's the Western Pentlands LCA lies the Pentlands Regional Park. Western Pentlands and Lammermuir Hills LCAs **Medium/ High** Moorfoot Hills LCA **Medium**
Cultural value	No designated viewpoints but views will be afforded from informal paths and the Southern Upland Way (Lammermuir Hills LCA), some locations of interest, Hillforts and Cairns. **Medium** Lammermuir Hills LCA will be **Medium/ High** due to the Southern Upland Way
Perceptual	Tranquil, windswept with a wilderness character. **High**
OVERALL RATING	Moorfoot Hills LCA **Medium/ High** Western Pentlands LCA has a **High** Rating due to the greater prominence and recreational value. The Lammermuir Hills LCA will also have a **High** rating in the southern area influenced by the Southern Upland Way.

2. Plateau Grassland

Landscape Character	Criteria /Thresholds
Scale	Large scale landscape with areas of farmland grasslands reminiscent of platform farmlands. **Low/ Medium**
Landform	Gently undulating/ rolling large relatively low dome shaped hills. **Low/ Medium**
Pattern	Simple land pattern with areas of heather moorlands on more elevated locations and blocks of conifer plantation woodlands. Outer less elevated slopes have rough pasture fields enclosed by simple dry stane walls. **Low/ Medium**
Development	Sparsely developed with individual farmsteads and dwellings located on outer slopes. **Low/ Medium**
Quality	Open agricultural areas on outer slopes and open heather moorlands creating a strong rural character. **High**
Elements and Features	Landscape has convex outer slopes that contrast with the gentler undulating land around this character type. Pylons, forestry, minor roads and access tracks, A roads, historic cairns and cultivation terraces and more recent windfarm development are all present within this landscape. **Medium**
Context	Either side of this character area are busy A roads and small to medium sized settlements that will have a view onto the outer slopes and high points of this character area, views into the character area will be limited to the outer slopes from the settlements and busy roads. **Medium/ Low**
OVERALL RATING	**Medium**

Visual Sensitivity	Criteria
Receptors	Within the site there are a low number of potential receptors with individual farmsteads and dwellings present. The busy A roads and settlements outwith the site will potentially have a limited view of any development within the character area. The northern slopes have a view over Edinburgh, Lothians, East Lothian and Fife (distant and only on a clear day). **Low/ Medium**
Internal Visibility	The gently rolling/ undulating broad hill landscape frames views across wide valleys as well as screening views from lower elevations looking into the LCA. **Medium**
External Visibility	There will be clear views looking from the lower valleys to the east and west of turbine development on the edges of this character area and partial views of turbine development within the central areas of this LCA from the settled valleys either side of this upland spur. There are wide panoramic views over Edinburgh (and on a clear day Fife) as well as the Lothians from the northern slopes of this LCA. The Southern Upland Way is located to the south east of this LCA, developments in the southern section of this LCA will be visible from this long distance path. There is currently a number of windfarm developments within this LCA resulting in cumulative impacts associated with multiple developments. **Medium/ High**
OVERALL RATING	**Medium**

Landscape Value	Criteria
Designations	There are no national or local landscape designations within this character area, there are however a few scheduled ancient monuments and on the outer slopes SBC designated Landscapes. **Low/ Medium**
Community value	There may be informal paths used by local residents within this area, there are no long distance paths or national cycle routes. **Low**
Cultural value	There are a few SAM's present in this area: Cairns, Hill forts and historic cultivation terraces present. **Low/ Medium**
Perceptual	This landscape has an open rural agricultural undulating character with areas that have more of a wilderness character. **Medium/ High**
OVERALL RATING	**Low**

3. Plateau Outliers

Landscape Character Sensitivity	Criteria /Thresholds
Scale	Large scale with more intimate localised areas within incised river valleys. **Low/ Medium**
Landform	Large undulating hills forming high ridgelines divided by deep valleys and glens. **Medium**
Pattern	Simple, field enclosures on lower slopes and rough grassland grazing on higher slopes with heather moorland. There are two large plantation woodlands within the character areas creating dense conifer plantation blocks. **Low/ Medium**
Development	There is little development within the character areas, a few individual farmsteads and dwellings are present on the lower sheltered slopes. **Low**
Quality	The area has a rural, undeveloped, exposed quality. **High**
Elements and Features	There are walking routes within this LCA, some lead to viewpoints, there are deep incised valleys and glens with small to medium sized burns, historical forts, settlements and cairns are present. **High**
Context	There are busy A and B roads around these character areas with small settlements and an increase in farmsteads within the more sheltered valleys around the character areas that will have a view of the outer slopes only. **Medium**
OVERALL RATING	**Medium**

Visual Sensitivity	Criteria
Receptors	The recreational walkers will have views of the interior of this character area. Owners of the sparsely distributed farmsteads and dwellings around the character areas along with road users will have views to the peripheral slopes of these character areas. **Medium/ High**
Internal Visibility	There are open long distance views from the hill tops and enclosed views within the valleys, both will be over undeveloped rural grazing and moorland with a wilderness character. **Medium**
External Visibility	There will be views to and from the high points onto the surrounding glens and valleys as well as views from the surrounding roads and small settlements onto the prominent peripheral slopes forming a skyline feature. **Medium/ High**
OVERALL RATING	**Medium/ High**

Landscape Value	Criteria
Designations	This Broughton Heights LCA is predominantly covered by a SLA with the southern area designated as part of a larger NSA, the south eastern tip of the Eddleston/ Lyne Interfluve LCA is part of a SLA and NSA. Both areas contain SAMs and Listed Buildings. **High**
Community value	There are a number of footpaths within the character area and high viewpoints over the surrounding countryside. **High**
Cultural value	The character area contains a number of historic settlements, forts and cairn sites. **Medium**
Perceptual	The character area has no roads within it and only the occasional farmstead or dwelling on the lower more sheltered slopes of the hills, the open undulating hills and glens create a wilderness quality. **High**
OVERALL RATING	**High/ Medium** Broughton Heights LCA will have a **High** rating due to the NSA and SLA designation

4. Southern Uplands with Scattered Forest

Landscape Character Sensitivity	Criteria /Thresholds
Scale	Large scale upland character. Undulating plateau creates enclosure in broad valleys that contrast with the more elevated undeveloped remote hill tops, elevated areas and ridgelines within this LCA. **Medium/ Low**
Landform	Large plateau like landscape of upland undulating dome shaped hills separated by incised river valleys. Relatively simple landform with rough grasslands, moorlands and conifer plantation woodlands. **Medium/ Low**
Pattern	Simple landscape pattern of open rough grazing, open heather moorland with conifer plantation woodlands with reservoirs. More sheltered valley areas creating strong blocks of dense conifer woodland and provide communication routes through the Plateau. **Medium**
Development	Sparsely populated with the occasional farmstead in lower sheltered areas, valleys contain some important 'A' road connections to neighbouring Dumfries and Galloway and England. **Low/ Medium**
Quality	Open, rural, exposed windswept area with a wilderness character. **High**
Elements and Features	Few features, the occasional road with an upland character or reservoir/ Loch are present. The plateau landscape is drained by numerous small burns that feed into larger burns and rivers (River Tweed and its tributaries). **Medium**
Context	There are no settlements and the occasional farmstead/ dwelling that may have a view into the character area, the high points of the plateau are sometimes prominent from the valleys and flatter areas below. **Low/ Medium**
OVERALL RATING	**Medium**

Visual Sensitivity	Criteria/ Thresholds
Receptors	There are very few individual farmsteads or dwellings, the occasional road within the character areas will increase receptors locally as will local footpaths. **Low** Broadlaw Group LCA contains the Southern Upland Way. **High/ Medium**
Internal Visibility	Long distance open views from the high points. Within the LCA views will generally be limited by the interlocking spurs of the plateau. **Medium** The Southern Upland Way within the Broadlaw Group will extend visibility within the upland areas. **High/ Medium**
External Visibility	There may be limited views from the nearest settlements and roads within the valleys and lower elevations. Due to the topographical containment created by these broad areas of plateau. **Low/ Medium** The eastern area of the Broadlaw Group LCA will have increased external visibility as settled valleys cut into this LCA. **Medium**
OVERALL RATING	**Medium/ Low** Broadlaw Group has a **High/ Medium** overall rating due to the Southern Upland Way and the settled valleys cutting into this LCA that increase receptors, recreational use and internal/ external visibility.

Landscape Value	Criteria/ Thresholds
Designations	The whole of the Broadlaw Group LCA is fully within an SLA and the northern part is part of a larger NSA, it also contains a large SSSI. Although not a landscape designation, the southern tip of Broadlaw Group area is within the Eskdalemuir seismological Array exclusion zone. The Dun Knowe Group and the Cauldcleuch Head group are not part of a SLA or NSA. **Low** Broadlaw Group has a **High** rating due to the SLA and NSA designation.
Community value	The Southern Upland Way is within the Broadlaw Group LCA. Local footpaths, fishing Lochs, picnic areas and car parking areas facilitating community use are within all of the LCA. **High/ Medium** Broadlaw Group has a **High** rating due to the Southern Upland Way.
Cultural value	There are historic settlement and fort sites on the lower slopes of the plateau, the open exposed rural character will be a highly valued quality by the local and regional population and a draw for tourists. The Broadlaw Group LCA contains the Southern Upland Way increasing its cultural value. **High**
Perceptual	This is an upland landscape with a matrix of woodland and moorland creating a wilderness character that will be highly valued by the local population and visitors to the Scottish Borders who will potentially use this area recreationally. **High**
OVERALL RATING	**High**

