

# The Onshore Wind Farm Sector In Ireland Planning In Harmony With Heritage

Policy Research Paper | Volume 1 | Final Report

*October 2013*

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## Acknowledgements:

The authors would like to thank the following people for their input and support: Tadhg O'Mahony (EPA SEA Unit), Aileen Doyle (DoECLG, Spatial Planning Unit), John McCann (SEAI), Mansil Miller (NIEA), Dr Ken Sterrett (QUB), Dr Steve McKay (QUB), Denis McGee, David Jordan, Pamela Harty and the late Stevie Harvey.

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### Abbreviations used in report:

<b>AA</b>	Appropriate Assessment
<b>EIA</b>	Environmental Impact Assessment - the process
<b>EIS</b>	Environmental Impact Statement - the output
<b>ELC</b>	European Landscape Convention - also known as the Florence Convention
<b>EPA</b>	Environmental Protection Agency
<b>EU</b>	European Union
<b>HLC</b>	Historic Landscape Characterisation
<b>LARES</b>	Local Authority Renewable Energy Strategies
<b>LCA</b>	Landscape Character Assessment
<b>NIEA</b>	Northern Ireland Environment Agency
<b>SEA</b>	Strategic Environmental Assessment
<b>SEAI</b>	Sustainable Energy Authority of Ireland
<b>UNECE</b>	United Nations Economic Commission for Europe
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organisation.

## Executive Summary

This Executive Summary follows the chapter structure of the main document and provides a précis of each chapter. The summary concludes with a series of 7 Key Recommendations designed to resolve the complex issues identified as a result of the research.

### 1.0 Introduction To Onshore Wind Farm Report

The Heritage Council as a national statutory body seeks to ensure that the development of the renewable energy sector in Ireland can be carried out in harmony with our unique and world-renowned national heritage, which is defined by Section 6 (1) of the Heritage Act 1995<sup>1</sup>, as including: 'monuments, archaeological objects, heritage objects, architectural heritage, flora, fauna, wildlife habitats, landscapes, seascapes, wrecks, geology, heritage gardens and parks and inland waterways'.

Meeting the needs identified will, in the view of the Heritage Council, resolve complex issues identified particularly in relation to the overall planning context in which development is proposed, and to necessary public participation in the decision-making process.

The draft research report examines the national onshore wind farm spatial planning legislation and policy framework in Ireland, Scotland, and Northern Ireland, assesses gaps and opportunities, and provides recommendations (Key and Further) to improve spatial planning policy formulation, implementation and monitoring in Ireland.

It is envisaged that this policy research report will inform the formulation of a National Landscape Strategy (NLS), which is projected to be drafted by the Department of Arts, Heritage and the Gaeltacht by the end of 2013. This policy research report follows on from a significant body of landscape-related policy research, detailed submissions to government, best practice guidance and multi-disciplinary training initiatives, which have been designed and delivered by the Heritage Council since 2008. For example, Council prepared a detailed submission to the Department of Communication, Energy and Natural Resources in relation to the draft Strategic Environmental Assessment (SEA) for the Off-Shore Renewable Energy Development Plan in April 2011. Council also prepared a publication in partnership with Fáilte Ireland (2009) entitled *Climate Change, Heritage and Tourism: Implications for Ireland's Coast and Inland Waterways*.

Given the significant development in EU Climate and Energy policy, and wind turbine design and technology at a pan-European level (i.e. scale and layout), ongoing proposals to develop large-scale wind farms in Ireland, and the potential impact on our national heritage, it is now an opportune time to investigate national onshore wind farm planning policy in Ireland, and to undertake a useful comparison with national planning policy provision in Scotland and Northern Ireland. Part of this comparison exercise includes an examination of policy approaches in other countries in relation to community and SME renewable energy incentive schemes.

### 2.0 Background To The Onshore Wind Farm Sector In Ireland And Potential Impact On National Heritage

Chapter 2 provides a brief overview of the onshore wind farm sector in Ireland, including an explanation of how wind energy works. An assessment of the potential effects and impacts of wind farm developments on our national heritage, as defined by the Heritage Act 1995, is also provided.

The nature and significance of the impact of wind farms and wind turbines normally depends upon the following: Wind turbine height, design and appearance, number of wind turbines and layout, how the wind turbine(s) is/are positioned and sited in the landscape, type of landscape - 'receiving environment' - character and visual amenity, sensitivity and capacity; and proximity to the wind turbine. Wind turbines are different from other forms of development in the landscape, as they include large moving parts - the rotor blades - which tend to naturally draw the eye. The colour and materials used in the turbine structure and associated development, e.g. access tracks, also contribute to the potential to impact on the landscape.

Potential impacts from onshore wind farm development on Ireland's national heritage including, landscape, cultural heritage, and natural heritage assets, may vary depending on the location and scale of a proposed wind farm development. Impacts may be temporary, and/or permanent, on-site or off-site, cumulative, and may also come into play at different times during the project cycle, e.g. during planning, construction, operation, and decommissioning.

Potential impacts are normally assessed during the Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA, or project EIA) and Appropriate Assessment (AA) processes and, where

<sup>1</sup> See - [www.irishstatutebook.ie/1995/en/act/pub/0004/index.html](http://www.irishstatutebook.ie/1995/en/act/pub/0004/index.html).

necessary, avoidance or mitigation measures are introduced. However, there is a growing awareness of a need to robustly assess the cumulative effects and impacts when several proposed wind farms and their associated structures are proposed within an area, as often these impacts can be transboundary - effects and impacts are beyond county boundaries **i.e. development proposals need a case-by-case approach along with a cumulative impact approach.**

### 3.0 Forces For Change - Eu Climate And Energy Policy And Ireland's Response (2009-To Date)

Renewable energy in Ireland is being driven by EU Climate Change and Energy Directives and Policy, which have widened and deepened in recent years. As a result, Ireland's renewable energy target for electricity for 2020 (RES-E, 40%) will require a significant acceleration in renewable energy development over a very short period of time. The potential for wind energy export is also a contributing factor.

The most common types of renewable energy include: wind energy (onshore and off-shore), bioenergy, hydropower, solar energy, ocean energy, geothermal energy, combined heat and power, micro-generation and auto production, i.e. supply. In parallel, there is a drive to reduce overall energy consumption levels across the EU and to promote intelligent energy, i.e. to reduce demand from the electricity (E), heat (H), and transport (T) sectors, by making systems, services, machinery and processes more energy efficient. Central to the current European renewable energy policy framework are the three main headline targets to be achieved by 2020:

1. **An EU based target for Greenhouse Gas (GHG) emission reductions of 20% relative to emissions in 1990;**
2. **A 20% share for (total) renewable energy sources in the energy consumed in the EU with specific targets for the Member States;**
3. **20% savings in energy consumption compared to projections.**

Ireland's response to Europe, through its first National Renewable Energy Action Plan (NREAP, 2010) and First NREAP Progress Report (2012), which were both prepared by the Department of Communications, Energy and Natural Resources, has entailed a clear policy shift from off-shore to onshore wind energy. This policy shift took place **without any strategic environmental**

**assessment or public participation and the role of the public in the delivery of the NREAP is unclear.**

The government's overall response to this change appears to only consider natural heritage, as opposed to cultural heritage and landscape, and fails to mention national heritage as a whole, as set out under the provisions of the Heritage Act 1995. Local Authority Renewable Energy Strategies (LAREAS) are being undertaken in two different ways, i.e. integrated (as part of the development plan) and separate (as an amendment to the development plan), which warrants further investigation by planning policy makers.

Results of the Memorandum of Understanding (MOU, 2013) between Ireland and the United Kingdom in relation to wind energy are keenly awaited and there is an overwhelming need that statutory agencies with responsibility for the promotion and management of our national heritage, including landscape, cultural heritage and natural heritage, should be consulted by government in relation to any MOU draft findings and proposed actions.

### 4.0 Republic Of Ireland Onshore Wind Farm Planning Legislation And Policy - Overview And Review

Chapter 4 sets out an overview of national planning legislation along with a detailed review of national planning policy in the Republic of Ireland as it relates to onshore wind farm development (i.e. Acts, Regulations and Guidelines), and provides a critique in relation to gaps in the existing policy framework. The overview also makes reference to Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA) and Appropriate Assessment (AA).

Ireland's existing planning legislation and policy framework in relation to onshore wind farm development requires updating on many levels, e.g. cumulative impact assessment, to ensure that the planning system is fit for purpose and that it accords with various EU Directives and international conventions including, the European Landscape Convention and the UNECE Aarhus Convention. A stand alone draft report (October 2013) entitled 'The Onshore Wind Farm Sector in Ireland: Volume 2 - Heritage Council Review of S28 Wind Energy Guidelines, 2006' accompanies this report (Volume 1).

Ireland's planning system would be substantially strengthened by the formulation of a National Planning Policy and robust and non-static Section 28 Guidelines

relating to landscape character, landscape capacity and landscape management, to assist and inform relevant government departments, Regional and Local Authorities, state agencies and wind farm developers and operators.

Policy in relation to onshore wind farms development proposals should also provide for the inclusion and engagement of local communities and should link to wider government policy, e.g. socio-economic development policy. In addition, an evidence-based planning policy framework should be continuously underpinned and informed by international and national best practice research, including an exchange and a sharing of best practice structures, systems and processes with fellow EU Member States and beyond.

## 5.0 Scottish Onshore Wind Farm Planning Legislation And Policy – Overview And Review

Scotland's long-established and well-developed national planning policy framework has created a clear and robust 'plan-led' system to deal effectively with onshore wind farm proposals, which are being driven by ambitious national renewable energy targets. The Scottish Government's national planning policy is clearly set out in its Scottish Planning Policy document published in 2010 (and associated Strategic Environmental Assessment), i.e. which sets out national planning policy on important landuse matters including renewable energy and onshore wind farms.

The national planning policy framework is predicated upon an in-depth understanding and appreciation of Scotland's unique landscape character and historic environment, in accordance with the European Landscape Convention (ELC). As a result, the sustainable management of the living landscape and historic environment is at the heart of Scotland's planning system. The continuous availability of regularly updated on-line planning advice notes and design advice guidance, dealing with technical environmental issues, ensures Scotland's planning system continuously evolves and remains fit for purpose.

Scotland has also established an innovative community and SME incentive scheme known as the Community and Renewable Energy Scheme (CARES), which aims to ensure that communities and local businesses can access the potential benefits of renewable energy through the exploration and development of their own proposals and projects.

## 6.0 Northern Ireland Onshore Wind Farm Planning Legislation And Policy – Overview And Review

The Northern Ireland (NI) planning system has been, in a state of flux since 2002 due to the on-going reform of local government, which entails the replacement of 26 districts down to 11 along with a return of planning powers to local councils. It is likely that upheaval in the Northern Ireland planning system is set to continue through 2014/2015 with the transferring of planning powers back to the local [reduced] councils and the subsequent bedding down period that that action will require.

Northern Ireland is currently moving towards the formulation of a single Planning Policy Statement, which will replace the suite of Planning Policy Statements (PPSs), i.e. a single policy statement similar to the Scottish Planning Policy (SPP), 2010.

In addition, the north of the island will soon have a NI Landscape Charter and it is envisaged that this project will re-energise the overall planning system within the new councils and will help raise awareness and understanding, within all sections of society, of the value and significance of the living landscape.

This action, on the part of DOE(NI), in addition to the Republic of Ireland's proposed National Landscape Strategy (NLS), would provide an all-island context for the first time for informing important decisions about the management of our living landscape, particularly in relation to development proposals which have a trans-boundary impact.

## 7.0 Summary Of Key And Further Recommendations

Key Recommendations (7 no.) and Further Recommendations (16 no.), which are discussed throughout the report, are summarised in Chapter 7. There are 7 no. Key Recommendations as follows:

### National Planning Policy

1. Ireland needs a **National Planning Policy** including a Vision for Planning in Ireland. This would communicate the Government's policy on nationally-important landuse planning matters, including renewable energy (i.e. onshore wind farms), economic development, the historic environment, public participation, community benefit/gain, coastal

planning, place making, etc. This policy should be screened in relation to Strategic Environmental Assessment (SEA).

2. National Planning Policy and any Section 28 Guidelines<sup>2</sup>, which are relevant to onshore wind energy development, should contain a detailed definition of Ireland's historic environment - both statutory and non-statutory - along with a description of the numerous multi-layered and inter-dependent heritage assets that make up the historic environment.

#### Forward Planning and Development Management

3. National guidance on the assessment of the impact (direct, indirect, cumulative) of onshore wind farms and their associated elements on our national heritage is required, in order to inform the plan-making and planning application determination processes.
4. The Department of the Environment, Community and Local Government, Department of Arts, Heritage and the Gaeltacht, and the Environmental Protection Agency (EPA) should promote the formulation and implementation of national guidance on cumulative impact assessment (not just visual) and impact interactions, along with impact monitoring, for forward planning and development management processes.

#### Landscape

5. It is clear that the need for a robust National Landscape Policy and Strategy is now critical. It would also appear that Ireland needs to invest adequate resources (i.e. staff, time and budget) in the research, design, implementation and monitoring of a landscape management 'system' at all levels of government, in keeping with the key tenets of the European Landscape Convention (ELC) and the UNECE Aarhus Convention.
6. Robust Section 28 Guidelines are required in relation to Landscape Character Assessment including Historic Landscape Characterisation (HLC), Habitat Mapping, effective Public Participation Methods/Tools and Geographical Information Systems (GIS). The Guidelines should be informed by the Heritage Council and Partners multi-disciplinary LCA CPD Training Course.

#### Resource and Technical Support

7. It is strongly recommended that the Department of Communications, Energy and Natural Resources, the Department of the Environment, Community and Local Government, and the Department of Arts, Heritage and the Gaeltacht, establish a joint, specialised technical team, operating within a proposed Renewable Energy Unit, to oversee and support the state-wide planning and development of the onshore (and off-shore) wind farm renewable energy sector in Ireland. This unit would inform local authorities and An Bord Pleanála.

#### Further Recommendations (16 no.) are also set out in Chapter 7 and include the need for:

- Policy to establish a Community and SME incentive scheme for renewable energy;
- National guidance on how to undertake Landscape Capacity Studies;
- Clearer guidance on heritage impact assessment, as part of wider EIA, in relation to the definition, integrity, setting and visual amenity of monuments and historic landscapes;
- Greater application of Historic Landscape Characterisation (HLC) in SEA for plans and programmes, and EIA for projects, as a means for understanding the receiving environment; and
- Greater co-operation with the Northern Ireland Environment Agency (NIEA) in relation to the emerging NI Landscape Charter, which is due to be issued for public consultation in January 2014.

It is envisaged that the above recommendations, in conjunction with the Heritage Council's earlier publication entitled - Proposals for Ireland's Landscapes (2010)<sup>3</sup> - will contribute positively to the resolution of the complex issues identified in this report.

<sup>2</sup> Section 28 of the Planning and Development Act 2000 makes provision for the preparation of Ministerial Guidelines known as National Planning Guidelines, which have since been amended by Section 20 of the Planning and Development (Amendment) Act 2010.

<sup>3</sup> See [http://www.heritagecouncil.ie/fileadmin/user\\_upload/Publications/Landscape/Proposals\\_for\\_Irelands\\_Landscapes\\_main.pdf](http://www.heritagecouncil.ie/fileadmin/user_upload/Publications/Landscape/Proposals_for_Irelands_Landscapes_main.pdf)

## 1.0

# Introduction To Onshore Wind Farm Report

This draft research report examines the national onshore wind farm spatial planning legislation and policy framework<sup>4</sup> in Ireland, Scotland, and Northern Ireland, assesses gaps and opportunities, and provides recommendations and proposed actions to improve spatial planning policy formulation, implementation and monitoring in Ireland.

It is envisaged that this policy research report will inform the formulation of a *National Landscape Strategy (NLS)*, which is projected to be drafted by the Department of Arts, Heritage and the Gaeltacht by the end of 2013. The report will also inform the Heritage Council's work programme for the period 2014 -2015.

## 1.1

### Rationale for Study Approach

In order to set the scene and to understand specific onshore wind farm planning policy approaches in the selected case study areas in comparison with Ireland, a brief background to the wind farm sector in Ireland is provided to highlight how this specific development sector is evolving. This background is augmented with an overview of the potential impacts of wind farm development on our national heritage - landscape, cultural, and natural. In addition, an overview of existing and emerging climate and energy policy in Europe and Ireland (2009-to date) is also provided before onshore planning legislation and policy in the three study areas is examined and assessed.

The situation in Scotland was examined due to its integrated policy framework for managing onshore wind energy development and its robust landscape and seascape assessment guidance<sup>5</sup>. Northern Ireland was selected due to its 360 km (220 miles) shared land and sea border with the Republic of Ireland, its award-winning landscape character assessment study<sup>6</sup> (NI LCA Study) undertaken in 1999/2000, and as the north of the island has similar geology and landscape to the south of Ireland.

