Kilkenny Draft Wind Energy Development Strategy 2021

1 Introduction

This Wind Energy Development Strategy (Wind Strategy) incorporates a statement of the Council's objectives in relation to wind energy development and sets out the methodology for the identification of suitable locations for wind energy development in the county, having regard to the relevant policy context.

2 Policy Context

2.1 Wind Energy Development Guidelines 2006

Guidelines on Wind Energy were first published by the Department of the Environment in 1996, and these were then superseded by Guidelines published in 2006. These Guidelines intended to ensure a consistency of approach throughout the country in the identification of suitable locations for wind energy development and the treatment of planning applications for wind energy developments. They included a Landscape Sensitivity Analysis Methodology in Appendix 1. This set out a step by step process, to aid in the formulation of a landscape sensitivity classification, and wind energy strategy areas for the county.

2.2 Interim Guidelines on Statutory Plans, Renewable Energy and Climate Change, 2017

The 2017 Interim Guidelines did not replace or amend the existing Wind Energy Development Guidelines 2006, but do include requirements for Local Authorities when considering policies relating to wind energy.

It is a specific planning policy requirement under Section 28(1C) of the Act that, in making, reviewing, varying or amending a development plan, or a local area plan, with policies or objectives that relate to wind energy developments, the relevant planning authority shall carry out the following:

(1) Ensure that overall national policy on renewable energy is acknowledged and documented in the relevant plan;

(2) Indicate how the implementation of the relevant plan over its effective period will contribute to realising overall national targets on renewable energy and climate change mitigation, and in particular wind energy production and the potential wind energy resource (in megawatts); and

(3) Demonstrate detailed compliance with item number (2) above in any proposal by them to introduce or vary a mandatory setback distance or distances for wind turbines from specified land uses or classes of land use into their plan. Such a proposal shall be subject to environmental assessment requirements, for example under the SEA and Habitats Directives. It shall also be a material consideration in SEA, when taking into account likely significant effects on climatic factors, in addition to other factors such as landscape and air, if a mandatory setback or variation to a mandatory setback proposed by a planning authority in a plan would create a significant limitation or constraint on renewable energy projects, including wind turbines, within the administrative area of the plan.

2.3 Draft Revised Wind Energy Development Guidelines 2019

The Draft Guidelines address a number of key aspects including noise, visual amenity setback, shadow flicker, community consultation obligations, community dividend and grid connections. Chapter 3, *Planning for Wind Energy Development*, outlines what a Development Plan needs to include. This includes a Step by Step approach to identifying suitable locations for wind energy development (the wind strategy).

The Guidelines state that planning authorities shall, in particular, have regard to the following national plans, policies and strategies when making, reviewing, varying or amending development plan or local area plan policies or objectives that relate to renewable energy, and in particular, wind energy developments:

- The National Renewable Energy Action Plan 2010 (Irish Government submission to the European Commission);
- The Government's Strategy for Renewable Energy 2012 – 2020 (DCENR);
- The Government's White Paper on Energy Policy - Ireland's Transition to a Low Carbon Energy Future 2015-2030 (DCENR); and
- The Government's National Mitigation Plan, July 2017 (DCCAE).
- The Government's National Planning Framework and National Development Plan, February 2018
- The Government's National Adaptation Framework, January 2018
- The Government's Draft National Energy and Climate Plan 2021-2030
- The All of Government Climate Action Plan, 2019
- Relevant Regional Spatial and Economic Strategy – Southern RSES, 2020

It is a specific planning policy requirement under Section 28(1C) of the Planning and Development Act 2000 (as amended) that in reviewing, varying or amending the development plan with policies or objectives that relate to wind energy developments, the relevant planning authority shall:

SPPR 1

1) Ensure that overall national policy on renewable energy as contained in documents such as the Government's '*National Energy and Climate Plan 2021-2030*', and the '*Climate Action Plan 2019*', is acknowledged and documented;

2) Indicate how the implementation of the development plan over its effective period will contribute to realising overall national targets on renewable energy and climate change mitigation, and in particular wind energy production and the potential wind energy resource (in megawatts) taking into account the 'sieve mapping approach', in particular the potential contribution of the areas identified as 'acceptable in principle' and 'open for consideration'; and

3) Demonstrate detailed compliance with Section 3.4 of the Guidelines (this sets out the policies and objectives that the Development Plan should include).

2.4 Compliance with SPPR1

2.4.1 National Energy and Climate Plan 2021-2030

The production of National Energy and Climate Plans (NECPs) was agreed by the EU as part of the 'Clean energy for all Europeans' package which was adopted in 2019. These national plans outline how the EU countries intend to address energy efficiency, renewables, greenhouse gas, emissions reductions, interconnections and research and innovation. A Draft NECP was submitted to the EU in 2018.

2.4.2 The Climate Action Plan 2019

The Government's Climate Action Plan sets out an ambitious course of action over the coming years to address climate disruption. The Plan clearly recognises that Ireland must significantly step up its commitments to reduce emissions and sets out targets per sector. In relation to onshore wind energy, the Plan estimates that in 2017 the total contribution of onshore wind was 3.3 GW. To meet the required level of emissions reduction, by 2030 the country will increase electricity generated from renewable sources to 70%, indicatively comprised of:

- at least 3.5 GW of offshore renewable energy
- up to 1.5 GW of grid-scale solar energy
- up to 8.2 GW total of increased onshore wind capacity

*The exact level of offshore wind, onshore wind, solar and other renewable technology will be determined by a new system of competitive auctions, known as the Renewable Electricity Support Scheme (RESS), where the lowest cost technology will be determined.

2.4.3 Contribution to realising overall national targets on renewable energy

The sieve mapping approach outlined in Section 4: Methodology, divides the county into three Strategy areas, in line with the Guidelines. Section 3: Target and Objectives sets out the required land area to be allocated for wind energy in order that Co. Kilkenny contributes effectively to the realisation of national targets.

2.4.4 Compliance with Section 3.4 of the Guidelines

Section 3.4 of the Guidelines relates to the Strategic Aims and Objectives of the Development Plan and requires that the Plan should include:

- a positive and supportive statement of the importance of wind energy as a renewable energy source, together with an objective to ensure the security of energy supply;
- objectives to secure the maximum potential from the wind energy resources of the planning authority's area commensurate with supporting development that is consistent with proper planning and sustainable development;
- the identification on development plan maps of the key areas where there is significant wind energy potential and where, subject to criteria such as design and landscape planning, natural heritage, environmental and amenity considerations, wind energy development will be acceptable in principle; those areas which may be open to consideration for wind energy development (where relevant) and those areas where wind energy development will generally be discouraged;

- the specific criteria for wind energy development that the planning authority will take into account when considering any wind energy or related[1] proposals in the key areas identified
- the investigation of the potential for relatively small-scale wind energy developments within urban and industrial areas, and for small community-based proposals outside the key areas that are identified as being appropriate for wind energy development.

All of these requirements are included in this appendix, except for the specific development management requirements as these are included in Volume 1, Chapter 11 of the Development Plan: Renewable Energy Strategy.

3 Target and Objectives

As set out in the *Climate Action Plan*, to meet the required level of emissions reduction, by 2030 the country will increase the proportion of electricity consumption generated from renewable sources to 70%. The 3 Counties Energy Agency (3CEA), covering the counties of Carlow, Kilkenny and Wexford, have estimated that by 2030, County Kilkenny will use 633 Gigawatt hours (Gwh) of electricity. It is Kilkenny's objective to exceed the 70% target and generate 100% renewable energy generation by 2030. This Wind Strategy will ensure that sufficient land area is designated in order to meet this requirement.

