

Landscape Wind Energy Capacity Study for Fermanagh and Omagh



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CONTENTS

	Page No		
EXECUTIVE SUMMARY			
1.0 INTRODUCTION	1		
1.1 Background	1		
1.2 Consultancy Appointment	1		
1.3 National and Local Policy	1		
1.4 Landscape Capacity and Cumulative Impacts	2		
2.0 CUMULATIVE IMPACT AND CAPACITY ASSESSMENT METHOD	3		
2.1 Purpose of Assessment	3		
2.2 Study Stages	3		
2.3 Scope of Assessment	4		
2.3.1 Area Covered	4		
2.3.2 Wind Energy Development Types	4		
2.3.3 Use of Geographical Information Systems	4		
2.4 Landscape and Visual Baseline	4		
2.5 Method for Determining Landscape Sensitivity and Capacity	5		
2.6 Defining Landscape Change and Cumulative Capacity	5		
2.6.1 Cumulative Change	5		
2.6.2 Determining Acceptable Levels of Change	6		
2.7 How to Use the Assessment Findings and Guidance	7		
2.8 Detailed Guidance	7		
2.9 Potential Opportunities and Constraints	7		
3.0 LANDSCAPE BASELINE	9		
3.1 Study Area	9		
3.2 Baseline Landscape Character Assessment	9		
3.2.1 Landscape Context	9		
3.2.2 Landscape Character	9		
		3.3 Landscape Designations	10
		3.3.1 National Designations	10
		3.3.2 Local Landscape Designations	10
		3.3.3 Registered Parks, Gardens and Demesnes	11
		3.4 Other Designations	11
		3.4.1 Local Landscape Policy Areas	11
		3.4.2 Country Park/ Forest Parks	11
		3.4.3 Historic and Cultural Designations	11
		3.4.4 Nature Conservation Designations	11
		3.5 Marble Arch Caves UNESCO Global Geopark	11
		4.0 VISUAL BASELINE	13
		4.1 Visual Receptors	13
		4.2 Visibility Analysis	13
		4.2.1 Settlements	13
		4.2.2 Roads	13
		4.2.3 Routes	13
		4.2.4 Viewpoints	14
		4.2.5 Analysis of Visibility	14
		5.0 WIND TURBINES IN THE STUDY AREA	15
		5.1 Turbine Numbers and Distribution	15
		5.2.1 Operating and Consented Wind Turbines	15
		5.2.2 Proposed Windfarms	15
		5.3 Landscape Character of Turbine Locations	16
		6.0 ASSESSMENT OF LANDSCAPE CAPACITY AND CUMULATIVE CHANGE	17
		6.1 Assessment Purpose and Process	17
		6.2 Guidance	17
		6.2.1 Turbine Size	18

6.2.2	Turbine Group Size	18	6.4.4	Areas with Very Limited or No Underlying Capacity	76
6.2.3	Separation between Turbine Groups	18	6.4.5	Areas of Significant Cumulative Development	77
6.2.4	Windfarm Extensions	19	6.5	Capacity for Further Development	81
6.2.5	Re-powering of Existing Windfarms	19	6.5.1	Areas with Most Remaining Capacity	81
6.2.6	Associated Windfarm Infrastructure	19	6.5.2	Areas with Limited Remaining Capacity	81
6.2.7	Other Factors Which Influence Guidance	19	6.5.3	Other Landscape Areas and Urban Areas	81
1.	FERMANAGH CAVELAND	21	6.6	Existing Developments: Extensions and Repowering	81
2.	LOUGH ERNE LAKELAND	29	6.7	Guidance for Single/Small Turbine Developments	82
3.	CLOGHER VALLEY AND SLIEVE BEAGH	39	REFERENCES		85
4.	OMAGH BASIN	45	FIGURES		
5.	WEST TYRONE HILLS AND VALLEYS	53	2.1	Cumulative Impact and Landscape Capacity Methodology Flowchart	
6.	SPERRINS	59	3.1	Study Area	
7.	CARRICKMORE PLATEAU AND POMEROY HILLS	65	3.2	Topography	
6.3	Landscape Capacity and Cumulative Development	71	3.3	Regional Landscape Character Areas	
6.3.1	Overview of Landscape Character, Sensitivity and Capacity	71	3.4	Landscape Character Areas	
6.3.2	Fermanagh Caveland: Summary of Capacity and Cumulative Development	71	3.5	Landscape Designations	
6.3.3	Lough Erne Lakeland: Summary of Capacity and Cumulative Development	71	3.6	(a-b) Natural & Cultural Heritage Designations	
6.3.4	Clogher Valley and Slieve Beagh: Summary of Capacity and Cumulative Development	72	3.7	Locations of Landscape Interest	
6.3.5	Omagh Basin: Summary of Capacity and Cumulative Development	72	4.1	(a-b) Transport Routes, Settlements, Viewpoints, Address Points	
6.3.6	West Tyrone Hills and Valleys: Summary of Capacity and Cumulative Development	72	5.1	(a-b) Existing, Consented and Applications Wind Turbines	
6.3.7	Sperrin: Summary of Capacity and Cumulative Development	73	6.1	(a-f) Landscape Capacity	
6.3.8	Carrickmore Plateau and Pomeroy Hills: Summary of Capacity and Cumulative Development	73	6.2	Current Wind Turbine Landscape Typology: Operational and Consented Wind Turbines	
6.4	Overall Assessment of Capacity and Cumulative Development	75	6.3	Wind Turbine Landscape Typology: Proposed Maximum Development Capacity	
6.4.1	Fermanagh and Omagh Summary: Landscape Character, Sensitivity and Capacity	75	6.4	Wind Turbine Development Opportunities and Constraints	
6.4.2	Areas with Highest Underlying Capacity.	75			
6.4.3	Areas with Limited Underlying Capacity	76			

APPENDICES

Appendix 1: Cumulative Impact and Landscape Capacity Assessment

Appendix 2: Factors Affecting the Landscape and Visual Impacts of Wind Turbines

Appendix 3: Wind Farms and Turbines in Fermanagh and Omagh

Appendix 4: Assessments of Landscape Sensitivity for Landscape Character Areas

Appendix 5: Viewpoint List

EXECUTIVE SUMMARY

Study Purpose and Objectives

The purpose of this study is to provide detailed technical assessment on landscape, visual and cumulative development matters for Fermanagh and Omagh District Council in relation to wind energy, providing detailed guidance on the capacity of the landscape within the Local Authority area to accommodate wind turbine developments and associated infrastructure of varying scale, to inform the policies of the Fermanagh and Omagh Local Development Plan 2030.

The key requirements of the study as described by the Local Authority are as follows:

- To identify those areas where due to the sensitivity of the landscape and their special scenic qualities, wind turbines of any size or related infrastructure would not be acceptable;
- To identify where there is capacity remaining within the different landscape character areas to accommodate further wind farm developments;
- Consider the landscape and visual issues related to the potential extension and repowering of existing windfarms within the Fermanagh and Omagh area; and
- Provide guidance within those areas identified as capable of accommodating further wind farms or repowering of existing as to the number and height of turbines and scale of related infrastructure that would be appropriate, in landscape and visual terms.

Approach to the Study

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

- Carrying out an assessment of the key landscape characteristics within Fermanagh and Omagh using a robust methodology identifying sensitivity criteria;
- Determining the thresholds of acceptable change and identifying critical factors which are likely to present an eventual limit to development;
- Setting out a spatial framework for onshore wind energy development and allowing better understanding of the opportunities and constraints on wind energy and how these should be addressed;
- Identifying areas most suitable for wind energy development, areas which are less suitable and areas which are not suitable at all; and
- Identifying where remaining capacity for development lies.

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

Landscape Character

Fermanagh and Omagh covers a large area of south western Northern Ireland. The total land area is approximately 3,000km², much of which is a lowland pastoral landscape, centred around the historical county towns of Omagh in Tyrone to the north and Enniskillen in Fermanagh to the south, the two largest settlements within the Local Authority area. However, there is great diversity in the landscape, from the wild upland landscapes of the Sperrins to the north, the scenic 'lakelands' of Fermanagh, and karst limestone uplands which are unique to Northern Ireland.

At the larger scale the landscape is described by 7 Regional Character Areas (ReCAs), as defined by the Northern Ireland Regional Landscape Character Assessment of 2016 (NIRLCA 2016). At the smaller scale the Local Authority area comprises 26 units of landscape character, as defined by the Northern Ireland Landscape Character Assessment (NILCA 2000). The 7 ReCAs are of varying character, affecting their capacity to accommodate wind energy development. The assessment has been organised by ReCA with assessments for each LCA within the ReCAs undertaken to identify their capacity to accommodate wind energy development of various sizes and typologies.

For the purposes of this assessment, LCAs are grouped according to their broad landscape character type (LCT), to allow areas sharing common landscape characteristics and therefore sensitivities to, and capacity for, wind energy to be identified.

Landscape Capacity and Cumulative Development

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

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

The underlying capacity for different sizes of turbine across the landscape character areas of Fermanagh and Omagh is shown in detail in figures 6.1 a - f. Upland areas of the Sandstone Ridges and Plateau landscape character type (LCT), a broad grouping

of undulating sandstone uplands found in various locations throughout the Local Authority Area, have the greatest underlying capacity for wind energy development. However, the scale and extent of areas of this LCT are typically insufficient to accommodate extensive wind energy developments. While some larger scale landscapes exist in the Sperrins, and also to the south of the Local Authority Area around Cuilcagh, the sensitivity of these landscapes makes them unsuited to larger scale wind energy development, and in some areas wind energy of any size.

Various lowland landscapes have a level of capacity for smaller scale wind energy developments, which can be accommodated within the undulating drumlins found across much of the lowland area. However, the 'lakeland' landscapes to the south of the Local Authority areas are sensitive to intrusion from relatively small-scale developments.

Consented Developments at November 2017

The emerging pattern of development in and around Fermanagh and Omagh reflects the wider pattern of wind energy development in the United Kingdom, where the majority of windfarms and turbines are located in upland areas, with smaller developments in the lowlands.

There are, as of November 2017, a total of 678 operational or consented turbines of 15m or greater height, and a further 38 in planning. Of those turbines consented, a significant proportion (72%) are below 80m to blade tip, i.e. 'medium' sized turbines (<80m) or smaller as defined by the categories used in this assessment. Beyond the Local Authority boundary, smaller turbine typologies extend into the lowland landscapes to the east and north, however some larger windfarms are located to the west and south in the more upland areas of Donegal and Leitrim.

Within Fermanagh and Omagh, there is a relatively clear pattern of wind energy development. The majority of larger scale development has taken place in the Sandstone Ridges and Plateau landscape type, including LCA 14 Lough Braden to the north-west, and 16 Brougher Mountain and 44 Slievemore to the east. Another area of significant wind energy development is the upland landscape of LCA 10 Slieve Russel, Derrylin and Kinawley, on the outlying hill of Slieve Rushen to the south of Fermanagh and Omagh adjacent to the uplands of Cuilcagh. There are various small windfarm developments and frequent small-scale single/ small turbine groups within lowland landscape types. The Sperrins to the north and Cuilcagh to the south are the only larger scale landscape with no significant consented or operational wind energy development.

Analysis of Capacity and Cumulative Development

The current levels of development have led to a landscape in which wind turbines are a key landscape feature in some areas of the Sandstone Ridges and Plateau landscape types, in particular those of LCA14 Lough Braden, LCA44 Slievemore, extending southwards into the LCA 16 Brougher Mountain. The semi-upland Carrickmore Hills also have significant numbers of consented turbines, including two small wind farms. The sandstone uplands, and neighbouring upland landscapes, provide topographic

enclosure to the enclosed lowland landscapes such as the 'Omagh Basin' at the heart of the Local Authority area, and the Clogher Valley to the east, and therefore cumulative issues can arise because of views to various wind energy developments on the horizon, seen in different directions, alongside various smaller typology wind turbines within lowland areas.

Elsewhere there are other concentrations of larger scale wind energy development, for example in LCA 10 Slieve Russel, Derrylin and Kinawley to the very south of the Local Authority area, and on the western edge of LCA 4 Lough Navar and Ballintempo Uplands. While these individual wind farms are quite prominent from some areas, they tend to be seen as more isolated developments, and not part of a wider landscape greatly characterised by wind energy developments.

This study has identified limited additional capacity for larger scale wind energy developments. The greatest residual capacity arises within LCA 14 Lough Braden, towards the north western Local Authority boundary. In this location there is a cluster of existing wind farms, however there would be capacity to further develop this area as a more consolidated wind farm cluster, for example through development within the Lough Braden Forest. This may involve considerable landscape change at the local level, but would broadly maintain the extent of the 'wind farm landscape' which already exists in this area. The repowering of 'medium/ large' (80<120m) turbine typologies with 'large' turbines (120<150m) is likely to be possible for some windfarms in this area, subject to careful assessment.

More limited capacity arises in the upland areas of LCA 16 Brougher Mountain and 44 Slievemore, however with the high level of consented development, these locations appear constrained against further large-scale wind farms. However, opportunities for limited extensions, and repowering of those windfarms currently operating smaller sized turbines, are identified. There are also some limited potential opportunities for small scale wind farm development at the transition from the Macnean Valley to the Lough Navar and Ballintempo Uplands towards the south west of the Local Authority area.

Lowland landscapes have a high density of consented 'small' to 'medium' sized wind turbine developments (<80m), and while some areas appear to have reached capacity, in particular within the 'Omagh Basin', opportunities for further smaller scale development arise within some of these more lowland landscapes.

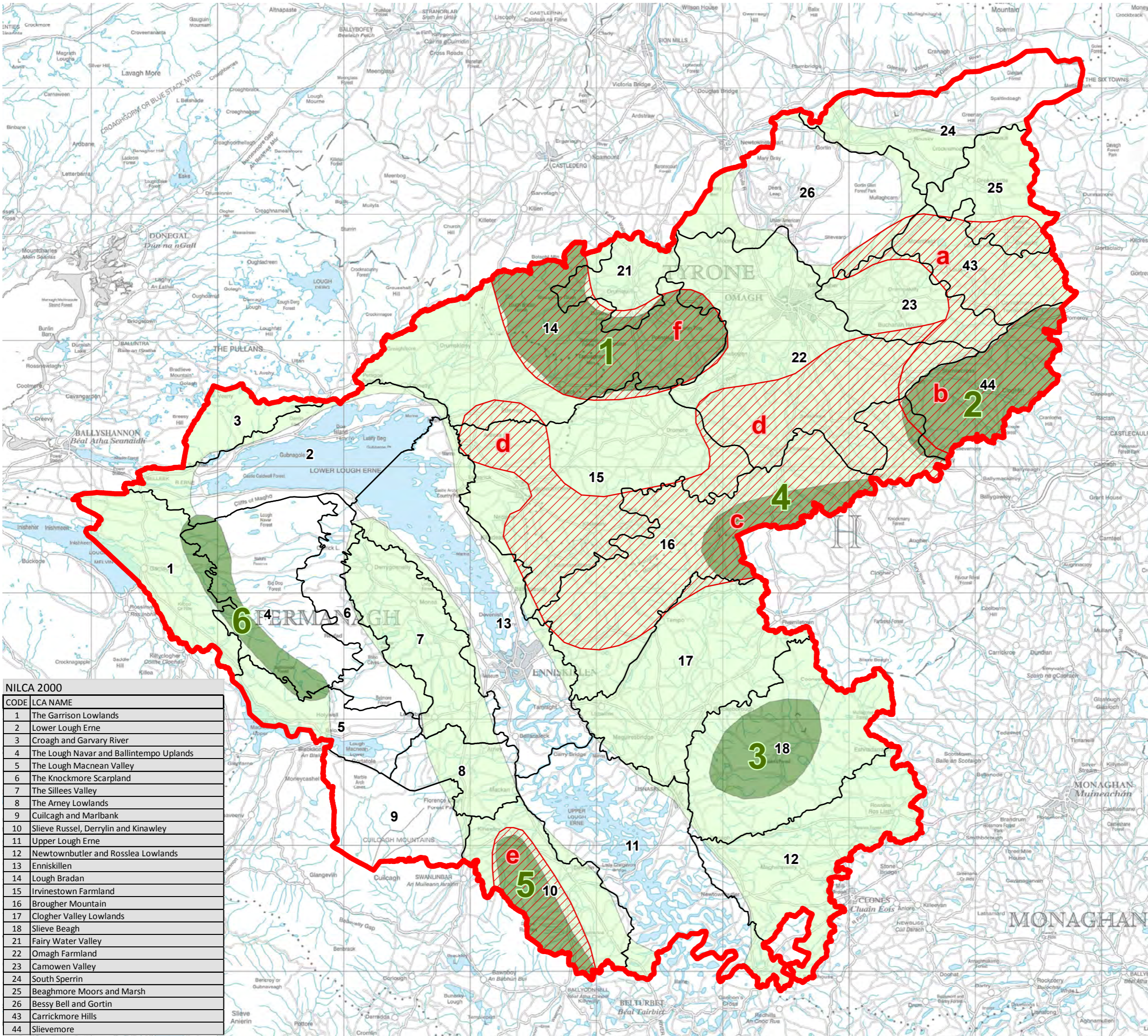
The sensitive landscape of the Sperrins and many areas of the karst landscape to the south including Cuilcagh, and the Fermanagh Lakelands should remain largely free of wind energy development.

The assessment has also considered the capacity of the landscape to accommodate wind farm infrastructure including access tracks, transmission lines, sub stations, control buildings and potential energy storage units. In those locations with capacity for larger scale wind energy developments i.e. commercial wind farms, no overriding constraints to the accommodation of these elements in the landscape are identified assuming that siting, design and other mitigations are given due consideration. Much wind farm infrastructure is low level and can typically be sited to take advantage of the topographic or vegetative screening which typically occurs within those landscapes suited to larger

scales of wind energy development. Transmission lines and pylons for grid connections tend to be taller and potentially contribute to clutter when seen with wind turbines, but minimising their effects to acceptable levels should also be possible with sensitive routing.

Conclusions

The assessment indicates that while much of the capacity for larger scale wind energy in Fermanagh and Omagh has been utilised, some residual capacity does exist within the Lough Braden Forest area, and to a lesser extent around Slievemore and Brougher Mountain. This residual capacity typically arises through the extension or intensification of areas already utilised for wind energy development, or through the repowering of existing developments. Any specific proposals would require full assessment of their landscape and visual impacts to determine their acceptability. There are no significant new areas, currently unaffected by wind energy development, considered suitable for large scale wind energy, and some areas have been assessed as unsuitable for significant wind energy development due to their sensitivity including the landscape of the Sperrins to the north, and that of Cuilcagh and Marlbank to the south.



Legend

- Local Authority Boundary
- Landscape Character Areas

Area Capacity

- Areas with Highest Underlying Capacity
- Areas with Limited Underlying Capacity
- Areas with No Underlying Capacity
- Areas of Significant Cumulative Development


Areas with Highest Underlying Capacity

- 1) Lough Braden
- 2) Slievemore
- 3) Slieve Beagh
- 4) Hunter Hill
- 5) Slieve Rushen
- 6) Loch Navar & Ballintempo Uplands

Areas where Cumulative Impact Limits Development

- a) Carrickmore Hills
- b) Slievemore
- c) Brougher Mountain
- d) Omagh and Irvinestown Farmland
- e) Slieve Rushen
- f) Lough Braden

CODE	LCA NAME
1	The Garrison Lowlands
2	Lower Lough Erne
3	Croagh and Garvary River
4	The Lough Navar and Ballintempo Uplands
5	The Lough Macnean Valley
6	The Knockmore Scarpland
7	The Silles Valley
8	The Arney Lowlands
9	Cuilcagh and Marlbank
10	Slieve Russel, Derrylin and Kinawley
11	Upper Lough Erne
12	Newtownbutler and Rosslea Lowlands
13	Enniskillen
14	Lough Bradan
15	Irvinestown Farmland
16	Brougher Mountain
17	Clogher Valley Lowlands
18	Slieve Beagh
21	Fairy Water Valley
22	Omagh Farmland
23	Camowen Valley
24	South Sperrin
25	Beaghmore Moors and Marsh
26	Bessy Bell and Gortin
43	Carrickmore Hills
44	Slievemore



Fermanagh & Omagh
District Council
Comhairle Ceantair
Fhear Manach agus na hÓmaí

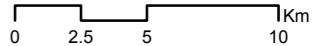
**Fermanagh & Omagh
Wind Energy Capacity Study**

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Figure A

**Wind Turbine Development
Opportunities & Constraints**

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1.0 INTRODUCTION

1.1 Background

Northern Ireland Planning Policy supports the greater use of renewable energy to achieve its targets for carbon emissions and to bring diversity and security of energy supply. The 2013 Onshore Renewable Action Plan (ORAP)¹ published, by the Northern Ireland Department for Enterprise, Trade and Investment (DETI), supports the achievement of a 40% renewable electricity target by 2020. Onshore wind energy provides by far the largest proportion of onshore renewable electricity generation in Northern Ireland and the UK as a whole, and is expected to do so for the foreseeable future.

While onshore wind is already well developed in Fermanagh and Omagh, it can be reasonably expected that there will be continuing pressure to utilise the wind resource through new wind energy development and repowering of existing schemes with wind turbines of greater generating capacity and efficiency.

The potential for unacceptable impacts, including cumulative impacts, from onshore wind energy to landscape character and visual amenity is recognised in the 2015 *Strategic Planning Policy Statement for Northern Ireland (SPPS)*² and the 2009 *Planning Policy Statement 18 'Renewable Energy'* (PPS 18)³. It is therefore desirable that wind energy developments are appropriate to the type of landscape in which they are located. The purpose of this study is to provide Fermanagh and Omagh District Council with a robust basis for developing local wind energy policy in terms of balancing development against landscape character and visual amenity.

1.2 Consultancy Appointment

Ironside Farrar were appointed in October 2017 by Fermanagh and Omagh District Council to undertake a landscape wind energy capacity study for the Local Authority area. The key purpose of the study is to provide detailed guidance on the capacity of the landscape within Fermanagh and Omagh to accommodate wind turbine developments of varying scales, to inform the policies of the Fermanagh and Omagh Local Development Plan 2030.

The key requirements of the study, as described by Fermanagh and Omagh District Council, are as follows:

- To identify those areas where due to the sensitivity of the landscape and its special scenic qualities, wind turbines of any size or related infrastructure would not be acceptable;

- To identify where there is capacity remaining within the different landscape character areas to accommodate further wind farm developments;
- Consider the landscape and visual issues related to the potential extension and repowering of existing windfarms within the Fermanagh and Omagh area; and
- Provide guidance within those areas identified as capable of accommodating further wind farms, or repowering of existing, as to what number and height of turbine and scale of related infrastructure that would be appropriate, in landscape and visual terms.

The basis for achieving these requirements is a comprehensive capacity assessment for wind energy based on landscape character, utilising well-established capacity assessment techniques. To achieve the requirements of the Local Authority, this assessment considers both the underlying or 'baseline' landscape capacity, assuming no wind energy is present, and the 'residual' capacity taking into consideration existing and consented developments at the time of the study.

1.3 National and Local Policy

Both the Strategic Planning Policy Statement (SPPS) and Planning Policy Statement 18 (PPS 18) encourage the development of onshore wind energy. National level policy is supported by accompanying Supplementary Planning Guidance (SPG) *Wind Energy Development in Northern Ireland's Landscapes*⁴, forming the main wind energy guidance for Northern Ireland.

It is noted that while SPPS and PPS 18 both require the acceptability of wind energy proposals to be demonstrated in terms of their landscape and visual effects, there are no absolute landscape constraints on wind energy developments, i.e. locations where wind farms would not be supported, although a minimum separation distance from occupied properties is stated in both PPS 18 and SPPS (the greater of 10 x rotor diameter or 500m). SPPS states that a cautious approach to wind energy development should be applied to proposals within designated landscapes of significant value, including Areas of Outstanding Natural Beauty, where it may be difficult to accommodate wind turbines without detriment to cultural and natural heritage assets.

The SPG aims to facilitate the appropriate siting of wind energy in the environment through the provision of broad strategic guidance. The SPG provides guidance for each of the 130

¹ Northern Ireland Department of Enterprise Trade and Investment (2013) *Onshore Renewable Electricity Action Plan 2013 – 2020*

² Northern Ireland Department of the Environment (2015) *Strategic Planning Policy Statement for Northern Ireland (SPPS) Planning for Sustainable Development*

³ Northern Ireland Department of the Environment, Planning and Environmental Policy Group (2009) *Planning Policy Statement 18 'Renewable Energy'*

⁴ Northern Ireland Environment Agency (2010) *SPG: Wind Energy Development in Northern Ireland's Landscapes*

LCAs of the 2000 Northern Ireland Landscape Character Assessment (NILCA 2000)⁵, including assessments of sensitivity and siting and design considerations. An overview of broader, strategic level considerations is also described at a wider landscape level e.g. for Fermanagh, and for the North West of Northern Ireland including the Sperrins.

While much useful information is found in SPG, the guidance 1) does not provide an assessment of capacity for varying scales and typologies of wind energy development, and 2) does not address the potential for further wind energy development – either at new sites or through the repowering of existing ones – based on current levels of development.

This capacity assessment addresses both issues and provides a single strategic assessment of capacity for wind energy development in the Local Authority area, on which Local Development Plan policies can be based.

1.4 Landscape Capacity and Cumulative Impacts

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

- A strategic landscape capacity study, investigating the underlying capacity of landscapes within Fermanagh and Omagh to accommodate wind energy development of all but the smallest domestic scale. This is reflected in detailed capacity maps for 6 turbine size ranges described later in this report;
- A cumulative assessment examining the level of cumulative development of operating and consented wind turbines and wind farms in Fermanagh and Omagh;
- Guidance on remaining development capacity and on the size and types of wind energy development throughout the Local Authority that would be acceptable in landscape terms, taking into account the first two considerations. This includes the potential for extension or repowering of currently operational sites.

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

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

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

⁵ Northern Ireland Environment Agency (2000) *Northern Ireland Landscape Character Assessment*, available at <https://www.daera-ni.gov.uk/articles/landscape-character-northern-ireland#toc-1>

2.0 CUMULATIVE IMPACT AND CAPACITY ASSESSMENT METHOD

2.1 Purpose of Assessment

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

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

Nevertheless, it is recognised in guidance that the assessment of landscape capacity and cumulative impacts is not a straightforward exercise. The background considerations and detailed methodology for this process are detailed in **Appendix 1** of this report. The following summarises the methodology and explains how the findings and recommendations are presented.

2.2 Study Stages

The assessment is a staged process which comprises the following steps:

- 1) Define the study area and characterise the landscape and visual baseline and scope of wind energy types to be included in the strategic study.
- 2) Assess landscape sensitivity based on the landscape character areas (LCAs) of Fermanagh and Omagh. This assessment considers landscape character sensitivity, visual sensitivity and landscape value.
- 3) Assess the capacity of the landscape to accommodate wind energy development of different types and scales based on the assessment of sensitivity and value of the LCA. This is an assessment of the *underlying* landscape without taking the effects of existing or consented wind turbines into account.
- 4) Record the current type and extent of operational and consented wind energy development in Fermanagh and Omagh and the surrounding Local Authorities.
- 5) Determine the extent to which cumulative consented development has occupied the underlying capacity of the landscape to accommodate wind energy developments.
- 6) Further to the assessment of landscape capacity and cumulative development, identify areas in which:
 - there is no underlying landscape capacity for wind energy development;

- cumulative consented development limits landscape capacity for further wind energy development; and

FIG 2.1 METHODOLOGY FLOWCHART FOR CUMULATIVE ASSESSMENT

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

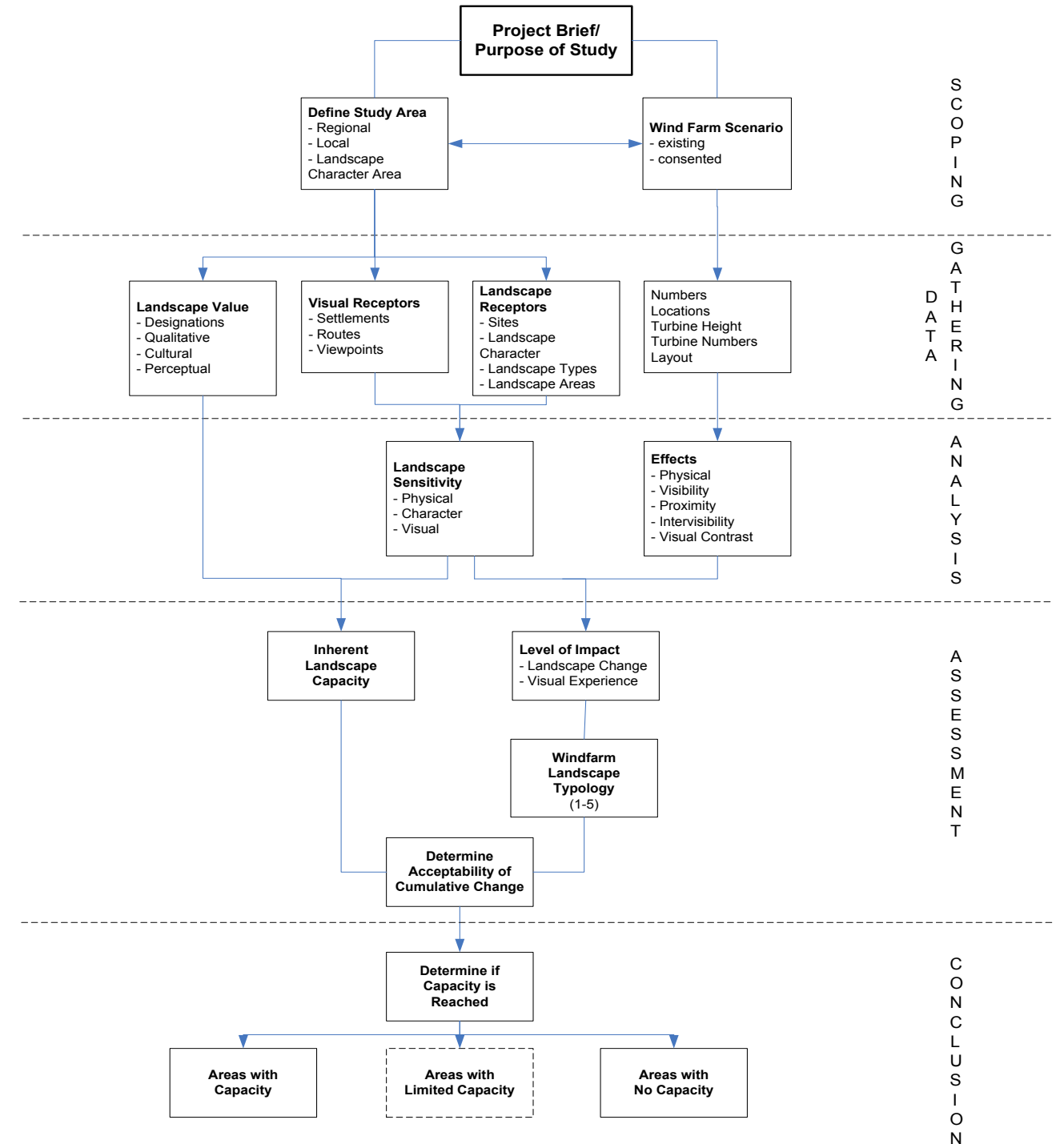


Figure 2.1. Cumulative Impact and Landscape Capacity Assessment Flowchart

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

2.3 Scope of Assessment

2.3.1 Area Covered

The study focuses primarily on the Local Authority area of Fermanagh and Omagh. However, the study area extends 15km beyond the Local Authority boundary because of the potential landscape and visual effects of wind energy developments in neighbouring areas.

