Northern Ireland Assembly

Research and Information Service Research Paper

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Wind Turbines: Planning and Separation Distances

NIAR 767-13

The following paper is in response to a request from the Environment Committee. It gives a summary of the planning process for wind development and considers Planning Policy and Guidance in Northern Ireland in relation to separation distances of turbines from residential areas. It also gives an account of the situation in the rest of the United Kingdom and the Republic of Ireland. Finally it gives examples worldwide where separation distances are more of an actual requirement

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Contents

1 Background

Planning permission is needed for all individual wind turbines and wind farms under the Planning (Northern Ireland) Order 1991.

Accompanying any planning application (on a P1 form) there must be:

- Copies of a site location map showing site boundary with access road and land requiring junction improvement outlined in red;
- Copies of the site layout including access roads within the site, detailed plans to scale including turbines, details of bases, access rods, wind monitoring masts, substation and other ancillary development.
- Details of finishing material (such as on turbines, substations, control rooms, fences etc), landscaping.[1]
- Environmental Impact Assessment

More detail on requirements for a wind application is provided in the Best Practice Guidance document

1.1 EIA

If an Environmental Statement is not submitted voluntarily with an application, most turbine applications will require that the Dept. carry out an Environmental Impact Determination under Schedule 2 (3) (j) of The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 1999 as amended by The Planning (Environmental Impact Assessment) (Amendment) Regulations (Northern Ireland) 2008

In many cases (for example a single turbine or where the hub height does not exceed 15 metres) applications for individual turbines for domestic purposes will not require to be accompanied by an Environmental Statement.

However, where it is determined that an Environmental Statement is not required, the Department may require the applicant to provide additional information to enable it to process the application – e.g. a noise assessment, ecological study or information on interference with Emergency service communication links etc.

The Dept., states that each application will be judged on its own merits and additional information will depend on the individual circumstances. For example:

- site location,
- turbine height,
- site designations such as A.O.N.B's or Conservation Areas.

[1] Detailed in the DOE's Windfarm Development Information Leaflet accessed at http://www.planningni.gov.uk/index/advice/advice_apply/advice_renewable_energy/renewable_wind_farms.htm

1.2 How decisions are made

Applications are assessed using the information provided by the applicant in relation to Planning Policy Statements which are material to decisions made. In the case of wind, PPS 18 'Renewable Energy' is the most relevant PPS as it aims to facilitate the siting of renewable energy generating facilities in appropriate locations within the built and natural environment. PPS 18 is accompanied by a Best Practice Guidance document which provides more technical information on areas such as wind turbine technology, height, spacing, maintenance and planning etc. [2]

Other policies influencing decisions may include:

- Regional Development Strategy (RDS) for NI 2035 –Ch 3 and 4
- Planning Policy Statement 1 – General Principles
- Planning Policy Statement 2 – Planning & Nature Conservation
- Planning Policy Statement 3 – Access, Movement & Parking
- Planning Policy Statement 6 – Planning, Archaeology and the Built Heritage
- Relevant Development Plans
- DCAN 15 Vehicular Access Standards·
- Planning Strategy for Rural NI DES 4 in relation to ancillary buildings and structures.
- Planning Policy Statement 21 – Sustainable Development in the Countryside in relation to ancillary buildings & structures elsewhere in the countryside.
- Coastal policies in the RDS

The planning system exists to regulate the development and use of land in the public interest. The material question is whether the proposal would have an unacceptable detrimental effect on the proposed location in general, and on amenities that ought to be protected. According to the Dept. each planning application will be considered on its own merits, and the argument that granting permission might lead to another application will not be sufficient grounds for refusal.[3]

[2] See PPS 18 ' Renewable Energy' and Best Practice Guidance to PPS 18 [available at] http://www.planningni.gov.uk/index/policy/policy_publications/planning_statements/planning_policy_statement_18_renewable_energy-4.htm

[3] DOE, Best Practice Guidance to PPS18.

1.3 Wind farm decisions

The following table gives information on the number of approved and refused planning applications for onshore wind applications for 2012 and 2013.

Wind farm Decisions

	2012	2013
Approved	14	3
Refused	4	1

Reasons for Refusal

According to information provided by the Department of Environment (see Appendix 1 for more detail) the most common reasons for the refusal of applications in 2012 and 2013 were:

- adverse impact on the visual amenity and landscape character of the area; and
- insufficient information submitted to enable determination of the full impacts of the planning application.

2 Separation Distances

Separation distances (or sometimes referred to as setback) between turbines and residential areas seem to vary greatly between countries in term of the distances, the reason for their establishment and the weight that is given to them i.e. whether they are recommendations or more of a statutory requirement. The following section will look at the current situation in NI and across the rest of the UK and Ireland. It will also look at areas that have introduced more stringent/statutory requirements for separation distances elsewhere in the world.

2.1 Current situation in NI

In Northern Ireland, there is no statutory separation distances stipulated in legislation. Recommendations or suggestions for separation are made through planning policy and guidance. Planning policy and guidance influence and inform decisions made on applications, therefore it is good practice for a developer to adhere to the recommendations made, however, they are not obligated.