The key objectives of this Wind Strategy are as follows:

- Recognise the importance of wind energy as a renewable energy source and ensure the security of energy supply by supporting, in principle and at appropriate scales and locations, the development of wind energy resources in the county.
- Promote the development of wind energy and other renewable energy sources in the county to meet national renewable energy targets (supplying a minimum of 100% of electricity consumption from renewable sources by 2030).
- Enable Kilkenny to generate the equivalent of 100% of its electricity needs from renewable energy.
- Identify strategic areas in the county for wind energy development.
- Provide specific criteria for wind energy development that the planning authority will take into account when considering any wind energy or related proposals
- Investigate the potential for relatively small-scale wind energy developments within urban and industrial areas, and for small community-based proposals outside the strategic areas.

4 Methodology

The Guidelines set out a four-step approach to identifying suitable areas for wind energy development. This approach is based on the use of 'sieve mapping', using Geographical Information Systems (GIS). Where appropriate, the key policy considerations were mapped and combined. This allows the data to be superimposed and combined such that areas where multiple overlapping constraints can be identified and areas where multiple overlapping opportunities can be identified. The SEA and AA processes have also informed this sieve mapping methodology by highlighting significant environmental issues.

[1] These may include energy networks and temporary wind anemometers that measure wind potential.

4.1 Step 1: Assess the areas of wind potential

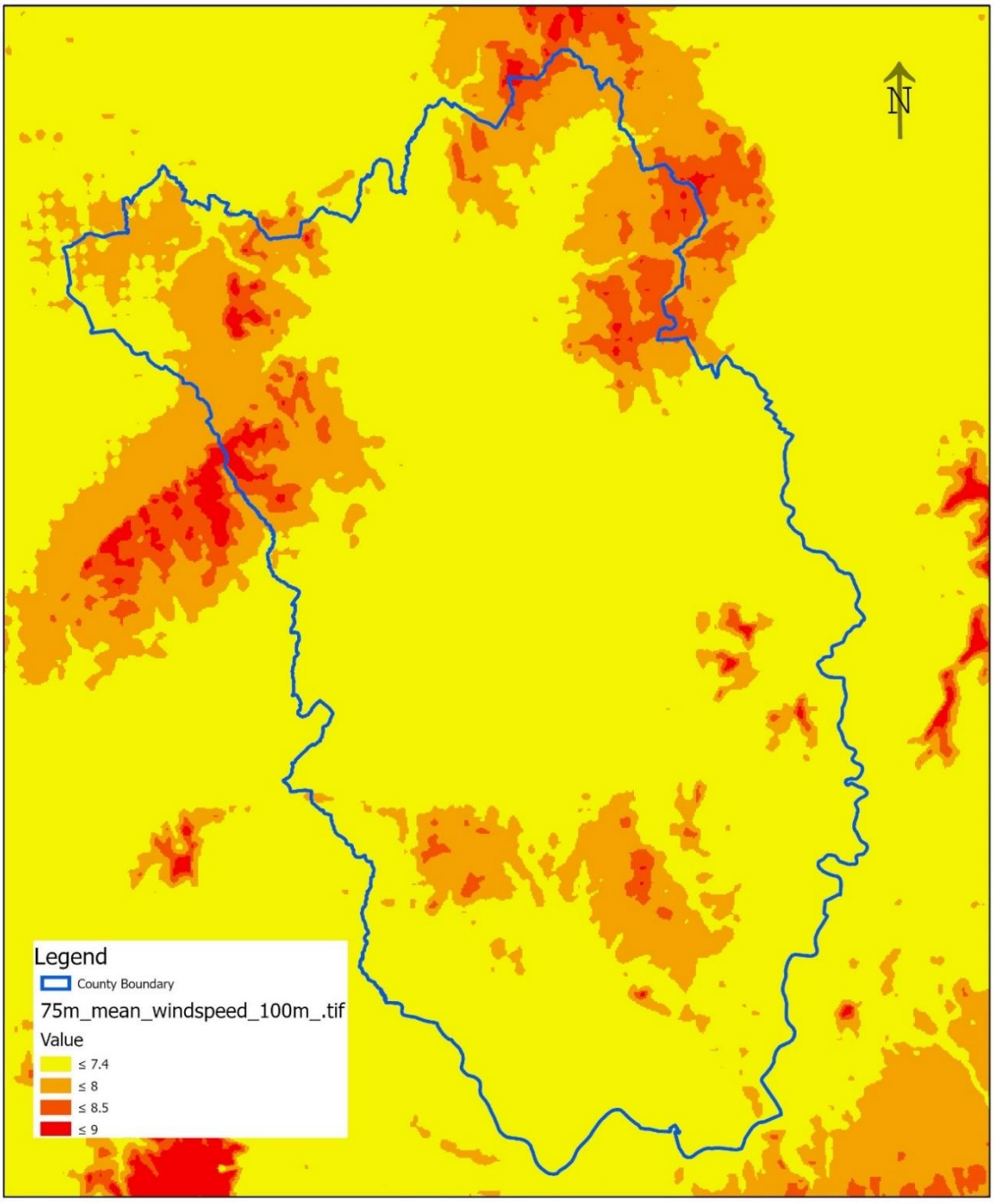
The first step in this process is to assess the areas of wind potential using the SEAI's Wind Atlas for Ireland (2013). This Wind Atlas provides information on wind speeds modelled at various heights above ground level. There are a number of factors which influence commercial wind farm viability, including wind speeds, the price of electricity, the distance from the electricity grid and the height and number of turbines to be located on site. All of these factors (apart from wind speed) are subject to continuous change. Available wind speed is therefore a key factor in determining the economic viability of potential wind energy locations. Wind speed increases with height above ground. For the purposes of this Strategy, wind speeds measured at 75 metres above ground level were utilised.

The previous Strategy was based on the 2003 Wind Atlas data, as that was what was made available to us at the time. It should be noted that the SEAI 2013 re-modelled wind speed data differs from that produced in 2003, and the area with wind speeds at or above 7.5m/s modelled at 75m above ground level is significantly less that it would have been based on the 2003 data.

In the past, wind speeds above 8 or 8.5m/s at 75m were considered necessary for economic viability. (The previous strategy only identified areas with wind speeds of 8 metres per second or greater.) However, increases in turbine heights (which can now have a tip height of 180-190m), in combination with advances in turbine technology and economies of scale, means that wind energy development can now be viable at much lower wind speeds; the Lisheen wind farm, near Urlingford, has wind speeds of approx. 7-7.5m/s. Wind energy development is therefore viable in a much larger area than before, as previously it was restricted to upland areas. However, as a consequence of the lower wind speeds, the turbines in locations of lesser wind potential, tend to be larger.

In the interests of maximising the wind resource potential and taking a plan-led approach, areas with wind speeds of 7.5 metres per second or above were identified as being the areas of extensive wind energy resources, which should be targeted. The areas identified are shown on Figure 1: Wind Speeds. The rationale for including areas of 7.5 metre per second wind speed is threefold; this allows for a greater range of areas to be examined, in line with national targets, particularly given the reduction in area of higher wind speeds on the basis of the 2013 Wind Atlas data; second, this reflects advances in turbine technology since the last Strategy, and third, this approach is consistent with two of our adjoining authorities of Wexford[2] and Laois[3].

[2] Draft Wexford County Development Plan (2021-2027) Volume 10: Energy Strategy
[3] Laois APPENDIX 5: WIND ENERGY STRATEGY, Laois County Development Plan 2017-2023



Kilkenny Wind Energy Strategy 2021
Figure 1: Wind Atlas 2013 Wind speeds of >7.5 m/s at 75m above ground level

Figure 1: Wind Speeds based on 2013 Wind Atlas data

This shows wind speeds of 7.5m/s or greater at 75m above ground level in increasing scale from orange through red.