2.3.2 Wind Energy Development Types

The study considers turbines of 15m and taller, and all scales of wind energy development operating, consented or proposed, as well as potential future scenarios which, based on current trends in UK onshore wind energy development, include turbines greater than 150m. Turbines are categorised in the following six height bands to allow a finer grained assessment of capacity and cumulative effects in relation to development type.

Table 2.1. Turbine Size Categories

Blade Tip Height	Category/ Size	Typical Use (in the Northern Ireland context)
15m to <30m	Category 1 – Small	Typically used for domestic and farm schemes
30m to <50m	Category 2 – Small/ Medium	Typically used for farm and small industrial schemes
50m to <80m	Category 3 – Medium	Single turbine schemes e.g. farms, industrial and smaller turbines used in commercial schemes
80m to <120m	Category 4 – Medium/ Large	Many current commercial windfarms and some single turbines
120m to <150m	Category 5 – Large	Many current and most proposed commercial windfarms
150m ~ 200m	Category 6 – Very Large	Windfarms with turbines > 150m are increasingly being proposed in the UK

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

2.3.3 Use of Geographical Information Systems

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

2.4 Landscape and Visual Baseline

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

The **landscape character assessment** is based on landscape character areas (LCAs) of the Northern Ireland Landscape Character Assessment 2000 (NILCA 2000). The assessment identifies 130 areas of landscape character in Northern Ireland, 26 of which are wholly or in part located within Fermanagh and Omagh.

NILCA 2000 does not categorise landscape character areas into landscape character types (LCTs), i.e. groupings based on common landscape characteristics, as is usual for landscape character assessment in other parts of the UK⁶. For the purposes of this assessment a categorisation into broad landscape character types is undertaken, to allow the sensitivities and capacity common to landscapes of a particular type to be better described and understood.

Furthermore, in 2016, the Northern Ireland Regional Landscape Character Assessment (NIRLCA) was undertaken, providing a higher-level description of the Northern Ireland landscape, but not superseding NILCA 2000. Seven Regional Character Areas (ReCAs) are identified in Fermanagh and Omagh⁷.

Regional and local landscape character areas (ReCAs/ LCAs) and character types (LCTs) in Fermanagh and Omagh are described in Section 3.2 and Table 3.1 of this report. The published assessments of regional and local landscape character were undertaken separately and at different times, and character area boundaries do not coincide.

Landscape value is determined partly through landscape designations. There is one nationally designated area in Fermanagh and Omagh, and four other local landscape or landscape related designations. There are also a number of Registered Parks, Gardens and Demesnes. Related designations that can contribute to landscape value and character are

⁶ SNH/ The Countryside Agency (1999) *Landscape Character Assessment Guidance for England and Scotland*.

⁷ <https://www.daera-ni.gov.uk/articles/landscape-character-northern-ireland#toc-1>

recorded. These include natural and cultural heritage designations, recreational/ visitor facilities and paths/ tracks.

The **visual baseline** assessment is detailed in **Chapter 4**. It involves identification of the types and locations of visual receptors within the study area, and the locations in which wind turbines are most or least likely to be visible to receptors. This approach should not be considered in isolation from other factors determining capacity, such as landscape character.

2.5 Method for Determining Landscape Sensitivity and Capacity

The method for determining landscape sensitivity and capacity is detailed in **Appendix 1**. This involves consideration of the two main elements discussed in 2.4 above:

- 1) The sensitivity of the landscape fabric and character to turbine development, which includes landscape features, elements and characteristics and its visual sensitivity, including intervisibility and affected receptor types.
- 2) The value of the landscape as determined by stakeholders. This may include national or local recognition by landscape designation or cultural association, or value to communities of interest such as local residents or user groups.

Appendix 1 describes a breakdown of the physical and perceptual characteristics that contribute to landscape character, visual sensitivity and value. Each criterion is described and evaluated in terms of its sensitivity to wind energy development. An overall assessment of **high, medium** or **low** is derived from a composite of all the criteria. There is no consistent relative weighting of criteria as, in the case of each landscape type or area, different criteria are likely to be critical in determining the sensitivity assessment.

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

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

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

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

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

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

2.6 Defining Landscape Change and Cumulative Capacity

An understanding of cumulative impacts and change in the landscape is key to determining acceptable levels of development and whether or not areas have reached cumulative capacity. This is discussed below and in further detail in **Appendix 1**.

2.6.1 Cumulative Change

Appendix 2, section 2.7 discusses in detail the issues involved in determining cumulative change thresholds and the acceptability of these changes. Limited guidance is provided in the Northern Ireland SPG in relation to cumulative change, however guidance in Scotland published by Scottish Natural Heritage (SNH) is well developed with several publications advising on best practice in the siting, design and assessment of wind energy developments, including their cumulative effects. SNH guidance on the assessment of cumulative impacts⁸ is referred to in the SPG, while SNH windfarm siting and design guidance^{9,10} is also relevant. Key factors that affect the perception of cumulative change include:

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

In determining an acceptable level of development, it is necessary to clearly define what differing levels of development actually entail. The methodology therefore sets out, in Table 2.2 below, defined levels of change to the landscape and visual environment that might occur

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

⁹ SNH (2017) *Siting and Designing Windfarms in the Landscape v.3*

¹⁰ SNH (2015) *Spatial Planning for Onshore Wind Turbines – natural heritage considerations*

or be experienced depending on the size, number and location of turbines to be built within an area.

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

Further generic illustration of the concept is provided in Section 4 of SNH's 2017 siting and design guidance (paragraphs 4.5 to 4.6) and illustrative sketches, reproduced in Figure 2.2 below Table 2.2). The extent of current and potential future wind turbine landscape types in Fermanagh and Omagh is described in detail in chapter 6 and illustrated in Figures 6.2 and 6.3.

2.6.2 Determining Acceptable Levels of Change

SNH 2015 *Spatial Planning for Onshore Wind Turbines*¹¹ provides spatial planning guidance aligned to planning policy in Scotland, however the principles underpinning the guidance are considered relevant to the Northern Ireland situation and are adopted for the purposes of this assessment in the absence of similar guidance specific to Northern Ireland. The SNH guidance identifies three broad levels of cumulative change in the landscape that may be set by Local Authorities depending on landscape sensitivity and value and local policy objectives:

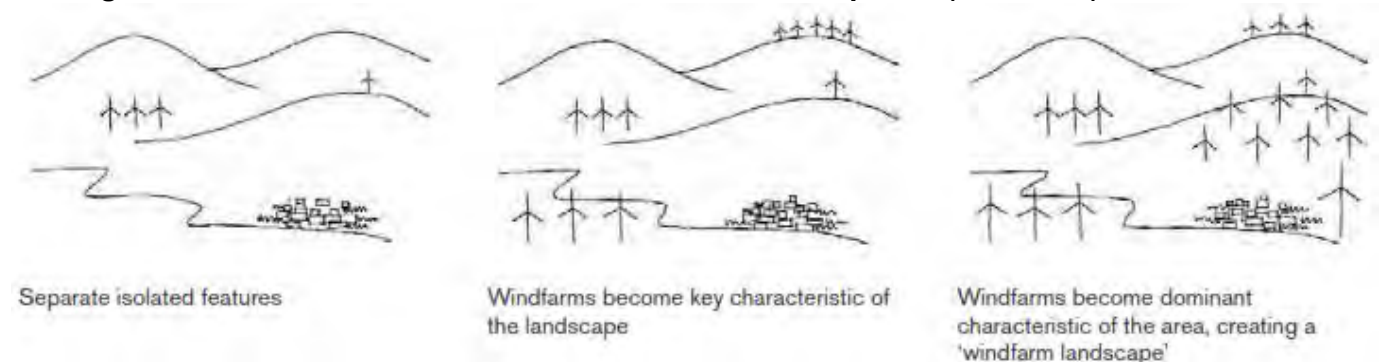
- **Landscape Protection:** Maintain existing landscape character.
- **Landscape Accommodation:** Accept a degree of change providing this does not fundamentally alter key landscape characteristics and visual resources.
- **Landscape Change:** Accept large amounts of change that may fundamentally alter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

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

Table 2.2: Description of Levels of Cumulative Wind Turbine Development

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

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



¹¹ SNH (2015) *Spatial Planning for Onshore Wind Turbines – natural heritage considerations*, Annex 1

2.7 How to Use the Assessment Findings and Guidance

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

Chapter 3: Landscape Baseline

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

The assessment of landscape capacity and cumulative landscape change is based on the 26 Landscape Character Areas (LCAs) of NILCA 2000 within Fermanagh and Omagh, organised according to Regional Character Areas (ReCAs). The information in Chapter 3 informs the assessment of the sensitivity and value of each landscape character area detailed in Chapter 6.

Chapter 4: Visual Baseline

This chapter defines the visual baseline by identification of the different types of visual receptors in the study areas, their locations, and areas where wind energy development is likely to have greater or lesser visibility. The information in Chapter 4 informs the assessment of landscape sensitivity as detailed in Chapter 6.

Chapter 5: Wind Turbines in the Study Area

This chapter describes the operating, consented and proposed wind turbine developments in Fermanagh and Omagh and the wider study area as of **November 2017**. There is a detailed breakdown of numbers and sizes of turbines and windfarms within the Local Authority and the surrounding study area provided in **Appendix 3**. Locations of turbines are illustrated in Figures 5.1a and b. There is also an analysis of turbine size ranges and distribution in relation to landscape character provided in Appendix 3.

Chapter 6: Assessment of Landscape Capacity and Cumulative Change

This chapter analyses and assesses the information in the previous chapters to determine the landscape and visual impacts of, and capacity for, wind energy development across Fermanagh and Omagh. The assessment is summarised in **Table 6.1** and **Figures 6.1 to 6.3**. The capacity assessment is informed by the detailed assessment of landscape sensitivity and value in **Appendix 4**. A desk and field based assessment was carried out. The assessment informs the subsequent spatial strategy and includes guidance on turbine size and distribution. Further details of how to use Table 6.1 together with the figures are given at the start of Chapter 6.

This assessment is carried out for LCAs within each of the 7 main regional landscape areas of Fermanagh and Omagh, including each of their component LCAs. The capacity assessment and current level of development for the LCAs in each regional area is combined to come to an overall assessment of capacity and cumulative effects for the area.

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

2.8 Detailed Guidance

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

Appendix 2 of this report contains detailed discussion of how turbine size, group size and group separation affects perceptions of wind energy and landscape character. Further guidance is given in SNH's siting and designing guidance¹² which provides best practice advice on the matter, equally applicable to Northern Ireland. Chapter 6 also briefly outlines the main considerations in developing the specific guidance.

2.9 Potential Opportunities and Constraints

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

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

Finally, it is emphasised that this assessment is focused on landscape and visual issues. Areas which have been identified as suitable on this basis may be restricted by other unrelated factors such as impacts on wildlife, impacts on residential amenity, tourism and recreation, aviation restrictions or effects on the water environment. These issues are not the subject of this assessment.

¹² SNH (2017) *Siting and Designing Windfarms in the Landscape v.3*

3.0 LANDSCAPE BASELINE

The following section defines and describes the study area, including the geographical extent and landscape character of Fermanagh and Omagh and its surroundings. It also reviews other relevant information including landscape-related designations, natural heritage and cultural heritage constraints. In the latter case it is the extent to which they may have a bearing on landscape character and value that is the primary consideration in this study.

3.1 Study Area

The study area for this assessment is shown in Figure 3.1. The Fermanagh and Omagh Local Authority area comprises most of the landscape of south western Northern Ireland, with Derry and Strabane to the north, and Mid Ulster to the east.

Its border with the Republic of Ireland is defined to the south/ south west by the hills of Cuilcagh and Slieve Rushen, and Loughs Macnean and Melvin. To the west the upland Pettigoe plateau runs into neighbouring Donegal. Drumlin farmland extends eastwards into Mid Ulster and Co. Monaghan, while the Sperrins provide a more defined physical boundary with Derry and Strabane to the north.

The study focuses on the Local Authority area of Fermanagh and Omagh for the purposes of determining landscape capacity. Nevertheless, there are a number of existing, consented and proposed wind energy schemes in neighbouring Local Authority areas and in the neighbouring Republic of Ireland. Some consideration has been given to these, due to the extensive visual influence exerted by most large wind turbines. The study area therefore includes a 15km buffer around the Local Authority boundary.

3.2 Baseline Landscape Character Assessment

3.2.1 Landscape Context

Fermanagh and Omagh is an inland landscape, albeit at its closest no more than 7km from the west coast of Ireland. The total land area is approximately 3,000km², much of which is a lowland pastoral landscape, centred around the historical county towns of Omagh in Tyrone to the north and Enniskillen in Fermanagh to the south, the two largest settlements within the Local Authority area. However, there is great diversity in the landscape, from the wild upland landscapes of the Sperrins to the north, the scenic 'lakelands' of Fermanagh, and karst limestone uplands which are unique to Northern Ireland.

To the south west of the Local Authority area, bordering the Republic of Ireland, are the 'Fermanagh Cavelands', a landscape of distinctive sandstone and limestone uplands including important landscape features such as Cuilcagh Mountain, the Cliffs of Magho, dramatic escarpments and other karst features resulting from the underlying limestone geology. The landscape is sparsely settled and valued for its scenic qualities and recreational value, and includes the UNESCO Marble Arch Caves Geopark.

To the north east of the 'cavelands', Upper and Lower Lough Erne lie within shallow and expansive lowland Lough basins, set within drumlin farmland of the river Erne Valley extending in an arc from County Cavan to the south east and Donegal to the north west. Enniskillen occupies a commanding position between the two loughs. This low-lying landscape is juxtaposed with the dramatic features of the more upland landscape to the west, including the Cliffs of Magho, adding to its scenic value. The area is important for recreation and tourism.

To the north east towards Omagh are low-lying pastoral landscapes characterised to varying extent by rolling drumlins. Enclosed pastures, small woodlands and hedgerows often providing a strong sense of enclosure. This landscape is bounded by the extensive undulating sandstone plateaus of Brougher Mountain to the south, and the hills of West Tyrone to the north which extend into Donegal. The Brougher Mountain uplands separate the farmlands between Irvinestown and Omagh from the lowlands of the Clogher Valley to the south east, with the lowlands of Rosslea and Newtownbutler further separated to the south of the Local Authority area by the uplands of Slieve Beagh. These rolling upland landscapes are typically no more than 300m AOD, in places forested and sparsely populated, forming long, low horizons when seen from lowland areas.

To the north of Omagh the landscape changes dramatically, with the lowland farmland and sandstone plateaus giving way to more pronounced hill summits including Bessy Bell and Mullaghcarn which mark the gateway to the wilder and more dramatic upland landscape of the South Sperrins, comprising a series of ridges separating lowland valleys aligned east to west, and extend northwards into neighbouring Strabane. Much of the landscape north of Omagh is designated as an Area of Outstanding Natural Beauty (AONB) in recognition of its nationally important scenic value.

3.2.2 Landscape Character

The Northern Ireland Regional Landscape Character Assessment (2016), published by the Northern Ireland Environment Agency (NIEA) defines the landscape of Northern Ireland in 26 Regional Character Areas (ReCAs). Seven ReCAs are located within Fermanagh and Omagh.

1. Fermanagh Cavelands
2. Lough Erne Lakeland
3. Clogher Valley and Slieve Beagh
4. Omagh Basin
5. West Tyrone Hills and Valleys
7. Sperrins
12. Carrickmore Plateau and Pomeroy Hills

At a smaller scale, the Northern Ireland Landscape Character Assessment (NILCA 2000) identifies 130 landscape character areas (LCAs) in Northern Ireland, 26 of which are wholly

or in part within the Fermanagh and Omagh Local Authority area. The character area boundaries at the regional and local level do not correspond, and in this study LCAs are included with the most applicable ReCA based on geographical coverage and landscape characteristics. Table 3.1 describes the geographical relationship between ReCAs and LCAs assumed for the purpose of this assessment. The published character assessments do not categorise landscapes into character types, therefore, in the right-hand column of Table 3.1, this assessment provides broad categorisation to group LCAs with common characteristics. Landscape character areas are shown on Figures 3.3 and 3.4.

Table 3.1. Landscape Character Areas in Fermanagh and Omagh (based on NILCA 2000 and NIRCA 2016)

Regional Character Areas	Landscape Character Areas (LCA)	Landscape Character Types (LCT)
FERMANAGH CAVELANDS		
	1. Garrison Lowlands	Lowland Farmland
	4. The Lough Navar and Ballintempo Uplands	Limestone Uplands
	6. The Knockmore Scarpland	
	9. Cuilcagh and Marlbank	
	5. The Lough Macnean Valley	Lough Basin
LOUGH ERNE LAKELAND		
	2. Lower Lough Erne	Lough Basin
	11. Upper Lough Erne	
	13. Enniskillen	
	7. The Sillees Valley	Lowland Farmland
	8. The Arney Lowlands	
	15. Irvinestown Farmland	
	3. Croagh and Garvary River	Lowland Hills
	10. Slieve Russel, Derrylin and Kinawley	Limestone Uplands
CLOGHER VALLEY AND SLIEVE BEAGH		
	12. Newtownbutler and Rosslea Lowlands	Lowland Farmland
	17. Clogher Valley Lowlands	
	18. Slieve Beagh	Sandstone Ridges and Plateau
OMAGH BASIN		
	16. Brougher Mountain	Sandstone Ridges and Plateau
	22. Omagh Farmland	Lowland Farmland
	23. Camowen Valley	Lowland River Valley
WEST TYRONE HILLS AND VALLEYS		
	14. Lough Braden	Sandstone Ridges and Plateau
	21. Fairly Water Valley	Lowland River Valley

Regional Character Areas	Landscape Character Areas (LCA)	Landscape Character Types (LCT)
SPERRINS		
	24. South Sperrin	Sperrin Upland Hills
	26 Bessy Bell and Gortin	Sperrin Upland Hills
CARRICKMORE PLATEAU AND POMEROY HILLS		
	25. Beaghmore Moors and Marsh	Lowland Hills
	43 Carrickmore Hills	
	44. Slievemore	Sandstones Ridges and Plateau

3.3 Landscape Designations

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

3.3.1 National Designations

Within Fermanagh and Omagh much of the landscape north of Omagh is designated as part of the Sperrins Area of Outstanding Natural Beauty (AONB), one of only eight such designations in Northern Ireland, and therefore of national significance.

3.3.2 Local Landscape Designations

There are four areas within Fermanagh and Omagh identified in the NILCA 2000 as **Areas of Scenic Quality** (ASQ) in recognition of their local or regionally important scenic qualities. These areas are shown on Figure 3.5 and are listed below:

1. Lough Melvin
2. Derrin Mountain
3. Colebrooke Estate
4. Bessy Bell

Special Countryside Areas (SCAs) are regarded as exceptional landscapes such as stretches of the coast or lough shores and certain views or vistas. The quality of the landscape and amenity value is such that development should only be permitted in

exceptional circumstances. The Islands of Lough Erne, Lough Macnean and Lough Melvin are SCA as identified in the 2007 Fermanagh Area Plan¹³.

3.3.3 Registered Parks, Gardens and Demesnes

There are 20 parks and gardens on the Register of Parks, Gardens and Demesnes within Fermanagh and Omagh and while registered sites are not protected by statute they are a material consideration in planning decisions. Such sites are included on the register in recognition of their historic, horticultural, architectural and archaeological importance, and can make a considerable contribution to landscape character. Registered sites are shown on Figure 3.6.

3.4 Other Designations

There are a number of designations that, whilst not solely landscape related, clearly indicate landscape value and inform the assessment process. These are shown in Figures 3.5 & 3.6. Many of these areas are likely to be significant constraints in themselves, but are not part of the landscape capacity assessment. Nevertheless, the most extensive and sensitive areas are highlighted in the detailed analysis. This is not a systematic exercise and is undertaken only in order to inform users of the guidance that, where there is landscape capacity based on landscape criteria, other constraints may apply.

3.4.1 Local Landscape Policy Areas

Many settlements within the Local Authority areas include Local Landscape Policy Areas (LLPA) (Figure 3.5). Such areas are those identified to be of the greatest amenity value and significance within or adjoining settlements, and therefore worthy of protection against undesirable development.

3.4.2 Country Park/ Forest Parks

There are two Country/ Forest Parks within Fermanagh and Omagh; the Gortin Glen Forest Park to the north of Omagh in the Sperrins foothills, and Castle Archdale Country Park on the eastern shore of Lower Lough Erne. Gortin Glen Forest Park provides opportunities for walking and scenic drives within coniferous woodland. Outstanding views are available from a number of points within the park. Castle Archdale Country Park is a former estate situated in a wooded lough side location with opportunities for walking, boating, cycling, wildlife appreciation and the enjoyment of scenic views to Lough Erne.

3.4.3 Historic and Cultural Designations

The Northern Ireland Sites and Monuments Record (NISMR) holds details of sites of cultural heritage interest, the most important of which are Scheduled and/ or under State Care. Such sites can be of landscape significance in their own right and may contribute to the character and value of a landscape. Furthermore, effects on their setting can be a consideration for neighbouring development proposals. Designations related to cultural heritage are shown on Figure 3.6b.

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

Listed Buildings feature throughout the urban and rural areas, and are scattered throughout the more lowland landscape area, concentrated in centres of population. Listed buildings contribute to landscape character and value and effects on their setting is a consideration for neighbouring development proposals.

Areas of Significant Archaeological Interest (ASAI) are non-statutory designations which identify distinctive areas of the historic landscape in Northern Ireland.

3.4.4 Nature Conservation Designations

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

Such designations are found throughout the Local Authority area, including concentrations of designations around Upper Lough Erne, the limestone karst landscape, blanket bogs and heath of Mullaghcarn to the north, the Owenkillew River SAC, and the SPA/ SAC/ RAMSAR sites of the uplands around Slieve Beagh.

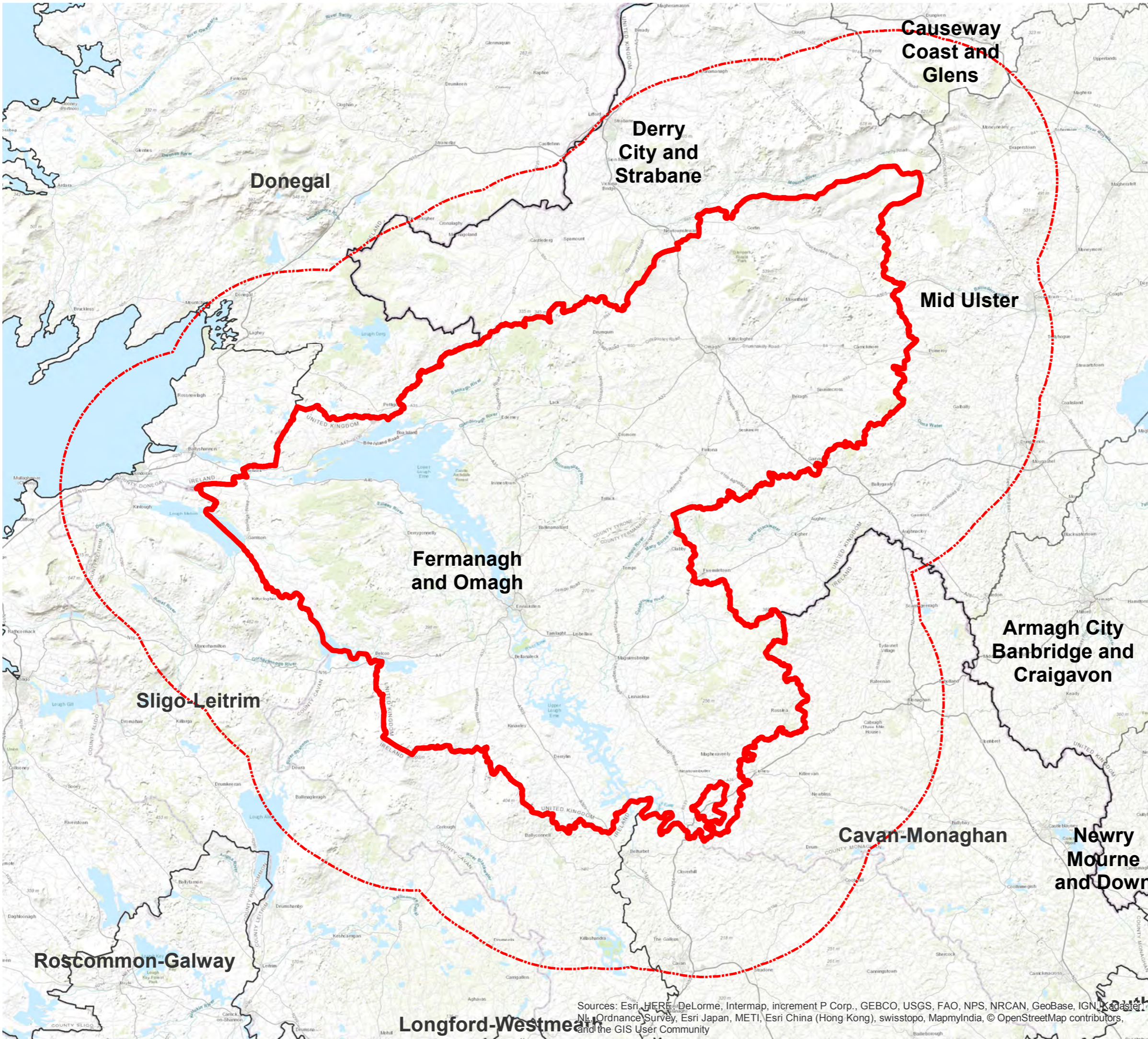
Key natural heritage designations are shown on Figure 3.6a.

3.5 Marble Arch Caves UNESCO Global Geopark





The Marble Arch Caves UNESCO Global Geopark covers an extensive area to the south west of the Local Authority area and crosses into neighbouring County Cavan. The Geopark was established in 2001 in recognition of the importance of its geology, landscape, natural


¹³ Countryside Policy Areas (CPAs) of the 2007 Fermanagh Area Plan, covering the Fermanagh Islands, were replaced by Special Countryside Areas (SCAs) in the NI Department of the Environment (2010) PPS 21 *Sustainable Development in the Countryside*.

and cultural heritage interest. The park was awarded UNESCO status in 2015, becoming one of 119 Global Geoparks. The UNESCO designation aims to promote economic activity through sustainable tourism, and the area is promoted as one of the premier tourist destinations in north west Ireland. While the UNESCO designation is not protected by statute, it includes designated natural and cultural heritage sites of national importance, and is an indicator of a valued landscape occupying much of the south-western part of the Local Authority area.