Planning Policy Statement 18 (PPS18) suggests that turbines are a safe technology and that even in the rare event of structural damage occurring incidents of blade throw are most unlikely. Distances are calculated on the basis of noise levels so as to reduce nuisance:

> *The minimum desirable distance between wind turbines and occupied buildings calculated on the basis of expected noise levels and visual impact will usually be greater than that necessary to meet safety requirements. Fall over distance (i.e. the height of the turbine to the tip of the blade) plus 10% is often used as a safe separation distance.*[4]

The Department of the Environment's best practice guidance on PPS18 goes on to state that:

> *As a matter of best practice for wind farm development, the Department will generally apply a separation distance of 10 times rotor diameter to occupied property (with a minimum distance of not less than 500m).*[5]

2.2 UK Position

The policy on siting of wind turbines differs across the UK:

There is no minimum separation distance in English planning law or guidance. With regards to proximity to dwellings, the draft National Policy Statement on Renewable Energy (2010) states:

Commercial scale wind turbines are large structures and can range from tip heights of 100m up to 150m although advances in technology may result in larger machines coming on the market. All wind turbines generate sound during their operation. As such, appropriate distances should be maintained between wind turbines and residential properties to protect residential amenity. The two main impact issues that determine the acceptable separation distances are visual amenity and noise.

The Government Companion Guide to Planning Policy Statement 22 (PPS22): Renewal Energy notes that safety is not really an issue and that calculations are based on noise and visual impact:

The minimum desirable distance between wind turbines and occupied buildings calculated on the basis of expected noise levels and visual impact will often be greater than that necessary to meet safety requirements. Fall over distance (i.e. the height of the turbine to the tip of the blade) plus 10% is often used as a safe separation distance.

The UK Government stated that they had no plans to introduce proximity rule.[6] However, the Companion Guide to PPS22 gives examples of noise suggesting a practical separation distance of 350 metres. It contains a comparison between typical wind turbine noise at 350 metres and other common noise sources.

[4] DoE (2007) PPS 18: Renewable Energy [online] available from: http://nia1.me/od (page 48)
[5] DoE (2009) Best Practice Guidance to Planning Policy Statement 18 'Renewable Energy' [online] available from: http://nia1.me/oe
[6] Barclay, C. (2011) Wind Farms - Distance from housing. HOC library

Well-specified and well-designed wind farms should be located so that increases in ambient noise levels around noise-sensitive developments are kept to acceptable levels with relation to existing background noise. This will normally be achieved through good design of the turbines and through allowing sufficient distance between the turbines and any existing noise-sensitive development so that noise from the turbines will not normally be significant. Noise levels from turbines are generally low and, under most operating conditions, it is likely that turbine noise would be completely masked by wind-generated background noise.

The Scottish Planning Policy states:

A separation distance of up to 2km between areas of search and the edge of cities, towns and villages is recommended to guide developments to the most appropriate sites and to reduce visual impact, but decisions on individual developments should take into account specific local circumstances and geography. Development plans should recognise that the existence of these constraints on wind farm development does not impose a blanket restriction on development, and should be clear on the extent of constraints and the factors that should be satisfactorily addressed to enable development to take place. Planning authorities should not impose additional zones of protection around areas designated for their landscape or natural heritage value.[7]

Welsh Planning Policy on separation distance is set out in Technical Advice Notice (TAN) 8: Planning for Renewable Energy. This states that:

500m is currently considered a typical separation distance between a wind turbine and residential property to avoid unacceptable noise impacts, however when applied in a rigid manner it can lead to conservative results and so some flexibility is advised[8]*.*

2.3 Republic of Ireland

Irish Planning guidelines consider a number of issues around the siting of wind turbines but noise is the primary consideration. Planning Policy states that:

> *Good acoustical design and carefully considered siting of turbines is essential to ensure that there is no significant increase in ambient noise levels at any nearby noise sensitive locations [including dwellings].*
>
> *In general, a lower fixed limit of 45 dB(A)10 or a maximum increase of 5dB(A) above background noise at nearby noise sensitive locations is considered appropriate to provide protection to wind energy development neighbours […] in general, noise is unlikely to be a significant problem where the distance from the nearest turbine to any noise sensitive property is more than 500 metres. Planning authorities may seek evidence that the*

[7] Scottish Executive (2010) Scottish Planning Policy (paragraph 190) [online] available from: http://nia1.me/ob
[8] Welsh Assembly Government (2005) Welsh Planning Policy: Technical Advice Note 8 – Planning for Renewable Energy (Page 59 [online] available from: http://nia1.me/oc

type(s) of turbines proposed will use best current engineering practice in terms of noise creation and suppression.[9]

3 Legislative Attempts in UK and ROI

3.1 UK

Currently government policy does not include separation distances. However, within Parliament there have been three Private Members Bills raised in both the House of Commons and the Lords providing proposals for establishing a legal basis for a separation distance between turbines and residential properties.