4.2 Step 2: Evaluation of landscape sensitivity

The Guidelines recommend that an evaluation of the landscape and its sensitivity for wind energy developments be prepared or utilised. A Landscape Character Assessment of the County was prepared in 2003, and this identified three areas of Highly Scenic and Significant Amenity Value, as shown in Figure 2: Highly Scenic Areas. These areas (Brandon Hill Uplands and the River Valleys) are considered to be extremely sensitive to wind energy development.

Scenic Views are designated in the Development Plan, and these views are also considered to be extremely sensitive to wind energy development, however these will be assessed on a case by case basis in accordance with the Development management standards.

4.2.1 Spahill and Clomantagh

The area of Spahill and Clomantagh Hill in the northwest of the county is one of the potential archaeological landscape sites identified in the *Preliminary Audit of Archaeological Landscapes in County Kilkenny.* Parts of this area are also designated as a Special Area of Conservation (SAC) (000849 Spahill and Clomantagh Hill) and Proposed Natural Heritage Area (000849 Spahill and Clomantagh Hill). A protected view is also located here, V14: Views north and east on the Johnstown/Gattabaun Road No. LP1805 between junctions with Road nos. LT18054 and LT18056. Any large scale development here, in particular such as a wind farm, may have a potential impact on the cumulative natural and cultural heritage features on this site. This area has therefore been identified as a layer for inclusion in the Sieve analysis.

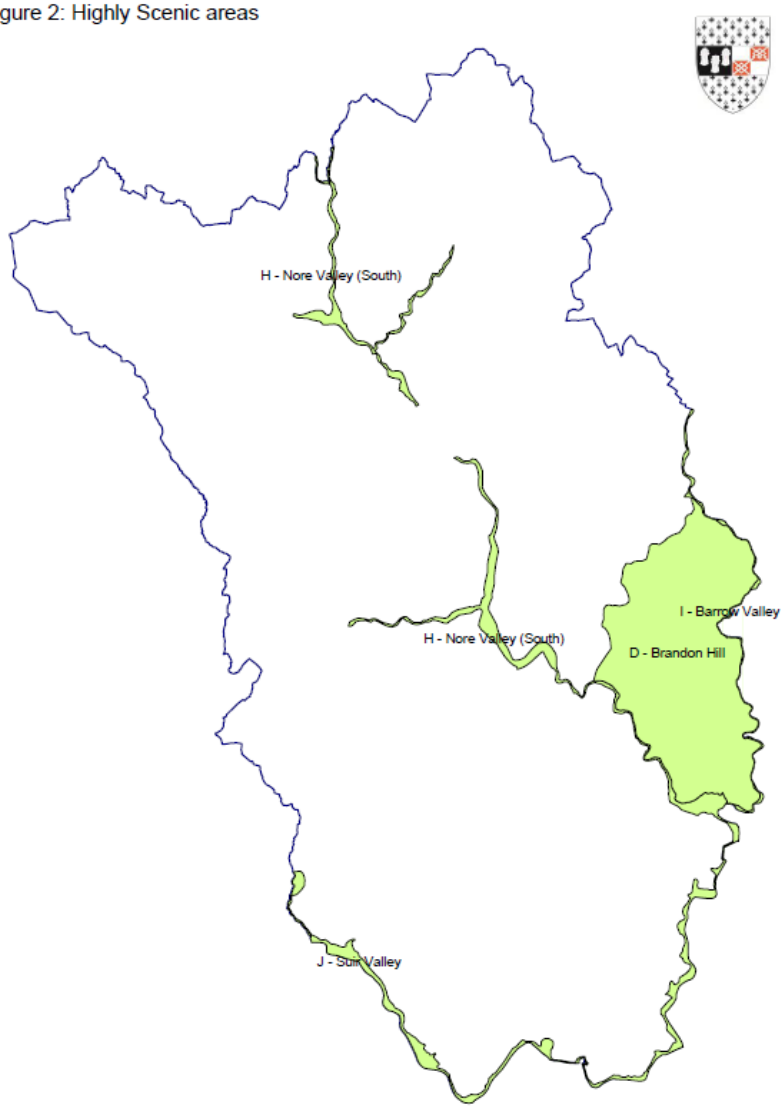
4.2.2 Sensitivities identified in adjoining Development Plans

A review of the policies in adjoining Development Plans was conducted in order to establish any possible effects on adjoining authorities' landscape designations. This is set out in the table below.

Table 1: Review of adjoining Development Plans in relation to landscape sensitivity			
Plan	**Views/scenic routes**	**Special sensitivity**	**Comment**
Carlow County Development Plan 2015 -2021 Appendix 6 – LCA and Protected Views	Scenic routes (no.s 6,7,8 &9) and views (no.s 31, 32 and 33) just east of Castlecomer. All views have easterly orientation, away from Co. Kilkenny Scenic views (no.s 45-49) and scenic routes (no.s 14 &15) east of Graiguenamanagh. Scenic views 46 and 48 are into Co. Kilkenny, based around the River Barrow and Mount Brandon. Scenic route 15 is based around Barrow Valley and Kilkenny hills to west.	No area of sensitivity adjoining Co. Kilkenny boundary.	Scenic view 46 & 48; River Barrow Valley and Mount Brandon identified as areas of Highly Scenic and Significant Amenity Value in Kilkenny DP, and excluded on that basis.
Laois County Development Plan 2017-2023 Figure 29 and Table 27: Designated Views Appendix 6: LCA	Two views into Kilkenny south of Cullahill and Durrow.	No area of sensitivity adjoining Co. Kilkenny boundary	Area of Spahill and Clomantagh excluded on basis of cumulative sensitivities.
Waterford County Development Plan 2011-2017 – term has been extended.	No scenic routes adjoining Co. Kilkenny boundary	No area of sensitivity adjoining Co. Kilkenny boundary	N/A
Waterford City Development Plan 2013-2019 – term has been extended.	No protected views adjoining Co. Kilkenny boundary.		N/A
Wexford Draft County Development Plan 2021 Chapter 11: Landscape	Scenic routes not designated.	No landscapes of greater sensitivity adjoining Co. Kilkenny boundary	N/A

SEA Figure 5.17: Landscape Character Types			
South Tipperary County Development Plan 2009 – term has been extended	Appendix 4: V51, V61	Map 9: Slieveardagh Hills – secondary amenity area Map 11: Slievenamon Primary & secondary amenity areas	Tipperary Renewable Energy Strategy has identified both areas as Open for Consideration.

