Midlothian Landscape Wind Energy Capacity Study

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CONTENTS

1 INTRODUCTION

1.1 Policy context

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

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

Scottish Planning Policy 2014 (SPP) seeks to support the initiatives set out above. It requires local authorities to seek to ensure an area's full potential for electricity and heat from renewable resources is achieved, while giving due regard to relevant environmental, community and cumulative impact considerations. Strategic development plans are required to set out the factors to be taken into account in considering proposals for energy developments. These will depend on the scale of the proposal and its relationship to the surrounding area. Landscape and visual impacts and cumulative impacts with existing and consented energy development are likely to be key considerations to take into account in spatial frameworks for wind farm development.

1.2 Landscape Capacity Study for Wind Turbine Development in Midlothian (2007)

Midlothian Council commissioned a landscape capacity study for wind energy development in 2007. This current 2014 study will help inform the application of the policy framework of the new Local Development Plan for Midlothian and supersedes the 2007 capacity study.

1.3 Background to the study

Since the publication of the 2007 Landscape Capacity Study for Wind Turbine Development in Midlothian, interest in single and smaller groups of turbines has increased largely as a result of the Feed In Tariff. A greater variety of wind turbines is now available on the market and these can also be seen in operation in many parts of UK. This study provides more detailed assessment of sensitivity, more clearly related to different types of wind turbine development. It considers all the landscape character areas assessed in the 2007 capacity study.

Although there are no wind farms in Midlothian, or what might be considered as larger wind turbines, a number of operational and consented wind farm developments are located close to its boundaries in neighbouring authorities. This study therefore reviews potential cumulative landscape and visual effects in detail.

1.4 Study objectives

This study provides the following information:

- A detailed landscape and visual sensitivity assessment for wind turbine developments based on the landscape character areas defined in the published Scottish Natural Heritage Lothians Landscape Character Assessment (1998) and focussed on the landscapes of Midlothian.
- Clear spatial principles as to what size of wind energy development would be appropriate, in landscape and visual terms, within the different landscape character areas considered in the study.
- Consideration of potential cumulative landscape and visual impacts

1.5 Structure of the report

This report initially sets out the methodology adopted for the study, the landscape character areas and the development typologies assessed in the study. Operational and consented wind farm and turbine developments which form the baseline for the study are also identified.

Landscape and visual sensitivity assessments have been produced for 12 landscape character types within Midlothian. These consider sensitivity against identified landscape and visual criteria for three development typologies principally based on turbine height. Guidance is provided on cumulative issues, opportunities and constraints and on siting and design for each landscape character area.

1.6 How to use the study

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

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

This study considers the ability of landscape character areas to accommodate wind turbines as a landscape characteristic which can be repeatedly and consistently

accommodated across each landscape character type. The recommendations and guidance on capacity for each character type reflect the potential of the landscape to accommodate turbines as a landscape characteristic, either as multiple single features or multiple small groups within the landscape character area.

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

Landscape character areas found to be of ***High-medium*** sensitivity will have a number of significant constraints to wind farm/turbine development. While some characteristics (usually found in limited parts of these landscapes) may relate better to such development, significant adverse landscape/visual effects are likely to occur on other key characteristics. We consider that there is either no scope or very limited scope for development in a small part of these character areas only.

The study considers the sensitivity of landscape character areas to a limited number of pre-determined turbine typologies, principally based on height. We consider that it is not practical to appraise a wide range of turbine typologies in a capacity study as it becomes too complicated in the field assessment but also in clearly presenting findings on sensitivity. Individual applications therefore need to be considered on a case-by-case basis with some flexibility on turbine heights being applied within close range of the upper height threshold used in the assessment. Where turbines are slightly above the height threshold or proposed within more sensitive landscapes, they should be subject to careful and thorough consideration with the developer being requested to demonstrate how they have dealt with potential effects on the constraints identified in the sensitivity assessment at a more detailed level.

2 STUDY METHODOLOGY

The study considers the sensitivity of key characteristics of different landscapes within Midlothian to changes that would be brought about by new wind turbine development.

2.1 Background to landscape capacity

Landscape capacity is described as *'the degree to which a particular landscape character type or area is able to accommodate change without significant effects on its character, or overall change of landscape character type. Capacity is likely to vary according to the type and nature of change being proposed'* [1]

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

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

2.2 Definition of terms

The following definitions of terms apply to this study:

Landscape character

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

Landscape sensitivity

Sensitivity relates to landscape character and how vulnerable this is to change. In this study change relates to wind energy development and any findings on landscape sensitivity are restricted to this. Landscapes may have different sensitivities to other forms of change or development. In this study, sensitivity is assessed by considering the effect of different heights of wind turbine development on the physical, experiential and perceptual characteristics of landscapes. Landscapes that are highly sensitive are

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

at risk of having their key characteristics fundamentally altered by the wind turbine typology under consideration in the assessment.

Landscape capacity

This relates to how far a landscape can accommodate development without significant adverse impacts on its character. Landscape character and sensitivity are part of this, but in this study capacity also includes an assessment of visual sensitivity.

2.3 General approach to the study

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

- Identification of existing and consented wind farm and turbine developments in Midlothian and within adjoining authorities to inform the baseline for this study.
- Identification of the different wind turbine development typologies to be assessed in the study in collaboration with Midlothian Council.
- Definition of landscape and visual sensitivity criteria to be used in the assessment.
- Field work to assess the sensitivity of landscape character areas to the agreed development typologies using identified sensitivity criteria.
- Provision of an overview of landscape and visual sensitivities across the study area and recommendations on strategic landscape and visual considerations for wind farms and single and smaller wind turbines within Midlothian.

2.4 Operational and consented wind farms and turbines

The following operational and consented wind farm developments lying within approximately 20km of Midlothian's boundaries (and with visibility from key viewpoints in Midlothian) form the baseline for the assessments set out in this study:

Windfarm	***Authority***	***Turbines***	***Height to blade tip***
Dun Law I and II	Scottish Borders	61	62.5m/75m
Bowbeat Hill	Scottish Borders	24	80m
Carcant	Scottish Borders	3	107m
Keith Hill	East Lothian	5	76m
Muirhall	South Lanarkshire	6	125m
Pates Hill	West Lothian	7	102m
Pogbie	East Lothian	6	76m
Tormywheel	West Lothian	15	102m
Toddleburn	Scottish Borders	12	110m/125m

The Auchencorth and Gilston wind farm proposals which were both sited in Midlothian were refused on Appeal in 2009 and 2013 respectively.

Potential smaller wind turbine developments

There has been relatively limited expressed interest from farmers, community groups and other landowners for smaller turbines within Midlothian. A number of consents for smaller single and small groups of up to 3 turbines have been granted in Midlothian since 2007. All these approvals comprise turbines under 34m high to blade tip.

2.5 Baseline landscape character

This study has been informed by the landscape characterisation set out in the Lothians Landscape Assessment (1998) published by Scottish Natural Heritage. The landscape character areas set out in the 1998 study were reviewed in the field as part of the 2007 Midlothian Capacity Study with some alteration of these being made for the purposes of the sensitivity assessment. This current study adopts the same definition of landscape character areas used in the 2007 capacity study. Landscape character areas in Midlothian are shown in Figure 1.

2.6 Development typologies

2.6.1 *Smaller typologies*

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

We have found during our field assessments (and observations of existing smaller turbines in the landscape) that there is a noticeable 'threshold' at around 30-35m height to blade tip where over this height a turbine will quickly become a dominant feature in many lowland/more settled landscapes. Turbines below 30m high are therefore not assessed in detail in the study although general advice is given where these smaller turbines are able to be accommodated within the guidance set out for each landscape character area.

2.6.2 *Larger typologies*

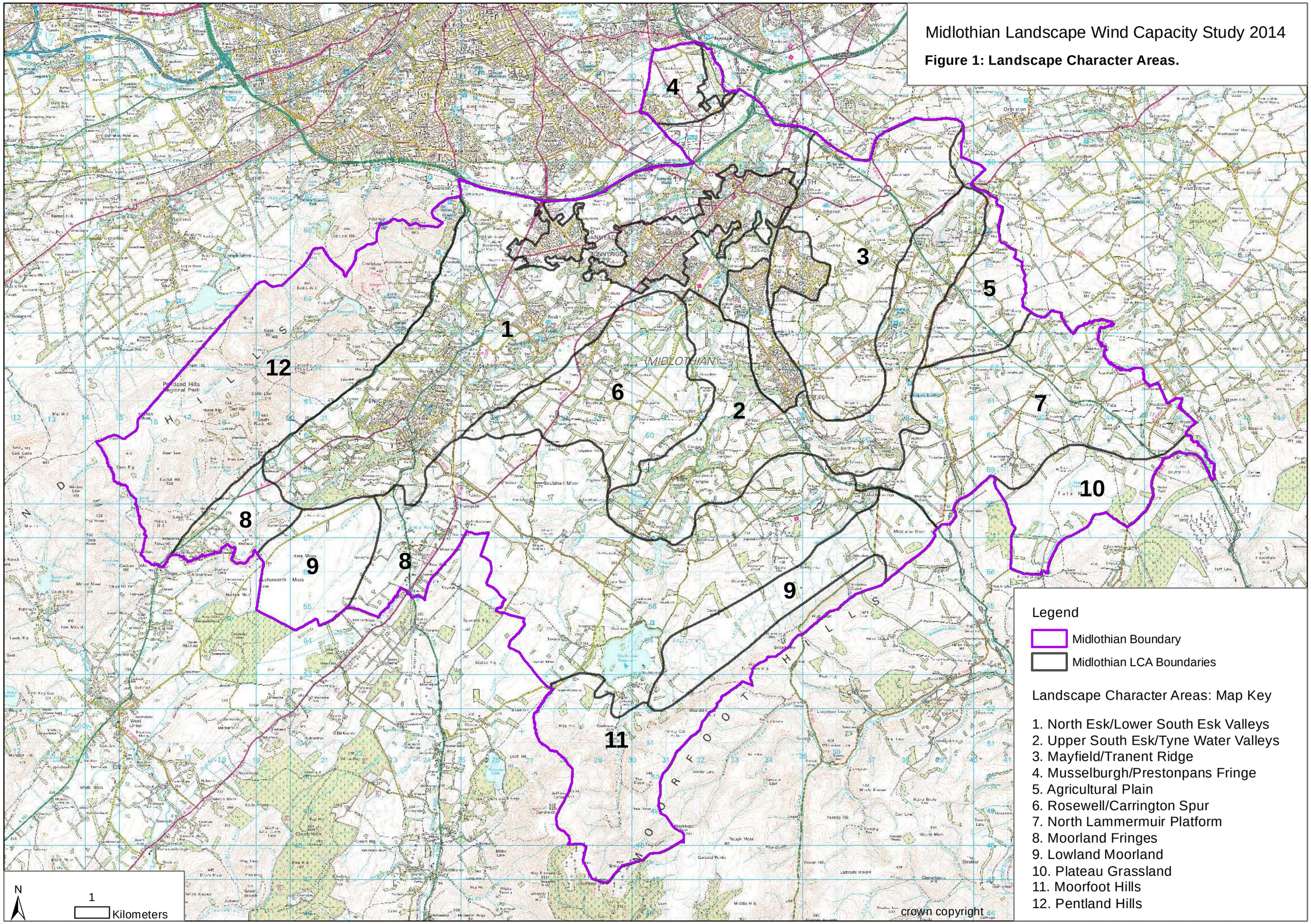
In terms of larger developments (turbines 50m +) we have principally considered the height of turbine within the sensitivity assessment as this is a critical factor in determining landscape and visual sensitivity. We have not specifically considered pre-determined numbers of turbines within the typologies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

2.6.3 *Summary of development typologies considered*

We have considered the following development typologies in the study:

Midlothian Landscape Wind Capacity Study 2014

Figure 1: Landscape Character Areas.



- ***Turbines between 30m and up to and including 50m high***. These turbines will be higher than most buildings, woodlands and trees but may be similar in height to pylons or relate in scale to lower, but relatively large scale industrial buildings. We have considered single and small groups of up to 5 turbines within this category.
- ***Turbines between >50m and up to and including 80m high***. Turbines in this category will be taller than most high voltage transmission line towers and roughly 3-4 times taller than mature trees and woodlands. The earlier wind farm developments of Bowbeat and Dun Law I in Scottish Borders have turbines which fall within this height category.
- ***Turbines over 80m high*** The more recent wind farm development of the Dun Law II extension and the Carcant and Toddleburn wind farms in Scottish Borders fall into this height category.

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

2.7 The sensitivity assessment

The study considers the sensitivity of key landscape and visual characteristics of different landscape character areas within Midlothian to the development typologies outlined above. In terms of assessing the potential effects of turbines on key characteristics, judgements were made on turbine height first. Numbers of turbines were considered in relation to the scale of key landscape features and any visual sensitivities. The field assessment used a series of computer generated visualisations showing different heights of turbine to inform the judgements made on landscape and visual sensitivities. Where relevant, key sensitivities in relation to landscapes lying outside Midlothian's boundaries in adjacent authorities are also noted in the assessment.

The study does not consider designated landscapes such as Special Landscape Areas (SLAs), or other recognised valued landscapes within Midlothian, in the sensitivity assessment although these will be considered by the Council in the appraisal of individual applications where relevant. This approach has been taken in the study in order to understand and identify landscape capacity for wind energy development irrespective of planning and other landscape designations.

2.7.1 *Landscape and visual sensitivity criteria*

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

- Scale and openness

- Landform
- Land cover pattern
- Built environment
- Perceptual qualities
- Landscape context
- Visual amenity
- Cumulative effects

A detailed description of the factors considered within the sensitivity assessment is explained in table 1 below.

Table 1: Sensitivity criteria used in the assessment

Sensitivity criteria	Factors considered and relevance of criteria to wind turbines
Scale and openness	Consideration of the scale of the landscape taking into account the degree of relief, amount of topographical containment, degree of openness and enclosure and the extent of land visible. Identification of areas of containment and factors that create enclosure where scale reduces. Identification of features against which the size of a turbine might be easily referenced. Consideration of how the size of the development might impact on the understanding of scale of the landscape. Assessment of how the development would relate to the scale of the landscape including whether they would be likely to dominate or appear compatible in scale in terms of the relative scale of landform, landscape pattern and individual features, including buildings, in the landscape. Consideration of how development would affect expansiveness and the sense of distance. In general, the more open the landscape and the larger the scale of the landscape the greater the ability to relate to larger development typologies.
Landform	Consideration of the overall topographical shape and the degree of complexity of landform including identification of any distinct 'landmark' features. Assessment of how development, including ancillary works, would impact on or relate to landform and whether it would intrude or detract if close to distinctive landform features. In general the simpler and more gently graded the landform the better the visual relationship with the simple form of turbines, and more gentle gradients are likely to better accommodate the platforms and roads associated with larger turbines.
Land cover pattern	Consideration of the degree of complexity and diversity of land cover pattern (field enclosure, woodlands, water courses and lochs) and whether pattern is strong or distinctly repeated, displays integrity or where it is fragmented. Assessment of the degree of diversity, and the

	importance of this in informing the distinctiveness of the landscape character. Assessment of how development could relate to pattern; whether it would disrupt or dominate strong pattern or undermine well balanced diversity, interrupt or fragment integrity of pattern, fit with areas where pattern is more simple or increase visual confusion where pattern is very fragmented. Consideration of potential effects on landmark features, such as hill top copses, designed landscapes and features, water bodies.
Built environment	Consideration of the pattern, density and character of settlement, its relationship to topography or other natural features and its setting, roads and other built structures. Consideration of historic features and sites and their setting. Assessment of how development might impinge on these characteristics; where there may be scope to attain some visual separation to minimise effects on settlement setting and avoid fragmentation of the pattern of built development and its association with topography or other natural features. Where larger scale industrial buildings and built structures such as pylons, masts and existing wind farms are present, the relationship of additional turbine development to these will be considered. Historic and archaeological features which contribute to landscape character are assessed in terms of any potential effects on setting.
Perceptual qualities	Consideration of the degree of modification by human intervention (such as roads, settlement, forestry, masts and wind turbines), consideration of how development could affect perceptions of naturalness and the degree of tranquillity experienced. Consideration of the sense of remoteness in terms of ease of access or seclusion (in the sense of the degree of containment that can be experienced rather than purely distance from roads and settlement) and whether and how development would alter these perceptions. Identification of landscapes where the number and distinctiveness of archaeological or historic features can give a strong sense of history or 'timelessness'. Identification of opportunities related to more developed and modified landscapes.
Landscape context	The role of adjacent character types in contributing to the overall character of the type being assessed. This includes consideration of where adjacent types may provide containment, increase or reduce the experience of scale or complexity or combine to provide a notably scenic whole. Assessment of the potential effects of development on adjacent character types and vice versa. This includes an assessment of inter-visibility.

	Landscape types that are more closely juxtaposed and contrast strongly with surrounding landscapes may be especially sensitive. Landscape types which are large in extent, or which have similar scale or vegetation pattern to neighbouring landscapes may have more scope for larger typologies.
Visual amenity	The extent of likely visibility (including considerations of whether the landscape is well settled and easily accessible, for example, or not) and types of viewpoints. The degree of openness or enclosure which influences visibility, including the amount of screening created by topography and woodland. The type of views, including elevated, extensive views which are sustained, framed views to focal points or glimpse views, or views experienced as part of a sequence or as revealed views creating a sense of arrival into the landscape type. The significance of skylines and visual horizons. Key vistas associated with historic landscapes or other features.
Cumulative effects	Consideration of existing operational and consented wind farms or turbines within the landscape character type and in the surrounding area. Identification of any constraints to further development in relation to cumulative visual or landscape effects. This includes consideration of sequential and simultaneous visual effects, as well as height, siting and design considerations informed by the presence of existing wind turbines.

2.8 Sensitivity levels

A five point scale of 'scoring' has been used in the assessment of each sensitivity criterion. This is also adopted in the overall sensitivity 'scores' accorded to each landscape character area. This is interpreted in the following table relating to overall sensitivity ratings:

Table 2: Explanation of Sensitivity Ratings

Overall Sensitivity rating	**Definition**
Low	The development typology relates well to key landscape characteristics and change is able to be accommodated without significant adverse impacts on landscape character or visual amenity.
Medium - low	Some limited sensitivities although there are opportunities to accommodate the development typology in most locations.
Medium	Some key landscape characteristics or aspects of visual amenity are sensitive but there is still some ability to accommodate development in some situations without significant character change or

	visual impact; the development typology relates to some aspects of landscape character.
High-medium	A number of key landscape characteristics are vulnerable to change. Development would undermine some important defining aspects of landscape character and/or visual amenity but may be able to be accommodated in very small parts of some landscape character areas.
High	The majority or all of the key landscape characteristics are vulnerable to change. Development would conflict with key aspects of landscape character and visual amenity with widespread and significant adverse impacts likely to arise.

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

2.9 Cumulative issues and overall capacity assessment

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

2.9.1 *Cumulative effects*

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

2.9.2 *Potential cumulative issues*

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

Potential landscape and visual cumulative impacts considered include:

- Change in landscape character – i.e. where an addition to existing and consented wind farms and turbines is likely to result in wind turbines becoming a recognisable and consistent characteristic associated with a specific landscape character area, rather than a one off feature (this may not necessarily be a negative impact);
- Significant alteration to a defining characteristic of that landscape character – i.e. a characteristic which is recognised as contributing to the distinctive identity of

the character of an area is likely to be lost or significantly diminished by the addition of one or more wind farms or multiple wind turbines to multiple existing and consented wind farms or turbines;

- Loss of recognisable development pattern – i.e where wind farms or turbines are introduced into a landscape where existing wind farms or turbines already create a recognisable pattern of development which relates strongly to particular landscape characteristics but additional development diminishes the integrity and robustness of the pattern leading to fragmentation of landscape character
- Visual dominance – i.e where wind farms or turbines become a visually dominant feature because of their combined presence as multiple or merged developments affecting a skyline as viewed from a significant viewpoint, or encountered sequentially as a series of focal points from a road or stretch of coast which is a definable journey
- Visual clutter – where different types of turbines, including different heights and styles of design, come together to create a muddled visual distraction from the landscape or key features.

2.10 Overall sensitivity ratings and potential areas for development

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

Within landscape character areas found to be of ***High-medium*** sensitivity, we consider that there is either no scope or very limited scope for development in a small part of the character area only. Within these High-medium sensitivity landscapes, it is recommended that developers should be required to demonstrate how they have dealt with the identified constraints in the siting and design of wind farm and turbine developments.

Where a ***Medium or lower sensitivity*** is identified, there is scope for development to be accommodated with fewer significant impacts on key sensitivities. Medium and lower sensitivity landscapes are not without constraints however and developers should be required to take note of these in the siting and design of proposals.

3 INTRODUCTION TO THE SENSITIVITY ASSESSMENT

The assessments which follow consider the sensitivity of each landscape character area to three different wind energy typologies, based on the height of the turbines ***taken to blade tip***.

An introduction to each landscape character area is set out in the sensitivity assessments that follow. This briefly describes the location of the character area and outlines operational and consented wind energy developments located in the surrounding area (and clearly visible from the landscape character area being assessed). Smaller single and small groups of wind turbines located in the landscape character area are also identified where relevant.

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

Potential cumulative issues and key constraints and opportunities to development are set out for each landscape character area and the sensitivity assessment concludes with recommendations related to the scope of capacity and guidance on siting of wind turbine development.

A map showing capacity for development is additionally provided for each landscape character area. These maps show indicative areas where the different development typologies considered in the study may be able to be accommodated as well as indicating scope for smaller turbines below 30m high to blade tip. The maps take into account key constraints identified in the sensitivity assessment but they do not accurately show constrained areas associated with cumulative effects or with the protection of key views or the setting of historic and other landmark features, designed landscapes or settlements. The terms '*very limited'* and *'limited'* are used on the maps to give a general indication of the degree of development that could be accommodated in terms of numbers of turbines given the identified constraints associated with the landscape character area.

Due to the strategic nature of this study, applications for individual proposals should demonstrate that turbines will not cause significant adverse effect on the sensitivities identified in this assessment. This must be informed by visualisations generated from agreed viewpoints.

The assessment within this study focuses on the landscapes lying within Midlothian's boundaries but notes key landscape and visual sensitivities within adjacent authorities where relevant.

4 NORTH ESK AND LOWER SOUTH ESK VALLEYS

4.1 Introduction

The River Esk diverges north of Dalkeith to form the North Esk, which runs parallel to the Pentlands Hills, and the lower South Esk which is aligned at the foot of the Mayfield/Tranent Ridge landscape character area. This is a well populated area with a number of settlements aligning the valleys.

4.1.1 *Operational/consented wind farms*

There is no wind farm or wind turbine development located in this landscape character area. There is also limited visibility of wind farm development located in neighbouring authorities due to a combination of distance and the screening provided by landform and woodland.

4.2 Summary of sensitivity

The deeply incised, narrow and predominantly wooded valleys of the North and South Esk have an intimate scale and often dramatic character. Broader valley shoulders above the valleys are flatter and more open but well-developed with settlements, industrial and commercial buildings and roads infrastructure in the north-east on the fringes of Loanhead, Bonnyrig and Lasswade. A number of designed landscapes are associated with these valleys and a rich pattern of policy woodlands extends onto the gently rolling farmland set above the valleys in the south-western part of this landscape character area. The valleys and these designed landscapes are a focus for recreation and the well-settled nature of this landscape character area also increases visual sensitivity. Views to the Pentland Hills are a key focus from many roads and settlements.

Wind turbines of any size would not be appropriate within the deep narrow river valleys of the North and South Esk as they would dominate their scale and diminish their naturalistic character. More complex rolling landform and diverse policy woodlands in the south-west of Penicuik would also be highly sensitive to the development typologies considered in this assessment. While the shoulders of the valley are flatter and more open in the north-east, large turbines would overwhelm the scale of most buildings and could exacerbate clutter when seen with existing tall built features such as transmission lines. The absence of extensive tracts of open land within this character area also restricts the number of turbines that can be accommodated with open space important in providing a contrast with, and landscape setting to, urban settlement. There would be a ***High*** sensitivity to Typologies A and B (turbines >50m) and a ***High-medium*** sensitivity to Typology C (turbines 30-50m).

4.2.1 *Potential cumulative issues*

Operational and consented wind farm developments have limited influence on views from this landscape. Potential cumulative effects could arise where multiple wind turbines contributed to the clutter of transmission lines and other large scale built development evident in the north-eastern parts of this landscape.

4.2.2 *Constraints*

- The strongly enclosed and confined nature of these valleys and the small buildings, areas of woodlands and enclosed farmland which provide ready scale references.
- More complex, rolling landform which occurs at the transition of the upper North Esk valley with the Pentland Hills.
- Steep side slopes and the often strongly meandering rivers which create spurs, cliffs and small arcs of flat floodplain in places within the often deeply incised valleys.
- The intricate pattern of mixed policy woodlands covering steep side slopes, semi-natural riparian woodlands, small rolling pastures enclosed by hedges and occasional field trees and occasional areas of parkland.
- The setting these valleys provide to historic buildings, settlements and designed landscapes, including those associated with Dalkeith Palace, Roslin Glen and the Penicuik Estate.
- The often open and elevated views over these valleys from settlement and roads sited on upper valley sides.
- Views to the Pentland Hills from settlements and roads on more open flatter ground above the valleys.
- The well-settled nature of these valleys and their popularity for recreation which increases visual sensitivity.
- Cumulative effects with electricity transmission lines and other built infrastructure in parts of this landscape.

4.2.3 *Opportunities*

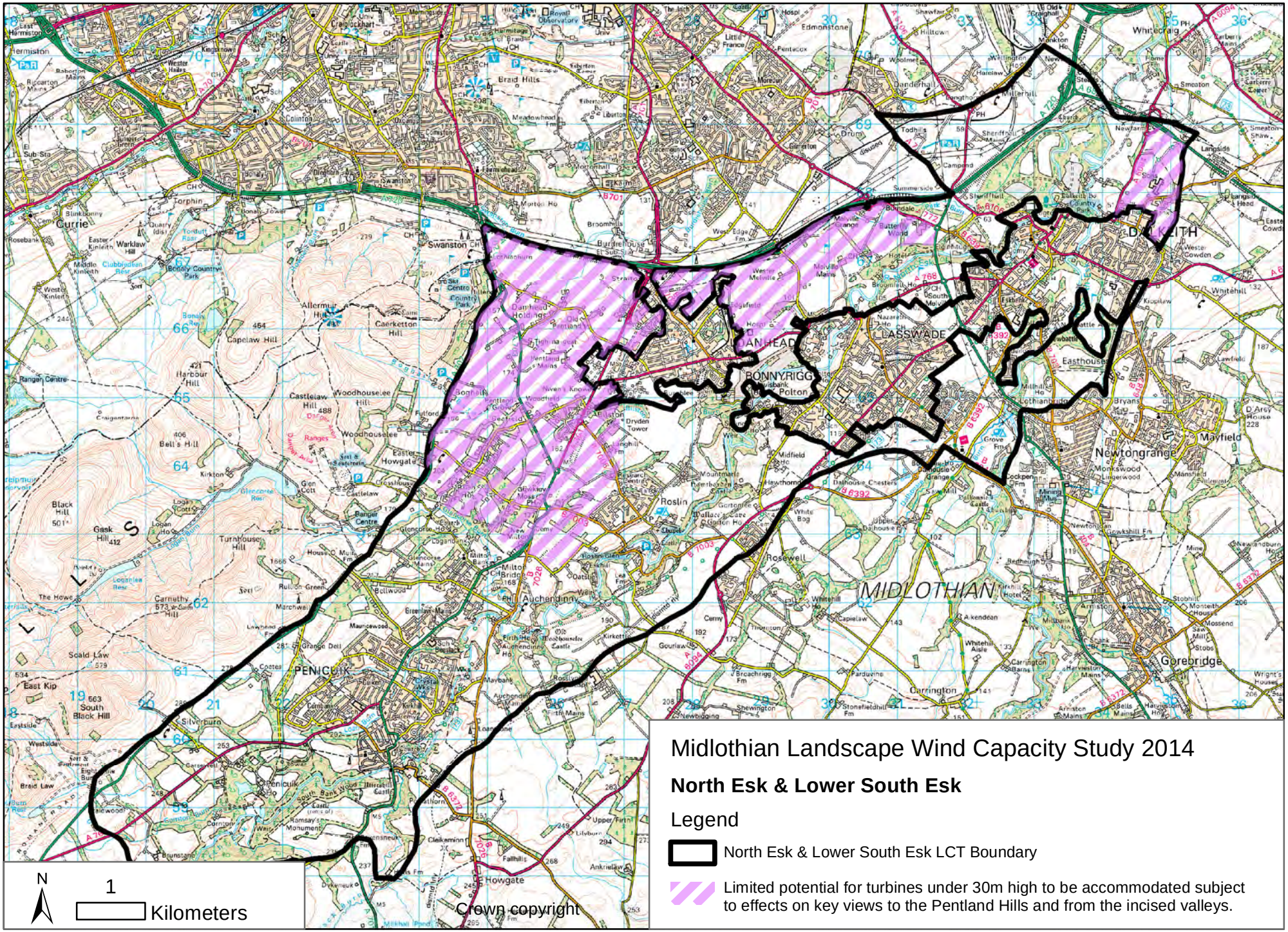
- The increased scale of more open and flatter valley shoulders where smaller wind turbines could be associated with larger buildings.