Wind Turbines (Minimum Distances from Residential Premises) Bill [House of Lords] 2010-12[10]

Reached a Second Reading in June 2011 the Bill was discontinued at second stage and will make no further progress. Made provision for a minimum distance between wind turbines and residential premises according to the size of the wind turbine;

- From 25m and not exceeding 50m 1000m
- From 50m and not exceeding 100m 1500m
- From 100m and not exceeding 150m 2000m
- Greater than 150m 3000m

Onshore Wind Turbines (Proximity of Habitation) Bill [House of Commons] 2010-12

The Bill had its first reading in November 2010 but subsequently failed to complete its passage through Parliament before the end of the session. It sought to give powers to local authorities to specify in their neighbourhood development plans a 'recommended best practice set-back distance' between onshore wind turbines and habitations. It includes recommendations for this set-back distance, calculated as a multiple of ten turbine rotor diameters.[11]

[9] The Department of the Environment, Heritage and Local Government (2002) Guidelines for Wind Farm Development [online] available from: http://nia1.me/of

[10] Wind Turbines (Minimum Distances from Residential Premises) Bill http://services.parliament.uk/bills/2010-12/windturbinesminimumdistancesfromresidentialpremiseshl.html

[11] Onshore Wind Turbines (Proximity of Habitation) Bill http://services.parliament.uk/bills/2010-12/onshorewindturbinesproximityofhabitation.html

Wind Turbines (Minimum Distance from Residential Premises) Bill [House of Lords] 2012-13[12]

Re-introduction of the earlier Bill was given its first reading in May 2012. It should be noted that Private Members' Bills are introduced by individual MPs or Lords who are not progressing government business.

In practice a small minority of these types of Bills become law, as less parliamentary time is allocated to these Bills, it is less likely that they will proceed through all the stages. Furthermore, the Bills have no weight in planning decisions as highlighted in a recent appeal, where the inspector stated

"*It has been mooted that a private members bill may result in mandatory minimum distances between turbines and dwellings. However at the present time this does not form part of Government policy and whether such measures would be enshrined in legislation is not known. The matter cannot therefore carry weight […..]"* APP/U2615/A/10/2131105 (November 2010)[13]

Local Council

Many Local Authorities are developing their own minimum distances between a wind turbine and housing. Although these 'policies' have limited status it demonstrates that separation distances are considered to be an issue across many areas of England. There are many different examples of practice and approaches undertaken, however, as of yet there are no adopted planning policies in place in England. The table in Appendix 2 provides a range of examples to illustrate both the range of distances selected and the 'status' of the approach.

Lincolnshire County Council

On 6 June 2012 Lincolnshire County Council issued a press release calling for a halt to the unrestrained invasion of wind turbines across Lincolnshire.[14] The full statement contains its own minimum distance:

c) Residential Amenity

Amenity of existing residential occupants must be maintained at an acceptable level, therefore the following criteria shall be applied:-

- no wind turbine developments shall be constructed in close proximity of a residential property (the accepted distance for separation is 700 metres) however, noise and amplitude modulation issues can be present up to 2km away. Therefore,

[12] Wind Turbines (Minimum Distance from Residential Premises) Bill 2012-13 http://services.parliament.uk/bills/2012-13/windturbinesminimumdistancefromresidentialpremises.html

[13] Allerdale Local Plan: Wind Turbine Separation Distance Topic Paper (May 2013) available at http://www.allerdale.gov.uk/planning-and-buildings/planning/planning-policy/local-plan-downloads/evidence-base/topic-papers.aspx

[14] Lincolnshire County council Press Release, Council says 'enough is enough' on wind farms, 6 June 2012

unless through assessment, it can be demonstrated that there would be acceptable noise levels within the 2km radius of a residential property, the minimum distance should be 2km.

- no wind turbines shall be constructed within a distance of a factor of ten times the diameter of the blades of a residential property to mitigate against flicker, unless intervening topography/structures negates the impact.
- wind farm developments must demonstrate that they would have no unacceptable impact due to noise, amplitude modulation, low frequency sound or vibration on residential amenity.

The House of Commons have informed that the county council is not the planning authority; therefore this would not have the same standing in relation to Government policy.[15]

Milton Keynes

Milton Keynes Council tried to introduce a sliding scale separation distance which required more than kilometre between large wind turbines and residential areas. The Council tried to adopt in its Supplementary Planning Document a sliding scale od distance requirements according to turbine height.

However the policy was quashed in a High Court case taken by energy firm RWE npower renewables. The Judge concluded that

> *"national guidance plainly indicates that local authorities should not have a policy that planning permission for a wind turbine should be refused if a minimum separation distance is not met."*[16]

For more information on other attempts across the UK refer to **Appendix 2**

3.2 Scotland

The third National Planning Framework (NPF3) and draft Scottish Planning Policy (SPP) will influence development plans across Scotland and guide future planning decisions on a range of sectors including transport, energy and infrastructure.

In a statement on the content of the proposals in April 2013, the Scottish Parliament informed that Scottish Ministers intend to extend the separation distance between wind farms and cities, towns and villages.