## 1.2

### Study Methodology

The study methodology involved undertaking the following key tasks:

- A review of EU Climate and Energy Policy and Ireland's response (2009 to date);
- Desktop review of onshore wind farm planning legislation and policy in the three study areas (covering the period 2002 to date);
- A guided site visit to Lisheen Wind Farm in County Tipperary (operated by Bord Gais);
- Consultation with the following:
  - Bord na Móna;
  - Department of the Environment, Community and Local Government's Spatial Planning Unit;
  - Department of the Arts, Heritage and the Gaeltacht;
  - Department of Communications, Energy and Natural Resources;
  - Environmental Protection Agency (EPA), which has responsibility for the scoping and implementation of Strategic Environmental Assessment (SEA)<sup>7</sup> in Ireland;
  - Northern Ireland Environment Agency (NIEA - Landscape Unit);
  - Queen's University Belfast's School of Environmental Planning;
  - Sustainable Energy Authority of Ireland (SEAI); and
  - Irish Planning Institute (IPI) and the Irish Landscape Institute (ILI).

## 1.3

### The Heritage Council's Statutory Role

#### 1.3.1

##### The Heritage Act 1995

As an element of its work programme, the Heritage Council as a national statutory body seeks to ensure that the development of the renewable energy sector in Ireland is carried out in harmony with our unique and world-renowned national heritage, which is defined by Section 6 (1) of the *Heritage Act 1995*<sup>8</sup>, as including:

<sup>4</sup> This report does not examine fiscal incentives or investment subsidies available to the on-shore wind farm energy sector as it is beyond the scope of the study.

<sup>5</sup> See <http://www.snh.gov.uk/protecting-scotlands-nature/looking-after-landscapes/lca/>.

<sup>6</sup> UK Landscape Institute Award, 2000.

<sup>7</sup> SEA Directive 2001/42/EC, [www.ec.europa.eu/environment/eia/sea-legalcontext.htm](http://www.ec.europa.eu/environment/eia/sea-legalcontext.htm). SEA is mandatory for plans/programmes: agriculture, forestry, fisheries, energy, industry, transport, waste/ water management, telecommunications, tourism, town & country planning or land use and which set the framework for future development consent of projects listed in the EIA Directive; or have been determined to require an assessment under the Habitats Directive.



*'monuments, archaeological objects, heritage objects, architectural heritage, flora, fauna, wildlife habitats, landscapes, seascapes, wrecks, geology, heritage gardens and parks and inland waterways'.*

### Recommendations to the Minister for Arts, Heritage and the Gaeltacht

The provisions of Section 7(1) of the Heritage Act 1995 state that:

*'The Council may make recommendations to the Minister on any matter relating to the Council's functions, and may make such recommendations public.'*

It is envisaged that the Recommendations set out at the end of the report will contribute to the continued development of the renewable energy sector in Ireland, whilst protecting and enhancing our unique national heritage, and enabling and strengthening sustainable communities.

#### 1.3.2

#### Irish Planning System - The Heritage Council as a 'Prescribed Authority'

The Heritage Council is also a 'prescribed authority' under the provisions of the *Planning and Development Acts 2000-2010* and the *Planning and Development Regulations 2001-2012*. The Heritage Council seeks to maintain a constructive and positive role in relation to the planning and development of the renewable energy sector in Ireland, including onshore wind farms.

The Heritage Council also seeks to maintain its role in accordance with numerous European Union (EU) Directives and Conventions including:

- UNECE Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, which was ratified by Ireland in June 2012<sup>9</sup>.
- European Landscape Convention (ELC);
- Strategic Environmental Assessment (SEA) Directive (SEA Directive for Plans and Programmes 2001/42/EC, as amended); and
- Birds Directive 2009/147/EC<sup>10</sup> and the Habitats Directive 92/43/EEC (which make provision for Appropriate Assessment (AA)).

This policy research report follows on from a significant

body of landscape-related policy research, detailed submissions to government, best practice guidance and multi-disciplinary training initiatives, which have been designed and delivered by the Heritage Council since 2008. A list of these initiatives is provided at *Appendix A*.

## 1.4

### Aim and Purpose of Report

Given the significant development in EU Climate and Energy policy, and wind turbine design and technology at a pan-European level (i.e. scale and layout), and the potential impact on our national heritage, it is now an opportune time to investigate national onshore wind farm planning policy in Ireland, and to undertake a useful comparison with national planning policy provision in Scotland and Northern Ireland. Part of this comparison exercise includes an examination of policy approaches in other countries in relation to community and SME renewable energy incentive schemes.

## 1.5

### Structure of Report

The report is structured as follows:

- Section 2:** provides a background to the onshore wind farm sector in Ireland and examines the potential impact of onshore wind farm developments on our national heritage;
- Section 3:** reviews the international *forces for change* acting on the onshore wind farm sector as a result of evolving EU Climate and Energy policy, along with an overview of Ireland's response, 2009 to date;
- Section 4:** examines existing Irish Planning legislation and policy in relation to onshore wind farm developments and highlights gaps and opportunities for enhancement;
- Section 5:** provides a summary overview of Scottish onshore Planning Legislation and policy and an assessment of its relevance to Ireland;
- Section 6:** provides a summary overview of NI onshore Planning Legislation and policy and an assessment of its relevance to Ireland;
- Section 7:** summarises the Key and Further Recommendations put forward throughout the report.

<sup>8</sup> See - [www.irishstatutebook.ie/1995/en/act/pub/0004/index.html](http://www.irishstatutebook.ie/1995/en/act/pub/0004/index.html).

<sup>9</sup> UNECE Aarhus Convention - [www.unece.org/env/pp/introduction.html](http://www.unece.org/env/pp/introduction.html) - Ireland ratified the Convention on the 20th June 2012. Ireland was the last country/Member State in the EU to ratify the UNECE Aarhus Convention. For more information, please see A. Harvey's paper 'The UNECE Aarhus Convention and Public Participation in Ireland' to the Urban Forum Colloquium in November 2012 - <http://www.heritagecouncil.ie/planning/welcome/>.

<sup>10</sup> This is the codified version of the EU Birds Directive 79/409/EEC, as amended.

## 2.0

# Background To The Onshore Wind Farm Sector In Ireland And Potential Impact On National Heritage

This section of the report provides a brief overview of the onshore wind farm sector in Ireland, including an explanation of how wind energy works. An assessment of the potential effects and impacts of wind farm developments on our national heritage, as defined by the *Heritage Act 1995*, is also provided.

## 2.1

### Overview of the Onshore Wind Farm Sector in Ireland and how Wind Energy Works

Development of the onshore wind farm sector in Ireland has accelerated significantly in the last decade due mainly to the evolution of EU Climate and Energy Policy (and the drive to generate 'clean energy'), advances in technology in the aeronautical (and hence wind farm) industry, along with the provision of fiscal incentives for renewable energy at a national level, e.g. *through the Tax Consolidation Act 1997, the Finance (No. 2) Act 2008 and S.I. 393 of 2009 - Accelerated Capital Allowances (ACA) for Energy Efficient Equipment*. We examine the evolution of EU Climate and Energy Policy since 2009 in the Chapter 3.

Wind turbine technology is constantly evolving, which impacts on the scale and layout of wind farm developments in Ireland and elsewhere. While the preferred location or *receiving environment* for wind turbines was traditionally in locations on higher ground such as upland mountains or plateaus, advances in technology (namely height and width) have enabled wind turbines to go into areas within lower-lying more populated areas. Useful facts on wind energy are provided in *Box 1*.

### Box 1: Wind Energy - Useful Facts

#### Wind Turbines - Useful Facts:

In physics the **kinetic energy of an object is the energy which it possesses due to its motion**. The word kinetic comes from the Greek word - *kinesis* - which means motion.

A **wind turbine** is defined as advanced equipment, which converts the wind's kinetic energy into a rotary mechanical energy, which is then used for electricity generation (Source: SEAI). Turbine height is measured from the base to the tip of the blade when in an upright position.

Wind turbines **do not produce electricity at low wind speeds** (less than 4 metres per second) **or at high wind speeds** (>25 metres per second). For safety reasons, a wind turbine stops running if the wind speed exceeds 25 metres per second. The electrical output of wind turbine is measured in kW or MW (1,000 kW=1MW), while the production volume is measured in kWh or MWh. For example, a 2MW wind turbine can produce a maximum output of 2MW or 2 MWh - enough electricity for around 1,000 electric kettles with an output of 2 kW switched on at the same time (Source: Danish Energy Agency).

**Wind Farm developments** normally consist of wind turbines, transformers, access tracks, sub-stations, borrow-pits and overhead cables linking to the electricity grid. There are four main phases involved in wind farm development - design and planning, construction, operation and decommissioning, e.g. during construction, works compounds may also be required.

Broadly speaking, there are two main types of wind farm development - **commercial and community-led**. Commercial wind farms are profit driven i.e. private benefit, while community-led developments aim to benefit the local community, i.e. social benefit.

As a useful overview, a detailed description of the main elements of a wind farm development and a wind turbine structure are provided at *Appendix B*. Grid connection is a critical issue for the location of wind farms and consequently the relationship between proposed wind farm developments and existing grid infrastructure is also a key aspect of spatial planning. As such, a map of Ireland's existing national electricity grid, which is operated and managed by EirGrid, and regulated by the Commission for Energy Regulation (CER)<sup>11</sup>, is provided at *Appendix C*.

<sup>11</sup> See <http://www.cer.ie/>.

## 2.2

### Overview of Characteristics of Wind Farms and Potential Effects on National Heritage

The nature and significance of the impact of wind farms and wind turbines normally depends upon the following:

- Wind turbine height, design and appearance;
- Number of wind turbines and layout;
- How the wind turbine(s) is/are positioned and sited in the landscape;
- Type of landscape - 'receiving environment' - character and visual amenity, sensitivity and capacity; and

- Proximity to the wind turbine.

It should be highlighted that wind turbines are different from other forms of development in the landscape, as they include large moving parts - the rotor blades - which tend to naturally draw the eye. The colour and materials used in the turbine structure and associated development, e.g. access tracks, also contribute to the potential to impact on the landscape.

A summary of the key characteristics of wind farms and their potential effects, for example, on natural heritage/biodiversity, cultural heritage and landscape, are listed in *Table 1* below.

**Table 1: Overview of Characteristics of Wind Farms and their Effects on National Heritage**

Characteristics	Effect	Examples of Responses (feeling/ sensation)
Scale of wind farm development (height and number of turbines)	Change of rural land use/'natural' and historical character, i.e. landscapes	Majestic or dominating, depending on point of view
	Eye catching	
	High visibility, including from long distances	
	Contrast to the horizon	
	Interruption to natural tree line	
	Impact on cultural heritage, including setting	Loss
	Impact on biodiversity and flora and fauna	
Form of Structure e.g. clean/thin lines of wind turbines and blades	Eye-catching	Majestic or dominating, depending on point of view
	Change of rural land use/'natural' character	
Movement of blades	Sun glint and shadow flicker	Distracting
	Eye-catching	Relaxing or irritating
	Noise	
	Impact on birds and bats <sup>12</sup>	Loss
Colour of towers and blades	Contrast to the surrounding area	Intrusive or non-intrusive
Location of substations	Change of rural land use/'natural' character	Dominating
	Reduction in visual appeal of area	Change or loss
Siting in landscape, e.g. on high land	Change of rural land use/'natural' character	Majestic or dominating, depending on point of view
Layout - ordered or natural	Change of rural land use/'natural' character	Majestic or dominating, depending on point of view
	Reduction in visual appeal of area	Change or loss

**Source:** Based on *Wind Farms and Landscape Values*, Australian Wind Energy Association and Australian Council of National Trusts, Draft Issues Paper, May 2004 - as amended by the Heritage Council, September 2013.

<sup>12</sup> According to the NPWS, there are 10 no. types of bat species in Ireland.

## 2.3

### Onshore Wind Farm development - Potential Impacts on our National Heritage - A Cultural Resource

Wind farm developments are a source of renewable energy and are often described as 'clean energy'. However, if they are inappropriately planned and developed, they have the potential to adversely impact on our unique heritage assets, which are a *non-renewable* and *finite* cultural resource.

Broadly speaking, wind farm developments and their associated elements, e.g. wind turbines access tracks, substations, transformers, borrow-pits and overhead cables linking to the electricity grid, can have an impact (e.g. direct, indirect, cumulative, etc.) on the following inter-dependent heritage assets:

1. **Landscape - Landscape Character and the Concept of Amenity;**
2. **Cultural Heritage - Architecture and Archaeology; and**
3. **Natural Heritage - Biodiversity (including wildlife habitats).**

These assets have in themselves inherent economic, social and environmental values of significance to the state as a whole.

#### 2.3.1

##### Landscape - Landscape Character and the Concept of Amenity

According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO):

*'...[Cultural] landscapes are those where human interaction with natural systems has, over a long time, formed a distinctive landscape. These interactions arise from, and cause, cultural values to develop... although an intellectual awareness of the concept of cultural landscapes evolved in the 19th century, cultural landscape planning and management is a relatively new professional field of land use and site management... there is also a need, and an opportunity to encourage innovation and creativity in management approaches...'<sup>13</sup>.*

In addition, according to the SEAI,

*'Landscapes can be recognised as part of the historical, cultural and social heritage of a nation, a people or a community, and National and local governments throughout Europe have formally designated landscapes in order to preserve them for future generations'<sup>14</sup>.*

The European Landscape Convention (ELC, also known as the Florence Convention)<sup>15</sup>, which Ireland signed/ratified in March 2002 and which came into force in March 2004, provides a detailed explanation of definitions associated with landscape planning and management and defines landscape as:

*"Landscape" means an area, as perceived by people whose character is the result of the action and interaction of natural and/or human factors".*

Article 1 of the European Landscape Convention (ELC) - entitled 'Definitions', is reproduced in *Box 2* below.

### Box 2: European Landscape Convention (ELC) definition of Landscape

For the purposes of the European Landscape Convention (ELC):

**a** "Landscape" means an area, as perceived by people, **whose character** is the result of the action and interaction of natural and/or human factors;

**b** "Landscape Policy" means an expression by the competent public authorities of general principles, strategies and guidelines that permit the taking of specific measures aimed at the protection, management and planning of landscapes;

**c** "Landscape quality objective" means, for a specific landscape, the formulation by the competent public authorities of the aspirations of the public with regard to the landscape features of their surroundings;

**d** "Landscape protection" means actions to conserve and maintain the significant or characteristic features of a landscape justified by its heritage value derived from its natural configuration and/or from human activity;

**e** "Landscape management" means action, from a perspective of sustainable development, to ensure the regular upkeep of a landscape, so as to guide and harmonise changes which are brought about by social, economic and environmental processes;

**f** "Landscape planning" means strong forward-looking action to enhance, restore or create landscape.

<sup>13</sup> Source: UNECESO, World Heritage Cultural Landscapes, pg 5.

<sup>14</sup> Source: SEAI, Good Practice Wind, 2011, pg 42, see [http://www.seai.ie/Renewables/Wind\\_Energy/Good\\_Practice\\_Wind/Good\\_Practice\\_Wind\\_Thematic\\_Case\\_Studies\\_Drafts\\_-\\_Themes\\_9-16.pdf](http://www.seai.ie/Renewables/Wind_Energy/Good_Practice_Wind/Good_Practice_Wind_Thematic_Case_Studies_Drafts_-_Themes_9-16.pdf).

<sup>15</sup> See [www.conventions.coe.int/Treaty/Commun/ChercheSig.asp?NT=176&CM=8&DF=&CL=ENG](http://www.conventions.coe.int/Treaty/Commun/ChercheSig.asp?NT=176&CM=8&DF=&CL=ENG).

Article 1 of the European Landscape Convention (ELC) was transposed into Irish Planning Legislation under the provisions of Section 4 (page 9) of the *Planning and Development (Amendment) Act 2010*<sup>16</sup>. However, the *Heritage Act 1995* has not been amended to reflect this significant advance in landscape management at a European level. In addition, Sections 7 (b)(p) and 14 (b)(ii) of the *Planning and Development (Amendment) Act 2010* introduced a statutory requirement for local and regional authorities in Ireland to provide a framework for the identification, assessment, protection and management and planning of landscapes, having regard to the European Landscape Convention (ELC). For example, Section 7(b)(ii)(p) of the 2010 Act (page 13) makes provision for the inclusion of:

*'landscape, in accordance with relevant policies or objectives for the time being of the Government or any Minister of the Government relating to providing a framework for the identification, assessment, protection, management and planning of landscapes and developed having regard to the European Landscape Convention done at Florence on 20 October 2000'.*

**Landscape** is considered a key environmental issue under the provisions of the EU SEA Directive 2001/42/EC<sup>17</sup> of 27th June 2001 introduced into Ireland in July 2004, i.e. Strategic Environmental Assessment of Plans and Programmes. The EPA SEA Unit undertook a review of the effectiveness of SEA in Ireland, which was published in 2012<sup>18</sup>. An explanation of SEA, EIA and AA and relevance to national heritage is provided at *Appendix D*.

Consultation with the Unit in July 2013 confirms that the **protection of landscape and cultural heritage under SEA is less robust than desired in Ireland compared to the protection of natural heritage, which is given significant protection under various EU Directives** - we return to the management of natural heritage in Section 2.2.3.

### Landscape Character

One of the most useful ways to assess the *character of the landscape* (as opposed to quality of the landscape) at a plan and programme level is a process known as landscape character assessment (LCA). In pursuit of LCA best practice, the Heritage Council and its Partners developed and delivered a multi-disciplinary LCA CPD training course during 2009-2011 entitled - *Introduction to LCA in accordance with the European Landscape Convention (ELC)*. This award-winning course, which was

the first of its kind in Ireland as it brought 10 professional institutes together (north and south), conjoined Historic Landscape Characterisation (HLC) with LCA. The course also included Habitat Mapping and Appropriate Assessment (AA)<sup>19</sup>, along with the principles and tools for effective Public Participation in participative landscape management<sup>20</sup>. The multi-disciplinary LCA CPD training course definition of LCA/HLC is provided in Box 3 below.