4.3 Guidance for development

There is ***no scope*** to accommodate any of the development typologies considered in this study (turbines >30m high).

There is some ***limited*** scope to accommodate turbines under 30m high in the more developed north-eastern part of this landscape character area. Turbines of this size would be likely to minimise effects on landscape scale, reduce visual impact and cumulative effects with existing built infrastructure. They could be associated with larger industrial, commercial or educational buildings where they would be more compatible in scale and would cluster development, minimising effects on open space between settlements.

Turbines should be set well back from the edge of the highly sensitive incised valleys of the North and South Esk. They should also be sited to avoid significant impact on designed landscapes and key views to the Pentland Hills from the A701 and A720 Edinburgh by-pass. Single and small groups of turbines (<3) would be less likely to impact on these key views although on-going review of the cumulative effects of multiple developments would be needed.


Midlothian Landscape Wind Capacity Study 2014
North Esk & Lower South Esk
Legend
North Esk & Lower South Esk LCT Boundary
Limited potential for turbines under 30m high to be accommodated subject to effects on key views to the Pentland Hills and from the incised valleys.
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PENICUIK
BONNYRIGG
LASSWADE
Roslin
Rosewell
Gorebridge
Currie
Swanston
Howgate

5 UPPER SOUTH ESK AND TYNE VALLEYS

5.1 Introduction

This area comprises the upper valleys of the South Esk and Tyne Water which share similar characteristics of a predominantly incised valley landform bordered by gentler farmed slopes with extensive policy landscapes of woodland and parkland.

5.1.1 *Operational/consented wind farms*

No wind turbines are located in this landscape character area. There is also very limited visibility of wind farm development located in neighbouring authorities due to the screening provided by landform and woodland although a single turbine at Southfield within the Mayfield/Tranent Ridge landscape character area and the Dun Law wind farm in the Plateau Grassland landscape character area are visible from more open upper valley sides.

5.2 Summary of sensitivity

The upper valleys of the South Esk and Tyne Water are largely deeply incised and richly patterned with policy woodlands and parkland. While the farmed upper side slopes of these valleys are less contained and intimately scaled, they have a strong enclosure pattern with many woodlands and mature field trees increasing diversity. A number of notable designed landscapes are associated with the South Esk and Tyne valleys and the presence of historic settlements and individual buildings additionally increases sensitivity. This landscape character area would be of ***High*** sensitivity to all the development typologies considered in the assessment.

5.2.1 *Potential cumulative issues*

There is limited visibility of operational and consented wind turbine developments in this landscape. Potential cumulative issues may be associated with multiple wind turbines associated with every farm holding.

5.2.2 *Constraints*

- The predominantly small scale of this character type, reinforced by the containment provided by steep valley sides, settlement, strong field pattern and woodlands.
- The complex knolly landform, diverse vegetation cover and distinctly naturalistic character of the upper South Esk valley between Crichton and Bothwick.
- The rich patterning of woodlands and policies including parkland and gardens which form components of designed landscapes such as Arniston, Oxenfoord Castle and Vogrie.
- Mature field trees and the strong field enclosure pattern on the farmed upper slopes of these valleys.
- The strong architectural integrity of settlements including Temple, Crichton, Bothwick and Ford.
- Views over the Tyne Water valley from the A68 and from elevated settlements such as Pathead and Edgehead.

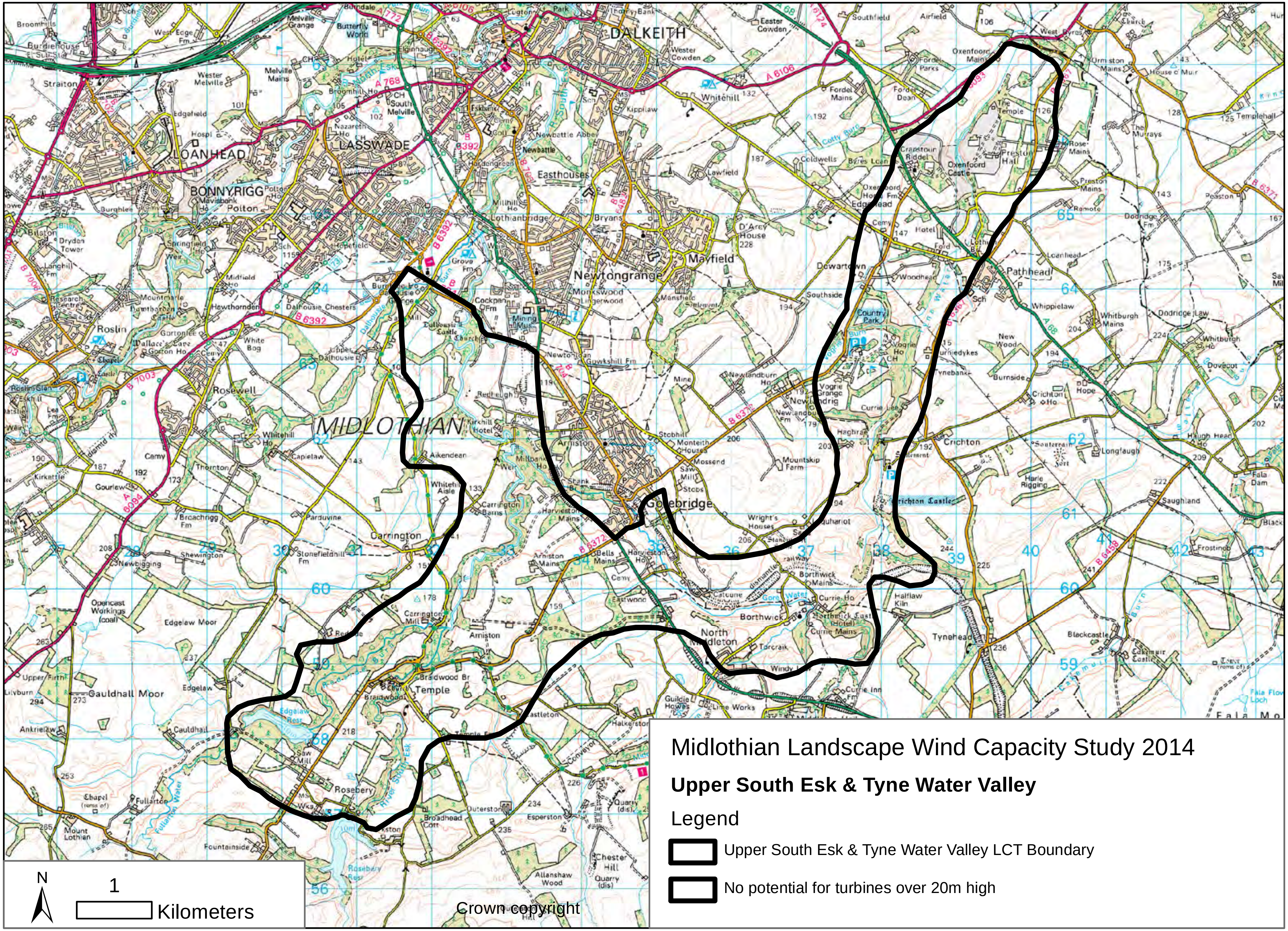
5.2.3 *Opportunities*

- There are no opportunities for the development typologies considered in this assessment to be accommodated in this landscape character area.

5.3 Guidance for development

There is ***no scope*** to accommodate any of the development typologies considered in the sensitivity assessment without significant adverse impacts occurring on a number of key criteria.

There are ***very limited*** opportunities for turbines below 20m to be accommodated in this landscape. Turbines should be set well back from the steep valley sides and be associated with the broader, more open farmland on the shoulders of the valley in areas with a less pronounced pattern of field trees and woodlands. Turbines of this size should be sited so visually associated with farm buildings in order to concentrate built development and thus minimise clutter in this highly sensitive landscape.



Midlothian Landscape Wind Capacity Study 2014

Upper South Esk & Tyne Water Valley

Legend

- Upper South Esk & Tyne Water Valley LCT Boundary
- No potential for turbines over 20m high

6 MAYFIELD/TRANENT RIDGE

6.1 Introduction

Located on the north-eastern edge of Midlothian and extending into East Lothian, this landscape character area comprises a distinct but low undulating ridge highly visible from Midlothian and Edinburgh.

6.1.1 *Operational/consented wind farms*

A single turbine, 34m high, is located at Southfield and two groups of 2 turbines <30m high are located near Cousland and close to the A68 within this landscape character area. Two turbines, 35.4m high to blade tip have been consented near Cousland, these replacing two existing 19m high turbines in the same location.

A single small turbine (15m height to blade tip) is located near Falside Hill within the part of this landscape character area that lies within East Lothian.

6.2 Summary of sensitivity

The long, low Mayfield Tranent Ridge is prominent in views across Midlothian and from Edinburgh. While the outer hill slopes of this ridge rise gently and are broad and often open in character, the interior is more contained with a rolling landform and woodland reducing scale. Electricity transmission lines and the A68 are prominent features on the north-west facing slopes of this ridge and the settlements of Gorebridge and Mayfield extend onto western slopes. The south-eastern slopes form the backdrop to the scenically diverse Tyne Water valley and feature a distinct pattern of field trees and woodlands.

There would be a ***High*** sensitivity to Typologies A, B and C (turbines >30m) as turbines of this size would be likely to dominate the height of this ridge, significantly impact on views and adversely affect more sensitive valleys. Cumulative effects with other wind turbines and transmission lines would also be a key constraint in some areas.

6.2.1 *Potential cumulative issues*

A number of smaller turbines <35m high are already located in this landscape character area. Operational wind farm development sited in the Lammermuir and Moorfoot Hills is also visible from more elevated and open roads in this landscape. Potential cumulative issues could arise if a greater variety of turbine sizes and styles were additionally introduced to this landscape and also if further large turbines were constructed in the Moorfoot and Lammermuir Hills.

6.2.2 *Constraints*

- The undulating interior of the ridge, enclosed fields, woodlands and settlement which provide ready scale references and the relatively low relief of the Mayfield/Tranent Ridge.

- The steeper north-west facing slopes and ridge top of this landscape which is visually prominent from parts of Edinburgh and other settlements and major transport routes such as the A1 and A720.
- Policy woodlands and the strong field enclosure pattern on the south-east facing hill slopes of this landscape which provides the setting to designed landscapes within the adjacent upper Tyne Water valley.
- Views from the roads which cross this ridge to Edinburgh and the Pentland Hills and to the Moorfoot and Lammermuir Hills.
- Cumulative effects with operational and consented wind turbines and with existing transmission lines located in this landscape character area.

6.2.3 *Opportunities*

- Lower hill slopes away from sensitive ridgelines where smaller turbines (<30m high) could be located while minimising effects on adjacent scenic valleys.

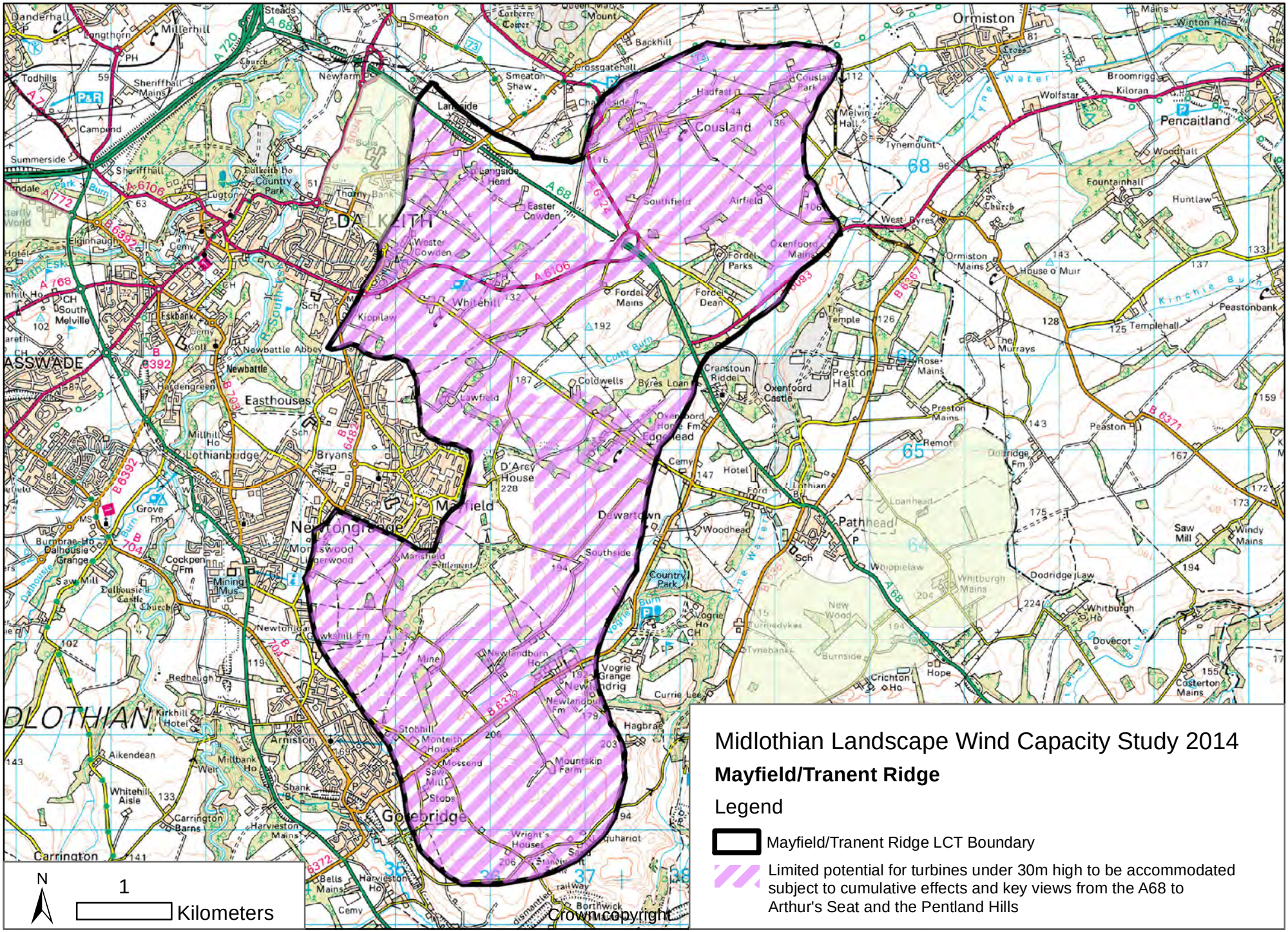
6.3 Guidance for development

There is ***no scope*** to locate the development typologies considered in this assessment (turbines >30m high) due to the significant effects likely to occur across a range of sensitivity criteria.

There is ***limited*** scope to accommodate single and small groups of turbines (<3 nr) below 30m high in this landscape character area. Turbines of this size would fit better with the scale of the landscape and minimise effects on the scenic character of the adjacent Tyne Water valley. They would also reduce cumulative effects with existing wind turbines sited in this landscape.

All turbines should avoid prominent ridgelines and be sited on lower slopes where a backdrop of higher ground would minimise visual impact. They should be sited so they do not break the skyline of the ridge seen from Edinburgh and other settlements to the north-west and should avoid significant intrusion on key views to Edinburgh from the A68. Care should be taken to minimise impact on the setting of the designed landscapes of Oxenfoord Castle and Vogrie in the adjacent Tyne Water valley and on areas with a more pronounced woodland and field enclosure pattern on the outer south-eastern slopes of this ridge. Turbines should be sited well away from areas where existing transmission lines and masts are present close to the A68 corridor. Turbines below 20m high should be located where they can be clearly associated with existing built development, farms or other settlement to minimise visual clutter.

There is limited scope for multiple developments of single and small groups of turbines due to the cumulative effects likely to occur with existing masts, pylons and other wind turbines located in this landscape. It is recommended that periodic review of cumulative landscape and visual effects is undertaken in this landscape.


Midlothian Landscape Wind Capacity Study 2014
Mayfield/Tranent Ridge
Legend
Mayfield/Tranent Ridge LCT Boundary
Limited potential for turbines under 30m high to be accommodated subject to cumulative effects and key views from the A68 to Arthur's Seat and the Pentland Hills
N
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Kilometers
Crown copyright

7 MUSSELBURGH/PRESTONPANS FRINGE

7.1 Introduction

While this landscape character area largely comprises a narrow, developed coastal fringe within East Lothian, it also includes a small area of urban fringe, extending up to the edge of Edinburgh and with less of a coastal influence, within Midlothian.

7.1.1 *Operational/consented wind farms*

There is a single small turbine located within the part of this landscape character area which lies in East Lothian.

7.2 Summary of sensitivity

The limited extent of this landscape character area and the planned growth in the Shawfair area physically restrict scope for wind turbine development. Large wind turbines sited in this area would also affect views to Edinburgh and Arthur's Seat from roads and settlement, including the A1 and A720 Edinburgh City by-pass. They could also exacerbate the clutter of large lighting columns and other vertical structures present in the Newcraighall area. There would be a ***High*** sensitivity to Typologies A, B and C.

7.2.1 *Potential cumulative issues*

There would be no potential cumulative issues due to the absence of operational turbines in this landscape character area within Midlothian and the very limited visibility of turbines in adjoining landscapes.

7.2.2 *Constraints*

- The limited extent of the landscape character area, together with new urban growth in the Shawfair area which physically constrain opportunities for wind turbine development.
- The visibility of this landscape from major roads, including the A1 and from the A720 City By-pass, where it forms the foreground to views of Arthur's Seat and Edinburgh.
- The high visibility of this landscape from urban areas.
- Existing transmission lines and tall lighting columns which increase potential for clutter.

7.2.3 *Opportunities*

- There are no opportunities for the development typologies considered in this assessment to be accommodated in this landscape.

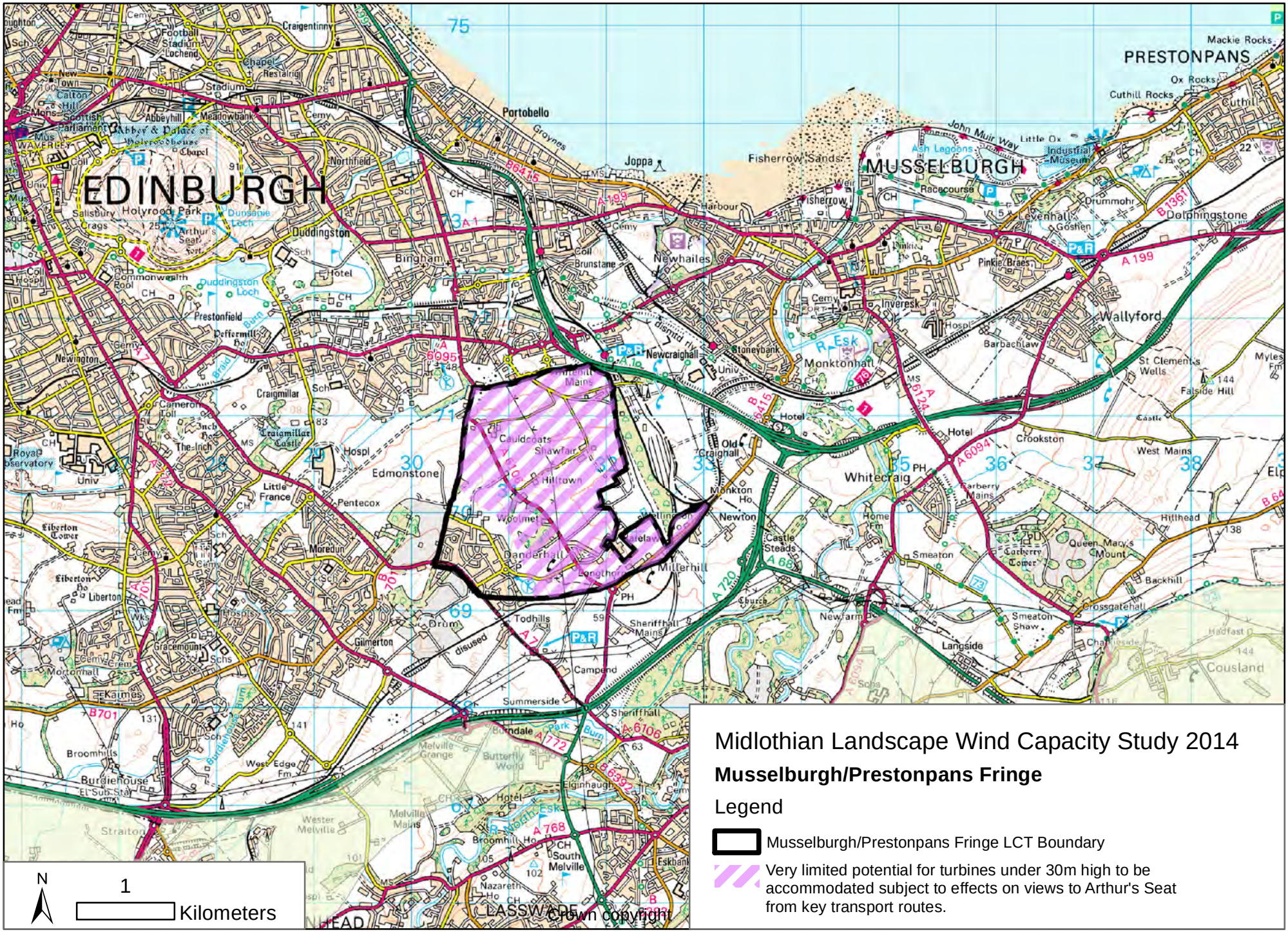
7.3 Guidance for development

There is ***no scope*** to accommodate any of the development typologies considered in this assessment.

There is some ***very limited*** scope to accommodate turbines <30m high in this landscape character area. Turbines should be sited to avoid significant intrusion on key

views to Arthur's Seat from the A1 on the approach to Edinburgh. Smaller turbines below 20m would have less of a landscape and visual impact providing they were closely associated with existing buildings or urban edges.

There is likely to be little opportunity for multiple developments due to the future development of this landscape.



Midlothian Landscape Wind Capacity Study 2014

Musselburgh/Prestonpans Fringe

Legend

Musselburgh/Prestonpans Fringe LCT Boundary

Very limited potential for turbines under 30m high to be accommodated subject to effects on views to Arthur's Seat from key transport routes.

8 AGRICULTURAL PLAIN

8.1 Introduction

The Agricultural Plain landscape character area covers much of the lowlands of East Lothian and extends into a relatively small part of Midlothian in an area south-east of Pathhead.

8.1.1 *Operational/consented wind farms*

No operational wind turbines are present in this landscape character area within Midlothian. Views of operational wind farms in the Lammermuir and Moorfoot Hills are restricted as this landscape comprises north-west facing slopes above the Tyne Water valley which are orientated away from these developments.

8.2 Summary of sensitivity

This landscape is relatively well settled with farms, small settlements, enclosed fields and woodlands providing ready scale references which would be dominated by larger wind turbines. The gentle farmed slopes of this landscape form the wider setting to the adjacent Tyne Water valley and a backdrop to the designed landscapes of Oxenfoord Castle and Vogrie. There would be a ***High*** sensitivity to Typologies A, B and C (turbines >30m high).

8.2.1 *Potential cumulative issues*

Potential cumulative issues may include visual clutter which could occur if small turbines of different styles were associated with the majority of land holdings due to the regular pattern of farms characteristic of this landscape.

8.2.2 *Constraints*

- The medium scale of this landscape where small buildings, enclosed fields and woodlands provide ready scale references and increase sensitivity to larger wind turbines.
- The close proximity of this landscape to the scenic Tyne Water valley where it forms the immediate backdrop to the designed landscapes of Oxenfoord and Vogrie.
- The visual prominence of this landscape in views from settlements such as Pathhead and Edgehead and from the A68.
- The potential for cumulative effects to arise where turbines sited in this landscape would be likely to be inter-visible with operational wind farms sited in the Lammermuir Hills seen in views from the upper slopes of the Tyne Water valley and the Mayfield/Tranent Ridge.

8.2.3 *Opportunities*

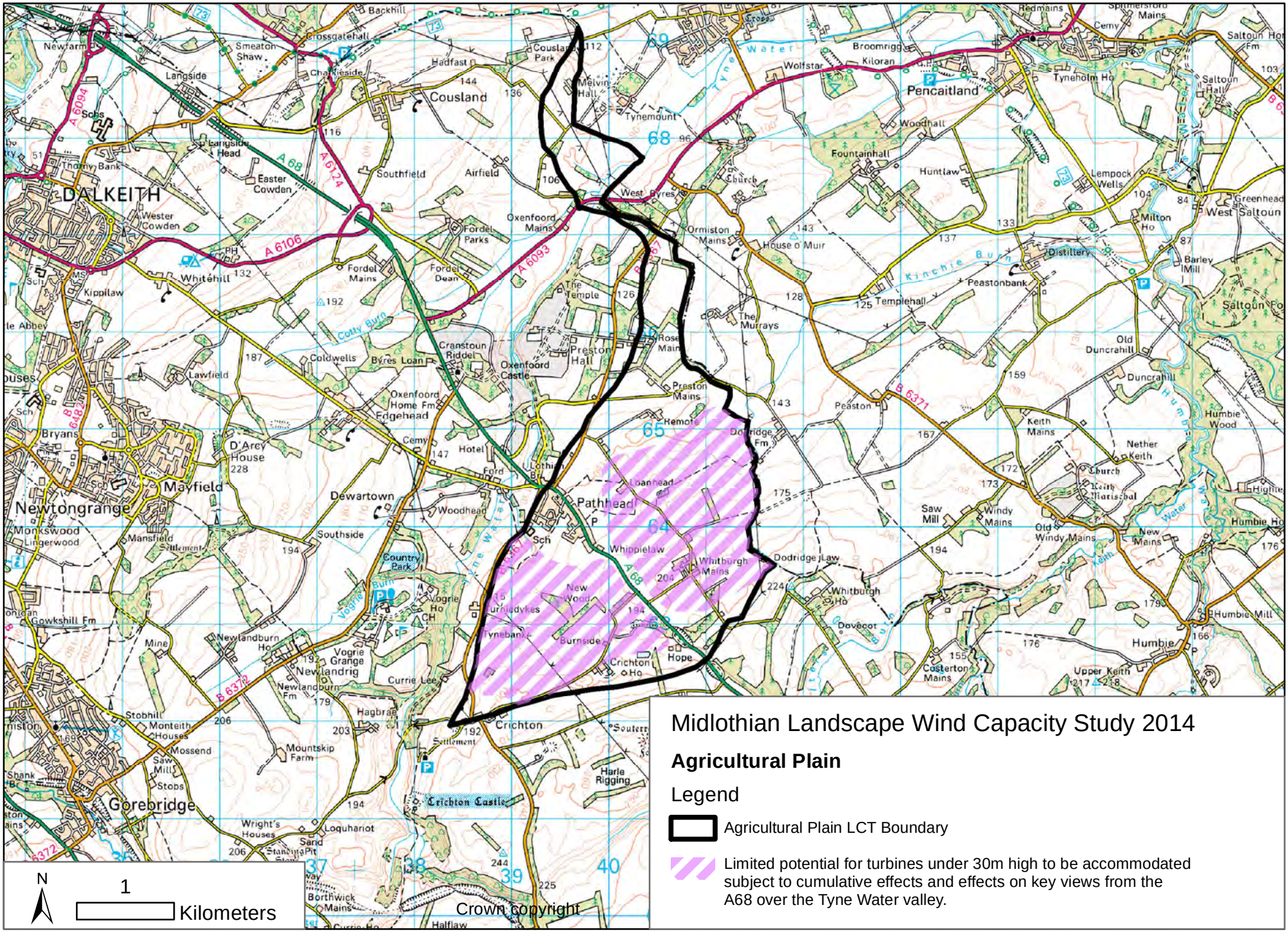
- The broad, gently undulating landform of this character area with its often simple pattern of large fields where smaller turbines <30m high could be accommodated.