5. Southern Uplands Forest Covered

Landscape Character Sensitivity	Criteria /Threshold
Scale	Large simple Upland Character interrupted by isolated peaks above the large and open areas of moorland/ forestry. **Low/ Medium**
Landform	Simple landform of gently undulating rounded hills with enclosed valleys between high points. **Medium/ Low** The Wauchope/ Newcastleton area has a more open simple landform. **Low**
Pattern	Large commercial forestry plantations cover much of this character area, This can be divided into separate forestry areas; some felled, some mature and areas of younger trees all of which create strong localised boundaries within this LCA where edges are viewed. Areas of open moorland and rough grazing are found in this character area. **Medium**
Development	There is sparse development in this character area with few farmsteads and the occasional upland rural road passing through this landscape. **Low**
Quality	This landscape has a rural upland character, the plantation woodlands add to this quality, however recently felled areas of forestry could locally lower this quality. **Medium/ High**
Elements and Features	There are a few viewpoints along the upland rural roads that cross the character areas. A few cycle routes pass through this area and there are a few core paths as well as cultural heritage sites, cairn's stone circles and sites of settlements can all be found. Medium sized rivers flow within gently undulating valleys which generally contain the road network. **Medium**
Context	Strong edges and boundaries to intact areas of woodland create a backdrop when seen from surrounding character areas as well as from roads within the site. **Medium**
OVERALL RATING	**Medium**

Visual Sensitivity	Criteria
Receptors	Few residential dwellings within this character area, there are occasional roads within the character areas where views will be afforded over valleys to wooded hills and there are a few footpaths within the area. **Low** Receptors increase significantly around the Carter Bar A68 viewpoint area of the Wauchope/ Newcastleton LCA. **Medium/ High**
Internal Visibility	Hills and woodland within the area limits internal visibility. Within the Craik LCA there is a picnic area and tourist facilities. **Low/ Medium**
External Visibility	There are rural roads that will provide a degree of external visibility, however the wooded character and gently undulating hilly context will limit this. The Upland landscape and topography creates containment and there is lower intervisibility from settlements, transport routes and viewpoints. **Low** At the Carter Bar area on the A68/ border viewpoint with England there is a panoramic sensitive viewpoint over the borders region creating localised **High** sensitivity.
OVERALL RATING	**Low** Localised area with a **High** rating at the Carter Bar A68 border viewpoint with the **Wauchope/ Newcastleton LCA.**

Landscape Value	Criteria
Designations	Within the Wauchope Forest area there is a SSSI located in a small area in the north east and a few listed buildings, both areas have a number of SAMs. The southern and western areas of the Craik area is within the Eskdalemuir Seismological array 10km exclusion area. **Medium/ High** Wauchope/ Newcastleton area **Medium.**
Community value	Limited recreational value, few core paths, Southern Upland Way enters a small area in the western section of the Craik Forest area. **Low/** localised pockets within each area of **Medium**
Cultural value	Forested upland areas could be perceived as having a modern cultural value as a 'wilderness', however to the trained eye this is planned development. There are a few historical cairns, settlements and stone circles present. **Medium** The Carter Bar A68 viewpoint/ England Border has a **High** cultural value.
Perceptual	The forested nature of this landscape could be perceived as wild, despite its planned nature. **Medium/ High**
OVERALL RATING	**Medium/ High** Wauchope/ Newcastleton area has an overall rating of **Medium,** however the Carter Bar viewpoint/ A68 England Border area has a **High** rating.

6. Cheviot Uplands

Landscape Character Sensitivity	Criteria /Thresholds
Scale	Relatively simple upland undulating landscape of steeply sided hills with incised river valleys. **Low/ Medium**
Landform	Undulating upland landscape with steeply sided valleys, hills create ridgelines and spurs. **Medium**
Pattern	Predominantly rough grassland with some areas of heather moorland, the lower elevations within the sheltered valleys contain simple enclosed grazing fields with the occasional shelterbelt of mature deciduous tree planting. **Medium**
Development	There is the occasional farmstead located within the sheltered valleys along minor single track roads. The Pennine Way enters this LCA. **Medium/ Low**
Quality	This is an undulating valley and hill landscape, sparsely populated, higher ground has a rural open exposed semi wild character. **Medium**
Elements and Features	The interlocking hills create strong ridge lines and spurs between which are strong valley landscapes with burns and small rivers. **High**
Context	The high points within this landscape will be more visible from the surrounding context, which is a National Park to the south and east, the Pennine Way enters the LCA and loosely follows the English Border with Scottish Borders Council. However, this LCA is a sparsely inhabited landscape and contains a few minor rural roads. **Medium/ High**
OVERALL RATING	**Medium/ High**

Visual Sensitivity	Criteria
Receptors	There are few farmsteads and dwellings, the Pennine Way loosely follows the English Border and enters the site and the Northumberland National Park is located immediately to the east and south of this LCA. **Medium/ High**
Internal Visibility	Interlocking hills creating spurs and ridgelines will reduce internal views, the presence of the Pennine Way will increase receptors and allows for views over this landscape. **Medium**
External Visibility	There will be views from the minor roads around this character area and the Pennine Way that follows the English Boundary as well as from promoted regional viewpoints in the Northumberland National Park (Cheviot Hill). This LCA generally has a lower intervisibility created by topographical containment. **Medium/ High**
OVERALL RATING	**Medium/ High**

Landscape Value	Criteria
Designations	The whole of the character area is part of a SLA that adjoins and is continuous with the Northumberland National Park in England, relatively high concentration of SAMs. **High**
Community value	There are a number of local footpaths along ridgelines, the Pennine Way loosely follows the English Border and enters the character area. **High**
Cultural value	There is a high concentration of historic fort, settlement and cairn sites within the character area, the Pennine Way follows the border with England and the Northumberland National Park in England borders this LCA. **High**
Perceptual	This character area has a strong upland rural character with a strong landform character of ridges and valleys with views from promoted regional viewpoints in Northumberland National Park and the Pennine Way follows the Border with England. **High**
OVERALL RATING	**High**

7. Cheviot Foothills

Landscape Character Sensitivity	Criteria /Thresholds
Scale	Medium/Large scale landscape. **Medium/Low**
Landform	Undulating upland landform with broad sloping areas and broad flat platform areas enclosed by hills and plateau edges. **High/ Medium**
Pattern	Simple enclosed grazing fields with more open rough grassland areas there are areas of commercial plantation forestry creating blocks of dense woodland. **Medium**
Development	There are a greater number of individual farmsteads and small settlements/ groups of individual dwellings and a greater number of minor roads. However this is still a relatively sparsely populated landscape. **Medium**
Quality	This landscape has an open rural upland character and is broadly enclosed by the higher hills of character areas to the south and east. This forms the middle distance view from Carter Bar/ A68 English Border viewpoint forming a high quality view and first impressions of Scottish Borders. **Medium/ High.**
Elements and Features	There are simple enclosed grazing fields, some with shelterbelts and larger areas of commercial conifer plantations. There are a number of medium sized hills drained by burns and small rivers. There is also a larger number of historic sites with forts, settlements, Cairns and roman camp sites within the character area. Dere Street was a roman road, today this is a long distance footpath. **High**
Context	There is locally large sized settlement to the north west (Jedburgh) that may have a view of the high points within the character area. High points to the east and south will look over this landscape. The majority of this area is sparsely populated. There will be views from the popular Carter Bar/ A68 English Border viewpoint over this landscape. **High**
OVERALL RATING	**Medium/ High**

Visual Sensitivity	Criteria
Receptors	There are sparsely distributed individual farmsteads and dwellings with the occasional larger grouping of dwellings and a number of minor and more important A roads that will be receptors within this landscape. There is the Dere Street historical route, now a footpath, within this LCA and the popular Carter Bar/ A68 English Border viewpoint overlooking this landscape. This provides an important first impression of the Scottish Borders and Scotland from England. **Medium/High**
Internal Visibility	There are medium distance views within this landscape across the broadly sloping areas framed by the more rolling or gently undulating areas. The broad undulating landscape creates pockets of containment. **Medium/ High**
External Visibility	There will be views to and from the high points to the east and south that will overlook the character area, the town of Jedburgh to the north west may have limited views of the high points within the character area. There will be views over this landscape from the Carter Bar/ A68 England/ Scotland viewpoint. **High**
OVERALL RATING	**Medium/High**

Landscape Value	Criteria
Designations	The eastern area of the character area is within a larger SLA, the character area contains a number of SAMs and listed buildings. **Medium/ High**
Community value	The character area contains a number of cycle routes and core paths, this includes the Dere Street historical route. **Medium**
Cultural value	There are a number of historic sites, including a roman fort and sites of historic settlements, forts and cairns. The Carter Bar viewpoint on the England/ Scotland Border will provide views over this landscape and provide a first impression of Scotland to visitors. **High**
Perceptual	The landscape has an upland farmland character, perceived as rural and is part of the first impression of Scotland to visitors from the Carter Bar viewpoint on the English Border. **Medium/High**
OVERALL RATING	**High/ Medium**

8. Rolling Farmland

Landscape Character Sensitivity	Criteria /Thresholds
Scale	Gently rolling medium scale transitional mid lowland/ upland landscapes. **Medium**
Landform	Gently rolling, undulating and enclosed at locations forming low gently sloping hills and isolated almost incised valleys. Occasionally more prominent and distinctive landforms such as the Minto Hills area and Lempitlaw around Kirk Yetholm. **Medium**
Pattern	There is a strong rural farmland pattern of enclosed arable and grazing fields with established hedgerows shelterbelts and small areas of broadleaved woodland. Upland more elevated areas have rough exposed grazing grassland with small areas of conifer plantation woodland. **Medium/ High**
Development	There is a greater concentration of farmsteads, individual dwellings and small settlements within this character area than higher more exposed areas. A number of busy A roads pass through these areas. **Medium/ High**
Quality	The landscape is intact as an agricultural landscape with a strong sense of field enclosure. **Medium/ High**
Elements and Features	There are numerous established hedges and established broadleaved shelterbelts as well as some commercial plantation woodlands, locally prominent high points and gentle valleys containing small burns and rivers. The Westruther Platform contains the Southern Upland Way in the north western area of the LCA. **Medium/ High**
Context	These character areas are generally located under areas of higher ground and will be fairly prominent from these higher locations. The Oxnam area contains the eastern area of Jedburgh and therefore the localised area to the east of this settlement will be more visible from this medium sized settlement, outside this area the sensitivity will be medium. **Medium**
OVERALL RATING	**Medium/ High**