### Box 3: Heritage Council and Partners, Multi-disciplinary LCA CPD Training Course - Definitions

*"Landscape Character is a distinctive and recognisable pattern of elements that occurs consistently in a particular type of landscape. Particular combinations of geology, landform, soils, vegetation, land-use, field patterns and human settlement create character. Character makes each part of the landscape distinct and gives each its particular sense of place. Increasingly, it is recognised that the assessment of landscape character should also encompass coastal and seascape character, as well as townscape character...."*

*Historic Landscape Character or HLC is a method for understanding and mapping the landscape that we see today with reference to its historical development, i.e. the 'time-depth' of the landscape. HLC often informs and should be incorporated into a Landscape Character Assessment (LCA)."*

Source: Heritage Council and Partners, Multi-disciplinary LCA CPD Training Course Programme, September 2011, pg 3.

As noted above, wind farm developments and their associated elements, e.g. wind turbines, transformers, access tracks, sub-stations, and overhead cables linking to the electricity grid, can impact on the living landscape, whose **character** has been formed over many decades and centuries due to the action and interaction of natural and human factors. Despite having **signed and ratified the ELC in 2002 and the transposing of the ELC's definition into Irish Planning Law in 2010, it should be noted that Ireland is currently without a national landscape strategy** or any regional landscape character assessments/classifications. Ireland is also **without any**

<sup>16</sup> See <http://www.irishstatutebook.ie/2010/en/act/pub/0030/index.html>

<sup>17</sup> The EU SEA Directive 2001/42/EC can be accessed at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2001:197:0030:0037:EN:PDF>

<sup>18</sup> See <http://www.epa.ie/pubs/advice/ea/reviewofeffectivenessofseainireland-mainreport.html>, authors RPS Group.

<sup>19</sup> AA is the primary mechanism for ensuring the protection of Natura 2000 sites (i.e. natural heritage) and their conservation objectives when considering whether to authorise or adopt a plan or project. The requirement for AA derives from the Birds Directive 2009/147/EC (codified version of 79/409/EEC) and the Habitats Directive 92/43/EEC. AA applies at programme, plan and project level.

<sup>20</sup> See <http://www.heritagecouncil.ie/planning/initiatives/landscape-character-assessment-training/?L=ralwkumqobskv>.

adopted national landscape planning guidelines<sup>21</sup> i.e. Local Authority LCAs are being undertaken without any adopted or formal guidelines or methodology, only draft guidelines.

It should be highlighted that the DoECLG's *Landscape and Landscape Assessment Draft Consultation for Local Authorities*<sup>22</sup> (Section 28, as amended) Guidelines are still in a draft format 13 years after their publication in 2000. A detailed critique of the situation pertaining to Landscape Character Assessment was published by the Heritage Council in 2006 and updated in 2009. The Guidelines were also prepared before the European Landscape Convention was enacted and also before the ratification of the UNECE Aarhus Convention in June 2012. We return to the issue of the 2000 Landscape and Landscape Assessment Guidelines in Chapter 4. The Department of the Arts, Heritage and the Gaeltacht is currently preparing a National Landscape Strategy (NLS), which is due to be completed by the end of 2013.

### Impact on the Landscape

Clearly, it is extremely difficult to assess the impact of proposed wind farm developments on the landscape - direct, indirect, cumulative, etc. through Environmental Impact Assessment (EIA) - if **the character of the receiving environment**, and the approach to undertaking character assessment is inconsistent and varies from county to county, and any impact assessment is without any national or regional context. The current approach to LCA in Ireland at a local authority level also tends to omit the historical impact of human action and/or interaction, as per the European Landscape Convention's definition of Landscape, i.e. it generally omits Historic Landscape Characterisation (HLC)<sup>23</sup> or the role that cultural heritage plays in creating national, regional and local distinctiveness, sense of place and sense of identity. We return to the issue of HLC in Section 2.3.2.

In addition, it is further submitted that the lack of a robust national landscape character assessment 'system' including electronic 3D/terrain modelling and computer simulation, with only county landscape assessments in place (normally omitting HLC), reveals a general lack of robustness for baseline SEA, EIA and AA. This lack of robustness and quality assurance in Ireland's LCA system has already been highlighted by the Heritage Council during the preparation of the draft SEA for the *Off-Shore Renewable Energy Development Plan* in 2011 (OREDP) and in the *Landscape Character Assessment (LCA) in Ireland: Baseline Audit and Assessment, 2006* and summary update 2009.

## The Concept of 'Amenity'

Onshore wind farm developments have the potential to impact on what is referred to in environmental assessment as **amenity**.

**Visual Amenity** - refers to the environmental quality of experiences of the landscape through the senses and intellect - it covers issues such as *perception* of the landscape, appearance, preferences, sound and smell, and memories. Visual amenity also relates to the pleasantness of the view or outlook of an identified receptor or group of receptors, e.g. receptors can include the local community, residents, visitors, road users, recreational and tourism facilities including heritage assets such as monuments, and general users of the landscape. **Visual amenity is normally linked to landscape character.**

### Impact on Amenity

The potential impact on visual amenity as a result of a development proposal is often assessed in terms of *direct, indirect, and cumulative*. Effects of the proposed development on the receiving environment or landscape are assessed in terms of temporary/short term (due to construction works) and/or permanent/long term (due to operational works) - residual impacts refer to the impact after mitigations measures have been applied. The effects on the receiving environment are assessed in terms of whether they are positive (using a sliding scale), negative/adverse (using a sliding scale), or neutral. Amenity also applies on a site-specific basis and potential impacts on environmental issues, which are normally considered through the environmental impact assessment (EIA) process, are<sup>24</sup>:

- **Potential Pollutants** - impact on noise, vibration and litter;
- **Operating Hours** - the operating hours of a proposed use and/or maintenance visits - e.g. daytime or night time activity;
- **Pedestrian/Vehicular Activity** - comings and goings of human activity and vehicular traffic - scale and impact;
- **Impact on Privacy** - impact due to footpaths, access roads, etc;
- **Impact on Light and Outlook** - impact on sunlight and daylight.

<sup>21</sup> Northern Ireland has a province-wide LCA (1999/2000), which won an award from the UK Landscape Institute.

<sup>22</sup> See <http://www.environ.ie/en/Publications/DevelopmentandHousing/Planning/>.

<sup>23</sup> See Heritage Council and Partners *Multi-disciplinary LCA CPD Course*, which conjoined LCA and HLC along with habitat mapping, GIS, and effective public participation methods and tools, at <http://www.heritagecouncil.ie/planning/initiatives/landscape-character-assessment-training/?L=ralwkumqobskv>.

<sup>24</sup> Main source - University of Reading, *The Relationship between Development Plans, Development Control and Appeals*, HWE Davies et al, 1986 (pgs 12/13), as amended by the Heritage Council.

These environmental issues resulting from a wind farm development have the potential to impact on landscape character, cultural heritage assets and natural heritage/biodiversity.

For example, an increase in noise and vibration (from traffic) can impact on historic landscapes and on sensitive wildlife areas - we examine these issues in detail in the following sections. It should be noted that **Visual Amenity Studies**<sup>25</sup> can be a useful part of statutory land-use plans but are not a widely used landscape management tool in Ireland, at present.

Clearly, the environmental assessment of proposed onshore wind farm developments is a complex and multi-layered issue, which has implications for our national heritage and the overall management of our shared landscapes, which have evolved over many centuries. The evolution and growth of the sector has resulted in a growing awareness that the specific **cumulative impacts** need to be examined and assessed more rigorously and thoroughly than before when the sector was in its infancy.

#### HC Recommendation:

It is clear that the need for a robust National Landscape Policy and Strategy is now critical. It would also appear that Ireland needs to invest adequate resources (i.e. staff, time and budget) in the research, design, implementation and monitoring of a landscape management 'system' at all levels of government, in keeping with the key tenets of the European Landscape Convention (ELC) and the UNECE Aarhus Convention.

#### HC Recommendation:

Landscape is considered a key environmental issue under the EU's SEA Directive and, as such, there is an overwhelming need for a summary booklet on 'SEA, Plans/Programmes and Landscapes'. The Heritage Council should consider preparing such a booklet in partnership with the EPA's SEA Unit as soon as possible.

#### HC Recommendation:

The concept of amenity is under-developed within the Irish Planning System. Greater awareness and understanding of the concept of amenity and the implications for landscape management should be developed through SEA for plans and programmes and EIA for proposed projects, as a means of enhancing environmental assessment processes in Ireland. It would also be beneficial if Irish Planning Legislation provided a clear definition of amenity.

## 2.3.2

### Cultural Heritage - Architecture and Archaeology<sup>26</sup>

In keeping with the ELC's definition of landscape, it should be highlighted that the impact i.e. direct, indirect, cumulative, etc.) of onshore wind farm development on **cultural heritage** can include implications for archaeological monuments, historic buildings, and designed landscapes but also the broader *historic character* of the landscape. Significantly, consideration should include the implications of any proposed development on the setting of monuments, embracing both the direct physical impact of developments and any indirect impacts.

Archaeological monuments in Ireland are protected under the *National Monuments Act 1930-2004*. A new bill to update and consolidate this Act is due for publication in 2013-14. Under the existing legislation, known archaeological monuments in Ireland are recorded on the Record of Monuments and Places (RMP) which is maintained by the Archaeological Survey of Ireland<sup>27</sup>.

#### Direct Impacts

Wind turbines have traditionally been most effective in windy locations such as on higher ground although, as noted above, this is now changing due to advances in technology. Such upland landscapes in Ireland have considerable *cultural value* and possess a long legacy of human settlement.

In earlier times, these areas were extensively farmed and were also exploited for their mineral wealth and woodland resources. This has created a rich legacy of monuments such as hilltop cairns, ancient field systems, hut sites and enclosures as well as particular types of vernacular architecture. To date, the State's programmes of archaeological mapping and recording have not sufficiently surveyed upland areas and more intensive surveys are only beginning to understand and reveal the scale of this resource.

For example, survey work in upland areas of Leitrim, West Cork and Kerry has consistently found that the numbers of monuments shown on the statutory Record of Monuments and Places (RMP) are an under-estimate<sup>28</sup>. This has led one researcher to comment that '*large areas of upland, including many mountain ranges from Donegal to Tipperary, have surprisingly few recorded ancient field patterns... As a consequence the current Sites and Monuments Record, must be seen as seriously deficient in respect of upland archaeology*'<sup>29</sup>

<sup>25</sup> See *Campaign to Protect Rural England* website - <http://www.cpre.org.uk/what-we-do/countryside/tranquil-places>.

<sup>26</sup> Section 2.3.2, *Cultural Heritage - Architectural and Archaeology* was prepared by Ian Doyle, Head of Conservation, Heritage Council.

<sup>27</sup> See [www.archaeology.ie](http://www.archaeology.ie) for further details.

<sup>28</sup> See W. O'Brien 2009. *Local Worlds: Early settlement landscapes and upland farming in south-west Ireland*, Galway, pp360-65.

<sup>29</sup> *Ibid.*, p363.

While wind turbines require a deep foundation to maintain stability in high winds, they also require ancillary elements such as transformers, access roads, under-ground cabling, fencing and possibly borrow-pits and temporary structures necessary during construction.

Where project design and construction take place without experienced archaeological input, all of these interventions have the potential to disturb archaeological deposits and structures directly. However, where projects are well planned and researched there may be opportunities to move and redesign turbine layout thereby minimizing any direct impact. A key issue is the variation in practice involving cultural heritage impact assessments.

Improvements have been made in this activity since concerns were expressed in 2000 and it is notable that the generality of current guidance allows for a wide variation in practice<sup>30</sup>. Most practitioners carrying out archaeological assessments, not just restricted to wind farms, refer to the Framework and Principles document dating from 1999, as well as guidance from the EPA on the content of Environmental Impact Assessments<sup>31</sup>.

Reliance is also made upon National Road Authority (NRA) guidance on archaeological assessment<sup>32</sup>. However, comments have been made by the Heritage Council on the insufficient useage of aerial photography, historic aerial imagery, and modern methods of aerial remote sensing as a part of archaeological assessment. Equally, the experience of practitioners in interrogating such resources is variable. A key development in recent years has been that of Geographic Information Systems (GIS) and the cheaper availability of Lidar data and imagery, in particular from Ordnance Survey Ireland (OSi).

While it would be expected that the use of such resources to identify previously unknown monuments and to determine view shed analysis would be a key way to measure impact and, as such manage risk for developers, the uptake in this techniques is highly varied and cultural assessments in many cases remain restricted to a list of Recorded Monuments accompanied by field survey and documentary research.

It is submitted that greater guidance on archaeological assessments would be highly beneficial to improving practice in this regard. In summary, gaps in understanding of distributions of archaeological monuments, in particular in marginal and upland areas, coupled with a wide variation in the practice of cultural

heritage/archaeological assessments is creating an environment of risk for wind farm developers and placing the preservation of archaeological monuments in doubt.

#### HC Recommendation:

Clearer guidance is required on heritage impact assessment, as part of wider EIA, in relation to the definition, integrity, setting, and visual amenity of monuments and historic landscapes.

#### Indirect Impacts

Indirect impacts are caused when wind farms alter the **setting** of historic sites and monuments. This can diminish the visual amenity of the landscape and its historic character. Given the height of turbines, their area of visual influence may be extensive, especially if located in upland areas. While in some cases, the issue of setting for relatively low visibility monuments such as *fulachta fiadh* or field systems may not be as strong an issue, there are cases where historic assets were deliberately intended to have a strong landscape context, such as hill-top cairns, passage tombs, megalithic tombs, designed landscapes with deliberate sight lines etc. The understanding of the landscape context of such places is crucial and is an issue of growing appreciation in recent years.

English Heritage in the UK has produced useful guidance on wind energy and historic landscapes entitled - *Wind Energy and the Historic Environment (2005)* - which highlights the need to consider certain factors when assessing the acceptability of proposed developments within the setting of historic sites and their setting, as reproduced in *Table 2*.

<sup>30</sup> *Review of Archaeological Assessment & Monitoring Procedures in Ireland*, The Heritage Council, 2000, Kilkenny.

<sup>31</sup> Department of Arts, Heritage, Gaeltacht and the Islands (1999), *Framework and Principles for the Protection of the Archaeological Heritage*. Environmental Protection Agency (2002), *Guidelines on the information to be contained in Environmental Impact Statements*. Environmental Protection Agency (2003), *Advice Notes on Current Practice in the Preparation of Environmental Impact Statements*.

<sup>32</sup> National Roads Authority (NRA, 2005), *Guidelines for the Testing and Mitigation of the Wetland Archaeological Heritage for National Road Schemes*. National Roads Authority (2005), *Environmental Impact Assessment of National Road Schemes - a Practical Guide*.



**Table 2: Wind Energy and the Historic Environment**

Factor	Description
<b>Visual dominance:</b>	Wind turbines are far greater in vertical scale than most historic features. Where an historic feature (such as a hilltop monument or fortification, a church spire, or a plantation belonging to a designed landscape) is the most visually dominant feature in the surrounding landscape, adjacent construction of turbines may be inappropriate.
<b>Scale:</b>	The extent of a wind farm and the number, density and disposition of its turbines will also contribute to its visual impact.
<b>Intervisibility:</b>	Certain archaeological or historic landscape features were intended to be seen from other historic sites. Construction of wind turbines should respect this intervisibility.
<b>Vistas and sight-lines:</b>	Designed landscapes invariably involve key vistas, prospects, panoramas and sight-lines, or the use of topography to add drama. Location of turbines within key views, which may often extend beyond any designated area, should be avoided.
<b>Movement, sound or light effects:</b>	The movement associated with wind turbines as well as their scale may be a significant issue in certain historic settings. Adequate distance should always be provided between important historic sites and wind turbine developments to avoid the site being overshadowed or affected by noise and shadow flicker effects.
<b>Unaltered settings:</b>	The setting of some historic sites may be little changed from the period when the site was first constructed, used or abandoned. Largely unaltered settings for certain types of sites, particularly more ancient sites, may be rare survivals and especially vulnerable to modern intrusions such as wind turbines <sup>33</sup> .

Source: English Heritage, 2005.

Greater use of Historic Landscape Characterisation (HLC) in SEA for plans and programmes as a means to understanding the receiving environment would be an advance in current practice. This identifies the contribution of the past to the landscape. All areas have some element of historic character, which needs to be identified and assessed.

HLC is not concerned exclusively with particular sites or monuments, although these do of course contribute to character, but considers the whole of the area. It contributes to practical landscape management by considering how monuments and landscape patterns are related. Guidance on HLC was published by the Heritage Council in 2013<sup>34</sup>. The absence of consideration of many of these issues in cultural heritage assessments relating to wind farm developments in Ireland, i.e. through EIA, is an issue for concern, and it is recommended that appropriate guidance on this issue is required. Case Studies applying the concept of setting to large and significant monument complexes are available and do

demonstrate a range of tools that may be appropriate in smaller cases<sup>35</sup>.

**HC Recommendation:**

It is recommended that greater application of Historic Landscape Characterisation (HLC) in SEA for plans and programmes, and EIA for projects, as a means to understanding the receiving environment would be an advance in current practice.