8.3 Guidance

There is no scope to accommodate Typologies A, B and C (turbines >30m high) in this landscape due to the likely significant adverse effects on a number of key characteristics.

There is some ***limited scope*** to locate turbines <30m high provided they were set well back from the sensitive Tyne Water valley where a number of notable designed landscapes are present. Turbines should be sited to avoid significant intrusion on key views from the A68 over the Tyne Water valley. Cumulative effects with operational wind farms located in the Lammermuir and Moorfoot Hills and any new wind turbines located in the North Lammermuir Platform landscape character area should be carefully considered on a case-by-case basis with period review being undertaken using principal viewpoints near Edgehead to generate visualisations testing potential effects.

There would be increased capacity to accommodate multiple developments of turbines below 20m high as these would be less visually prominent and could be partially screened by landform and woodland thus reducing cumulative impacts. Turbines of this size should be visually associated with farms and other buildings in order to limit the spread of structures in the landscape.


Midlothian Landscape Wind Capacity Study 2014
Agricultural Plain
Legend
Agricultural Plain LCT Boundary
Limited potential for turbines under 30m high to be accommodated subject to cumulative effects and effects on key views from the A68 over the Tyne Water valley.
N
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Kilometers
Crown copyright
DALKEITH
Newtongrange
Gorebridge
Pencaitland
Cousland
Pathhead
Dewartown
Mayfield
Crichton
Crichton Castle
Oxenfoord Castle
Preston Hall
Tyne Water
A 68
A 6106
A 6124
A 6093
B 6372
B 6371

9 ROSEWELL/CARRINGTON SPUR

9.1 Introduction

An area of elevated rolling ground separating the North and South Esk valleys and principally characterised by well-managed farmland and policy woodlands but with some former and current opencast coal mining operations affecting the character of the higher south-western part of this landscape character area.

9.1.1 *Operational/consented wind farms*

There is no wind turbine development located in this landscape character area. Operational wind farms in the Moorfoot and Lammermuir Hills are located at distances of over 12km and this, together with the containment offered by trees, woodland and landform, limits visual intrusion on this landscape character area.

9.2 Summary of sensitivity

The softly rolling landform of this landscape, together with the strong pattern of woodlands, field trees and hedgerows, provides containment and reduces scale across much of this character area. Small villages and individual buildings in this well-settled landscape would also be overwhelmed by larger wind turbines. The scale of this landscape increases towards the south-western border with the Moorland Fringes landscape character area where landform is more gently undulating and mixed shelterbelts form a broader and simpler pattern – these areas largely coinciding with former and current opencast coal mining operations. While this landscape is not visually prominent, it forms an elevated area between the South and North Esk valleys which increases sensitivity in relation to the potential effects of larger wind turbines on views. There would be a ***High*** sensitivity to Typologies A, B and C.

9.2.1 *Potential cumulative issues*

Potential cumulative issues may be associated where any wind turbines sited in this landscape character area were closely inter-visible with potential larger turbines sited in the adjacent Moorland Fringes landscape character area.

This landscape character area borders the consented surface coal mine at Cauldhall and cumulative effects could arise during the operation of this site, particularly if wind turbines were sited close-by.

9.2.2 *Constraints*

- The small to medium scale of this landscape, which is influenced by the often strong containment provided by woodlands, field trees, rolling ridges and the presence of small buildings, which would be dominated by larger turbines.
- More complex rolling landform cut by narrow valleys at the transition with the South Esk valley and close to Edgelaw Reservoir.
- The often rich diversity of policy woodlands, mature oak trees aligning roads and strong field enclosure pattern.

- The small estate village of Carrington which forms a focus marked by its church tower seen from more open parts of this landscape.
- Views to the Pentland Hills and Arthur's Seat from rare open, elevated parts of this landscape.

9.2.3 *Opportunities*

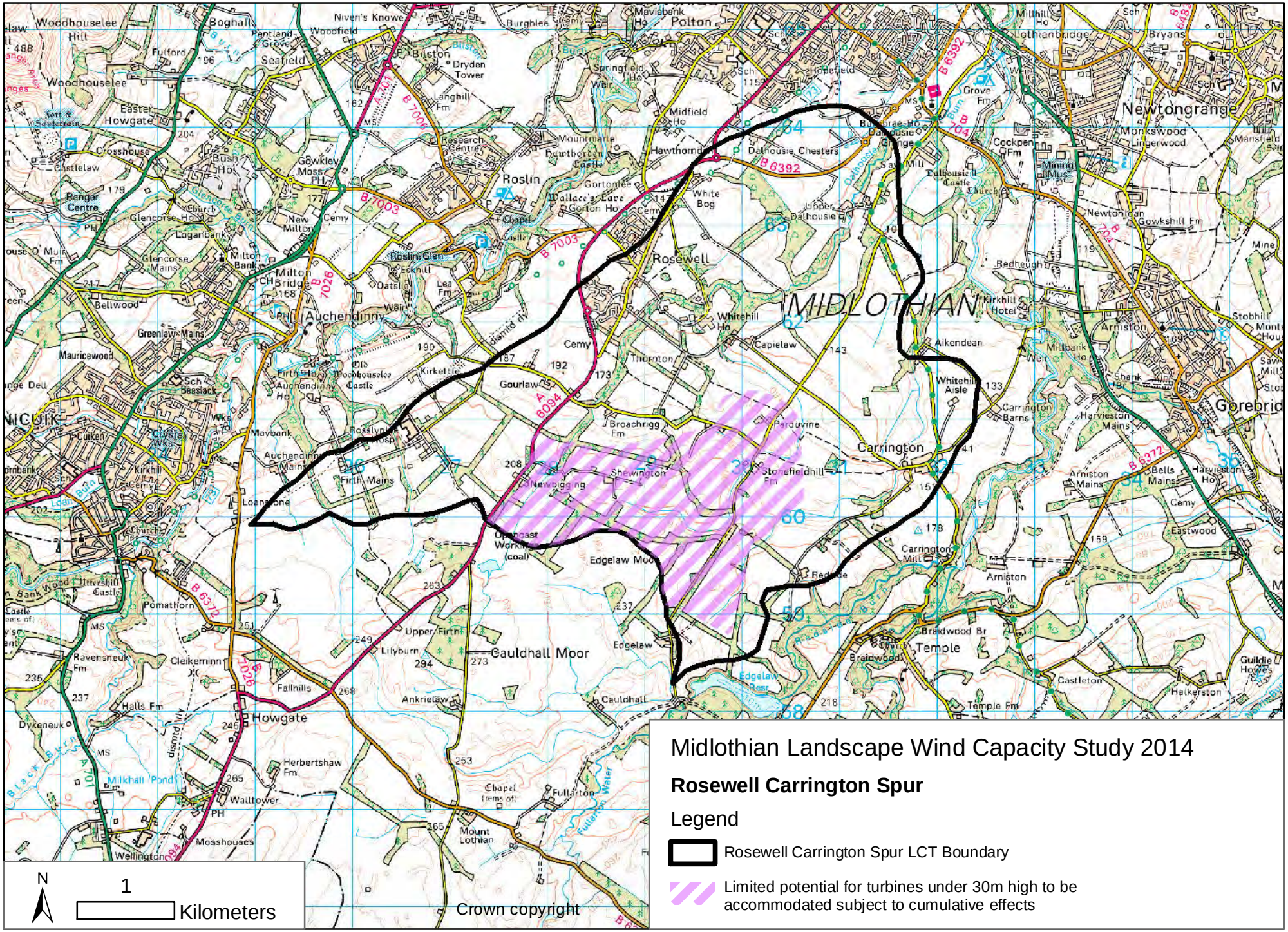
- Areas with a less pronounced woodland and field enclosure pattern in the south-western part of this landscape where former opencast mining and quarrying has occurred and where smaller turbines could be accommodated.

9.3 Guidance for development

There is ***no scope*** to accommodate Typologies A, B and C in this landscape character area.

There is ***limited*** scope to accommodate wind turbines below 30m height. Development should avoid areas with a more complex landform and stronger field enclosure pattern of woodlands and hedgerows at the transition with the upper South Esk valley. The policy woodlands associated with the area around Whitehill House would also be sensitive. Intrusion on the setting of Carrington village and on key views to the Pentland Hills and Arthur's Seat should be minimised. Turbines should also be set well back from the north-western edge of this landscape character area to avoid being visible from popular views above Roslin Glen (for example, from Rosslyn Castle). Turbines could be sited on the more open ground at the transition with the Moorland Fringes landscape character area where the enclosure pattern is of a broader scale yet still offers a degree of containment although potential cumulative effects with the consented Cauldhall surface mine would need to be considered.

This is a small character area and it is anticipated that in terms of cumulative impacts, there is very limited scope for multiple developments. A greater number of smaller turbines <20m could be associated with farms and other buildings across much of this landscape character area.



Midlothian Landscape Wind Capacity Study 2014

Rosewell Carrington Spur

Legend

Rosewell Carrington Spur LCT Boundary

Limited potential for turbines under 30m high to be accommodated subject to cumulative effects

10 NORTH LAMMERMUIR PLATFORM

10.1 Introduction

This landscape forms a band of undulating farmland and hill slopes along the foot of the Lammermuir and Moorfoot Hills and extends east into East Lothian.

10.1.1 *Operational/consented wind farms*

There are no operational wind farm or wind turbine developments located within this landscape character area.

The operational wind farm of Dun Law I and II is located in the adjacent Plateau Grassland landscape character area (within Scottish Borders) and comprises a total of 61 turbines between 62.5m and 75m high. It is clearly visible on the skyline of hills which back this landscape character area from the B6458 and from other more open and elevated areas. The operational Carcant wind farm (3 turbines 107m high) and the Bowbeat wind farm (19 turbines, 90m high) are also visible from western parts of this landscape character area. Six small turbines 19.5m high at Falahill and two turbines 17.7m high at Cowbrae cottage are sited within Scottish Borders but close to Midlothian's boundary.

The consented Pogbie (6 turbines, 76m) and Keith Hill wind farms (5 turbines, 76m) will be located approximately 2-3km to the east of this character area within East Lothian. These developments are likely to be prominent in glimpsed views from the A68 and more extensively from the B6458 and B6368.

10.2 Summary of sensitivity

A number of key constraints limit scope for accommodating larger turbines in this area. These principally relate to the effect of tall turbines on the scale of this landscape which is characterised by an often rolling landform, small buildings, strongly enclosed fields and woodlands. More complex landform features would be highly sensitive to wind turbine development and within Midlothian these include the narrow incised valleys which cut through the eastern parts of this landscape. This character area provides the foreground to extensive views to and from the Lammermuir Plateau from roads such as the A68 and from more open and elevated parts of Midlothian to the north. Larger turbines would intrude on these views and would be likely to have significant cumulative effects with operational and consented wind farm developments sited in the Plateau Grassland landscape character area. While the smaller turbines of Typology C would have a better fit with the broader scale of gentle and more open hill slopes at the transition with the Plateau Grassland landscape character area, turbines of this size would have cumulative effects with nearby operational wind farms as they would appear large in views from roads and settlement in the lowlands of Midlothian and would conflict with the established association of large turbines with more expansive upland landscapes. There would be a ***High*** sensitivity to Typologies A, B and C (turbines >30m).

10.2.1 *Potential cumulative issues*

Potential cumulative issues may include the following:

- Visual clutter could occur if small turbines of different styles were associated with the majority of land holdings.
- Inter-visibility and potential cumulative effects with larger turbines sited in the adjacent Lammermuir Hills. These effects are particularly likely to occur in the eastern part of this landscape where the operational Dun Law and consented Pogbie and Keith Hill wind farms are/will be prominent.

10.2.2 *Constraints*

- The predominantly medium scale of this landscape which is influenced by an often rolling landform, settlement, enclosed fields and individual trees.
- Areas with a more complex landform including narrow incised valleys and small rolling hills where scale is significantly reduced.
- The distinctive pattern of policy woodlands, field trees and hedgerows, particularly characteristic of the eastern part of this landscape.
- The setting to the small historic settlements of Crichton, Fala and Fala Dam and architecturally distinctive buildings such as Cakemuir Castle and Whitburgh.
- Potential effects on the adjacent Upper Tyne Water valley which is especially complex, intimately scaled and diverse in the Crichton/Borthwick area.
- Close views of this landscape from the A68 and B6458 and long views from more open and elevated parts of Midlothian where this landscape is seen at the foot of the Lammermuir Hills.
- Cumulative landscape and visual effects with operational and consented wind farms within the adjacent Lammermuir Hills

10.2.3 *Opportunities*

- More gently undulating hill slopes with a simpler land cover pattern in the south western part of this landscape where smaller turbines <30m high could be accommodated to minimise cumulative effects.

10.3 Guidance on development

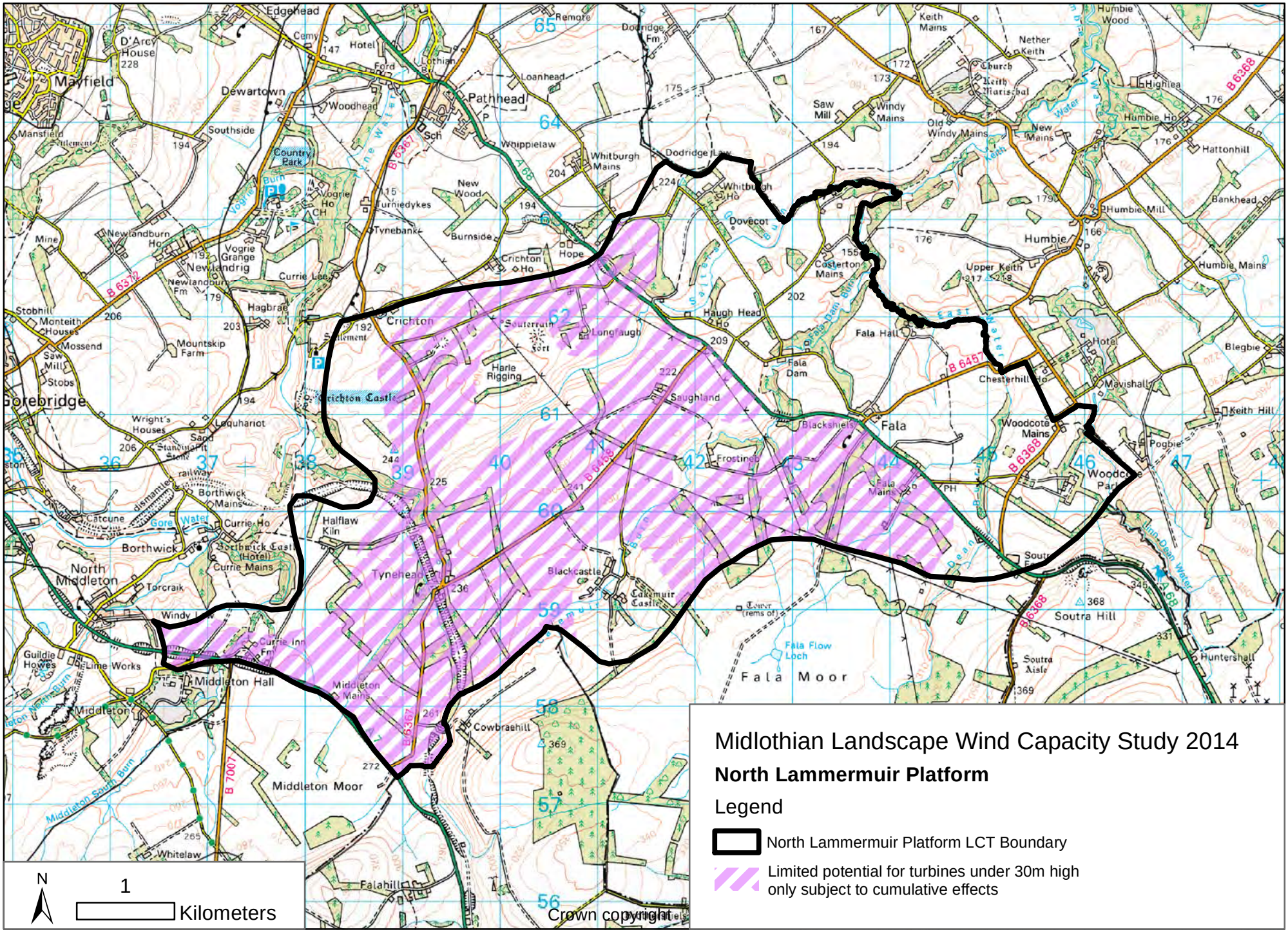
There is ***no scope*** to accommodate Typologies A, B and C (turbines >30m high) within this landscape character area due to the significant adverse effects likely to occur across a number of key characteristics including cumulative effects with nearby operational wind farms.

There is some ***limited*** scope to locate turbines <30m high in this landscape due to the ability of turbines of this size to fit with the scale of landscape features and to be visually contained to some degree by woodlands and landform thus minimising cumulative effects. Single and small clusters of turbines (<3 number) could be accommodated but should be located on more gently undulating ground with a simpler land cover pattern and in areas where close inter-visibility with operational wind farms in the Plateau Grassland would not occur. The intimately scaled incised river valleys and more diverse

pattern of policy plantings generally found in the east of this character area should be avoided as should intrusion on views from the A68 at Soutra Hill over the Lothians and Firth of Forth. Turbines should also be sited to avoid significant intrusion on the upper Tyne valley and on the setting of historic settlements and individual buildings.

Multiple developments of wind turbines could quickly dominate the strong, coalescing pattern of woodlands and field trees and uncluttered character of this landscape and create visual confusion with operational wind farms seen on much of the skyline of the uplands which immediate backdrop this landscape character area. On-going review of cumulative landscape and visual effects will be essential particularly once consented wind farms in nearby East Lothian are constructed.

In the wider context, Cowbraehill which falls within neighbouring Scottish Borders, forms an important backdrop to this landscape character area and wind turbines sited on this hill or significantly breaching the skyline would be likely to be highly prominent features in views from the A7 and from other parts of Midlothian.


Midlothian Landscape Wind Capacity Study 2014
North Lammermuir Platform
Legend
North Lammermuir Platform LCT Boundary
Limited potential for turbines under 30m high only subject to cumulative effects
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Kilometers
Crown copyright

11 MOORLAND FRINGES

11.1 Introduction

This area of undulating farmland and fragmented moorland lies between the Pentland and Moorfoot Hills and borders the Lowland Moorland landscape character area. It extends south-west into Scottish Borders where coniferous forestry increasingly features.

11.1.1 *Operational/consented wind farms*

There are no operational wind farms or wind turbines located in this landscape character area. A single turbine 35m high has been consented at Loanstone close to the north-western boundary of this landscape character area.

The operational Bowbeat wind farm lies within the adjacent Moorfoot Hills landscape character area in Scottish Borders. This development comprises 19 turbines, 90m high to blade tip and is clearly visible from the Moorland Fringes at distances of 6km at the closest point. The operational Carcant wind farm (3 turbines, 107m high) also lies in the Moorfoot Hills and within Scottish Borders but is not visible. Six small turbines 19.5m high are located near Falahill in Scottish Borders and are seen on the skyline of the smaller rounded hills which extend east from the Moorfoot Hills scarp.

11.2 Summary of sensitivity

While larger turbines could relate to more extensive areas of subtly undulating pasture and grass moorland with a more simple and open character, the proximity of this landscape to the Pentland and Moorfoot Hills is a key constraint limiting scope for accommodating larger typologies. This is because very large turbines would diminish the appreciation of the vertical scale and distinct profile of these hills which are often seen to great advantage from this adjacent open lowland area. They would also conflict with the scale of much of this landscape, which is influenced by a more rolling landform, small buildings and walled fields. More complex deeply cut valleys and knolly landform and the scenic Gladhouse Reservoir form additional constraints to development.

There would be a ***High*** sensitivity to Typology A (turbines >80m) and a ***High-medium*** sensitivity to Typology B (turbines 50-80m). Sensitivity would be ***Medium*** for Typology C (turbines 30-50m) as turbines of this size could fit better with landscape scale, be sited to avoid more complex areas and minimise impact on the adjacent Pentland and Moorfoot Hills.

11.2.1 *Potential cumulative issues*

Potential cumulative issues may include the following:

- Close inter-visibility with the operational Bowbeat wind farm development which is prominently sited at the highest point of the Moorfoot Hills.
- Larger typologies sited in this settled landscape would be contrary to the established association of larger turbines with more expansively scaled and less settled upland landscapes.

11.2.2 *Constraints*

- Although not as well settled as other parts of Midlothian, the openness of this landscape character area results in domestic and farm buildings being small but prominent features likely to be overwhelmed by large turbines seen in close proximity.
- Smaller scale areas generally lying closer to the South Esk valley where more rolling landform and a strong pattern of woodlands increase containment.
- The proximity to the Pentland and Moorfoot Hills where this relatively low-lying and gently undulating landscape allows striking open views to both ranges. The perceived height and drama of these hils is increased by their juxtaposition with this low-lying and open landscape.
- The potential for significant cumulative effects to arise with the operational Bowbeat wind farm large wind turbines sited in the Moorfoot Hills which provide an immediate backdrop to this character area and are seen at minimum distances of 6km.
- More complex landform of deeply cut valleys and interlocking rolling ridges around the North Esk and the water courses which fall from the Moorfoot Hills.
- Diverse areas of heather moorland, water bodies, broadleaved woodlands/scrub, intact stone-walled pastures and an absence of recent development which contributes to the sense of naturalness and seclusion associated with parts of this landscape.
- Consented opencast coal mining operations at Cauldhall Moor in the north-eastern part of this landscape character area which could contribute to cumulative landscape and visual effects in combination with wind turbine development.
- Gladhouse Reservoir which has a naturalistic character and is a key focus within this landscape especially when seen together with the backdrop of the steep northern scarp of the Moorfoot Hills cut by the glen of the upper South Esk.
- The adjacent highly sensitive South Esk valley whose small scale and diverse land cover could be affected by larger turbines sited close-by.

11.2.3 *Opportunities*

- More open and gently undulating pasture with a weak enclosure pattern and areas of grass moorland which have a larger scale set within the core of this landscape character area which offer potential for turbines to be sited to minimise effects on the adjoining Pentland and Moorfoot Hills.

11.3 Guidance for development

There is ***no scope*** for Typology A (turbines >80m) to be accommodated in this landscape due to the effects turbines of this size would have on the appreciation of the Pentland and Moorfoot Hills and on the scale of this landscape which is influenced by small buildings, walled fields and woodlands.

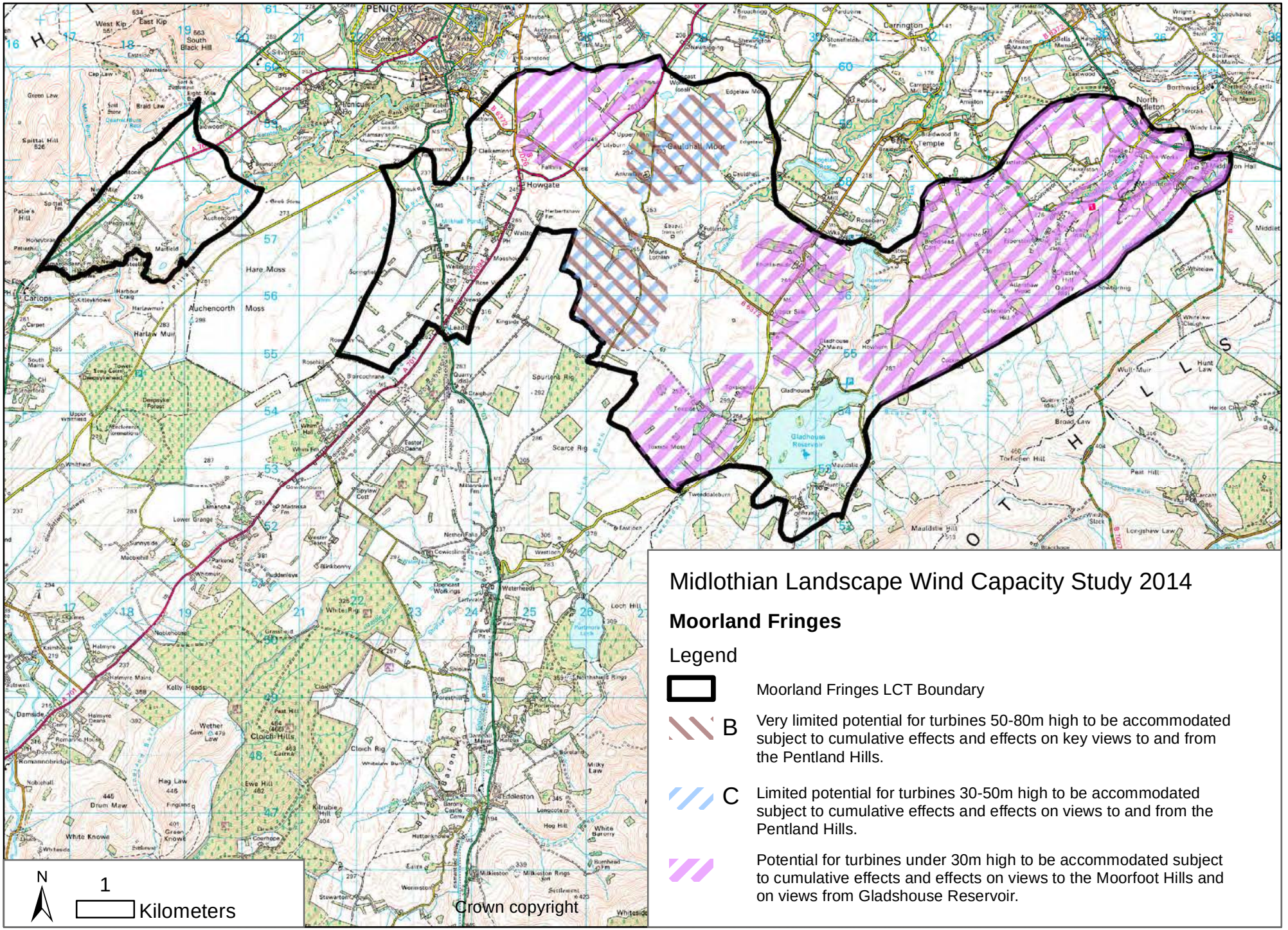
There is ***very limited*** scope for Typology B (turbines 50-80m turbines) to be accommodated in the central parts of this landscape, set well away from the dramatic scarp of the Moorfoot Hills and from the Pentland Hills. Turbines towards the lower

height band of this typology would be more appropriate in minimising effects on the perceived scale of these nearby hill ranges and reducing intrusion on key views across Midlothian, from the B7007 from example. Areas with a more complex landform, diverse heather moorland/broadleaved woodlands and smaller scale areas generally found close to the South Esk valley should be avoided. Turbines should also be sited to minimise intrusion on the scenic Gladhouse Reservoir. The horizontal spread of development should be restricted with developments comprising approximately <7 turbines to minimise intrusion on views to the adjacent hill ranges. There is limited scope for multiple developments due to the cumulative effects on views to the Pentland and Moorfoot Hills. Both typologies A and B would be contrary to the established association of large wind turbines with extensive upland landscapes and cumulative effects with the existing Bowbeat would also be likely to occur if turbines of this size were sited in the south-eastern part of this landscape character area.