Visual Sensitivity	Criteria
Receptors	There are a number of individual farmsteads and dwellings present in these character areas, larger settlements are found within the lower elevations of the main river valleys. There are a number of busy roads and minor roads within these character areas as well as local and core footpaths and cycleways. **Medium/ High** The Westruther Platform LCA contains the Southern Upland Way which will slightly increase sensitivity. The Oxnam area has fewer receptors, sparsely distributed farmsteads and dwellings east of Jedburgh. The majority of this area will have a **Medium** sensitivity with a small area of **High** sensitivity in the immediate vicinity of Jedburgh and the A68. Lempitlaw also has fewer potential receptors
Internal Visibility	The gently rolling and broad gentle sloping landform will provide mid to long range views across the landscape, in places these are restricted by established shelterbelts and woodlands as well as intervening high points of local prominence, from which long distance views are afforded.. **Medium/ High**
External Visibility	Each individual area within this character area has an adjoining character area of higher ground from which there will be views into the character area. The flatter broadly sloping areas will also be more visible. **Medium/ High**
OVERALL RATING	**Medium/ High** Lempitlaw and Oxnam. **Medium**

Landscape Value	Criteria
Designations	The West Linton Synclinal Belt (Midland Valley) section is partly within a SLA, this area also contains a SSSI and ancient woodland as well as listed buildings. The Lempitlaw area contains Listed Buildings, the Oxnam area contains listed buildings and a small area of a larger SLA and the Minto Hills area contains a small section of a larger SLA and listed buildings. The Westruther Platform LCA contains a number of SBC designated landscapes (however not on the inventory of Gardens and Designed Landscapes do provide an indication of landscape quality). **High/ Medium**
Community value	All areas contain local path networks and cycle routes. The Westruther Platform contains the Southern Upland Way in the western area of the LCA. **Medium/ High**
Cultural value	There are ancient woodlands present as well as sites of historic forts, settlements and Cairns. **Medium/ High**
Perceptual	Perceived rural farmland character that is relatively accessible to a large number of people who live or travel through these character areas. **Medium/ High**
OVERALL RATING	**Medium/ High**

9. Platform Farmland

Landscape Character	Criteria /Thresholds
Scale	Medium to large scale, broad gently rolling landscape. **Medium**
Landform	Broad, gently undulating with fairly small variations in height, small incised river valleys. **Medium**
Pattern	A relatively simple pattern of open grazing and arable fields with simple field boundaries of post and wire fences and some hedgerows. There are a few areas of established woodland. **Medium**
Development	There is little development within the character area with distributed farmsteads and individual dwellings. There are other developments including overhead pylon development. **Medium**
Quality	The integrity of this landscape is fairly intact as a unit of elevated agricultural farmland. **Medium/ High**
Elements and Features	There are fairly simple features within this landscape of open agricultural fields, simple field boundaries and established shelterbelts and one line of overhead electricity pylons in the north western section of this area. The Southern Upland Way long distance path passes through this LCA. **Medium/ High**
Context	The north eastern outer slopes of the character area will be highly visible from the busy A1 and east coast main line along the coast. Internally within the character area visibility will reduce. The Southern Upland Way passes through this LCA. **Medium/ High**
OVERALL RATING	**Medium**

Visual Sensitivity	Criteria
Receptors	There are individual farmsteads and dwellings within this character area and nationally important infrastructure routes just outside the area along the north eastern boundary. The Southern Upland Way passes through this area. **High/ Medium**
Internal Visibility	There are medium length views within this character area across the broad gently undulating landform, intervening established woodlands and shelterbelts partially screen some views, large areas of the LCA will be visible from the Southern Upland Way and outer eastern slopes visible from coastal and lowland areas. **High/Medium**
External Visibility	The north eastern slopes and high points will be visible from the coastal infrastructure routes and the area is visible from nearby surrounding high ground**. High/Medium**
OVERALL RATING	**High/ Medium**

Landscape Value	Criteria
Designations	The eastern area of this LCA contains a small area of a SLA. There are two listed buildings and the Southern Upland Way passes through this area. **Medium/ Low**
Community value	The Southern Upland Way cuts across this character area and there are a number of local core and informal paths as well as cycle routes. **Medium/ High**
Cultural value	There are a few cultural or historical sites within this character area as well as the Southern Upland Way. **Medium/ High**
Perceptual	Gently rolling broad landscape with views to and from the coast from the John Muir Way and busy east coast mainline (railway) and A1 links to England. There will be views to and from the LCA, including from the Southern Upland Way. **Medium**
OVERALL RATING	**Medium**

10. Grassland with Rock Outcrops

Landscape Character	Criteria /Thresholds
Scale	Rolling or undulating landscapes, medium in scale. **Medium**
Landform	Undulating landform with low to medium height differences creating some broad plateau bowl-like landscapes, rural semi upland character above a large regional settlement (Hawick). Some areas with distinctive ridges, knolls and outcrops. **Medium**
Pattern	Simple Landscape pattern of large open undulating grazing fields enclosed by post and wire fences, there are a few established commercial forested areas and shelterbelts. **Medium**
Development	Sparsely developed with the occasional farmstead and dwelling present there are a few minor single track roads present. **Medium**
Quality	Intact comprehensive landscape reading as a semi upland farming landscapes elevated above Hawick. **Medium**
Elements and Features	The most prominent feature of this landscape is the landform itself, the undulations create locally distinctive ridgelines elongated hill tops towards the peripheries in a north east to south west direction. Internally the landform creates upland plateau like landscape with broad enclosed areas. **Medium/ Low**
Context	The outer slopes facing Hawick are prominent features visible and provide a rural setting to the settlement. **High** Internal areas are less visible from lower elevations or settlements. **Low**
OVERALL RATING	**Medium** Outer slopes facing Hawick have a **High/ Medium** sensitivity.

Visual Sensitivity	Criteria
Receptors	Farmsteads and minor roads are within the character areas, outer slopes are fully visible from Hawick and the receptors within the valleys dividing up this group of LCA. **Medium**
Internal Visibility	Mid range views, partially obscured by undulating topography. **Medium/ Low**
External Visibility	Views afforded to and from Hawick from the outer slopes, Whitehaugh, Midgard and Chisholme are more visible from Hawick and valleys that divide this group of LCAs. **High** The larger internal area within the Allan Water is less visible from Hawick. **Medium/Low**
OVERALL RATING	**Medium** Allan Water (iii) has a **Medium/ Low** sensitivity due to the large internal areas being less visible Chislholme is smaller with slopes above 2 settled valleys and the A7. **Medium/High**

Landscape Value	Criteria
Designations	The Midgard LCA contains a small area of a SLA. The Midguard, Whitehaugh and Chisholme LCA contain SSSI's and within the southernmost Allan Water LCA there are a number of SAMs. **Medium/ Low**
Community value	A fairly high number of local core path walks originate from Hawick as well as the long distance Borders Abbeys Way passes through Whitehaugh LCA. **High/ Medium**
Cultural value	A number of heritage sites near by including historic forts, settlements, Cairns and enclosures. **Medium**
Perceptual	Outer slopes provide a setting to Hawick, internal areas could be perceived as semi upland farmland areas. **Medium**
OVERALL RATING	**Medium**

11. Grassland with Hills

Landscape Character	Criteria /Thresholds
Scale	Varied, large to medium scale landscape. **Medium/ Low**
Landform	Fairly broad gently sloping areas of grassland with locally prominent hills, accentuated by the steeper slopes. Landscape has an open character. **Medium** Rubers Law area feels like a large spur jutting into the lowlands areas. **High** sensitivity Eildon Hills LCA has three conical regionally dominant landmark hills. **High**
Pattern	Simple landscape pattern of open agricultural grazing fields with post and wire fences, some with sections of broken hedgerows. There are shelterbelts within this character area that create a strong but simple visual pattern. **Medium** Rubers Law and Eildon Hills have a **High** sensitivity due to the large regionally dominant landmark hills.
Development	There are individual farmstead developments and the occasional collection of individual dwellings within this character area. **Medium/ High** Eildon Hills and Skirling LCA have more development internally or alongside and thus have a higher sensitivity. **High**
Quality	Open, rural landscape with regional landmark conical hills in the Eildon and Rubers Law LCA. **Medium/ High** Other LCAs contain less prominent hills that are not regional landmarks. **Medium**
Elements and Features	There are prominent high points and elongated ridges, on the lower slopes of the hills there are shelterbelts and established mixed woodlands. Small Burns and Rivers are present and an overhead electricity line with pylons. **Medium** Ruber's law and Eildon Hills LCA have a **High** sensitivity as the conical hills are regionally recognisable landmarks.
Context	Each area has elevated sections that are more prominent than the flatter areas affording long distance views to and from these high points within each area. High points outwith the character areas overlook some of the space. Eildon Hills and Rubers Law LCAs are locally and regionally prominent landmarks. The Settlements of Galashiels and Melrose are visible to and from the Eildon hills LCA. Tinto Hill and Broughton Heights are visible and prominent skyline features from the Skirling LCA. **High/ Medium**
OVERALL RATING	**Medium/ High** Rubers Law and Eildon Hills LCAs have a **High** sensitivity