**HC Recommendation:**

The concept of setting is underdeveloped within the Irish Planning System. Greater awareness and understanding of the concept of setting and the implications for landscape management should be developed through SEA for plans and programmes and EIA for proposed projects, as a means of enhancing environmental assessment processes in Ireland. It would also be beneficial if Irish Planning Legislation provided a clear definition of setting.

<sup>33</sup> See <http://www.english-heritage.org.uk/publications/wind-energy-and-the-historic-environment/>. Similar criteria are set out in Historic Scotland's 2007 report: *Scoping of Wind Farm Proposals, Assessment of Impact on the Setting of the Historic Environment Resource Some General Considerations*. The Scottish document places greater emphasis on the recreational/leisure value of the site within its surroundings and potential role as an educational resource - see [http://www.historic-scotland.gov.uk/eia\\_and\\_gdpo\\_scoping\\_setting.pdf](http://www.historic-scotland.gov.uk/eia_and_gdpo_scoping_setting.pdf).

<sup>34</sup> G. Lambrick et al. 2013. Historic Landscape Characterisation (HLC) in Ireland: Best practice Guidance, The Heritage Council, Kilkenny.

<sup>35</sup> Atkins 2008 The Heart of Neolithic Orkney World Heritage Site Setting Project report commissioned by Historic Scotland, Appendix B of Orkney Management Plan.

### 2.3.3

#### Natural Heritage

As noted previously, wind farm developments and their associated elements can have a direct, indirect and cumulative impact on natural heritage assets including wildlife habitats. Unlike cultural heritage, the natural heritage protection framework in Ireland stems from two European Directives, as well as national legislation. The Natura 2000 Network of designated sites is made up of Special Protection Areas (SPAs) and candidate SPAs, under the *Birds Directive (1979/409/EEC and 2009/147/EC)*, and the Special Areas of Conservation (SACs) and candidate SACs under the *Habitats Directive 92/43/EEC*. In both cases, sites are designated for the protection of specific species and habitats of European importance listed in the Directives. Sites of national interest are designated as Natural Heritage Areas (NHAs) and proposed NHAs under the *Wildlife (Amendment) Act 2000*. Geological sites of national interest are also given this designation.

It should be highlighted that there is a very wide range of biodiversity interest that exists outside of designated Natura 2000 sites. The significant value of these assets cannot be overlooked and is currently highlighted in the ongoing work of the National Biodiversity Data Centre<sup>36</sup>.

The DoAHG (NPWS) monitors the requirements of the Natura 2000 Network re. additional designations and re-designations, and is also responsible for the overall management, conservation and enhancement of the ecological coherence of the Natura 2000 Network in Ireland.

The requirement for Appropriate Assessment (AA) derives from the *Birds Directive 2009/147/EC* (codified version of 79/409/EEC) and the *Habitats Directive 92/43/EEC* (including consolidated version 1.1.2007). AA, which is linked to SEA and EIA, is the primary mechanism for ensuring the protection of Natura 2000 sites (i.e. natural heritage) and their conservation objectives when considering whether to authorise or adopt a plan or project. A description of SEA, EIA and AA and relevance to national heritage is provided at *Appendix D*.

In addition, Article 6(3) of the *Habitats Directive* requires an Appropriate Assessment (AA, also referred to as *Habitats Directive Assessment* or *Natura 2000 Assessment*) to be carried out, where any plans or projects that are not directly linked to the management of a Natura 2000 site, may have a significant effect (either on its own or in combination with other plans or

projects) on the conservation objectives and would ultimately affect the integrity of the site.

Integrity in relation to Natura 2000 sites can be defined as: *'the ability of the site to fulfil its function to continue to support protected habitats or species'*. Annex I to the *Habitats Directive* includes a full list of protected habitats and Annex II a list of protected species at a European level.

The Heritage Council prepared *Best Practice Guidance for Habitat Survey and Mapping* in 2011, which aims to present current best practice guidance for survey and mapping of all habitats in the Republic of Ireland. The guidance is aimed at those who conduct or commission habitat surveys, and to inform those who use the final product and follows on from previous work undertaken in 2000. It is intended for use in survey and mapping of terrestrial, freshwater and coastal habitats (not all of which will be in designated sites).

#### Direct and Indirect Impacts

EU Guidance (2011, Section 3.3) on *Wind Energy Developments and Natura 2000*<sup>37</sup>, which was prepared in accordance with the EU nature legislation, highlights the type and scale of potential impact (direct and indirect) on species and habitats, which might occur as a result of wind farm developments.

There are four main types of impact as follows (a description of each impact is set out in *Table 3*):

1. Collision Risk;
2. Disturbance and displacement;
3. Barrier effect; and
4. Habitat loss or degradation.

<sup>36</sup> See <http://www.biodiversityireland.ie/>.

<sup>37</sup> See [http://ec.europa.eu/environment/nature/natura2000/management/docs/Wind\\_farms.pdf](http://ec.europa.eu/environment/nature/natura2000/management/docs/Wind_farms.pdf)

**Table 3: Summary of Type of Impact**

Type	Description
Collision Risk	<b>Birds and bats may collide with various parts of the wind turbines</b> , or with associated structures such as electricity cables and meteorological masts. The level of collision risk depends very much on site location and on the species present, as well as on weather and visibility factors <sup>38</sup> . Species that are long-lived, have low reproductive rates and/or are rare or are already in a vulnerable conservation state ( <b>such as eagles, vultures and various species of bats</b> ) may be particularly at risk. Evidence to date indicates that wind farms that are located away from areas harbouring concentration of wild animals or areas that are important for wildlife have relatively low rates of mortality.
Disturbance and displacement	Disturbance can lead to displacement and exclusion, <b>and hence loss of habitat use. This risk may be relevant for birds, bats</b> (and marine mammals). The species may be displaced from areas within and surrounding wind farms <b>due to visual, noise and vibration impacts. Disturbance may also arise from increased human activity</b> during construction work and maintenance visits, and/or as a result of opening up access to the site for others through the construction of new access roads, etc. The scale and degree of disturbance determines the significance of the impact, as does the availability and quality of other suitable habitats nearby that can accommodate the displaced animals.
Barrier Effect	Wind farms, especially large establishments with tens of individual wind turbines, <b>may force birds or mammals to change direction, both during migration and, more locally, during regular foraging activities</b> . Whether or not this is a problem depends on a range of factors such as the size of the wind farm, the spacing of turbines, the extent of displacement of species and their ability to compensate for increased energy expenditure as well as the degree of disruption caused to linkages between feeding, roosting and breeding areas.
Habitat Loss or degradation	<b>The scale of direct habitat loss resulting from constructing a wind farm and associated infrastructure depends on size, location and design of the project</b> . Whilst the actual land take may be comparatively limited, the effects may be more widespread where developments interfere with hydrological patterns or geo-morphological processes. The significance of loss depends on the rarity and vulnerability of the habitats affected (e.g. blanket bogs or sand dunes) and/or of their importance as feeding, breeding or hibernating place for species, especially for species of European conservation concern. Also, the potential role of some habitats as components in corridors or stepping stones important for dispersal and migration, as well as for more local movements, e.g. feeding and nesting sites, has to be taken into account.

Source: EU Guidance, *Wind Energy Developments and Natura 2000*, page 32, [bold - authors' emphasis].

**Example - Potential Impacts on Bats**

In relation to the potential impact of wind farms on bats, Section 3.4.2 of the EU Guidance document states the following:

*'The highest collision rates have been found in wind farms near forests but bat collisions have also been reported from turbines from turbines in open areas and even at offshore wind farms. Potential siting in important hibernation areas where large number of bats forage before and after hibernation should be carefully*

*evaluated, and are best avoided if it is determined that this will result in a significant negative impact'.*

Further information on possible impacts on bats from wind farms is provided at *Appendix E*.

**Wildlife Sensitivity Mapping**

The EU Guidance (2011) also strongly recommends the production of **Wildlife Sensitivity Maps**, preferably during the plan making process. According to Section 4.3.3 of the Guidelines:

<sup>38</sup> E.g. away from 'hangwind' areas in upland locations.

*'Wildlife sensitivity maps are useful tools in helping to place wind farm developments in areas that are compatible with nature conservation requirements. Sensitivity maps can be developed for selected categories of species, (e.g. species of birds, bats, marine mammals of European importance) or for valuable wildlife in general over a pre-determined area – for instance an entire region.*

Wildlife Sensitivity Maps and/or sensitivity modelling are not currently produced in Ireland as part of the statutory plan making/SEA process nor are they prepared as part of the Regional Planning Guidelines, which are also subject to SEA.

Consultation with the EPA in September 2013, reveals that the EPA is currently in the process of funding research in the area of developing *environmental sensitivity mapping*, which will address sectors including the energy sector. It is intended that wildlife sensitivity mapping will complement this research proposal.

In addition, it should be noted that *Cultural Heritage Sensitivity Maps* are not produced in Ireland under the current provisions of SEA or EIA. This gap, in combination with the lack of robust landscape assessment, i.e. as noted above, the impact of human interaction on the landscape over centuries or HLC is omitted, has reduced the overall quality and robustness of environmental assessment in the planning and development sector, as it relates to wind farm development.

**HC Recommendation:**

It is clear that the need for a robust National Landscape Policy and Strategy is now critical. It would also appear that Ireland needs to invest adequate resources in research to determine the impact (direct, indirect cumulative) of onshore wind farms and their associated elements on selected categories of species and valuable wildlife, which are unique to Ireland. This research should in turn inform policy for onshore wind farm proposals.

**HC Recommendation:**

Wildlife Sensitivity Maps and/or modelling should be prepared in areas experiencing significant pressure for onshore wind farm development based on the selected categories of species and habitats listed under the EU Habitats and Birds Directives. These maps should inform SEA, EIA and AA in relation to wind farm proposals. The National Biodiversity Data Centre should assist in this regard.

**HC Recommendation:**

National Guidance on the assessment of the impact

(direct, indirect, cumulative) of onshore wind farms and their associated elements on our national heritage is required in order to inform the plan making and planning application determination processes.

## 2.4 Summary

In summary, potential impacts from onshore wind farm development on Ireland's national heritage, including landscape, cultural heritage, and natural heritage assets, may vary depending on the location and scale of a proposed wind farm development. Impacts may be temporary, and/or permanent, on-site or off-site, cumulative, and may also come into play at different times during the project cycle, e.g. during planning, construction, operation, and decommissioning.

Potential impacts are normally assessed during the SEA, EIA and AA processes and, where necessary, avoidance or mitigation measures are introduced. **However, there is a growing awareness of a need to robustly assess the cumulative effects and impacts when several proposed wind farms and their associated structures are proposed within an area as often these impacts can be transboundary – effects and impacts are beyond county boundaries i.e. development proposals need a case-by-case approach along with a cumulative impact approach. We return to the theme of cumulative impact assessment in Chapter 4.**

The following chapter examines EU Climate and Energy Policy (since 2009) along with Ireland's response, as a precursor to a review of existing planning policy in Ireland, Scotland and Northern Ireland, as it relates specifically to onshore wind farm development.

### 3.0 Forces For Change - Eu Climate And Energy Policy And Ireland's Response (2009-To Date)

Climate and energy policy in Europe and Ireland has widened and deepened substantially since 2009. The EU's Energy Policy, which is under the control of the *European Commission Directorate General (DG) for Energy*<sup>39</sup>, is effectively the key driver of the emerging clean energy/renewable energy sector at a pan-European level, including Ireland.

The most common types of renewable energy include: wind energy (onshore and off-shore<sup>40</sup>), bioenergy, hydropower, solar energy, ocean energy, geothermal energy, combined heat and power, micro-generation and auto production<sup>41</sup>, i.e. supply. In parallel, there is a drive to reduce overall energy consumption levels across the EU and to promote intelligent energy, i.e. to reduce demand from the electricity (E), heat (H), and transport (T) sectors, by making systems, services, machinery and processes more energy efficient. Central to the current European renewable energy policy framework are the three main headline targets, adopted in December 2008, to be achieved by 2020 as set out in *Box 4*:

#### Box 4: European Climate and Energy Headline Targets

4. An EU based target for Greenhouse Gas (GHG) emission reductions of 20% relative to emissions in 1990;
5. A 20% share for (total) renewable energy sources in the energy consumed in the EU with specific targets for the Member States;
6. 20% savings in energy consumption compared to projections.

### 3.1 Background to Climate and Energy Policy in Europe (2009-to date)

According to the European Commission (2012), *'energy is the life blood of our society... and the energy challenge is*

*one of the greatest tests which Europe has to face*<sup>42</sup>. Broadly speaking, the European Commission is developing a strategic Climate and Energy Policy in pursuit of:

1. **Competitiveness;**
2. **Sustainability; and**
3. **Security of supply.**

In addition, demand for energy is growing and patterns of demand are evolving. As a result, concerns about **security of supply** and **climate change** have moved to the forefront of global and pan-European policy making (Source: *The European Commission Market Observatory for Energy, 2013*).

The following Directives, Green Papers and Strategies from 2009 onwards are relevant to the developing wind farm sector in Ireland:

- March 2013 - European Commission Green Paper - A 2030 Framework for Climate and Energy Policies<sup>43</sup>;
- December 2011 - EC Energy Roadmap 2050;
- November 2010 - EC Energy 2020; and
- April 2009 - EC Directive - 2009/28/EC<sup>44</sup>.

A brief summary of the above policy and legislation is provided in *Appendix F* (in chronological order).

#### Renewable Energy Targets

The above policy framework at a European level along with a policy response at a national level has produced the following electricity renewable energy targets (RES-E) for Ireland, Northern Ireland and Scotland, which are listed in *Table 4*:

**Table 4: Electricity<sup>45</sup> - Renewable Energy Targets for Republic of Ireland, Northern Ireland and Scotland**

Country/Region	2010-2012	2020
Republic of Ireland	15% (2010)	40% <sup>46</sup>
Scotland	31% (2011)	100%
Northern Ireland	12% (2012)	40%
Europe	19.43% (2010)	33.91% <sup>47</sup>

<sup>39</sup> See [http://ec.europa.eu/energy/index\\_en.htm](http://ec.europa.eu/energy/index_en.htm).

<sup>40</sup> Source: At present there is no consenting regime for off-shore wind farm developments beyond 12 nautical miles, approx 23km.

<sup>41</sup> Source SEAI, *A Methodology for Local Authority Renewable Energy Strategies*, April 2013, page 11.

<sup>42</sup> Source: EC Energy 2020, page 21.

<sup>43</sup> Adopted by the European Commission on the 27th March 2013 in accordance with the International Energy Agency (IEA).

<sup>44</sup> This Directive follows on from Directive 2001/77/EC.

<sup>45</sup> i.e. Data excludes RES T - transport and RES H - heat targets. This target does not include export wind, i.e. it is for gross annual electricity consumption.

<sup>46</sup> Ireland increased its target from 33% under the 2009 Carbon Budget.

<sup>47</sup> Source: *Renewable Energy: Progressing towards the 2020 target*, EC, 31st January 2011.

It should be highlighted that there are no sub-national targets in place for Ireland, i.e. Planning Legislation does not currently require that the Regional Planning Guidelines (RPSs) or County Development Plans (CDPs) set out targets for renewable energy sectors (RES), namely E - electricity, H - heat and T - transport.

In addition, it was an extremely difficult task to research the national targets set out above as there is widespread confusion as to what are the agreed 'total' renewable energy targets at a national level compared to the national targets for 'electricity only' (RES-E). It is clear that Ireland's renewable energy target for electricity in 2020 (RES-E) will require a significant acceleration in renewable energy development over a very short period of time.

## 3.2 Ireland's Response to the EU's Climate and Energy Policy

### 3.2.1 First National Renewable Energy Action Plan (NREAP 2010-2020)

Ireland's first *Renewable Energy Action Plan (REAP)* was prepared by the Department of Communications, Energy and Natural Resources and submitted to the EC in mid-2010. The Plan highlights the following:

- In energy terms, 2020 is rapidly approaching;
- A joined up and integrated approach, involving all appropriate public sector bodies at national, regional and local level will be critical for delivery over the next decade;
- In setting out to achieve a significant transformation of the energy landscape, the Government does not underestimate the challenge of winning the hearts and minds of local communities, in support of the new infrastructure required to deliver change.

The level and structures put in place for public consultation and/or participation<sup>48</sup> in the drafting of the first REAP is unclear. In addition, the role of the public in the delivery of the plan is also unclear. An Implementation or Action Plan, which accords with the ELC and UNECE Aarhus Convention, does not appear to have been prepared, as yet. An international case study of the promotion of public involvement in the delivery of renewable energy in Denmark is provided in Box 5. This is a useful example in light of Ireland's efforts to meet its stated targets by 2020.

## Box 5: Renewable Energy in Denmark- Public Involvement<sup>49</sup>

The *Energy Policy Agreement 2008* and the *Danish Promotion of Renewable Energy Act 2008* contains four schemes aimed at promoting the local acceptance of, and involvement in, the development of onshore wind turbines in Denmark:

**1. Loss of Value Scheme (Wind Turbines >25m):** gives neighbours the **right to claim compensation for loss of value on their property if the loss is assessed to be at least 1% of the property's value.**

The erector must draw up information on the project and invite neighbours to a public information meeting. The information must include neighbours within a distance of up to 6 times the wind turbine's total height. Information must be approved by the Energinet.dk. Claims must be submitted within 4 wks of the meeting - no fee for within distance of 6 times height, small fee if beyond. If compensation cannot be agreed with the erector within a 4 week period, the claim is submitted to one of 5 valuation authorities, consisting of a lawyer and an expert in assessing real property value.