There is increased scope to accommodate Typology C (turbines 30-50m) as turbines of this size would have less of a dominating effect on smaller scale features of this landscape including buildings. This typology would also minimise effects on views from surrounding settlements such as Penicuik, from the B7007 and views to the Pentland and Moorfoot Hills from roads and settlement within this landscape character area.

Wind turbines may incur cumulative effects with the surface coal mining operations associated with the consented Cauldhall development and detailed landscape and visual assessment of these potential impacts should form part of any proposals.

Turbines <30m could also be accommodated but should be associated with more settled areas where a stronger woodland and enclosure pattern has potential to contain and frame this scale of development. A greater number of turbines <30m could be accommodated in this landscape due to their ability to fit more comfortably with the size of buildings, woodlands and trees and be partially contained by landform and vegetation.


PENICUIK
Howgate
Gladhouse Reservoir
Auchencorth Moss
Hare Moss
Gaultshall Moor
Spurlens Rig
Scarce Rig
Cloich Rig
White Rig
Cloich Hills
Kelly Heads
Pentland Hills
Midlothian Landscape Wind Capacity Study 2014
Moorland Fringes
Legend
Moorland Fringes LCT Boundary
B
Very limited potential for turbines 50-80m high to be accommodated subject to cumulative effects and effects on key views to and from the Pentland Hills.
C
Limited potential for turbines 30-50m high to be accommodated subject to cumulative effects and effects on views to and from the Pentland Hills.
Potential for turbines under 30m high to be accommodated subject to cumulative effects and effects on views to the Moorfoot Hills and on views from Gladshouse Reservoir.
N
1
Kilometers
Crown copyright

12 LOWLAND MOORLAND

12.1 Introduction

This character area comprises two distinct broad swathes of open and expansive moorland lying at the foot of the Pentland Hills at Auchencorth and at the foot of the Moorfoot Hills to the east of Gladhouse Reservoir.

12.1.1 *Operational/consented wind farms*

The operational Bowbeat wind farm lies within the adjacent Moorfoot Hills landscape character area in Scottish Borders. This development comprises 19 turbines, 90m high to blade tip. The operational Carcant wind farm (3 turbines, 107m high) also lies in the Moorfoot Hills and within Scottish Borders. Six small turbines 19.5m high are located near Falahill in Scottish Borders and are visible on the skyline of the smaller rounded hills which extend east from the Moorfoot Hills scarp from the Lowland Moorland landscape character area.

12.2 Summary of sensitivity

These areas of flat to gently domed moorland are predominantly open and have an expansive scale. While these are landscape characteristics which generally reduce sensitivity to larger wind turbines, these low-lying and open moorlands are important in the contrast they provide to the Pentland and Moorfoot Hills which immediately backdrop them and which rise dramatically to create a highly scenic landscape composition. The simple character of these largely uncluttered moorlands contrasts with adjacent well-settled and more visually diverse landscapes within Midlothian. They are unusual landscapes in their lowland context and a sense of naturalness is also associated with these moorlands. These moorlands provide an open foreground to extensive views to and from the Moorfoot and Pentland Hills. There would be a ***High*** sensitivity to Typologies A, B and C.

12.2.1 *Potential cumulative issues*

Potential cumulative issues could include the following:

- Close inter-visibility of additional wind turbines sited within this landscape with the operational Bowbeat wind farms which are sited in Scottish Borders cumulatively affecting views across Midlothian. Turbines sited on these lowland moorlands would conflict with the established association of operational large wind farm developments with the interior of the Moorfoot and Lammermuir Hills.
- Development located in this landscape character area would be likely to have cumulative effects with any larger wind turbines sited in the adjacent Moorland Fringes landscape character area given the openness and inter-visibility of these landscapes from key views. Mulltiple developments in these two landscape character areas would be likely to have cumulative effects on views to and from the Moorfoot and Pentland Hills.

12.2.2 *Constraints*

- The scenic juxtaposition of these simple, low-lying moorlands with the steep-sided defined peaks of the Pentland Hills and the pronounced northern scarp of the Moorfoot Hills.
- The appreciation of the vertical scale and distinct profile of the Moorfoot and Pentland Hills which is seen to great advantage across these moorlands and which would be affected by larger turbines sited on these moorlands.
- The sense of naturalness that can be experienced in these moorlands and their unusualness in a lowland context, contrasting with the highly developed landscapes in the north-east of Midlothian.
- Spectacular extensive views from the B7007 across the moorland area lying at the base of the Moorfoot Hills over Midlothian and focusing on the Pentland Hills.
- Cumulative effects from roads and settlement in more elevated parts of Midlothian where any large turbines sited in the moorland lying at the base of the Moorfoot Hills would be likely to be inter-visible with the operational Bowbeat, Dun Law and Carcant wind farms sited in the Moorfoot and Lammermuir Hills which are already variously seen from areas such as the Mayfield Tranent Ridge.

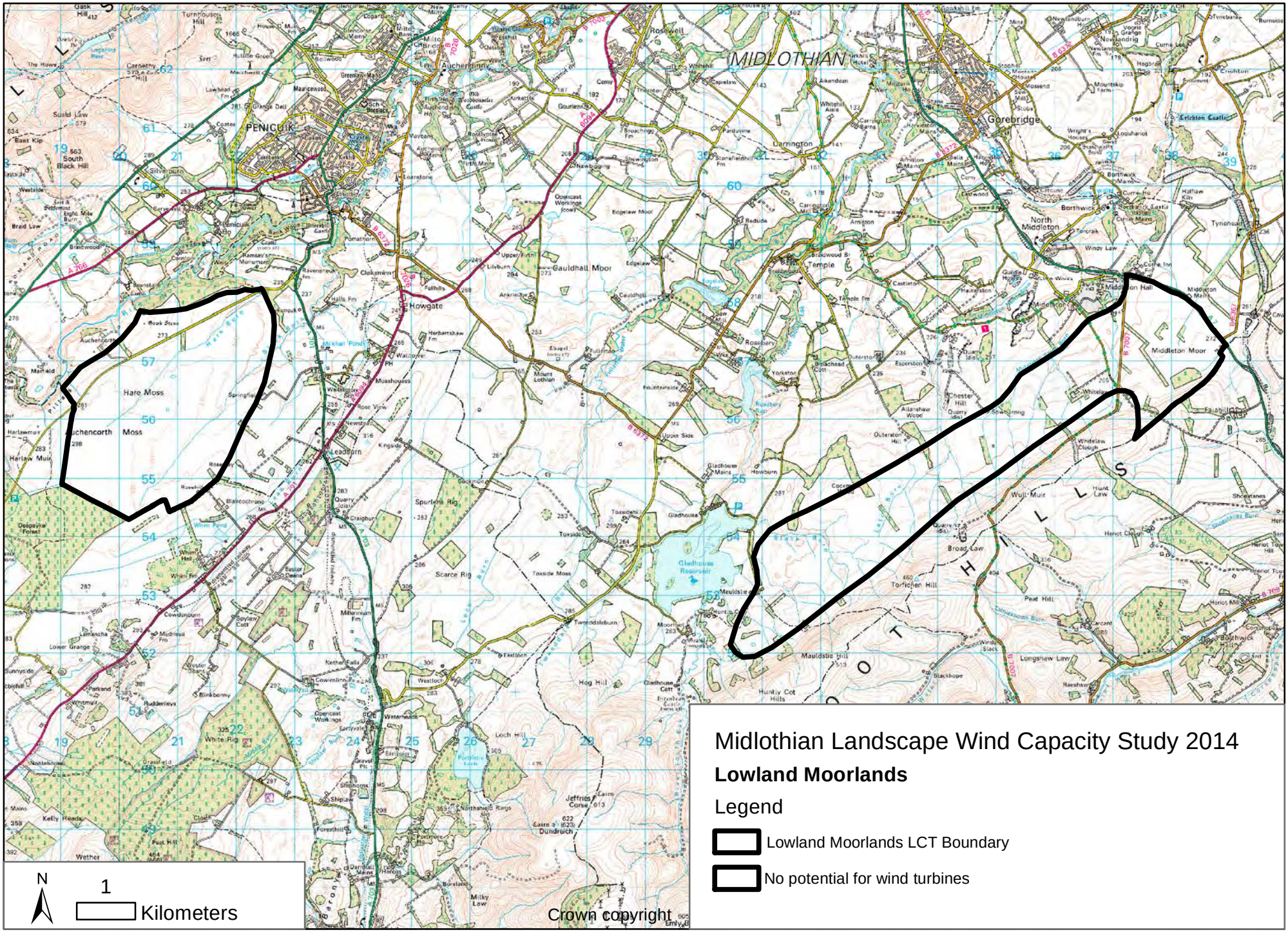
12.2.3 *Opportunities*

- There are no opportunities to accommodate the development typologies considered in this assessment in this landscape character area.

12.3 Guidance for development

There is ***no scope*** to accommodate any of the development typologies considered in this assessment in this landscape character area.

Smaller turbines <30m would also interrupt the simple and open character of these moorlands and should be located at the transition with the Moorland Fringes landscape character area where they could be associated with smaller scale features in this more settled and patterned landscape.



Midlothian Landscape Wind Capacity Study 2014

Lowland Moorlands

Legend

- Lowland Moorlands LCT Boundary
- No potential for wind turbines

13 PLATEAU GRASSLAND

13.1 Introduction

This character area comprises a gently undulating upland plateau occurring at the transition between the generally higher and more pronounced Moorfoot and Lammermuir Hills. Only a small part of the Plateau Grassland falls within Midlothian with the majority of this landscape character area being found in the Scottish Borders.

13.1.1 *Operational/consented wind farms*

The existing large scale wind farm of Dun Law I and II is located in this character area (within Scottish Borders) and comprises a total of 61 turbines between 62.5m and 75m high. The operational Toddleburn wind farm,also located in Scottish Borders, lies approximately 4.5 km south of Midlothian's boundary and comprises 12 turbines, 125m high to blade tip. The Bowbeat wind farm located in Scottish Borders lies approximately 14 km from this landscape character area. This development comprises 19 turbines, 90m high to blade tip. Six small turbines 19.5m high are located near Falahill in Scottish Borders.

The consented Pogbie (6 turbines, 76m high) and Keith Hill wind farms (5 turbines, 76m high) will be located within East Lothian close to the south-eastern boundary of Midlothian.

13.2 Summary of sensitivity

The part of this character area which lies within Midlothian comprises the shallow basin of Fala Moor and the farmed hill slopes which immediately surround it. The Fala Moor area forms a gradual transition between the rolling lowlands of the North Lammermuir Platform landscape character area and the more elevated and extensive undulating uplands of the Plateau Uplands which lie in neighbouring Scottish Borders and East Lothian.

While larger turbines (>50m high) could fit with the expansive scale and simple landform of Fala Moor, they would significantly affect the distinct sense of naturalness associated with the core of the Moor. They would also impact on extensive views across the Lothians from the A68 and B6368 and from the footpath which traverses Fala Moor, particularly if located on the Moor and on the lower hill slopes of Soutra Hill.

The presence of operational wind farm developments within nearby East Lothian and Scottish Borders is an additional constraint, limiting landscape and visual capacity. The operational Dun Law wind farm is largely associated with a relatively low-lying basin and while the later extensions to this wind farm feature taller turbines sited on higher ground, this development is set back into the core of the uplands thus minimising intrusion on the settled lowlands of Midlothian to the north. The ridge of Hangingshaw and Brotherstone Hills and higher Clints and Hartside Hills in Scottish Borders additionally provides screening of operational wind farm development in views from Midlothian, although some of the Dun Law turbines are visible from Fala Moor. Larger turbines (>50m high) sited on these higher ridges and on Cowbraehill which contains

the western edge of Fala Moor would be prominent and would be significantly more intrusive than existing wind farm developments in views from Fala Moor and from the North Lammermuir Platform landscape character area in Midlothian. Larger turbines sited in these areas and on the northern slopes of Soutra Hill would be contrary to the established pattern of operational wind farm development which is set well back from the edge hills which provide an immediate backdrop to Midlothian. There would be a ***High*** sensitivity to Typologies A and B (turbines >50m high) within the part of this character area which lies in Midlothian.

Sensitivity would be ***High-medium*** for Typology C (turbines 30-50m) as there may be some ***very limited*** scope to site turbines of this size to minimise intrusion on Fala Moor and cumulative effects with nearby operational wind farms. Single and small groups of turbines (<5) would be more likely to form a clearly different scale of development with the more extensive operational wind farms sited in the core of the Plateau Grassland landscape character area.

13.2.1 *Potential cumulative issues*

Typology C turbines (30-50m high) sited on the farmed hill slopes on the northern edge of this landscape character area would lie closer to roads and settlement within the adjacent North Lammermuir Platform landscape character area and would appear large in comparison with the bigger but more set back (and partially screened) turbines of the Dun Law wind farm. They would also be visible from more elevated roads and settlements in Midlothian – for example from the Mayfield/Tranent Ridge.

Potential cumulative effects could also occur where multiple single and small groups of smaller turbines, in combination with operational wind farms, created a dominant and cluttered effect in views from more settled areas. This effect may also be exacerbated in the eastern part of the landscape character area where high voltage transmission lines are a feature.

13.2.2 *Constraints*

- The strong sense of naturalness and seclusion that can be experienced within the less modified moorland and wetlands of Fala Moor.
- The deeply incised narrow valley of Linn Dean Water.
- Extensive views from the A68 north across the steep scarp slope of Soutra Hill to the Lothians
- Views north over the Lothians from the B6368, the historic chapel of Soutra Isle and from the footpath across Fala Moor.
- Cumulative landscape and visual effects likely to occur in association with operational and consented wind farm developments in this character area in close views from roads and footpaths.
- Cumulative effects from roads, footpaths and settlements in more elevated and open parts of Midlothian where any turbines sited on the lower slopes and the moorland lying at the foot of the Lammermuir Hills would be closely inter-visible with large turbines sited in the Lammermuir and Moorfoot Hills.

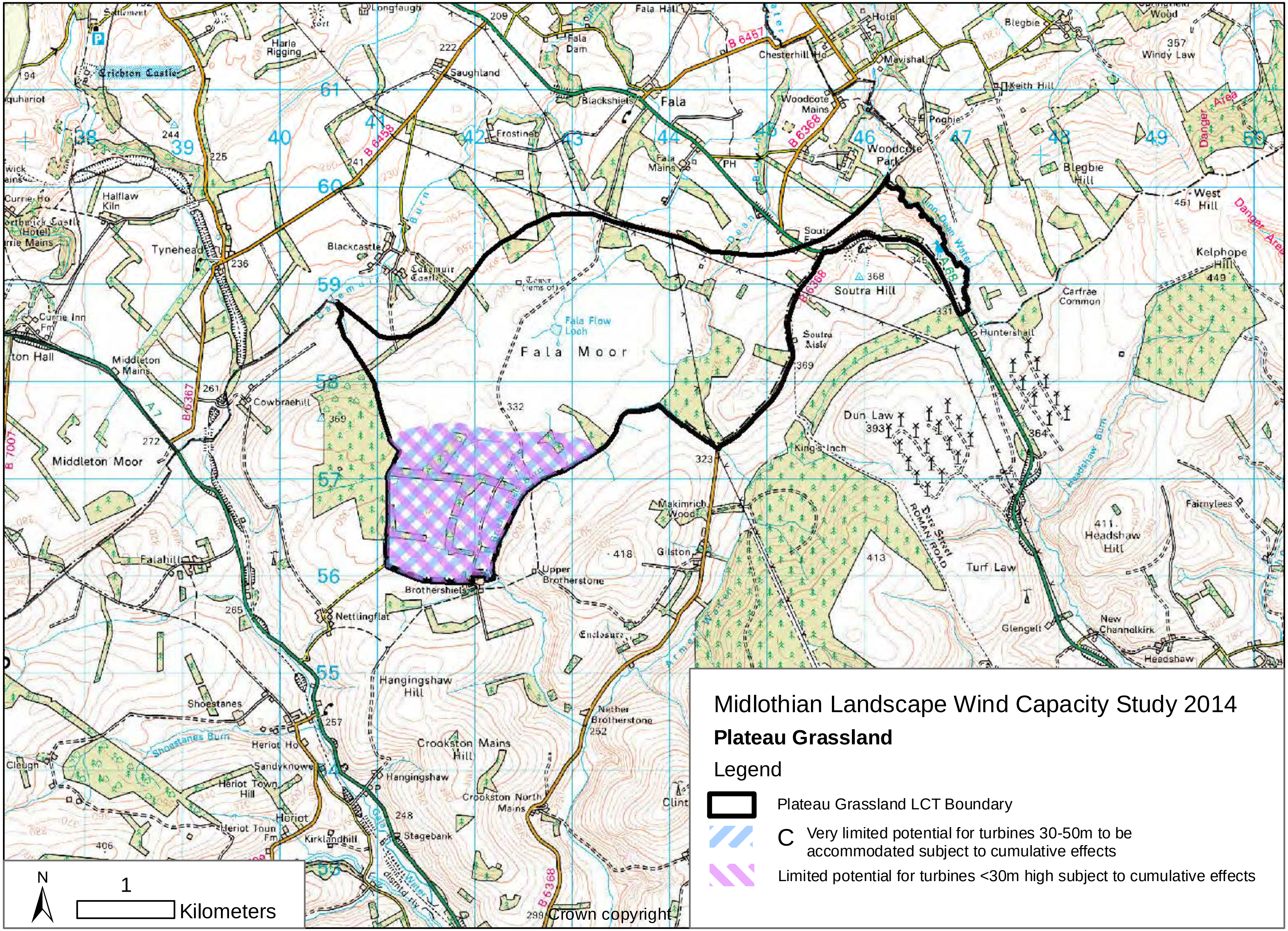
13.2.3 *Opportunities*

- Farmed hill slopes with a simple land cover pattern set back from the sensitive Fala Moor and partially screened by Cowbraehill where wind turbines could be sited to minimise inter-visibility with operational wind farms and avoid significant intrusion on the Moor.

13.3 Guidance for development

There is ***no scope*** to accommodate Typologies A and B (turbines>50m high) in the Plateau Grassland character area within Midlothian without significant landscape and visual impacts occurring on a number of sensitivity criteria. In the area of the Plateau Grassland landscape character area which lies in Scottish Borders, additional wind farm development should avoid being sited on the higher ground of Cowbraehill, Brotherstone, Hangingshaw, Clints and Hartside Hills. This is because these hills provide an important backdrop to Midlothian and restrict views of operational wind farms from within Fala Moor and from the adjacent North Lammermuir Platform landscape character area.

There is ***very limited scope*** for single and small groups of turbines (around 3-5 number) within Typology C (turbines 30-50m) to be sited on lower farmed hill slopes on less prominent hill slopes south-west of Fala Moor. Care should be taken to avoid breaching the skyline of Cowbraehill in views from the A7 and from other parts of Midlothian. Turbines below 30m high could also be accommodated in this part of the landscape character area but not in combination with Typology C as this would increase cumulative landscape and visual effects due to the small extent of these slopes and likely close inter-visibility of different sized turbines which would additionally be seen with much larger turbines within nearby operational wind farm developments.


Midlothian Landscape Wind Capacity Study 2014
Plateau Grassland
Legend
Plateau Grassland LCT Boundary
C
Very limited potential for turbines 30-50m to be accommodated subject to cumulative effects
Limited potential for turbines <30m high subject to cumulative effects
N
1
Kilometers
Crown copyright
Crichton Castle
Harle Rigging
Longfaugh
Saughland
Fala Hall
Fala Dam
Blackshiels
Fala
Chesterhill Ho
Mavishall
Blegbie
Windy Law
Keith Hill
Woodcote Mains
Woodcote Park
Poghie
Blegbie Hill
West Hill
Danger Area
Kelphope Hill
Carfrae Common
Frostineb
Fala Mains
Halflaw Kiln
Tynehead
Blackcastle
Cakemuir Castle
Fala Flow Loch
Fala Moor
Soutra Hill
Soutra Aisle
Huntershall
Dun Law
King's Inch
Currie Inn Fm
Middleton Mains
Cowbraehill
Middleton Moor
Makimrich Wood
Gilston
Upper Brotherstone
Brothershiels
Nettlingflat
Falahill
Turf Law
Headshaw Hill
Fairnylees
Glengelt
New Channelkirk
Headshaw
Enclosure
Hangingshaw Hill
Shoestanes
Shoestanes Burn
Heriot Ho
Sandyknowe
Heriot Town Hill
Heriot
Heriot Toun Fm
Kirklandhill
Hangingshaw
Stagebank
Crookston Mains Hill
Crookston North Mains
Nether Brotherstone
Clint
Cleugh
Dere Street ROMAN ROAD
Armet Water
Linn Dean Water
Headshaw Burn
A7
A68
B 6367
B 6368
B 6457
B 6458
B 7007

14 MOORFOOT HILLS

14.1 Introduction

The distinctive north-west facing scarp of the Moorfoot Hills lies within Midlothian with the hills forming an extensive rolling dissected plateau to the south-east within neighbouring Scottish Borders.

14.1.1 *Operational/consented wind farms*

The operational Bowbeat wind farm lies within this landscape character area in Scottish Borders. This development comprises 19 turbines, 90m high to blade tip. The operational Carcant wind farm (3 turbines, 107m high) also lies in this character area and within Scottish Borders. Six small turbines 19.5m high are located near Falahill in Scottish Borders.

The operational wind farm of Dun Law I and II is located in the adjacent Plateau Grassland landscape character area within Scottish Borders and comprises a total of 61 turbines between 62.5m and 75m high. The operational Toddleburn wind farm, also located in Scottish Borders, lies approximately 4.5 km south of Midlothian's boundary and comprises 12 turbines, 125m high to blade tip.

The consented Pogbie (6 turbines, 76m high) and Keith Hill wind farms (5 turbines, 76m high) will be located within East Lothian close to the south-eastern boundary of Midlothian.

14.2 Summary of sensitivity

The steep north-west facing scarp of the Moorfoot Hills, cut by the deeply incised valley of the South Esk, lies within Midlothian. This part of the Moorfoot Hills landscape character area is of **High** sensitivity to all the development typologies considered in the study. This is because of the dramatic juxtaposition that exists between the scarp of the Moorfoots and lower-lying moorland in Midlothian where all wind turbines located on steep slopes or perched on the top of the scarp would be a major detractive element. Larger turbines >50m would additionally diminish the apparent vertical scale of the scarp which is of relatively low relief.

The operational Bowbeat wind farm is visible on sensitive skylines above the headwaters of the South Esk and already has a significant effect on landscape character and on views from the Gladhouse Reservoir area. Additional development located on the edge of the scarp and/or involving larger turbines would exacerbate this effect.

14.2.1 *Potential cumulative issues*

Potential cumulative issues would include the following:

- Close inter-visibility of additional wind turbines with the operational Carcant and Bowbeat wind farms which are sited in Scottish Borders cumulatively affecting

views across Midlothian – turbines sited on the scarp edge would be prominent and turbines on steep scarp slopes would conflict with the established association of operational wind farm developments with the interior of the Moorfoot and Lammermuir Hills.
- Additional development located in this landscape character area could add to the incremental extension of wind turbines seen on the skyline of the Lammermuir and Moorfoot Hills which backdrop Midlothian.

14.2.2 *Constraints*

- The steep scarp of the Moorfoot Hills which abruptly rises from low-lying moorland and is seen in key views from the A7, B7007, from the area around Gladhouse Reservoir and in wider views from more open and elevated parts of Midlothian.
- The relatively low relief of the eastern Moorfoots scarp which would be overwhelmed by larger wind turbines.
- The B7007 which forms National Cycle Route 1 and offers spectacular views across Midlothian to the Pentland Hills.
- The dramatic deeply incised upper South Esk valley which cuts into the Moorfoots scarp and provides the landscape setting to the scenic Gladhouse Reservoir.
- Cumulative landscape and visual effects that would occur with the operational wind farms of Bowbeat, Carcant and with small but prominently sited turbines at Falahill in Scottish Borders in views from nearby roads and settlement but also in more distant views from more open and elevated parts of Midlothian, including the Mayfield/Tranent Ridge.

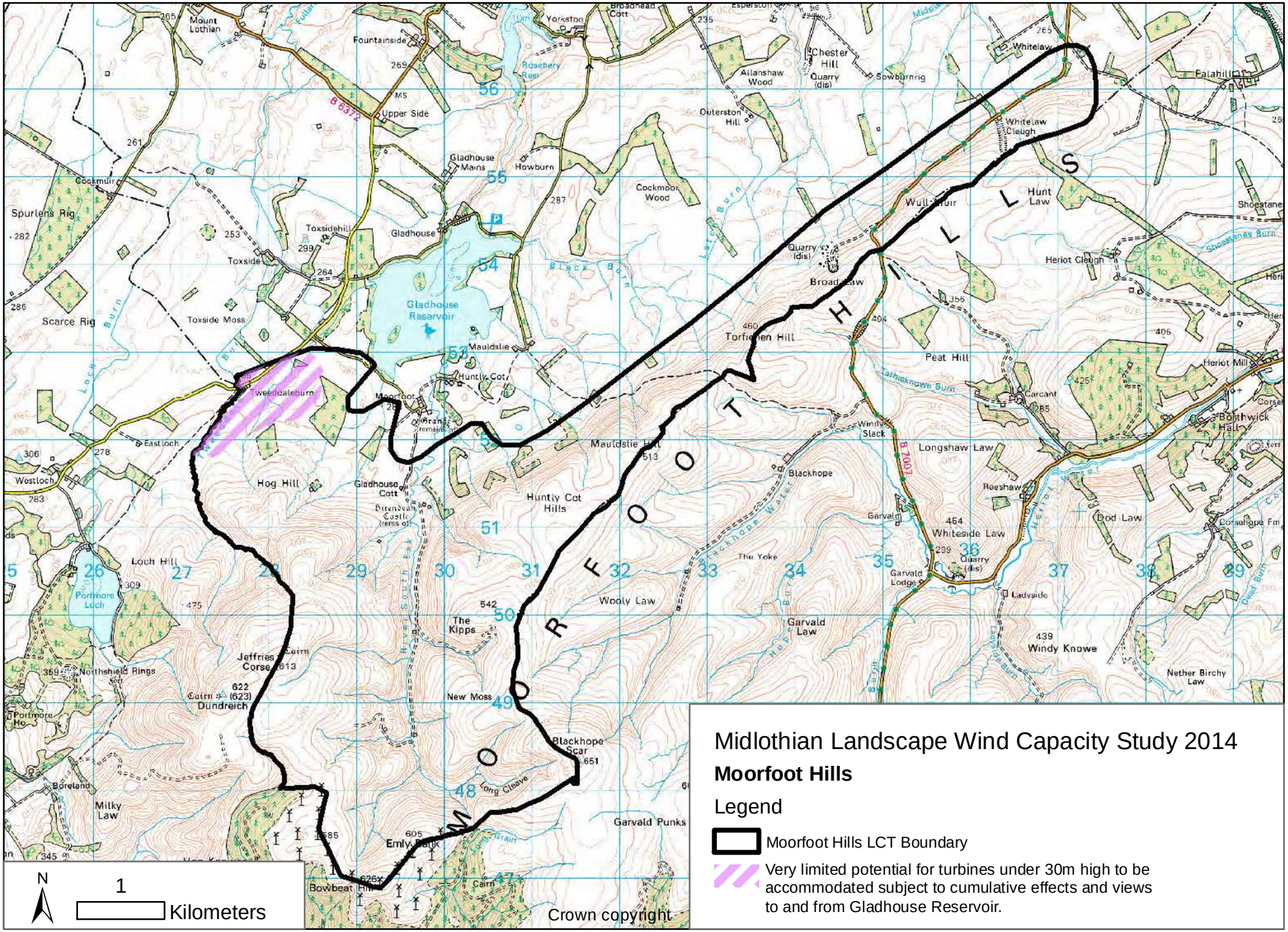
14.2.3 *Opportunities*

- There are no opportunities for the development typologies considered in this study to be located in this landscape character area within Midlothian

14.3 Guidance for development

There is ***no scope*** for any of the development typologies considered in this study to be accommodated in the part of this landscape character area which lies within Midlothian. Additional wind turbine development sited in the part of the Moorfoot Hills lying in Scottish Borders would have significant landscape and visual effects on Midlothian if it comprised large turbines seen above the dramatic scarp of the hills or was sited adjacent to the deeply incised valley of the South Esk and affected the setting of Gladhouse Reservoir.