Legend

-  Local Authority Boundary
-  Study Area 15km Buffer
-  NI Local Government Districts
-  Ireland Local Authority Boundaries

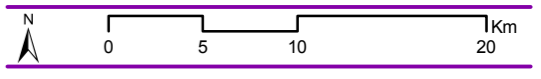


Fermanagh & Omagh
District Council
Comhairle Ceantair
Fhear Manach agus na hÓmaí

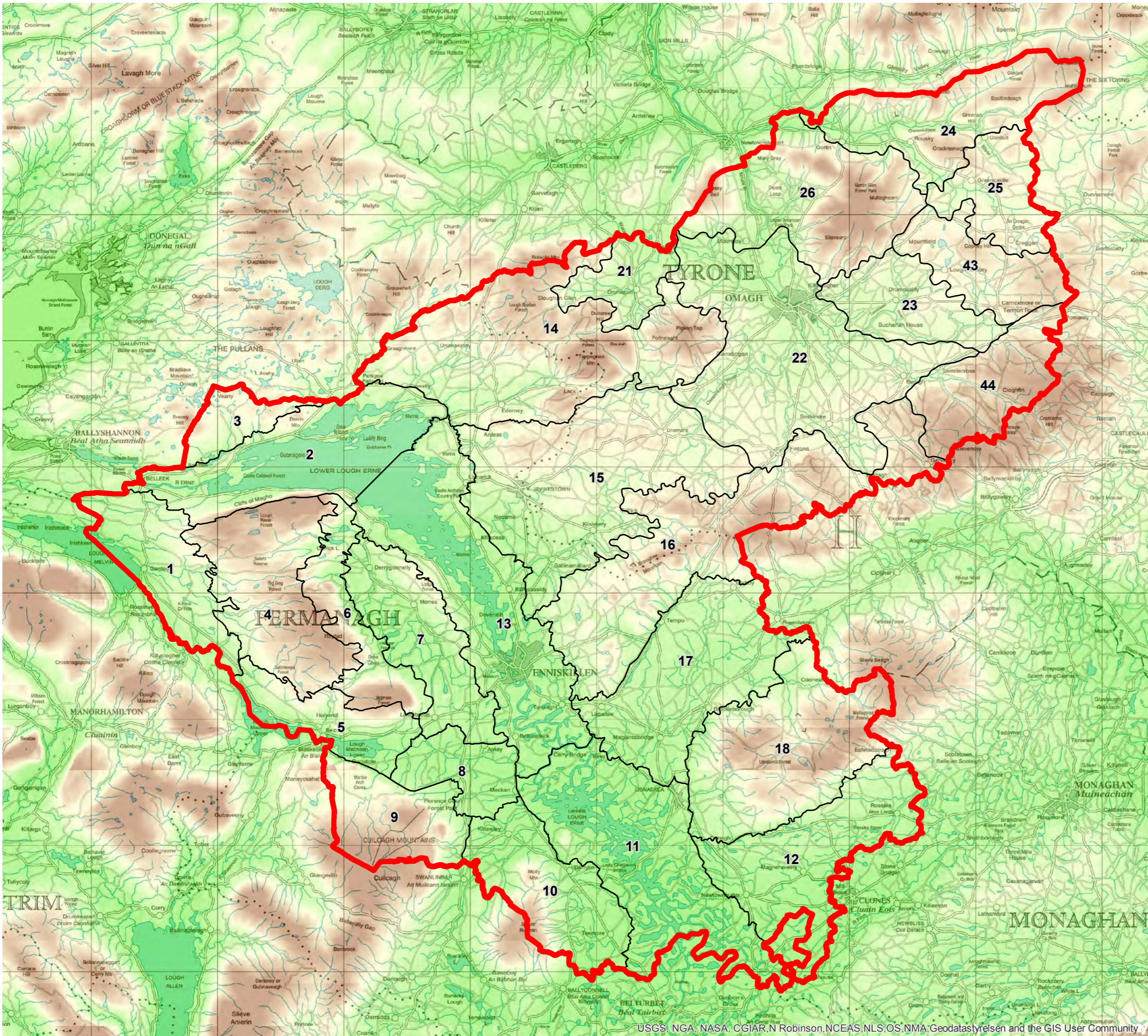
**Fermanagh & Omagh
Wind Energy Capacity Study**

Dec 2017 50087 / GIS / Fig 3.1

**Figure 3.1
Study Area**



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community




Legend

- Local Authority Boundary
 - Landscape Character Areas
- Height Value (AOD)**
 High : 571.79
 Low : 40.9351

NILCA 2000

CODE	LCA NAME
1	The Garrison Lowlands
2	Lower Lough Erne
3	Croagh and Garvary River
4	The Lough Navar and Ballintempo Uplands
5	The Lough Macnean Valley
6	The Knockmore Scarpland
7	The Silles Valley
8	The Arney Lowlands
9	Cuilcagh and Marlbank
10	Slieve Russel, Derrylin and Kinawley
11	Upper Lough Erne
12	Newtownbutler and Rosslea Lowlands
13	Enniskillen
14	Lough Bradan
15	Irvinestown Farmland
16	Brouher Mountain
17	Clogher Valley Lowlands
18	Slieve Beagh
21	Fairy Water Valley
22	Omagh Farmland
23	Camowen Valley
24	South Sperrin
25	Beaghmore Moors and Marsh
26	Bessy Bell and Gortin
43	Carrickmore Hills
44	Slievemore




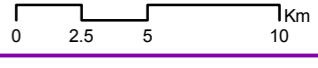
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**Fermanagh & Omagh
Wind Energy Capacity Study**

Dec 2017 50087 / GIS / Fig 3.2

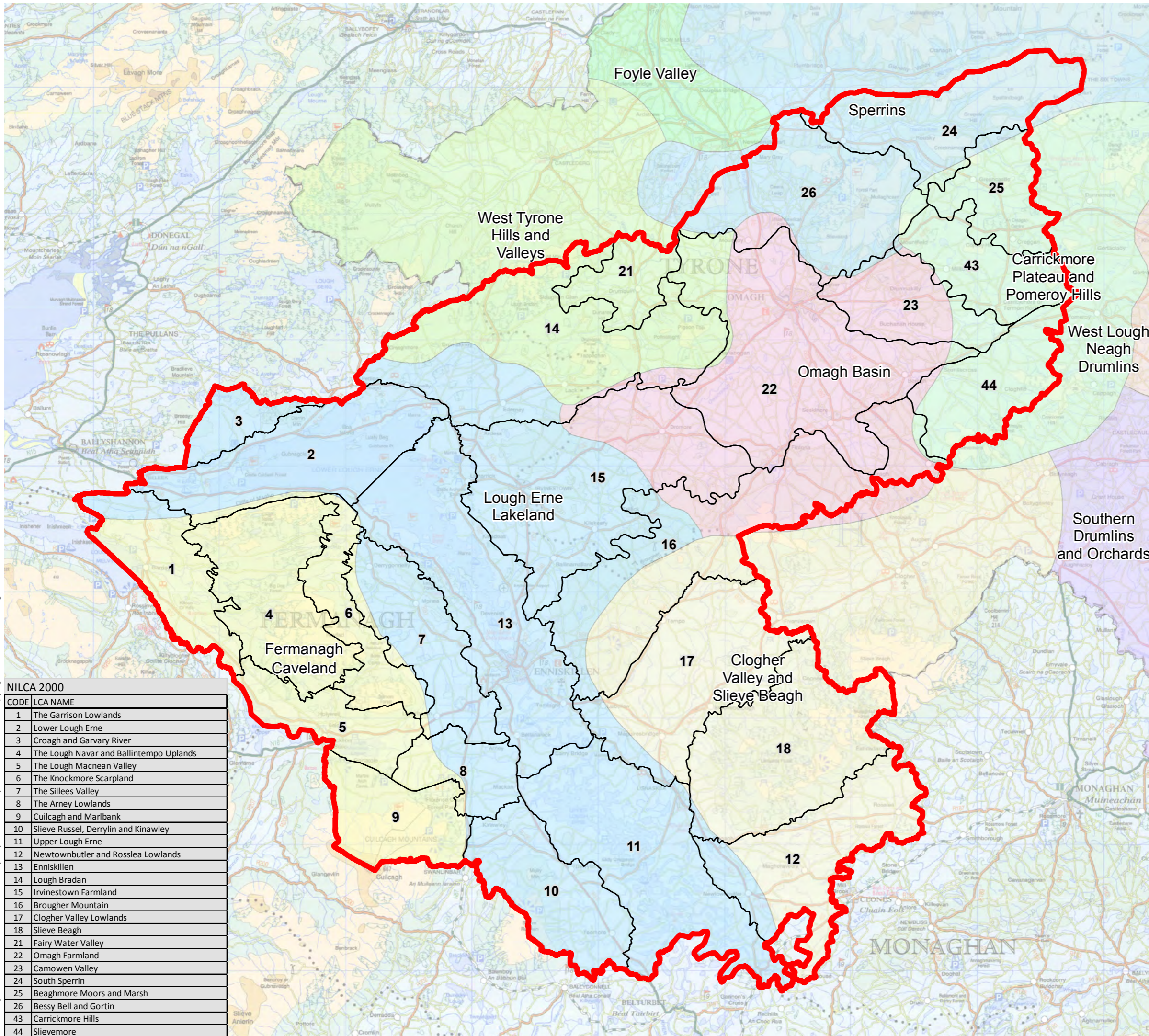
**Figure 3.2
Topography**






Legend

- Local Authority Boundary
- Landscape Character Areas



CODE	LCA NAME
1	The Garrison Lowlands
2	Lower Lough Erne
3	Croagh and Garvary River
4	The Lough Navar and Ballintempo Uplands
5	The Lough Macnean Valley
6	The Knockmore Scarpland
7	The Silles Valley
8	The Arney Lowlands
9	Cuilcagh and Marbank
10	Slieve Russel, Derrylin and Kinawley
11	Upper Lough Erne
12	Newtownbutler and Rosslea Lowlands
13	Enniskillen
14	Lough Bradan
15	Irvinestown Farmland
16	Brougher Mountain
17	Clogher Valley Lowlands
18	Slieve Beagh
21	Fairy Water Valley
22	Omagh Farmland
23	Camowen Valley
24	South Sperrin
25	Beaghmore Moors and Marsh
26	Bessy Bell and Gortin
43	Carrickmore Hills
44	Slievemore



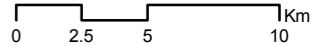
Fermanagh & Omagh
District Council
Comhairle Ceantair
Fhear Manach agus na hÓmaí

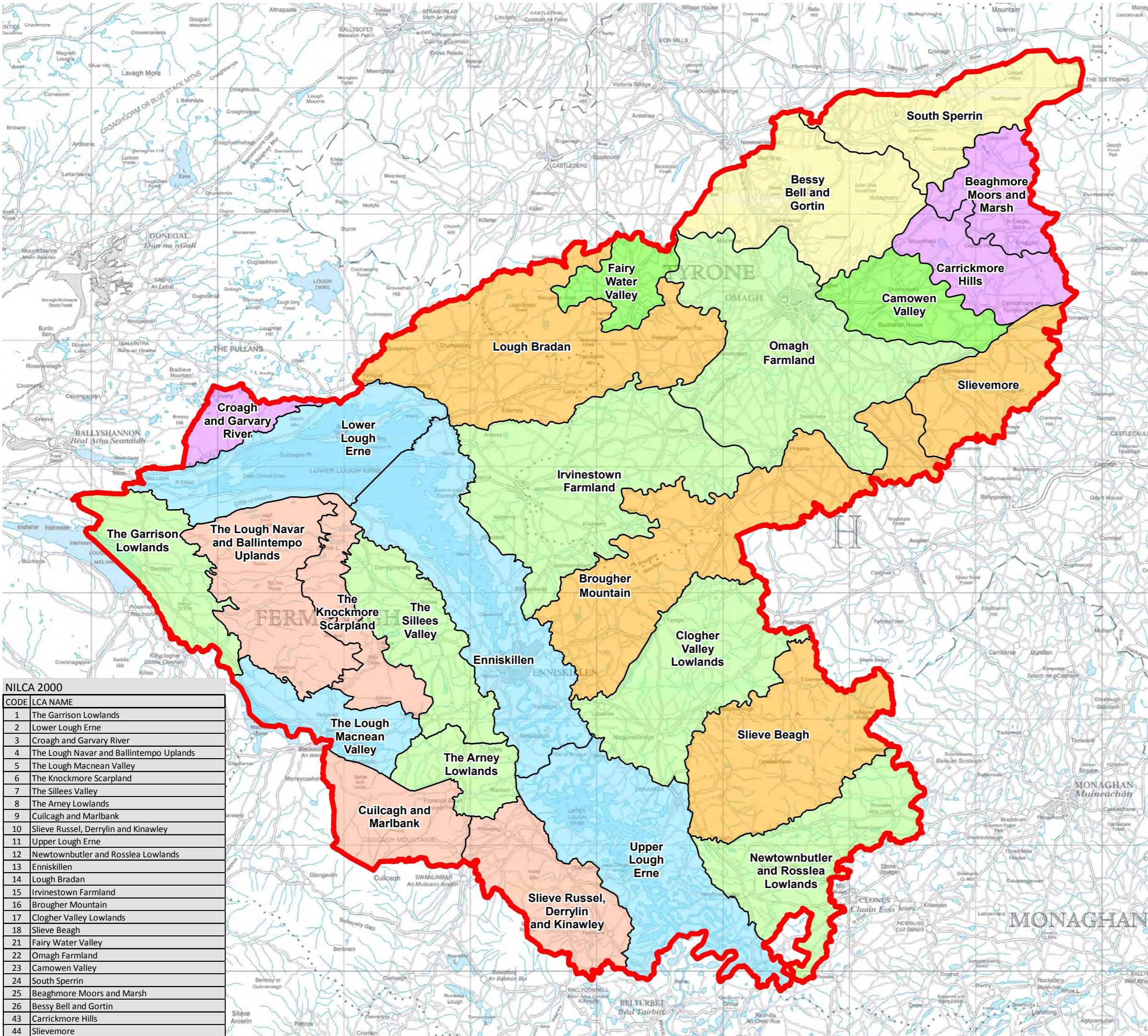
**Fermanagh & Omagh
Wind Energy Capacity Study**

Nov 2018 50087 / GIS / Fig 3.3

**Figure 3.3
Regional Landscape
Character**

N






Legend

- Local Authority Boundary
- Landscape Character Areas

Landscape Character Types

- Lowland Farmland
- Limestone Uplands
- Lough Basin
- Lowland Hills
- Sandstone Ridges & Plateau
- Lowland River Valley
- Sperrin Upland Hills

NILCA 2000	
CODE	LCA NAME
1	The Garrison Lowlands
2	Lower Lough Erne
3	Croagh and Garvary River
4	The Lough Navar and Ballintempo Uplands
5	The Lough Macnean Valley
6	The Knockmore Scarpland
7	The Silles Valley
8	The Arney Lowlands
9	Cuilcagh and Marlbank
10	Slieve Russel, Derrylin and Kinawley
11	Upper Lough Erne
12	Newtownbutler and Rosslea Lowlands
13	Enniskillen
14	Lough Bradan
15	Irvinestown Farmland
16	Brougher Mountain
17	Clogher Valley Lowlands
18	Slieve Beagh
21	Fairy Water Valley
22	Omagh Farmland
23	Camowen Valley
24	South Sperrin
25	Beaghmore Moors and Marsh
26	Bessy Bell and Gortin
43	Carrickmore Hills
44	Slievemore




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District Council
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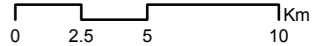
**Fermanagh & Omagh
Wind Energy Capacity Study**

Dec 2017 50087 / GIS / Fig 3.4

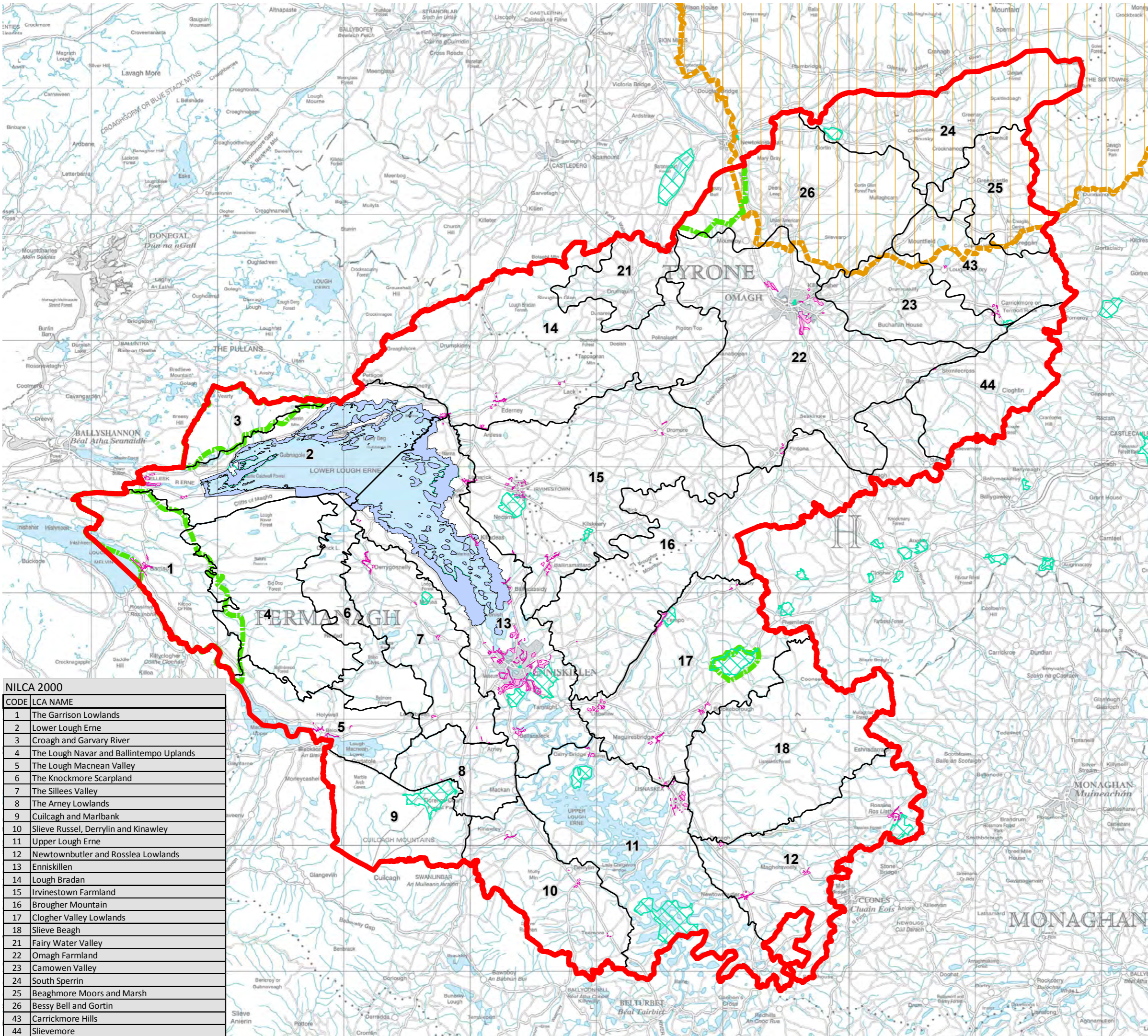
**Figure 3.4
Landscape
Character**

N






- Legend**
- Local Authority Boundary
 - Landscape Character Areas
 - Local Landscape Policy Areas
 - Lough Erne CPA
 - Registered Parks & Gardens
 - Areas of Scenic Quality
 - Areas of Outstanding Natural Beauty



NILCA 2000	
CODE	LCA NAME
1	The Garrison Lowlands
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4	The Lough Navar and Ballintempo Uplands
5	The Lough Macnean Valley
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7	The Silles Valley
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23	Camowen Valley
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26	Bessy Bell and Gortin
43	Carrickmore Hills
44	Slievemore



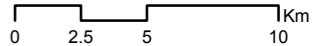
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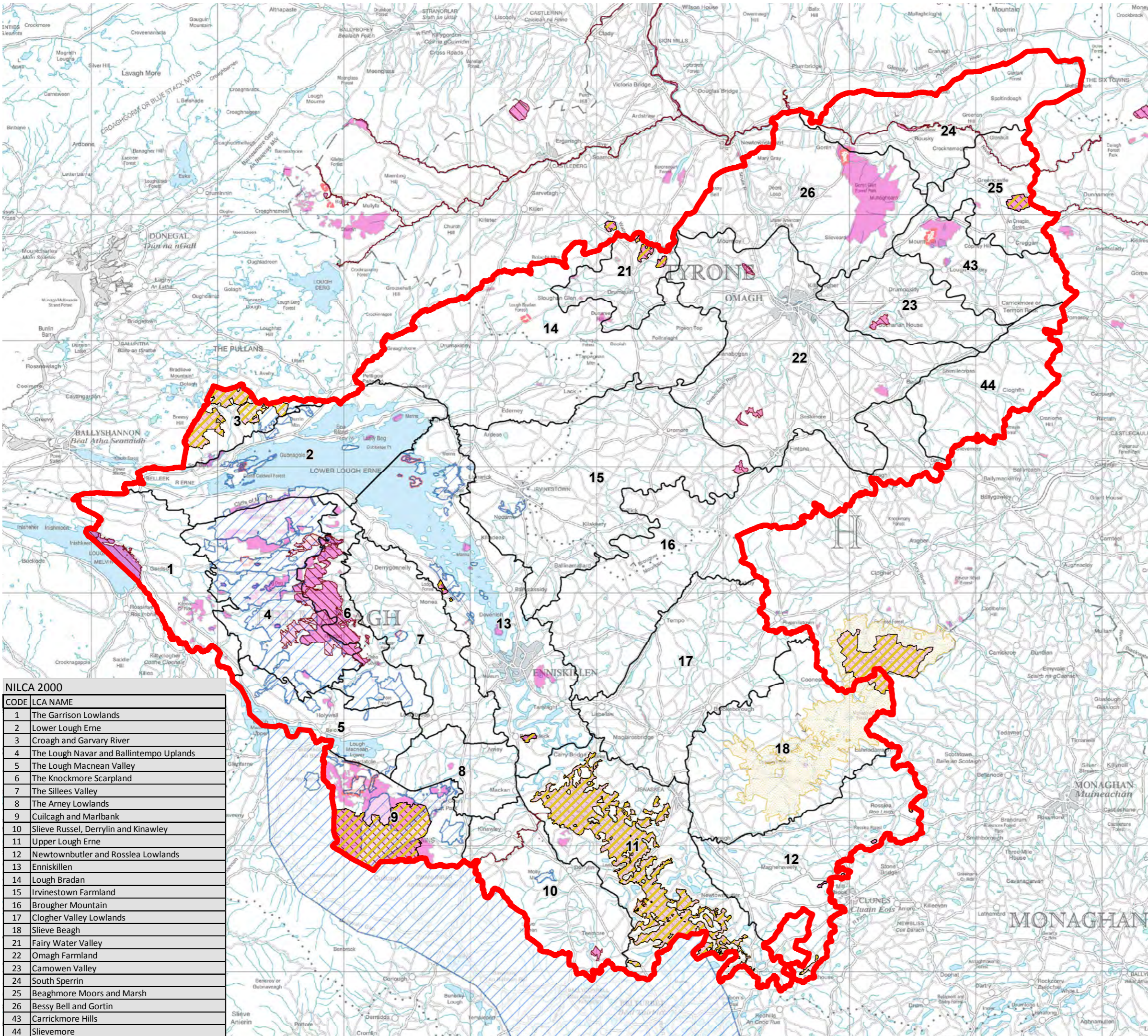
Fermanagh & Omagh Wind Energy Capacity Study

Dec 2017 50087 / GIS / Fig 3.5

Figure 3.5 Landscape Designations

N






Legend

- Local Authority Boundary
- Landscape Character Areas
- Natural Heritage**
- Special Areas of Conservation
- RAMSAR Sites
- Special Protected Areas
- Areas of Special Scientific Importance
- Geopark & Expansion Area
- Nature Reserves**
- National
- Local

NILCA 2000	
CODE	LCA NAME
1	The Garrison Lowlands
2	Lower Lough Erne
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6	The Knockmore Scarpland
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21	Fairy Water Valley
22	Omagh Farmland
23	Camowen Valley
24	South Sperrin
25	Beaghmore Moors and Marsh
26	Bessy Bell and Gortin
43	Carrickmore Hills
44	Slievemore



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**Fermanagh & Omagh
Wind Energy Capacity Study**

Dec 2017 50087 / GIS / Fig 3.6a

**Figure 3.6a
Natural Heritage
Designations**

N
↑

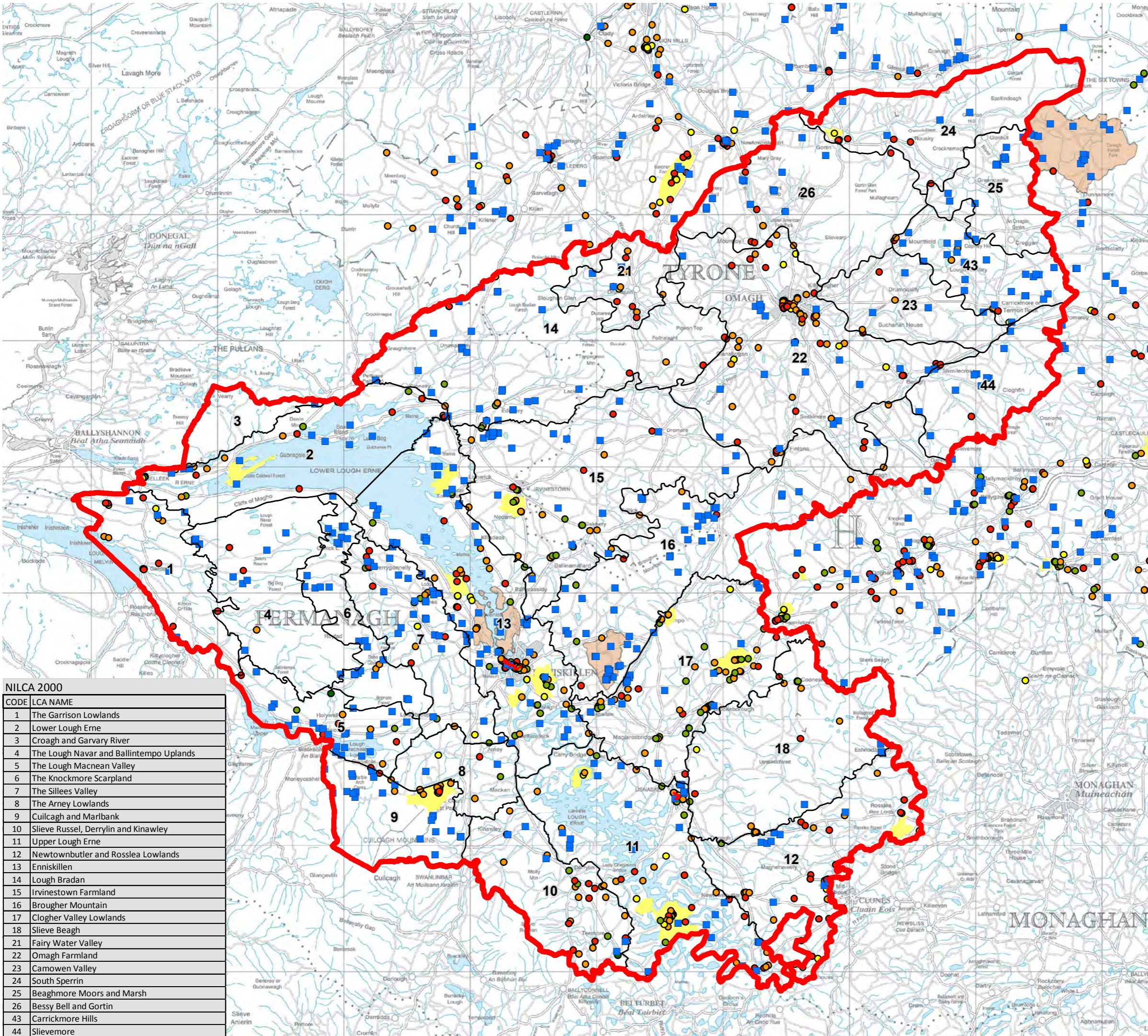
1km

0

2.5

5


10



- Legend**
- Local Authority Boundary
 - Cultural Heritage**
 - Registered Parks & Gardens
 - Areas of Significant Archaeological Interest
 - Conservation Areas
 - Landscape Character Areas
 - Scheduled / State Care Monuments

- Listed Building Designation**
- A
 - B
 - B+
 - B1
 - B2

NILCA 2000	
CODE	LCA NAME
1	The Garrison Lowlands
2	Lower Lough Erne
3	Croagh and Garvary River
4	The Lough Navar and Ballintempo Uplands
5	The Lough Macnean Valley
6	The Knockmore Scarpland
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25	Beaghmore Moors and Marsh
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43	Carrickmore Hills
44	Slievemore

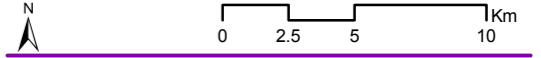


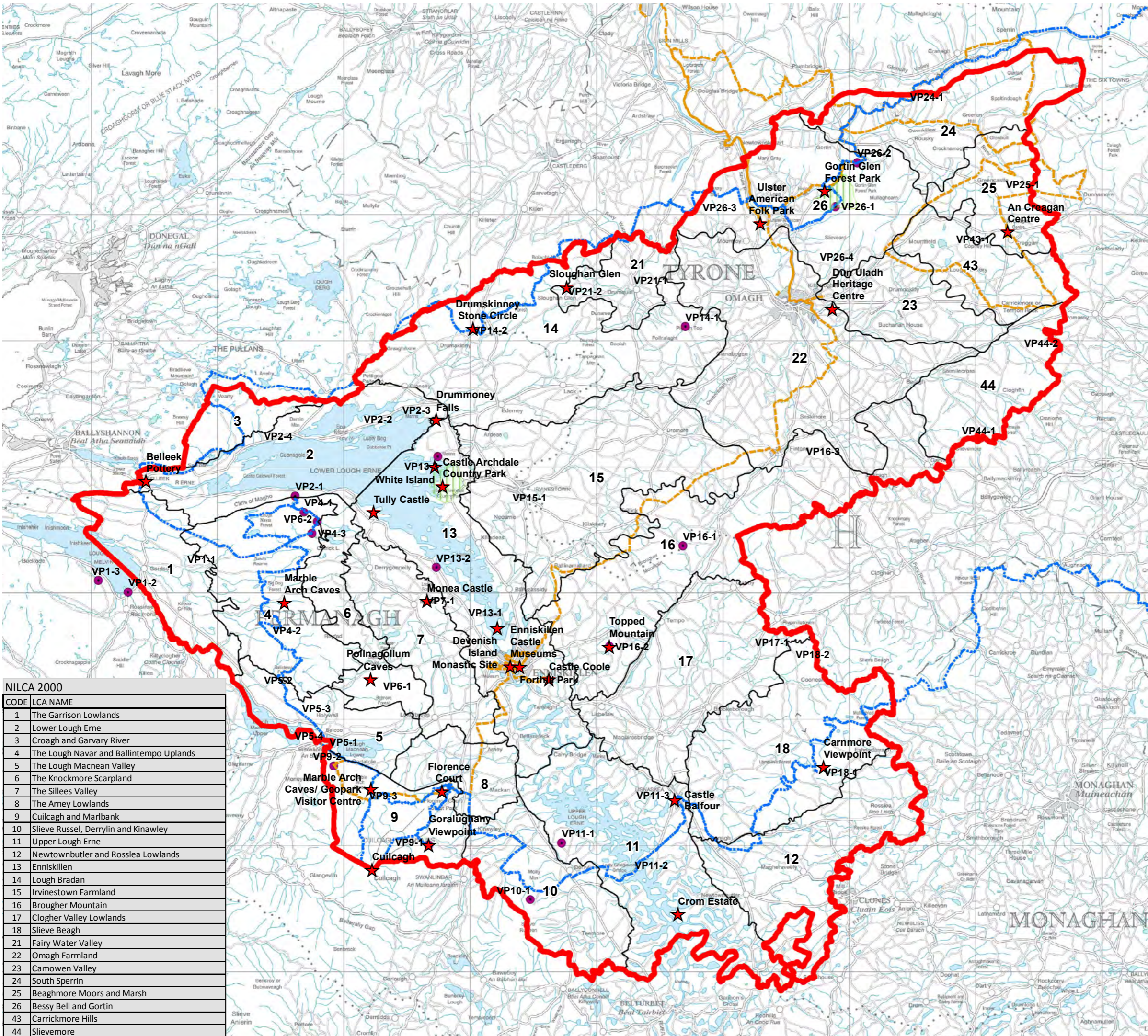
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**Fermanagh & Omagh
Wind Energy Capacity Study**

Dec 2017 50087 / GIS / Fig 3.6b

**Figure 3.6b
Cultural Heritage
Designations**






Legend

- Local Authority Boundary
- Landscape Character Areas
- ★ Points of Interest
- Country / Forest Park
- Ulster Way
- Cycle Paths
- Scenic Viewpoints

CODE	LCA NAME
1	The Garrison Lowlands
2	Lower Lough Erne
3	Croagh and Garvary River
4	The Lough Navar and Ballintempo Uplands
5	The Lough Macnean Valley
6	The Knockmore Scarpland
7	The Silles Valley
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23	Camowen Valley
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25	Beaghmore Moors and Marsh
26	Bessy Bell and Gortin
43	Carrickmore Hills
44	Slievemore

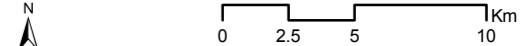


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Fermanagh & Omagh Wind Energy Capacity Study

Dec 2017 50087 / GIS / Fig 3.7

Figure 3.7 Other Locations of Landscape Interest



0 2.5 5 10 km

4.0 VISUAL BASELINE

The following section describes the main visual receptors and where they would most likely experience views of wind energy development based on empirical observation from desk study and site visits. This provides an overview of potential issues relating to visual impact and those parts of the landscape most sensitive to views, with the subsequent capacity assessments providing more detailed analysis.