Visual Sensitivity	Criteria
Receptors	Knock Hill LCA has a section of the Southern Upland Way within it increasing the number of receptors in this LCA. All LCAs have Individual farmsteads and groupings of individual dwellings and small settlements within them. The Eildon Hills LCA and Rubers Law contain popular viewpoints and walks that will look over these LCA and the flatter lowlands. The Bonchester Dunion LCA will be visible from Jedburgh and the smaller settlements around this LCA as well as important transport routes. **High**
Internal Visibility	There are occasional long distance views from areas within the character areas, these are mainly towards high points within or just outwith the areas. Within the majority of areas views are contained by undulating landform. Longer distance views will be afforded over the LCAs and wider agricultural lowland landscapes with larger settlements from the Eildon Hills and Rubers Law LCAs. **High**
External Visibility	The higher areas will have greater prominence and visibility in this landscape. The Skirling LCA area is visible from the Tinto Hill regionally prominent viewpoint in South Lanarkshire. **High**
OVERALL RATING	**High**

Landscape Value	Criteria
Designations	All LCAs contain Listed Buildings, Eildon Hills, Knock Hill and Skirling LCA's contain SSSI's, and SAMs. The Eildon Hills area is part of a larger NSA. All LCAs have small or large areas that are part of larger SLAs. **Medium/ High** Eildon Hills has a higher sensitivity due to the NSA. **High**
Community value	Knock Hill contains a section of the Southern Upland Way as well as cycle routes and local footpaths, the Eildons and Rubers Law contain local walks and viewpoints, cycle paths can be found in Rubers Law and Bonchester/ Dunion LCAs. **Medium/ High**
Cultural value	Historic settlement, cairns, fort sites. **Medium**
Perceptual	This landscape is more accessible to a local population with locally and regionally prominent hills accessible, visually and physically. From within the character area there are views to and from high points. **Medium.** Rubers Law and the Eildon Hills have a **High** sensitivity
OVERALL RATING	Knock Hill, Skirling and Bonchester/ Dunion LCAs have a **Medium/ High** value. Eildon Hills and Rubers Law have a **High** value

12. Undulating Grassland

Landscape Character	Criteria /Thresholds
Scale	Large to medium scale landscape. **Medium**
Landform	Undulating hills with steeply sided valleys. **Medium**
Pattern	Consistent landscape pattern of open rolling grazing fields divided by simple dry stane dykes, rougher grasslands are found on more exposed hill tops. Mixed woodland is associated with river valleys, field boundaries with some larger conifer forestry areas. **Medium**
Development	There are small settlements, individual farmsteads and a few roads that cross the character areas. **Medium/ High**
Quality	The landscape has an undulating semi upland rural character, high quality. **High/ Medium**
Elements and Features	There are local high points of the undulating hills divided into simple fairly regularly shaped fields by dry stane dykes. There are a few larger rivers with established mature trees. Overhead electricity lines and pylons are located within East Gala, to the north of Galashiels. **Medium**
Context	These areas are above the regionally important and sizable settlement of Galashiels, the outer more prominent slopes of these LCA's will be visible from this settlement will be visible. There are a few small settlements within the character areas. **Medium**
OVERALL RATING	**Medium**

Visual Sensitivity	Criteria
Receptors	There are a number of individual farmsteads and dwellings as well as smaller settlements within the character area and a number of roads that will have receptors. The Southern Upland Way passes through this LCA, increasing the number of sensitive receptors. **High/ Medium**
Internal Visibility	The rolling landscape will reduce internal visibility, reducing views to short/ mid range, there will be views onto this landscape from the Southern Upland Way. **High**
External Visibility	Views of the outer more prominent slopes from Galashiels and routes along the River Tweed, the internal areas will be less visible from external areas. There will be views onto this LCA from the higher ground to the north, east and west. **High**
OVERALL RATING	**High**

Landscape Value	Criteria
Designations	SSSI's, SAMs, the West Gala area contains part of a larger SLA to the south western area. The East Gala LCA contains a small part of the NSA in the south east of the LCA. The prominent outer slopes facing Galashiels are designated as 'Countryside around Towns' to preserve the character and setting of the settlements within the Valley. **Medium/ High**
Community value	There are a number of local and core paths as well as the Southern Upland Way. **Medium/ High**
Cultural value	Currently this is an intact area of open grazing farmland with little or no development creating fragmentation or an interruption to the landscape. There are historic fort, settlement and cairn sites within the character areas. **High/ Medium**
Perceptual	These area could be perceived as a rural semi upland intact farmland landscape with little fragmentation or landuse. **High/ Medium**
OVERALL RATING	**High/ Medium**

13. Poor Rough Grassland

Landscape Character	Criteria /Thresholds
Scale	Medium to large scale but limited in area. **Medium**
Landform	Gently undulating and gently sloping landform with areas that are more enclosed and intimate in character. **Medium**
Pattern	Simple landscape of rough grassland and conifer plantation woodland. **Low/ Medium**
Development	There are a few individual farmstead developments in the western and southern areas. The busy A703 passes through this area. **Medium**
Quality	Intact area of open rough grassland with conifer plantation areas. Low/**Medium**
Elements and Features	There are small burns draining the area, these are within gently sloping valleys that are not prominent elements in the landscape. Regular blocks of conifer plantation. Occasional farms and small roads. Large Millennium Farm shed complex west of A703 in the west of area. **Medium**
Context	The busy A703 passes through this area, individual farmsteads and the Moorfoot Hills are visible to the southeast. **Medium**
OVERALL RATING	**Medium**

Visual Sensitivity	Criteria
Receptors	There are individual farmsteads within the area and a busy A road as well as minor rural roads and tracks within this relatively small area. **Medium/ High**
Internal Visibility	There are some longer distance internal open views afforded from some more elevated areas of the LCA. Northern area is highly visible to and from Edinburgh and Mid Lothian. **High**
External Visibility	Long distance views will be afforded from the Moorfoot Hills to the south and east, the Pentlands to the north west and south west and the Southern Uplands to the south. **Medium/ High**
OVERALL RATING	**High/ Medium**

Landscape Value	Criteria
Designations	A small southern most area is part of a Scottish Borders Council designated Landscape (not inventory Garden and Designed Landscape). **Low**
Community value	No footpaths, no immediate public access provisions. **Low**
Cultural value	No historical sites of cultural interest. **Low**
Perceptual	The majority of receptors will be drivers of vehicles passing through this open, exposed environment. **Medium**
OVERALL RATING	**Low/ Medium**

14. Upland Fringe Moorland

Landscape Character	Criteria /Thresholds
Scale	Isolated relatively small area with a large scale character. **Medium**
Landform	Upland gently undulating with two locally prominent and distinctive hills. **Medium**
Pattern	Simple landscape pattern of rough grassland and Heather moorland, especially around the Dirrington Hills, there are a few established mixed specie shelter belts. **Medium**
Development	There is little development, just a few individual farmsteads. **Low**
Quality	Barren, exposed, remote upland character with little existing development, landscape intact with few features. **Medium/ High**
Elements and Features	Contrast of rough grazing land and heather moorland divided by a dry stane wall. Two locally prominent hills overlook this space and a number of small burns drain the area in a radial fashion. One road passes through the space. Local Kaims features, possible glacial in origin. **Medium**
Context	The Lammermuir Hills are located to the north and north west, from which the LCA may be visible. The minor rural road to the north east of the area may allow views of the site. **Low**
OVERALL RATING	**Low/ Medium**

Visual Sensitivity	Criteria
Receptors	There are few farmstead developments in the character area and one rural upland road that passes over the character area. The Southern Upland Way passes close to North and western areas of LCA. **Medium**
Internal Visibility	There will be long distance views from the high point of the two Dirrington Hills and medium distance views. Internally over the simple rough grassland/ Heather. **Medium/ High**
External Visibility	Views from rural road to the north eastern boundary, views maybe afforded from the Lammermuir Hills to the north and north west. there will be views from the Southern Upland Way to the LCA. **Medium**
OVERALL RATING	**Medium/ High**

Landscape Value	Criteria
Designations	The southern area of this LCA contains a SSSI, a RAMSAR Site, a SPA and SACs and the northern area of this LCA is part of a larger SLA. The area also contains a number of SAMs. **High**
Community value	There are no core paths or local paths present, a cycle route skirts the north eastern boundary. **Low**
Cultural value	Character Area contains The Kaims (possible glacial in origin) and Heriot's Dyke as well as a number of Cairns and standing stones. **Medium/ High**
Perceptual	This area could be perceived as a barren and upland wilderness. **Medium/ High**
OVERALL RATING	**Medium/ High**

15. Lowland with Drumlins

Landscape Character	Criteria /Thresholds
Scale	Large scale landscape. **Low/ Medium**
Landform	Generally flat to gently sloping with drumlins identified as low elongated hills, generally aligned north east to south west. **Medium**
Pattern	There is a relatively simple landscape pattern of large arable and some grazing fields divided by hedgerows, some with trees, there are a few shelterbelts also dividing fields. The field pattern is broken by the occasional designed landscape/ policy landscape and small mixed woodland group. **Medium**
Development	There are numerous individual farmstead developments and small settlements within this character area. There is greater human influence and development within this area. **Medium/ High**
Quality	This landscape is intact with little fragmentation as an intensive farming landscape. **Medium/ High**
Elements and Features	There are regular shaped fields with established hedgerows, some with trees and shelterbelts. The drumlins create localised features. **Medium/ High**
Context	The Character area is overlooked by the Lammermuir Hills to the north and the Southern Uplands or Cheviot Hills to the south and west. There are numerous small and medium sized towns within this landscape that will have localised views within this relatively flat landscape. **High/ Medium**
OVERALL RATING	**Medium/ High**

Visual Sensitivity	Criteria
Receptors	There are numerous individual farmstead developments dotted throughout this landscape as well as small and medium sized settlements within and outwith the character area that will be receptors. There are also a number of busy A roads connecting Scotland to England and numerous single track minor roads. **High**
Internal Visibility	There are long to medium range views within this relatively flat landscape, views are shortened by undulating Drumlins and shelterbelts or established woodland. **Medium/ High**
External Visibility	There are views from more elevated areas within the Lammermuir Hills and the Southern Uplands/ Cheviot Hills as well as more local views from busy A roads and quieter rural roads The southern areas (north east of Kelso) have a higher intervisibility. **Medium/ High**
OVERALL RATING	**Medium/ High**