It is proposed that the SPP will be finalised by the end of 2013, with NPF3 being adopted by 2014.[17]

[15] Barclay, C. (2011) Wind Farms - Distance from housing. HOC library
[16] Planning Portal (April 2013) http://www.planningportal.gov.uk/general/news/stories/2013/apr13/180413/18042013_5
[17] Scottish Parliament (April 2013) http://www.scotland.gov.uk/News/Releases/2013/04/Planning-systems-30042013

3.3 Republic of Ireland

The Environment and Public Health (Wind Turbines) Bill 2012 was introduced to the Oireachtas in November 2012 by Deputy Willie Penrose. It proposed to set minimum separation distances of up to 2km between wind turbines and residential property depending on the size of turbines:[18]

- 500 metres, where the height of the wind turbine is up to 50 metres
- 1,000 metres, where the height of the wind turbine is up to 100 metres
- 1,500 metres, where the height of the wind turbine is up to 150 metres
- 2,000 metres, where the height of the wind turbine is greater than 150 metres

However the Bill was not passed as it was felt that the Bill "could hinder our ability to meet ambitious but necessary and legally binding EU renewable energy and climate change commitments"[19]

This statement was made on the back of research carried out by the All Ireland Research Observatory Ireland (AIRO) who mapped the practical consequences of setting each of separation distances between turbines and residential areas. Each of the maps illustrated (see Appendix 3) the extent of the land area in the Republic of Ireland that would remain following the introduction of these exclusion buffers. In the case of the 500m setback, just under a quarter (23.75%) of the total land area of the country would remain available for new wind farm development. However, this drops to 9.4% for the 1,000 metre setback, 5.2% for the 1,500 setback and 3% for the 2,000m setback.

It is important to note that while the analysis above from AIRO at NUI Maynooth does not take into account other constraints such as:

- Availability of a viable Wind resource
- Suitable site availability
- A buffer for watercourses
- Avoidance of known archaeological features with an appropriate buffer if required
- An airport buffer
- A radar buffer

[18] Information on the Bill is available at http://www.oireachtas.ie/viewdoc.asp?DocID=22164&&CatID=59
[19] Press Release Wind Action http://www.windaction.org/posts/35923-wind-energy-lobby-says-bill-would-hinder-industry

- A telecommunications buffer
- Landscape constraints for sensitive landscape
- County Development Plan zoning etc.

Therefore the total land area remaining available could in fact be smaller than the scenarios suggest.

4 Worldwide

4.1 Germany

Germany has no national level requirements or recommendations for wind turbine setback distances from residences, however local authorities or municipalities set their own recommendations, or in some cases requirements which include:[20]

Hamburg

Hamburg has published a document entitled “Exclusion Zones for Wind Turbines in Hamburg,” which outlines wind turbine setback requirements from many settings, but does not provide rationale for their setbacks.

Wind turbines must be setback 300 meters (985 feet) from individual dwellings and 500 meters (1,640 feet) from residential areas. Turbines are also required to be located 50-100 meters (164- 328 feet) from the nearest roads, railways, power lines, radio transmitters, and property lines. To protect the environment, turbines must be set back a distance of 200-500 meters (656-1,640 feet) from forests, wetlands, bird and bat areas, and other areas of environmental concern.[21]

4.2 Denmark

Municipalities are in charge of the planning for wind turbines up to 150 meters (492 feet) tall, with assistance from the Wind Turbine Secretariat in the Agency for Spatial and Environmental Planning. The municipalities work closely with both members from the public and wind turbine owners or sponsors. The municipalities create guidelines and requirements regarding turbine siting that fall within Danish law parameters.[22]

EIA

Other than small turbines, no turbines may be constructed without the approval of the municipality. If a project involves more than three turbines or turbines more than

[20] K.Haugen (2011) International Review of Policies and Recommendations for Wind Turbine Setbacks from Residences. [Available at] http://mn.gov/portal/search/?query=international+review+turbine+setbacks
[21] ibid
[22] ibid

80 meters (262 feet) tall, an EIA must be completed for permitting. Even without an EIA, neighbours must be informed of the project ahead of time.

Distances

All wind turbines over 25 meters (82 feet) high must be placed at least four times their height from all residences. Generally, wind turbines are prohibited from locations within three kilometres (1.86 miles) of the coast unless special permission is granted due to the positive environment for wind energy. Areas with wide, open, flat spaces are generally considered better for wind facility development than areas with many hills, as large turbines do not overpower the existing landscape in a flat area. Municipalities often require grouping of wind turbines and geometric arrangements to reduce the visual impacts.

Compensation

People living within six times the total height of the wind turbine may request to have their property assessed for loss of value due to proximity of the wind turbines.80 If the value of their property is determined to have decreased by a minimum of 1%, they may be reimbursed for their loss. The value of the property is assessed by experts in property value, and if they determine a significant decrease in the property value the wind facility developer is required to pay the difference.

4.3 Canada

At the national level, Canada does not have any requirements regarding wind turbine setbacks from residences, as setback requirements are decided at the provincial level instead of the federal

Ontario

Ontario has well-developed turbine setback regulations. It classifies wind facilities according to their capacity level and sound produced, ranging from Class 1 with a less than a 3 kW capacity and any sound level, to Class 5 with greater than a 50 kW capacity and greater than 102 sound level.