4.1 Visual Receptors

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

The types of potentially sensitive visual receptors within Fermanagh and Omagh are broadly categorised into three groups:

- Residents (dwellings and settlements)
- Travellers (principally road users)
- Visitors (visitor destinations, viewpoints, recreational footpaths and cycle routes)

Whilst there are workplace receptors in Fermanagh and Omagh, these have not been included, as people at work are considered to be lower sensitivity visual receptors.

Visibility from the following main locations/ receptor types are considered where identifying those parts of the landscape where wind energy development would be most visible, with visual receptors illustrated on Figure 4.1. Viewpoints used for undertaking the assessment are listed in Appendix 5.

- **Settlements and Properties:** representing concentrations of residential receptors;
- **Roads:** There is a dense network of roads and tracks throughout the Local Authority area and therefore views from A roads and scenic routes are considered.
- **Routes:** The Ulster Way is a promoted walking route through the region, and the National Cycle Network and local cycling routes pass through the Local Authority area.
- **Viewpoints:** Views from recognised viewpoints within the area as identified from OSNI 1:50,000 maps, locations identified by Fermanagh and Omagh District Council, and locations where more sensitive visual receptors may experience views to the landscape.

4.2 Visibility Analysis

4.2.1 Settlements

Settlements are found throughout the Local Authority Area but are concentrated in the farmland of the *Omagh Basin* and extending south west towards Lower Lough Erne,

including the two largest settlements of Omagh and Enniskillen. Settlements often have views to higher ground, where the *Sandstone Ridges and Plateau* landscapes form wide and low horizons to views. Views to the edges of these upland areas are therefore widely available from settlements, and hills and upland areas to the north/ north east such as Bessy Bell, Tappaghan Mountain, and Pollnalaght and the southern fringes of the Sperrins are prominent. The interior of these more upland areas to the north/ north east tend to be less visible from main settlement. Other upland areas are of more limited extent, such as the uplands of *LCA 16 Brougher Mountain*, and their interiors are less hidden, however their undulating terrain tend to screen parts of the landscape from view. The uplands of the karst landscape to the south west are in relatively close proximity to Enniskillen, however they do not feature greatly in views from the settlement. However, small settlements within this area to the south west of Fermanagh and Omagh have views to these uplands, e.g. from Belcoo, Belleek.

Figure 4.1 shows the distribution of residential properties throughout the Local Authority area. This provides an illustration of how population density varies throughout the area, and shows how landscapes with no resident population are very few. It can be concluded that there are few, if any, landscapes within the Local Authority area where there will be no nearby resident population to experience views to wind energy developments.

4.2.2 Roads

There is a dense network of roads within the Local Authority Area. Main transport routes tend to run through lowland areas, for example through the *Omagh Basin* between Omagh and Enniskillen (A32), along the Clogher Valley (A4), and alongside the loughs to the south of the area (A45, A47). Visibility from main routes tends to follow the pattern described from settlements, although in practice views from roads are typically restricted by frequent drumlins and the vegetation of adjacent field boundaries. Scenic routes pass through the Sperrins, often following minor roads, from which the interior of this upland area is in view, as are the more prominent peaks to the north including Bessy Bell, Pollnalaght and Mullaghcarn.

Minor roads are found throughout the Local Authority area, and with the exception of the more upland areas of the Sperrins and Cuilcagh to the north and south respectively, most larger scale areas potentially suited to wind farm development have minor roads passing through or nearby.

4.2.3 Routes

A small number of recreational walking routes and cycle routes pass through the Local Authority area. The Ulster Way passes through a number of the most scenic landscapes including those of the *Lough Navar and Ballintempo Uplands*, *Cuilcagh and Marlbank*, and further north the Sperrins. The route also traverses the less scenic upland fringes including *Slieve Beagh* to the south and *Lough Braden* to the north. Therefore, from the route there is visibility to much of the more upland landscape with potential capacity for wind energy developments.

National Cycle Network (NCN) Routes 91, 92 and 95 pass through the Local Authority area, the routes incorporating both more scenic locations to the south west and north east, as well as more commonplace lowland farmland. A local network of cycle paths is concentrated around the Sperrins to the north covering remoter and hillier terrain. With the exception of the Sperrins, it would be the periphery of upland areas that would be most visible from lowland cycle routes, for example from the farmland of the *Omagh Basin* or the Macnean Valley. Cycle routes through the Sperrins would provide internal visibility of this more upland landscape.

4.2.4 Viewpoints

The Local Authority area includes a number of scenic viewpoints identified on OSNI 1:50,000 mapping and these are concentrated in the south and north of the Local Authority area. To the south there are scenic viewpoints overlooking Lower Lough Erne, across the Lough Navar Forest, and from the Cuilcagh/ Marlbank area. To the north there are scenic viewpoints located within parts of the Sperrins and Gortin Glen. It follows that it is the more scenic landscapes to the north and south of the study areas which have greatest visibility from recognised viewpoints.

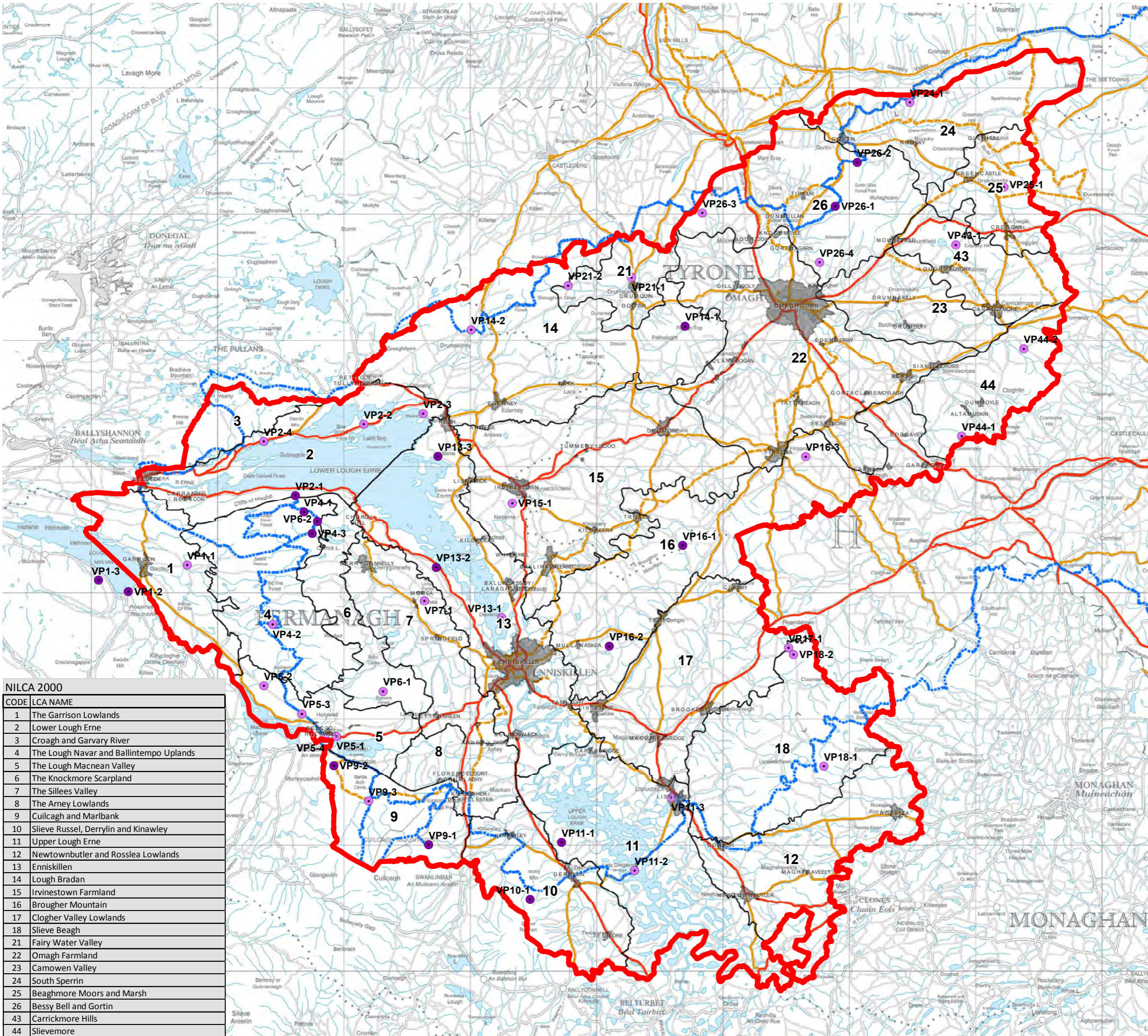
4.2.5 Analysis of Visibility

The Fermanagh and Omagh area is widely settled, but at a low density in the more upland locations. There are few areas not visible to sensitive visual receptors, be they residents or recreational receptors appreciating scenic landscapes. Based on desk study and observations from site visits, it is assessed that the following areas are likely to have the highest visual sensitivity, this having a bearing on their capacity for wind energy development.

- The north facing slopes of Cuilcagh which are visible from near Belcoo and around Upper Lough Macnean to sensitive visual receptors;
- The fringes of the *Lough Navar and Ballintempo Uplands* (LCA4) to the north and east, including the escarpment of the Cliffs of Magho and that immediately west of Lower Lough Erne, and the distinctive Belmore Mountain south of the LCA;
- The more easterly summits of LCA 14 *Lough Braden Forest* overlooking the lowland landscapes an Omagh to the east (i.e. Pollnalaght, Tappaghan Mountain);
- The southern fringes of the Sperrins, including Mullaghcarn and Bessy Bell; and
- The upland landscape of LCAs *Brougher Mountain* and *Slievemore*, visible from both the Clogher Valley and the Omagh Basin farmland.

The areas likely to be least visually sensitive include:

- The more internal parts of LCA 14 *Lough Braden Forest* which are set back from more lowland locations to the south and east; and
- Parts of the interior of LCA 18 *Slieve Beagh*.



Legend

- Local Authority Boundary
- Landscape Character Areas
- Settlements

Viewpoints

- Scenic Viewpoints
- Other Viewpoints


Routes

- Ulster Way
- National & Local Cycle Routes

Roads

- Class M
- Class A
- Class B

NILCA 2000	
CODE	LCA NAME
1	The Garrison Lowlands
2	Lower Lough Erne
3	Croagh and Garvary River
4	The Lough Navar and Ballintempo Uplands
5	The Lough Macnean Valley
6	The Knockmore Scarpland
7	The Silles Valley
8	The Arney Lowlands
9	Cuilcagh and Marbank
10	Slieve Russel, Derrilyn and Kinwley
11	Upper Lough Erne
12	Newtownbutler and Rosslea Lowlands
13	Enniskillen
14	Lough Bradan
15	Irvinestown Farmland
16	Brougher Mountain
17	Clogher Valley Lowlands
18	Slieve Beagh
21	Fairy Water Valley
22	Omagh Farmland
23	Camowen Valley
24	South Sperrin
25	Beaghmore Moors and Marsh
26	Bessy Bell and Gortin
43	Carrickmore Hills
44	Slievemore



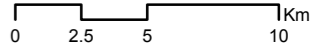
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District Council
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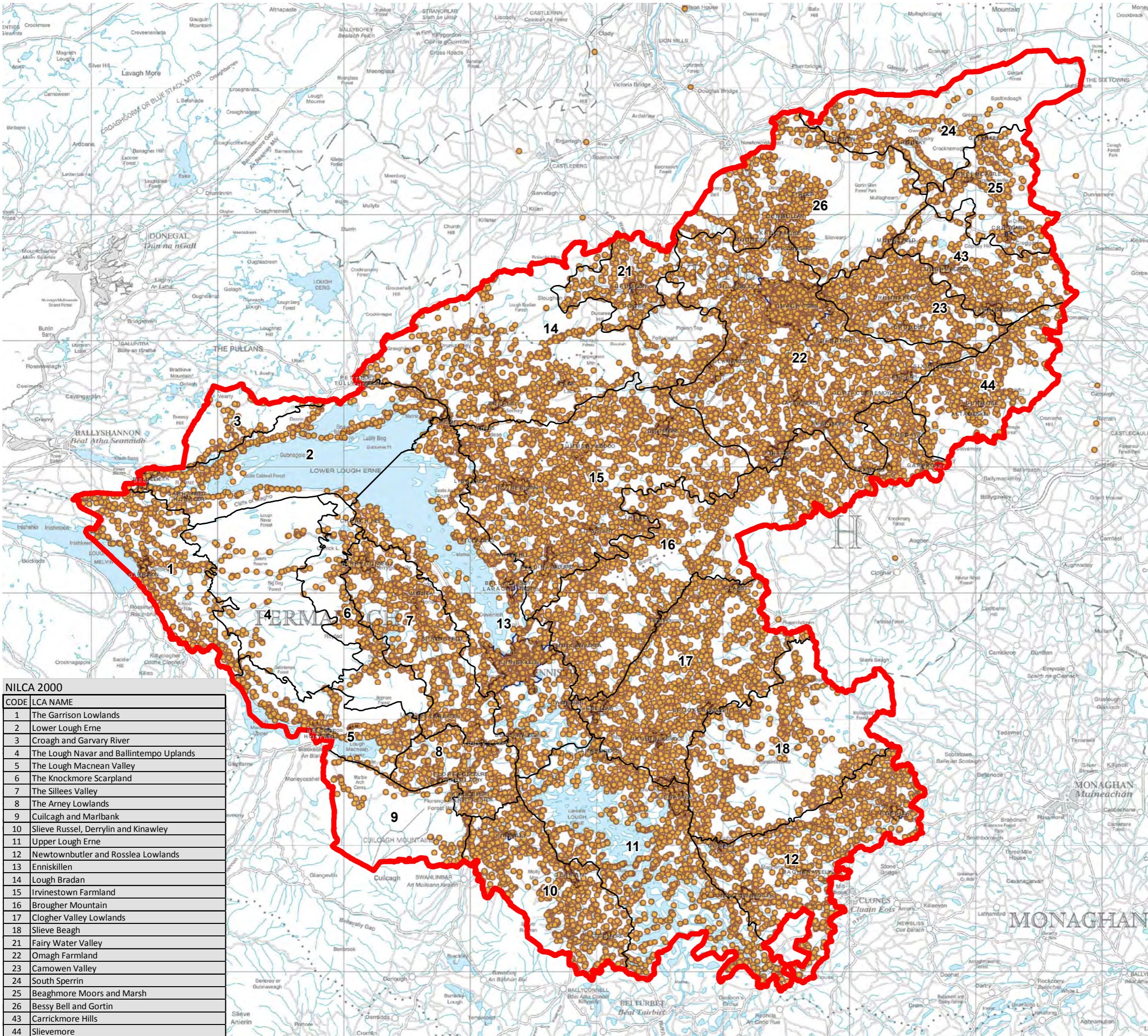
**Fermanagh & Omagh
Wind Energy Capacity Study**

Dec 2017 50087 / GIS / Fig 4.1a

**Figure 4.1a
Routes, Settlements
& Viewpoints**

N






Legend

- Local Authority Boundary
- Landscape Character Areas
- Domestic Address Points

NILCA 2000	
CODE	LCA NAME
1	The Garrison Lowlands
2	Lower Lough Erne
3	Croagh and Garvary River
4	The Lough Navar and Ballintempo Uplands
5	The Lough Macnean Valley
6	The Knockmore Scarpland
7	The Silles Valley
8	The Arney Lowlands
9	Cuilcagh and Marbank
10	Slieve Russel, Derrilyn and Kinwley
11	Upper Lough Erne
12	Newtownbutler and Rosslea Lowlands
13	Enniskillen
14	Lough Bradan
15	Irvinestown Farmland
16	Brougher Mountain
17	Clogher Valley Lowlands
18	Slieve Beagh
21	Fairy Water Valley
22	Omagh Farmland
23	Camowen Valley
24	South Sperrin
25	Beaghmore Moors and Marsh
26	Bessy Bell and Gortin
43	Carrickmore Hills
44	Slievemore

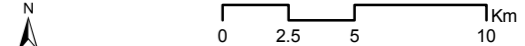


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Fermanagh & Omagh Wind Energy Capacity Study

Dec 2017 50087 / GIS / Fig 4.1b

Figure 4.1b Address Points



0 2.5 5 10 km

5.0 WIND TURBINES IN THE STUDY AREA

The following section describes the operating, consented and proposed wind turbine developments in Fermanagh and Omagh and the rest of the study area according to available databases as of **November 2017**. It should be noted that data provided on wind energy development for the Republic of Ireland is partial, and does not include all wind energy developments within the study area.

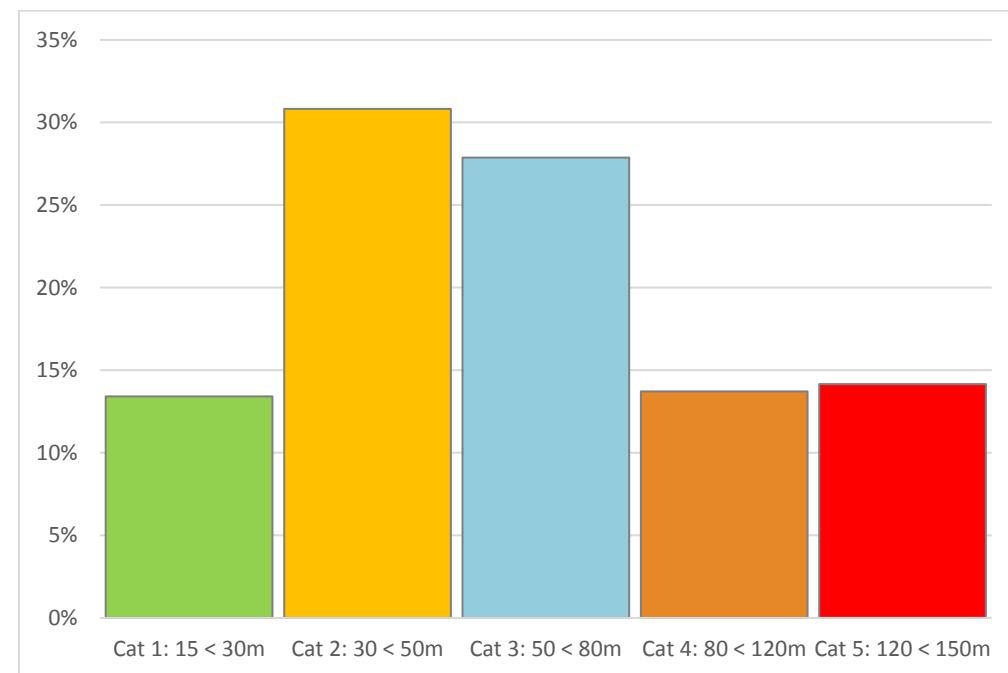
5.1 Turbine Numbers and Distribution

The study area, for the purposes of visibility, landscape and visual impacts of turbines includes the Fermanagh and Omagh area, plus a 15km buffer around its boundary, taking in parts of Mid Ulster, Derry and Strabane within Northern Ireland, and Donegal, Leitrim, Cavan and Monaghan in the Republic of Ireland. The extents of the study area are illustrated on Figure 3.1.

Consented and proposed wind energy developments within the study area are listed, together with details (where available) of location, number and height of turbines, etc, in Appendix 3. The locations are shown in Figure 5.1.

Based on available information there are, within Fermanagh and Omagh, a total of 678 operational or consented turbines of 15m or greater height, with 1164 located within the wider study area of 15km outside the Fermanagh and Omagh boundary. At the time of the assessment there were a small number of application wind turbines within Fermanagh and Omagh or close to its borders.

Of those turbines consented or operational within Fermanagh and Omagh, a significant number (72%) are less than 80m in height ('medium' size or smaller), with 'small/ medium' and 'medium' sized turbines the most frequently occurring typologies.



Operational and Consented Wind Turbines in Fermanagh and Omagh (Nov 2017): Percentage by Height Category.

Within the wider study area smaller wind turbines also predominate, although larger wind farm developments are located to the south and west in Donegal and Leitrim.

5.2.1 Operating and Consented Wind Turbines

While there are significant numbers of consented for wind turbines within the Fermanagh and Omagh area, a notable proportion of these do not appear to have been constructed at the time of the study. With regards to larger scale wind energy developments i.e. windfarms comprising 'medium/ large' or 'large' typology turbines, i.e. those in excess of 80m to blade tip, the following are located within Fermanagh and Omagh:

Wind Farms with Category 5 ('Large') Wind Turbines

Castlecraig Windfarm, Drumquin	10 x 127m
Cornavarrow Wind Farm	9 x 126m
Crockagarran, Ballygawley	7 x 125m
Crockbaravally Wind farm, Sixmilecross	3 x 127m
Gortfinbar	5 x 125m
Inishative Road, Sixmilecross	6 x 120.5m
Killycreen East and Killycreen West near Belcoo	2 x 125m
Molly Mountain, Derrylin	5 x 125m
Ora More Hill, Boho and Belcoo	6 x 125m
Pollnalaght	12 x 125m
Slieve Divena & k/05/1691/F	8 x 125m
Slieve Rushen, Derrylin	18 x 125m
Teiges Mountain, Brookeborough	5 x 120m

Wind Farms with Category 4 ('Medium/ Large') Wind Turbines

Tappaghan Mountain, Lack	19 x 100m
Callagheen, Belleek	13 x 93m
Slieve Divena	12 x 100m
Hunters Hill, Fintona	8 x 101m
Bessy Bell 2	6 x 100m
Clunahill, Drumquin	6 x 100m
Lough Hill, Drumquin	6 x 83m
Crockdun	5 x 100m
Loughmallon Road, Cregganconroe	5 x 101m
Thornog, Drumquin	4 x 110.5m
Altamuskan, Sixmilecross	3 x 110.5m

5.2.2 Proposed Windfarms

Wind turbine data shows only two wind farm applications within or close to Fermanagh and Omagh: Doraville Wind Farm is located to the north east of LCA *South Sperrin* (33 turbines up to 149m); and Murley Wind Farm (9 x 126.5m turbines) is close to the existing Hunters Hill Wind Farm near Fintona, but located in Mid Ulster.

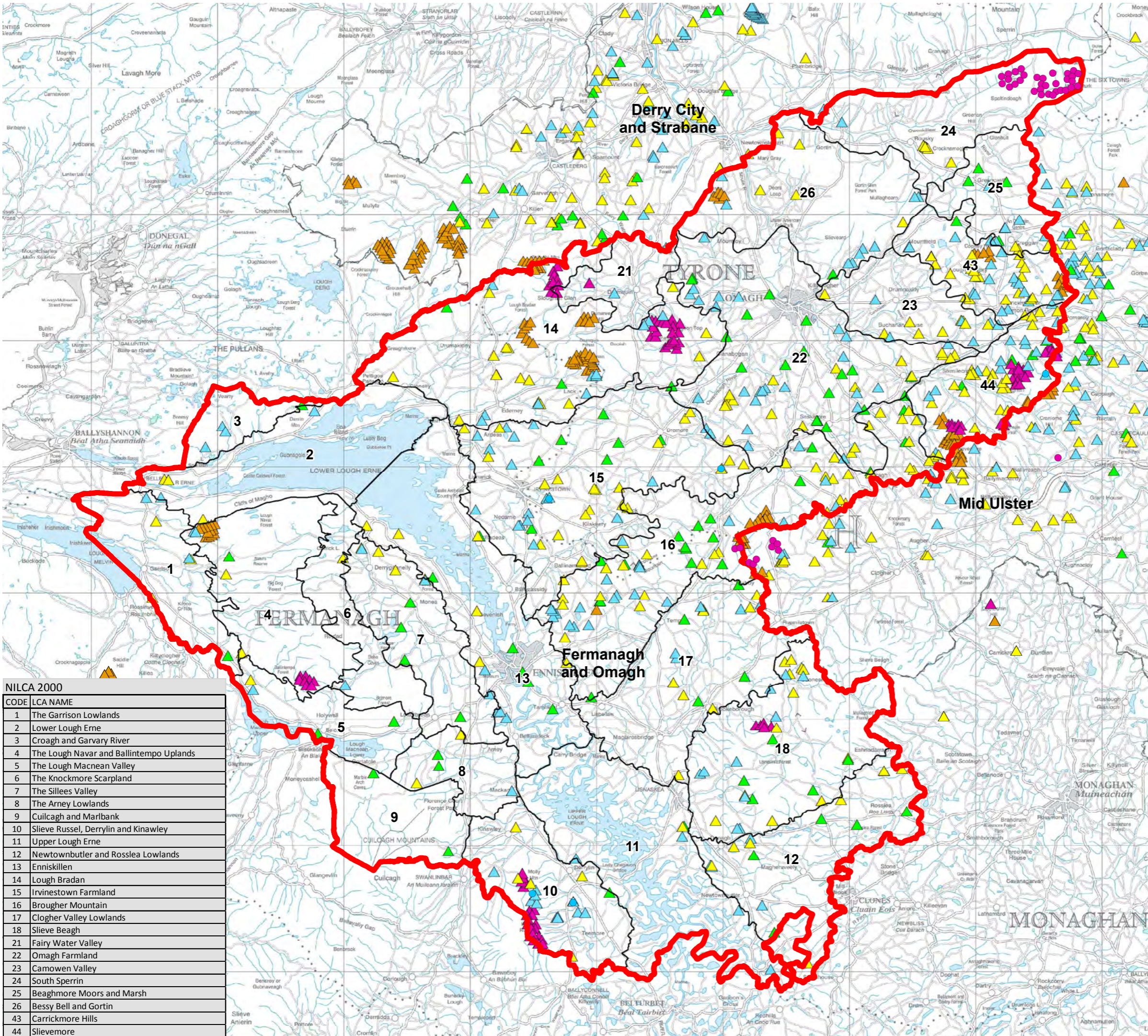
5.3 Landscape Character of Turbine Locations

A clear pattern of operational and consented wind energy developed has emerged in Fermanagh and Omagh. The majority of larger scale wind energy development has taken place in the *Sandstone Ridges and Plateau* landscape types, in particular those of *LCA 14 Lough Braden* close to the north-western boundary of the Local Authority Area, within *LCA 16 Brougher Mountain* and *44 Slievemore* to the east. Wind farms in *LCA 14 Lough Braden* are clustered around a series of low hills, some of which are located at the southern and eastern edge of the LCA and overlooking more lowland farming areas to the east from prominent hill tops. Wind energy development in LCAs *16 Brougher Mountain* and *44 Slievemore* are situated along the alignment of the undulating ridge running from south west to north east.