Landscape Value	Criteria
Designations	The whole area is within prime agricultural land, there are numerous listed buildings spread throughout this area and a Historic Garden and Designed landscape. **Medium/ High**
Community value	Hirsel country park, picnic areas, core paths, cycle routes and a viewpoint. This area is accessible to a large number of people who live within the area or nearby. **High**
Cultural value	There are a number of historic sites within this area, including defensive sites. The farmland landscape also has a cultural value itself. **Medium**
Perceptual	This landscape is accessible to a larger population who live within it, it contains one of the main east coast routes between Scotland and England. The farming landscape can be perceived as an intact whole with a high quality. **High/ Medium**
OVERALL RATING	**High/ Medium**

16. Rolling Lowland Margins

Landscape Character	Criteria /Thresholds
Scale	Medium scale landscape with some more intimate areas. **Medium/Low**
Landform	Gently undulating with flat areas. **Medium**
Pattern	Large scale arable fields divided by hedgerows, some shelterbelts divide the area further. Landscape is intact as an agricultural landscape. **Medium**
Development	There are small to medium scale settlements and numerous individual farmsteads or dwellings dotted throughout the landscape. **High/ Medium**
Quality	The landscape has a managed character associated with intensive arable land uses. **Medium/ High**
Elements and Features	There are a few medium sized rivers that drain the higher ground of the Scottish Borders. Other elements include hedgerows, large regular shaped fields, shelterbelts and the occasional area of mixed woodland. **Medium/ High**
Context	The busy A1 and east coast mainline railway passes through the Eye Water Lowland LCA, this is an important connection between England and Scotland and provides a first impression of Scotland to people visiting from England. There will be long distance views from the higher areas within the Lammermuir Hills. **Medium/ High**
OVERALL RATING	**Medium/ High**

Visual Sensitivity	Criteria
Receptors	There are numerous individual dwellings and farmsteads throughout the area, busy roads connecting England and Scotland and more regional and local roads. **High/ Medium**
Internal Visibility	There are long distance views afforded by the gently undulating landscape. **High/ Medium**
External Visibility	There are views from character areas to the north over the Lowland with Drumlins landscape and longer distance views from the Lammermuir Hills. The Maxwellheugh area has a higher intervisibility. **High/ Medium**
OVERALL RATING	**High/ Medium**

Landscape Value	Criteria
Designations	Listed buildings and SAMs can be found within both LCAs. The Maxwellheugh LCA contains a small SSSI. **Medium**
Community value	Numerous core paths from small or medium sized settlements, core paths. Maxwellheugh LCA provides a setting to Kelso. **Medium/ High**
Cultural value	Historic fort sites, Culturally this landscape is associated with the more fertile landscapes of the east coast and Borders area. **Medium**
Perceptual	This landscape is also more accessible to people who live in the towns and other developments within it, the A1 and east coast main line (railway) pass through this area and it can be perceived as an intact unit of agricultural land. **Medium**
OVERALL RATING	**Medium**

17. Lowland Margin Platform

Landscape Character	Criteria /Thresholds
Scale	Large scale open agricultural landscape. **Medium/ High**
Landform	Very gently rolling landscape. **High/ Medium**
Pattern	An open landscape of large arable and grazing fields divided by dry stane dykes and hedges, some trees and shelterbelts are present as well as larger areas of woodland. **Medium/ High**
Development	There are individual farmsteads within this landscape and a few smaller settlements, there are two lines of overhead electricity pylons passing through this area. **High/ Medium**
Quality	This landscape has an intact semi lowland strongly rural and exposed agricultural character. **High/ Medium**
Elements and Features	There is the occasional medium sized river and burn present. The grid of dry stane dykes is a strong element of this landscape which is strengthened by the linear roads, these strong linear elements are occasionally broken by areas of woodland. **Medium/ High**
Context	This semi lowland landscape has views over the lowlands to the east. **Medium/ High**
OVERALL RATING	**High/ Medium**

Visual Sensitivity	Criteria
Receptors	There are a number of individual farmsteads and medium sized settlements within the character area as well as the receptors that will travel along the rural A roads that pass over the area. **High/ Medium**
Internal Visibility	There are medium to long distance views afforded by the gently rolling landscape. At places these are partially screened by vegetation. **High/ Medium**
External Visibility	There are a few small hills that will overlook this area from the north, east, south and west. **Medium/ High**
OVERALL RATING	**High/ Medium**

Landscape Value	Criteria
Designations	This area contains prime agricultural land, a SSSI and a few listed buildings. **Medium**
Community value	Short distance core paths are found around the two largest settlements. There is a sizable community living within this landscape who could view this landscape as an open relatively undeveloped rural agricultural landscape. **Medium/ High**
Cultural value	The remains of the Greenknowe Tower to the west of Gordon. **Low**
Perceptual	This open exposed semi upland landscape could be seen as having low recreational value but a higher visual scenic value as you travel through the rural agricultural landscape. **Medium**
OVERALL RATING	**Medium**

18. Lowland Margins with Hills

Landscape Character	Criteria /Thresholds
Scale	Medium scale landscape with undulating, sometimes steeply sided and locally prominent hills. **Medium/ High**
Landform	Open rolling rural agricultural landscape with some more intimate feeling areas resulting from landform. **Medium/ High**
Pattern	There is a pattern of open rolling farmland divided into fields by hedgerows and the occasional dry stane dyke, the occasional shelterbelt woodland and the occasional larger woodland area. There are a number of policy landscapes with a greater coverage of woodland. **Medium/ High**
Development	There is sparse development in this area with the occasional farmstead and dwelling as well as a few small settlements. **Medium/ High.**
Quality	The landscape can be read as an intact managed landscape of agricultural use with policy landscapes. The high regionally prominent peak of Black Hill increases this quality locally. **Medium/ High**
Elements and Features	The predominant element of this landscape is one of larger fields divided by established hedgerows and dry stane dykes with the occasional shelterbelt woodland and policy landscape. The numerous prominent rounded hills within this landscape dominate the character. **Medium/ High**
Context	There are views from this character area onto the lowlands to the east and the high points within the Eildon Hills are visible from most areas within this area. **High/ Medium**
OVERALL RATING	**Medium/ High**

Visual Sensitivity	Criteria
Receptors	There are farmsteads scattered throughout this landscape and a few small to medium sized settlements within the landscape, there are two policy landscapes within the area and a few medium sized settlements located just outside the character area. The high prominent regional hills of Black Hill and the nearby Eildon Hills will have a view over this landscape. **High**
Internal Visibility	Internal visibility is reduced by the undulating landscape and hills. There will be a panoramic views over this landscape from Black Hill, a regionally prominent hill and popular walking route. **High**
External Visibility	There will be views to and from the agricultural lowlands to the east and to and from the Eildon Hills to the west, there will be views of the western areas from the busy transport routes and settlements such as Earlston. **High**
OVERALL RATING	**High**

Landscape Value	Criteria
Designations	The area contains a Historic Garden and Designed Landscape, SSSI's, SAM's, Conservation Area, Listed Buildings and a small area of Ancient Woodland. The south and south western area is also part of a larger NSA & SLA. **High/ Medium.**
Community value	The area contains core paths, cycle routes and a viewpoint, Black Hill is a popular walk. **Medium**
Cultural value	There is a viewpoint overlooking the River Tweed that has associations to Sir Walter Scott, the area also contains a few historic hill forts and policy landscapes. **Medium/ High**
Perceptual	This area could be perceived as a semi upland environment with a rural agricultural character. Medium/ High
OVERALL RATING	**Medium/ High**

19. Coastal Farmland

Landscape Character	Criteria /Thresholds
Scale	Medium to large scale landscape. **Medium/ Low**
Landform	The landform is undulating with steeply incised valleys with woodland. **Medium**
Pattern	Large arable fields divided by hedgerows, there is the occasional hedgerow tree, the occasional woodland and forested area. Transport infrastructure tends to generally follow the coast within these LCA. **Medium**
Development	There are a few medium sized settlements as well as individual farmsteads, dwellings and tourism infrastructure developments such as the caravan park at Pease Bay. **High/ Medium**
Quality	Generally intact farmland landscape with some minor detractors such as quarries, transport routes and holiday parks. The coastline has a rugged windswept character; in places a relatively wild landscape, a character reflected by the tourism infrastructure along the coast. Cockburnspath. **High/ Medium** Coldingham. **High**
Elements and Features	The rolling agricultural landscape is interrupted by deeply incised river valleys that create strong landscape elements within this landscape. The coastal area is distinctive. **High/ Medium**
Context	This coastal area is prominent from the sea and is visible from the higher ground to the south west. **High/ Medium**
OVERALL RATING	**High/ Medium**

Visual Sensitivity	Criteria
Receptors	There are isolated farmsteads and dwellings as well as medium sized settlements, the main east coast railway line travels through the area as does the busy A1, both providing important connections to England. **High/ Medium**
Internal Visibility	Internal visibility is reduced locally by the undulating and deeply incised river valleys and inland by shelterbelts. **Medium**
External Visibility	The area will be visible from the sea, and the coastal area is highly prominent. Internal areas of this designation are less prominent but will be visible from higher elevations to the south west including the Southern Upland Way. **High/ Medium**
OVERALL RATING	**High/ Medium**

Landscape Value	Criteria
Designations	The coastal area is part of a larger SLA and the two areas contain listed buildings. **High/ Medium**
Community value	The Southern Upland Way begins/ ends within the Cockburnspath LCA and joins onto the Berwickshire Coastal Path, both areas contain core paths and cycle routes. Holiday parks in both areas. **High**
Cultural value	The coastal landscape is valued culturally and is visually prominent. **High**
Perceptual	This coastal landscape and settlements can be perceived as a valued landscape for residents and tourists. **High/ Medium**
OVERALL RATING	**High/ Medium**