**2. Option to Purchase Scheme (wind turbines >25m):** erectors shall offer for sale **at least 20% of the wind turbines project to the local population** - anyone over 18 yrs within a distance of max 4.5 km from the site or in the municipality where the turbine is erected has the option to purchase. People who live closer have first priority if the interest is >20%. Sales material (e.g. construction and operation budget, financing for the project, liability per share, price of shares) must be prepared and verified by a state-authorized public accountant. Local citizens have a period of 4 weeks to make a purchase order.

**3. The Green Scheme:** in order to further promote the **local council's** commitment to wind turbine planning and local acceptance of new wind turbine projects, the Act introduced a green scheme to finance projects that enhance scenery and recreational opportunities within a given municipality. The amount of money depends on how many wind turbines and of what size are connected to the grid in the municipality. A subsidy may also be granted for municipal cultural activities and information activities aimed at promoting the acceptance of the use of renewable energy. The money for the green scheme is recouped from electricity consumers as a PSO<sup>50</sup> contribution.

<sup>48</sup> For a detailed explanation of 'Consultation v Participation', please see Heritage Council and Partners *Multi-disciplinary LCA CPD Training Course* and Heritage Council *Community-led VDS Toolkit Training Course*, A.Harvey's presentation entitled - *Theory and Principles of Public Participation*.

<sup>49</sup> An evaluation of the four schemes is beyond the scope of this research study.

<sup>50</sup> PSO = Public Service Organisation (PSO, formerly 'Obligation') levy is a government charge which was re-introduced in 2010 to cover the higher costs of peat and renewable energy. It is set by the Commission for Energy Regulation (CER, see page 5) and is currently €2.73 per month for all domestic customers (September 2013).

## Box 5: Renewable Energy in Denmark- Public Involvement (cont.)

**4. The Guarantee Scheme:** The Act set up a guarantee fund which makes it easier for local initiatives (at least 10 members, the majority of whom should be from the municipality) to obtain commercial loans for financing preliminary investigations. The guarantee can be given for activities that may be regarded as a natural and necessary part of a preliminary investigation into establishing one more wind turbines, e.g. siting of wind turbines, technical assistance with applications to authorities. The guarantee lapses when the wind turbines are connected to the grid or if the local group sells its project to another party.

It should be highlighted that the first NREAP was not subject to a Strategic Environmental Assessment (SEA). The decision not to undertake an environmental assessment of the NREAP was recently the subject of a court case taken by a Mr. Pat Swords, which is due to be listed for mention in October 2013.

### 3.2.2

#### First NREAP Progress Report, January 2012

Ireland submitted its first *NREAP Progress Report*<sup>51</sup> in January 2012 - it was prepared by the Department of Communications, Energy and Natural Resources. Sections 2, 12 and the Annex are of particular relevance to this study. Section 2 of the 2012 Progress Report provides a summary of new schemes, policies or measures introduced in 2009, 2010, 2011. Section 12 (a and c) includes information in relation to the Irish Planning System and the framework for renewable energy proposals, and the Annex provides information in relation to the additional capacity targets for electricity (RES-E).

#### Section 2

Section 2 includes:

*'No. 11 - Planning and Development (Amendment) Act 2010 - Legislative/Regulatory. The Act provides for changes to the planning system, some of which have implications for the renewable energy sector (e.g. projects over a certain size will now automatically be treated as strategic infrastructure under the Strategic Infrastructure Act. The time period relating to initial planning consent is now longer). The legislation was enacted in 2010. Renewable generators may now obtain planning consent for 10 years which is generally more satisfactory and projects over a certain size now*

*automatically seek consent under the Strategic Infrastructure Act.'*

We return to the *Strategic Infrastructure Act 2006* (as amended) in Chapter 4 of this report. The Irish *Wind Energy Development Guidelines for Planning Authorities* (2006), prepared under the provisions of Section 28 of the *Planning and Development Act 2000* (as amended), which are also examined in Chapter 4, are considered a 'soft' measure as opposed to a 'legislative/regulatory measure'.

The Progress Report summarises the expected result of this measure as follows - they will: *'Facilitate a consistency of approach by planning authorities, both in identifying areas suitable for wind energy development and having regard to potential impacts, inter alia on nature and diversity'*, i.e. natural heritage.

It should be noted that the first REAP Progress Report does not make any reference to *The Heritage Act 1995* nor does it make any reference to the potential impact of wind energy development on cultural heritage and/or landscape.

#### Section 12 (a)

Section 12 (a) of the 2012 Progress Report, which was prepared by the Department of Communications, Energy and Natural Resources, does not pick up on changes to the thresholds for onshore wind farm developments covered under the *Strategic Infrastructure Act 2006*, as amended by the provisions of Section 78 of the *Planning and Development (Amendment) Act 2010*.

**As a result, the report quotes the pre-2010 Act threshold of '>50 turbines or having a total output greater than 100 megawatts' rather than the updated threshold introduced by Section 78 (page 149) of the Planning and Development (Amendment) Act 2010, i.e. '>25 turbines or having a total output greater than 50 megawatts'.**

#### Section 12 (c) - SEAI Local Authority Renewable Energy Strategies (LARES)

Section 12 (c) of the Progress Report states that: *'The Sustainable Energy Authority of Ireland initiated a project in 2011 that is seeking to assist local authorities in the methodology they could employ for the development of local authority renewable energy strategies (LARES), which are broader than just wind energy strategies. As part of the strategy development, local authorities will be encouraged to use<sup>52</sup> the SEAI methodology on the assessment and definition of renewable energy resources.* [bold - authors' emphasis]

<sup>51</sup> See <http://www.dcenr.gov.ie/NR/rdonlyres/C71495BB-DB3C-4FE9-A725-0C094FE19BCA/0/2010NREAP.pdf>

<sup>52</sup> i.e. LARES are a non-statutory instrument unless they are implemented under Section 28 Guidelines (as amended).

Consultation with the Environment Protection Agency (EPA) in July 2013 reveals that LARESs, which are subject to SEA under the provisions of S.I. 435 and 436 of 2004 (as amended), are currently being undertaken in two ways:

1. **Integrate** RES into the review of the statutory County Development Plan and carry out one Strategic Environmental Assessment, e.g. Waterford County; and
2. Carry out RES **separately** to the statutory County Development Plan and undertake Strategic Environmental Assessment, e.g. Clare, Mayo, Galway, Kerry. The RES can then be adopted by way of an **amendment to the CDP**.

It should be highlighted that consultation with the DoECLG in June 2013 reveals that there are no plans to prepare S28 Guidelines for the preparation, implementation and evaluation of Local Authority Renewable Energy Strategies (LARESs). In addition, the role of regional authorities in renewable energy planning is unclear as the NRAEP Progress Report highlights the role of local planning authorities.

#### Progress Report Annex

In relation to renewable energy sector - electricity target (RES-E), the Annex of the Progress Report (2012) states *'that 3,521 MW of wind needs to be connected ... annual capacity added must increase to over 200MW so that the required 3,521 MW is attained by 2020 - this is down from the 4,649 MW of wind generation envisaged to be required in the original NREAP'*. In addition, the Progress Report also states that onshore wind rather than off-shore wind *'should be pursued in the first instance, in order to minimise any support scheme costs borne by electricity consumers - this is a change from what was indicated in the original NREAP'*.

#### Gaps - e.g. Lack of Strategic Environmental Assessment (SEA)

There is a clear imbalance at a national level in the approach to the management of natural heritage v cultural heritage and landscape, with the Progress Report omitting any reference to the latter. The significant 'policy shift' in the *Renewable Energy Action Plan* during 2010-2012, i.e. **from off-shore to onshore**, appears to have been undertaken without any strategic environmental assessment (SEA) or environmental assessment at a national level. The spatial location or distribution of the **required annual capacity added** is not discussed or illustrated in the 2012 Progress Report, nor is it clear how the annual capacity added are to be delivered at a

regional or county level as there are no targets at this level.

Any Implementation Plan should seek to set out how the national targets are going to be achieved at a regional and local level, in order to assist policy formulation and development management on the ground.

In addition, it should be highlighted that this major shift in national energy and landuse policy has been undertaken without a plan-led approach, which includes SEA, i.e. there is no *Onshore Renewable Energy Wind Farm Plan* for the country. Given that an Off-Shore Renewable Energy Plan was prepared when the policy was to pursue off-shore wind energy, it is a concern that such a plan for onshore wind energy, which is a more complex and multi-layered issue<sup>53</sup> than off shore energy, has not warranted the formulation of a plan with, at the very least, an associated public 'consultation' process. The requirement for 'public participation', rather than consultation *per se*, in environmental decision-making is even more important as a result of Ireland having ratified the UNECE Aarhus Convention in June 2012.

Further, it should also be highlighted that the first Progress Report does not reference the formal MOU signed between Ireland and the UK in early 2013, as discussed in the following section.

### 3.3 Climate and Energy Policy in Ireland in 2012/2013

This section examines existing and emerging climate and energy policy in Ireland and focuses on the following strategies and initiatives:

1. January 2013 - Green Energy Memorandum of Understanding (MOU) between Ireland and Britain; and
2. May 2012 - Renewable Energy Strategy 2012-2020.

#### 3.3.1

##### January 2013 - Green Energy Memorandum of Understanding (MOU) between Ireland and Britain (24th January)

Ireland has recently signed a Memorandum of Understanding (MOU) with the United Kingdom in January 2013. At the MOU press conference held in Dublin, Minister for Communications, Energy and Natural Resources, Pat Rabbitte T.D. highlighted that:

<sup>53</sup> i.e. involving impact on amenity, impact on landscape character including historic landscapes, visual impact, impact on natural and cultural heritage, etc.



*"Ireland has the potential to generate far more wind energy than we could consume domestically. The opportunity to export this green power presents an opportunity for employment growth and export earnings which we must seize if we can. Today the two Governments are committing themselves to a programme of work."*

In relation to the MOU, UK Secretary of State for Energy and Climate Change, Edward Davey M.P. stated that: *"Trading power with Ireland could increase the amount of green power in our energy mix and potentially bring down costs for UK customers."*

The MOU has triggered a detailed analysis of how Irish renewable energy resources, onshore [and off-shore] might be developed to the mutual benefit of Ireland and the United Kingdom. If the analysis indicates that there would likely be a mutual benefit accruing from renewables trading, the next stage would be to develop an *inter-governmental agreement*<sup>54</sup> for signing in 2014. The Heritage Council anticipates that the draft results of the detailed MOU analysis will be available to interested stakeholders and the public, in accordance with the *UNECE Aarhus Convention*.

#### Update on MOU, July 2013

Minister Pat Rabbitte T.D. announced in late July 2013 that he had instructed his officials to develop an overall policy and planning framework, which will guide An Bord Pleanála when considering any proposals for wind energy export projects, i.e. strategic infrastructure projects. The framework, which will be based on a *Strategic Environmental Assessment (SEA)*, will be prepared over the coming twelve months and will provide an opportunity for all stakeholders including local authorities, potential project developers, and local communities to be consulted and have an input into the national policy for wind export.

Minister Rabbitte T.D. continued *"As I have previously said, a clear national planning policy context for Renewable Energy Export is essential for An Bord Pleanála (ABP) in assessing and determining individual strategic projects. The framework we will develop will provide an opportunity to integrate relevant EU Directive requirements - Strategic Environmental Assessment and Appropriate Assessment under the Habitats Directive - in the context of developing a new national framework"*. [bold - authors' emphasis.]

Consultation with the Department of Communications, Energy and Natural Resources in October 2013, reveals that stakeholder consultation on the development of a national framework for renewable energy export

(including SEA and AA) is due to commence in mid-October 2013.

It is hoped that this Heritage Council research will help the Minister in achieving this objective.

#### 3.3.2

##### May 2012 - Renewable Energy Strategy 2012-2020

The *Renewable Energy Strategy 2012-2020* follows on from Ireland's submitted *Renewable Energy Action Plan 2010* and the publication of *Energy Roadmap 2050* in December 2011. The 2012-2020 strategy sets out five strategic goals, as follows:

1. Progressively more renewable electricity from onshore and offshore wind power for the domestic and export markets;
2. A sustainable bioenergy sector supporting renewable heat, transport and power generation;
3. Green growth through research and development of renewable technologies including the preparation for market of ocean technologies;
4. Increase sustainable energy use in the transport sector through biofuels and electrification (*e.g. 10% by 2020*); and
5. An intelligent, robust and cost efficient energy networks system, e.g. modernisation and expansion of the national grid.

A *Renewable Energy Development Group*, which was established by the Government to bring all the Departments, agencies and stakeholders together, is due to be relaunched under the aims of the strategy.

It should be noted that the Heritage Council is not currently represented on this Group despite having a statutory remit for the planning and management of the landscape under the provisions of the *Heritage Act 1995* - it is recommended that this gap should be addressed as soon as possible. Consultation with the Department of Communications, Energy and Natural Resources in June 2013, reveals that this advisory group has not met since 2011.

#### 3.4

##### Forces for Change - Summary

Renewable energy in Ireland is being driven by EU Climate Change and Energy Directives and Policy, which have widened and deepened in recent years. As a result,

<sup>54</sup> Under Directive 2009/28/EC.

Ireland's renewable energy target for electricity for 2020 (RES-E, 40%) will require a significant acceleration in renewable energy development over a very short period of time.

Ireland's response to Europe, through its first *National Renewable Energy Action Plan (NREAP)* and *First NREAP Progress Report*, which were both prepared by the Department of Communications, Energy and Natural Resources, has entailed a clear *policy shift* from off-shore to onshore wind energy. This policy shift took place without any strategic environmental assessment or public participation and the role of the public in the delivery of the NREAP is unclear.

In addition, the government's response appears to only consider natural heritage and fails to mention the *Heritage Act 1995*. Local Authority Renewable Energy Strategies (LAREAS) are being undertaken in two ways, which warrants further investigation by planning policy makers. The potential role of regional authorities in renewable energy planning in Ireland also remains unclear.

Results of the Memorandum of Understanding (MOU) between Ireland and the United Kingdom are keenly awaited and there is an overwhelming need that statutory agencies with responsibility for the promotion and management of our national heritage, including landscape, cultural heritage and natural heritage, should be consulted by government in relation to any MOU draft findings and proposed actions.

## 4.0 Republic Of Ireland Onshore Wind Farm Planning Legislation And Policy - Overview And Review

This chapter sets out an overview of national planning legislation along with a detailed review of national planning policy in the Republic of Ireland as it relates to onshore wind farm development (i.e. Acts, Regulations and Guidelines), and provides a critique in relation to gaps in the existing policy framework. The overview also makes reference to Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA) and Appropriate Assessment (AA). General recommendations are then presented on opportunities to make Irish onshore wind planning policy more robust and efficient, along with specific recommendations relevant to the Heritage Council, given Council's statutory role in advising and supporting the formulation and implementation of national planning and heritage management policy under the provisions of the *Heritage Act 1995*.

### 4.1 National Planning Legislation and Policy - Context

National planning legislation<sup>55</sup> is set out under the provisions of the *Planning and Development Acts 2000-2010*<sup>56</sup> and the *Planning and Development Regulations 2001-2013*. The Acts set out the primary legislation in relation to the planning system and the accompanying regulations provide an interpretation of the primary legislation. Planning law makes provision for the preparation of **development plans** (Part II), and for the **determination of planning applications for proposed development** (Part III). One of the core principles of the planning system is that there is a **presumption in favour of development**, i.e. sustainable development, which accords with the relevant statutory development plan. Planning enforcement and appeals are also provided for under the legislation but these matters are beyond the scope of this report.

Section 28 of the 2000 Act makes provision for the preparation of Ministerial Guidelines, known as National Planning Guidelines, which have since been amended by Section 20 of the *Planning and Development (Amendment) Act 2010*<sup>57</sup>. The *Wind Energy Development Guidelines 2006* are examined in the following section.

<sup>55</sup> The first piece of planning legislation in Ireland was the *Local Government (Planning and Development) Act 1963*.

<sup>56</sup> Off-shore wind farms are excluded from the provisions of the *Planning and Development Act 2000* (as amended). The foreshore licence area is out to 12 nautical miles, approx 23 km. The DoECLG is currently reforming the foreshore licensing process and a Bill is expected before the end of 2013.

<sup>57</sup> See [www.irishstatutebook.ie/pdf/2010/en.act.2010.0030.pdf](http://www.irishstatutebook.ie/pdf/2010/en.act.2010.0030.pdf).

*Strategic Environmental Assessment (SEA)*, as noted, is also applicable to development plans, renewable energy plans and strategies as landuse/town and country planning and energy are mandatory sectors covered by the *EU SEA Directive 2001/42/EC*, which was transposed into Irish planning law through Statutory Instruments (No. 435 and 436 of 2004, as amended –see also *Appendix D*).

*The Strategic Infrastructure Act 2006* (2006 SI Act), which amends the *Planning and Development Act 2000*, makes provision [generally] for applications for permission/approval for specified private and public strategic infrastructure developments to be made directly to An Bord Pleanála. Section 5 (Seventh Schedule) of the 2006 SI Act introduced a specific threshold in relation to large scale wind farm developments (originally >50 turbines or total output >100 megawatts), which has since been amended by the provisions of Section 78 of the *Planning and Development (Amendment) Act 2010* to include a reduced threshold of '**>25 turbines or total output >50 megawatts**'.