Another area of significant wind energy development is the upland landscape of *LCA 10 Slieve Russel, Derrylin and Kinawley*, on the outlying hill of Slieve Rushen to the south of Fermanagh and Omagh adjacent to the uplands of Cuilcagh.

Further smaller windfarms are located in other more upland landscapes, including Bessy Bell 2 located in *LCA 26 Gortin and Bessy Bell* towards the north of the study area, within *LCA 4 Lough Navar and the Ballintempo Uplands* and *LCA 18 Slieve Beagh*. Wind turbines of smaller typologies are located in many lowland farming landscapes, which are unsuited to larger scales of wind energy development.


There are few wind turbine applications within Fermanagh and Omagh. However, it is notable that the single current major application is located within *LCA 24 South Sperrin*, an area currently free of major wind energy development and designated as an Area of Outstanding Natural Beauty (AONB). The scheme proposes turbines up to 149m in height, which would be largest turbines in the Local Authority area. This scheme may be an indication of pressure for development in more sensitive landscape areas due to constrained capacity elsewhere, and reflects the trend for larger wind turbines, which can be difficult to accommodate in smaller scale upland landscapes close to populated lowland areas.



Legend

- Local Authority Boundary
 - Landscape Character Areas
- Existing Turbine Categories**
- ▲ 15-30m Height
 - ▲ 30-50m Height
 - ▲ 50-80m Height
 - ▲ 80-120m Height
 - ▲ 120m Height and over
- Proposed Turbine Categories**
- 15-30m Height
 - 30-50m Height
 - 50-80m Height
 - 80-120m Height
 - 120m Height and over

NILCA 2000	
CODE	LCA NAME
1	The Garrison Lowlands
2	Lower Lough Erne
3	Croagh and Garvary River
4	The Lough Navar and Ballintempo Uplands
5	The Lough Macnean Valley
6	The Knockmore Scarpland
7	The Silles Valley
8	The Arney Lowlands
9	Cuilcagh and Marbank
10	Slieve Russel, Derrilyn and Kinwley
11	Upper Lough Erne
12	Newtownbutler and Rosslea Lowlands
13	Enniskillen
14	Lough Bradan
15	Irvinestown Farmland
16	Brougher Mountain
17	Clogher Valley Lowlands
18	Slieve Beagh
21	Fairy Water Valley
22	Omagh Farmland
23	Camowen Valley
24	South Sperrin
25	Beaghmore Moors and Marsh
26	Bessy Bell and Gortin
43	Carrickmore Hills
44	Slievemore



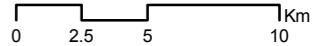
Fermanagh & Omagh
District Council
Comhairle Ceantair
Fhear Manach agus na hÓmaí

**Fermanagh & Omagh
Wind Energy Capacity Study**

Dec 2017 50087 / GIS / Fig 5.1a

Figure 5.1
**Existing, Consented &
Proposed Turbines**

N



6.0 ASSESSMENT OF LANDSCAPE CAPACITY AND CUMULATIVE CHANGE

6.1 Assessment Purpose and Process

The purpose of the following assessment is to determine the capacity of the Fermanagh and Omagh landscape to accommodate wind turbine development and to determine what levels of cumulative development could be considered acceptable across the Local Authority area. The assessment also takes into account the level of cumulative development that already exists within and around the Local Authority area and is based on the premise that current renewable energy policies have and will continue to lead to landscape change.

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

- 1) Firstly, identifying the *underlying* capacity of the Fermanagh and Omagh landscape to accommodate wind turbine development;
- 2) Secondly, assessing the degree of cumulative change resulting from operating and consented wind turbines in the study area and within specific areas of Fermanagh and Omagh;
- 3) Thirdly, assessing the extent to which cumulative consented development has reached the limit of the landscape's capacity to acceptably accommodate wind energy developments; and
- 4) Finally, assessing the level of further development that could acceptably be accommodated within areas of Fermanagh and Omagh thereby identifying *remaining* capacity.

An assessment methodology is given in Chapter 2.0 and further detailed in **Appendix 1**. The assessments are set out in **Tables 6.1(i)-(vii)** and illustrated in **Figures 6.1 to 6.4**, which show landscape capacity, the current wind energy landscape typology, proposed limits to wind energy development by landscape typology, and opportunities and constraints for wind energy development.

The assessment of landscape capacity and cumulative landscape change is based on the 26 Landscape Character Areas of Fermanagh and Omagh, organised by Regional Character Area.

- 1) Fermanagh Cavelands
- 2) Lough Erne Lakeland
- 3) Clogher Valley and Slieve Beagh
- 4) Omagh Basin
- 5) West Tyrone Hills and Valleys

- 6) Sperrins
- 7) Carrickmore Plateau and Pomeroy Hills

Detailed assessment of the sensitivity and value of each landscape character area is shown in a tabulated form in **Appendix 4** and summarised in left hand columns of Tables 6.1(i)-(vii) which are interleaved with the relevant LCT maps. This information is used to determine the capacity for accepting different turbine sizes, detailed in Table 6.1(i)-(vii) and as maps in Figures 6.1a – f. The maps are indicative, showing the geographical location of each LCA and *overall* rating of capacity for a particular turbine size based on the assessed sensitivities. Capacity may vary across each of the areas and reference should be made to the detailed assessment and guidance which follows the tabulated assessment.

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

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

The proposed acceptable landscape capacity for development is detailed in Table 6.1 and illustrated indicatively in Figure 6.3 as a map of areas of proposed wind turbine landscape typologies which can be compared with the current situation in Figure 6.2.

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

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

6.2 Guidance

Table 6.1 also gives guidance on turbine sizes, cluster sizes and separation between groups of turbines for each landscape area that would limit cumulative development to the proposed acceptable level. This relates to turbines of 15m to blade tip and greater. As highlighted in section 2.7, guidance on small turbines below 15m to blade tip applies at a local level.

Appendix 2 of this report contains detailed discussion of how turbine size, group size and group separation affects perceptions of wind energy and landscape character. Further

guidance is given in SNH siting and design guidance^{14,15}. The following briefly outlines the main considerations in developing the specific guidance for this assessment given in Table 6.1.

6.2.1 Turbine Size

The height of turbines which can be accommodated within a particular landscape is influenced by its scale and openness. Landscape scale varies with the presence or absence of detailed features such as buildings, trees, walls and hedgerows which can provide a visual reference point to compare turbines with. In general, the larger the scale of the landscape and the more open and simple the landscape, the greater the ability to relate to larger development typologies. Smaller turbine sizes may also be accommodated in such landscapes, although it may be more appropriate or appear rational to utilise such landscapes for larger scale turbines. Some discussion of the general issues associated with the siting of 'very large' (150m+) turbines in the landscape is provided in Appendix 2.

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

The landscapes of Fermanagh and Omagh vary in their scale and complexity and are potentially suited to the full range of wind turbine sizes current employed in contemporary on-shore wind energy developments. However, there are other significant constraints to the appropriateness of large wind turbines in these larger scale landscapes, discussed further in the assessment.

6.2.2 Turbine Group Size

Turbine group sizes relate to the scale and complexity of the landscape, particularly to landform and pattern. In general, larger scale more simple landscapes with gentle landforms and simpler patterns can accommodate larger groups of turbines, subject to having the physical capacity (i.e. available area). In the case of Fermanagh and Omagh, as noted above, there are few areas of sufficient extent to accommodate very extensive wind farm developments, and in some upland areas the landscape character is enhanced by the complexity of the landform and its features. However, there are also smaller areas of simpler upland landscape potentially able to accommodate smaller size windfarm developments.

6.2.3 Separation between Turbine Groups

Turbine size and group size can be generically related to landscape character when applied to a single turbine or windfarm, or across a number of windfarms. However, separation

between groups of turbines is the single most important factor in controlling cumulative effects. This is because of the high prominence and extensive visibility of most turbines, leading to effects on landscape character well beyond the turbines and between individual schemes, as discussed in detail in Appendix 4.

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

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

- 1) Proposed Turbine Landscape Typology: each proposed typology detailed in Table 2.2 requires a different separation distance between turbines or schemes to achieve the landscape and visual criteria described.
- 2) Turbine Size: due to their lesser prominence and visibility, smaller turbines would require closer spacing than larger turbines to achieve the defined landscape typology.
- 3) Group Size: smaller groups of turbines would be less dominant and require closer spacing to achieve the same landscape typology than would larger groups of the same size of turbine.
- 4) Underlying Landscape Character Type: this has an effect on all the above criteria. More open, flatter landscapes are more easily affected by intervisibility of turbines and are likely to require greater separation distances between groups. Landscapes with significant topography and woodland cover have the potential to reduce intervisibility. Scale and pattern can have a more subjective effect, but in general smaller scale landscapes are more likely to be affected by wind energy development compared with larger scale landscapes. The presence of other tall objects such as electricity pylons also affects the perception of turbine development.

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

In the case of small LCAs, the separation distances for larger turbines might mean that, in theory, only one grouping would be comfortably accommodated within the area. Separation distances also apply between a development in one landscape type and another in an adjacent type, or between turbines of different size categories. In such situations an average of the two recommended distances would be most appropriate.

¹⁴ SNH (2017) *Siting and Designing Windfarms in the Landscape v.3*

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

In all cases the distances are an approximate range intended for guidance. Separation distances between specific proposals should therefore be considered in more detail on a case by case basis.

6.2.4 Windfarm Extensions

In some cases, it is more appropriate to extend an existing windfarm than to create a new focus of development with a new set of separation distances. The acceptability of such extensions depends upon the extent to which the original approved site has occupied the space available and whether additional turbines will push on to visually sensitive areas or sensitive landscapes. Extensions should fit harmoniously to form a single coherent composition with the previously existing windfarm.

6.2.5 Re-powering of Existing Windfarms

Re-powering involves the replacement of existing turbines with more modern and generally larger turbines located within the site of an existing windfarm. In practice, this will involve new turbine positions and different turbine separation distances set for the new parameters. Effectively, it involves the creation of a new windfarm on the site of an old one. In assessing the acceptability of such developments, it will be necessary to assess the potential change to wind turbine landscape type that could result from increased turbine size, as the scaling relationships of larger turbines and the associated Zones of Theoretical Visibility may be radically different and may exceed an established landscape capacity. The existing windfarm usually forms part of the baseline for assessment.

6.2.6 Associated Windfarm Infrastructure

Wind farm developments require ancillary infrastructure including control buildings, sub-stations, transformer units, access tracks, power and grid connections. With advances in battery technology, energy storage systems co-located with wind farm developments may also become more commonplace.

While the form and likely effects of common ancillary elements can be predicted from existing wind farm developments, energy storage systems are a new technology and it is currently difficult to predict with certainty the likely size and scale of such systems which might usually be associated with a wind farm. However, based on current installations, these are assumed to be centralised low level containerised systems, with landscape and visual effects comparable to a typical wind farm sub-station.

It is usually the case that the landscape and visual effects of associated infrastructure are secondary to effects from the wind turbines themselves, however they do have the potential to contribute to adverse effects. The overriding objective for the design and siting of such features should be to avoid adding complexity or clutter to the image of the wind farm, and this can be achieved through measures including appropriate siting of elements in relation

to landforms or other landscape features, the use of appropriate colours for built elements, mitigation planting, undergrounding, and minimising the numbers of elements in view e.g. through utilising turbines with integrated transformer units, or the concentration of features in a limited number of locations.

The subsequent guidance also considers the landscape capacity for accommodating such elements in those locations identified with capacity for larger scale wind energy developments, taken as groups of turbines >80m in height. For smaller developments, ancillary infrastructure will tend to comprise only of minor elements which should be sited bearing in mind local small scale landscape features such as buildings, walls, local landforms or field patterns.

Advice on the siting and design of these ancillary elements is provided in SNH guidance¹⁶ and included with the LCA assessments. General siting and design considerations for ancillary infrastructure associated with small scale wind energy development is provided in Section 6.7.

6.2.7 Other Factors Which Influence Capacity

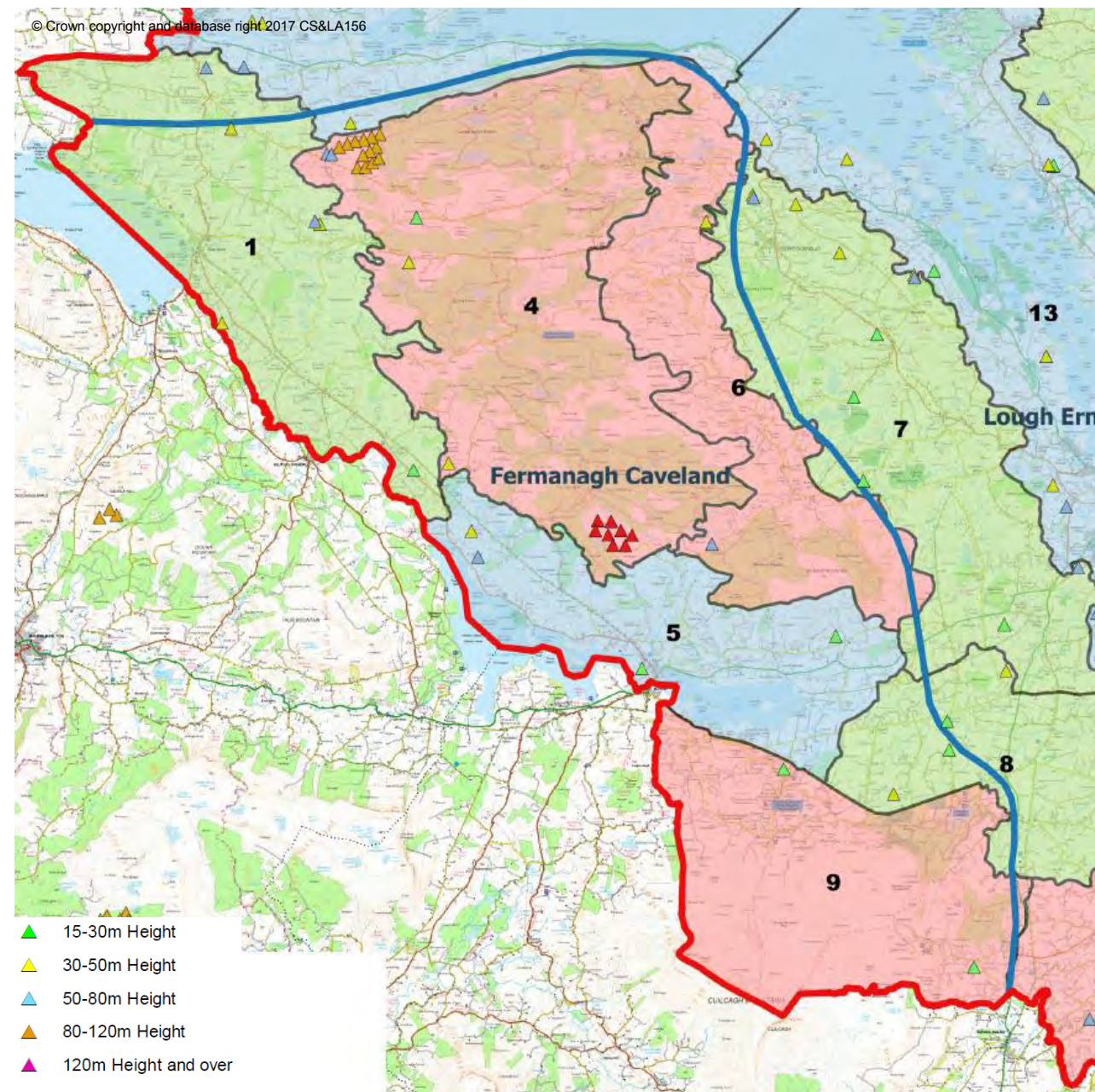
It is emphasised that this assessment is focused on landscape and visual issues. Areas which have been identified as suitable on this basis may be restricted by other unrelated factors such as protection of wildlife, effects on residential amenity, tourism and recreation, aviation restrictions, or lack of grid connection.

¹⁶ SNH (2017) *Siting and Designing Windfarms in the Landscape v3*, §2.20 – 2.24

Explanation of Table 6.1

Key: <input type="radio"/> No Capacity <input type="radio"/> Low Capacity <input type="radio"/> Medium Capacity <input type="radio"/> High Capacity																	
UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)						CURRENT CONSENTED DEVELOPMENT				PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)							
Landscape Sensitivity to Wind Energy Development				Landscape Capacity (Related to turbine size)				Existing/ Consented Developments	Current Wind Energy Landscape Type(s)	Future Wind Energy Landscape Type(s)	Remaining Landscape Capacity (Related to turbine size)				Comments on Sensitivity and Capacity		
Landscape Character Sensitivity	Visual Sensitivity	Landscape Sensitivity	Landscape Value	15-<30m	30-<50m	50-<80m	80-<120m				15-<30m	30-<50m	50-<80m	80-<120m			
Landscape Character Area: <i>Name of Landscape Character Area/ Sub-Area</i>																	
Med/High	Med/High	Med/High	Med/High	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		Brief description of consented wind energy developments (at time of report), including numbers size range, distribution, with key developments named.	Wind Turbine Landscape Type(s) within the area resulting from current consented levels of development (refer to Table 2.1 for description of type and map in Figure 6.2 for distribution of types across study area)	Proposed limits to future Wind Energy development expressed as a Wind Turbine Landscape Type (refer to Table 2.1 for description of type and Figure 6.3 for proposed distribution of types across the study area)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		<p>Landscape Analysis: Brief description of key qualities and characteristics of the landscape character area/ sub-area affecting its capacity to accommodate different types of wind turbine development.</p> <p>Development Capacity: Brief comment on landscape capacity and on current developments and future proposals in relation to landscape capacity.</p> <p>Further guidance is provided in text following the tabulated assessment.</p>		
Assessment of landscape sensitivity and value of the landscape character area or sub-area (from detailed assessment in Appendix 4)				Assessment of landscape capacity for different turbine sizes derived from the sensitivity and value assessment and mapped in Figures 6.1a-f . This represents the 'underlying' capacity of the landscape and does not take into account the cumulative effects of existing/ consented wind energy development.								Max. Numbers in Group		Suggested range/ maximum number of turbines in groupings to ensure capacity is not exceeded			
												1-3	1-3				
										Min Group Separation Distances (km)		Suggested separation distance between turbine groupings to ensure capacity is not exceeded					
										2-4	3-5						

1. FERMANAGH CAVELAND



LCTs 1. Garrison Lowlands, 4. Lough Navar and Ballintempo Uplands, 5. The Lough Macnean Valley, 6. The Knockmore Scarpland, 9. Cuilcagh and Marlbank

The *Fermanagh Caveland* is a limestone upland landscape to the south west of Fermanagh bordering the Republic of Ireland, and to the south west of the Erne river valley. Much of the area comprises an upland of undulating forested plateau, the northern and eastern extents of which are defined by a dramatic limestone escarpment, including the Cliffs of Magho overlooking Lower Lough Erne to the north. The transition to the adjoining valley landscape to the west, containing Loughs Macnean and Melvin, is less dramatic, with forested uplands giving way to more gentle sloping pastures towards the valley floor. Near Belcoo, Upper Lough Melvin is enclosed to the south by the rugged foothills of Cuilcagh, containing Florence Court estate and the Marble Arch Caves, rising to

the distinctive flat-topped sandstone summit of Cuilcagh itself, the highest point in Fermanagh. The landscape area is largely rural and undeveloped, but includes small settlements of Belcoo and Garrison in the valley linking Lough Macnean and Lower Lough Melvin which runs from south east to north west close to the Republic of Ireland border. Main transport routes tend to circumnavigate rather than cross the main central plateau, and do not penetrate far into the upland landscape of Cuilcagh. Much of the area is within the Marble Arch Caves UNESCO Global Geopark.

Lowland Farmland LCT

LCA 1. Garrison Lowlands

LCA1. The Garrison Lowlands share many characteristics with other *Lowland Farming* areas, characterised by drumlins, enclosed small pastures bounded by wooded hedges and hedgerows, and scatterings of small farms and properties. Towards the north of the character area drumlins become less of a landscape feature, and instead the landform is more clearly that of sloping lough basin forming the north-eastern enclosure to Lough Melvin and features in scenic views from its southern shore. Most of the LCA is identified as an Area of Scenic Quality (ASQ).

Limestone Uplands LCT

LCTs 4. The Lough Navar and Ballintempo Uplands; 6. The Knockmore Scarpland; 9. Cuilcagh and Marlbank

These landscapes form the most scenic parts of the *Fermanagh Caveland*. **LCA 4 The Lough Navar and Ballintempo Uplands** are an extensive upland plateau of undulating forestry which tend to mask the more rugged features of this landscape, but there are various outcroppings, ridges and loughs which contribute to landscape character. The Cliffs of Magho mark the northern extent of the LCA, while the more rounded hill summit of Tullybrack (386m AOD) lies to the south. The wind farm developments of Callagheen and Ora Moor lie at the north and south ends of this LCA respectively. **LCA 6. The Knockmore Scarpland** lies immediately east of the *Lough Navar and Ballintempo Uplands*, forming a steep escarpment including gorges and cliffs, with more lowland character as it transitions into the Sillees Valley to the east. To the south of the *Knockmore Scarpland* is the rounded but pronounced hill summit of Belmore Mountain (398m AOD). Both of these landscapes are sparsely populated and of mostly upland character. They are promoted for recreation and are part of the Global Geopark.



The rugged landscape of the Knockmore Scarpland as seen towards the south from the Lough Navar Forest

LCA 9. Cuilcagh and Marlbank is separated from the limestone plateau landscape described above by Upper Lough Macnean. Above the lough there is a distinctive rugged karst landscape with features such as Hanging Rock which are important as local landmarks. This landscape gives way to a more uniform upland which rises to the summit of Cuilcagh at 666m AOD. While the area is not designated for landscape quality, it is of high scenic value, and includes the estate at Florence Court, and the Marble Arch cave system.



Cuilcagh and Marlbank viewed from the north of the Lough Macnean Valley looking south (Cuilcagh Mountain in cloud)

Lough Basin LCA

LCA 5. The Lough Macnean Valley

LCA 5. The Lough Macnean Valley encompasses the entirety of Upper Lough Macnean and the northern half of Lower Lough Macnean that lies within the United Kingdom, meeting the *Garrison Lowlands* to the north west. It also includes the lower slopes of the limestone upland plateau and Belmore Mountain as they transition to the lowlands around the loughs. The valley of Upper Lough Macnean is of particular scenic value, appearing as a small to medium scale landscape with great interest provided by the rugged geology of the enclosing landscape at *Cuilcagh and Marlbank*, and which provides the setting to the attractive settlement of Belcoo. There is however some quarrying to the southern slopes of Belmore Mountain to the north east of the LCA. Lower Lough Macnean is more expansive, of larger scale and more remote, with its shoreline more wooded, bordered by small scale enclosed pastures similar to those of the *Garrison Lowlands* described above.



Upper Lough Macnean seen from the Marlbank Viewpoint looking north east towards Belmore Mountain

Table 6.1(i). Summary of Landscape Capacity and Cumulative Effects and Guidance for Future Wind Energy Development: Fermanagh Caveland

1. FERMANAGH CAVELAND																				
Key: No Capacity Low Capacity Medium Capacity High Capacity Turbine Size: Small 15<30m; Small/ Medium 30<50m; Medium 50<80m; Medium/ Large 80<120m; Large 120<150m; Very Large 150~200m																				
UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)								CURRENT CONSENTED DEVELOPMENT				PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)								
Landscape Sensitivity to Wind Energy Development				Landscape Capacity (Related to turbine size)				Existing/ Consented Developments (November 2017)	Current Wind Energy Landscape Type(s)	Future Wind Energy Landscape Type(s)	Remaining Landscape Capacity (Related to turbine size)					Comments on Sensitivity and Capacity				
Landscape Character Sensitivity	Visual Sensitivity	Landscape Sensitivity	Landscape Value	15-<30m	30-<50m	50-<80m	80-<120m				120-<150m	150 ~ 200m	15-<30m	30-<50m	50-<80m		80-<120m	Over 120m	150 ~ 200m	
LOWLAND FARMLAND																				
Landscape Character Area: 1. Garrison Lowlands																				
Med/ High	Med/ High	Med/ High	Med/ High							5 consented wind turbines, the tallest of which is 59m.	Landscape with No Wind Turbines/ Landscape with Occasional Wind Turbines (LNWT/ LOWT)	LOWT							Landscape Analysis: The landscape is more open with less varied terrain than some other lowland 'drumlin farmland'. The landscape is important to the setting of Lough Melvin and to views north across the lough. ASQ indicates landscape value.	
										Max. Numbers in Group	1-3	1-3	1						Development Capacity: Limited capacity for small scale wind energy developments associated with farms and properties. Care to be taken to avoid cumulative issues with the wind farm at Callagheen by providing clear separation between upland and lowland turbines.	
										Min Group Separation Distances (km)	3-4	4-5	5							
LIMESTONE UPLANDS																				
Landscape Character Area: 4. The Lough Navar and Ballintempo Uplands																				
Med	Med	Med	Med/ High							Windfarms at Callagheen (13 x 93m) and Ora Moor (8 x 125m), 5 turbines up to 80m size.	Landscape with Wind Turbines/ Landscape with No Wind Turbines (LWT/ LNWT)	LWT/ LNWT							Landscape Analysis: A mixture of larger scale uplands with forestry of lower sensitivity, with other areas of complex topography and landform features, of greater sensitivity.	
										Max. Numbers in Group	1-2	1-2	1-5	5-15	5-15				Development Capacity: Some parts suited to small wind farm developments with 'medium/ large' or 'large' wind turbines.	
										Min Group Separation Distances (km)	3-4	3-4	5-7	7-12	7-12					

1. FERMANAGH CAVELAND																			
Key: <input type="radio"/> No Capacity <input type="radio"/> Low Capacity <input type="radio"/> Medium Capacity <input type="radio"/> High Capacity Turbine Size: Small 15<30m; Small/ Medium 30<50m; Medium 50<80m; Medium/ Large 80<120m; Large 120<150m; Very Large 150~200m																			
UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)								CURRENT CONSENTED DEVELOPMENT				PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)							
Landscape Sensitivity to Wind Energy Development				Landscape Capacity (Related to turbine size)				Existing/ Consented Developments (November 2017)	Current Wind Energy Landscape Type(s)	Future Wind Energy Landscape Type(s)	Remaining Landscape Capacity (Related to turbine size)					Comments on Sensitivity and Capacity			
Landscape Character Sensitivity	Visual Sensitivity	Landscape Sensitivity	Landscape Value	15<30m	30<50m	50<80m	80<120m				120<150m	150 ~ 200m	15<30m	30<50m	50<80m		80<120m	Over 120m	150 ~ 200m
Landscape Character Area: 6. The Knockmore Scarpland																			
Med/ High	Med	Med/ High	Med	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 consented wind turbines, 76m and 44m	Landscape with No Wind Turbines (LNWT)	LNWT	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Landscape Analysis: Complex landscape is very sensitive to wind energy development, and overlooks a small-scale lowland landscape to the east. Development Capacity: This landscape should remain essentially free of wind turbine development, other than at the extreme eastern edge of the LCA at the transition to the Sillees Valley or at the foot of Belmore Mountain.
												Max. Numbers in Group	1	1					
												Min Group Separation Distances (km)	3	3					
Landscape Character Area: 9. Cuilcagh and Marlbank																			
Med/ High	High	High	Med/ High	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 small turbines; 20m and 25m.	Landscape with No Wind Turbines (LNWT)	LNWT	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Landscape Analysis: Highly scenic upland landscape with complex karst landscape features, Florence Court estate landscape and Marble Arch caves. Development Capacity: Almost no capacity for wind energy development other than the occasional turbine of the smallest typology in lowland areas associated with farms and properties.
												Max. Numbers in Group	1						
												Min Group Separation Distances (km)	3						

1. FERMANAGH CAVELAND																			
Key: <input type="radio"/> No Capacity <input type="radio"/> Low Capacity <input type="radio"/> Medium Capacity <input type="radio"/> High Capacity Turbine Size: Small 15<30m; Small/ Medium 30<50m; Medium 50<80m; Medium/ Large 80<120m; Large 120<150m; Very Large 150~200m																			
UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)						CURRENT CONSENTED DEVELOPMENT				PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)									
Landscape Sensitivity to Wind Energy Development				Landscape Capacity (Related to turbine size)		Existing/ Consented Developments (November 2017)	Current Wind Energy Landscape Type(s)	Future Wind Energy Landscape Type(s)	Remaining Landscape Capacity (Related to turbine size)				Comments on Sensitivity and Capacity						
Landscape Character Sensitivity	Visual Sensitivity	Landscape Sensitivity	Landscape Value	15<30m	30<50m				50<80m	80<120m	120<150m	150 ~ 200m							
LOUGH BASIN																			
Landscape Character Area: 5. The Lough Macnean Valley																			
Med/ High	Med/ High	Med/ High	Med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5 wind turbines, typically small or small/ medium. The largest is 56m.	Landscape with No Wind Turbines/ Landscape with Occasional Wind Turbines (LNWT/ LOWT)	LOWT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Landscape Analysis: Eastern parts of the LCA are of high scenic quality with the rugged karst landscape at Cuilcagh and Marlbank forming the setting to Upper Lough Macnean. Western parts are less scenic and of remoter character. Development Capacity: Landscape has a low capacity for wind energy, which should be limited to smaller turbine typologies, particularly if developing windfarms at the fringe of the <i>Lough Navar and Ballintempo Uplands</i> . Greatest capacity is in the landscape around Lower Lough Macnean.
												Max. Numbers in Group	1-3	1-2	1				
												Min Group Separation Distances (km)	3-4	4-7	7				

SUMMARY OF LANDSCAPE CAPACITY: FERMANAGH CAVELAND

Overall, the *Fermanagh Caveland* has a relatively high sensitivity to wind energy development. Although the landscape is mostly undesignated for its landscape qualities, it has a complex and rugged landform which contribute to its scenic qualities. Parts of the landscape are small scale, for example around Upper Lough Macnean. Other areas, including parts of the forested plateau of *LCA 4 The Lough Navar and Ballintempo Uplands* are of a larger scale and less complex because of widespread forestry. The sections below provide a summary of the sensitivity, capacity, and guidance for future development for each landscape character type of the Regional Character Area.