Figure 2: Highly Scenic areas

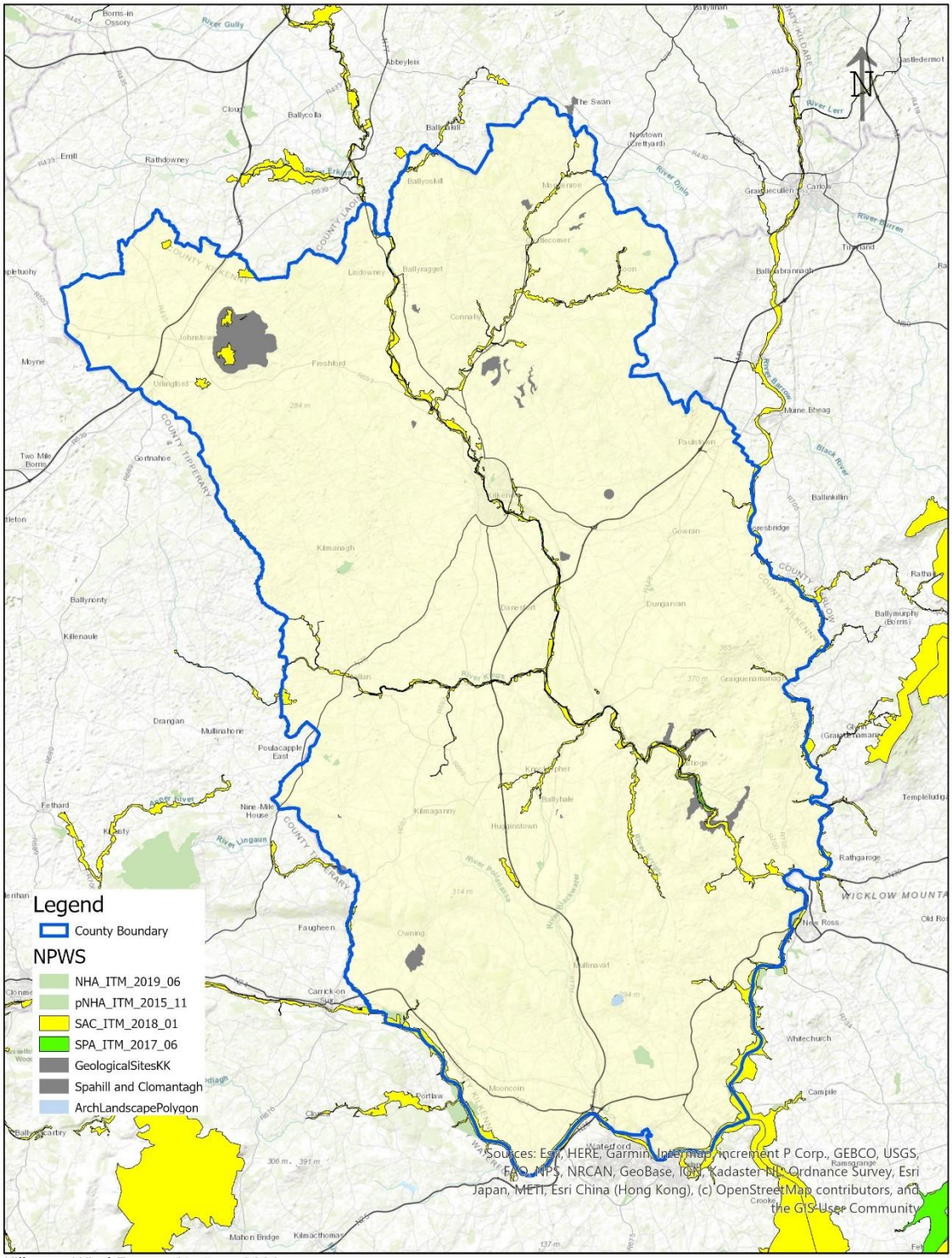


4.3 Step 3: Overlay the wind energy mapping and the evaluation of landscape sensitivity

This step includes overlaying the information from the first two steps, in combination with the heritage, archaeological and amenity designations in the Development Plan, and existing settlements. It is noted that the Guidelines state that the designation of an area for protection of natural or built heritage does not automatically preclude wind energy development. However, considering the extent of the land in the county identified as having an extensive wind energy resource (greater than or equal to 7.5m/s), excluding areas of natural and cultural heritage as identified below would not impact on the ability of the County to meet its renewable targets. Therefore, the approach taken is to exclude these areas due to the potential effects on their sensitivities. The areas identified are set out in the following table and are shown on Figure 3: Heritage considerations.

Policy Consideration	**Exclusion criterion**
Natural heritage	
SACs (EU/National designation)	Exclude
SPAs (EU/National designation)	Exclude
NHAs (National designation)	Exclude
Geological sites (National designation)	Exclude
Landscape designations	
Highly scenic areas (CDP designation)	Exclude highly scenic areas – as identified in LCA - Brandon Hill Uplands, River Valleys.
Cultural heritage/ archaeological/Greater sensitivity landscapes (CDP designation)/Cumulative sensitivity	Exclude Freestone Hill, Lingaun River Valley, Tory Hill and Spahill/Clomantagh.

The Southern RSES identifies Urban Areas as settlements of greater than 1,500 population. The Guidelines recommend that settlements be excluded as they will be subject to the project level requirement for a minimum of 500m setback from individual properties. A minimum exclusion zone of 0.5 kilometres has been applied to Kilkenny City, all District Towns, Ferrybank and New Ross. In adjoining counties, Carrick On Suir is the only town exceeding 1,500 population within 0.5km of County Kilkenny's boundary, so the exclusion zone has also been applied around Carrick On Suir.



Kilkenny Wind Energy Strategy 2021
Figure 3: Heritage considerations

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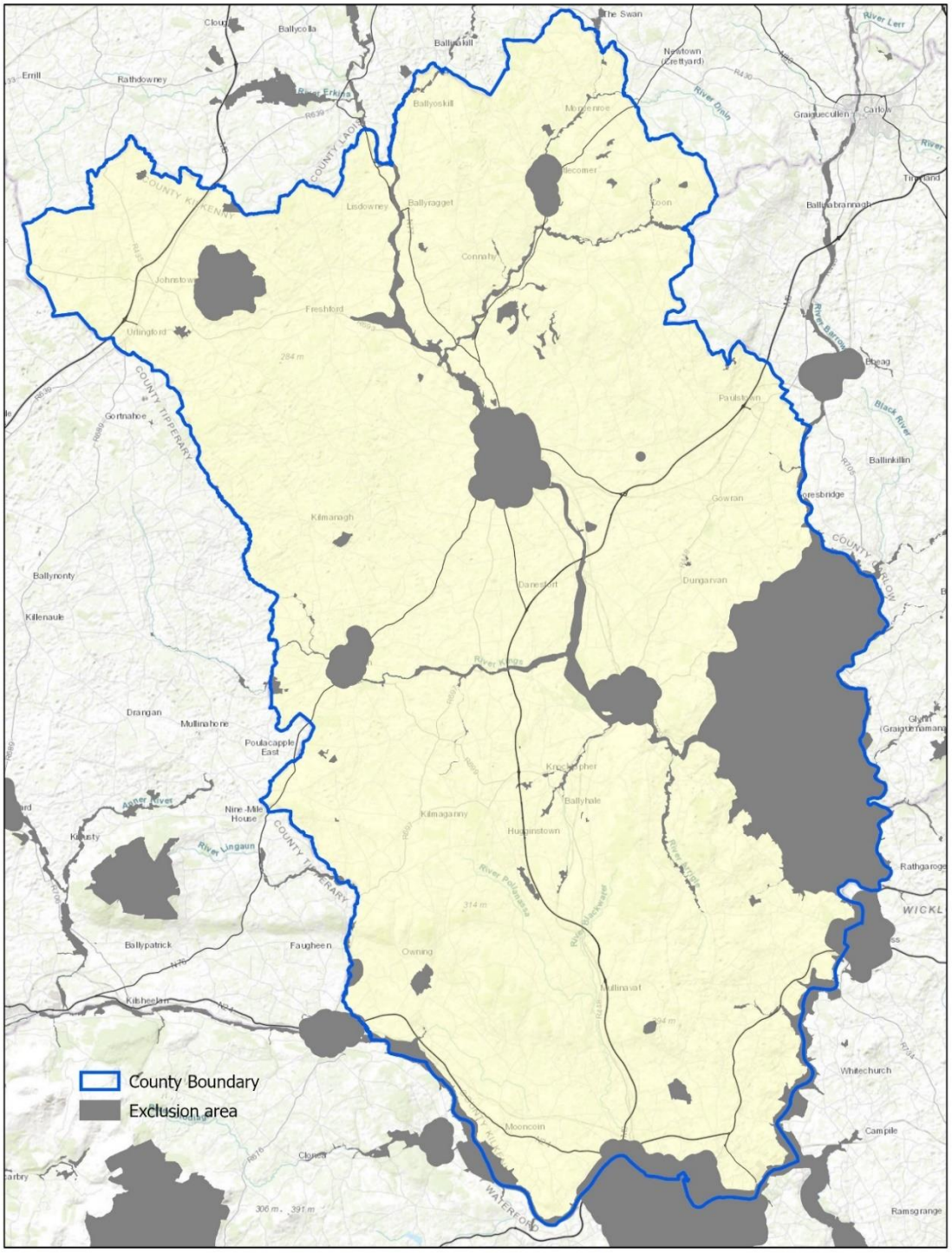
Figure 4 shows the total exclusion areas as outlined above, i.e. the areas of landscape and heritage sensitivity, and areas within 0.5km of the settlements listed above.