20. Coastal Pasture

Landscape Character	Criteria /Thresholds
Scale	Medium/ large scale landscape with enclosed intimate valleys. **Medium/ High**
Landform	Gently undulating landscape with steeply incised valleys leading to the North Sea. **Medium/ High**
Pattern	Large arable and grazing fields divided by dry stane dykes, incised river valleys contain mixed woodland. There are planted shelterbelts within this landscape that with the hedgerows provide structure to the landscape. **Medium/ High**
Development	There are a few coastal harbour towns and smaller settlements inland as well as farmsteads. **High/ Medium**
Quality	The coastal landscape is highly regarded for its scenic qualities, reflected in the amount of tourism infrastructure located along the coast and designation as a SLA. **High/ Medium**
Elements and Features	The dry stane dykes and incised river valleys are prominent features of this landscape. The established shelterbelts and hedgerows provide structure and are the dominant features of the landscape. **High/ Medium**
Context	The undulating landscape will inhibit most long distance views, however there will be views over the lowlands with Drumlins from the southern part of the area. **Medium/ High**
OVERALL RATING	**High/ Medium**

Visual Sensitivity	Criteria
Receptors	There are coastal towns and individual farmsteads and small groupings of dwellings further inland. There is also the busy A1 and east coast mainline that are important connections between England and Scotland. There is a high degree of intervisibility from Transport routes and viewpoints. **High**
Internal Visibility	The undulating landscape reduces views across the landscape. **Medium/ High**
External Visibility	There are some long distance views to and from the Lowlands to the south west. There will also be long distance and dramatic views along the coast. There will be views from the A1 transport route when approaching from England to the south and when passing through this landscape. **High/ Medium**
OVERALL RATING	**High/ Medium**

Landscape Value	Criteria
Designations	The coastline is part of a SLA. Although not a landscape designation just off the coast is a SAC. The area also contains listed buildings and a number of SAMs (sites of historic hill forts). **High/ Medium**
Community value	Several settlements within or nearby. There are numerous core paths that connect within the Berwickshire Coastal Path and cycle routes. **High**
Cultural value	There are a few historic fort sites. The coastal landscape could have a high cultural value to the community. **Medium/ High**
Perceptual	The coastline has an open exposed rural character, the coastal landscapes have more of a wild character. **Medium/ High**
OVERALL RATING	**High/ Medium**

21. Coastal Moorland

Landscape Character	Criteria /Thresholds
Scale	Open large scale landscape with areas of smaller scale reference features. **Medium/ Low**
Landform	Broadly undulating plateau like landscape. **Low/ Medium**
Pattern	Large, open grazing fields divided by dry stane dykes. There are areas of open moorland and scrubby vegetation, dominated by gorse and areas of woodland planting. **Medium**
Development	There are individual farmstead developments and individual dwellings present within this area. The central area of this LCA is dominated visually by the Drone Hill windfarm. **Medium**
Quality	The landscape has an intact agricultural grazing quality with a windswept rugged and often dramatic coastal zone of relatively wild character. **Medium** (**High** along the coastal zone)
Elements and Features	A key element and feature of this character area is the dramatic coastal area. The Drone Hill windfarm dominates the central area of this LCA, the windfarm follows the strong linear agricultural features of the local landscape. **Medium/ High**
Context	The coastline is largely hidden, but slopes to the north west and east will be prominent when viewed from adjoining areas. The western edge escarpment will be visible from the busy A1 road and from LCAs to the south and west of this LCA. **Medium/ High**
OVERALL RATING	**Medium/ High** **High** along the coast.

Visual Sensitivity	Criteria
Receptors	There are individual farmsteads and dwellings within this area. Receptors will increase along the coast due to the presence of the Berwickshire Coastal Path and St Abbs Headland destination and viewpoint allowing views up and down the coastal zone. **Medium/ High**
Internal Visibility	Views are reduced by Topography, however along the coastal zone these views become much more open and extensive. **Medium/ High** **High** along the coastal zone
External Visibility	There are long distance views to and from this area along the coastal zone and from the outer slopes to the north west. **Medium**
OVERALL RATING	**Medium/ High**

Landscape Value	Criteria
Designations	Most of this LCA is part of a larger SLA. Although not a landscape designation a SPA and SAC are located along the coastline. **Medium/ High**
Community value	The Berwickshire coastal path is located along the coast as is a promoted viewpoint at St Abbs Head promoting a view along this dramatic coastline. There is a cycle route along the A1107. **Medium/ High**
Cultural value	The coastal area has a greater concentration of cultural heritage features with historic hill forts and settlements along the coastal zone. Fast Castle and St Abb's Head lighthouse **Medium/ High**
Perceptual	This landscape has an open windswept rugged character, especially along the coastal zone. This character is semi wilderness on the plateau area and increases in wildness along the coastal zone. **Medium/ High**
OVERALL RATING	**Medium / High** **High** along the coastal zone

22. Upland Valley with Pastoral Floor

Landscape Character	Criteria /Thresholds
Scale	Narrow to broad valleys with more intimate areas at the narrower areas of the valleys, enclosed by hills of higher elevations before entering more lowland broad valley types. **High**
Landform	Small to Medium scales, narrow to broad valleys with enclosed intimate sections at higher elevations. **High**
Pattern	Open undulating grazing fields with the occasional arable field enclosed by dry stane walls with sections of woodlands and trees along the river course. Hedgerows are predominantly alongside roads that can be found within the valleys. **High**
Development	There are individual dwellings and medium sized settlements within the more sheltered valley settings, roads are located at a slight elevation just above the flat floodplains to reduce the occurrence of flooding. **Medium/ High**
Quality	The landscape on the valley floor affords scenic vistas up and down the valleys and to the hills that enclose the landscape. The landscape can be read as an attractive intact rural farmland landscape with little to no industrialisation framed by the steep slopes of large Hills. **High**
Elements and Features	There are more areas of broadleaf woodlands and established broadleaf trees along river courses, roads and field boundaries, the dry stane dykes are a feature of this landscape. **High/ Medium**
Context	The lower elevations within the valley floor are overlooked by the higher elevations, hills and ridges that enclose the valleys. **High**/ **Medium**
OVERALL RATING	**High/ Medium**

Visual Sensitivity	Criteria
Receptors	There are residential dwellings and farmsteads within the valleys, there are a number of scenic drives and tourist routes along these roads. **High**
Internal Visibility	There are views up and down the valleys and to the hills and higher elevations that create containment for the valleys. **Medium**
External Visibility	There will be views from walks and viewpoints in the higher elevations that will look down onto these valleys. **Medium**
OVERALL RATING	**High/ Medium**

Landscape Value	Criteria
Designations	Lyne Water – Partly in NSA and SLA. Hillforts Liddel Water - Listed Buildings, Conservation Village, Ancient Woodlands. Upper Ettrick - Listed Buildings, SAMs, Historic gardens and Designed landscape, Historic Battlefields, Ancient Woodland. Upper Yarrow – north western area part of a SLA, Listed Buildings, eastern areas have Ancient Woodland. Manor Water – within a NSA, SLA, contains listed buildings. Upper Tweed / Biggar Water – within SLA, central area contains part of the NSA. Overall: **Medium/High** but Upper Tweed/Biggar and Manor Water **High**
Community value	Most of these valleys contain important infrastructure routes through the Borders region, as well as cycle routes, long distance footpaths and core paths. **Medium/High** Tweed/Biggar, Lyne and Yarrow with A roads **High.**
Cultural value	These valleys include a number of historic hill fort sites and settlements. Liddel Water hosts Hermitage Castle and Newcastleton. The valleys through the upland elevated hills will be valued by the local community as well as tourists and visitors. **High**
Perceptual	The valleys will be perceived as part of the more rural hilly/ mountainous areas of the Borders and represent a transitional landscape from the more elevated uplands to the broad settled middle and lower valleys. **Medium/High**
OVERALL RATING	Upper Tweed/Biggar and Manor Water. **High** Yarrow, Ettrick, Lyne and Liddel. **Medium/ High**

23. Pastoral Upland Valley

Landscape Character	Criteria /Thresholds
Scale	Medium to smaller intimate scale, gently sloping valley topography with steeper more elevated side slopes up to the Moorfoot Plateau and Lauder Common. **Medium/ High**
Landform	Valley landscapes with gently sloping sides, increasing in gradient as the slope reaches the base of the Moorfoot Plateau landscape. **High/ Medium**
Pattern	A strong pattern of grazing pasture on the flat valley floors with rough grazing on valley slopes and woodland plantation breaking up the valley embankments. **High/ Medium**
Development	The valley floors form important infrastructure routes into the Borders area, along these routes there are small settlements and individual farmsteads. **High/ Medium**
Quality	The landscape can be read as an intact river valley unit connecting the uplands with the lowlands. The valleys are a visually attractive rural landscape quality with broadleaved and conifer woodlands and shelterbelts and grazing farmland. **High/ Medium**
Elements and Features	The gently sloping valley sides contrasting with the flat bottomed valley is a strong element of this landscape. **High/ Medium**
Context	These landscapes provide important infrastructure routes through more upland environments. Vehicle and pedestrian routes from higher elevations will provide views down onto the valley floor. **Medium/ High**
OVERALL RATING	**High/ Medium**

Visual Sensitivity	Criteria
Receptors	There are numerous individual dwellings dotted along the busy road routes and a few small settlements. **High/ Medium**
Internal Visibility	There are long distance views afforded along sections of the valley. **Medium/ High**
External Visibility	External visibility is limited by the upland slopes of the Moorfoot Plateau. However there will be views up and down the valley. **Medium**
OVERALL RATING	**High/ Medium**