There is some ***very limited*** potential for single and small groups (<3) of turbines <30m high to blade tip to be accommodated on the lower slopes of the Moorfoot Hills south-west of Gladhouse Reservoir. Turbines should be sited to minimise inter-visibility with the Bowbeat wind farm from key views from roads and to avoid intrusion on the views from Gladhouse Reservoir.


MOORFOOT HILLS
Midlothian Landscape Wind Capacity Study 2014
Moorfoot Hills
Legend
Moorfoot Hills LCT Boundary
Very limited potential for turbines under 30m high to be accommodated subject to cumulative effects and views to and from Gladhouse Reservoir.
N
1
Kilometers
Crown copyright

15 THE PENTLAND HILLS

15.1 Introduction

The Pentland Hills form prominent, well-defined peaks within Midlothian. A less visually distinctive broad dissected upland plateau occurs to the south-west where the hills extend into Scottish Borders.

15.1.1 *Operational/consented wind farms*

No operational or consented wind energy development is located in this landscape.

The operational wind farms of Pates Hill (7 turbines,102m high), Tormywheel (15 turbines, 102m high) and Muirhall, located in West Lothian/South Lanarkshire are visible from higher summits of the Pentland Hills. The Bowbeat (19 turbines, 90m high) and the Dun Law wind farms (61 turbines between 62.5m and 75m high) located in Scottish Borders are also visible from the Pentland Hills.

15.2 Summary of sensitivity

The Pentland Hills form distinctive peaks with steep slopes and well-defined summits within Midlothian. This landscape character area is of **High** sensitivity to all the development typologies considered in the study. This is principally because of the iconic profile of these visually prominent hills where wind turbines located on steep slopes or hill tops would be a major detractive element. The popularity of the Pentland Hills for recreation and the distinct sense of naturalness and seclusion that can be experienced within these hills also increase sensitivity to the development typologies considered in the assessment.

15.2.1 *Potential cumulative issues*

The Pentland Hills contrast with the Moorfoot and Lammermuir Hills (and the adjacent lowland moorland and low forested ridges in West Lothian and South Lanarkshire) which now accommodate large scale wind farm developments. Potential cumulative issues are likely to include additional wind farm developments sited in adjacent landscapes encroaching on the wider setting of the Pentland Hills, affecting views and diminishing the sense of expansiveness and naturalness experienced.

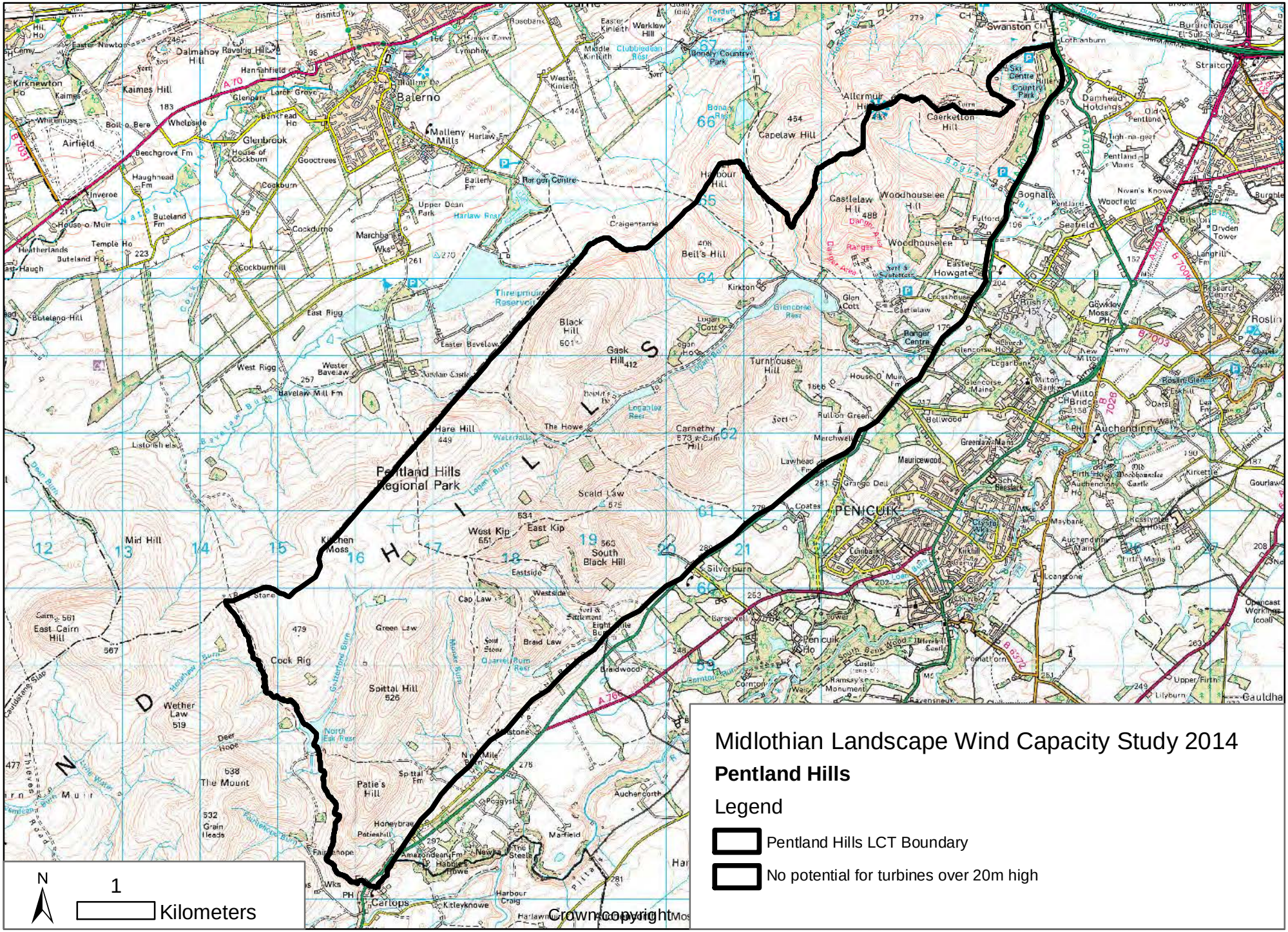
15.2.2 *Constraints*

- The iconic profile of the pronounced and shapely peaks of the Pentland Hills which are prominent across the Lothians.
- The backdrop and setting these hills provide to Edinburgh and the Lothians together with the scenic juxtaposition that occurs where the distinctive high north-eastern peaks are seen across open moorland in Midlothian.
- Narrow incised valleys within the hills and the complex rolling landform at the foot of the hills at the transition with the North Esk valley.
- The popularity of the hills for recreation which increases visual sensitivity
- The strong sense of naturalness and seclusion that can be experienced when walking in these hills.

15.3 Guidance for development

There is ***no scope*** for the development typologies considered in this study to be accommodated in this landscape.

There is some limited scope to sensitively accommodate smaller turbines <20m within the more settled fringes of this character area where they could relate to the reduced scale and increased pattern of small scale elements. Turbines should be visually associated with farms and other buildings on lower hill slopes in order to concentrate areas of built development thus minimising clutter on these highly sensitive hills.


Midlothian Landscape Wind Capacity Study 2014
Pentland Hills
Legend
Pentland Hills LCT Boundary
No potential for turbines over 20m high
N
1
Kilometers
Crown copyright

16 SUMMARY OF FINDINGS AND RECOMMENDATIONS

16.1 Key findings of the sensitivity assessment

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

- ***Typology A***: Turbines 80m+
- ***Typology B:*** Turbines between 50m-80m
- ***Typology C:*** Turbines between 30m-50m

Sensitivity to each turbine typology was scored on a five point scale of High, High-medium, Medium, Medium-Low and Low against each of the 8 key landscape and visual criteria defined for the assessment. Key landscape and visual criteria included landscape context, landform, landscape scale, visual amenity and cumulative effects. Operational and consented wind farms and turbines as at July 2014 formed the baseline for the assessment when considering cumulative landscape and visual effects.

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

The following tables set out the overall findings on the sensitivity of landscape character areas for each of the turbine typologies considered in the study.

Typology A (Turbines 80m+)	
Sensitivity	**Character area**
High	North Esk and Lower South Esk, Upper South Esk and Tyne Water, Mayfield/Tranent Ridge, Musselburgh/Prestonpans Fringe, Agricultural Plain, Rosewell/Carrington Spur, Moorland Fringe, Lowland Moorland, North Lammermuir Platform, Plateau Grassland, Moorfoot Hills, Pentland Hills
High-medium	-
Medium	-
Medium-low	-
Low	-

Typology B (Turbines 50m-80m)	
Sensitivity	**Character area**
High	North Esk and Lower South Esk, Upper South Esk and Tyne Water, Mayfield/Tranent Ridge, Musselburgh/Prestonpans Fringe, Agricultural Plain, Rosewell/Carrington Spur, North Lammermuir Platform, Lowland Moorland, Plateau Grassland, Moorfoot Hills, Pentland Hills

High-medium	Moorland Fringe
Medium	-
Medium-low	-
Low	-

Typology C (Turbines 30m-50m)	
Sensitivity	**Character Type**
High	North Esk and Lower South Esk, Upper South Esk and Tyne Water, Mayfield/Tranent Ridge, Musselburgh/Prestonpans Fringe, Agricultural Plain, Rosewell/Carrington Spur, Lowland Moorland, North Lammermuir Platform, Moorfoot Hills, Pentland Hills
High-medium	Plateau Grassland
Medium	Moorland Fringe
Medium-low	-
Low	-

Turbines below 30m height would relate better to the scale of more settled landscapes and there would be scope to accommodate them in the majority of landscape character areas within Midlothian. However, the deeply incised, intimately scaled and richly diverse South Esk and Tyne Water valleys, the open Lowland Moorlands which lie at the foot of the Pentland and Moorfoot Hills and the Pentland Hills, with their iconic profile of well-defined steep-sided peaks, would be sensitive even to these smaller turbines.

16.1.1 *How to interpret the sensitivity scores*

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

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

A landscape accorded ‘Medium’ sensitivity would have increased opportunities for wind turbines, although there would still be some constraints (including any cumulative effects) which would be likely to restrict the geographic scope for development and/or the ability to accommodate multiple developments. Careful siting and design would be

necessary to mitigate effects on more sensitive landscapes or limit visual intrusion in some instances. No landscapes with a medium-low or low sensitivity to any of the development typologies were identified in the assessment.

The findings on landscape and visual sensitivity set out for each landscape character area are based on field work undertaken during summer 2014 with current operational and consented wind farms and turbine development taken into account. As further wind farm and turbine developments are consented and constructed in Midlothian and neighbouring authorities, sensitivities will be likely to change and on-going monitoring of the cumulative landscape and visual situation is therefore essential. Cumulative effects with operational wind farm developments sited in Scottish Borders and East Lothian are a key constraint in the North Lammermuir Platform, Plateau Grassland and Moorfoot Hills landscape character areas. The increasing number of single and small groups of smaller turbines in the Mayfield/Tranent Ridge also has potential to give rise to cumulative effects. These landscapes (shown in Figure 2) should form the principal focus for periodic review and updated assessment.

This study has found that all but two of the landscape character areas within Midlothian are of high sensitivity to turbines >30m high. This is largely due to the small scale character of settled and richly patterned valleys and lowlands, the presence of iconic hills such as the Pentlands and the potential for cumulative effects with operational and consented wind farms sited in the uplands of neighbouring East Lothian and Scottish Borders.

16.1.2 *Wind farm/turbine developments in more sensitive landscapes*

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

16.2 Scope for smaller turbines below 30m high

Turbines <30m would fit more comfortably with the scale of the settled lowland landscapes of Midlothian, incurring fewer landscape and visual effects and allowing a greater number of turbines to be accommodated by reducing cumulative effects associated with multiple larger turbines. In some highly sensitive, small scale landscapes it is recommended that turbines <20m high only could be accommodated where they should be closely associated with farms and other buildings.

16.3 A recommended spatial landscape strategy for Midlothian

Key strategic landscape aims are summarised below:

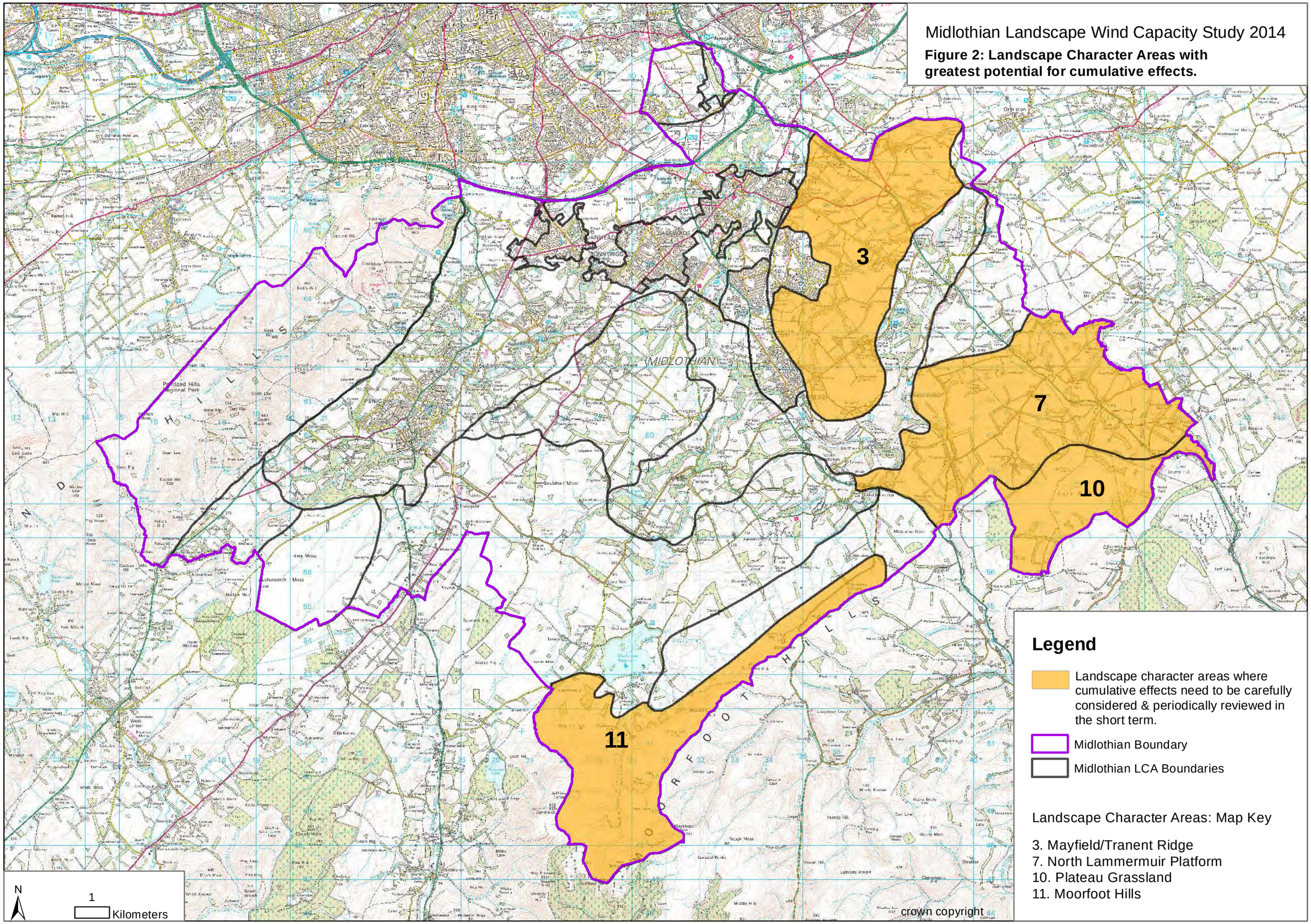
- ***Maintain the rugged scenery and sense of wildness associated with the Pentland Hills*** The instantly recognisable profile of the well-defined steep-sided high peaks which lie in Midlothian form a prominent and highly scenic backdrop to (and contrast with) the more settled and developed lowlands of Midlothian and Edinburgh. These hills are also hugely popular for recreation providing a

respite from urban living and a strong sense of wildness. Protection of the iconic profile of the more dramatic hills which lie in Midlothian is important and significant intrusion on key views from the hills should also be minimised.

- ***Avoid significant cumulative effects with operational wind farms sited in the western Lammermuir Hills*** The operational Dun Law wind farm is largely associated with a lower-lying plateau between the Lammermuir and the Moorfoot Hills (which are both more defined and dramatic to the east and west) and this reduces the prominence of this development in views from Midlothian. Larger turbines sited on the parts of the Plateau Grassland and North Lammermuir Hills which lie within Midlothian would conflict with this association and clear design rationale, appearing to 'spill down' lower hill slopes. More pronounced rounded hills lying in Scottish Borders, including Hartside Hill and Cowbraehill are important in either containing operational wind farm developments and/or providing an uncluttered upland backdrop to the settled landscapes of Midlothian.
- ***Ensure that larger turbines are associated with more extensively scaled and simpler landscapes*** where they can be better accommodated without significantly impacting on more sensitive smaller scale features. This strategy would consolidate the established association of larger turbines with a particular landscape character, minimising cumulative impacts that would be likely to occur where different sizes and designs of turbines are sited in all landscapes irrespective of character.
- ***Protect the richly diverse valleys of the North and South Esk and Tyne*** These valleys have a rich architectural heritage and feature extensive wooded policies. It is important to limit intrusion and avoid dominating the intimate scale of these landscapes and adversely affecting the setting of notable designed landscapes and historic settlements and buildings.
- ***Avoid significant intrusion on key views to the Pentland Hills*** There are a number of special views over Midlothian to the Pentland Hills. The most spectacular of these are from the B7007 and the A701 although the hills are a key feature in views from many open and elevated parts of Midlothian including the A68 near Soutra Hill and as it traverses the Mayfield Tranent Ridge.
- ***Conserve the low-lying moorlands which make an important contribution to the scenic diversity of landscapes within Midlothian*** Areas of low-lying open moorland sitting at the foot of the Pentland and Moorfoot Hills are important in providing a contrast with steep scarps and defined peaks. These areas of moorland accentuate the perceived height of these hills and form a simple uncluttered foreground to dramatic views from roads and settlements.

Midlothian Landscape Wind Capacity Study 2014

Figure 2: Landscape Character Areas with greatest potential for cumulative effects.



Legend

- Landscape character areas where cumulative effects need to be carefully considered & periodically reviewed in the short term.
- Midlothian Boundary
- Midlothian LCA Boundaries

Landscape Character Areas: Map Key

3. Mayfield/Tranent Ridge
7. North Lammermuir Platform
10. Plateau Grassland
11. Moorfoot Hills

APPENDIX A: REFERENCES

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APPENDIX B: DETAILED SENSITIVITY TABLES

North Esk/Lower South Esk LCA

North Esk and Lower South Esk Landscape Character Area – Detailed sensitivity assessment

Topic	Summary description	Assessment of Typology A: Turbines over 80m high	Sensitivity rating	Assessment of Typology B: Turbines 50-80m high	Sensitivity rating	Assessment of Typology C: Turbines 30-50m high	Sensitivity rating
Scale	An intimate scale is experienced within the deeply incised valleys of the North and South Esk. Scale increases on upper sides of valleys and on flatter ground between the rivers although woodland and buildings increase the sense of containment in many areas. Open spaces between urban areas are relatively small.	Turbines of this size located on more open valley sides and tops could affect the intimate scale experienced within the valleys. This typology would affect the small-medium scale of the open ground/woodland pattern and the containment provided by woodlands and would dominate the scale of buildings.	***High***	Turbines of this size located on more open valley sides and tops could affect the intimate scale experienced within the valleys. This typology would affect the small-medium scale of the open ground/woodland pattern and the containment provided by woodlands and would dominate the scale of buildings.	***High***	Turbines of this size would dominate the intimate scale experienced within the valleys and smaller scale areas where woodlands and individual trees provide containment. This typology would still appear very large in relation to most buildings although turbines towards the lower height band would have a better scale relationship to some commercial and industrial buildings present in parts of this landscape.	***High-medium***
Landform	The North and South Esk occupy narrow incised valleys. Broad shoulders of undulating ground occur on valley sides. Flatter ground is present in the Loanhead and Roslin area and past mining has resulted in some modified landform in some areas. Landform becomes more complex and rolling at the transition with the Pentland Hills to the west.	Turbines would detract from narrow incised valleys and the more rolling and complex landform at the foot of the Pentland Hills although simpler gently undulating and level ground would be less sensitive.	***Medium***	Turbines would detract from narrow incised valleys. This typology would conflict with the more rolling and complex landform at the foot of the Pentland Hills although simpler gently undulating and level ground would be less sensitive.	***Medium***	Turbines of this size would detract from narrow incised valleys if sited nearby. The more complex landform at the foot of the Pentland Hills would also be sensitive. Gentler slopes, broader ridges and flatter ground found between river valleys and in the Loanhead/Roslin area would be less sensitive.	***Medium-low***
Landscape pattern	This character area often has a strong and consistent pattern of policy woodland which encloses small fields of undulating pastured on valley sides and provides the setting to settlements such as Dalkeith and Penicuik. Dense woodland also traces the course of the incised river valleys. The landscape is more open and less diverse in the north close to the Edinburgh City By-pass.	This typology could affect the setting and integrity of designed landscapes and areas with a diverse smaller scale enclosure and woodland pattern.	***High-medium***	This typology could affect the setting and integrity of designed landscapes and areas with a diverse smaller scale enclosure and woodland pattern.	***High-medium***	There would be increased scope to site the smaller turbines of this typology to avoid effects on the setting of designed landscapes and on areas with a more diverse landscape pattern.	***Medium***
Built Environment	This is a well-settled area with a number of towns and villages, including Penicuik, Dalkeith, Lasswade and Loanhead, lying adjacent to the rivers but located above steeper banks. A number of mansion houses and castles lie close to the rivers and their wooded policies are an important feature on the edge of settlements. More recent housing and industrial and commercial development has tended to merge settlements and make them less distinct in some areas. Former mining has left a legacy of disturbed ground, bings and infrastructure although woodland and landform tends to lessen their visual impact. Transmission lines, a large retail development and the City Bypass (A720) are prominent features in the north of this character area.	Turbines of this size (and particularly multiple developments) would fill open space which currently separates settlements and would affect their setting. This typology would exacerbate the clutter of disparate infrastructure and buildings in the more well-developed parts of this landscape.	***High***	Turbines of this size (and particularly multiple developments) would fill open space which currently separates settlements and would affect their setting. This typology would exacerbate the clutter of disparate infrastructure and buildings in the more well-developed parts of this landscape.	***High***	Multiple turbines of this size would fill open space which currently separates settlements and would affect their setting. Although the lower height band of this typology would have a better scale relationship to industrial and commercial buildings, they would still exacerbate the clutter of disparate infrastructure and buildings in the more well-developed parts of this landscape.	***High-medium***

Perceptual Qualities	This is a highly modified landscape in terms of built infrastructure, industry and settlement. However, the incised river valleys have a particularly naturalistic quality and considerable historic interest.	While wind farm development would accentuate the already developed character of this area, large scale typologies would diminish the sense of seclusion experienced in the valleys if sited nearby.	***Medium***	While wind farm development would accentuate the already developed character of this area, large scale typologies would diminish the sense of seclusion experienced in the valleys if sited nearby.	***Medium***	Smaller typologies would have limited impacts provided they were clearly associated with more developed areas.	***Medium-low***
Landscape Context	The Pentland Hills provide an important backdrop to this area and to settlements such as Penicuik. Farmland in the northern part of this character area is important in providing a foreground to views of the Pentland Hills and a wider rural setting to Edinburgh.	Turbines of this size would appear very large in relation to the size of the Pentland Hills and would detract from the distinctive form of the particularly shapely northern-most peaks which lie adjacent to this landscape.	***High***	Turbines of this size would appear very large in relation to the size of the Pentland Hills and would detract from the distinctive form of the particularly shapely northern-most peaks which lie adjacent to this landscape.	***High***	Turbines sited close to the foot of the Pentland Hills would dominate their scale and significantly intrude on their setting although effects could be minimised by siting turbines towards the lower height band of this typology in the eastern part of this landscape.	***High-medium***
Visual Amenity	Views are restricted from within the deeply incised valleys. Screening by woodland and the steeply rolling valley sides generally limits views from settlements and roads with brief glimpsed views of open space being commonly experienced when travelling in this area. Views are more open from the A701 in the Loanhead to Milton Bridge area and include striking views across to the Pentland Hills and to the more distant Moorfoot Hills. Some views from the A702 and A701. Elevated views of this character area are possible from popular walking routes in the Pentland Hills.	Turbines of this size would be highly visible from roads and settlement and would intrude on views to the Pentland Hills. While the containment of the highly sensitive incised river valleys limits views, large turbines visible above woodland and seen on skylines from key viewpoints such as Rosslyn Castle and from more open sections of these valleys would have significant effects.	***High***	Turbines of this size would be highly visible from roads and settlement and would intrude on views to the Pentland Hills. While the containment of the highly sensitive incised river valleys limits views, large turbines visible above woodland and seen on skylines from key viewpoints such as Rosslyn Castle and from more open sections of these valleys would have significant effects.	***High***	Although this typology would still be likely to form prominent features, widely visible across this well-settled landscape, turbines towards the lower height band would minimise intrusion on key views to the Pentland Hills and views from the more sensitive North Esk and South Esk valleys.	***High-medium***
Cumulative Effects	No wind farms are located in this character area. The operational Bowbeat wind farm is visible at around 14km distance on the Moorfoot Hills from rare more open and elevated areas.	No significant cumulative issues would arise with operational and consented wind energy developments.	***Low***	No significant cumulative issues would arise with operational and consented wind energy developments.	***Low***	No significant cumulative issues would arise with operational and consented wind energy developments.	***Low***

Upper South Esk and Tyne Water LCA

Upper South Esk and Tyne Water Landscape Character Area – Detailed sensitivity assessment