Kilkenny Wind Energy Strategy 2021
Figure 4: Exclusion areas

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Figure 5 overlays the exclusion areas over the areas of highest wind speeds. By overlaying these maps, it is possible to see where the conflicts between landscape and other sensitivities, and areas of highest wind resource arise. All exclusion areas are subtracted from the areas of highest wind speeds. This results in a map showing the optimal areas for wind farm development.

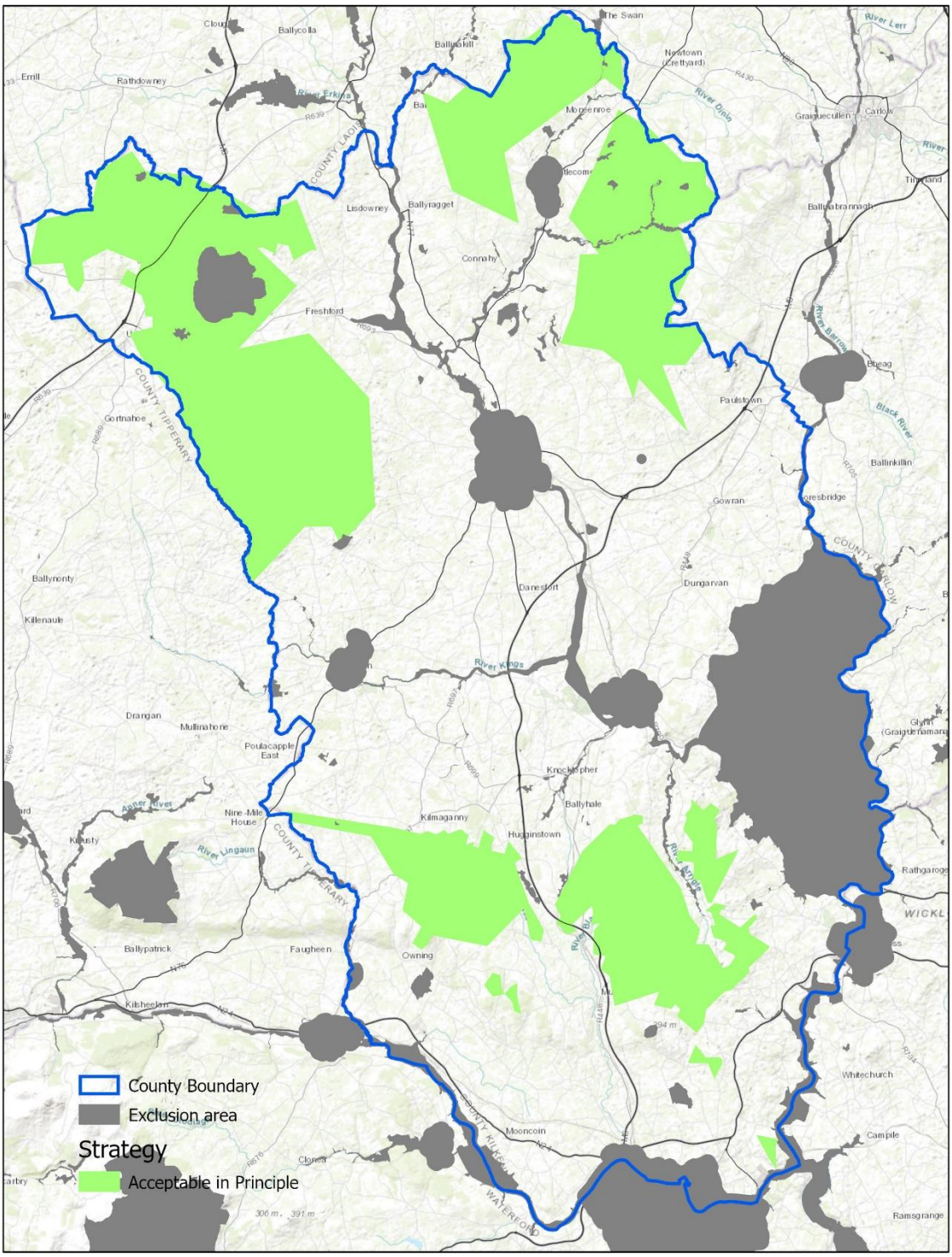


Figure 5: Exclusion areas (in gray) overlain on areas of highest wind speeds (bright green).

4.4 Step 4: Add information regarding accessibility to electricity transmission and distribution girds

This process is to establish areas where wind energy resources are readily capable of development due to access to the transmission and distribution grids. Figure 6a below shows the existing transmission infrastructure in the vicinity of the county. As a general rule, larger wind energy developments need to access the larger power lines such as the 400kV or 220kV lines. Smaller wind energy developments can access into the smaller capacity network such as 110kV. However, proximity is recognised as being only one factor in accessing the transmission network.