LOWLAND FARMLAND LCT

LCA 1. Garrison Lowlands

Underlying Landscape Capacity

As a small-scale farming landscape, the *Garrison Lowlands* have a limited capacity for small scale wind energy development. This landscape is also of a more open character than other landscapes of a similar type with fewer drumlins and some more open views. The importance of the landscape to the setting of Lough Melvin, especially when viewed from the south, also reduces its capacity for wind energy development. This landscape has low capacity for wind turbines, of no greater than 'medium' size (50<80m).

The landscape objective should be to maintain this area as *landscape with occasional wind turbines*.

Consented Wind Energy Landscape and Wind Energy Applications

There are very few wind turbines within the area, with the largest turbines 59m high. The consented wind energy landscape is a *landscape with occasional or no wind turbines*. There are no known applications within the LCA.

Residual Capacity and Guidance for Future Development

Wind Turbines

A low level of wind energy development could be supported within the LCA, but no more than occasional scattered wind turbines, typically 'small' or 'small/ medium' size (<50m). 'Medium' size turbines (50<80m) tend to be prominent when seen from the south across Lough Melvin, and therefore there is only limited capacity for this typology, which should be well separated single turbine developments only. With the nearby existing windfarm at Callagheen, there is the potential for cumulative issues if smaller typology turbines become too closely associated with this larger wind farm in views, therefore a clear separation should be maintained between this upland windfarm and the more lowland small-scale wind energy developments.

Ancillary Elements

Ancillary elements for small scale wind energy developments (<80m) including access tracks, transformer units, power connections and energy storage units to be sited to suit local conditions. Refer to Section 6.7 for general guidance.

LIMESTONE UPLANDS LCTs

LCAs 4. The Lough Navar and Ballintempo Uplands; 6. The Knockmore Scarpland; 9. Cuilcagh and Marlbank

Underlying Landscape Capacity

The greatest capacity for wind energy development in this area is in the more extensive forested upland landscape of the *Lough Navar and Ballintempo Uplands*. In general, the western parts of this LCA have the greater capacity, sited away from the more rugged landscape with exposed features towards the east and in particular where relatively distant from loughs Melvin and Upper Lough Macnean. Small scale and well separated wind farm developments, including turbines of 120<150m ('large') typology, can be supported in this area, creating a *landscape with wind turbines*. The landscape provides opportunities for the screening of associated infrastructure within existing or new forestry/ woodland. Other parts of this landscape should remain free of wind energy development i.e. a *landscape with no wind turbines*, because of the rugged character, of geological interest, and to avoid having detrimental impacts on recreational resources.

Neither the *Knockmore Scarpland* or *Cuilcagh and Marlbank* have any capacity for wind energy development other than very occasional smaller typology wind turbines of at the character areas' lowland fringes. The rugged undeveloped character of *Cuilcagh and Marlbank* would be particularly susceptible to intrusion from wind energy development, with wind turbines and related infrastructure likely to be high prominent on the bare slopes. The landscape objective should be to maintain these LCAs as *landscapes with no wind turbines*.

Consented Wind Energy Landscape and Wind Energy Applications

The windfarms at Callagheen and Ora More are located within the *Lough Navar and Ballintempo Uplands*, with 93m and 125m turbines respectively and a small number of turbines <80m are located at the western fringe of this LCA. Wind energy developments within the other LCAs are very limited. The current wind energy landscape is largely a *landscape with no wind turbines*. There are no known wind energy applications.

Residual Capacity and Guidance for Future Development

Wind Turbines

There is almost no capacity for wind farm development in much of this landscape other than very localised small-scale developments in lowland fringes.

However, the north west and southern parts of the *Lough Navar and Ballintempo Uplands* have been utilised for relatively small-scale commercial wind farm developments. Subject to careful siting and design, there is potentially scope for limited further development of small scale windfarms

at this western fringe, with 80<120m or potentially 120<150m wind turbines. This may include small extensions to the existing wind farm developments, repowering with larger wind turbines, or potentially a further small wind farm development sited between the two existing schemes, albeit in practice there may be significant constraints from the presence of properties and sites of recreation/ tourism interest. All developments should be perceived as discrete wind farm developments, occupying a minor extent of the upland horizon. Smaller typology windfarm development in this landscape should be limited so as to better accommodate larger development, avoiding small and large wind turbines being seen close together.

Ancillary Elements

For larger wind energy development in upland areas of the *Lough Navar and Ballintempo Uplands* ancillary infrastructure should be sited to make use of screening provided by existing trees/ woodland, or where necessary additional woodland planting is likely to be appropriate within this landscape. Transmission lines should not be sited so as to appear skylined above the plateau and to avoid conflicting with views to wind turbines as far as possible. For small scale wind energy development general guidance is provided in Section 6.7.



93m turbines at Callagheen wind farm overlooking Lough Melvin



View towards the western parts of LCA4 The Lough Navar and Ballintempo Uplands which have some limited capacity for larger scale wind energy development

LOUGH BASIN LCT

LCA5. The Lough Macnean Valley

Underlying Landscape Capacity

The scenic qualities and lowland character of this landscape result in very limited capacity for wind energy development. The landscape is generally less sensitive towards the north west, and away from the more scenic Upper Lough Melvin. Overall there is capacity for a low level of wind energy development of no greater than 80m turbines as single turbine developments, or as small groups of smaller typologies.

The landscape objective should be to maintain this area as *landscape with occasional wind turbines*.

Consented Wind Energy Landscape and Wind Energy Applications

There are very few wind turbines within the area, with the largest turbines 56m high. The consented wind energy landscape is a *landscape with occasional or no wind turbines*. There are no known applications within the LCA.

Residual Capacity and Guidance for Future Development

Wind Turbines

Wind energy development should typically be of well separated single 'medium' sized turbines (<80m) or small clusters of 'small' or 'small/ medium' (<50m) sized turbines. Development close to the shores of either Upper or Lower Lough Macnean should be avoided

Capacity for wind energy development is somewhat greater towards the west of this LCA, away from the more scenic landscapes of Upper Lough Macnean. However, development in this location is also constrained by the presence of the wind farm at Ora Moor in the neighbouring upland landscape, where it would be desirable to maintain clear separation between the larger scale upland development and smaller lowland turbines to avoid undesirable cumulative effects.

Wind energy development around Upper Lough Macnean should be concentrated toward the north and away from the more sensitive landscapes of *Cuilcagh and Marlbank*. The lower slopes of Belmore Mountain provide backclothing for single turbines of the 'medium' typology (50<80m) or small groups of 'small' or 'small/ medium' (<50m) wind turbines. Any such development should be well separated to largely retain the existing character of the landscape.

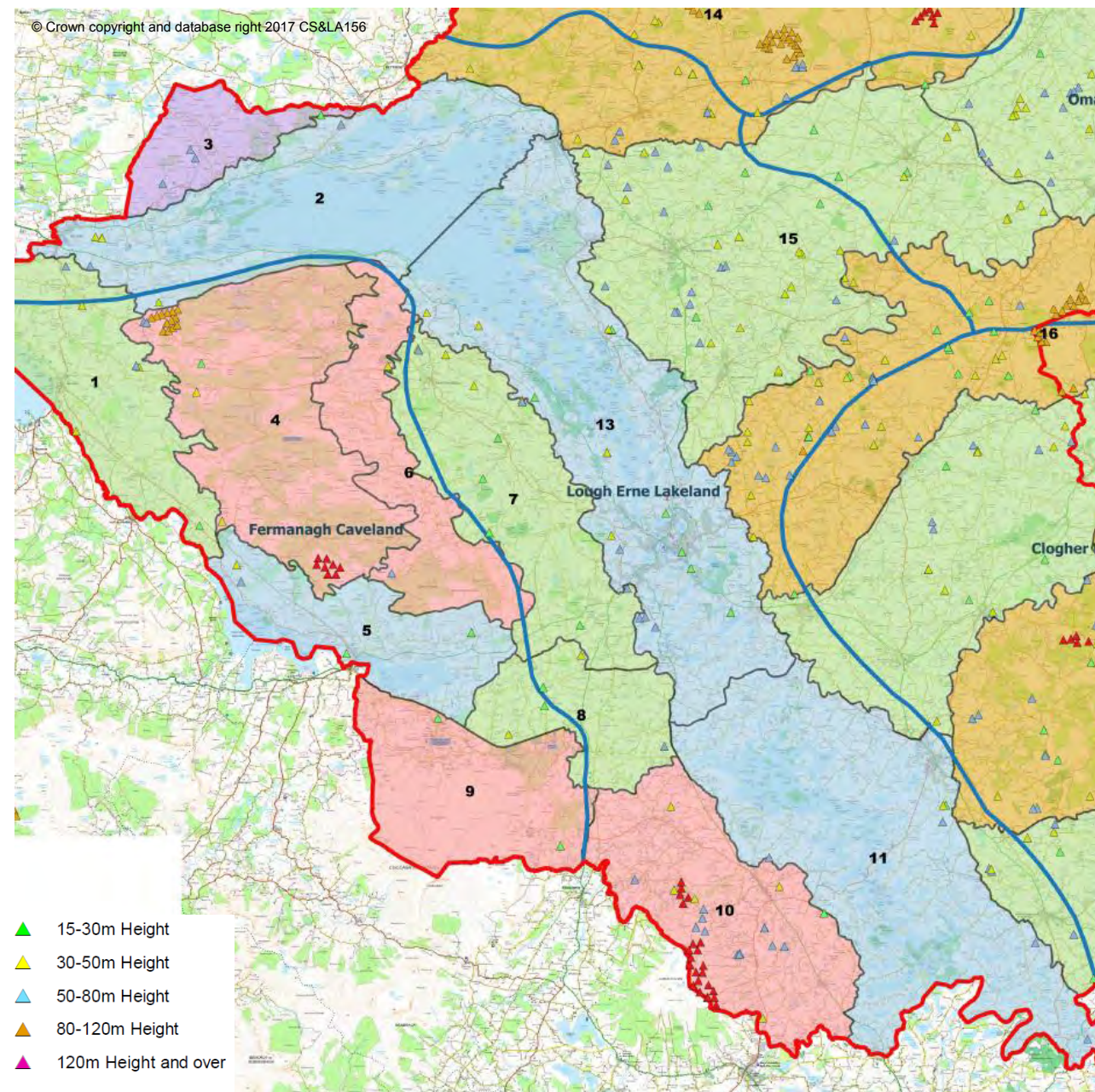
Ancillary Elements

Ancillary elements for small scale wind energy developments (<80m) including access tracks, transformer units, power connections and energy storage units to be sited to suit local conditions. Refer to Section 6.7 for general guidance.



Limited expansion of Ora Moor wind farm may be acceptable, however turbines of significantly larger typology would most likely appear out of scale with the enclosed Upper Lough Melvin basin

2. LOUGH ERNE LAKELAND



LCAs 2. Lower Lough Erne, 3. Croagh and Garvary River, 7. The Sillees Valley, 8. The Arney Lowlands, 10. Slieve Russel, Derrylin and Kinawley, 11. Upper Lough Erne, 13. Enniskillen, 15. Irvinestown Farmland

The Lough Erne Lakeland occupies the broad, arcing, river corridor of the Erne Valley. To the south east the river drains through drumlin farmland, creating a complex interconnected series of water bodies which form Upper Lough Erne, while to the north west the river broadens into the more defined Lower Lough Erne, overlooked by the dramatic Cliffs of Magho, before exiting into neighbouring Donegal. The loughs are bounded by pastoral farmed landscapes and wooded estates, with the south-western boundary of the area defined by the slopes of Slieve Rushen. While the scenic qualities of the islands of Lough Erne are recognised through designation as a Special Countryside Area (SCA), and to the north is the Derrin Mountain ASQ, the area is not covered by

wider landscape designation. The area is however highly valued for its scenic qualities and importance for tourism and recreation, and also is the setting for Enniskillen which lies between Upper and Lower Lough Erne. While the *Lough Basins* of Upper and Lower Lough Erne are the principle landscape types, several others contribute to the overall character of the area.

Lough Basin LCT

LCAs 2. Lower Lough Erne, 11. Upper Lough Erne, 13. Enniskillen

These three LCAs comprise the River Erne corridor, and while having some commonality as broad and expansive landscapes defined by water, there are some significant differences in their character through the change in the River Erne Valley from a complex and fragmented water body to the south east to more defined lough to the north west.

Upper Lough Erne (LCA 11) is intricate and complex, appearing as a ‘drowned’ lowland landscape, where from many locations the waterbody does not exert a strong influence on landscape character due to the screening effects of surrounding pastures with drumlins, hedgerows and woodland, tending to prevent outward views. The landscape is mostly flat excepting the prominent limestone outcrop of Knockinny Hill. The area is sparsely settled, although the busy town of Lisnaskea lies on the eastern boundary of the LCA.



Upper Lough Erne

By contrast **Lower Lough Erne (LCA 2)** is a much more expansive waterbody characterised by elongated islands and promontories and the Cliffs of Magho which rise from its southern shoreline, and while the lough shore is by no means heavily developed, it supports a larger scale of recreational and tourism interest, for example through a marina at Kesh and a nearby caravan park. The settlement of Belcoo sits at the exit of the lough as it flows west into Donegal. The Lough shore is a mix of open pastures and woodland, and views of the waterbody are revealed intermittently when travelling close to the shore by road.



Lower Lough Erne viewed from the north east

Enniskillen (LCA 13) represents a transition between Upper and Lower Lough Erne with the waterbody varying in character from fragmented to the south east and more defined to the north west, but having most in common with Upper Lough Erne in terms of its character. The shore line tends to be well wooded including parkland landscapes at Castle Archdale and Ely Lodge, and the farmland landscape appear to be of good condition and prosperous. As with Upper and Lower Lough Erne, the water body is often hidden from view from the surrounding landscape. The central part of this area is characterised by development in an around Enniskillen, and the industrial sites and airport at Ballycassidy. The area north of Enniskillen, including Devenish Island is an Area of Significant Archaeological Interest.

Lowland Farmland LCT

LCAs 7. The Sillees Valley, 8. The Arney Lowland, 15. Irvinestown Farmland

These farmed landscapes border the *Lough Basins*, with the *Sillees Valley* and *Arney Lowlands* to the west, and the *Irvinestown Farmland* to the east. All are of the 'drumlin farmland' pastures commonly found within the Local Authority area. **The Sillees Valley (LCA 7)** is shallow river valley which the Sillees River winds through, and has a sense of enclosure created by a limestone ridge separating the area from Lough Erne to the east, and the Knockmore Scarpland to the west. Drumlins are tightly packed and steep sided, and the landscape is further enclosed by hedgerows and woodlands. To the south the landscape gives way to the **Arney Lowlands (LCA 8)**, the landscape of which is broader with less enclosure created by drumlins and surrounding landforms, and forms a shallow valley for the Arney River outflowing from Upper Lough Erne towards Lough Macnean. Both landscapes are quite sparsely settled, with small villages, hamlets and single properties scattered throughout.



Enclosed pastures of The Sillees Valley seen from the Lough Navar Forest

The **Irvinestown Farmland (LCA 15)** lies to the east of Upper Lough Erne and is a broad area of farmland extending north eastwards between the sandstone uplands on either side and into the neighbouring *Omagh Basin* Regional Character Area. This is a pastoral landscape of generally good quality farmland, with rolling drumlins hedgerows and small woods. The area contains the larger settlements of Irvinestown and Dromore, connected by the A32 which is a principal transport corridor linking Enniskillen and Omagh.

Lowland Hills LCT

LCA 3. Croagh and Garvary River

The **Croagh and Garvary River (LCA 3)** is an area of rugged small hills to the north of Lower Lough Erne forming part of the wider Pettigo Plateau. The notable high point is the summit of Bressy Hill just outside of the Local Authority area. Farming and small settlement is concentrated on the lower slopes near Lough Erne, while at higher elevations there is rough grazing and moorland, and forestry covers much of the character area to the east. This area is identified as an ASQ, and contributes to the setting of Lower Lough Erne, particularly when seen from the popular Cliffs of Magho viewpoint. Much of the area is also designated as SPA.

Limestone Uplands LCT

LCA 10. Slieve Russel, Derrylin and Kinawley

To the very southwest of the ReCA lies the landscape of **Slieve Russel, Derrylin and Kinawley (LCA 10)**. This area includes both upland and lowland landscapes; its eastern parts, where close to Upper Lough Erne, are largely flat and of the *Lowland Farmland* character type, while further west the ground rises steeply to the flat topped elongated hill of Slieve Rushen at 404m AOD, with a secondary summit of Molly Mountain lying to the north. The lower lying ground is more settled, but the uplands also contain farms, rough grazing and pastures, and limestone quarries are found at all

elevations. Wind farms and single turbines are present in the upland area, contributing to the sense of a semi-industrialised landscape. The landscape appears as a background feature in views from Upper Lough Erne and is visible approximately 12km south east from the summit of Cuilcagh.



'Large' (125m) and 'Small/ Medium' (45m) turbines seen together to the south west of Molly Mountain

Table 6.1(ii). Summary of Landscape Capacity and Cumulative Effects and Guidance for Future Wind Energy Development: Lough Erne Lakeland

2. LOUGH ERNE LAKELAND																			
Key: <input type="radio"/> No Capacity <input type="radio"/> Low Capacity <input type="radio"/> Medium Capacity <input type="radio"/> High Capacity Turbine Size: Small 15<30m; Small/ Medium 30<50m; Medium 50<80m; Medium/ Large 80<120m; Large 120<150m; Very Large 150~200m																			
UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)								CURRENT CONSENTED DEVELOPMENT				PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)							
Landscape Sensitivity to Wind Energy Development				Landscape Capacity (Related to turbine size)				Existing/ Consented Developments (November 2017)	Current Wind Energy Landscape Type(s)	Future Wind Energy Landscape Type(s)	Remaining Landscape Capacity (Related to turbine size)					Comments on Sensitivity and Capacity			
Landscape Character Sensitivity	Visual Sensitivity	Landscape Sensitivity	Landscape Value	15-<30m	30-<50m	50-<80m	80-<120m				120-<150m	150 ~ 200m	15-<30m	30-<50m	50-<80m		80-<120m	Over 120m	150 ~ 200m
LOUGH BASIN																			
Landscape Character Area: 11. Upper Lough Erne																			
Med/ High	Med	Med/ High	Med/ High	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6 consented wind turbines within Upper Lough Erne, with a maximum height of 59m and located at the fringes of the character area only.	Landscape with No Wind Turbines (LNWT)	LNWT	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<p>Landscape Analysis: Enclosed and intimate landscape that susceptible to the effects of wind energy development, but enclosed character reduces internal visibility.</p> <p>Development Capacity: Small-scale wind energy developments at the LCA fringes can be accommodated because of the enclosed nature of the landscape. Where the perception of a LNWT can be maintained there may be limited further opportunities for small scale developments.</p>
												Max. Numbers in Group	1-3	1-2	1				
												Min Group Separation Distances (km)	3-4	4-7	7				
Landscape Character Area: 13. Enniskillen																			
Med/ High	Med	Med/ High	Med/ High	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	17 consented wind turbines, small to medium size, maximum 59m	Landscape with No Wind Turbines/ Landscape with Occasional Wind Turbines (LNWT/ LOWT)	LNWT/ LOWT	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<p>Landscape Analysis: Generally small scale, intimate and sensitive, enclosed rural character, while around Enniskillen the landscape is more urbanised and of lower sensitivity e.g. at Ballycassidy.</p> <p>Development Capacity: The rural landscape has very limited capacity to accommodate some small-scale development, while some opportunities for siting turbines within urban/ industrial/ commercial developments may exist.</p>
												Max. Numbers in Group	1-3	1-2	1				
												Min Group Separation Distances (km)	2-3	2-4	5				

2. LOUGH ERNE LAKELAND																			
Key: No Capacity Low Capacity Medium Capacity High Capacity Turbine Size: Small 15<30m; Small/ Medium 30<50m; Medium 50<80m; Medium/ Large 80<120m; Large 120<150m; Very Large 150~200m																			
UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)				CURRENT CONSENTED DEVELOPMENT				PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)											
Landscape Sensitivity to Wind Energy Development				Landscape Capacity (Related to turbine size)				Existing/ Consented Developments (November 2017)	Current Wind Energy Landscape Type(s)	Future Wind Energy Landscape Type(s)	Remaining Landscape Capacity (Related to turbine size)						Comments on Sensitivity and Capacity		
Landscape Character Sensitivity	Visual Sensitivity	Landscape Sensitivity	Landscape Value	15-<30m	30-<50m	50-<80m	80-<120m				120-<150m	150 ~ 200m	15-<30m	30-<50m	50-<80m	80-<120m		Over 120m	150 ~ 200m
Landscape Character Area: 2. Lower Lough Erne																			
Med/ High	High	Med/ High	Med/ High							6 consented wind turbines, small/ medium or medium size, up to 69m.	Landscape with Occasional Wind Turbines (LOWT)	LOWT							Landscape Analysis: Overall a medium – large scale landscape but with smaller scale features and high scenic qualities. Open views across lough. Development Capacity: Due to the large scale of the landscape a limited amount of small scale development could be accommodated without affecting key landscape characteristics.
												Max. Numbers in Group	1-3	1-2	1				
												Min Group Separation Distances (km)	3-4	4-7	7				
LOWLAND FARMLAND																			
Landscape Character Area: 7. The Sillees Valley; 8. The Arney Lowlands																			
Med/ High	Med	Med/ High	Med							10 (Sillees Valley) 5 (Arney Lowlands) consented wind turbines, mostly small or small/ medium but occasionally medium up to 55m.	Landscape with No Wind Turbines/ Landscape with Occasional Wind Turbines (LNWT/ LOWT)	LOWT/ LNWT							Landscape Analysis: Small scale enclosed pastoral landscapes, which feature in views from scenic upland areas. Arney Lowlands less enclosed than Sillees Valley. Development Capacity Limited capacity for small scale wind energy developments associated with farms and small settlement.
												Max. Numbers in Group	1-3	1-2	1				
												Min Group Separation Distances (km)	3-4	4-7	7				
Landscape Character Area: 15. Irvinestown Farmland																			
Med/ High	Low/ Med	Med	Med							47 consented wind turbines, mostly of small/ medium typology occasionally up to 60m approx.	Landscape with Occasional Wind Turbines (LOWT)	LOWT							Landscape Analysis: Broad, undulating lowland landscape, often enclosed by drumlins and trees. Development Capacity: Enclosed character of the landscape creates opportunities for accommodating smaller scale wind turbines, however the landscape is approaching capacity to the west.
												Max. Numbers in Group	1-3	1-3	1-2				
												Min Group Separation Distances (km)	2-3	3-5	4-7				

2. LOUGH ERNE LAKELAND																			
Key: <input type="radio"/> No Capacity <input type="radio"/> Low Capacity <input type="radio"/> Medium Capacity <input type="radio"/> High Capacity Turbine Size: Small 15<30m; Small/ Medium 30<50m; Medium 50<80m; Medium/ Large 80<120m; Large 120<150m; Very Large 150~200m																			
UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)							CURRENT CONSENTED DEVELOPMENT				PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)								
Landscape Sensitivity to Wind Energy Development				Landscape Capacity (Related to turbine size)			Existing/ Consented Developments (November 2017)	Current Wind Energy Landscape Type(s)	Future Wind Energy Landscape Type(s)	Remaining Landscape Capacity (Related to turbine size)					Comments on Sensitivity and Capacity				
Landscape Character Sensitivity	Visual Sensitivity	Landscape Sensitivity	Landscape Value	15-<30m	30-<50m	50-<80m				80-<120m	120-<150m	150 ~ 200m	15-<30m	30-<50m		50-<80m	80-<120m	Over 120m	150 ~ 200m
LOWLAND HILLS																			
Landscape Character Area: 3. Croagh and Garvary River																			
Med	Med	Med	Med/High	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4 consented wind turbines, up to 'medium' size.	Landscape with No Wind Turbines/ Landscape with Occasional Wind Turbines (LNWT/ LOWT)	LOWT/ LNWT	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Landscape Analysis: Transitional landscape, with lowland, upland plateau and forested areas. Sensitive as part of setting to Lower Lough Erne and close to Castle Caldwell. Development Capacity: Site is unsuitable for a wind farm development, but the expansive landscape context would allow a level of smaller scale development to be absorbed.
											Max. Numbers in Group	1-3	1-3	1-3					
											Min Group Separation Distances (km)	2-3	3-5	4-7					
LIMESTONE UPLANDS																			
Landscape Character Area: 10. Slieve Russel, Derrylin and Kinawley																			
Low/Med	Med	Low/Med	Low/Med	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	41 consented turbines, including 18x125m turbines at Slieve Rushen, and 5x125m at Molly Mountain, various single turbines of 'medium' size.	Landscape with Occasional Wind Turbines/ Wind Turbines Landscape (LOWT/ WTL)	LOWT/ WTL	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Landscape Analysis: Landscape with a varying character including a larger scale upland landscape, affected by wind energy and other industrial land uses. Development Capacity: Upland areas of the landscape have underlying capacity for substantial wind farm development, while lowland areas would also have some capacity for smaller turbine typologies.
											Max. Numbers in Group	1-3	1-3	1-3	25	25			
											Min Group Separation Distances (km)	1-2	2-3	3-5	15	15			

SUMMARY OF LANDSCAPE CAPACITY: LOUGH ERNE LAKELAND

The majority of the *Lough Erne Lakeland* has very limited opportunities for larger scale wind energy development, however there are opportunities for siting smaller typologies of wind turbines up to 'medium' size (50<80m) due to the enclosed nature of the landscape where internal visibility tends to be restricted by frequent drumlins and well wooded field boundaries. The only areas with landscapes potentially able to accommodate larger scale wind energy development are *LCA 3. Croagh and Garvary River* to the north, and *LCA10. Slieve Russel, Derrylin and Kinawley*. However, any sizeable development in the former area it most likely to have a significant impact to the character of Lower Lough Erne. There is already considerable wind energy development within *LCA10. Slieve Russel, Derrylin and Kinawley* but there appear to be few remaining areas suited to turbines in excess of 80m ('medium/ large').

LOUGH BASIN LCT

LCAs 2. Lower Lough Erne, 11. Upper Lough Erne, 13. Enniskillen

Underlying Landscape Capacity

All three landscape areas have a relatively high sensitivity to wind energy development, having small scale features, the character of which could easily be overwhelmed by larger scale or frequent wind turbines. The landscape of *Lower Lough Erne* is the largest scale of the three LCAs, with the waterbody of more prominence in views, but is of high scenic quality. However, the enclosed nature of these landscapes inland from the loughs does provide a limited capacity for wind energy development, with landscapes typically able to accommodate occasional, relatively small wind turbines typically of domestic/ farm scale in single/ small groups, with up to 'medium' sized turbines (50<80m).

The landscape objective should be to maintain these areas as *landscapes with occasional or no wind turbines*.

Consented Wind Energy Landscape and Wind Energy Applications

All areas have a low level of wind energy development, with occasional turbines up to the 'medium' size (50<80m), typically as single turbines or small groups. The greatest concentration of development is around the urban area of Enniskillen. The consented wind energy landscape is a *landscape with occasional or no wind turbines*. There are no known applications in this area.

Residual Capacity and Guidance for Future Development

Wind Turbines

In all landscape areas there would be only limited opportunities for future development while maintaining the desired wind energy landscape type. Maximum turbine sizes will depend on locations, but it is unlikely that wind turbines in excess of 'medium' size (50<80m) would be acceptable.

The enclosed landscape of *Upper Lough Erne* could potentially support a very low level of additional wind energy development at sites towards the periphery of the area so as not to encroach upon the central water body, maximising the screening effects of vegetation and landform. The prominence of wind turbines can be reduced by avoiding siting turbines directly on top of drumlins or other local landforms.

In LCA *Enniskillen* the urbanised character of parts of this LCA may allow capacity for additional developments associated with commercial/ industrial land uses. However, the objective should be to maintain the rural parts of the character area as largely free of wind energy developments. Developments close to the shores of Lower Lough Erne should be avoided, and there should be no development on any islands within the lough.

Wind energy development within *Lower Lough Erne* is currently very limited, and views from the Lough shores should remain largely free of wind energy development. There may be very limited opportunities for wind turbine developments away from the lough shore, but there should be no development on the islands of the loughs. Any turbines below the Cliffs of Magho should be of the small typology only (15<30m), sited in lowland areas associated with farms and other properties.

Ancillary Elements

Lough Basin landscapes are generally well enclosed in the locations more suited to wind turbines and therefore ancillary features should take advantage of screening provided by vegetation and topography, according to local conditions. Refer to Section 6.7 for general guidance.