Topic	Summary description	Assessment of Typology A: Turbines over 80m high	Sensitivity rating	Assessment of Typology B: Turbines 50-80m high	Sensitivity rating	Assessment of Typology C: Turbines 30-50m high	Sensitivity rating
Scale	A strongly contained landscape with an intimate scale due to the incised form of the narrow river valleys and extensive woodland cover. Scale is slightly increased where a broader pattern of woodlands and individual trees enclose medium sized fields on the more gently sloping land on valley sides. This is a well-settled area with a number of small villages and individual buildings.	This typology would dominate the intimate scale of deeply incised valleys, woodlands, field enclosure pattern and small buildings	***High***	This typology would dominate the intimate scale of deeply incised valleys, woodlands, field enclosure pattern and small buildings	***High***	Even these smaller turbines would appear very large in relation to the key characteristic features which contribute to the predominantly small scale of these valley landscapes.	***High***
Landform	The Tyne and upper South Esk form narrow incised river valleys, often contained by steep banks. Small arcs of floodplain occur in places, these generally broader along the lower reaches of the Tyne. The South Esk has a particularly sinuous form and significant tributaries cut into side slopes. Landform becomes more complex and rolling towards the upper reaches of both water courses. Broad shoulders above the valleys grade out into gently undulating slopes.	Turbines of this size would significantly detract from dramatic landform features associated with the incised valleys and complex rolling terrain although more gentle upper valley sides would be less sensitive.	***High-medium***	Turbines of this size would significantly detract from dramatic landform features associated with the incised valleys and complex rolling terrain although more gentle upper valley sides would be less sensitive.	***High-medium***	This smaller typology would have less of a detractive effect if sited on more gently sloping upper valley sides well away from the more sensitive incised valleys. Areas of more complex rolling landform within the upper reaches of these valleys would remain sensitive to all development typologies.	***Medium***
Landscape pattern	A rich mix of woodlands, field and roadside trees and parkland (these largely comprising the policies of a number of country estates) gives these valleys a distinctive character. Dense woodland covers steep valley slopes, consistently tracing the South Esk and the middle and lower sections of the Tyne. Parkland extends across river terraces set above the rivers. Medium to large-scale arable fields are enclosed by long shelterbelts and woodlands and/or enclosed by neat stone walls.	Turbines of this size would dominate woodlands and individual trees. They would significantly detract from the diverse land cover of this landscape and affect the integrity of designed landscape features.	***High***	Turbines of this size would dominate woodlands and individual trees. They would significantly detract from the diverse land cover of this landscape and affect the integrity of designed landscape features.	***High***	While turbines of this size would have less of a dominating effect on woodlands and individual trees, they would still detract from the integrity of designed landscape features and the richly diverse land cover of these valleys.	***High-medium***
Built Environment	Settlement within this character area includes the small clustered villages of Temple, Ford and Borthwick and the grand houses and associated buildings of the estates of Dalhousie Castle, Carrington and Arniston in the upper South Esk and Oxenfoord, Vogrie and Preston in the Upper Tyne Water. Crichton and Bothwick Castles are distinctive landmarks at the head of the Upper Tyne Water. Buildings generally have a strong architectural integrity and are often of historic interest. The A68 crosses the Tyne valley although the majority of roads are narrow and quiet.	This typology would significantly affect the setting of mansion houses and castles, diminishing their focus and relative scale within the landscape. Turbines of this size would also dominate and significantly detract from the strong architectural integrity and setting of settlements.	***High***	This typology would significantly affect the setting of mansion houses and castles, diminishing their focus and relative scale within the landscape. Turbines of this size would also dominate and significantly detract from the strong architectural integrity and setting of settlements.	***High***	While this typology could be sited to minimise effects on the setting of settlements and landmark built features, turbines of this size would still be considerably larger than buildings and would detract from the strong architectural integrity characteristic of this landscape.	***High***

	The Borders railway is aligned through the upper Tyne valley and an overhead transmission line is routed across the middle section of this valley although woodland limits its visibility.						
Perceptual Qualities	The valleys have a strong rural character and many historic buildings. Narrow roads lined with mature oak trees, policy woodlands, high estate walls and the strong containment experienced within the incised valleys give a sense of seclusion in many areas.	Turbines sited within the valleys, or visible on skylines above the valleys, would diminish the containment and seclusion experienced from river side footpaths. Turbines of this size would adversely affect the little modified rural character of this landscape.	***High-medium***	Turbines sited within the valleys, or visible on skylines above the valleys, would diminish the containment and seclusion experienced from river side footpaths. Turbines of this size would adversely affect the little modified rural character of this landscape.	***High-medium***	The sense of seclusion associated with the incised river valleys would be affected by smaller turbines sited nearby although there would be increased scope to site turbines towards to smaller height band of this typology to minimise effects on perceptual qualities.	***Medium***
Landscape Context	These valleys are contained by landform and woodland, with their character really only appreciated from within the landscape character area or from elevated views from the nearby Mayfield/Tranent Ridge character area. The south-facing slopes of the Mayfield/Tranent Ridge feature diverse woodlands and field enclosure, important as a wider backdrop to the Tyne valley.	Very large turbines would dominate the Mayfield/Tranent Ridge which is of low relief and affect the backdrop this landscape provides to the Tyne valley.	***High-medium***	Very large turbines would dominate the Mayfield/Tranent Ridge which is of low relief and affect the backdrop this landscape provides to the Tyne valley.	***High-medium***	There would be scope to site turbines of this size to minimise effects on the adjacent Mayfield/Tranent Ridge although they would detract from more diversely patterned south-facing slopes if sited nearby.	***Medium***
Visual Amenity	Views from roads and settlements within this character area are generally limited by the rolling landform and dense woodland. The more open shoulders of the South Esk valley feature views to Arthur's Seat and the Pentland Hills. Footpaths within these valleys are well-used by walkers. The South Esk valley is seen in elevated views from Gorebridge and Mayfield and from roads and footpaths on the Mayfield Tranent Ridge. The Tyne valley is highly visible from the A68 and A7 and from elevated settlements such as Edgehead.	This size of turbine would be highly visible from settlements elevated above these valleys. This typology could also significantly intrude on views from key roads. While the rolling landform and extensive woodland limits long views from within the valleys, turbines sited on the more open valley shoulders could intrude on views from valley based footpaths and interrupt views to the Pentland Hills.	***High***	This size of turbine would be highly visible from settlements elevated above these valleys. This typology could also significantly intrude on views from key roads. While the rolling landform and extensive woodland limits long views from within the valleys, turbines sited on the more open valley shoulders could intrude on views from valley based footpaths and interrupt views to the Pentland Hills.	***High***	Turbines of this size would be prominent features in elevated views from settlements and from key roads although there would be scope to site these smaller turbines to limit effects on valley footpaths and minimise intrusion on views to the Pentland Hills.	***High***
Cumulative Effects	No operational or consented wind farms or turbines are located within this landscape character area. A single turbine (34m high) located at Southfield on the Mayfield/Tranent Ridge is visible from parts of the Tyne valley and the Dun Law wind farm is visible from the south-facing slopes of the Tyne valley.	The Dun Law wind farm lies some 12km from the Tyne valley which limits cumulative effects with any large turbines sited in this LCA. Turbines of this size sited in this landscape would contrast with smaller turbines sited in the Mayfield/Tranent Ridge and would be contrary to the established association of large turbines with more extensive and less settled upland landscapes.	***Medium***	The Dun Law wind farm lies some 12km from the Tyne valley which limits cumulative effects with any large turbines sited in this LCA. Turbines of this size sited in this landscape would contrast with smaller turbines sited in the Mayfield/Tranent Ridge and would be contrary to the established association of large turbines with more extensive and less settled upland landscapes.	***Medium***	This typology would have minimal cumulative effects with operational wind farms and turbines towards the lower height band would fit with the size of smaller turbines sited in the Mayfield/Tranent Ridge.	***Low***

Mayfield/Tranent Ridge LCA

Mayfield Tranent Ridge Landscape Character Area – Detailed sensitivity assessment

Topic	Summary description	Assessment of Typology A: Turbines over 80m high	Sensitivity rating	Assessment of Typology B: Turbines 50-80m high	Sensitivity rating	Assessment of Typology C: Turbines 30-50m high	Sensitivity rating
Scale	Although prominent, this ridge is of relatively low relief only rising to 260m at its highest point. This ridge is predominantly farmed and open but with woodland, the more rolling interior and an often strong field enclosure pattern providing containment and reducing scale in places. This landscape is well-settled with a number of settlements and individual buildings.	The tall turbines of this typology would overwhelm the vertical scale of this relatively low but prominent ridge. This typology would also dominate the scale of landform, woodlands, enclosed fields, individual trees and small buildings which characterise this landscape.	***High***	The tall turbines of this typology would overwhelm the vertical scale of this relatively low but prominent ridge. This typology would also dominate the scale of landform, woodlands, enclosed fields, individual trees and small buildings which characterise this landscape.	***High***	While turbines of this size would have less of an effect on the vertical scale of this ridge, the taller turbines within this typology would appear very large in relation to smaller components of this landscape including buildings, woodlands and individual trees.	***High***
Landform	This landscape is seen as a simple even ridge in many views from the north although internally it features an undulating plateau-like landform of small rolling ridges and valleys.	This typology would detract from the more diverse landform of rolling ridges and valleys at the core of this landscape although more gently graded outer slopes would be less sensitive.	***High-medium***	This typology would detract from the more diverse landform of rolling ridges and valleys at the core of this landscape although more gently graded outer slopes would be less sensitive.	***High-medium***	The relatively simple landform of this landscape would be less sensitive to these smaller turbines although all turbines would detract from prominent ridge tops	***Medium***
Landscape pattern	An agricultural landscape of medium-sized arable fields divided by hedges and low walls. Small woodlands, mixed shelterbelts and a strongly enclosed field pattern with prominent individual trees feature on eastern slopes above the Tyne Water valley. The designed landscape of Carberry Tower in East Lothian is also a focus on the steep north-west slopes of the ridge.	This typology would significantly detract from more diverse woodlands and field enclosure pattern on eastern slopes and could affect the setting of the Carberry designed landscape within neighbouring East Lothian. Sensitivity would be reduced where open farmed slopes have a simpler pattern.	***High-medium***	This typology would significantly detract from more diverse woodlands and field enclosure pattern on eastern slopes and could affect the setting of the Carberry designed landscape within neighbouring East Lothian. Sensitivity would be reduced where open farmed slopes have a simpler pattern.	***High-medium***	Even smaller turbines would significantly detract from more diverse woodlands and field enclosure pattern on eastern slopes and could affect the setting of the Carberry designed landscape within neighbouring East Lothian if sited nearby. Sensitivity would be reduced where open farmed slopes have a simpler pattern.	***High-medium***
Built Environment	The large urban settlements of Tranent and Mayfield are sited on the lower slopes at the edge of this ridge. Dispersed farms and smaller villages such as Cousland and Edgehead are also present. Transmission lines (towers between 47-50m high) crossing the western slopes of ridge are visually prominent and detractive features and a number of minor roads and the A68 traverse this ridge.	This typology would dominate the scale of small villages in the interior of the ridge and the domestic scale of housing in larger urban centres. While tall built structures are already present in this landscape, larger development typologies would add to the visual confusion of transmission lines which are particularly complex in some areas.	***High***	This typology would dominate the scale of small villages in the interior of the ridge and the domestic scale of housing in larger urban centres. While existing large scale vertical built structures are already present in this landscape, larger development typologies would add to the visual confusion of transmission lines which are particularly complex in some areas.	***High***	There would be scope to site this typology to minimise effects on small settlements. The use of turbines towards the smaller height band of this typology (<30m high) would reduce clutter in the landscape although scope for multiple developments of single and small groups of turbines will be limited (see cumulative effects).	***High-medium***
Perceptual Qualities	While this landscape is easily accessible, it can feel secluded within the internal rolling plateau away from fringing urban settlements. This ridge is more modified to the north-east in neighbouring East Lothian where disturbed ground, landfill sites and transmission lines are present.	Although perceptual qualities are not distinct, this typology could be perceived as further eroding the rural character of this ridge.	***Medium***	Although perceptual qualities are not distinct, this typology could be perceived as further eroding the rural character of this ridge.	***Medium***	This size of turbine (and particularly turbines towards the lower height band of this typology) would be likely to have less of an effect on perceptual qualities.	***Medium-low***

Landscape Context	This ridge is prominent, providing a backdrop to Dalkeith and other Midlothian settlements as well as to Edinburgh and settlements along the coast of East Lothian. It is important in providing a contrast with surrounding densely built up areas. The eastern slopes of this ridge backdrop the Tyne Water valley and provide an attractive wooded and farmed setting to a number of designed landscapes.	The rural character and setting to Midlothian settlements and Edinburgh would be significantly affected by this typology. Turbines of this size sited on south-facing slopes would significantly impact on the sensitive Tyne Water valley.	***High***	The rural character and setting to Midlothian settlements and Edinburgh would be significantly affected by this typology. Turbines of this size sited on south-facing slopes would significantly impact on the sensitive Tyne Water valley.	***High***	This typology (and particularly turbines towards the lower height band) would be likely to have a reduced effect on the setting of settlements provided they were sited well away from key outward-facing slopes and more prominent ridgelines.	***High-medium***
Visual Amenity	Dramatic views over Midlothian to the Pentland Hills, Edinburgh and the Firth of Forth are a feature from elevated roads such as the A68, an important 'tourist' route to Edinburgh. This ridge also provides a vantage point for views over the Tyne Water and South Esk valleys. In terms of views **to** this landscape character area, this ridge forms a prominent feature visible from much of south-east Edinburgh, Midlothian and East Lothian.	This typology (and particularly multiple turbines) could intrude on views from elevated roads, settlements and footpaths within this landscape character area. Turbines of this size would be highly visible in views from the wider area across Midlothian and Edinburgh, especially if they breached the skyline of this prominent ridge.	***High***	This typology (and particularly multiple turbines) could intrude on views from elevated roads, settlements and footpaths within this landscape character area. Turbines of this size would be highly visible in views from the wider area across Midlothian and Edinburgh, especially if they breached the skyline of this prominent ridge.	***High***	This typology would also be highly visible, particularly if sited on prominent ridgelines and seen against the sky. There would be increased scope to site single and small turbines within this typology to minimise intrusion on key views **from** this ridge.	***High-medium***
Cumulative Effects	A number of single and small groups of turbines <34m high to blade tip are operational and consented in this landscape. The operational wind farm of Dun Law located on the Lammermuir Hills is visible from roads and footpaths from this ridge at distances of around 14km. A number of masts and transmission lines are also present within the landscape	This typology would contrast with the scale of existing small wind turbines and would increase the clutter of disparate vertical structures including masts, wind turbines and transmission lines in this landscape. Although significant cumulative effects are unlikely to arise with the Dun Law wind farm, this typology would be contrary to the established association of larger wind turbines with more expansive unsettled upland landscapes.	***High***	This typology would contrast with the scale of existing small wind turbines and would increase the clutter of disparate vertical structures including masts, wind turbines and transmission lines in this landscape. Although significant cumulative effects are unlikely to arise with the Dun Law wind farm, this typology would be contrary to the established association of larger wind turbines with more expansive unsettled upland landscapes.	***High***	Turbines towards the upper height band of this typology would contrast with the scale of existing small wind turbines and would increase the clutter of disparate vertical structures including masts, wind turbines and transmission lines in this landscape. There is limited scope to accommodate further single and small groups of turbines within this height band on this ridge.	***High-medium***

Musselburgh/Prestonpans Fringe LCA

Musselburgh/Prestonpans Fringe Landscape Character Area – Detailed sensitivity assessment

Topic	Summary description	Assessment of Typology A: Turbines over 80m high	Sensitivity rating	Assessment of Typology B: Turbines 50-80m high	Sensitivity rating	Assessment of Typology C: Turbines 30-50m high	Sensitivity rating
Scale	This very small landscape character area is bounded by the urban edge of Edinburgh. There is little open space within this landscape as it is subject to new urban growth. Buildings are small within the nearby settlements of Danderhall although larger new commercial buildings are also present.	Large turbines (and particularly multiple turbines) would dominate the limited extent of open spaces and surrounding domestic buildings.	***High***	Large turbines (and particularly multiple turbines) would dominate the limited extent of open spaces and surrounding domestic buildings.	***High***	This typology would appear very large in relation to nearby domestic buildings but also significantly higher than commercial buildings. Turbines towards the lower height band of this typology would have a better scale relationship with the limited extent of open ground.	***High-medium***
Landform	Landform is gently undulating with long slopes falling gradually to the south. The shape of open ground is often irregular and fragmented, being cut by roads and other built development.	The generally simple gently undulating landform of this character area would be less sensitive to wind turbine development.	***Low***	The generally simple gently undulating landform of this character area would be less sensitive to wind turbine development.	***Low***	The generally simple gently undulating landform of this character area would be less sensitive to wind turbine development.	***Low***
Landscape pattern	This character area has an often fragmented pattern of arable fields, unmanaged ground and construction sites lying on the urban edge of Danderhall and Edinburgh.	Multiple turbines sited in this small area would increase the fragmentation of this landscape.	***High***	Multiple turbines sited in this small area would increase the fragmentation of this landscape.	***High***	Multiple turbines of this size would also increase the fragmented pattern of this landscape although there is greater scope to accommodate single and very small numbers of turbines towards the lower height band of this typology so as to minimise effects.	***High***
Built Environment	Bounded and criss-crossed by a network of transport routes. A number of high voltage transmission lines (47-50m high towers) cross this landscape and former coal workings on the fringes of this area combine to create a fragmented and often cluttered landscape.	Turbines of this size would dominate the size of buildings in this landscape and the setting of settlements. They would also increase the discordant clutter of built elements characteristic of this landscape.	***High***	Turbines of this size would dominate the size of buildings in this landscape and the setting of settlements. They would also increase the discordant clutter of built elements characteristic of this landscape.	***High***	While this typology would have less of a dominant effect on buildings, the limited extent of this landscape would result in turbines affecting the setting of settlements. They would also increase the discordant clutter of built elements characteristic of this landscape.	***High***
Perceptual Qualities	This is an obviously modified landscape which is surrounded by urban areas, major roads and some industrial development. It is easily accessible with no sense of tranquillity.	The absence of key perceptual qualities limits effects	***Low***	The absence of key perceptual qualities limits effects.	***Low***	The absence of key perceptual qualities limits effects	***Low***
Landscape Context	Although not a distinctive landscape in itself, this area forms part of the foreground to views from the A1 and A720 City By-pass to Arthur's Seat and Edinburgh.	Turbines could affect the setting of Edinburgh and the perception of the scale of Arthur's Seat which is a prominent feature seen across this landscape.	***Medium***	Turbines could affect the setting of Edinburgh and the perception of the scale of Arthur's Seat which is a prominent feature seen across this landscape.	***Medium***	Turbines could affect the setting of Edinburgh and the perception of the scale of Arthur's Seat which is a prominent feature seen across this landscape.	***Medium***
Visual Amenity	Views **from** this area focus on the Firth of Forth. This landscape forms the foreground to views **to** Arthur's Seat from the A1 on the approach to Edinburgh and also from the A720 City By-pass.	The tall turbines of this typology would significantly intrude on open sea views from this (presently open) area and on views from the A720 City By-pass and the A1 which focus on Arthur's Seat.	***High***	The tall turbines of this typology would significantly intrude on open sea views from this (presently open) area and on views from the A720 City By-pass and the A1 which focus on Arthur's Seat.	***High***	While this typology could also be highly visible from key transport routes and settlement, turbines towards the lower height band would be less prominent.	***High - medium***
Cumulative Effects	No operational or consented wind turbines are visible from this landscape character area.	There would be no cumulative effects with other wind turbines.	***Low***	There would be no cumulative effects with other wind turbines.	***Low***	There would be no cumulative effects with other wind turbines.	***Low***

Agricultural Plain LCA

Agricultural Plain Landscape Character Area – Detailed Sensitivity Assessment Table

Topic	Summary description	Assessment of Typology A: Turbines over 80m high	Sensitivity rating	Assessment of Typology B: Turbines 50-80m high	Sensitivity rating	Assessment of Typology C: Turbines 30-50m high	Sensitivity rating
Scale	The gently undulating landform and medium to large arable fields contribute to the openness of the landscape although small woodlands and a more rolling landform west of the A68 reduce scale. A regular pattern of farms and the small settlement of Pathhead are present.	Although the more open parts of this landscape would be less sensitive the presence of smaller elements such as buildings, settlements and individual trees together with the limited extent of this LCA (which would result in turbines being seen in close proximity to these features) increases sensitivity to the very large turbines of this typology.	***High***	Although the more open parts of this landscape would be less sensitive the presence of smaller elements such as buildings, settlements and individual trees together with the limited extent of this LCA (which would result in turbines being seen in close proximity to these features) increases sensitivity to the very large turbines of this typology.	***High***	This typology could relate to the increased scale in the more open eastern part of this landscape although turbines towards the lower height band of this typology would have less of an effect on nearby buildings and other small features.	***High-medium***
Landform	This landscape forms gently undulating north-west facing slopes set above the Tyne Water valley. Landform is more rolling west of the A68 and close to Critchton.	The more gently undulating landform in the eastern part of this landscape would be less sensitive although turbines of this size would detract from more complex rolling landform	***Medium***	The more gently undulating landform in the eastern part of this landscape would be less sensitive although turbines of this size would detract from more complex rolling landform	***Medium***	Sensitivity is reduced to these smaller turbines which could be sited to avoid conflicts with more complex rolling topography.	***Medium-low***
Landscape pattern	Large arable fields, usually enclosed by fences and low hedges, have a simple pattern. This landscape is relatively well wooded with small broadleaved woodlands and individual field trees particularly occurring west of the A68 and at the transition with the North Lammermuir Platform LCA around Whitburgh Mains and Crichton.	The simple landcover pattern of arable farmland would be less sensitive although turbines of this size would dominate and detract from individual field trees and woodlands	***Medium***	The simple landcover pattern of arable farmland would be less sensitive although turbines of this size would dominate and detract from individual field trees and woodlands	***Medium***	There is increased scope to site this typology in areas where a simpler landcover prevails and to minimise effects on more diverse woodlands and prominent field trees.	***Medium-low***
Built Environment	Dispersed farms pattern this landscape. The settlement of Pathhead is located on the edge of this landscape set above the Tyne Water valley. A high voltage transmission line crosses this landscape although there are few tall infrastructure features in this farmed landscape.	This typology would affect the setting of Pathhead. Turbines of this size sited in the western part of this landscape could also affect the very small settlement of Crichton.	***High***	This typology would affect the setting of Pathhead. Turbines of this size sited in the western part of this landscape could also affect the very small settlement of Crichton.	***High***	There is increased scope to accommodate this size of turbine in the more open eastern part of this landscape to minimise impacts on the setting of settlements.	***Medium***
Perceptual Qualities	This is a well-managed and settled agricultural landscape. It is crossed by a network of minor roads and the A68.	The tall turbines of this typology would be likely to diminish the perception of rural character which is associated with this landscape although the absence of key perceptual qualities limits effects.	***Medium***	The tall turbines of this typology would be likely to diminish the perception of rural character which is associated with this landscape although the absence of key perceptual qualities limits effects.	***Medium***	Turbines of this size would be likely to have less of an effect on the perception of rural character provided that numbers of turbines were limited.	***Med-low***
Landscape Context	This landscape forms the immediate setting to the highly sensitive Tyne Water valley which accommodates a number of notable designed landscapes including Oxenfoord Castle, Vogrie and Preston Hall.	This typology would be likely to significantly affect the setting of designed landscapes within the Tyne Water valley and could dominate the often intimate scale experienced within the more incised sections of this valley.	***High***	This typology would be likely to significantly affect the setting of designed landscapes within the Tyne Water valley and could dominate the often intimate scale experienced within the more incised sections of this valley.	***High***	Although these smaller turbines could be sited to minimise intrusion on the more incised sections of the Tyne Water valley, they could still affect the setting of designed landscapes particularly appreciated in elevated views.	***High-medium***

Visual Amenity	Views **from** roads and footpaths within this landscape are fairly open and focus on the Tyne Water valley and the eastern slopes of the Mayfield Tranent Ridge. This landscape is highly visible from the A68, an important tourist route to Edinburgh. While views **to** this landscape are limited from the more incised and wooded sections of the neighbouringTyne Water valley, there are open views from roads, footpaths and settlement, including Edgehead, from the east-facing slopes of the Mayfield Tranent Ridge.	The relatively well-settled nature of this landscape and the opportunity for close views from the A68 increases visual sensitivity with this typology being likely to have a significant impact on views. Turbines of this size would also impact on views from the eastern slopes of the Mayfield/Tranent Ridge.	***High***	The relatively well-settled nature of this landscape and the opportunity for close views from the A68 increases visual sensitivity with this typology being likely to have a significant impact on views. Turbines of this size would also impact on views from the eastern slopes of the Mayfield/Tranent Ridge.	***High***	The well-settled nature of this landscape increases visual sensitivity although there is greater scope to locate these smaller turbines to limit intrusion, for example by setting them well back from the A68 and from Pathhead. However, turbines of this size would still be prominent features seen in views from parts of the Tyne Water valley and from the east facing slopes of the Mayfield Tranent Ridge.	***High-medium***
Cumulative Effects	Although views from this LCA are principally towards the north-west, the operational wind farm of Dun Law on the skyline of the Lammermuir Hills is visible from the upper east-facing slopes of the Tyne Water Valley and the Mayfield Tranent Ridge. The consented wind farms of Pogbie and Keith Hill are also likely to be seen in these views. The single small turbine at Southfield within the Mayfield/Tranent Ridge is clearly visible from this area and from parts of the Tyne Water valley.	Large turbines sited in the Agricultural Plain would be inter-visible with operational and consented wind farms in the Lammermuir Hills. The foreshortening which occurs in views across the Tyne Valley from the Mayfield Tranent Ridge could result in visual coalescence of turbines, resulting in significant clutter and visual confusion. This effect could be exacerbated by any wind turbines sited in the intermediate North Lammermuir Platform LCA. There would also be potential cumulative effects on the Tyne Water valley LCA as any turbines sited in the Agricultural Plain were inter-visible with operational wind turbines sited in the Mayfield/Tranent Ridge.	***High***	Large turbines sited in the Agricultural Plain would be inter-visible with operational and consented wind farms in the Lammermuir Hills. The foreshortening which occurs in views across the Tyne Valley from the Mayfield Tranent Ridge could result in visual coalescence of turbines, resulting in significant clutter and visual confusion. This effect could be exacerbated by any wind turbines sited in the intermediate North Lammermuir Platform LCA. There would also be potential cumulative effects on the Tyne Water valley LCA as any turbines sited in the Agricultural Plain were inter-visible with operational wind turbines sited in the Mayfield/Tranent Ridge.	***High***	Although these smaller turbines would be likely to be less dominant in views, multiple turbines would have cumulative effects with wind farms in the Lammermuir Hills and any turbines sited in the North Lammermuir Platform. There would also be potential cumulative effects on the Tyne Water valley LCA as any turbines sited in the Agricultural Plain were visible with operational wind turbines sited in the Mayfield/Tranent Ridge.	***High***

Rosewell/Carrington Spur LCA

Rosewell Carrington Spur Landscape Character Area – Detailed sensitivity assessment