Figure 6a: Transmission System

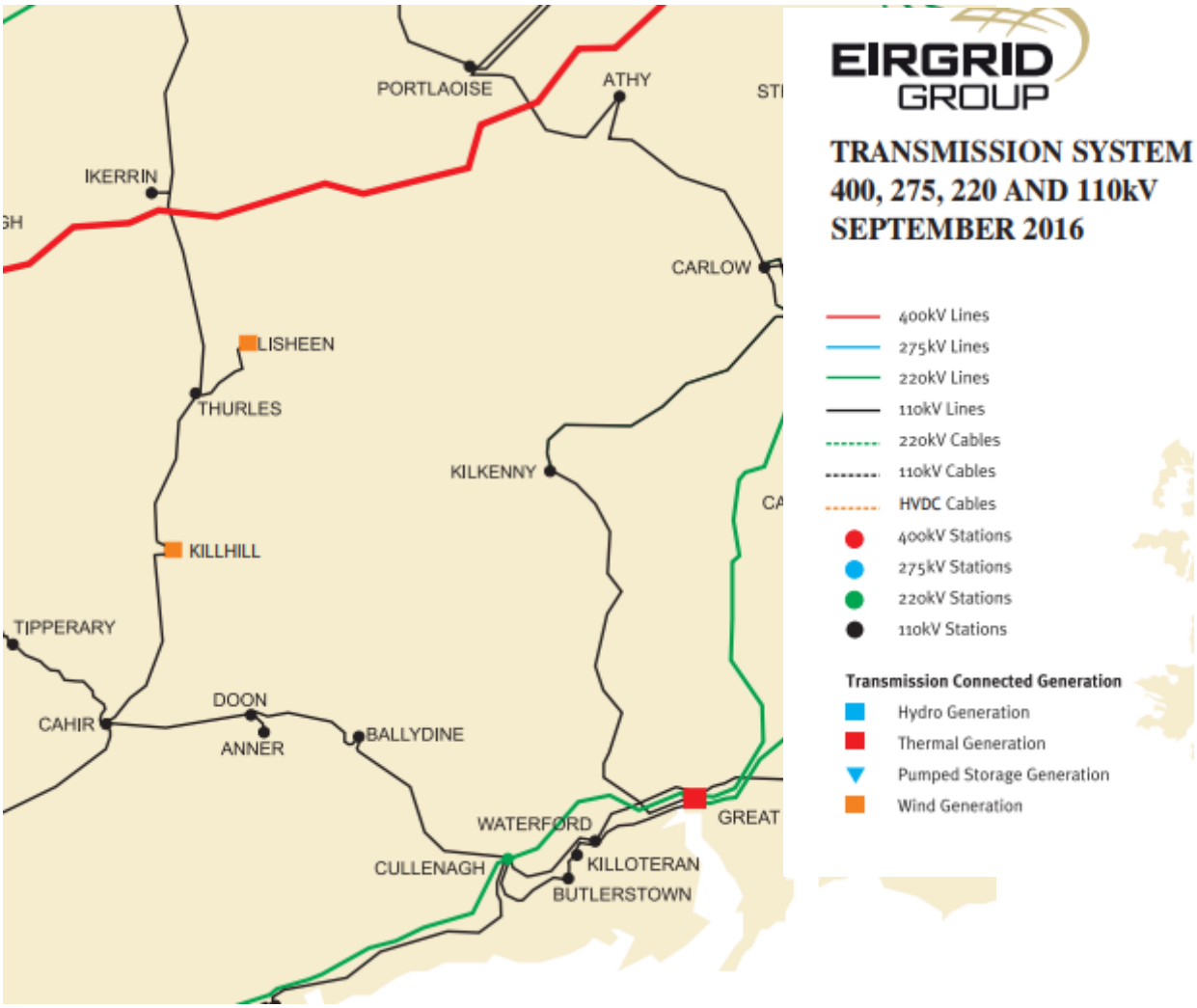
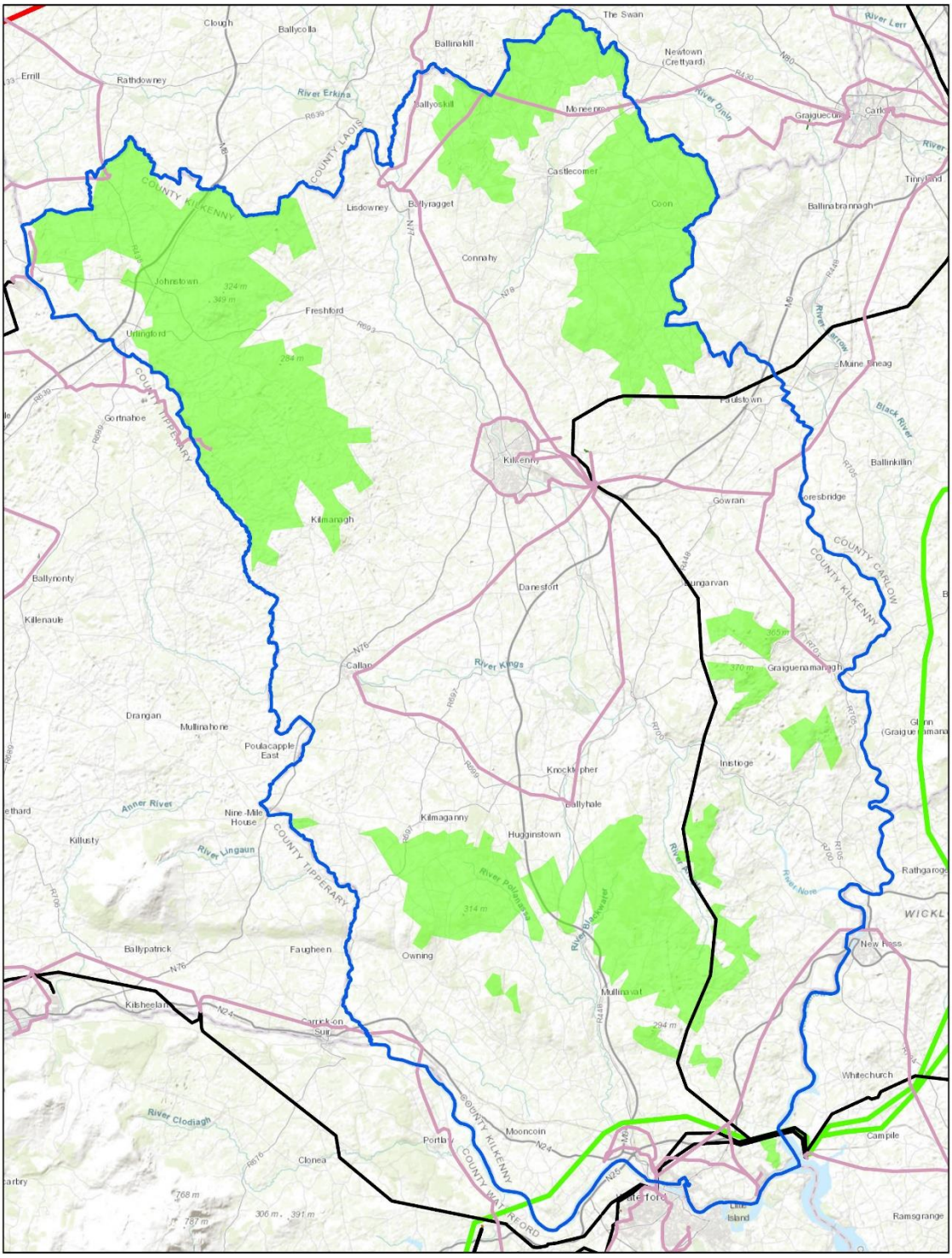
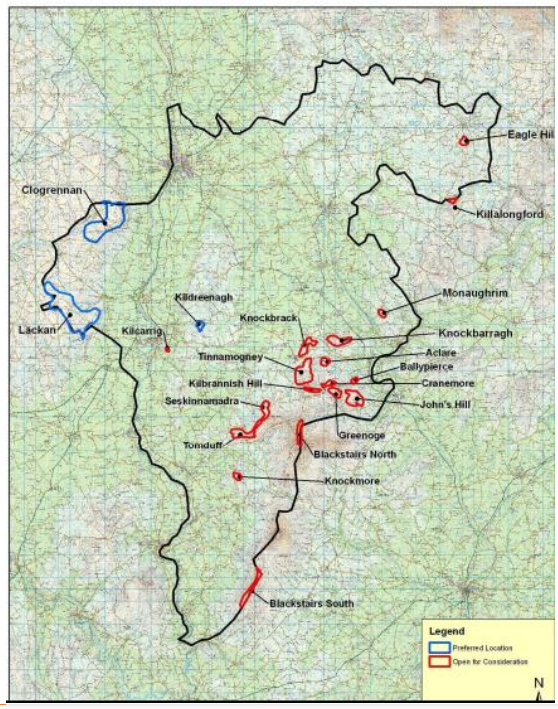
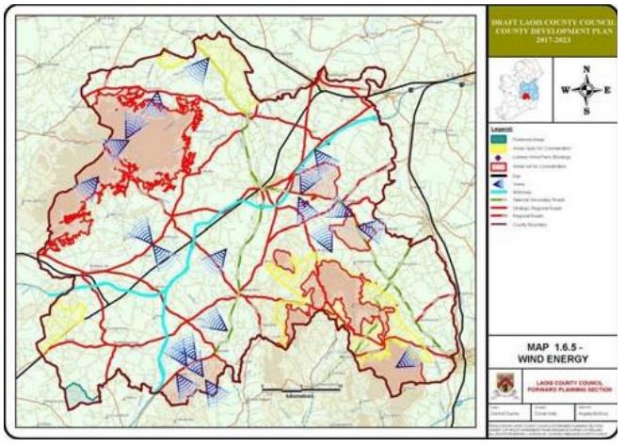