Landscape Value	Criteria
Designations	Listed buildings can be found in both areas. The southern area of the Gala Water LCA contains a small area of countryside around towns, protecting the northern area and setting of Galashiels. The southern tip of Eddleston Water LCA contains a SLA designation, historic garden and Designed Landscape. **Medium/ High**
Community value	There are cycle routes within the areas, the local communities will value the landscapes' visual qualities. **Medium**
Cultural value	Historic sites of Forts and Settlements can be found within these areas. The Valley landscapes cutting through the more rugged upland characters will be valued by the local community. **High/ Medium**
Perceptual	The broad valley landscapes could be perceived as part of the uplands environment, dominated by the high points of the overlooking hills. **High**
OVERALL RATING	**High/ Medium**

24. Upland Valley with Farmland

Landscape Character	Criteria /Thresholds
Scale	Broad gently sloping valley, medium large landscape. **High/ Medium**
Landform	Gently sloping broad valley landscape, Upper Whiteadder is more enclosed with incised burn valleys and enclosed intimate areas that contrast with the broad open valley landscape of Upper Leader. **High Medium**
Pattern	There is a strong agricultural pattern of enclosed grazing and arable fields with post and wire fences, hedgerows and a high number of wooded shelterbelt boundaries that create a strong pattern on the valley floor. **High/ Medium**
Development	There are individual farmsteads and small to medium sized settlements within the area, a number of busy A roads pass through this area. **High/ Medium**
Quality	The areas have an intact rural agricultural landscape quality within an attractive broad valley landscape with incised burns on valley sides over looked by Heather moorland and coarse grassland. **Medium/ High**
Elements and Features	The large fields are divided by post and wire fences, hedgerows and woodland shelterbelts, the shelterbelts create a strong visual element to this landscape. The main features also include rivers, burns, roads, tracks and residential developments. **High/ Medium**
Context	These valleys are visible from the surrounding high ground that will overlook them. **Medium**
OVERALL RATING	**High/ Medium**

Visual Sensitivity	Criteria
Receptors	Receptors will include hill walkers as well as residents who live in the settlements and individual dwellings/ farmsteads and people travelling through this landscape in vehicles, the A697 is an important connection between England and Scotland. **High/ Medium**
Internal Visibility	There are long distance views from elevated areas within the character areas whilst the smaller incised valleys of the burns that feed into the main rivers are of a smaller scale and enclosed. **High/ Medium**
External Visibility	There will be views from high points from the areas around these Character areas. **Medium/ High**
OVERALL RATING	**High/ Medium**

Landscape Value	Criteria
Designations	The Upper Whiteadder character area is part of a larger SLA, the Upper Leader is partly within a SLA along its north eastern boundary. Both areas contain listed buildings and the Upper Leader area also contains a Historic garden and Designed Landscape area. **High/ Medium**
Community value	Core Paths and sections of long distance paths and cycle routes can be found in these areas. **Medium/ High**
Cultural value	Historic hill forts and settlement sites can be found in these character areas. **Medium.**
Perceptual	This area can be perceived as a strongly rural landscape that is visually and physically accessible to the local population as well as a large volume of people travelling through these areas. **High/ Medium**
OVERALL RATING	**Medium/ High**

25. Upland Valley with Woodland

Landscape Character	Criteria /Thresholds
Scale	Small to medium sized valley enclosed by outer slopes, broad in places, intimate in others. **High/ Medium**
Landform	Valley framed by high hills, valley floor broad in places, some areas have steep slopes and spurs punctuating the valley. **High/ Medium**
Pattern	More complex patterns in the landscape with hedgerows and stone walls enclosing grazing fields with broadleaved shelter belts and broadleaved woodland areas and more complex policy landscapes. Plantation conifer woodlands are also located within this character area. Major A and B roads are located within the valley bottom. **High**
Development	Roads tend to follow the flatter lands of the valley but above the floodplain, there are numerous individual farmsteads and dwellings as well as small to medium sized settlements and the larger settlement of Peebles located within the more sheltered valleys. **High**
Quality	This character area has a rural settled upland valley character. **High**
Elements and Features	This character area contains numerous tourism facilities and attractions including a Botanical Garden (Dawyck) as well as important roads, settlements and rivers with small burns and rivers feeding into them. The Southern Upland Way also follows the glen with numerous viewpoints along its route, the glen is also a starting point for more local footpaths and recreational routes and the entrance into Glentress mountain biking area and Go-ape. The River Tweed forms an important and strong natural element of this landscape with an international reputation for Salmon fishing. **High**
Context	Settlements, roads and infrastructure are generally located in the more sheltered location of the glen. The glen will be visible from higher elevations looking down onto this landscape. **High**
OVERALL RATING	**High**

Visual Sensitivity	Criteria
Receptors	There are settlements and numerous individual farmsteads and dwellings as well as important roads, Long and short distance footpaths and transport infrastructure. **High**
Internal Visibility	There are long distance views up and down the valleys and from the high points of the hills and mountains that frame the valleys. Medium/**High**
External Visibility	There will be views from the High points of the hills and mountains that frame the valleys. **Medium/ High**
OVERALL RATING	**High**

Landscape Value	Criteria
Designations	There is a high concentration of listed buildings within the valleys, the Middle Tweed and Lower Ettrick/ Yarrow LCAs are part of a larger SLA. The western section of the Middle Tweed LCA is also within a NSA. Throughout the character area there are areas of ancient woodland, Historic gardens and Designed Landscapes and Historic battlefields. **High** Ettrick and Yarrow **Medium/ High**
Community value	There are lots of local as well as a long distance footpath within the valleys and up to the hills and mountains. The river Tweed is an internationally renowned Salmon fishing river and recreational scenic location for the community and tourists. **High**
Cultural value	There are numerous historic forts, standing stones and settlement sites as well as more recent interventions such as viewpoints, Glentress mountain biking area and Botanical Gardens in Tweed. **High** Ettrick and Yarrow **Medium/High**
Perceptual	The valleys have an important regional role. Historically it is an important infrastructure route within the region reflected in the busy roads and larger settlements found here today. The valleys are also important for tourism as routes and destinations with open views onto upland hills and mountains. **High**
OVERALL RATING	**High (Tweed)** **Medium/ High (Ettrick/Yarrow)**

26. Pastoral Upland Fringe Valley

Landscape Character	Criteria /Thresholds
Scale	Medium scale landscape with more enclosed small scale areas. **Medium/ High**
Landform	Broad to more enclosed valley landscapes enclosed by gently rounded hills. **Medium/ High** Bowmont Water LCA enclosed by steeper hills. **High**
Pattern	Large arable and grazing fields are located within the valley floors defined by post and wire fences and mixed shelterbelts. There are areas of broadleaved woodland present within these areas providing a strong contrast to the slopes of the surrounding hills enclosing the valleys. **High**
Development	There are individual farmsteads and small settlements within the valleys. Medium to larger settlements (Hawick) can be found within the broader areas of the valleys. The River Teviot flows through the Upper Teviot area, busy and minor roads are located within the valleys. **High/ Medium**
Quality	These landscapes have an intact settled rural agricultural landscape quality with sections of mixed woodland that contrasts with the more upland character of the hills that enclose the valleys. **High/ Medium**
Elements and Features	There are established hedgerows, woodlands and agricultural fields within this character area. Roads, settlements and rivers also provide strong elements and features of this landscape. **High**
Context	These valleys contain busy as well as rural single lane roads and tracks, as the valleys enter wider broader areas there is the occasional medium sized settlement. Some valleys are major communication routes. **Medium/ High**
OVERALL RATING	**High/ Medium**

Visual Sensitivity	Criteria
Receptors	Within the valleys there are individual farmsteads and dwellings, busy roads and minor rural roads. Medium sized settlements are located at the transitional areas where these character areas join larger broader character areas. The Eye Water LCA contains the busy A1 and East Coast Mainline railway providing key transportation routes between England and Scotland. **High** Kale Water has low population and is a dead end road. **Medium**
Internal Visibility	There are views up and down the valleys, these are obscured in places by vegetation. **High/ Medium**
External Visibility	There will be views from the high points on the hills that overlook these character areas. **Medium**
OVERALL RATING	**High/ Medium** Kale Water has a **Medium** visual sensitivity.

Landscape Value	Criteria
Designations	Upper Teviot and Borthwick Water, Listed buildings and designated designed landscapes in the north east area of the LCA. Kale Water and Bowmont Water contain SSSI's and are part of a large SLA. Lower Leader contains a number of SBC designated designed landscapes, listed buildings and the southern tip is part of a NSA. Eye Water, contains listed buildings, prime agricultural land and ancient woodland, the northern tip is part of a larger SLA. **Medium/ High**
Community value	Core paths and Cycle ways, the Eye Water area contains the start/ end of the Southern Upland Way. Pennine Way ends in Bowmont water valley. **Medium/ High**
Cultural value	There is varied cultural heritage interest. Most contain settlements.. The River Tweed is an important internationally renowned Salmon fishing river. **Medium** Several Designed Landscapes in the Leader. **High/ Medium**
Perceptual	These areas could be perceived as scenic, intact rural areas with that currently provide access into upland plateau/ hill landscapes. **Medium/ High**
OVERALL RATING	**Medium/ High**

27. Upland Fringe Valley with Settlements

Landscape Character	Criteria /Thresholds
Scale	Small/ Medium scale due to development and valley landscape creating small intimate areas. Outwith the more developed areas the scale of the landscape becomes larger (Medium/ Large scale) and more open. **High/ Medium**
Landform	Broad valley with gently sloping to steeper sides enclosing this landscape. The valley bottom is broad and wide with very gentle undulations at slightly higher elevations. **High**
Pattern	There is a regionally large and visually continuous settlement development along the valley floor and main A road corridor (Galashiels – Melrose). Arable and grazing fields occupy undeveloped land within the flat valley floor, the busy roads outwith the larger settlements are enclosed by dense woodland planting strips. Within the more sheltered valley bottoms the fields are divided by established hedgerows and shelterbelts, the steeper elevations are characterised by post and wire fences and the occasional shelterbelt or areas of woodland. **High**
Development	This is a highly developed landscape with a number of large regional settlements along the valley floor following the busy A road corridors, settlements have visual and, in places physical coalescence. Outside the main settlement development there are individual farmstead developments. **High**
Quality	This landscape has more of a developed character with extensive residential developments, busy A roads, retail areas with industrial and business estates. Outwith the settlements the quality of this landscape is higher and more rural in character with single track roads, hedges, woodlands and individual farmsteads. **High/ Medium**
Elements and Features	This is one of the more busy character areas with larger settlements with perceived coalescence along the busy A road corridors within the valley floors, arable and grazing fields are located on undeveloped valley floors and higher elevations around settlements, there is the occasional farmstead and smaller settlements. The River Tweed is a dominating feature of this landscape and the disused borders railway has a significant presence that will increase as this line is reopened. This area also contains larger and more established woodland areas. **High**
Context	Development on the valley slopes have views down into the valley, intervisibility is high through the valley where development allows views. The area is overlooked by the Eildon Hills. **High**
OVERALL RATING	**High**