LOWLAND FARMLAND LCT

LCAs 7. The Sillees Valley, 8. The Arney Lowland, 15. Irvinestown Farmland

Underlying Landscape Capacity

The Sillees Valley is the smallest scale and most enclosed of these landscape character areas. Its small-scale results in a relatively high sensitivity to wind energy development, however its enclosed character means that a level of wind energy development could be accommodated due to restricted visibility when moving around the landscape. *The Arney Lowlands* are less enclosed and flatter, and of a larger scale, but form the immediate lowland setting to the sensitive upland landscapes at Cuilcagh. Both therefore have low capacity for wind energy development, and can accommodate only occasional, small scale wind energy developments typically of domestic/ farm scale in single/ small groups, up to a maximum of 'medium' sized turbines (50<80m). Turbines of this larger typology are more suited to the more southerly *Arney Lowlands* due to its larger landscape scale.

The landscape objective should be to maintain these areas as *landscapes with occasional wind turbines or no wind turbines*.

The Irvinestown Farmland is mostly of a lower sensitivity than the above landscape areas, being a relatively extensive lowland farming landscape within a less sensitive landscape context. The landscape is well settled including the main A32 transport corridor, but its enclosed character can accommodate some smaller scale wind energy development, with a medium capacity for 'small or 'small/ medium' sized turbines (<50m), and some capacity for turbines up to 80m. However, the landscape objective should be to retain this area as a *landscape with occasional wind turbines*.

Consented Wind Energy Landscape and Wind Energy Applications

The Sillees Valley and Arney Lowlands have a low level of wind energy development, with occasional turbines up to the 'medium' size (50<80m), typically as single turbines or small groups. The consented wind energy landscape is a *landscape with occasional or no wind turbines*. There are no known wind energy applications in this area.

Wind energy development within the *Irvineestown Farmland* is more prevalent, with concentrations of larger wind turbines (50 – 60m) located towards the west of the character area, and fewer, smaller turbines towards the east. The consented wind energy landscape is a *landscape with occasional wind turbines*, but approaching a *landscape with wind turbines* towards the west. There is a current application for a single 'medium' size turbine (50<80m) east of Irvineestown.

Residual Capacity and Guidance for Future Development

Wind Turbines

There is limited potential for further development within the *Sillees Valley and Arney Lowlands*. Development within *The Sillees Valley* should be limited principally to smaller scale developments of the 'small' or 'small/ medium' size (<50m) which can be associated with farms and settlements. There is difficulty in siting larger typology turbines in such a way that they do not dominate smaller scale landscape features of the LCA including the enclosing scarp to the west of the limestone ridge in the east.

The small extent of the *Arney Lowlands* restricts the potential for further wind energy developments, but its flatter landscape presents fewer difficulties in siting turbines of the 'medium' (50<80m) typology as they would be seen in a more open and less complex landform. These larger turbines should be sited away from the sensitive landscape of Florence Court to the south of the LCA.

Consented wind energy development towards the west of the *Irvineestown Farmland* is approaching capacity, with a relatively high number of 'medium' sized turbines (50<80m) already consented/ constructed. Remaining capacity is mostly in the east of the LCA. Single turbines/ small turbine groups of 'medium' size (50<80m) should be well separated in this landscape to prevent the occurrence of 'windfarm landscapes' in this lowland environment.

Ancillary Elements

The enclosed nature of these landscape areas provides opportunities for mitigating the effects of ancillary elements of small scale wind energy developments (<80m). Ancillary elements should be sited to suit local conditions utilising screening provided by topography and vegetation. Refer to Section 6.7 for general guidance.

LOWLAND HILLS LCT

LCA 3. Croagh and Garvary River

Underlying Landscape Capacity

This landscape is of small extent, and while its character is not particularly sensitive to wind energy development, it forms part of the setting to Lower Lough Erne and is close to the Registered Park and Garden at Castle Caldwell. This landscape area is typically seen in expansive views to the wider Pettigo Plateau, and the larger scale context of the LCA provides some opportunities for a level of wind energy development to be absorbed. The simpler forested eastern part of the landscape is of lower sensitivity to wind energy development than the more rugged western parts. The SPA designation encompassing much of the more upland parts of the LCA may be a significant constraint to wind energy development because of its high value for conservation purposes.

The capacity of the landscape is generally low, suited to occasional turbines of the 'medium' size (50<80m).

The landscape objective should be to maintain this area as a *landscape with occasional wind turbines or landscape with no wind turbines*.

Consented Wind Energy Landscape and Wind Energy Applications

The landscape includes only 4 consented wind turbines, mostly of the 'medium' typology with the tallest turbine 64m tall, situated to the west of the character area. The consented wind energy landscape is a *landscape with occasional or no wind turbines*.

Residual Capacity and Guidance for Future Development

Wind Turbines

Any future development of the 'medium' (50<80m) typology turbines would be more suited to eastern parts of the LCA, associated with the simpler forested landscape found here. Within this landscape it would be preferable to group wind energy developments and avoid an apparent proliferation of single turbine developments within more upland parts of the landscape. Wind turbines should be sited such that they avoid apparently dominating small landscape features, such as knolls, rock outcrops. Smaller scale turbines <30m should be sited in more lowland areas, associated with farms and other properties.

Ancillary Elements

Parts of the landscape are relatively open and exposed, and therefore ancillary elements have the potential to be locally intrusive, exacerbating effects of wind turbines. In more open locations infrastructure should respect local topography, with forested parts of the LCA providing better opportunities for screening infrastructure from view.

LIMESTONE UPLAND LCT

LCA 10. Slieve Russel, Derrylin and Kinawley

Underlying Landscape Capacity

Parts of this landscape are of relatively simple upland character with the ability to accommodate larger scale wind energy developments, while others are of more lowland character and therefore have capacity for smaller wind energy typologies only. The landscape is also separated from more sensitive landscapes, and therefore developments here have limited impacts on views and wider landscape character.

The landscape has a medium capacity for large wind turbines (80<120m), and also has capacity for smaller wind turbines types within lowland areas. The landscape has capacity to appear as a *wind turbine landscape* in upland areas, but the extent of upland landscape is limited, with windfarms only suited to a small part of the character area as a whole. Subject to careful siting and design the landscape also has capacity to accommodate associated wind farm infrastructure within the more upland areas, with guidance provided below.

Consented Wind Energy Landscape and Wind Energy Applications

Upland parts of the landscape are almost fully developed for wind energy, with 23 wind turbines of 125m, with additional turbines extending across the border into County Cavan. The upland areas also include various 'medium' size wind turbines of around 60m. Lowland areas include occasional 'small/ medium' or 'medium' size turbines (<80m), either singly or in small groups. The wind energy landscape varies from a *wind turbine landscape* to a *landscape with occasional wind turbines*. There are current applications for two 'medium' sized wind turbines (50<80m) within the LCA.

Residual Capacity and Guidance for Future Development

Wind Turbines

There are very limited opportunities for further large-scale wind farm development, as most areas of 'upland' character have been fully developed, although there may be some scope for linking the Molly Mountain and Slieve Rushen turbines e.g. through replacement of existing 'medium' typology turbines. While large turbines (120<150m) can be accommodated within this landscape, there is no capacity for very large (150m+) turbines as these are likely to appear out of scale with the landform on which they would be sited, and the scale of the landscape within the LCA and surrounding landscapes is insufficiently large to absorb such development. Development in this area should continue to avoid the summit of Molly Hill or being sited on its forward slopes when viewed from the north and east.

There are some opportunities for smaller scale wind energy development within the lowland areas, up to the 'medium' (50<80m) size of wind turbines. There is greater capacity within the more lowland landscape towards the east and north of the LCA rather than the lower slopes of Slieve Rushen, to provide separation between the upland windfarms and lowland single/ small turbine group developments.

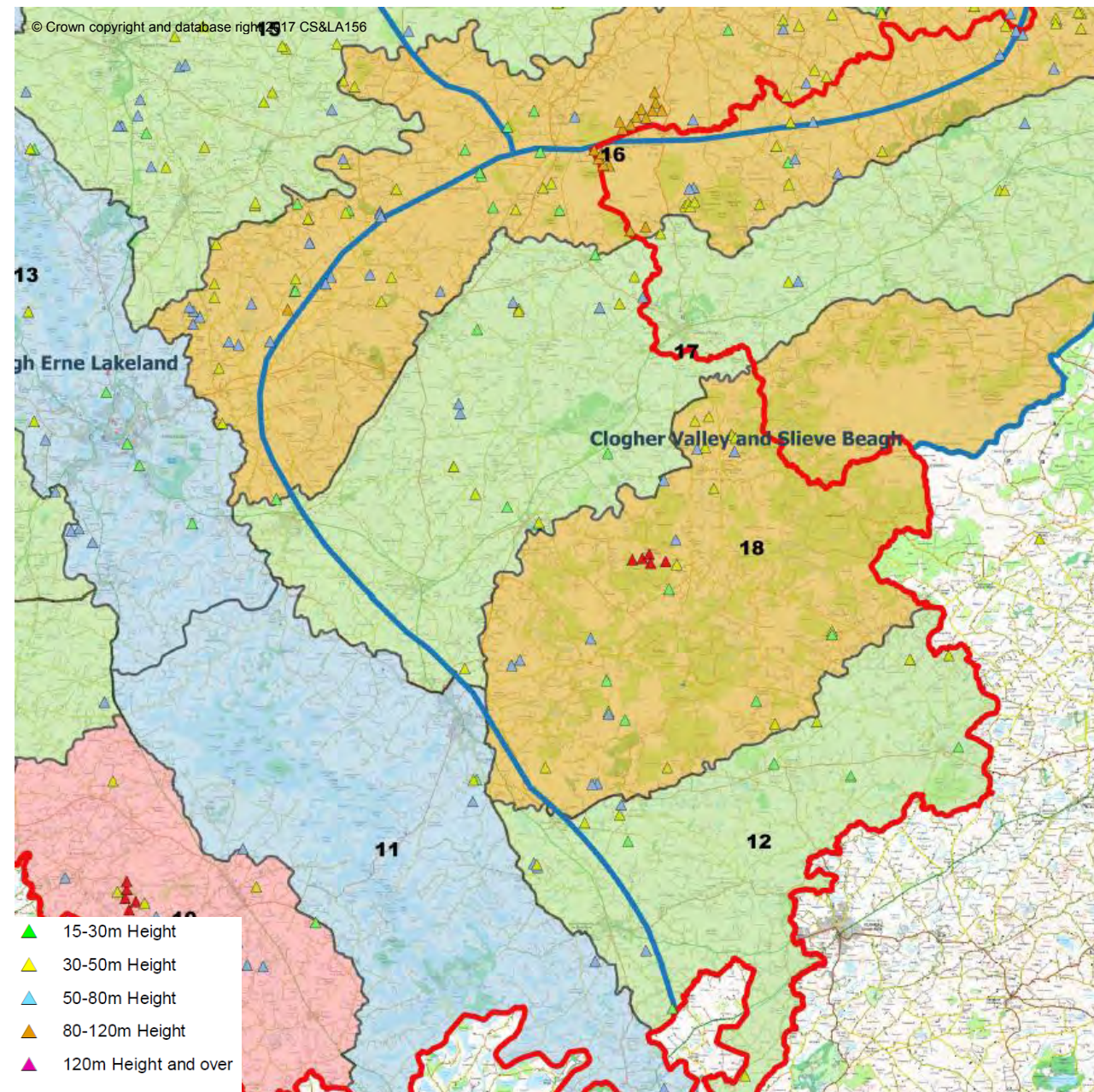
Ancillary Elements

In the case of larger wind farms, associated low level infrastructure can be accommodated either in more upland areas, taking advantage of variations within the landform, but set back from the main ridge, or within nearby areas of more lowland character, where sub-stations, control rooms or energy storage units would be of a similar scale to the various farm buildings already present in the landscape. Infrastructure should not be sited on east facing slopes where it would be seen with wind turbines in views from the lowlands, including from Upper Lough Erne. Power lines/ pylons have the potential to add to visual clutter within this landscape, and should not be seen with wind turbines along the Slieve Rushen/ Molly Mountain ridge.



At Slieve Rushen and Molly Mountain (LCA 10) different turbines sizes add complexity to the wind energy landscape. Consistent use of 'large' typologies only would add capacity and create a more coherent appearance

3. CLOGHER VALLEY AND SLIEVE BEAGH



LCAs 12. Newtownbutler and Rosslea Farmland, 17. Clogher Valley Lowlands, 18. Slieve Beagh

To the south of the Local Authority Area are the lowland farming landscapes of the Clogher Valley, and those around the settlements of Newtownbutler and Rosslea, extending across the border into County Monaghan. These two lowland landscapes are separated by the uplands of Slieve Beagh, with the two lowland areas meeting to the south west as they transition into the Upper Lough Erne basin. To the north the sandstone ridge including Brougher Mountain extends north eastwards and provides a physical barrier between these landscapes and the farmlands between Omagh and

Irvinestown. The area therefore has a varied character, the more rugged, partly forested uplands contrasting with the lowland drumlin farmland. The Clogher Valley has a more linear character, enclosed on either side by *Sandstone Ridges and Plateau* uplands, while the farmland around Newtownbutler and Rosslea is less enclosed. The area includes Registered Parks and Gardens at Rosslea Manor, Colebrook and Tempo Manor, but is not otherwise designated for its landscape qualities. The area does not have strong interest for recreation and tourism, however the Ulster Way does pass along the uplands of Slieve Beagh. Much of this upland area is designated as SPA for its importance to birds.

Lowland Farmland LCT

LCAS 12. Newtownbutler and Rosslea Lowlands; 17. Clogher Valley Lowlands

These landscapes shares characteristics with the other lowland farmlands, characterised by drumlins, small pastures enclosed by well wooded field boundaries. The **Newtownbutler and Rosslea Lowlands (LCA 12)** is a broad landscape but of a small scale and enclosed. The Finn River passes through the landscape and small loughs are present throughout, but in particular at the foot of Slieve Beagh to the north, a number of which are designated wildlife sites. The landscape is widely settled with single/ small collections of properties, and some small settlements.



Looking across the Newtownbutler and Rosslea Farmland to the east

The **Clogher Valley Lowlands (LCA 17)** forms one of the main transport corridors within Fermanagh and Omagh, with the A4 the most direct route between Enniskillen and Belfast. The landscape is of productive farmland, again characterised by smaller scale topographic features of drumlins and eskers, and there are areas of parkland landscape at Colebrook and Tempo with the former identified as an ASQ. Outside of the main A4 corridor the landscape remains rural and tranquil with settlement that is small scale and dispersed. To the north of the LCA the pastures of this landscape extend to the higher rounded uplands of Brougher Mountain (LCA 16, see below).



View east across the drumlin farmland of the Clogher Valley from Topped Mountain



The interior of LCA 18. Slieve Beagh, towards the location of the consented Tiegies Mountain windfarm, located to the left of the valley

Sandstone Ridges and Plateau LCT

LCA 18. Slieve Beagh

The upland landscape of **LCA 18. Slieve Beagh** separates these lowland landscapes. This landscape is an undulating sandstone plateau, with a mosaic of pastures, forestry and moorland, but at higher elevations of more distinct upland character. The high point of Slieve Beagh (370m AOD approx.) lies just to the north east of the Local Authority boundary, but there are a number of rounded hills within Fermanagh and Omagh including Teiges Mountain and Doocarn which provides excellent views to the east from a recognised viewpoint. The area is sparsely settled and traversed by a network of minor roads and tracks, and there is a wind farm consented at Teiges Mountain. Much of this area is designated as a SPA, which in practice could be a significant constraint to wind energy development. The Ulster Way passes through the LCA.

Table 6.1(iii). Summary of Landscape Capacity and Cumulative Effects and Guidance for Future Wind Energy Development: Clogher Valley and Slieve Beagh

3. CLOGHER VALLEY AND SLIEVE BEAGH																			
Key: <input type="radio"/> No Capacity <input type="radio"/> Low Capacity <input type="radio"/> Medium Capacity <input type="radio"/> High Capacity Turbine Size: Small 15<30m; Small/ Medium 30<50m; Medium 50<80m; Medium/ Large 80<120m; Large 120<150m; Very Large 150~200m																			
UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)								CURRENT CONSENTED DEVELOPMENT				PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)							
Landscape Sensitivity to Wind Energy Development				Landscape Capacity (Related to turbine size)				Existing/ Consented Developments (November 2017)	Current Wind Energy Landscape Type(s)	Future Wind Energy Landscape Type(s)	Remaining Landscape Capacity (Related to turbine size)					Comments on Sensitivity and Capacity			
Landscape Character Sensitivity	Visual Sensitivity	Landscape Sensitivity	Landscape Value	15-<30m	30-<50m	50-<80m	80-<120m				120-<150m	150 ~ 200m	15-<30m	30-<50m	50-<80m		80-<120m	Over 120m	150 ~ 200m
LOWLAND FARMLAND																			
Landscape Character Area: 12. Newtownbutler and Rosslea Lowlands																			
Med/ High	Low/ Med	Med	Med	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	18 consented turbines ranging from small to medium sized, maximum 56m.	Landscape with No Wind Turbines/ Landscape with Occasional Wind Turbines (LNWT/ LOWT)	LOWT	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Landscape Analysis: Broad lowland landscape, small scale but enclosed character. Development Capacity: Landscape can accommodate a level of smaller scale wind energy development associated with farms and properties, and some residual capacity exists in the LCA.
											Max. Numbers in Group	1-3	1-3	1-2					
											Min Group Separation Distances (km)	2-3	3-5	4-7					
Landscape Character Area: 17. Clogher Valley Lowlands																			
Med/ High	Low/ Med	Med	Med	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	26 consented turbines ranging from small to medium sized, maximum 63m.	Landscape with No Wind Turbines/ Landscape with Occasional Wind Turbines (LNWT/ LOWT)	LOWT	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Landscape Analysis: Valley landscape enclosed by uplands to the north and south, but relatively broad, lowland farming landscape, small scale features. The area includes the ASQ at Colebrook. Development Capacity: Landscape would accommodate a level of smaller scale wind energy development associated with farms and properties, and some residual capacity exists in the LCA.
											Max. Numbers in Group	1-3	1-3	1-2					
											Min Group Separation Distances (km)	2-3	3-5	4-7					

3. CLOGHER VALLEY AND SLIEVE BEAGH																			
Key: <input type="radio"/> No Capacity <input type="radio"/> Low Capacity <input type="radio"/> Medium Capacity <input type="radio"/> High Capacity Turbine Size: Small 15<30m; Small/ Medium 30<50m; Medium 50<80m; Medium/ Large 80<120m; Large 120<150m; Very Large 150~200m																			
UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)				CURRENT CONSENTED DEVELOPMENT				PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)											
Landscape Sensitivity to Wind Energy Development				Landscape Capacity (Related to turbine size)				Existing/ Consented Developments (November 2017)	Current Wind Energy Landscape Type(s)	Future Wind Energy Landscape Type(s)	Remaining Landscape Capacity (Related to turbine size)						Comments on Sensitivity and Capacity		
Landscape Character Sensitivity	Visual Sensitivity	Landscape Sensitivity	Landscape Value	15-<30m	30-<50m	50-<80m	80-<120m				120-<150m	150 ~ 200m	15-<30m	30-<50m	50-<80m	80-<120m		Over 120m	150 ~ 200m
SANDSTONE RIDGES AND PLATEAU																			
Landscape Character Area: 18. Slieve Beagh																			
Med	Med	Med	Low/Med	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	33 consented wind turbines including Teiges Mountain wind farm (5 x 120m). Other are single or small turbine groups of small to medium sized turbines.	Landscape with Wind Turbines (LWT)/ Landscape with Occasional Wind Turbines (LOWT)	LWT	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Landscape Analysis: The upland landscape is broad and undulating in character, modified by forestry and not of particular scenic or landscape quality. Development Capacity: The undulating nature of the landscape allows wind energy developments to be partly concealed in valleys and hollows. The landscape scale is sufficient for larger wind energy developments and there is some residual capacity. However, the SPA is a potentially significant non-landscape constraint.

SUMMARY OF LANDSCAPE CAPACITY: CLOGHER VALLEY FARMLAND AND SLIEVE BEAGH

The lowland landscapes of this regional landscape area are broadly typical of other 'drumlin' farmlands within the Local Authority area. Both are relatively broad, low lying landscapes. Small features and enclosure can create an intimate character, but on the other hand limit internal visibility and provide some capacity for wind turbine development. Both landscapes are visible from frequented viewpoints within neighbouring upland areas (e.g. Carnmore Viewpoints, Topped Mountain) but are not seen as areas of high scenic value. As an upland landscape, Slieve Beagh has a capacity to accommodate larger scale wind farm developments, although some of that capacity has been utilised by the Teiges Mountain wind farm.

LOWLAND FARMLAND LCTS

LCA 12. Newtownbutler and Rosslea Lowlands; 17. Clogher Valley Lowlands

Underlying Landscape Capacity

Both of these landscapes have similar sensitivities and capacity for wind energy development, and are therefore assessed together. The small scale of these landscapes results in a susceptibility to larger scale wind energy development. However, their enclosed character and frequently curtailed internal visibility results in a medium capacity for accommodating smaller scale wind turbine developments, and a low capacity for 'medium' sized single turbine/ turbines in small groups (<80m).

The landscape objective should be to maintain these areas as *landscapes with occasional wind turbines*.

Consented Wind Energy Landscape and Wind Energy Applications

Both areas have a low level of wind energy development, with occasional turbines up to the 'medium' size (50<80m), typically as single turbines or small groups. The *Clogher Valley Lowlands* have a slighter greater level of wind energy development, with a greater number of 'medium' (50<80m) turbines. The consented wind energy landscape is a *landscape with occasional or no wind turbines*. There are no known applications within either LCA.

Residual Capacity and Guidance for Future Development

Wind Turbines

There is some opportunity in both LCAs for further wind energy development up to the 'medium' (50<80m) size of turbines. With smaller scale typologies of <50m ('small', 'small/ medium' sized turbines) these should be logically associated with the features of the farming landscape i.e. associated with farms and properties. 'Medium' sized turbines (50<80m) have the greater potential to overwhelm or appear out of scale with smaller landscape elements and these should be sited in more open areas away from smaller scale elements, particularly small buildings, against which they can be scaled. The edges of the LCAs at the transition to the more upland landscapes may provide

the best sites, also providing backclothing of the turbines in views. Siting should be mindful of the more sensitive estate landscapes found in both areas, which larger turbines could dominate.

Ancillary Elements

The enclosed nature of these landscapes provides opportunities for mitigating the effects of ancillary elements of small scale wind energy developments (<80m). Ancillary elements should be sited to suit local conditions utilising screening provided by topography and vegetation. Refer to Section 6.7 for general guidance.

SANDSTONE RIDGES AND PLATEAU LCT

LCA 18. Slieve Beagh

Underlying Landscape Capacity

This landscape is an undulating upland plateau of no particular scenic value and a relatively large scale, although the landscape is limited in its extent. While the landscape character has quite low sensitivity to wind energy development, it is visible from the lowlands on either side where it appears as a long and low forested horizon. Wind energy development therefore has the potential to be quite prominent in this landscape, but the undulating terrain does provide opportunities for concealing wind turbines to a degree, lessening their visual impact. Varied topography and forestry also provide opportunities concealing wind farm infrastructure into the landscape. The landscape includes quite frequent single properties, and large areas suited to more extensive wind energy development are limited. The landscape has a medium capacity for 'medium/ large' turbines (80<120m), but a lesser capacity for the largest typologies because of their potential to appear out of scale with the landform when seen from the lowland areas. There is no capacity for very large 150m+ turbines. The SPA designation may significantly constrain the capacity of the area in terms of locations where wind turbines would be acceptable.

The landscape has capacity for development as a *landscape with wind turbines*.

Consented Wind Energy Landscape and Wind Energy Applications

The 5 x 120m turbines at Teiges Mountain is the largest wind energy development in the LCA. There are a number of single and small turbine groups, particularly in the more transitional lowland areas, up to a maximum height of 77m. There are no known applications within the LCA. The consented wind energy developments create a mixture of *landscape with wind turbines/ landscape with occasional wind turbines*.

Residual Capacity and Guidance for Future Development

Wind Turbines

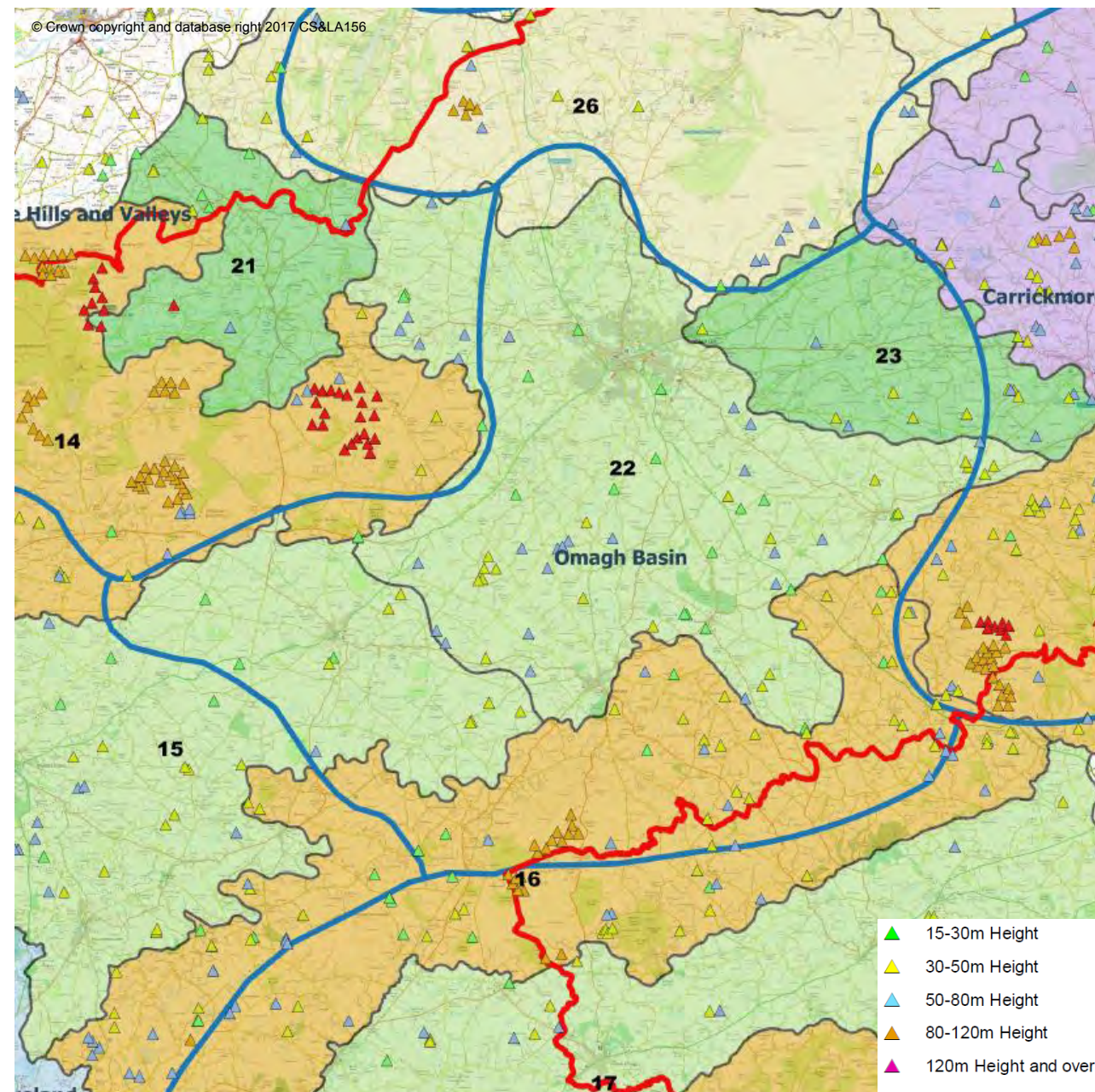
There is some capacity for further wind energy development of the larger scale in this landscape. Due to the limited geographical extent of the area, it is preferable that future wind farm development appears as a limited extension to the existing Teiges Mountain wind farm avoiding the outward facing slopes of the LCA and more prominent hill tops to reduce the visual prominence from adjacent lowland landscapes, and wind farms seen to encroach upon the summit of Slieve Beagh should be

avoided. Small groups of turbines, typically 'medium/ large' (80<120m) so as not to appear out of scale with the landform and its features, could be accommodated in various location within the undulating landscape, taking advantage of topographic screening, but separated from the larger windfarm developments to avoid cumulative issues from intervisibility of different scales of wind energy development. Recommended separation distances should be maintained to avoid creating a *windfarm landscape* of varying wind turbine sizes and development types.

Ancillary Elements

Wind farm infrastructure should be sited to take advantage of screening or backclothing provided by undulating topography and forestry found within the more upland parts of the landscape character area.

4. OMAGH BASIN



LCAs 16. Brougher Mountain, 22. Omagh Basin, 23. Camowen Valley

The *Omagh Basin* is a large area of mostly lowland farmland which extends towards the north east from the lowlands of the *Lough Erne Lakeland*. The landscape area is broad and extensive, but contained by the Brougher Mountain ridge to the south east, the Carrickmore Hills to the east, South Sperrin to the north and the West Tyrone Hills to the west. The landscape forms a shallow drainage basin for several rivers, with the Drumragh and Camowen meeting at Omagh outflowing to the north along the Strule. Omagh is the largest town in Fermanagh and Omagh, located at the heart of the basin landscape. Outside of Omagh, the landscape is entirely pastoral, except for some of the more elevated upland areas of *LCA 16 Brougher Mountain* which are included within this assessment. This sandstone ridge rises to 370m AOD at Brougher Mountain itself, extending northwards to the

Carrickmore Hills, and separates the *Omagh Basin* from the Clogher Valley to the south. There are no landscape designations within the area, but the area is located at the southern edge of the Sperrins AONB.