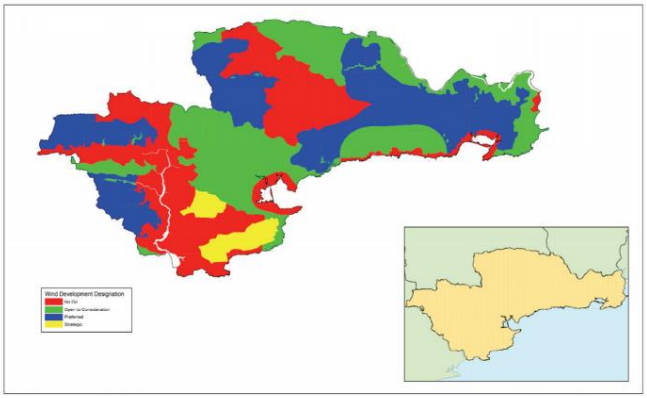
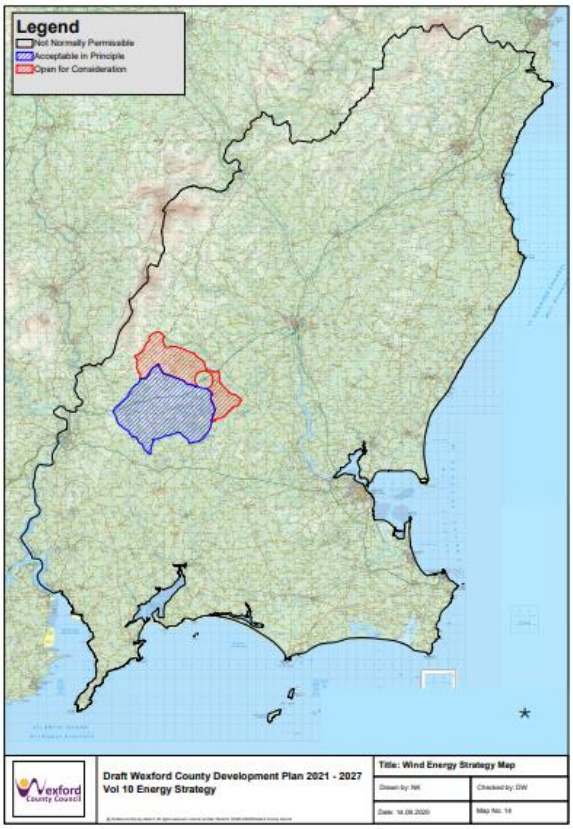
Figure 6b Transmission system in County Kilkenny overlain on the areas of highest wind speeds (includes 38 kV lines)

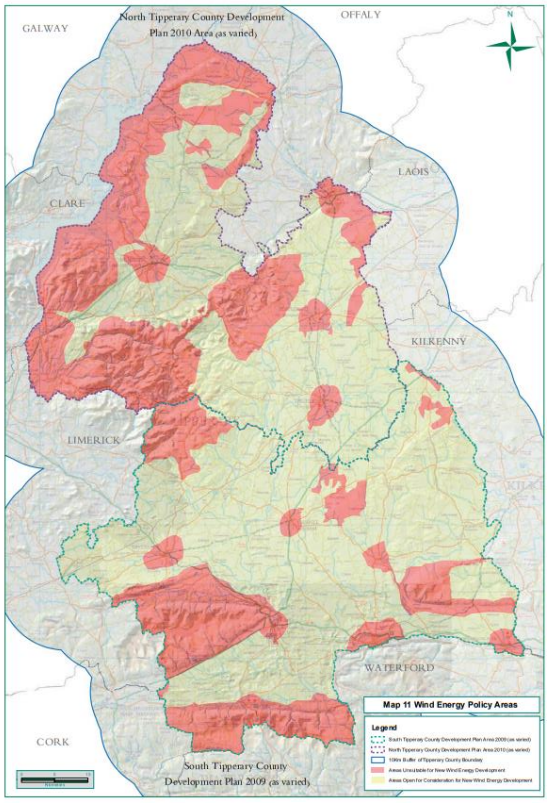


4.4.1 Strategy areas of adjoining counties

To ensure a consistency of approach across the region, the Wind strategy designations in adjoining counties were considered as a final step in this methodology. The table below sets out the current Wind Strategy designations in each Development Plan and highlights if there are any conflicts in strategy areas across the borders.

Plan	Comment	
Carlow County Development Plan 2015 - 2021	For the most part, along the county boundary with Carlow, the strategy areas is 'Not normally permissible'. Small area of conflict northwest of the M9, where proposed Co. Kilkenny strategy area is Acceptable in principle.	
Laois County Development Plan 2017-2023	To the north, along the Laois border, approximately half of the county boundary is deemed 'Not normally permissible'.	

Waterford County Development Plan 2011-2017 – term has been extended. Waterford RES 2016	To the south, County Waterford's areas are 'Open for consideration'.	 Wind Energy Designations (Waterford County Development Plan 2011-2017)
Wexford Draft County Development Plan 2021	Along the county boundary with Wexford, the strategy areas is 'Not normally permissible'. Areas in Co. Kilkenny are excluded also, on the basis of the River valleys.	

South Tipperary County Development Plan 2009 – term has been extended Tipperary RES 2016	To the west, there are some small areas in Tipperary along the county boundary, which have been designated as Unsuitable.	

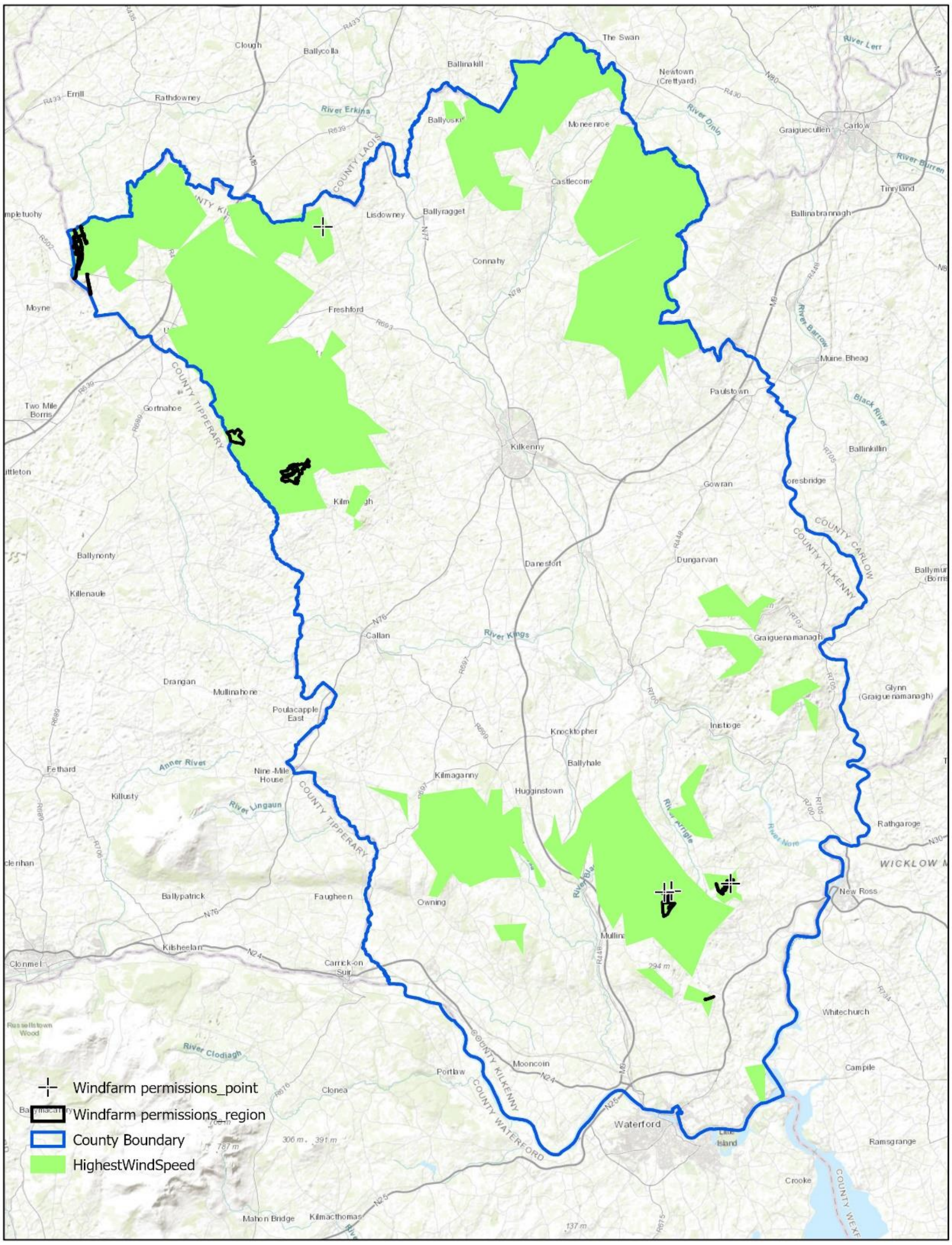
On the basis of the review of adjoining Wind Strategies as outlined, there is the possibility of conflict mainly to the north, adjoining the Laois County boundary. There is also a small area of conflict with the Co. Carlow strategy, northwest of the M9.