In addition, Section 37 of the *Strategic Infrastructure Act 2006* (2006 SI Act) makes provision for planning authorities to require developers to build or finance local facilities and services that confer a substantial gain on the community.

It should be highlighted that Ireland is currently without a *National Planning Policy* despite regular calls from the Irish Planning Institute (IPI) of the need for such a policy, particularly in light of the on-going national financial crisis. In addition, in February 2013, the Minister for the Environment Phil Hogan T.D. announced that the National Spatial Strategy would be replaced with a new policy in 2014.

#### HC Recommendation:

Ireland needs a **National Planning Policy** including a Vision for Planning in Ireland. This would communicate the Government's policy on nationally-important landuse planning matters, including renewable energy (i.e. onshore wind farms), economic development, the historic environment, public participation, community benefit, coastal planning, etc. This policy should be screened in relation to Strategic Environmental Assessment (SEA).

## 4.2

### Overview of Section 28 National Wind Energy Guidelines (as amended)

As discussed in Chapter 3, Ireland has a national renewable energy target for electricity of 40% by 2020.

National statutory planning policy for onshore wind farms is set out in DoECLG Section 28 Guidelines entitled *Wind Energy Development Guidelines*, which were published in 2006 and are available to download from the Department of the Environment, Community and Local Government's website<sup>58</sup>. The DoECLG *Wind Energy Development Guidelines* (2006, 113 pages) provide guidance to Local Authorities on planning for wind energy through the statutory development plan process and in the determination of planning applications, i.e. the Core Two Strands of Planning: 1. Forward Planning and 2. Development Management

Essentially, the S28 Guidelines cover the two core strands of the statutory planning system in Ireland<sup>59</sup>, i.e. the formulation of development plans (Forward Planning FP - formerly known as Development Plan - 'DP'); and the determination of planning applications otherwise known as development management (DM - formerly known as Development Control or 'DC').

The Guidelines were published before the *Strategic Infrastructure Act 2006*. It should also be noted that the 2006 Guidelines are currently the subject of a focused review in relation to two environmental considerations of significance to onshore wind farms, namely **noise and shadow flicker** (Sections 5.6 and 5.12 of the Guidelines). This review is due to be published for public consultation in the last quarter of 2013 by the Department of the Environment, Community and Local Government (DoECLG).

A summary of the assessment of the S28 Wind Energy Development Guidelines is discussed below. A detailed assessment of the S28 Wind Energy Development Guidelines is provided as a stand alone Heritage Council report (2013) entitled *The Onshore Wind Farm Sector in Ireland: Volume 2- Heritage Council Review of S28 Wind Energy Guidelines, 2006*.

## 4.3

### Assessment of the S28 Guidelines (2006)

An assessment of the Guidelines is discussed under the following headings:

1. Lack of External, Independent Monitoring or Evaluation of 2006 Guidelines;
2. Predate the UNECE Aarhus Convention and Omission of the European Landscape Convention (ELC);
3. Gaps in relation to Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA), and Appropriate Assessment (AA);

<sup>58</sup> See [www.environ.ie/en/Publications/DevelopmentandHousing/Planning/](http://www.environ.ie/en/Publications/DevelopmentandHousing/Planning/).

<sup>59</sup> Planning Appeals and Planning Enforcement are also part of the overall planning system but are beyond the scope of this research study.

4. Pre SEAI Local Authority Renewable Energy Strategies (LARES) Methodology (2013);
5. Emphasis should be on Landscape 'Capacity' rather than Landscape 'Sensitivity';
6. Lack of detail in relation to Cumulative Impact Assessment (not just cumulative visual impact);
7. Lack of focus on Risk Assessment and Risk Management over the lifetime of the wind farm project; and
8. S28 Guidelines (2006), Appendices 1-4.

#### 4.3.1

##### Lack of External, Independent Monitoring or Evaluation of 2006 Guidelines

There has been no update, or external independent monitoring or evaluation of the 2006 Guidelines since their publication. As a result, any international or national research relating to heritage management, wind farm strategies and wind farm development is unable to inform or integrate with the provision of national guidelines, i.e. there is no added value built into the system as it is a static and closed system or ability to identify trends and patterns. It should be noted that the Guidelines are not supported by an 'interactive' webpage, as is the case in other EU countries, thus negating the opportunity to provide additional and on-going technical guidance and advice in relation to this sector, etc. We return to this issue when examining the Scottish planning framework in the following chapter.

In addition, the guidelines do not differentiate between commercial wind farms and community-led wind farms or proposals for micro-generation.

It is submitted that the DoECLG's Planning Unit lacks resources.

#### 4.3.2

##### Predate the UNECE Aarhus Convention and Omission of the European Landscape Convention (ELC)

The 2006 S28 Guidelines also predate the UNECE Aarhus Convention, which Ireland ratified in June 2012 and which came into force in September 2012. The UNECE Aarhus Convention links human rights to environmental rights for the first time and is based on three core pillars, which are listed in *Box 6*.

### Box 6: UNECE Aarhus Convention<sup>60</sup> - Three Pillars

1. The right of everyone to receive environmental information that is held by public authorities ("**access to environmental information**"). This can include information on the state of the environment, but also on policies or measures taken, or on the state of human health and safety where this can be affected by the state of the environment. Applicants are entitled to obtain this information within one month of the request and without having to say why they require it. In addition, public authorities are obliged, under the Convention, to actively disseminate environmental in their possession;
2. The right to participate in environmental decision-making. Arrangement are to be made by public authorities to enable the public affected and environmental non-governmental organisations to comment on, for example, proposals for projects affecting the environment, or plans and programmes relating to the environment, these comments to be taken into due account in decision-making, and information to be provided on the final decisions and the reasons for it - ("**public participation in environmental decision-making**");
3. The right to review procedures to challenge public decisions that have been made without without respecting the two aforementioned rights or environmental law in general ("**access to justice**").

In addition, the Section 28 2006 Guidelines omit any reference to the European Landscape Convention (ELC), which Ireland signed and ratified in March 2002 and which came into force in March 2004. The ELC is reviewed in detail in Section 2.3.1 above. It should be highlighted that the ELC covers the integration of landscape management in all public policy and not just planning policy. In addition, the 2006 Guidelines do not make any provision for the accrual of what is known as 'planning gain'<sup>61</sup> nor do they include provision for the creation of a social dividend associated with the development of the onshore wind farm sector in Ireland, e.g. for example the setting up of *Community Energy Saving Trusts*<sup>62</sup>. Also, see Denmark (*Box 3.5*) in Section 3 for examples of public and private incentive schemes.

#### HC Recommendation:

National Guidance on the role of Public Participation in environmental decision-making, delivery and monitoring

<sup>60</sup> See <http://www.unece.org/env/pp/introduction.html>.

<sup>61</sup> In the UK, planning gain (also known as planning agreements) is provided for under Section 106 Agreements, under S106 of the *Town and Country Planning Act 1990 (as amended)*.

<sup>62</sup> See <http://www.energysavingtrust.org.uk/Communities>.

is needed as soon as possible, in accordance with the UNECE Aarhus and the ELC Conventions. Guidance is also required in relation to the role of the public and public participation in the development of the wind energy sector in Ireland (see Denmark Case Study in Chapter 3). The Heritage Council believes that effective public participation delivers better planning and heritage management decisions.

#### HC Recommendation:

Legislation and policy is required to ensure that there is a clear 'planning gain' associated with the development of the onshore wind farm sector in Ireland, e.g. Energy Trusts. Public policy in relation to a desired social dividend should also be prepared in parallel with socio-economic, environmental and cultural policy, in accordance with the European Landscape Convention and the UNECE Aarhus Convention.

#### 4.3.3

#### Gaps in relation to Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA), and Appropriate Assessment (AA)

The Section 28 2006 Guidelines make no reference to the EU SEA Directive 2001/42/EC - the process of SEA for plans and programmes, introduced into Ireland in July 2004, nor do they mention Appropriate Assessment (AA) for Plans AND Projects. Broadly speaking, the Guidelines focus on *development management*, rather than on *forward planning* functions. As a result, there is a clear imbalance between the two core strands of planning - forward planning and development management. As a result, there is not enough emphasis on establishing a robust 'plan-led' system to guide onshore wind farm development. This becomes even more critical given the lack of national or regional onshore wind farm plans, which would normally be subject to full SEA.

Ideally, the Guidelines should be split into two discreet but interdependent set of documents - one for development plans (and programmes), i.e. SEA and AA, and another set for development management/planning applications, i.e. EIA and AA.

In addition, as noted in Section 2, there is no equivalent statutory assessment process such as Appropriate Assessment (i.e. Natura 2000 sites) for 'cultural heritage' at plan and/or project level and cultural heritage's profile and protection in Ireland has suffered as a result.

#### Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA)

Although **Landscape** is considered a key environmental

element under EU SEA, its protection under SEA<sup>63</sup> in Ireland is less robust than desired, compared to natural heritage. (Landscape assessment also relates to AA.) As noted above, the S28 *Landscape and Landscape Assessment Consultation for Local Authorities Guidelines (2000)* are in draft format almost 13 year later - they are pre the European Landscape Convention (ELC), pre the UNECE Aarhus Convention, omit Historic Landscape Characterisation (HLC), omit the concept of setting, omit landscape assessment for urban areas, lack robust seascape assessment guidance, and are generally not 'fit for purpose'.

As a result, there is a clear 'double whammy' when it comes to managing onshore wind farm development within the Irish landscape as the regulatory framework is weak, disjointed, out of date and under resourced. *Landscape Character Assessment (LCA)*<sup>64</sup>, as a concept, is mentioned throughout the 2006 Wind Energy Guidelines but this concept and approach is without any national or regional basis or context. As noted above, Ireland is currently without a National Landscape Strategy (NLS) or any regional landscape strategies to inform the spatial planning of wind farm development. County-wide LCAs vary greatly in methodology and quality, depending on LA resources, and they tend not to consider trans-boundary issues due to their geographical constraints, nor do they include historic landscape characterisation (HLC) or urban areas, i.e. the impact of human interaction on the landscape, as required by the ELC.

#### Environmental Impact Assessment (EIA) and Appropriate Assessment (AA)

In relation to EIA, (Chapter 4 of the Guidelines), and hence AA although not mentioned specifically, the guidelines recommend the production of a **management plan** to deal with the co-existence of wind energy developments and the species/habitats identified through an EIA. The guidelines also recommend the provision by the wind farm applicant of information on the potential impact on built heritage including archaeological heritage, landscape, etc. Clearly, the emphasis is on the management of natural heritage.

Traditionally, EIA in Ireland focuses on the impact on natural heritage and visual impact, rather than focusing on overall heritage impact including landscape character (including historic landscapes), impact on landscape character and impact on visual amenity - i.e. an existing lack of focus on the inter-relationships (direct and indirect) and impact interactions of environmental assets, including heritage impact, as per the spirit of the EIA Directive.

<sup>63</sup> According to the EPA, 82% of SEAs in Ireland relate to landuse plans, Source: EPA, June 2013.

<sup>64</sup> As provided for under the DoEHLG 2000 Section 28 *Landscape and Landscape Assessment Guidelines*.

A methodology to calculate **carbon savings** (as a result of constructing a wind farm development) is not provided for in the 2006 Guidelines despite a growing need for its adaptation and endorsement as part of the evolving planning and development system. National technical guidance is required on this as soon as possible.

**HC Recommendation:**

National Guidance on 'SEA, Plans/Programmes and Landscape' should be prepared by the Heritage Council in partnership with the Environmental Protection Agency's SEA Unit.

**HC Recommendation:**

It is recommended that the introduction of a well-resourced national landscape management system (to include and embrace electronic 3D/terrain modelling and computer simulation) would go some way to enhancing the overall spatial planning system at a plan and programme level. This modelling could be assisted by the Heritage Council's GIS-based Heritage Viewer.

**HC Recommendation:**

Robust Section 28 Guidelines are required in relation to Landscape Character Assessment conjoining Historic Landscape Characterisation (HLC), Habitat Mapping, effective Public Participation Methods/Tools and Geographical Information Systems (GIS). The Guidelines should be informed by the Heritage Council and Partners multi-disciplinary LCA CPD Training Course.

**HC Recommendation:**

The 2006 Wind Energy Development Guidelines should be updated and include a methodology for an 'Integrated Landscape, Cultural Heritage and Natural Heritage Management Plan', rather than a limited natural heritage management plan for wind energy wind proposals, which should be prepared, implemented and monitored by national government.

**HC Recommendation:**

Clearer guidance is required on heritage impact assessment as part of wider EIA, in relation to the definition, setting, and visual amenity of monuments and historic landscapes.

**HC Recommendation:**

Establish a technical working group to explore the potential for a national environmental portal/database in relation to capturing and sharing the valuable environmental information and data gathered during environmental assessment processes. This portal would meet the requirements of several EU Directives and International Conventions, including SEA, EIA, and AA,

INSPIRE, along with the ELC and the UNECE Aarhus Convention, which includes as one of its three pillars, a requirement for public access to environmental information.

**4.3.4**

**Predate the SEAI Local Authority Renewable Energy Strategies (LARES) Methodology (2013)**

The Guidelines predate the Sustainable Energy Authority Ireland's *A Methodology for Local Authority Renewable Energy Strategies (LARES)*<sup>65</sup> which were published in June 2013 to support local authority forward planning operations. Consultation with the DoECLG in July 2013, reveals a lack of resources to undertake S28 Guidelines to support the implementation of LARES. As such, it is not known whether or how there is any '*consistency of approach by planning authorities both in identifying areas suitable for wind energy development and having regard to potential impacts, inter alia on nature and diversity*', as stated in the National Renewable Energy Action Plan (NREAP) First Progress Report, 2012 (see Section 3.2.2).

**4.3.5**

**Emphasis should be on Landscape 'Capacity' rather than on Landscape 'Sensitivity'**

Ireland has one of the most varied landscapes in Europe and its landscapes are internationally renowned. As such, its unique landscapes have different capabilities and capacities to accommodate and absorb different types of development (Source: LCA CPD Training Course). At present, the 2006 Guidelines focus on landscape sensitivity. However, the renewable energy sector, communities and the general public require greater information and guidance on the overall concept of landscape capacity.

**Landscape capacity** is the extent to which a particular landscape type is able to accept a particular kind of change (e.g. mining, forestry, wind farms, housing, etc.) without significant effects on its character. The capacity of a landscape for a specific type of change will depend upon the nature and magnitude of the change and the landscape's sensitivity and visual amenity. Capacity is usually expressed in relative terms, showing how greater levels of a particular change increasingly and cumulatively affect landscape character, ultimately changing it into a different character. For example, increasing amounts of housing development ultimately change the landscape's character from a rural to a built one.

<sup>65</sup> [www.seai.ie/Publications/Renewables\\_Publications/Wind\\_Power/Methodology\\_for\\_Local\\_Authority\\_RE\\_Strategies/Methodology\\_for\\_Local\\_Authority\\_Renewable\\_Energy\\_Strategies.pdf](http://www.seai.ie/Publications/Renewables_Publications/Wind_Power/Methodology_for_Local_Authority_RE_Strategies/Methodology_for_Local_Authority_Renewable_Energy_Strategies.pdf)

Landscape capacity studies could help to inform the spatial distribution of wind farm development based on relevant thresholds, e.g. <5MW, 5-10MW, 10-20MW, 20+MW. Capacity studies, as part of the development plan process, should inform the location and scale of development proposals.

Consultation with a number of local planning authorities reveals that they would be in favour of illustrating spatially where development is suitable using agreed thresholds, which could be set out in national guidance.

#### HC Recommendation:

National guidance is required on how to undertake Landscape Capacity Studies in Ireland (at various scales) and also depending on the proposed type of development. This guidance should be informed by international best practice, including recent recipients of the ELC Landscape Award.

#### 4.3.6

##### Lack of detail in relation to Cumulative Impact Assessment (not just cumulative visual impact assessment - CVIA)

The 2006 Guidelines are weak in relation to guidance on cumulative impact assessment. For example, they make no reference to *EU Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions, 1999*. The use of 3D electronic models and various modelling and scenario testing techniques (using ICT), and the consideration of how to undertake trans-boundary (county and international) cumulative impact assessment are also unclear, e.g. how to assess cumulative impacts along the Border area with Northern Ireland and between neighbouring counties or counties impacted upon by inter-visibility, particularly in upland areas or along the coast.

It would appear that local planning authorities do not have adequate expertise in-house to assess or critique EIAs for proposed wind farms, particularly in relation to cumulative impacts and impact interactions. Broadly speaking, this situation has the potential to be an exact re-run of the submission of Retail Impact Statements (RISs) made in support of large-scale developments during the 1990s and 2000s, which were all prepared without a specialised retail unit within national government. The cumulative impact of this light touch regulatory framework can be seen on the edge of most Irish towns and cities.

In addition, there is no guidance in relation to cumulative visual impact assessment, which is an important

consideration in relation to proposed wind farm developments, which as noted in Section 2.2 above, are a specific form of development in the landscape as they include large moving parts. Specifically in relation to cultural heritage, the 2006 Guidelines do not explain or define the concept of *integrity*. In addition, they do not include any reference to the concept of **setting** in relation to cultural heritage assets (see Section 2.3.2). This is particularly important when it comes to the assessment of cumulative impacts and impact interactions. See recommendation re. **Integrated Management Plan**.