What is interesting is that Ontario has set back distances from residential areas and also places of work:

- For wind facilities ranked class three or above, all turbines must be one blade length plus 10 meters (32 feet) away from public roads/railways, and one turbine height away from property boundaries.
- All turbines at wind facilities ranked class four or higher must be located at least 550 meters (1,804 feet) away from all residences, workplaces, and recreational areas,

unless the background noise levels are greater than 40 dB(A) before turbines are erected, in which case the setback distance may be decreased.[23]

Brunswick

Brunswick has a policy regarding setbacks for crown lands, or federal or province-controlled lands, but not for privately owned land. On crown lands, wind turbines must be located at a distance of 150 meters (492 feet) or 1.5x the total turbine height from all water and industrial areas. Turbines on crown lands must also be located 500 meters (1,640 feet) or 5x the turbine height from roads, communication towers, and recreational or residential areas, and 1,000 meters (3,281 feet) from endangered species habitat. If municipalities have additional requirements in addition to the requirements on crown lands, these must be obeyed as well.[24]

Prince Edward Island

Prince Edward Island has published a number of planning regulations on wind facility development. These regulations define minimum distances turbines may be located from nearby property lines, residences, and roads. The regulations state that wind turbines must be set back a minimum of 3 times the total height from all residences, unless the developer owns the property. If the developer owns the property, the wind turbine must be located at a distance at least the height of the wind turbine from residences on the property, and 3 times the turbine height from residences on bordering properties. In addition, turbines must be set back a minimum distance of the turbine height from all property boundaries and public roads. These restrictions were developed based on possible impacts regarding the environment and public health and safety concerns.

[23] ibid
[24] ibid

Appendix 1: Reasons for refusal for planning application for Wind

The following detail was provided by the Department of Environment:

2012

Planning ref: Q/2007/0914/F:

1. The proposal is contrary to Paragraph 9 of the Banbridge Area Plan 1983 -1998 and Policy COU1 of the Draft Banbridge Newry and Mourne Area Plan 2015 in that the proposal is located within the Mournes Area of Outstanding Natural Beauty and Slieve Croob Special Countryside Area Zone A, as identified in the Banbridge District Rural Area Subject Plan 1986 to 1998 and would, if permitted, have an unacceptable ***adverse impact on the visual amenity and landscape character of the area by reason of siting, scale and massing.***

2. The proposal is contrary to Policy RE1 of the Department's Planning Policy Statement 18 - Renewable Energy in that the proposal would, if permitted, have an ***unacceptable adverse impact on visual amenity and landscape character of the locality***, an area within the Mournes Area of Outstanding Natural Beauty and Slieve Croob Special Countryside Area Zone A, by the reason of its scale, size and siting.

3. The proposal is contrary to Policy CTY1 of the Department's Planning Policy Statement 21 - Sustainable Development in the Countryside in that it fails to comply with Policy RE1 of the Department's Planning Policy Statement 18 - Renewable Energy by reason of ***unacceptable adverse impact on visual amenity and landscape character***

Planning Ref: J/2008/0088/F:

1. The proposal is contrary to Policy RE 1 of the Department's Planning Policy Statement 18 - Renewable Energy in that the development would, if permitted, have an ***unacceptable adverse impact on the visual amenity and landscape character*** of the area by reason of the number, scale, size and siting of turbines and by reason of the cumulative effects with existing and approved turbines in the locality.

2. The proposal is contrary to Policy RE1 of Planning Policy Statement 18 - Renewable Energy in that ***insufficient information*** has been submitted to enable

full determination of the planning application on issues relating to geology and traffic routes, haulage and passing bays.

Planning Ref: J/2006/0840/F:

1. The proposal is contrary to Policy RE 1 of the Department's Planning Policy Statement 18 - Renewable Energy in that the cumulative effects of the development in addition to other existing and approved wind farms in the locality would, if permitted, have an ***unacceptable adverse impact on visual amenity and landscape character*** through the number, scale, size and siting of turbines

Planning Ref: J/2008/0840/F:

1. The proposal is contrary to Planning Policy Statement 18 - Renewable Energy (Policy RE1), Planning Policy Statement 21: Sustainable Development in the Countryside (Policy CTY1) in that the proposal will have an ***unacceptable adverse impact on:***
   (i) Residential amenity by reason of the number, scale, size and siting of the turbines in close proximity to residential properties;
   (ii) visual amenity and landscape character by reason of the number, scale, size and siting of the turbines and cumulative impacts with existing and consented wind farms in the locality;
   (iii) biodiversity and nature conservation by reason of potential impacts on active peatland, badgers and bats.
2. The proposal is contrary to Planning Policy Statement 18 - Renewable Energy (Policy RE1), Planning Policy Statement 2 - Planning and Nature Conservation, Planning Policy Statement 3 - Access, Movement and Parking, and The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 1999 (as Amended) in that ***insufficient information*** has been provided to allow the full impacts of the proposal to be considered in terms of landscape and visual cumulative impacts, shadow flicker and noise, impacts on bats and badgers, and roads matters.