In order to ensure that Strategies are consistent in their approach, we will consult with all our adjoining planning authorities during the preparation of their Draft Development Plans[4] and review this information as the process proceeds.

4.5 Existing wind farms

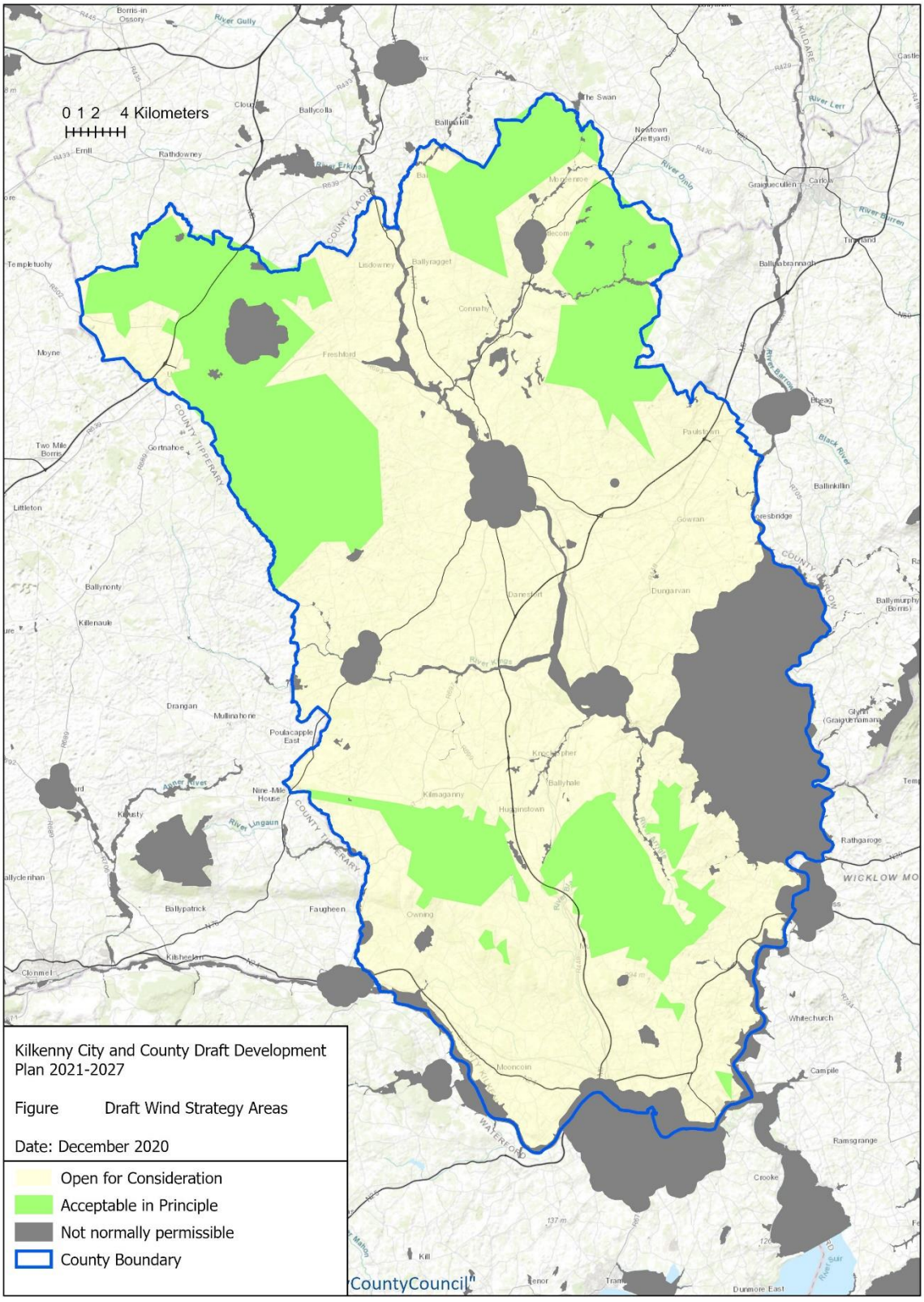
The location of existing and permitted wind farms was also taken into consideration, recognising the investment made by private developers, the ESB and EirGrid in terms of site access roads and electricity transmission and distribution infrastructure. The locations of existing wind farms in Co. Kilkenny are shown on Figure 7a.

[4] Laois County Development Plan 2017-2023, currently preparing CE's report on submissions to pre-draft, Carlow County Development Plan 2015-2021 – SEA Scoping just published


Windfarm permissions_point
Windfarm permissions_region
County Boundary
HighestWindSpeed
Kilkenny
Waterford
Carlow
New Ross
Carrick-on-Suir
Clonmel
Castlecomer
Graiguenamanagh
Callan

Strategy Areas

The resulting map designates three policy areas as 'Acceptable in Principle', 'Open for Consideration', and 'Not normally Permissible', see Figure 8 below.



This Strategy identifies a total land area of over 50,000 hectares as 'acceptable in principle'. Considering that a typical wind turbine requires a land take of 0.4 hectares, it is clear that notwithstanding the 500m setback criteria from residences, this Strategy provides for sufficient land area.

Wind Energy Strategy Areas

Strategic Area	Description and Guidance
Acceptable in Principle	This is the preferred area for wind energy development, characterised by high wind speeds, and no significant conflict with environmental designations or sensitivities.
Open for Consideration	This area is characterised by no significant conflict with environmental designations or sensitivities.
Not Normally Permissible	This area is considered to be generally unsuitable for wind farm development. Individual small scale turbines will be considered on a case-by-case basis. Community led initiatives will also be considered here.

Detail on the project categories and policies for their development are set out in Chapter 11 of Volume 1.