Lowland Farmland LCT

LCA 22. Omagh Farmland

The *Omagh Farmland (LCA 22)*, together with the *Irvinestown Farmland (LCA 15)* included with the assessment of the *Lough Erne Lakeland ReCA*) forms the largest expanse of lowland pastoral landscape within Fermanagh and Omagh, forming a continuous pastoral landscape which extends from Lower Lough Erne north eastwards until meeting the Sperrins and Carrickmore Hills to the north. The landscape is typically small scale 'drumlin farmland', with densely packed drumlins, occasional loughs, dense hedgerows, becoming less enclosed around Omagh, where farmland appears to be of better quality. North of Omagh, the farmland rises towards the outer Sperrins foothills. The area includes the key transport corridor of the A32 which links Omagh to Fermanagh. The enclosure provided by the surrounding upland landscape becomes more defined towards the north, where the landscape is overlooked by the prominent summits of Bessy Bell, Pollnalaght and Mullaghcarn, partially surrounding Omagh.



View to the north east across LCA 22 Omagh Farmland, with Bessy Bell to the right of the photograph

Lowland River Valley LCT

LCA 23. Camowen Valley

The *Camowen Valley (LCA 23)* lies to the north east of the *Omagh Farmland*, draining the uplands of the Carrickmore Hills and Slievemore. This landscape is undulating with occasional rocky outcrops, and with fewer drumlins than the *Omagh Farmland*. While much of the landscape is pastoral, there are also extensive areas of bog, marsh and some conifer plantations, and the farmed landscape is more marginal and of poorer quality than that of the *Omagh Farmland*. The area has

a remote and neglected character and settlement is sparse. The importance of some of the wetland habitats is recognised by designation, including the SAC at Deroran Bog.

Sandstone Ridges and Plateau LCT

LCA16. Brougher Mountain

This landscape forms an elongated ridge running approximately from Topped Mountain in the south west to Slievemore and the Carrickmore Hills to the north, bounding the *Omagh Basin* to the south east. Much of this ridge extends only to 250 – 300m and it is only the most elevated parts which are of true upland character, such as at Lendrum's Bridge and at Brougher Mountain. The upland areas comprise a series of undulating hills which are typically rounded, some of which form quite distinct features when viewed from lowland areas, in particular Brougher Mountain itself which can be identified by telecommunication masts. Elsewhere there are conifer plantations and some poorer quality enclosed pastures, extending towards the lowland areas where landscape quality improves. The area has no landscape designations, but from southern parts there are scenic views to the *Lough Erne Lakeland* and the limestone uplands beyond. The area includes a wind farm at Hunters Hill, at the edge of the Local Authority area. The area includes no landscape designation, however the area around Topped Mountain, a noted viewpoint, is identified as an Area of Significant Archaeological Interest.



View north east within the LCA16 Brougher Mountain. Brougher Mountain itself is to the right of the photograph

Table 6.1(iv). Summary of Landscape Capacity and Cumulative Effects and Guidance for Future Wind Energy Development: Omagh Basin

4. OMAGH BASIN																			
Key: No Capacity Low Capacity Medium Capacity High Capacity Turbine Size: Small 15<30m; Small/ Medium 30<50m; Medium 50<80m; Medium/ Large 80<120m; Large 120<150m; Very Large 150~200m																			
UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)								CURRENT CONSENTED DEVELOPMENT				PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)							
Landscape Sensitivity to Wind Energy Development				Landscape Capacity (Related to turbine size)				Existing/ Consented Developments (November 2017)	Current Wind Energy Landscape Type(s)	Future Wind Energy Landscape Type(s)	Remaining Landscape Capacity (Related to turbine size)					Comments on Sensitivity and Capacity			
Landscape Character Sensitivity	Visual Sensitivity	Landscape Sensitivity	Landscape Value	15-<30m	30-<50m	50-<80m	80-<120m				120-<150m	150 ~ 200m	15-<30m	30-<50m	50-<80m		80-<120m	Over 120m	150 ~ 200m
LOWLAND FARMLAND																			
Landscape Character Area: 22. Omagh Farmland																			
Med/ High	Low/ Med	Med	Med							68 consented wind turbines, all of small to medium typology as single turbines/ small groups. The tallest turbine is 77m.	Landscape with Occasional Wind Turbines (LOWT) approaching Landscape with Wind Turbines (LWT)	LOWT							Landscape Analysis: A broad and largely flat landscape overall, but with numerous small-scale landform features, enclosed by trees and hedgerows.
												Max. Numbers in Group	1-3	1-3	1-2				Development Capacity: Landscape would accommodate a level of smaller scale wind energy development associated with farms and properties. Undulating topography provides local screening.
												Min Group Separation Distances (km)	2-3	3-5	4-7				
LOWLAND RIVER VALLEYS																			
Landscape Character Area: 23. Camowen Valley																			
Med	Low/ Med	Med	Low/ Med							15 consented wind turbines, all of which are small/ medium or medium size, either single or small turbine groups. The tallest turbine is 56m.	Landscape with Occasional Wind Turbines (LOWT)	LOWT							Landscape Analysis: Small scale Landscape with varied landform, small scale features, mosaic of pastures, bog and small woodland areas. Some wildness of character.
												Max. Numbers in Group	1-3	1-3	1-2				Development Capacity: A limited capacity for smaller scale development, a greater wildness and openness of character lessens capacity to some extent.
												Min Group Separation Distances (km)	2-3	3-5	4-7				

4. OMAGH BASIN																			
Key: <input type="radio"/> No Capacity <input type="radio"/> Low Capacity <input type="radio"/> Medium Capacity <input type="radio"/> High Capacity Turbine Size: Small 15<30m; Small/ Medium 30<50m; Medium 50<80m; Medium/ Large 80<120m; Large 120<150m; Very Large 150~200m																			
UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)						CURRENT CONSENTED DEVELOPMENT			PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)										
Landscape Sensitivity to Wind Energy Development				Landscape Capacity (Related to turbine size)		Existing/ Consented Developments (November 2017)	Current Wind Energy Landscape Type(s)	Future Wind Energy Landscape Type(s)	Remaining Landscape Capacity (Related to turbine size)					Comments on Sensitivity and Capacity					
Landscape Character Sensitivity	Visual Sensitivity	Landscape Sensitivity	Landscape Value	15-<30m	30-<50m				50-<80m	80-<120m	120-<150m	150 ~ 200m	15-<30m		30-<50m	50-<80m	80-<120m	Over 120m	150 ~ 200m
SANDSTONE RIDGES AND PLATEAU																			
Landscape Character Area: 16. Brougher Mountain																			
Med	Med	Med	Low/Med	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	85 consented turbines, the largest of which are 101m turbines of Hunters Hill windfarm. All others are of small to medium size single turbines or small turbine groups	Landscape with Wind Turbines/ Wind Turbine Landscape (LWT/ WTL)	LWT	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Landscape Analysis: Upland landscape of larger scale, albeit in places not wide, and the landscape forms part of the enclosure to neighbouring lowlands, and therefore has some importance to the setting of and views from lowland landscapes. Development Capacity: Some areas with more defined upland character have capacity for wind farm developments, other areas of more lowland character are less suitable, however residual capacity is very limited.
												Max. Numbers in Group	1-3	1-3	1-5	5-15	5-15		
												Min Group Separation Distances (km)	2-3	3-5	4-7	7-12	7-12		

SUMMARY OF LANDSCAPE CAPACITY: OMAGH BASIN

Taken as a whole, this area has an underlying capacity to accommodate a range of scales of wind energy development. The extensive lowland landscapes of 'drumlin farmland' have a reasonable capacity for accommodating wind turbine developments of 'medium' size turbines or smaller (<80m), with the undulating landform providing screening from within these landscape areas, while the more upland landscape of Brougher Mountain has underlying capacity for wind farm development.

LOWLAND FARMLAND LCT

LCA 22. Omagh Farmland

Underlying Landscape Capacity

While extensive, this landscape character area is primarily small scale and has susceptibility to larger scale wind energy development. However, due to its enclosed character and often limited internal visibility there is a 'medium' capacity to accommodate wind turbine developments with 'small' or 'small/ medium' size wind turbines (<50m), and some developments of 'medium' size (50<80m).

The landscape objective should be to maintain the area as a *landscape with occasional wind turbines*.

Consented wind Energy Development and Wind Energy Applications

This area has been quite extensively developed with turbines up to 'medium' size (<80m), and with development spread throughout the LCA. The consented wind energy development creates a *landscape with occasional wind turbines* in some areas, verging on a *landscape with wind turbines*, where there are clusters of single turbine developments. There are no known wind energy applications in the area.

Residual Capacity and Guidance for Future Development

Wind Turbines

Opportunities for further wind energy development in this landscape are low if maintaining a landscape with occasional wind turbines. 'Medium' sized turbines (50<80m) are quite prevalent throughout the area and there may be only very limited scope for further developments of this turbine size, but perhaps somewhat greater residual capacity for smaller turbines. Developments should be sited to maintain recommended separation distances and to account for local sensitivities in landscape character. It is desirable that larger turbines (50<80m) should be sited in more open areas away from smaller scale elements, particularly small buildings, against which they can be scaled. Turbines should not be sited directly on top of drumlins or other small scale but prominent landscape features in order to reduce their dominance. It may be appropriate to site larger scale turbines toward the periphery of the character area, where they can be backclothed by larger

landforms, however siting should be mindful of potential cumulative issues when seen with the larger wind farm developments of these neighbouring upland areas.

Ancillary Elements

The enclosed nature of the landscape provides opportunities for mitigating the effects of ancillary elements of small scale wind energy developments (<80m). Elements including access tracks, transformer units, power connections and energy storage units should be sited to suit local conditions utilising screening provided by topography and vegetation. Refer to Section 6.7 for general guidance.

LOWLAND RIVER VALLEY LCT

LCA 23. Camowen Valley

Underlying Landscape Capacity

Extending down into the *Omagh Farmland* from the east, this LCA has similarities in character to the wider farmed landscape of the ReCA, and therefore its underlying capacity for wind energy development is similar to that of the *Omagh Farmland* described above, with the ability to accommodate 'medium' (50<80m) size wind turbine developments of single or small turbine groupings.

The landscape objective should be to maintain the area as a *landscape with occasional wind turbines*.

Consented wind Energy Development and Wind Energy Applications

There are relatively few wind energy developments in the LCA, and all are of the 'low/ medium' and 'medium' size wind turbines (<80m). Almost all developments are south of the B4 which runs east – west through the valley. The consented wind energy landscape is a *landscape with occasional wind turbines*. There are no known wind energy applications in the area.

Residual Capacity and Guidance for Future Development

Wind Turbines

There are few wind energy developments within the area, however the valley is of relatively small extent and could therefore accommodate only limited further development. There are few wind turbines north of the B4, and this area is most likely to contain the greatest residual capacity for turbines, possibly making use of the backclothing to the north of the LCA provided by higher ground of the *Carrickmore Hills* and *South Sperrin*, although the southern fringes of these upland areas already include a number of consented wind energy developments.

Ancillary Elements

Ancillary elements for small scale wind energy developments (<80m) including access tracks, transformer units, power connections and energy storage units to be sited to suit local conditions. Refer to Section 6.7 for general guidance.

SANDSTONE RIDGES AND PLATEAU LCT

LCA 16. Brougher Mountain

Underlying Landscape Capacity

Upland parts of this LCA have the capacity to accommodate a level of wind farm development, however those areas are limited in number and extent. The more notable peaks, and in particular Brougher Mountain itself, would be unsuited to wind farm development because of their prominence from the local lowland landscape. While to the south west, for example around Topped Mountain, the landscape is of too small a scale for wind farm development and is approaching the more sensitive landscapes around Upper and Lower Lough Erne. The upland area at Hunters Hill/ Lendrum's Bridge is the only area considered suitable for wind farm development utilising 'large' (120<150m) wind turbines. However, there is some capacity also for small sized wind energy developments, typically small clusters of 'medium' or 'small/ medium' (<80m) sized turbines away from more settled lowland landscapes, taking advantage of folds in the landscape where possible to reduce visual prominence.

The parts of the landscape of more upland character and better suited to larger scale wind energy development tend to be undulating and have capacity for accommodating associated wind farm infrastructure, where features can be sited to take advantage of topographic screening.

This landscape has capacity to be a *landscape with wind turbines* and locally a *wind turbine landscape* at Hunters Hill.

Consented wind Energy Development and Wind Energy Applications

This landscape is well developed for wind energy including the 101m ('medium/ large') turbines of Hunters Hill wind farm which extends across the border to Mid Ulster. Wind turbines of smaller size are found throughout the LCA. The landscape is perceived as a *landscape with wind turbines*. There are no known application wind energy developments within the LCA, however the proposed Murley Windfarm is located adjacent to Hunters Hill in Co. Tyrone (9 x 126m turbines).

Residual Capacity and Guidance for Future Development

Wind Turbines

The site of Hunters Hill wind farm is the most suited to wind farm development within the LCA. It is the case therefore that residual capacity remains with the potential repowering of this site, which could accommodate a development of 'large' (120<150m) typology wind turbines. There may also be some limited capacity to extend the area occupied by wind turbines at this location, however nearby residential properties are likely to be a constraint to significant expansion. A key issue is likely to be the avoidance of unacceptable impact to the settlement of Fintona, which lies only 4km from the closest turbine at present, requiring careful turbine siting and avoidance of the more prominent forward slopes. It should be ensured that wind turbines here appear as a single clustered development, and not be seen to extend excessively across the horizon.

Elsewhere there is limited residual capacity for smaller typology developments, with consented turbines already often separated by no more than 1- 2km.

Slopes to the north of the existing Hunters Hill wind farm should remain free of wind farm development to avoid significant cumulative effects in views towards to the windfarm from lowland locations.

Ancillary Elements

Windfarm infrastructure has the potential to appear prominently on the bare slopes of the upland areas, and should therefore be sited away from hill to tops and front facing slopes, and preferably within valleys and on back slopes away from visual receptors. Transmission lines and pylons should not be sited on the horizon, so as not to be seen with wind turbines.

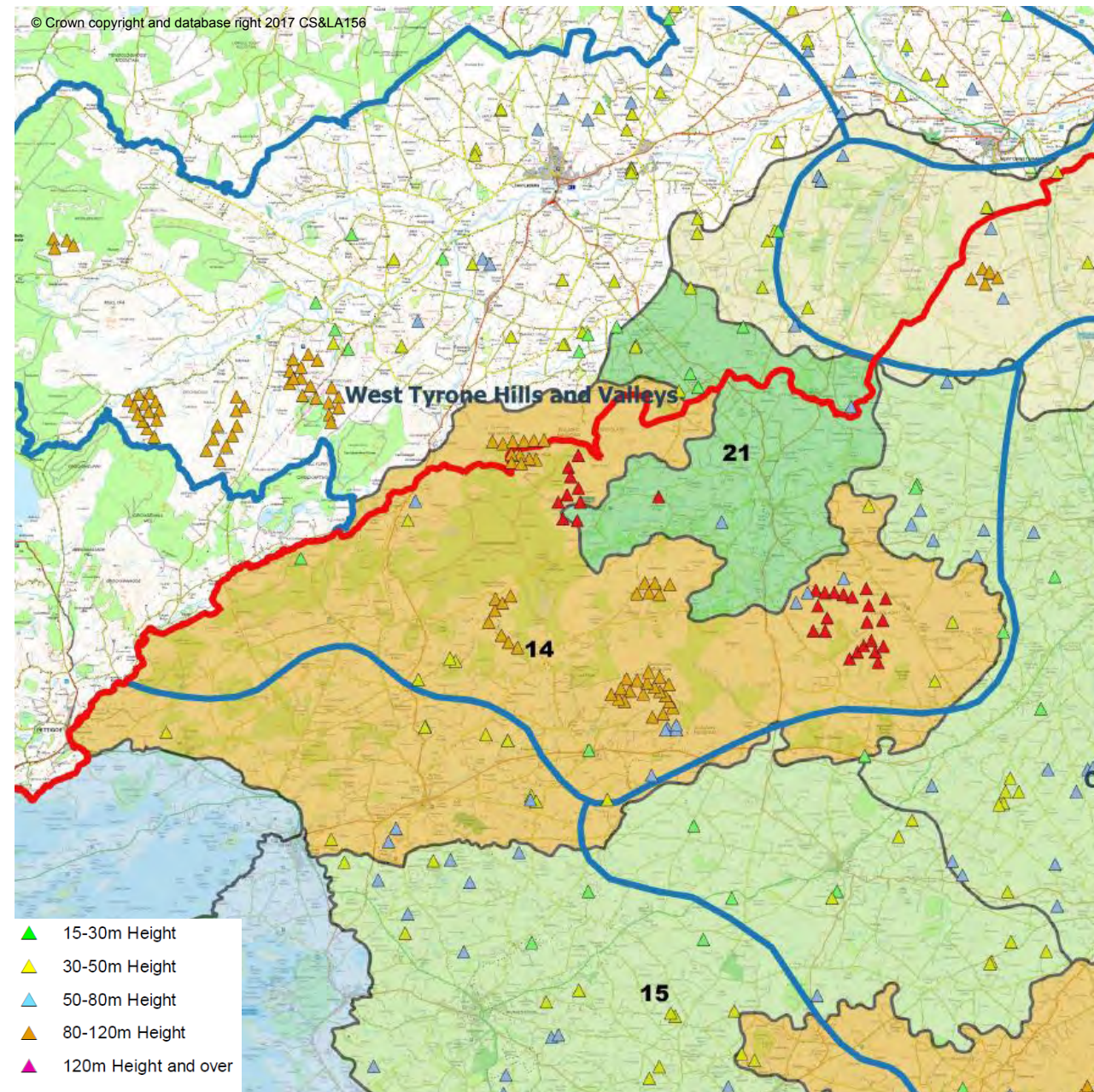


South western parts of LCA 16 Brougher Mountain have high levels of consented wind energy development. To avoid a 'wind farm landscape' future development would need to be limited



The undulating western fringes of LCA 16 Brougher Mountain which provides screening to 'medium' sized wind turbines, however the siting of turbines directly on top of local topographic features should be avoided to reduce their prominence in the landscape

5. WEST TYRONE HILLS AND VALLEYS



LCAs 14 Lough Braden, 21 Fairy Water Valley

The *West Tyrone Hills and Valleys* lie to the north west of the Local Authority area and comprise an undulating sandstone plateau extending into Northern Ireland from Donegal to the west, and the regional character area encompasses a large expanse of landscape outside of Fermanagh and Omagh. Within the Local Authority area, the eastern extent of the plateau ends in some distinct peaks which overlook the lowland landscape of the Omagh Farmland to the south and east. To the north the upland landscape provides the enclosure to the Fairy Water Valley which drains the upland area through the Drumquin and Fairy Water. The landscape within the Local Authority areas is

mostly of upland character and sparsely settled, but does include areas of more lowland pastoral character within the Fairy Water Valley and to the west closer to Lower Lough Erne.

Sandstone Ridges and Plateau LCT

LCA 14. Lough Braden

The landscape of *Lough Braden (LCA 14)* is variable in character. To the west, and extending into the *Lough Erne Lakeland ReCA*, the landscape is a pastoral one of steep drumlin farmland. The quality of the pastures seems mixed but often rush infested and of apparently low productivity. Towards the east the undulating drumlins give way to more substantial topographic features of sandstone outcrops, rising to an undulating plateau typically of around 200m AOD in elevation, much of which is used for coniferous forestry. Further east, there are the more defined upland hills of Tappaghan Mountain, Greenan, Dooish and Pollnalaght, and a number of these hills have wind farm developments. The topography is mostly undulating and rounded, except where enclosing the Fairy Water Valley to the north where the landscape is steeper and craggier. The landscape to the west is thinly settled farmland, with settlement diminishing towards the higher ground, where it is found mostly along the upper Drumquin valley. The landscape has no landscape designations however some areas are designated for natural heritage value.



Western parts of LCA 14 Lough Braden close to the transition with the more upland landscape to the east

Lowland River Valley LCT

LCA 21. Fairy Water Valley

North east of *Lough Braden* the sandstone uplands drop to the broad, *Fairy Water Valley (LCA 21)*, and at the transition of this landscape there are some steep sided incised valleys with rock outcrops and waterfalls at Sloughan Glen. Elsewhere the landform is generally irregular and hummocky including small areas of woodland, small loughs marshes, peat bogs and small branching watercourses. To the north of the settlement of Drumquin, the valley floodplain becomes

notably flatter and more open. Drumquin is the main centre of settlement, but the landscape is mostly of rural lowland character. Overall the landscape is small scale. There are no landscape related designations within the LCA, but natural heritage designations (ASSI and SAC) related to bogs to the north and oakwoods at the more upland fringes.



View north west from within LCA 14 Lough Braden towards the enclosed Fairy Water Valley

Table 6.1(v). Summary of Landscape Capacity and Cumulative Effects and Guidance for Future Wind Energy Development: West Tyrone Hills and Valleys

5. WEST TYRONE HILLS AND VALLEYS																			
Key: No Capacity Low Capacity Medium Capacity High Capacity Turbine Size: Small 15<30m; Small/ Medium 30<50m; Medium 50<80m; Medium/ Large 80<120m; Large 120<150m; Very Large 150~200m																			
UNDERLYING LANDSCAPE CAPACITY (i.e. not taking account of current wind energy development)								CURRENT CONSENTED DEVELOPMENT				PROPOSED LIMITS TO FUTURE DEVELOPMENT (i.e. proposed acceptable level of wind energy development)							
Landscape Sensitivity to Wind Energy Development				Landscape Capacity (Related to turbine size)				Existing/ Consented Developments (November 2017)	Current Wind Energy Landscape Type(s)	Future Wind Energy Landscape Type(s)	Remaining Landscape Capacity (Related to turbine size)						Comments on Sensitivity and Capacity		
Landscape Character Sensitivity	Visual Sensitivity	Landscape Sensitivity	Landscape Value	15-<30m	30-<50m	50-<80m	80-<120m				120-<150m	150 ~ 200m	15-<30m	30-<50m	50-<80m	80-<120m		Over 120m	150 ~ 200m
SANDSTONE RIDGES AND PLATEAU																			
Landscape Character Area: 14. Lough Braden																			
Med	Med	Med	Low/Med							104 consented turbines including 6 main windfarm developments/ clusters of medium/ large or large turbines. The consented tallest consented turbines are those at Castle Craig Windfarm (127m).	Landscape with Occasional Wind Turbines/ Wind Turbine Landscape (LOWT/ WTL)	LWT/ WTL							Landscape Analysis: Landscape with larger scale upland areas of forestry and undulating topography. Outer slopes to the south and east, and steep glen enclosures are more sensitive.
												Max. Numbers in Group	1-3	1-3	1-5	5-20	5-20	5-10	Development Capacity: The landscape within Fermanagh and Omagh most suited to larger scale wind farm developments, this may include limited opportunity for 'very large' (150m+) turbines if sited within the core of this upland area.
												Min Group Separation Distances (km)	2-3	3-5	4-7	5-10	5-10	5-10	
LOWLAND RIVER VALLEY																			
Landscape Character Area: 21. Fairy Water Valley																			
Med/High	Low/Med	Med	Low/Med							There is only 1 wind turbine within the LCA (50m).	Landscape with No Wind Turbines (LNWT/ LOWT)	LWT/ LOWT							Landscape Analysis: Small scale lowland landscape, enclosed by more upland landscapes to the south and west.
												Max. Numbers in Group	1-3	1-3	1				Development Capacity: Very limited capacity for small scale development associated with farms and properties.
												Min Group Separation Distances (km)	2-3	3-7	7				

SUMMARY OF LANDSCAPE CAPACITY: WEST TYRONE HILLS AND VALLEYS

This landscape includes a relatively expansive upland area with a low population, and the scale of the landscape is suitable for larger scale wind energy development. Constraints to development are the proximity of the area to more lowland landscapes, from which the hilly areas form the northern and western horizon. The area is also visible from Omagh, a major population centre, and from the sensitive landscape of Lower Lough Erne. The landscape of the Fairy Water Valley is small scale and intimate in character, which is susceptible to larger scale developments, including the presence of dominant windfarms on its enclosing upland landforms.

SANDSTONE RIDGES AND PLATEAU LCT

LCA 14. Lough Braden

Underlying Landscape Capacity

Capacity in this landscape derives from the relatively large scale of its rounded hills, and their simple topography and landcover. The arrangement of the landform is such that a degree of internal enclosure is created by surrounding hills, although the lightly populated valley containing the upper reaches of the Drumquin River passes through this more remote area, presenting a likely constraint to windfarm development. Parts of Lough Braden Forest lie within this area, the landscape of which would be suited to wind energy development due to its simple character and relatively remote location. The Ulster Way passes through this area, which may present some constraint to development, however the landscape through which this section passes is not of particular scenic quality. The landscape has capacity for wind farm development of 'large' wind turbines (up to 150m), and potentially there may be capacity for limited numbers of 'very large' (150m+) turbines if sited away from more prominent outer hills or sensitive valley sides. Varied topography and forestry provide opportunities for accommodating wind farm infrastructure.

The landscape has the capacity for a *landscape with wind turbines*, and locally a *wind turbine landscape* to the east, but is more sensitive towards the west approaching Lower Lough Erne.

Consented wind Energy Development and Wind Energy Applications

The more upland areas have been quite extensively developed with medium sized wind farms clustered around hill tops, typically using 'medium/ large' and 'large' wind turbines (<150m). The largest development is that on Pollnalaght at the eastern extent of the character area, including an operational windfarm of 12 x 125m turbines and the under-construction wind farm at Cornavarrow comprising 9 x 126m turbines. Cornavarrow wind farm will be sited on the slopes facing the Fairy Water Valley, which will affect the capacity of the valley to accommodate wind energy developments. The consented wind energy landscape across the area as a whole varies from a *landscape with occasional wind turbines* (to the west), to a *wind turbine landscape* to the east.

There are no known wind farm or wind turbine applications within the character areas.

Residual Capacity and Guidance for Future Development

Wind Turbines

Some existing wind farm developments have potential for repowering with larger typology wind turbines i.e. 'medium/ large' turbines replaced by 'large' (120<150m) turbines. However, wind farm development at Pollnalaght has reached capacity, currently using 'large' typology machines and it is unlikely that 150m+ wind turbines would be acceptable in this location overlooking the Fairy Water Valley to the north and quite close to lowland landscapes to the south and east. Development here should not extend to the eastern parts of Pollnalaght, the landform of which currently screens views to wind farm development from Omagh. There may be other limited opportunities for the extension of existing windfarms, with turbines sited sympathetically to the local landform, however these landforms are typically small in extent, limiting opportunities for large extensions. The wind farm at Tappaghan Mountain currently comprises turbines of 88m which are relatively small by modern commercial wind farm standards. This windfarm is less than 2km from the village of Lack to the south and overlooks the *Omagh Basin* on outward facing slopes, and therefore while repowering with larger typology turbines may be possible, this would require careful consideration with respect to effects on this settlement.

The greatest opportunities for further wind farm development appear to be in parts of the Lough Braden Forest, where development would be distant from larger centres of population and sufficiently distant from the more sensitive landscape of Lower Lough Erne. Wind turbines located here would usually be seen close to existing and consented wind farms, presenting a relatively consolidated windfarm cluster. Future developments should be sited sensitively so as not to encroach excessively into the upper Drumquin river valley, or the neighbouring Fairy Water Valley. For any proposals of 150m or greater, aviation lighting would most likely be required, the impact of which should be carefully considered.

The western part of the character area would be suited to additional wind turbine developments up to 'medium' (50<80m) size with greater capacity toward the east where larger turbines can be sited against bigger landform features and away from the more sensitive landscape of Lower Lough Erne, however larger turbines would need to be considered in relation to any future large-scale development to the east of the character area and potential cumulative effects.

Ancillary Elements

The parts of the landscape of more upland character and better suited to larger scale wind energy development tend to be undulating and the landscape is partly forested. Therefore, this landscape also has capacity for accommodating associated wind farm infrastructure, where features can be sited to take advantage of topographic screening provided by undulations in the landscape and forestry, or in more enclosed parts of the lowland landscape where screen planting could further mitigate landscape and visual effects. Visible infrastructure should be avoided on the more exposed rounded hillsides of Pollnalaght and Tappaghan Mountain. General guidance for infrastructure associated with smaller scale wind energy developments in more lowland locations is provided in Section 6.7.



View across the Omagh Basin towards LCA 14 Lough Braden and Tappaghan wind Farm

very little wind energy development within the LCA, however occasional 'small' to 'medium' (<80m) size wind turbines could be accommodated if well-spaced and sited to respect smaller scale features of the landscape.

Ancillary Elements

Ancillary elements for small scale wind energy development should be sited to take advantage of screening provided by local landform features and vegetation, and should respect the undulating local topography. General guidance is provided in Section 6.7.

LOWLAND VALLEY LCT

LCA 21. Fairy Water Valley

Underlying Landscape Capacity

This landscape has low capacity for wind energy development because of its small scale and enclosed lowland character, but which also includes a relatively open and flat landscape to the north where wind turbines could be visually prominent. The landscape would be suited only to occasional wind turbines up to the 'medium' typology (<80m).

The landscape should be maintained as a *landscape with no or occasional wind turbines*.

Consented wind Energy Development and Wind Energy Applications

There is only 1 single consented wind turbine of 50m within the LCA, and no known application developments.

Residual Capacity and Guidance for Future Development

Wind Turbines

The under-construction Cornavarrow wind farm on the northern slopes of Pollnalaght is likely to be prominent in views from much of this character area, located close to its southern boundary. This southern more undulating part of the LCA would be most suited to wind energy developments, which would could be concealed more easily in landforms and sited against rising ground, however the new windfarm would present some constraints to development here to avoid undesirable cumulative effects from smaller lowland turbines being seen with larger wind farm-scale machines. There is