Topic	Summary description	Assessment of Typology A: Turbines over 80m high	Sensitivity rating	Assessment of Typology B: Turbines 50-80m high	Sensitivity rating	Assessment of Typology C: Turbines 30-50m high	Sensitivity rating
Scale	Overall this landscape has a medium to small scale influenced by its often rolling landform, woodlands, field trees and small buildings. Openness is increased to the south-west where the broader pattern of shelterbelts and more gently undulating landform rises up to Cauldhall Moor in the adjacent Moorland Fringes LCA. This LCA is very limited in extent.	Large turbines would dominate the scale of this landscape even if sited in the more open areas due to the limited extent of this LCA.	***High***	Large turbines would dominate the scale of this landscape even if sited in the more open areas due to the limited extent of this LCA.	***High***	Turbines of this size could be sited within more open areas in the south-west to minimise effects on landscape scale.	***High-medium***
Landform	An undulating landform of smooth rolling ridges and valleys rising to form more gently graded slopes to the south-west. The Dalhousie Burn has a notably incised valley and the area around Edgelaw Reservoir has a complex rolling landform at the transition with the Moorland Fringe LCA to the south.	Turbines of this size would detract from more complex rolling landform and incised valleys although sensitivity would be reduced within areas with a more gently graded topography (which are limited in extent).	***High-medium***	Turbines of this size would detract from more complex rolling landform and incised valleys although sensitivity would be reduced within areas with a more gently graded topography (which are limited in extent).	***High-medium***	There is increased scope to locate single and very small groups of this typology on broader ridges and gently graded slopes to minimise effects on more complex landform.	***Medium***
Landscape pattern	There is a distinctive pattern of broadleaved woodlands and mature oak and ash field and roadside trees in this landscape. A broader pattern of mixed shelterbelts occurs in the south-western extent of this LCA at the transition with the Moorland Fringes LCA.	Turbines of this size would dominate woodlands and individual trees. They would significantly detract from the diverse land cover which characterises much of this LCA.	***High***	Turbines of this size would dominate woodlands and individual trees. They would significantly detract from the diverse land cover which characterises much of this LCA.	***High***	Even this smaller typology would dominate woodlands and individual trees and they would detract from the diverse land cover which characterises much of this LCA.	***High***
Built Environment	The settlements of Rosewell and Carrington are sited on the fringes of this LCA at the transition with the adjacent North and South Esk valleys. Whitehill House sits within wooded policies near Rosewell. Some opencast coal mining occurs on the western fringes of this area at Shewington although this area is predominantly farmed and has a distinctly rural character .	This typology could affect the setting of the distinct estate village of Carrington, Roswell and Whitehill House and its policies. Effects may be minimised by siting turbines in the less settled south-western part of this landscape.	***High-medium***	This typology could affect the setting of the distinct estate village of Carrington, Roswell and Whitehill House and its policies. Effects may be minimised by siting turbines in the less settled south-western part of this landscape.	***High-medium***	There is increased scope to accommodate this size of turbine to reduce impacts on the setting of settlements.	***Medium***
Perceptual Qualities	While some past and current mining activities are evident, these are located on the fringes of this character area and do not affect the core of this LCA which comprises well managed farmland and woodland. This area is not remote but in places it can feel relatively secluded despite being located close to well settled and developed areas	Although this area does not have a strong sense of naturalness and past and current mining operations reduce this perception further, the more intact rural core of this landscape, with its distinct pattern of field trees, wooded policies and well-managed farmlands would be affected by large turbines which could be perceived as industrial scale development.	***Medium***	Although this area does not have a strong sense of naturalness and past and current mining operations reduce this perception further, the more intact rural core of this landscape, with its distinct pattern of field trees, wooded policies and well-managed farmlands would be affected by large turbines which could be perceived as industrial scale development.	***Medium***	These smaller turbines would be less likely to be perceived as 'industrial' features and would be likely to have less of an impact on perceptual qualities particularly if located away from the more intact and sensitive core of this landscape.	***Medium-low***
Landscape Context	Proximity to the intimately scaled valleys of the South Esk and North Esk increases sensitivity.	Larger turbines could be visible from more open parts of the South Esk and North Esk valleys where they would significantly detract from these intimately scaled and scenic valleys.	***High-medium***	Larger turbines could be visible from more open parts of the South Esk and North Esk valleys where they would significantly detract from these intimately scaled and scenic valleys.	***High-medium***	These smaller turbines may be able to be sited to avoid intrusion on the more open parts of the South Esk and North Esk valleys.	***Medium***

Visual Amenity	Roadside trees and woodlands tend to filter and screen views particularly in the northern parts of this LCA. Views from more elevated and open parts of this character area can be extensive, focussing on Edinburgh and Arthur's Seat to the north and the Pentland Hills to the west. There are elevated views **to** this area from Mayfield and Gorebridge and there are also fleeting views from the A702 where the raised landform of this area can be seen above the North Esk valley. It is also visible from elevated viewpoints within the Pentland Hills and from the B7007 in the Moorfoot Hills.	Larger turbines could intrude on open views from roads and would be highly visible from elevated footpaths within the Pentland Hills. Turbines sited close to the outer edges of this landscape may also significantly impact on key views from the North and South Esk Valleys.	***High***	Larger turbines could intrude on open views from roads and would be highly visible from elevated footpaths within the Pentland Hills. Turbines sited close to the outer edges of this landscape may also significantly impact on key views from the North and South Esk Valleys.	***High***	There is increased scope for the smaller turbines within this typology to be partially contained by woodlands and landform thus reducing their visual impact.	***High-medium***
Cumulative Effects	No operational or consented wind farms or turbines are located within this landscape character area. There are limited views of wind farm development sited in the Moorfoot and Lammermuir Hills due to the screening provided by woodlands and landform and the distance of these developments from this LCA.	Cumulative effects with other wind farm/turbine developments would not be significant although turbines of this size sited in this landscape would be contrary to the established association of large turbines with more extensive and less settled upland landscapes.	***Medium***	Cumulative effects with other wind farm/turbine developments would not be significant although turbines of this size sited in this landscape would be contrary to the established association of large turbines with more extensive and less settled upland landscapes.	***Medium***	This smaller typology would have minimal cumulative effects with operational wind farms.	***Low***

North Lammermuir Platform LCA

North Lammermuir Platform Landscape Character Area – Detailed Sensitivity Assessment

Topic	Summary description	Assessment of Typology A: Turbines over 80m high	Sensitivity rating	Assessment of Typology B: Turbines 50-80m high	Sensitivity rating	Assessment of Typology C: Turbines 30-50m high	Sensitivity rating
Scale	The undulating to rolling landform of this landscape is cut by incised narrow valleys with broader and more open gentle hill slopes merging with the Plateau Grassland to the south below Fala Moor. Enclosure is additionally provided by long shelterbelts and woodlands although the landscape is more open in the south-west. Regularly spaced farms, small buildings and individual trees provide ready scale references.	This typology would dominate the scale of narrow valleys and smaller hills. It would also appear very large in relation to the size of buildings, trees and woodlands.	***High***	This typology would dominate the scale of narrow valleys and smaller hills. It would also appear very large in relation to the size of buildings, trees and woodlands.	***High***	Narrow valleys, small hills and areas with a more intricate small scale enclosure and woodland pattern would still be sensitive to this size of turbine. More open hill slopes at the transition with the Plateau Grassland and Lowland Moorland landscape character areas would be less sensitive particularly to turbines towards the lower height band of this typology.	***High-medium***
Landform	Landform is often complex and rolling with small hills cut by narrow incised water courses especially in the east around Fala and Whitburgh. The terrain broadens to form more open and gently undulating slopes rising to the uplands of the Plateau Grassland landscape character area to the south and the Lowland Moorland landscape character areas to the west.	This typology would detract from the more complex landform of narrow incised valleys and rolling hills. Simpler, gently graded hill slopes at the transition with the Plateau Grassland and Lowland Moorland character areas would be less sensitive.	***High-medium***	This typology would detract from the more complex landform of narrow incised valleys and rolling hills. Simpler, gently graded hill slopes at the transition with the Plateau Grassland and Lowland Moorland character areas would be less sensitive.	***High-medium***	This typology would detract from narrow incised valleys although there would be some limited scope to locate turbines of this size to minimise effects on more complex landform.	***Medium***
Landscape pattern	Fields of arable and improved pasture are often strongly enclosed by stone walls and hedgerows. Angular mixed shelterbelts pattern broader swathes of semi-improved pasture on hill slopes at the transition with the Lowland Moorlands and Plateau Grassland landscape character areas. Woodlands and field trees are a consistent feature throughout the area and these tend to coalesce in long views to create an impression of a well wooded landscape. Policy features such as plantings of avenue trees and roundel plantings contribute to the rich diversity of land cover particularly evident in the east.	This typology would significantly detract from the often distinct field and woodland pattern including policy plantings of beech hedgerows, roundels and avenues. Areas with a broader and simpler land cover pattern of pasture and shelterbelts would be less sensitive.	***High-medium***	This typology would significantly detract from the often distinct field and woodland pattern including policy plantings of beech hedgerows, roundels and avenues. Areas with a broader and simpler land cover pattern of pasture and shelterbelts would be less sensitive.	***High-medium***	There is some increased scope to site turbines towards the lower height band of this typology to minimise effects on more diverse wooded policy features. Areas with a broader and simpler land cover pattern of pasture and shelterbelts would be less sensitive.	***Medium***
Built Environment	Tightly clustered villages and a dispersed pattern of isolated farms and small estate houses have a strong architectural integrity. The busy A68 and high voltage transmission lines are aligned through this landscape and a network of relatively minor roads wind through the rolling terrain.	The tall turbines of this typology would dominate the scale of buildings and affect the setting of settlements. Turbines sited close to existing transmission lines would increase clutter in this landscape.	***High***	There may be increased scope to site this typology to avoid dominating the setting of settlement in less populated parts of this character area. Turbines sited close to existing transmission lines would increase clutter in this landscape.	***High-medium***	There is greater scope to locate this typology to minimise impacts on settlement. Turbines sited close to existing transmission lines would increase clutter in this landscape.	***Medium***
Perceptual Qualities	The architectural integrity of settlement and well-managed character found in parts of this area with strong landscape features of woodlands, policy plantings and hedgerows result in a distinctively rural character. The area can feel secluded in places but is not remote.	Large turbines could adversely affect the perception of rural character. Multiple developments of turbines this size spread across this character area would significantly exacerbate this effect.	***High-medium***	Large turbines could adversely affect the perception of rural character. Multiple developments of turbines of this size spread across this character area would significantly exacerbate this effect.	***High-medium***	The lower turbine height band of this typology is less likely to be perceived as being large scale industrialisation, fitting better with the pattern of existing land use and settlement.	***Medium***

Landscape Context	The eastern part of this landscape is important in providing a diverse well-wooded foreground in views to the distinctive steep northern scarp of Lammer Law which is sited within East Lothian. To the west into Midlothian, the uplands which abut the southern boundary of the North Lammermuir Platform are lower lying and less distinct with a more gradual transition occurring as gentle hill slopes rise to Fala Moor within the Plateau Grassland character area. To the south-west, the North Lammermuir Platform provides the backdrop to the dramatically incised upper Tyne Water in the Crichton/Borthwick area.	Large turbines located in the eastern part of this character area could detract from the scenic, steep northern face of Lammer Law seen in long views from roads and footpaths. They could also dominate the intimately scaled upper Tyne Water valley if visible on the skyline of rolling hills which immediately contain this valley.	***High-medium***	Large turbines located in the eastern part of this character area could detract from the scenic, steep northern face of Lammer Law seen in long views from roads and footpaths. They could also dominate the intimately scaled upper Tyne Water valley if visible on the skyline of rolling hills which immediately contain this valley.	***High-medium***	There is increased scope to site this typology, and particularly turbines towards the lower height band of 30m, to avoid significant impact on adjacent landscapes.	***Medium***
Visual Amenity	Views from roads and settlement within this character area are often screened by woodland and high hedges. The B6458 offers more open views particularly south to the upland edge but also east to the dramatic northern face of Lammer Law and distant views west to the steep scarp of the Moorfoot Hills. This character area is visible from the A68 and the B6368 near Soutra Hill where it forms the foreground to extensive views across the Lothians. There are also views of the western part of this landscape from the A7.	Although woodland and landform would be likely to offer some intermittent screening from local roads and settlement, the tall turbines of this typology could be highly visible from more open areas of Midlothian and East Lothian. Turbines sited at the transition with the Plateau Grassland character area could intrude on dramatic views from the A68 and B6368 over Midlothian.	***High***	Although woodland and landform would be likely to offer some intermittent screening from local roads and settlement, the tall turbines of this typology could be highly visible from more open areas of Midlothian and East Lothian. Turbines sited at the transition with the Plateau Grassland character area could intrude on dramatic views from the A68 and B6368 over Midlothian.	***High***	There is greater scope for this typology, and particularly turbines towards 30m high, to be sited to avoid intrusion on prominent skylines (by being located on lower hill slopes to benefit from a backdrop of rising ground thus reducing visibility). Landform and woodlands would be likely to offer screening from local roads and settlement and turbines <35m high would be less intrusive in longer views. Turbines sited at the transition with the Plateau Grassland character area could intrude on dramatic views from the A68 and B6368 over Midlothian although there is increased scope to site these smaller turbines to minimise impact on key views to the more scenic parts of the Lammermuir Hills.	***High-medium***
Cumulative Effects	The existing wind farm of Dun Law is visible on the upland skyline within 3km of the eastern part of the North Lammermuir Platform and the consented Pogbie and Blegbie wind farms are also likely to be seen together with Dun Law in close proximity from roads and settlement within this character area. The operational Bowbeat wind farm is visible from more open western parts of the North Lammermuir Platform and is seen together with the Dun Law wind farm in long views across open and elevated parts of Midlothian. There is very limited visibility of the operational Carcant wind farm from this character area and from the wider Midlothian area.	There would be cumulative visual effects with existing and consented large scale wind farm development within the Plateau Grassland character area. Turbines of this size sited in this landscape would be inter-visible with these developments in views across Midlothian and would contrast with the clear association of existing wind farm developments with more extensive upland landscapes. Turbines of this size sited in this landscape would appear very large in relation to the Dun Law turbines in views from roads and settlement. Sequential cumulative effects would be likely to arise on the A68, B6368, B6369 and B6355.	***High***	There would be cumulative visual effects with existing and consented large scale wind farm development within the Plateau Grassland character area. Turbines of this size sited in this landscape would be inter-visible with these developments in views across Midlothian and would contrast with the clear association of existing wind farm developments with more extensive upland landscapes. Turbines of this size sited in this landscape would appear very large in relation to the Dun Law turbines in views from roads and settlement. Sequential cumulative effects would be likely to arise on the A68, B6368, B6369 and B6355.	***High***	There would be some limited scope to site these smaller turbines to minimise cumulative effects with existing wind farm development. Turbines towards the lower height band of this typology would minimise effects where developments were inter-visible with woodland and landform likely to provide a degree of screening.	***High-medium***

Moorland Fringes LCA

Moorland Fringes Landscape Character Area – Detailed sensitivity assessment

Topic	Summary description	Assessment of Typology A: Turbines over 80m high	Sensitivity rating	Assessment of Typology B: Turbines 50-80m high	Sensitivity rating	Assessment of Typology C: Turbines 30-50m high	Sensitivity rating
Scale	Flatter pockets of moorland and less strongly enclosed semi-improved grazing land increase openness, giving a medium-large scale in parts of this landscape. More complex rolling landform, small woodlands, as strong enclosure pattern of smaller fields and small farms and other buildings also occur in many areas and reduce scale.	While some parts of this landscape are more open and larger in scale, these areas are not extensive and turbines of this size would dominate adjacent smaller scale areas and features such as buildings and woodlands.	***High***	There would be some limited scope to locate this size of turbine (and limited numbers of turbines) on more open and larger scale moorland and areas of less strongly enclosed rough grazing land to minimise effects on smaller scale features in this landscape.	***High-medium***	The smaller turbines of this typology would be better able to be accommodated without incurring significant effects on the parts of this landscape with a smaller scale character.	***Medium***
Landform	While landform is generally gently undulating, it is varied. A distinctly knolly landform is often associated with river valleys such as the South Esk and Fullarton Water while the North Esk close to Auchencorth has a dramatically incised valley. Halkerston Hill and the area around the Middleton North Burn is notably rolling while areas of flatter moorland also occur in places, some of these partially contained by undulating ground.	While more gently undulating and flatter areas of moorland have a reduced sensitivity, this typology would detract from more complex deeply incised valleys and the rolling landform centred on the Halkerston Hill area.	***Medium***	While more gently undulating and flatter areas of moorland have a reduced sensitivity, this typology would detract from more complex deeply incised valleys and the rolling landform centred on the Halkerston Hill area.	***Medium***	There are increased opportunities to site these smaller turbines to minimise effects on more complex areas of landform.	***Medium-low***
Landscape pattern	Small areas of heather-dominated moorland, native woodland and scrub and wetlands are diverse. The field pattern is medium to large with stone walls and long coniferous shelterbelts providing enclosure to improved pastures. More open semi-improved and rough grazing is present in the south-west. The naturalistic Gladhouse Reservoir forms a key focus in this landscape.	More diverse areas of heather moorland, strongly enclosed walled fields and Gladhouse Reservoir increase sensitivity in this landscape although there is some limited scope to site turbines to minimise effects on these features	***High-medium***	More diverse areas of heather moorland, strongly enclosed walled fields and Gladhouse Reservoir increase sensitivity in this landscape although there is some limited scope to site turbines to minimise effects on these features	***High-medium***	There is increased scope to located these smaller turbines to minimise effects on more sensitive moorlands and the setting of Gladhouse Reservoir	***Medium***
Built Environment	This is a relatively sparsely settled area with widely dispersed farms and the small settlements of Leadburn, Nine Mile Burn and Howgate aligning roads along higher ridges. An operational quarry is located at Middleton.	This typology could affect the setting of small settlements although the relatively sparsely settled nature of this landscape reduces sensitivity.	***Medium***	This typology could affect the setting of small settlements although the relatively sparsely settled nature of this landscape reduces sensitivity.	***Medium***	There would be increased scope to locate these smaller turbines to minimise effects on the setting of settlements	***Medium-low***
Perceptual Qualities	Although settled, the Moorland Fringes often have a distinctly rural character with well-managed farmland, stone walls and many traditional buildings. Gladhouse Reservoir and its associated wetlands and pockets of heather moorland have a more natural character. This area can feel secluded away from major roads and settlement.	This typology would affect the perception of naturalness and seclusion experienced in many parts of this landscape but particularly if visible in close proximity to Gladhouse Reservoir and more intact richly diverse moorlands.	***High-medium***	This typology would affect the perception of naturalness and seclusion experienced in many parts of this landscape but particularly if visible in close proximity to Gladhouse Reservoir and more intact richly diverse moorlands.	***High-medium***	Turbines towards the lower height band of this typology would be likely to have a reduced effect on perceptual qualities.	***Medium***
Landscape Context	This area lies close to the Pentland and Moorfoot Hills where it provides an open and simple foreground to the distinctive northern scarp of the Moorfoot Hills and the iconic profile of the northern Pentland Hills. The highly sensitive South Esk Valley also lies close to this LCA.	This typology would detract from the dramatic scenic contrast which occurs between the Moorland Fringes and Lowland Moorlands LCAs. Large turbines sited close to the foot of these hills would also diminish the appreciation of their vertical scale. Turbines visible from within the South Esk Valley LCA	***High***	There may be increased scope to site turbines towards the lower height band of this typology to minimise effects on the appreciation of the Pentland and Moorfoot Hills. Turbines visible from within the South Esk Valley LCA could dominate the small scale of this landscape and detract from its rich land cover of wooded policies.	***High***	These smaller turbines would be likely to have less of an impact on the appreciation of the Pentland and Moorfoot Hills although areas close to these hills and to the South Esk Valley LCA should be avoided.	***Medium***

		could dominate the small scale of this landscape and detract from its rich land cover of wooded policies.					
Visual Amenity	The A701, A702 and a number of minor roads are aligned through the Moorland Fringes and allow extensive views to the Pentland and Moorfoot Hills. These views are most dramatic where the low-lying open foreground of the Moorland Fringes and Lowland Moorland LCAs accentuate the vertical scale of the scarp of the Moorfoot Hills and where the full height of the more distinctive northern Pentland Hills can be seen. Views are restricted in some areas where a more complex landform is present or where coniferous forestry provides a degree of screening. The B7007 (NCR 1) provides a vantage point with extensive and spectacular views across this character area to the Pentland Hills. Views from roads and settlement on the south-western edge of the Mayfield/Tranent Ridge focus on Halkerston Hill and the backdrop of the Moorfoot Hills. Popular walking routes in the Pentlands also offer views across this landscape to the Moorfoot Hills.	This typology would significantly impact on views from roads and settlement in the Moorland Fringes LCA and would affect views from elevated footpaths in the Moorfoot and Pentland Hills and from the Mayfield/Tranent Ridge LCA. Turbines of this size would also significantly detract from spectacular views over Midlothian and to the Pentland Hills from the B7007. Turbines sited close to the Moorfoot Hills and the Pentland Hills would have a particularly significant effect on dramatic views to these hills.	***High***	This typology would significantly impact on views from roads and settlement in the Moorland Fringes LCA and would affect views from elevated footpaths in the Moorfoot and Pentland Hills and from the Mayfield/Tranent Ridge LCA. Turbines of this size would also detract from spectacular views over Midlothian and to the Pentland Hills from the B7007, although turbines towards the lower height band of this typology would be likely to have a reduced effect. Turbines sited close to the Moorfoot Hills and the Pentland Hills would have a particularly significant effect on dramatic views to these hills.	***High***	This typology would impact on views from roads and settlement in the Moorland Fringes LCA although turbines of this size would have a reduced effect on views from elevated footpaths in the Moorfoot and Pentland Hills and from the Mayfield/Tranent Ridge LCA. Turbines of this size would still interrupt spectacular views over Midlothian and to the Pentland Hills from the B7007 but turbines towards the lower height band of this typology would have significantly reduced effect particularly if sited in less open areas where woodland and landform would provide a degree of containment. Turbines sited close to the Pentland Hills would have a significant effect on dramatic views.	***High-medium***
Cumulative Effects	The existing windfarm at Bowbeat located on the adjacent Moorfoot Hills is a prominent feature visible from much of this generally open landscape. The Carcant wind farm is not visible.	Large turbines sited close to the Moorfoot Hills would be likely to have significant cumulative effects with the Bowbeat wind farm although there is scope to locate turbines of this size elsewhere in this landscape to minimise these effects.	***Medium***	Large turbines sited close to the Moorfoot Hills would be likely to have significant cumulative effects with the Bowbeat wind farm although there is scope to locate turbines of this size elsewhere in this landscape to minimise these effects.	***Medium***	This typology, and particularly turbines towards the lower height band, would have fewer cumulative effects with existing wind farm development due to their greater ability to be contained to some degree by woodland and landform.	***Medium-low***

Lowland Moorland LCA

Lowland Moorland Landscape Character Area – Detailed sensitivity assessment

Topic	Summary description	Assessment of Typology A: Turbines over 80m high	Sensitivity rating	Assessment of Typology B: Turbines 50-80m high	Sensitivity rating	Assessment of Typology C: Turbines 30-50m high	Sensitivity rating
Scale	This landscape forms a broad swathe of open and expansive moorland which is largely unsettled and has very few smaller scale features.	The expansive scale of this landscape reduces sensitivity to wind turbine development.	***Low***	The expansive scale of this landscape reduces sensitivity to wind turbine development.	***Low***	The expansive scale of this landscape reduces sensitivity to wind turbine development.	***Low***
Landform	Broad expanses of near-flat or gently domed areas of moorland located at the foot of the Moorfoot and Pentland Hills. These moorlands gradually merge with the more varied rolling terrain of surrounding Moorland Fringes.	All development typologies could relate to the subtle and relatively simple landform of this landscape.	***Low***	All development typologies could relate to the subtle and relatively simple landform of this landscape.	***Low***	All development typologies could relate to the subtle and relatively simple landform of this landscape.	***Low***
Landscape pattern	Large expanses of open and distinctly darker grass and heather moorland lie at the core of the Auchencorth moorlands while the area lying at the base of the Moorfoot Hills include more open grass dominated moorland as well as some large fenced semi-improved pastures and angular coniferous shelterbelts. The generally limited land cover components of this landscape result in an overall simple pattern.	The simple landscape pattern of much of this landscape reduces sensitivity although areas with a richer diversity of heather cover would be more sensitive.	***Medium***	The simple landscape pattern of much of this landscape reduces sensitivity although areas with a richer diversity of heather cover would be more sensitive.	***Medium***	The simple landscape pattern of much of this landscape reduces sensitivity although areas with a richer diversity of heather cover would be more sensitive.	***Medium***
Built Environment	This landscape is largely unsettled with just a single farm lying at the base of the Moorfoot Hills. Derelict industrial buildings and spoil heaps also occur in this area while peat extraction works are evident within part of the Auchencorth moorlands. These features form very small point features in the expansive context of these moorlands	The absence of settlement within this landscape reduces sensitivity	***Low***	The absence of settlement within this landscape reduces sensitivity	***Low***	The absence of settlement within this landscape reduces sensitivity	***Low***
Perceptual Qualities	These moorlands can be perceived as being semi-natural landscapes and this perception is more pronounced because of their contrast with adjacent well-settled and diverse lowland landscapes. While peat extraction works and poorly designed shelterbelts diminish the sense of naturalness in some areas these moorlands can feel secluded and have a degree of wildness.	This typology would significantly affect the perceived naturalness and seclusion associated with these moorlands and would adversely affect the sense of openness which contrasts with more settled lowland landscapes nearby.	***High-medium***	This typology would significantly affect the perceived naturalness and seclusion associated with these moorlands and would adversely affect the sense of openness which contrasts with more settled lowland landscapes nearby.	***High-medium***	This typology would significantly affect the perceived naturalness and seclusion associated with these moorlands and would adversely affect the sense of openness which contrasts with more settled lowland landscapes nearby.	***High-medium***
Landscape Context	These moorlands lie close to the long ridges of the Pentland and Moorfoot Hills. They are important in providing a simple open foreground to the distinctive northern scarp of the Moorfoot Hills and the iconic profile of the northern Pentland Hills. These expansive, open and unsettled moorlands are unusual in the context of well-settled landscapes and urban areas to the north. The designed landscapes of Penicuik House and Middleton Hall lie close to these areas of moorland as does the landmark feature of Gladhouse Reservoir.	Turbines of this size would appear very large in relation to the relief of the Moorfoot scarp and Pentland Hills. They would significantly detract from the dramatic juxtaposition that occurs between these flat open moorlands and the scarp of the Moorfoot Hills and the steep-sided and shapely northern-most peaks of the Pentland Hills. Additional sensitivities are associated with the deeply incised river valley of the North Esk, the landmark feature of Gladshouse Reservoir and with nearby designed landscapes, particularly the	***High***	Turbines of this size would appear very large in relation to the relief of the Moorfoot scarp and Pentland Hills. They would significantly detract from the dramatic juxtaposition that occurs between these flat open moorlands and the scarp of the Moorfoot Hills and the steep-sided and shapely northern-most peaks of the Pentland Hills. Additional sensitivities are associated with the deeply incised river valley of the North Esk, the landmark feature of Gladshouse Reservoir and with nearby designed landscapes, particularly the	***High***	While turbines of this size would appear less dominant in relation to the hills, they would still significantly detract from the dramatic juxtaposition that occurs between these flat open moorlands and the steep scarp of the Moorfoot Hills and the Pentland Hills. There would be increased scope for the smaller turbines of this typology to be sited to avoid intrusion on adjacent highly sensitive landscape features.	***High***

		notable landscape associated with Penicuik House.		notable landscape associated with Penicuik House.			
Visual Amenity	A minor road traverses Auchencorth Moss and allows extensive views over the deeply incised upper reaches of the North Esk to the Pentland and Moorfoot Hills. The moorlands at the base of the Moorfoot Hills provide the foreground to extensive views over Midlothian, Edinburgh and the Firth of Forth from the B7007(and National Cycle Route 1). The A701 and A702 are aligned on the fringes of Auchencorth Moss and the open character of this moorland allows long views to the Pentland and Moorfoot Hills. Moorland at the base of the Moorfoots forms the foreground to views from the A7. Views are dramatic as the foreground of flat moorland accentuates the vertical scale of the scarp of the Moorfoot Hills and the distinctive northern peaks of the Pentland Hills. Walking routes in the Pentlands Hills and Moorfoot Hills offer panoramic views over these open moorland which provide a striking contrast with more settled and urban areas to the north. These moorlands are highly visible from the settled but fairly open Moorland Fringes LCA and from villages such as Leadburn and Howgate.	This typology would significantly intrude on dramatic views to the Moorfoot and Pentland Hills from settlements, major roads, cycle routes and from well-used footpaths in the surrounding fairly open Moorland Fringes, Moorfoot and Pentland Hills.	***High***	This typology would significantly intrude on dramatic views to the Moorfoot and Pentland Hills from settlements, major roads, cycle routes and from well-used footpaths in the surrounding fairly open Moorland Fringes, Moorfoot and Pentland Hills.	***High***	Even these smaller turbines would significantly intrude on dramatic views to the Moorfoot and Pentland Hills from key views.	***High***
Cumulative Effects	The Bowbeat windfarm is located in the highest south-western part of the Moorfoot Hills and is visible from both these areas of moorland and from the Moorland Fringes LCA. The Carcant wind farm is also located in the Moorfoot Hills but is largely screened from Midlothian. Six small wind turbines sited at Falahill are prominent on the skyline of the lower north-eastern extent of the Moorfoot Hills near the A7.	Significant cumulative impacts are likely to occur from roads and settlement in the Moorland Fringes LCA and in longer views from other parts of Midlothian if turbines were located in the western part of the moorlands lying at the foot of the Moorfoot Hills. The distance of the Bowbeat wind farm from the Auchencorth moorlands would reduce cumulative effects.	***Medium***	Significant cumulative impacts are likely to occur from roads and settlement in the Moorland Fringes LCA and in longer views from other parts of Midlothian if turbines were located in the western part of the moorlands lying at the foot of the Moorfoot Hills. The distance of the Bowbeat wind farm from the Auchencorth moorlands would reduce cumulative effects.	***Medium***	These smaller turbines, and particularly turbines towards the lower height band of this typology, would be less prominent in long views from the Moorland Fringes LCA thus reducing cumulative impacts with the Bowbeat wind farm if sited on the moorlands lying at the base of the Moorfoot Hills.	***Medium-low***