2013

Planning Ref: M/2006/1754/F:

1. The proposal is contrary to the Department's Planning Policy Statement 2, Planning and Nature Conservation and Policy RE1 of Planning Policy Statement 18 - Renewable Energy in that the site lies within the Slieve Beagh-Mullaghfad-Lisnaskea SPA, a designated site of national and international nature conservation importance and would, if permitted, likely ***adversely affect the nature conservation interests***

and integrity of the area by virtue of impact on the Hen Harrier, a species listed in Annex 1 of the EU Habitats Directive .

2. The proposal is contrary to the Department's Planning Policy Statement 2, Planning and Nature Conservation in that Hen Harrier, a species listed in Annex 1 of the EU Birds Directive and which is protected under the terms of the Wildlife Order (NI) 1985, occur within the site and would be adversely affected by virtue of:
   (i) Direct loss and damage of feeding and breeding habitat;
   (ii) Disturbance of foraging and breeding Hen Harrier and;
   (iii) Risk of displacement of breeding pairs of Hen Harrier from actual nests or discouragement from establishing potential nest sites.

3. The proposal is contrary to Policy RE1 of Planning Policy Statement 18 - Renewable Energy and Policy CTY1 of Planning Policy Statement 21 in that the development would, if permitted, be visually intrusive and have an ***unacceptable adverse impact on the amenity and landscape character of the area*** and adversely impact on an area designated as a Special Protection Area for Hen Harrier (Sliabh Beagh).

4. The proposal is contrary to Policy RE1 of Planning Policy Statement 18 - Renewable Energy and Policy CTY1 of Planning Policy Statement 21 in that the development would, if permitted, result in an ***unacceptable adverse impact on active peatland***.

5. The proposal is contrary to Policy RE1 of Planning Policy Statement 18 - Renewable Energy in that **insufficient information** has been submitted to enable full determination of the planning application on issues relating to bats, traffic haulage routes and access.

Appendix 2

Examples of Guidance on Minimum Separation Distance in Practice

Location/ authority	Distance	Details	Policy Status
Welsh Assembly	500m	Technical Advice Note 8: Renewable Energy sets out a typical separation distance between turbines and residential property. Flexible approach, and can be refined by LPA	Adopted
Northern Ireland	10 times rotor diameter, but not less than 500m	Planning Policy Statement: Related to wind farm development proximity to occupied dwellings. Noise related.	Adopted
Cherwell District Council	800m	Informal planning guidance Recommends separation distances between turbines and settlements/dwellings, based on amenity and other issues such as landscape, noise, heritage, safety and shadow flicker.	Adopted 'without status'
Milton Keynes Council	Sliding scale approximately 10 times height	Supplementary Planning Guidance based on noise / safety.	Quashed 'no status'[25]
Lincolnshire County Council	700m (2km if there are noise issues)	Wind Energy Position Statement: Distance from residential properties. The county council is not the planning authority.	No status
Scottish Planning Policy (SPP)	2km	Guidance refers to strategic search areas for wind and relates to settlements	Adopted
Wilshire Council	Sliding scale up to 3km	Policy text within the Wilshire Core Strategy Submission Draft. Sliding scale based on distance from residential property.	No Status
Proposed Lords Bill	Sliding scale up to 3km	Private Members' Bill: Sliding scale based on distance from residential property.	No Status

Source: Allerdale Local Plan: Wind Turbine Separation Distance[26]

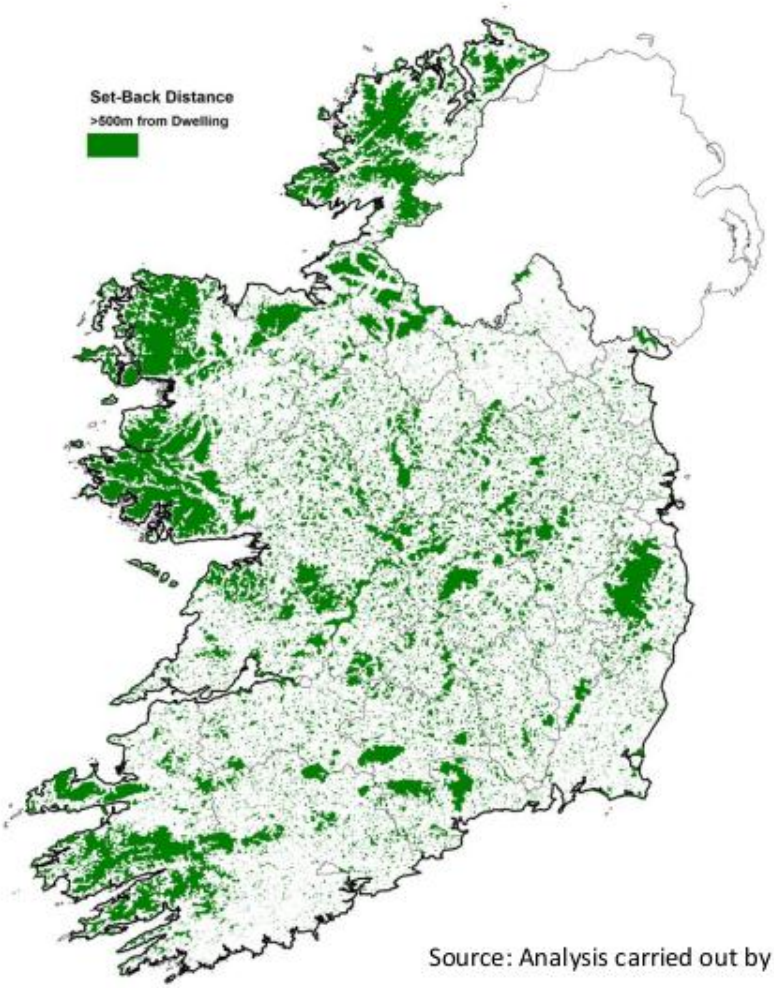
[25] The Wind Turbines SPD was adopted in July 2012 and subsequently quashed by a High Court judgement in April 2013 http://www.milton-keynes.gov.uk/planning-policy/displayarticle.asp?ID=84312