#### 4.3.7

##### Lack of focus on Risk Assessment and Risk Management over the lifetime of the wind farm project

The issue of project development risks are included in the 2006 Guidelines, particularly in relation to land slides on or near peatlands. However, it is important to highlight that there is no dedicated national technical unit to assist in this important task, which has potential wide-ranging repercussions for, and impacts on, our national heritage. Given the repercussions at an EU level of previous landslides in Ireland due to wind farm development, e.g. Derrybrien Wind Farm in Galway (ECJ Case No. C215/06<sup>66</sup>), it is desirable that a national 'one-stop' agency is established and given independent powers and responsibilities for supporting the preparation and monitoring of geological assessments, landslide and slope stability risk assessments for wind farm developments<sup>67</sup>. Landslide Risk Assessments and Risk Management Plans should be a core part of SEA and EIA in Ireland.

#### HC Recommendation:

It is strongly recommended that the Department of Communications, Energy and Natural Resources, the Department of the Environment, Community and Local Government, and the Department of Arts, Heritage and the Gaeltacht, establish a joint, specialised technical team, operating within a proposed Renewable Energy Unit, to oversee and support the state-wide planning and development of the onshore (and off-shore) wind farm renewable energy sector in Ireland. This unit would guide and inform local authorities and An Bord Pleanála.

#### 4.3.8

##### S28 Guidelines (2006), Appendices 1-4

*Appendices 5 and 6* are not reviewed in detail in this report as they contain the Glossary and References. However, as part of the review, it should be highlighted that *Appendix 5* of the 2006 Guidelines (*Glossary*) does

<sup>66</sup> ECJ Ruling 3rd July 2008.

<sup>67</sup> The Geological Society of Ireland established a voluntary Multi-disciplinary Irish *Landslides Working Group* in 2004 as a direct response to landslides in 2003 - see [www.gsi.ie](http://www.gsi.ie).

not contain a detailed definition or explanation of the following terms, which have relevance to our national heritage, and which are used in the main text of the guidelines:

1. **Landscape Character Assessment** (LCA which includes historic landscape characterisation/ HLC), (*Guidelines Chapter 1*) is not defined - this is important given the proposed formulation of a National Landscape Strategy (NLS) and also the existence of Local Authority Landscape Character Assessments as part of the statutory development plan process and whose use is recommended in the guidelines.
2. **Heritage** (*Guidelines, Chapters 2, 3, 4, 5, 6 & 7 and Appendices 1, 3 & 4*), i.e. the Guidelines' define heritage as follows - '*Environmental Heritage: includes natural and built, including archaeological, heritage*'. It is recommended that the Guidelines should include a workable definition of heritage, for example, Section 6 (1) of the *Heritage Act 1995* includes: '*...monuments, archaeological objects, heritage objects, architectural heritage, flora, fauna, wildlife habitats, landscapes, seascapes, wrecks, geology, heritage gardens and parks and inland waterways.*'
3. **Cultural Heritage** (*Guidelines, Chapter 3*), is not defined. It is recommended that the Guidelines should include UNESCO's definition of cultural heritage (tangible and intangible);
4. **Amenity e.g. Visual Amenity** (*Guidelines, Chapters 3, 5, 6 & 7 and Appendix 3*) is not defined in the Glossary. It is recommended that a detailed definition should also be included in any planned Planning Bill.
5. **Imperative Reasons for Overriding Public Interest (IROPI)** (*Guidelines Chapter 5*), which relates to the Appropriate Assessment (AA) of Plans and Programmes impacting on designated Natura 2000 sites, is not defined in the Guidelines;
6. **Landscape Character Types (LCTs)** (*Guidelines Chapter 6*) and **Landscape Character Areas (LCAs)** are not defined. In addition, an explanation of the key differences in the overall concepts of LCTs and LCAs is also required<sup>68</sup>;
7. **A Viewshed** (*Guidelines Chapter 6 and Appendix 3*) - an annotated illustration would be useful to demonstrate this concept;

8. **Landscapes of national or international renown** (*Guidelines, Appendix 3*) are not defined in the Guidelines; and
9. **Road Batters** (*Guidelines, Appendix 4*) are not defined.

Planning authorities in Ireland have at their disposal a range of heritage expertise - Heritage Officers, Architectural Conservation Officers, Conservation Rangers, Archaeology Officers, Biodiversity Officers. This expertise should be mobilised to support the decision-making for the particularly complex planning issues that relate to wind farm development, and to ensure that sound decisions are made. Further resources for stakeholder consultation, heritage research projects and scoping studies, and for the capacity to deliver their statutory planning regulatory function should be made available to them. Finally, *Appendix 6* of the Guidelines - '*References*' does not provide any information on or access to useful environmental organisations or their websites, in accordance with the UNECE Aarhus Convention.

#### HC Recommendation:

It is recommended that updated 2006 Guidelines should make reference to the range of heritage expertise within Local Planning Authorities (e.g. Heritage Officers, Architectural Conservation Officers, Archaeology Officers, Biodiversity Officers, Conservation Rangers (NPWS)) as these officers deal with sensitive sites and cultural landscapes of national and international renown (i.e. cultural and natural heritage) and work with community groups on a day to day basis.

#### HC Recommendation:

Updated 2006 Guidelines should also include a reference to the methodology of Heritage Appraisals, a holistic approach to heritage management developed and introduced by the Heritage Council in 2000.

## 4.4 Republic of Ireland - Summary

In summary, Ireland's existing planning legislation and policy framework in relation to onshore wind farm development requires updating on many levels, e.g. cumulative impact assessment, to ensure that the planning system is fit for purpose and that it accords with various EU Directives and international conventions including, the European Landscape Convention and the UNECE Aarhus Convention. Ireland's planning system would be substantially strengthened by the formulation of a *National Planning Policy* and robust and non-static

<sup>68</sup> See Heritage Council's award-winning, *Multi-disciplinary LCA CPD Training Course Programme (2009-2011)* for a full explanation of the key differences between Landscape Character Types (LCTs) and Landscape Character Areas (LCAs).



Section 28 Guidelines relating to landscape character, landscape capacity and landscape management, to assist and inform relevant government departments, Regional and Local Authorities, state agencies and wind farm developers and operators.

Policy in relation to onshore wind farms development proposals should also provide for the inclusion and engagement of local communities and should link to wider government policy, e.g. socio-economic development policy. In addition, an evidence-based planning framework should be continuously underpinned and informed by international and national best practice research including an exchange and a sharing of best practice structures, systems and processes with fellow EU Member States and beyond.

## 5.0 Scottish Onshore Wind Farm Planning Legislation And Policy - Overview And Review

Scottish Government renewable energy policy is to generate 100% of Scotland's gross annual electricity consumption by 2020 (see Section 3, Table 3). Scotland's planning policy framework in relation to onshore wind farms is reviewed below. This review aims to highlight possible opportunities for the widening and deepening of planning policy in relation to onshore wind farm developments in Ireland. The Scottish planning framework is discussed under the following headings:

1. National Planning Legislation and Policy - Context;
2. On-line Advice Notes - e.g. Onshore Wind Turbines (July 2013, etc.) and Process for Preparing Spatial Frameworks for Wind Farms (2012, etc.);
3. Scottish Natural Heritage (SNH) - Overview of Policy, Guidance, etc; and
4. Case Study - Scotland: Community and Renewable Energy Scheme (CARES).

### 5.1 National Planning Legislation and Policy - Context

The main planning legislation in Scotland is the *Town and Country Planning (Scotland) Act 1997*, as amended by the *Town and Country Planning (Scotland) Act 2006*<sup>69</sup>, which came into force in August 2009, along with planning regulations which interpret the law<sup>70</sup>. Part II of the Act deals with Development Plans and Part III deals with Control of Development. The Scottish Government's national planning policy is clearly set out in *Scottish Planning Policy 2010*<sup>71</sup> (55 pages), and associated Strategic Environmental Assessment (SEA), i.e. national planning policy on important land use matters, along with the *National Planning Framework (NPF)*, which sets out the government's strategy for Scotland's long term spatial development. Core principles of the SPP include that the planning system should be genuinely 'plan-led' and that planning authorities should support communities/small businesses (urban and rural) in developing renewable energy projects in an environmentally acceptable way. For example, in relation to the European Landscape Convention and landscape character, paragraph 127 (page 26 of the SPP states:

<sup>69</sup> See <http://www.legislation.gov.uk/ukpga/1997/8/contents>

<sup>70</sup> The *Town and Country Planning (Scotland) Act 1947* would have established the planning system in Scotland, in parallel with the *Town and Country Planning Act 1947* for United Kingdom of Great Britain and Northern Ireland.

<sup>71</sup> The 2010 SPP is currently under review but it remains in force until replaced.

*'Landscape in both the countryside and urban area is constantly changing and the aim is to facilitate positive change whilst maintaining and enhancing distinctive character. The European Landscape Convention defines landscape as an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors and makes it clear that all landscapes require consideration and care. Different landscapes will have a different capacity to accommodate new development, and the siting and design of development should be informed by local landscape character...'*

In relation to forward planning requirements Paragraph 187 states that:

*'...Development Plans should provide a clear indication of the potential for development of wind farms of all scales, and should set out the criteria that will be considered in deciding applications for all wind farm developments including extensions. The criteria will vary depending on the scale of development and its relationship and the characteristics of the surrounding area, but are likely to include:*

- Landscape and visual impact;
- Effects on the natural heritage and historic environment;
- Contribution of the development to renewable energy generation targets;
- Effect on the local and national economy and tourism and recreational interests;
- Benefits and disbenefits for communities;
- Aviation and telecommunications;
- Noise and shadow flicker; and
- Cumulative impact.

When identifying areas with potential constraints on wind farm development, Paragraph 190 states that planning authorities should consider the following:

- **The historic environment;**
- **Areas designated for their regional and local landscape or natural heritage value;**
- Tourism and recreational interests;

- Likely impacts on communities, including long term and significant impact on amenity;
- Impact on aviation and defence interests, particularly airport and aerodrome operation, flight activity, tactical training areas, aviation and defence radar and seismological recording; and
- Impact on broadcasting installations, particularly maintaining transmission links.

**The Historic Environment** - Scottish Planning Policy's definition of the historic environment, which is set out in Paragraphs 111 and 112, is reproduced in *Box 7*.

### **Box 7: Scotland's Historic Environment**

... The historic environment includes ancient monuments, archaeological sites and landscape, historic buildings, townscape, parks, gardens and designed landscapes and other features. It comprises both statutory and non-statutory designations. **The location of historic features in the landscape and the patterns of past use are part of the historic environment.** In most cases, the historic environment (excluding archaeology) can accommodate change which is informed and sensitively managed, and can be adapted to accommodate new uses whilst retaining its special character. However, in some cases the importance of the heritage asset is such that change may be difficult or may not be possible. Decisions should be based on a clear understanding of the importance of the heritage assets. **Planning authorities should support the best viable use that is compatible with the fabric, setting and character of the historic environment.**

Development plans should provide the framework for the protection, conservation and enhancement of all elements of the historic environment to allow the assessment of the impact of proposed development on the historic environment and its setting. **Setting is more than the immediate surroundings of a site or building, any may be related to the function or use of a place, or how it is seen from around, or areas that are important to the protection of the place, site or building..** Authorities should also consider whether further and more detailed assessment is required to establish the capacity of an area for and its sensitivity to change....

In relation to wind turbines and separation distances between wind turbines proposals and settlements, Paragraph 190 of the SPP recommends a separation distance of up to 2km between areas of search and the edge of cities, towns and villages to guide development to the most appropriate sites and to reduce visual impact. Paragraph 190 also highlights that decisions on individual developments should take into account specific local circumstances and geography. Clearly, the sustainable management of the living landscape and the historic environment is at the heart of the Scottish national policy approach to guiding the development of the onshore wind farm sector.

**HC Recommendation:**

National Planning Policy and any Section 28 Guidelines, which are relevant to onshore wind energy development, should contain a detailed definition of Ireland’s historic environment - both statutory and non-statutory - along with a description of the numerous multi-layered and inter-dependent heritage assets that make up the historic environment.

**5.2**

**On-line Advice Notes- e.g. *Onshore Wind Turbines (July 2013, etc.) and Process for Preparing Spatial Frameworks for Wind Farms (2012, etc.)*<sup>72</sup>**

On-line planning advice notes are issues and updated by the Chief Planner on a regular basis and are linked to Scottish Planning Policy and the National Planning Framework. They provide advice to Planning Authorities and identify trends relevant to their statutory planning functions and duties. On-line advice notes support Planning Advice Notes or PANs which are also issued by national government (e.g. PAN 1/2011 Planning and Noise, PAN 1/2010 SEA), *On-line Onshore Wind Turbines Advice Note (July 2013, etc.)*, *Process for Preparing Spatial Frameworks for Wind Farms (2012, etc.)*, along with Design Advice Guidance (DAGs). Areas of focus contained in the 2013 and 2012 Advice Notes are reproduced in *Table 5*.

**Table 5: Summary of 2013 and 2012 Scottish on-line Advice Notes**

Onshore Wind Turbines (2013)	Process for Preparing Spatial Frameworks for Wind Farms (2012)
Provide greater clarity on where groups of wind turbines can be located by ensuring that a spatial framework for wind farms >20MW has been set out in the development plan and addressing the potential below 20MW where appropriate	If a spatial framework for onshore wind farms of over 20MW generating capacity has not been started, development plan schemes should set out a timeline for preparation and production. If a spatial framework is not required, the reasons can be given in the development plan scheme.
Detail criteria to be applied in assessing wind turbine applications	If a spatial framework for onshore wind farms over 20MW has been prepared, updates or an additional spatial framework, could provide further guidance on where there is greatest potential for wind farms below 20MW.
Establish protocol and key consultees for involvement in spatial planning, policy making, pre-application work and applications for wind turbines	If a spatial framework for onshore wind farms has been prepared as supplementary guidance and not adopted, a timeline for adoption should be prepared.
Identify proportionate levels of information to service pre-application discussions and to assess applications on wind turbines	In some lowland and more populated areas, the Feed In Tariff Scheme has driven a notable shift to scales of wind farm below 5MW. Locally developed planning guidance for that scale of development can serve developers and communities well.
Secure support from local communities, wind power operators and other stakeholders on policies and procedures	
Ensure planning conditions and agreements for wind turbine approvals are reasonable and appropriate.	

Source: [www.scotland.gov.uk](http://www.scotland.gov.uk).

<sup>72</sup> The on-line *Onshore Wind Turbines* advice note was first published in February 2011 and the *Process for Preparing Spatial Frameworks for Wind Farms* was first published in February 2011.

### 5.3

#### Scottish Natural Heritage (SNH) – Overview of Policy, Guidance, etc.

In addition to government planning policy, Scottish Natural Heritage (SNH<sup>73</sup>), which is the national agency and statutory advisor on landscape issues, has developed a suite of robust policy and guidance documents in

relation to renewable energy, which are easily located on their user-friendly website<sup>74</sup>. A list of the most pertinent reports in relation to this study is provided in chronological order in *Table 6*. We provide a summary of the main points of the guidance entitled *Assessing cumulative impact of onshore wind energy developments (2012)* in the following section.

**Table 6: List of SNH Renewable Energy Policy, Guidance and Other References**

Policy	Guidance	Other References
1. Policy Statement: Renewable Energy (2010)	1. <b>Assessing the cumulative impact of onshore wind energy developments (2012)</b>	1. Energy and the Natural Heritage (2008, conference proceedings)
2. Bioenergy and the Natural Heritage - SNH's Approach (2009)	2. Assessing the small impact of small-scale wind energy proposals on the natural heritage (2012)	2. An Assessment of the Sensitivity and Capacity of the Scottish Seascape in relation to Wind Farms (2005)
3. Marine Renewable Energy and the Natural Heritage - An Overview and Policy Statement (2008)	3. Siting and Design of Small Scale Wind Turbines of between 15m and 50m in Height (2012)	3. Visual Assessment of Wind Farms: Best Practice (2002)
4. Energy and the Natural Heritage (2006)	4. Siting and Developing Wind Farms in the Landscape (2009)	
	5. Strategic Locational Guidance for Onshore Wind Farms in respect of the Natural Heritage (2009)	
	6. Visual Representation of Wind Farms: Good Practice Guidance (2007)	
	7. Assessing the impacts on wildland: Interim Guidance Note (2007)	

Source: Scottish Natural Heritage, September 2013.

#### Onshore Wind Energy Developments (2012)

This guidance document which was first published in 2011 was updated in 2012 and whilst it focuses mainly on cumulative landscape and visual amenity impacts at a strategic planning i.e. forward planning and development management level, it provides a relatively straightforward example of how Ireland's existing planning policy framework could be enhanced and strengthened. For example, cumulative impact is defined as *'the additional*

*changes caused by a proposed development in conjunction with other similar developments or as the combined effect of a set of developments, taken together'*.

The SNH Guidance states that cumulative impacts should be considered in **strategic planning (i.e. forward planning)** and in **development management**. It is important to distinguish between the two distinct planning processes.

<sup>73</sup> It should be noted that Historic Scotland deals with the historic built environment - <http://www.historic-scotland.gov.uk/>.