Plateau Grassland LCA

Plateau Grassland Landscape Character Area - Detailed Sensitivity Assessment Table

Topic	Summary description	Assessment of Typology A: Turbines over 80m high	Sensitivity rating	Assessment of Typology B: Turbines 50-80m high	Sensitivity rating	Assessment of Typology C: Turbines 30-50m high	Sensitivity rating
Scale	The area of Plateau Grassland within Midlothian comprises the open basin of Fala Moor and the hill slopes immediately surrounding it. Coniferous shelterbelts and woodlands on farmed hill slopes provide a limited degree of enclosure and scale is further reduced within the narrow valley of the Linn Dean Water which cuts into the steep scarp of the Lammermuir Hills.	Turbines of this size could relate to the large scale of Fala Moor although the narrow valley of Linn Dean Water would be more sensitive.	***Medium***	Turbines of this size could relate to the large scale of Fala Moor although the narrow valley of Linn Dean Water would be more sensitive.	***Medium***	Turbines of this size could relate to the large scale of Fala Moor although the narrow valley of Linn Dean Water would be more sensitive.	***Medium***
Landform	The simple, shallow basin of Fala Moor is surrounded by gently graded hill slopes. Landform is more complex where the steep northern slopes of Soutra Hill are cut by the deeply incised valley of the Linn Dean Water.	This typology could relate to the relatively simple landform of much of this landscape. The steep slopes of Soutra Hill and incised valley of Linn Dean Water would be sensitive (and involve significant ground modification to accommodate access tracks and turbine bases)	***Medium-low***	This typology could relate to the relatively simple landform of much of this landscape. The steep slopes of Soutra Hill and incised valley of Linn Dean Water would be sensitive (and involve significant ground modification to accommodate access tracks and turbine bases)	***Medium-low***	This typology could relate to the relatively simple landform of much of this landscape. The steep slopes of Soutra Hill and incised valley of Linn Dean Water would be sensitive.	***High***
Landscape pattern	The diverse heather and blanket bog of Fala Moor contrasts with the simple pattern of semi-improved grassland and angular pattern of coniferous shelterbelts and woodlands on surrounding farmed hill slopes.	This typology would detract from the rich and unusual land cover of Fala Moor although more uniform pasture and the broad pattern of coniferous woodlands would be less sensitive.	***Medium***	This typology would detract from the rich and unusual land cover of Fala Moor although more uniform pasture and the broad pattern of coniferous woodlands would be less sensitive.	***Medium***	There would be increased scope to site these smaller turbines to avoid detracting from the rich and unusual land cover of Fala Moor.	***Med-low***
Built Environment	This is a very sparsely settled area with isolated farms located on lower hill slopes. The A68 cuts through this area and is a major transport route. High voltage transmission lines and existing wind farm developments are located in this landscape character area but outside Midlothian.	The sparsely settled nature of this landscape reduces sensitivity. Turbines sited close to transmission lines would increase clutter and fragmentation of this landscape. Cumulative effects with operational and consented wind farms are considered separately below.	***Medium-low***	The sparsely settled nature of this landscape reduces sensitivity. Turbines sited close to transmission lines would increase clutter and fragmentation of this landscape. Cumulative effects with operational and consented wind farms are considered separately below.	***Medium-low***	The sparsely settled nature of this landscape reduces sensitivity. There would be increased scope to site this typology to avoid exacerbating clutter with transmission lines. Cumulative effects with operational and consented wind farms are considered separately below.	***Low***
Perceptual Qualities	A sense of naturalness and seclusion is associated with Fala Moor. The presence of the busy A68, transmission lines and operational wind farm development diminishes these perceptual qualities on the eastern and southern fringes of the moor.	Turbines of this size would significantly affect the sense of naturalness and seclusion associated with Fala Moor whether sited on the Moor itself or on surrounding hill slopes.	***High***	Turbines of this size would significantly affect the sense of naturalness and seclusion associated with Fala Moor whether sited on the Moor itself or on surrounding hill slopes.	***High***	There may be scope to site turbines towards the lower height band of this typology on farmed hill slopes to limit intrusion on Fala Moor	***High-medium***
Landscape Context	This landscape forms a gradual transition between the more settled lowlands of the North Lammermuir Platform LCA and the uplands. The part of the Plateau Grassland landscape character area which lies within Midlothian forms the western extremity of the Lammermuir Hills and is less dramatic than the steep northern scarp of the Lammermuir Hills in East Lothian.	This typology would impact on the more diverse character and smaller scale of the adjacent North Lammermuir Platform LCA but would have less of an effect on the more dramatic steep scarp of the Lammermuir Hills.	***High-medium***	This typology would impact on the more diverse character and smaller scale of the adjacent North Lammermuir Platform LCA but would have less of an effect on the more dramatic steep scarp of the Lammermuir Hills.	***High-medium***	This typology would be likely to have less of an impact on the more settled and smaller scale North Lammermuir Platform LCA.	***Medium***

Visual Amenity	The A68 offers extensive views northwards over the Lothians on the descent down the steep slopes of Soutra Hill. While Fala Moor is not seen in views to the south from the A68 the hill slopes on its northern edge and on the north face of Soutra Hill are intermittently visible. The B6368 has elevated views over Fala Moor near the historic chapel of Soutra Isle. A footpath traverses Fala Moor and offers both close views of the moor and extensive views north over the Lothian plain.	This typology would significantly intrude on views from the A68 if sited on the steep northern slopes of Soutra Hill. Turbines of this size would also interrupt striking views over Fala Moor from the B6368 and would be a dominant feature seen from the footpath across the moor. They would also be prominent in views from roads such as the B6458 and from more elevated and open settlement in Midlothian.	***High***	This typology would significantly intrude on views from the A68 if sited on the steep northern slopes of Soutra Hill. Turbines of this size would also interrupt striking views over Fala Moor from the B6368 and would be a dominant feature seen from the footpath across the moor. They would also be prominent in views from roads such as the B6458 and from more elevated and open settlement in Midlothian.	***High***	Turbines of this size, and particularly those towards the lower height band of this typology, could be sited to minimise impacts on key views from roads and settlement within Midlothian. They would also have a less dominant effect on views from Fala Moor.	***High-medium***
Cumulative Effects	The operational Dun Law wind farm is located in this LCA (but outside Midlothian) and is set within the core of the upland plateau which generally minimises intrusion on the settled lowlands of Midlothian. The landscape and visual effects of this wind farm are also reduced because of its association with the lower and more uniform upland plateau which lies between the higher dramatic scarps of the Moorfoot and Lammermuir Hills. The Toddleburn wind farm sited in Scottish Borders is screened by higher ridges lying to the south of Fala Moor which restricts visibility from Midlothian. The operational Bowbeat wind farm is seen together with the Dun Law wind farm in long views across open and elevated parts of Midlothian while there is very limited visibility of the operational Carcant wind farm. Consented wind farms at Pogbie and Keith Hill will contrast with the established association of larger wind turbines with the undulating plateau lying at the core of the Plateau Grasslands as they will be sited on steeper slopes on the northern edge of this landscape character area.	Operational wind turbines are already visible in relatively close proximity from Fala Moor. Additional development of large turbines around the periphery of the moor would result in significant cumulative effects on views and its special character. Turbines sited on the northern slopes of Soutra Hill would be seen in conjunction with the Dun Law wind farm and would conflict with the siting and design of this operational development by appearing to 'spill down the hill' thus increasing intrusion and visual confusion. Turbines of this size sited on Fala Moor and on hill slopes to the south-west and on the northern edge of the moor would appear very large in relation to the Dun Law wind farm turbines which are set back into the uplands and partially contained thus limiting intrusion on the more settled lowlands of Midlothian. Significant cumulative effects would be likely to arise due to the different design rationale adopted. Significant cumulative effects would be likely to arise due to the different design rationale adopted.	***High***	Operational wind turbines are already visible in relatively close proximity from Fala Moor. Turbines of this size located on the periphery of the moor would result in significant cumulative effects on views and on its special character. Turbines sited on the northern slopes of Soutra Hill would be seen in conjunction with the Dun Law wind farm and would conflict with the siting and design of this operational development by appearing to 'spill down the hill' thus increasing intrusion and visual confusion. This typology would also appear large in relation to the operational Dun Law turbines if sited on Fala Moor and on hill slopes to the south-west and on the northern edge of the moor as they would be closer to more settled areas in Midlothian. Significant cumulative effects would be likely to arise due to the different design rationale adopted.	***High***	Turbines of this size would also have cumulative impacts on Fala Moor if sited on or close-by. Single and small groups <3 turbines towards the lower height band of this typology would minimise cumulative effects if sited on south-western slopes above the moor where inter-visibility with the operational Dun Law wind farm would be reduced from key viewpoints.	***High-medium***

Moorfoot Hills LCA

Moorfoot Hills Landscape Character Area – Detailed sensitivity assessment

Topic	Summary description	Assessment of Typology A: Turbines over 80m high	Sensitivity rating	Assessment of Typology B: Turbines 50-80m high	Sensitivity rating	Assessment of Typology C: Turbines 30-50m high	Sensitivity rating
Scale	A medium to large scale, open upland landscape with hills generally over 400 metres, cumulating in the summits of Blackhope Scar (651m) and Dundreich (622m) which are distinct high points on the Moorfoot ridge when viewed from Midlothian. Scale is greatly reduced within the narrow valleys which cut into the tighter pattern of smaller rounded hills found on the eastern and western fringes of this area. The Moorfoots are not very high hills but can appear so from the adjacent lowlands of Midlothian where they form a distinct scarp seen above low lying moorland.	This typology would dominate the narrow South Esk valley and the relatively low relief of the Moorfoot scarp if sited on the steep slopes and top of the lower hills lying to the north-east within Midlothian.	***High***	This typology would be less dominant in relation to the higher hills lying in the south-west but turbines of this size would still overwhelm the scale of the narrow incised South Esk valley.	***High-medium***	Turbines of this size would be less dominant in relation to the vertical scale of the Moorfoots scarp. The narrow and deeply incised South Esk valley remains sensitive however.	***Medium***
Landform	The hills form a pronounced steep, north-west facing scarp within Midlothian. This scarp is relatively even to the north-east becoming more dramatic to the south-west where the hills increase in height and are cut by the steep-sided valley of the South Esk and where rounded spurs, folds and gullies create a distinctive sculptural landform. Blackhope Scar and Dundreich have broader plateau summits.	This typology would significantly detract from the dramatic steep rugged scarp of the Moorfoot Hills and from the complex landform of steep-sided folded hills which contain the South Esk valley. Turbines of this size could relate better to broader summit plateaux which lie outside Midlothian.	***High***	This typology would significantly detract from the dramatic steep rugged scarp of the Moorfoot Hills and from the complex landform of steep-sided folded hills which contain the South Esk valley. Turbines of this size could relate better to broader summit plateaux which lie outside Midlothian.	***High***	Even these smaller turbines would detract from the prominent Moorfoot Hills scarp if sited on steep slopes or at the top of the scarp. The complex landform within the South Esk valley would also be sensitive to any turbine development.	***High***
Landscape pattern	The Moorfoot Hills have a consistent land cover of semi-improved pasture and grass and heather moorland. Small, geometric coniferous shelterbelts form prominent features on the northern scarp of the hills above Gladhouse Reservoir.	The simple land cover pattern of this upland landscape reduces sensitivity to this typology.	***Low***	The simple land cover pattern of this upland landscape reduces sensitivity to this typology.	***Low***	The simple land cover pattern of this upland landscape reduces sensitivity to this typology.	***Low***
Built Environment	The hills are sparsely settled with only a few isolated buildings located within the lower glen of the South Esk. The B7007 and occasional tracks are aligned through these hills. Existing wind farm development is a feature of this landscape (see cumulative effects).	Sensitivity is reduced in relation to the effect on the character, scale and setting of settlement. Cumulative effects with operational and consented wind farms are considered separately below.	***Low***	Sensitivity is reduced in relation to the effect on the character, scale and setting of settlement. Cumulative effects with operational and consented wind farms are considered separately below.	***Low***	Sensitivity is reduced in relation to the effect on the character, scale and setting of settlement. Cumulative effects with operational and consented wind farms are considered separately below.	***Low***
Perceptual Qualities	The relative absence of man-made elements and extensive grazing in this character area gives a perception of naturalness, although this is diminished to the south-west where operational wind farm development sited in Scottish Borders is visible. The South Esk Glen is relatively inaccessible and has a distinct sense of seclusion.	This typology would further diminish the sense of naturalness and seclusion that can be experienced in this landscape.	***Medium***	This typology would further diminish the sense of naturalness and seclusion that can be experienced in this landscape.	***Medium***	This typology may further diminish the sense of naturalness and seclusion that can be experienced in this landscape although turbines towards the lower height band of this typology are less likely to be perceived as ‘industrial’ features.	***Medium-low***

Landscape Context	The Moorfoot Hills, together with the Pentland Hills are strong landscape features providing clear delineation of Midlothian's boundaries and are important in providing a sense of place. Both hill ranges also provide a contrasting backdrop of uplands to the foothills and lowlands of Midlothian, making a strong contribution to the landscape diversity of the region.	Turbines of this size located on the scarp top or on steep north-west facing slopes would dominate the setting and scale of the scenically diverse Gladhouse Reservoir and its immediate surrounds. The dramatic juxtaposition between the low-lying Lowland Moorland and Moorland Fringes landscape character areas and the Moorfoot Hills scarp would also be diminished.	***High***	Turbines of this size located on the scarp top or on steep north-west facing slopes would dominate the setting and scale of the scenically diverse Gladhouse Reservoir and its immediate surrounds. The dramatic juxtaposition between the low-lying Lowland Moorland and Moorland Fringes landscape character areas and the Moorfoot Hills scarp would also be diminished.	***High***	Even these smaller turbines would diminish the scenic juxtaposition of low-lying moorland and the Moorfoots scarp. They could also adversely affect the setting to Gladhouse Reservoir although turbines towards the lower height band of this typology would have less of an impact on the landscape scale of the more settled Moorland Fringes landscape character area.	***High-medium***
Visual Amenity	This landscape is sparsely settled. The B7007 forms part of National Cycle Route 1 and there are promoted walking routes to the hill of Dundriech. The scarp of the Moorfoot Hills is a key focus from many areas in Midlothian with the B7007 and minor roads around Gladhouse Reservoir providing close views to the hills and to the deeply incised cleft of the South Esk Glen. The high point of Dundreich and Blackhope Scar tends to draws the eye in the context of the whole stretch of the Moorfoot Hills ridge seen from more open and elevated parts of Midlothian.	Although this is a sparsely settled landscape, the prominence of the Moorfoot scarp in close views from the B7007, A7 and from Gladhouse Reservoir and its surrounds increases visual sensitivity. Turbines of this size sited on steep slopes and perched on the top of the scarp would be dominant features in these views.	***High***	Although this is a sparsely settled landscape, the prominence of the Moorfoot scarp in close views from the B7007, A7 and from Gladhouse Reservoir and its surrounds increases visual sensitivity. Turbines of this size sited on steep slopes and perched on the top of the scarp would be dominant features in these views.	***High***	Turbines of this size would be less dominant but would still form prominent features if sited on steep slopes and on the top edge of the Moorfoot scarp.	***High-medium***
Cumulative Effects	The operational Bowbeat wind farm, although a prominent feature in views from parts of Midlothian, is clearly associated with the upland 'interior' rather than the edge of the more sensitive scarp of the Moorfoot Hills. The Carcant wind farm located in Scottish Borders is not visible from roads and settlement within Midlothian. Operational small turbines at Falahill Farm in Scottish Borders are visible on the skyline of lower hills at the north-eastern end of the Moorfoot scarp.	Additional large turbines visible on the skyline above the Moorfoot Hill scarp would further diminish the scenic qualities of this landscape which is principally appreciated from Midlothian. Additional wind farm development in the south-western part of this landscape in Midlothian would exacerbate the existing intrusive effect of the Bowbeat wind farm on the setting of Gladhouse Reservoir and on the dramatically incised South Esk Glen. Development sited so visible on the presently open skyline of the Moorfoot scarp to the north-east of Bowbeat would increase the extent of turbines seen on the long backdrop of the Lammermuir and Moorfoot Hills from the Lothians and would result in sequential effects from key roads and recreational routes.	***High***	Additional large turbines visible on the skyline above the Moorfoot Hill scarp would further diminish the scenic qualities of this landscape which is principally appreciated from Midlothian. Additional wind farm development in the south-western part of this landscape in Midlothian would exacerbate the existing intrusive effect of the Bowbeat wind farm on the setting of Gladhouse Reservoir and on the dramatically incised South Esk Glen. Development sited so visible on the presently open skyline of the Moorfoot scarp to the north-east of the Bowbeat wind farm would increase the extent of turbines seen on the long backdrop of the Lammermuir and Moorfoot Hills from the Lothians and would result in sequential effects from key roads and recreational routes.	***High***	Even smaller turbines visible on the skyline above the Moorfoot Hill scarp would further diminish the scenic qualities of this landscape. Additional wind farm development in the south-western part of this landscape in Midlothian would exacerbate the existing intrusive effect of the Bowbeat wind farm on the setting of Gladhouse Reservoir and on the dramatically incised South Esk Glen with this typology being discordant in size with existing turbines. Development sited so visible on the presently open skyline of the Moorfoot scarp to the north-east of the Bowbeat wind farm would increase the extent of turbines seen on the long backdrop of the Lammermuir and Moorfoot Hills from the Lothians and would result in sequential effects from key roads and recreational routes. Introducing this smaller size of turbine would additionally increase potential for visual clutter and confusion of disparate turbine forms- this already evident with the operational turbines at Falahill seen from the A7.	***High-medium***

The Pentland Hills LCA

Pentland Hills Landscape Character Area – Detailed sensitivity assessment

Topic	Summary description	Assessment of Typology A: Turbines over 80m high	Sensitivity rating	Assessment of Typology B: Turbines 50-80m high	Sensitivity rating	Assessment of Typology C: Turbines 30-50m high	Sensitivity rating
Scale	A medium to large scale open upland landscape with hills rising to just under 580m at the highest summit. The Pentlands are not high hills but their isolated location within the expansive Lothian plain increases the perception of height; this also accentuated by the steep slopes of the northern hills. Individual peaks have steep slopes and confined summits although some broader areas of more undulating plateau occur in the north-west. Scale is greatly reduced within the narrow valleys which dissect the hills	Sensitivity in relation to scale is reduced where the landscape forms a broader upland plateau away from more confined peaks (which physically limits scope for multiple turbines). This typology would dominate the scale of narrow valleys within the hills.	***High-medium***	Sensitivity in relation to scale is reduced where the landscape forms a broader upland plateau away from more confined peaks (which physically limits scope for multiple turbines). This typology would dominate the scale of narrow valleys within the hills.	***High-medium***	Single and small groups of this typology could relate to the scale of lower hill slopes although narrow valleys remain sensitive.	***Medium***
Landform	A hills form two parallel ridge lines separated by a deep internal valley containing the Glencorse and Loganlea reservoirs. More pronounced steep-sided folded slopes and shapely peaks occur within Midlothian, these gradually merging with more rounded indistinct summits to the south-west in neighbouring West Lothian and Scottish Borders. The hill summits within Midlothian have easily recognisable profiles and form key foci, for example the conical form of Scald Law. The landform is particularly complex and rolling at the foot of the hills at the transition with the North Esk valley.	This typology would significantly detract from the pronounced form of distinctive peaks which occur in Midlothian. It would also conflict with particularly complex rolling landform at foot of hills at transition with North Esk Valley.	***High***	This typology would significantly detract from the pronounced form of distinctive peaks which occur in Midlothian. It would also conflict with particularly complex rolling landform at foot of hills at transition with North Esk Valley.	***High***	Turbines towards the lower height band of this typology could have less of a detractive effect on pronounced peaks if sited on broader and gentler lower hill slopes. More rolling complex landform at the transition with the north Esk valley remains sensitive.	***High-medium***
Landscape pattern	The hills are predominantly covered with rough grassland with some patchy heather and small mixed woodlands. Small fields enclosed by stone walls and hedgerows occur on lower hill slopes and within valleys.	The simple land cover pattern on upper slopes would be less sensitive although this typology could affect more strongly patterned small enclosed fields and woodlands on lower slopes.	***Medium-low***	The simple land cover pattern on upper slopes would be less sensitive although this typology could affect more strongly patterned small enclosed fields and woodlands on lower slopes.	***Medium-low***	This typology, which is more likely to comprise single or very small groups of turbines, could be sited to have less of an effect on more strongly patterned enclosed farmland on lower hill slopes.	***Low***
Built Environment	Isolated farmsteads and some water authority housing and reservoirs are set within the valley of the Logan Burn. Small clustered settlements occur along the A702 at the foot of the south-east facing hill slopes. Settlement is more sparse at the foot of the north-west facing hill slopes within West Lothian and Edinburgh. There are no public through roads within the hills although the A702 and A70 are aligned either side of the hills. An MOD firing range, golf course and ski facility are prominent features on the north-east facing hill slopes close to Edinburgh.	While the sparsely settled nature of this landscape reduces sensitivity, turbines of this size would dominate small buildings on the fringes of these hills if sited nearby. This typology would also significantly increase built infrastructure in this landscape.	***Medium***	While the sparsely settled nature of this landscape reduces sensitivity, turbines of this size would dominate small buildings on the fringes of these hills if sited nearby. They would also significantly increase built infrastructure in this landscape.	***Medium***	This typology would dominate small settlements on the fringes of these hills if located nearby although there is scope to site turbines of this size to avoid unfavourable comparisons of scale and character with domestic building. Turbines towards the lower height band of this typology would have less of an effect in cumulatively increasing man-made infrastructure	***Medium-low***

Perceptual Qualities	The upland character and relative absence of man-made elements in these hills gives a strong perception of naturalness. The hills within Midlothian are popular with walkers with ridge walks particularly well-used in the north-east. The hills to the south-west are generally less frequented and can feel more secluded.	All development typologies would significantly affect the sense of naturalness and respite these hills provide to nearby urban areas.	***High***	All development typologies would significantly affect the sense of naturalness and respite these hills provide to nearby urban areas.	***High***	All development typologies would affect the sense of naturalness and respite the hills provide to nearby urban areas.	***High***
Landscape Context	The Pentland Hills are important in providing an iconic backdrop to the lowlands of Midlothian and West Lothian where their simple yet dramatic upland character contrasts with the more complex settled lowland landscapes. They also form a key element in the landscape setting of Edinburgh acting as a foil to the visual complexity of dense urban development and a strong containing edge. The Lowland Moorland of Auchencorth Moor provides a particularly striking contrast with the steep rugged backdrop of the hills.	This typology would diminish the contrast and scenic juxtaposition of these rugged largely undeveloped hills with the more settled lowlands of Midlothian and Edinburgh.	***High***	This typology would diminish the contrast and scenic juxtaposition of these rugged largely undeveloped hills with the more settled lowlands of Midlothian and Edinburgh.	***High***	This typology would affect the appreciation of vertical scale and drama of the hills and detract from the contrast they provide with the more settled lowlands of Midlothian and Edinburgh.	***High-medium***
Visual Amenity	Although sparsely settled, these hills are popular for recreation with many well-used ridge and valley footpaths. Panoramic views from hill summits range over the Lothians, Edinburgh and the Firth of Forth. The A702 is aligned at the transition with the North Esk Valley landscape character area and offers continuous and close views of the hills. The Pentland Hills occupy a prominent position within the lowlands of the Lothians and they are a consistence and distinctive feature in views from these densely populated areas. The profile of the hills forms an important backdrop to many views from the Lothians and Edinburgh with the more distinctive peaks to the north-east particularly drawing the eye. The hills feature in views on the major approaches to Edinburgh from the A701, A68 and A7.	The popularity of walking routes in the Pentland Hills increases visual sensitivity as turbines would be seen at close quarters. This typology would also be prominent across wide swathes of Midlothian, Edinburgh and West Lothian where it would interrupt the dramatic skyline or largely uncluttered hill slopes which form a backdrop to many key views.	***High***	The popularity of walking routes in the Pentland Hills increases visual sensitivity as turbines would be seen at close quarters. This typology would also be prominent across wide swathes of Midlothian, Edinburgh and West Lothian where it would interrupt the dramatic skyline or largely uncluttered hill slopes which form a backdrop to many key views.	***High***	The popularity of walking routes in the Pentland Hills increases visual sensitivity as turbines would be seen at close quarters. This typology would also be prominent across wide swathes of Midlothian, Edinburgh and West Lothian where it would interrupt the dramatic skyline or largely uncluttered hill slopes which form a backdrop to many key views.	***High***
Cumulative Effects	No operational or consented wind turbines are located in this landscape character area. The operational wind farms of Pates Hill, Tormywheel, Black Law and Muirhall are visible from summits and north-west facing hill slopes. Bowbeat and Dun Law wind farms located on the Moorfoot and Lammermuir Hills in Scottish Borders are visible from south-east facing slopes and hill summits.	Operational wind farms are visible at distances >16km from the Pentland Hills thus reducing landscape and visual impacts. In strategic terms, if this typology were to be sited in this landscape, it would result in wind farm development being present on all the hill ranges within the Lothians. Cumulative effects would occur from roads and settlement within more open areas in Midlothian.	***Medium***	Operational wind farms are visible at distances >16km from the Pentland Hills thus reducing landscape and visual impacts. In strategic terms, if this typology were to be sited in this landscape, it would result in wind farm development being present on all the hill ranges within the Lothians. Cumulative effects would occur from roads and settlement within more open areas in Midlothian.	***Medium***	Operational wind farms are visible at distances >16km from the Pentland Hills thus reducing landscape and visual impacts. There would be scope for the smaller turbines of this typology to be sited so less prominent thus reducing potential cumulative effects.	***Medium-low***