Visual Sensitivity	Criteria
Receptors	There is a high concentration of residential receptors, receptors travelling through this landscape on the busy A roads, receptors working in these settlements and recreational receptors who will be using the long distance footpaths (Southern Upland Way) and the shorter distance core paths and cycle routes within this landscape. **High**
Internal Visibility	There are long range internal views along the valley where development and vegetation allows. Medium/ **High**
External Visibility	There are long range views to and from the Eildon Hills above this character area. There are popular walking routes and viewpoints. Medium/ **High**
OVERALL RATING	**Medium/ High**

Landscape Value	Criteria
Designations	NSA, SLA as well as listed buildings and Historic Gardens and Designed Landscapes can all be found in this character area. **High**
Community value	There are a number of long distance and short distance footpaths, core paths, cycle routes, viewpoints and picnic areas within this character area. **High/ Medium**
Cultural value	This character area contains sites of historic Cairns and Forts and the remains of Melrose Abbey. The River Tweed is an important fishing river of regional and national importance. **High**
Perceptual	This character area can be perceived as containing gateway settlements into upland areas of the Borders area at the transitional area between upland and lowland areas. **High**
OVERALL RATING	**High**

28. Woodland Upland Fringe Valley

Landscape Character	Criteria /Thresholds
Scale	Semi broad valley landscapes enclosed by steeper slopes. Generally small scale landscape with more intimate areas. **Medium/ High**
Landform	Relatively flat to gently sloping/ undulating valley bottoms with slightly steeper sides rising to steeper more elevated slopes. **Medium/ High**
Pattern	A diverse, visually complex matrix of pasture and arable fields with established hedgerows, shelterbelts and mixed or broadleaved woodlands. **High/ Medium**
Development	There are a number of large to medium sized settlements as well as individual farmstead developments, busy A roads and minor single track roads. **Medium/ High**
Quality	Rural attractive valley landscapes with intact areas of woodland. These areas would be valued for their enclosed quality. **High**
Elements and Features	The landscapes have an undulating or gently sloping character to the central rivers within each area. Large open fields have established hedgerows, mixed and broadleaved shelterbelts and areas of broadleaved or mixed woodlands. The valley landscapes create natural routes for roads and communication routes through the landscape. There are areas of mixed woodland however these areas are dominated by large arable and grazing fields divided by hedgerows with mature trees. **High/ Medium**
Context	The topography of the valley landscapes affords medium distance views along the river corridors, in places these are screened by woodlands, shelterbelts and hedgerows. The higher hills surrounding each valley will have views looking down into them. **Medium/ High**
OVERALL RATING	**High/ Medium**

Visual Sensitivity	Criteria
Receptors	There are medium to small settlements within each character area and road corridors that range from busy A roads leading to England to minor single track rural roads and tracks. **Medium/ High** Jed Water with A68 and Jedburgh. **High**
Internal Visibility	Views are afforded up and down valley landscapes, these are reduced by trees, hedgerows and woodlands within the valleys. At places landform will further reduce views. **Medium**
External Visibility	The higher land around each valley will have views down onto the valley floor. **Medium**
OVERALL RATING	**High/ Medium** Jed Water. **High**

Landscape Value	Criteria
Designations	Rule Water and Jed Water character areas are part of a larger SLA, the Middle Whiteadder near the North Sea Coast is also part of a larger SLA. Each area contains listed buildings and SBC designated landscapes. **High/ Medium**
Community value	Cycle routes, long distance paths and core paths are all located within these areas. **Medium/ High**
Cultural value	Sites of historic forts and settlements and remains of historic towers. Designed landscapes of local importance. **High/ Medium** Jed Water. The historic town of Jedburgh contains important historic sites and many listed buildings. **High**
Perceptual	These areas provide a visually rich linear landscape, intact as rural and agricultural with woodlands and meandering rivers with an upland character. **Medium/ High**
OVERALL RATING	**High/ Medium** Jed Water. **High**

29. Lowland Valley with Farmland

Landscape Character	Criteria /Thresholds
Scale	Medium to large scale undulating lowland landscapes. **Medium**
Landform	Gently undulating and rolling open agricultural fields enclosed and defined by hedgerows, shelterbelts and medium sized areas of woodland. The Rivers Teviot and Tweed create an overall gentle valley landscape. Occasional more prominent landforms. **High**
Pattern	A diverse landscape. The dominant pattern in the landscape is one of large arable and grazing fields enclosed by established hedgerows and shelterbelts. There are areas of established woodlands and policy landscapes. **High**
Development	There are medium to small sized settlements within these adjoining character areas as well as individual farmsteads and policy landscapes with large country homes. Other developments in this landscape include busy A roads connecting the main larger settlements outwith this character area to small minor single track roads. **High/ Medium**
Quality	This landscape has an intact extensively rural agricultural landscape quality. **High**
Elements and Features	The large agricultural field systems with established hedgerows, shelterbelts, small woodlands and rivers form the main elements within this landscape. Settlements and large country houses, castles and monuments. **High**
Context	These lowland landscapes are overlooked by a number of locally and regionally prominent hills, Rubers Law, the Minto Hills and the Eildon Hills will all overlook this landscape type. The settlements of Hawick, Kelso and Jedburgh are just outside the character areas and will be affected by development within these areas. **High**
OVERALL RATING	**High**

Visual Sensitivity	Criteria
Receptors	These adjoining areas contain long distance footpaths (Dere Street), core paths and cycleways, small to medium sized settlements as well as roads that range from busy A roads connecting key larger settlements to single track rural roads and tracks. **High** Kale has fewer settlements and minor roads. **Medium/High**
Internal Visibility	The undulating landscape provides short to medium range views at points across valley landscapes and lower areas of undulations. Linear vistas are created along the flatter areas of the river valleys with an attractive scenic quality. **High**
External Visibility	The higher ground that surrounds the area will have a overview of this landscape type. These include Rubers Law, Minto Hills and The Eildon Hills. The larger settlements of Hawick, Jedburgh and Kelso will have localised views onto these areas. **High** Lower Kale generally less visible from key surrounding receptors. **Medium**
OVERALL RATING	**High** Lower Kale **Medium/ High**

Landscape Value	Criteria
Designations	The combined areas include Listed buildings, SLAs, Historic battlefields, NSA, Historic Gardens and Designed Landscapes the river Tweed including tributaries are SSSIs and SAC sites. The area around Melrose/ Newton St Boswell is designated as Countryside Around Towns to protect the rural character of these settlements and prevent coalescence. **High** Kale has no landscape designations. **Medium**
Community value	This landscape is accessible to a larger local population who live nearby and within it, the rivers are important fishing areas of national/ international recognition. **High**
Cultural value	There are policy landscapes within this character area, sites of historic forts, settlements, standing stones and historic Dryburgh Abbey. **High**
Perceptual	The landscape can be perceived as an open undulating or rolling agricultural landscape that separates more sizable settlements. **High/ Medium**
OVERALL RATING	**High** Lower Kale. **Medium/ High**

30. Coastal Valley

Landscape Character	Criteria /Thresholds
Scale	Small scale intimate areas enclosed by steep sided incised wooded valleys, upper slopes are gently sloping and more open in character **High**
Landform	Incised wooded valleys with gently sloping upper slopes. **High**
Pattern	The valleys are dominated by broadleaved woodland, the upper slopes are large arable/ grazing fields. **High**
Development	There are individual farmsteads and dwellings along the upper slopes of the valleys, as the Eye Water enters the North Sea there is the larger settlement of Eyewater. **High**
Quality	This area has a high quality condensed character and acts as a transitional area between the agricultural Lowlands to the west and the North Sea to the east. **High**
Elements and Features	The wooded valleys form a dominant element of this landscape, these are in contrast to the open agricultural fields. **High**
Context	The settlement of Eyemouth and the smaller settlements within the character area will have a view of development within the character area. **High**
OVERALL RATING	**High**

Visual Sensitivity	Criteria
Receptors	The main receptors will be within the settlements of Eyemouth and the smaller groupings of dwellings as well as the individual farmsteads and dwellings throughout the character area. The character areas also includes a number of busy A roads and minor roads. **High**
Internal Visibility	Generally enclosed. There will be views from Eyemouth into the LCA. **Medium/ Low**
External Visibility	This enclosed valley is fairly self contained but opens as the valley joins the coastal zone with a greater degree of intervisibility and views along the dramatic coast. **Medium**
OVERALL RATING	**Medium**

Landscape Value	Criteria
Designations	The area contains a number of listed buildings, the coastal area is part of a larger SLA. Ayton Castle designed landscape. **High**
Community value	Two settlements including Eyemouth. There are a number of cycle routes and core paths within the character area, the long distance Berwickshire Coastal Path is along the coast. **High**
Cultural value	Ayton Castle and the port of Eyemouth are within this LCA. **High**
Perceptual	This character area could be perceived as an attractive transitional landscape between the coastal zone and more inland areas with extensive woodland cover within the valley. **High**
OVERALL RATING	**High**

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