[26] Allerdale Local Plan: Wind Turbine Separation Distance Topic Paper (May 2013) available at http://www.allerdale.gov.uk/planning-and-buildings/planning/planning-policy/local-plan-downloads/evidence-base/topic-papers.aspx

Appendix 3: AIRO Separation Maps

(i) Impact of a 0.5KM Housing Buffer Zone in ROI

In the case of the **500m setback, 23.75%** of the total land area of the country would remain available for new wind farm development.



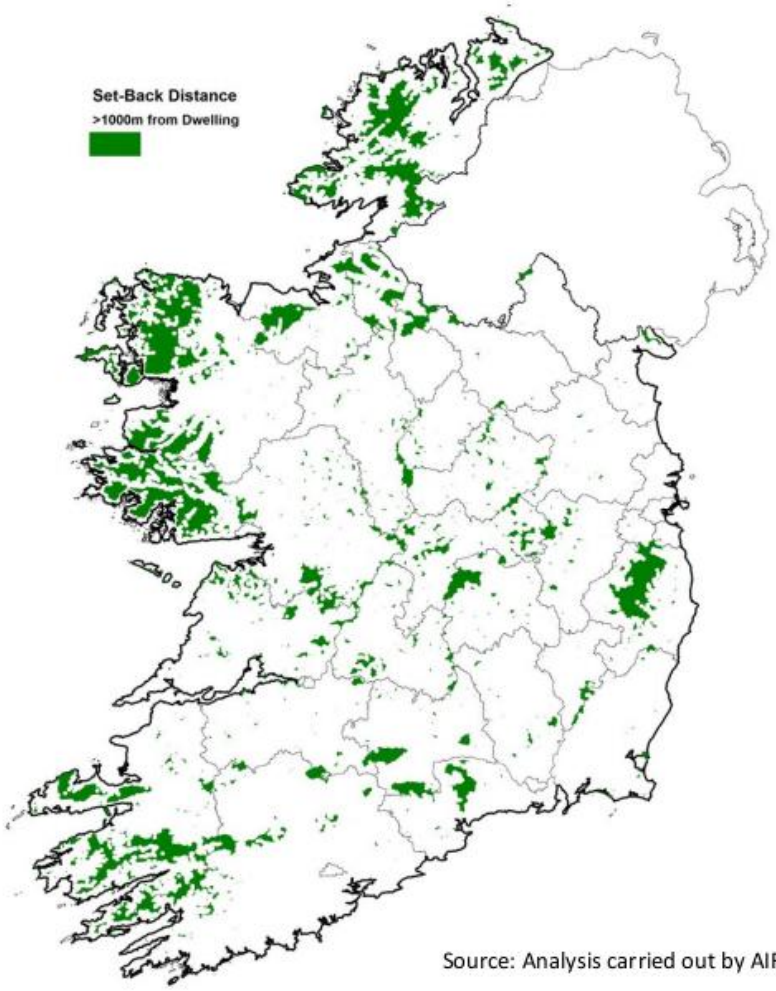
Source: Analysis carried out by AIRO at NUI Maynooth

[27]

[27] AIRO http://airo.ie/news/airo-mapping-asking-questions-new-wind-turbines-bill-0

(ii) Impact of a 1KM Housing Buffer Zone in ROI

In the case of the **1000m setback, only 9.4%** of the total land area of the country would remain available for new wind farm development.



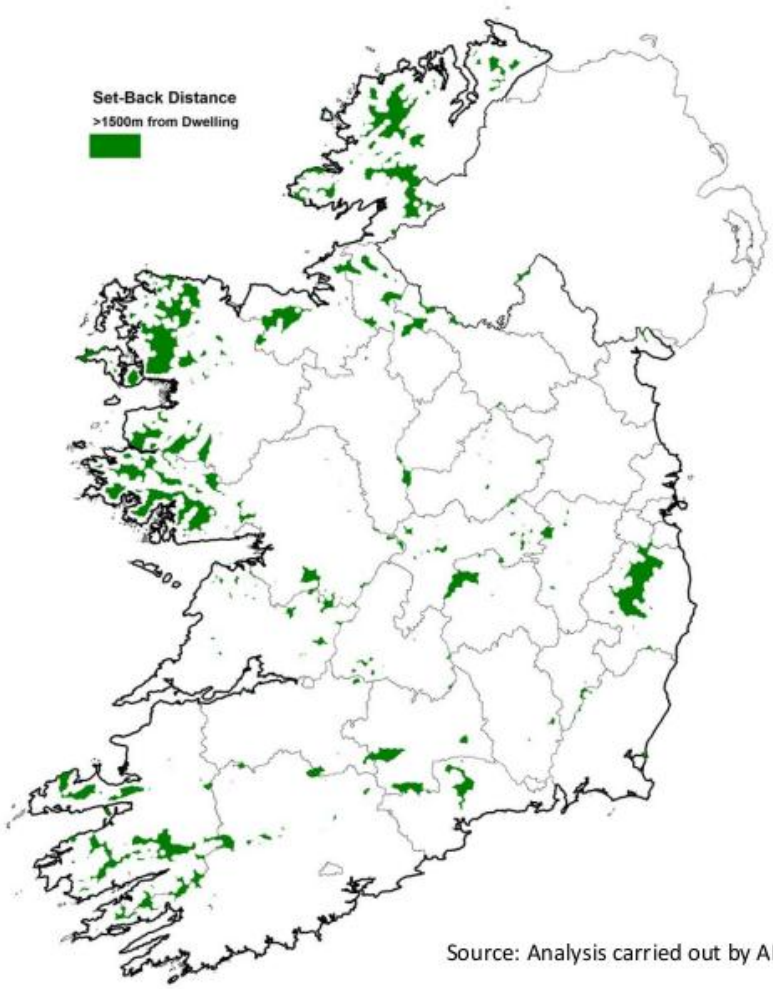
Source: Analysis carried out by AIRO at NUI Maynooth

28

[28] AIRO http://airo.ie/news/airo-mapping-asking-questions-new-wind-turbines-bill-0

(iii) Impact of a 1.5KM Housing Buffer Zone in ROI

In the case of the **1500m setback, only 5.2%** of the total land area of the country would remain available for new wind farm development.



Source: Analysis carried out by AIRO at NUI Maynooth

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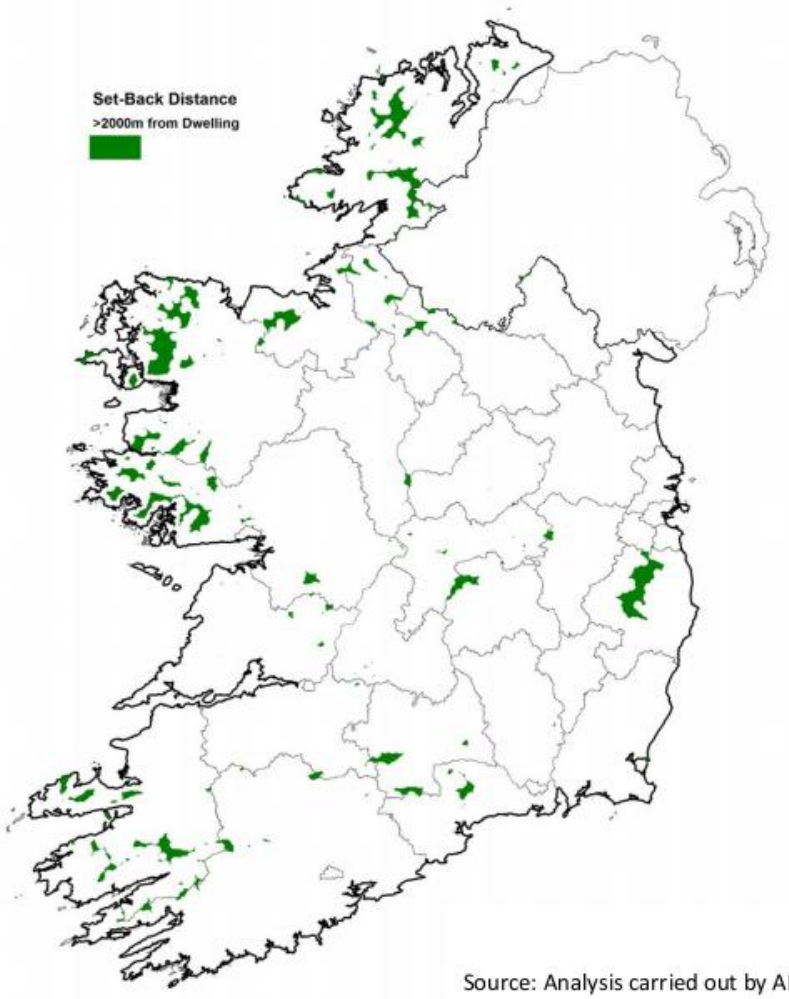
[29] AIRO http://airo.ie/news/airo-mapping-asking-questions-new-wind-turbines-bill-0

(iv) Impact of a 2KM Housing Buffer Zone in ROI

In the case of the **2000m setback, only 3%** of the total land area of the country would remain available for new wind farm development.



Source: Analysis carried out by AIRO at NUI Maynooth

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[30] AIRO http://airo.ie/news/airo-mapping-asking-questions-new-wind-turbines-bill-0