<sup>74</sup> See [www.snh.gov.uk/](http://www.snh.gov.uk/)

### Strategic Planning:

- Strategic cumulative impacts assessment should be undertaken as part of a planning authority's preparation of Development Plan policies (and supplementary guidance); Strategic environmental assessment (SEA) and renewable energy capacity assessments;
- In all cases, the focus is on forward planning: setting out the vision for wind farm development; and determining the thresholds of acceptable change, where the most suitable locations for development are, and what might be appropriate design and scale;
- The strategic plan (often underpinned by a landscape capacity study) should consider a range of specific scenarios, in terms of numbers, scale and distribution of wind farm developments to be accommodated. It should then make use of the resulting cumulative impact assessment to draw conclusions as to which of these scenarios is acceptable;
- The area included in a strategic cumulative assessment should not be constrained by administrative boundaries. Effective assessments should cover the whole of a region, straddling more than one planning authority or that of a natural heritage management unit such as a National Park or Firth Partnership area.
- This approach will have enhanced value if it is also associated with the view of the **capacity of the area** for such development and identification of the critical factors which are likely to present an eventual limit to development.

### Development Management:

- Cumulative impacts should be assessed where a proposed development involves:
  - a new development in combination with one or more existing or approved but unbuilt development;
  - an extension to an existing or approved but unbuilt development;
  - more than one development proposed at the same time within an area; or
  - any combination of the above.
- An assessment is most likely to be carried out by the prospective developer, as part of an Environmental Impact Statement (EIS) or environmental

information, and reviewed by the determining authority (the planning authority or the Scottish Government) and consultees (such as SNH).

- The decision as to which proposals in the planning/consenting system should be included in an assessment is the responsibility of the determining authority. The determining authority may ask a developer to seek advice from SNH on which proposals are likely to have cumulative impacts on bird interests.
- Planning authorities (and the Scottish Government) are encouraged to ask developers to cooperate over the exchange of information where cumulative assessment has been identified as important and data outwith publicly available Environmental Impact Statements is needed in order to make such assessments.

The SNH cumulative impact guidance (2012) provides a number of extremely useful, detailed flowcharts in relation to *Cumulative Landscape Visual Impact Assessment (CLVIA, Figure 1, page 13)* and *Cumulative Impact Assessment for Birds (Figure 2, page 28)*. These flowcharts are provided in *Appendix G*.

#### HC Recommendation:

The Department of the Environment, Community and Local Government, Department of Arts, Heritage and the Gaeltacht, and the Environmental Protection Agency (EPA) should promote the formulation and implementation of national guidance on cumulative impact assessment (not just visual) and impact interaction, along with impact monitoring, for forward planning and development management processes.

## 5.4

### Case Study - Scotland: Community and Renewable Energy Scheme (CARES)

Scotland has established an innovative community and SME incentive scheme known as the Community and Renewable Energy Scheme or CARES. Scotland's current renewable energy action plan **2020 Routemap for Renewable Energy in Scotland**<sup>75</sup> contains a commitment to ensuring that communities and local businesses can access the potential benefits of renewable energy through developing their own projects. Currently the Scottish Government has a target of 500MW community and locally-owned renewable energy<sup>76</sup> by 2020.

CARES has been established by the Scottish Government to encourage the local or community ownership of renewable energy across Scotland. It is a 'one stop shop'

<sup>75</sup> <http://www.scotland.gov.uk/Publications/2011/08/04110353/5#communityrenewables>

<sup>76</sup> i.e. Electricity, heat and transport.

for support, advice and loans to community groups and local businesses who wish to generate renewable energy either through small scale projects or in partnership with a commercial developer as a joint venture (JV)<sup>77</sup>. CARES is delivered by *Local Energy Scotland*, a nationwide consortium<sup>78</sup> of Scottish Government Agencies and social enterprises. The scheme is administered through a network of local offices each with a dedicated development worker who provides free advice.

CARES offers a range of supports including loans to assess the feasibility of projects; pre-planning applications; grants for community infrastructure buildings; and tailored supports to overcome specific local issues. Financial support through CARES includes:

- **Community Grants** of up to £10,000 are available to fund non capital preparatory aspects of the project such as feasibility studies or community consultation;
- **Community Buildings Fund** supports projects within the lowest band of the Scottish deprivation index to allow them to install renewable energy equipment;
- The **Pre-Planning Loan** provides support to community applicants taking forward plans for renewable energy generation schemes on land they own or could lease from a land owner;
- **Renewable Energy Investment Fund (REIF)** - Community renewable energy projects that have successfully gained planning permission can apply for support from REIF, delivered by the Scottish Investment Bank, on behalf of the Scottish Government, and is designed to build on the early stage support provided through the CARES scheme; and
- **Innovation and Infrastructure Fund** - Grant funding is available for communities to investigate and develop projects that link local energy generation with local energy use, or projects that wish to develop innovative distribution and storage solutions.

Benefits to the local community as a result of working with CARES are accrued through the payment of Community Benefit<sup>79</sup> from a commercial developer; payments will vary depending on the ownership model the project has been developed under.

Community-led renewable energy projects which are eligible for a feed-in tariff<sup>80</sup> will also provide a financial

return to communities as well as savings on energy costs. Funds are generally held in a *Community Trust* and can be used to finance mutually agreed projects within the community i.e. identified in the local area plan or through a grant scheme or to provide match funding for larger scale projects.

#### HC Recommendation:

The Irish government should prepare policy to establish a Community and SME incentive scheme for renewable energy in Ireland using Scotland's CARES as a model.

## 5.5 Scotland - Summary

Scotland's long-established and well-developed national planning policy framework has created a clear and robust 'plan-led' system to deal effectively with onshore wind farm proposals, which are being driven by ambitious national renewable energy targets. The national planning policy framework is predicated upon an in-depth understanding and appreciation of Scotland's unique landscape character and historic environment, in accordance with the European Landscape Convention (ELC). As a result, the sustainable management of the living landscape and historic environment is at the heart of Scotland's planning system.

The continuous availability of regularly updated on-line planning advice notes and design advice guidance, dealing with technical environmental issues, ensures Scotland's planning system continuously evolves and remains fit for purpose. For example, the importance of assessing cumulative impact - not just visual impact - is clearly demonstrated by Scottish Natural Heritage's recent publication in 2012, which informs strategic planning and development management processes.

Finally, Scotland has established an innovative community and SME incentive scheme known as CARES, which aims to ensure that communities and local businesses can access the potential benefits of renewable energy through the exploration and development of their own proposals and projects. The lessons for Ireland are palpable.

<sup>77</sup> Further information on ownership models and structures of joint ventures is available at <http://www.energysavingtrust.org.uk/scotland/Communities/Community-And-Renewable-Energy-Scheme/Joint-ventures>

<sup>78</sup> Made up of *Change Works, Energy Agency, Energy Saving Trust, CARF, WISE Group*.

<sup>79</sup> The Scottish Government encourages a minimum contribution of £5,000 per MW per annum.

<sup>80</sup> Feed in Tariffs are available for the following renewable energy sources - solar electricity (PV) (roof mounted or stand alone); wind turbines (building mounted or free standing); hydroelectricity; anaerobic digesters; and micro combined heat and power (CHP).

## 6.0

# Northern Ireland Onshore Wind Farm Planning Legislation And Policy - Overview And Review

Northern Ireland has a renewable energy target for electricity of 40% by 2020 (see Section 3, Table 3). A review of Northern Ireland's planning system is provided below along with possible opportunities for greater co-operation on strategic landscape management issues between the north and the south. The Northern Ireland (NI) planning system has been, in a state of flux since 2002 due to the on-going reform of local government, which entails the replacement of 26 districts down to 11<sup>81</sup> along with a return of planning powers to local councils<sup>82</sup>. As such, a brief summary of the existing planning framework in relation to onshore wind farms is provided below under the following headings:

1. National Planning Legislation and Policy - Context;
2. Overview of Planning Policy Statement (PPS) 18 'Renewable Energy';
3. PPS 18 Supplementary Planning Guidance (SPG) - Wind Energy Development in Northern Ireland's Landscapes; and
4. NI Landscape Charter - draft due for public consultation in January 2014.

## 6.1

### Northern Ireland Planning Legislation and Policy - Context

Northern Ireland planning legislation is set out under the provisions of the *Planning Acts (Northern Ireland) 1971-2011* and the *Northern Ireland Planning Orders 1972-2013*. As with the Scottish and Irish system, there is a presumption in favour of development, i.e. sustainable development. In 1973 local government was reorganised and when the provisions in the *Planning (NI) Order 1972* were commenced, the Ministry of Development became the planning authority for Northern Ireland in place of the local planning authorities. Responsibility for planning control was subsequently transferred to the Department of the Environment, which is now responsible under the *Planning (Northern Ireland) Order 1991* for planning matters. Planning enforcement, appeals, etc. are also provided for under the legislation and order but these matters are beyond the scope of this report.

Northern Ireland planning legislation is supported by policy instruments known as Planning Policy Statements or 'PSSs'. Planning Policy Statements (PPS) contain policies on land-use and other planning matters, for example, wind energy development (PPS 18) or planning, archaeology and the built environment (PPS 6), and apply to the whole of Northern Ireland. PPSs set out the main planning considerations that the Department of the Environment takes into account in assessing proposals for the various forms of development and are relevant to the preparation of statutory development plans. (PPSs are also material to decisions on individual planning appeals.) The Department of the Environment also prepares non-statutory planning guidance to supplement its policy documents and development plans, including what is commonly known as supplementary planning guidance (SPG)<sup>83</sup>.

Consultation with QUB's School of Environmental Planning in September 2013 reveals that Northern Ireland is currently moving towards the formulation of a single *Planning Policy Statement*, which will replace the suite of PPSs, i.e. a single policy statement similar to the *Scottish Planning Policy (SPP)*.

## 6.2

### Overview of Planning Policy Statement (PPS) 18 'Renewable Energy'

Planning Policy Statement 18 'Renewable Energy' was published in August 2009 and it sets out the Department of the Environment's policy for development that generates energy from renewable resources and that requires the submission of a planning application, i.e. it assists development management. The PPS document states that it has been subjected to an equality impact screening exercise. The objectives of the Statement include, to ensure that the environmental, landscape, visual and amenity impacts associated with or arising from renewable energy development are adequately addressed; and ensure adequate protection of the Region's built and natural heritage; and cultural heritage features. PPS 18 states that renewable energy development will be permitted, provided the proposal does not have an adverse impact on:

- a) Public safety, human health, or residential amenity;
- b) Visual amenity and landscape character;
- c) Biodiversity, nature conservation or built heritage interests;
- d) Local natural resources, such as air quality or water quality; and

<sup>81</sup> The first elections to these new councils in NI will be on the 22nd May 2014.

<sup>82</sup> Planning powers passed to NIO Ministry for Development in 1973 after Stormont was prorogued in 1972.

<sup>83</sup> Irish planning legislation has no provision for supplementary planning guidance (SPG).

e) Public access to the countryside.

Applications for wind energy developments in Northern Ireland are also required to demonstrate all of the following, as listed below.

- (i) That the development will not have an unacceptable impact on visual amenity or landscape character through: the number, scale, size and siting of turbines;
- (ii) That the development has taken into consideration the cumulative impact of existing wind turbines, those which have permissions and those that are currently the subject of valid but undetermined applications;
- (iii) That the development will not create a significant risk of landslide or bog burst;
- (iv) That no part of the development will give rise to unacceptable electromagnetic interference to communications installations; radar or air traffic control systems; emergency services communications; or other telecommunications systems;
- (v) That no part of the development will have an unacceptable impact on roads, rail or aviation safety;
- (vi) That the development will not cause significant harm to the safety or amenity of any sensitive receptors<sup>84</sup> (including future occupants of committed developments) arising from noise; shadow flicker; ice throw; and reflected light; and
- (vii) That above ground redundant plant (including turbines), buildings and associated infrastructure shall be removed and the site restored to an agreed standard appropriate to its location.

PPS 18 states that any development **on active peatland will not be permitted unless there are imperative reasons of overriding public interest (IRORPI)**. In relation to separation distances, PPS 18 states that:

*'for wind farm development a **separation distance of 10 times rotor diameter** to occupied property, with a **minimum distance of not less than 500m**, will generally apply. The supplementary planning guidance 'Wind Energy Development in Northern Ireland's Landscapes will be taken into account in assessing all wind turbine proposals.*

It is interesting to note that planning applications for

wind farm development proposals that will be connected to the National Grid are dealt with by the *Renewable Energy Team in Planning Service Headquarters* (part of the Department of the Environment).

### 6.3 PPS 18 Supplementary Planning Guidance (SPG) - Wind Energy Development in Northern Ireland's Landscapes

PPS 18 Supplementary Planning Guidance (SPG) should be read in conjunction with *Planning Policy Statement (PPS 18): Renewable Energy* which was published in August 2009. The SPG provides broad, strategic guidance in relation to the visual and landscape impacts of wind energy development. The guidance is based on the sensitivity of Northern Ireland's landscapes to wind energy development and contains an assessment of each of the 130 Landscape Character Areas (LCAs) in Northern Ireland by referencing the characteristics and values associated with each LCA - the NI LCAs are contained in the SPG as Figure 1: Northern Ireland's Landscape Character Areas. The guidance:

- Sets out the background to the landscapes of Northern Ireland, and to wind energy development in these landscapes;
- Explains the approach and methodology that was used to assess wind energy development in relation to the landscape of each Landscape Character Area (LCA);
- Contains general principles and guidance relating to wind energy development in the landscape and associated sensitivities, opportunities and challenges. This includes principles and guidance relating to site selection, siting, layout and design and the assessment of landscape, visual and cumulative impacts;
- Considers cumulative wind energy development in Northern Ireland's distinctive landscapes in October 2007 and highlights landscape issues that need to be carefully considered in the future;
- Provides practical guidance relating to the use of this guidance and the preparation and submission of wind energy proposals.

Consultation with the Northern Ireland Environment Agency Landscape Unit (part of the DoE) in September 2013 reveals that their team considers the PPS 18 SPG is in need of updating due to the following reasons; the guidance:

<sup>84</sup> Defined by PPS 18 as 'habitable residential accommodation (although not necessarily occupied), hospitals, schools and churches'.



- Is static and closed, i.e. the LCA study, which underpins the SPG, was undertaken in 1999/2000 and has not been updated since then;
- Does not include the concept of landscape capacity only landscape sensitivity;
- Omits the concept of historic landscape characterisation (HLC);
- Does not make any provision for the requirement for wildlife sensitivity mapping;
- Does not involve any public participation.

The NIEA Landscape Unit is currently working on a *Northern Ireland Landscape Charter*, which will be issued for public consultation in January 2014 and is discussed below.

#### 6.4 NI Landscape Charter - draft due for public consultation in January 2014

Statutory responsibility for spatial planning including the requirement to produce county Landscape Character Assessments (LCAs) will pass from DoE(NI) to the 11 new councils in April 2015 (under RPA).

Post-RPA, NIEA will monitor LCA professional practice by councils, provide them with evidenced-based LCA data, and therefore, may object to future local council development plans if they fail to use the evidence provided. A *Northern Ireland Landscape Charter* will establish the value of our landscapes and what actions are needed from A. Individuals, communities and non-government organisations B. Land managers C. Developers and D. New councils, public agencies and government departments.

According to the NIEA, the draft *NI Landscape Charter* will be launched at a Place-Making Conference for new councils in January 2014 for consultation with key stakeholders before issuing as a final document post-April 2014. i.e. the start of the new council transition or shadowing year - consultation responses received will be considered and incorporated, where appropriate. The NIEA highlighted in discussions that it would be beneficial to Ireland's landscape as a whole if the publication of the Charter could be co-ordinated with the publication of Ireland's National Landscape Strategy, which is also to be published in 2014.

#### HC Recommendation:

The Irish Government should investigate opportunities to collaborate with the Northern Ireland Environment Agency (NIEA) in relation to the emerging NI Landscape Charter, which is due to be issued for public consultation in January 2014 and/or final publication later in 2014.

#### 6.5 Northern Ireland - Summary

It is likely that upheaval in the Northern Ireland planning system is set to continue through 2014/2015 with the transferring of planning powers back to the local [reduced] councils and the subsequent bedding down period that that action will require. Clearly, the well-regarded NI landscape character area (LCA) study, which was undertaken in 2000, appears to be one of the casualties of the local government reform process, which has resulted in a knock on impact on the robustness of NI onshore wind farm planning policy.

However, the north of the island will soon have a *NI Landscape Charter* and it is envisaged that this project will re-energise the overall planning system within the new councils and will help raise awareness and understanding, within all sections of society, of the value and significance of the living landscape. This action, on the part of DOE(NI), in addition to the Republic of Ireland's proposed *National Landscape Strategy*, would provide an all-island context for the first time for informing important decisions about the management of our living landscape, particularly in relation to development proposals which have a trans-boundary impact. This action also has the potential to promote best practice exchange and co-operation throughout the Island of Ireland at all levels of government and society in relation to landscape planning and management. Enhanced co-ordination of the *NI Landscape Charter* and the emerging *RoI National Landscape Strategy* would also be in accordance with the key tenets of the European Landscape Convention (ELC) and the UNECE Aarhus Convention.

## 7.0

# Summary Of Key And Further Recommendations

Key Recommendations (7 no.) can be summarised as follows:

### National Planning Policy

1. Ireland needs a **National Planning Policy** including a Vision for Planning in Ireland. This would communicate the Government's policy on nationally-important landuse planning matters, including renewable energy (i.e. onshore wind farms), economic development, the historic environment, public participation, community benefit/gain, coastal planning, place making, etc. This policy should be screened in relation to Strategic Environmental Assessment (SEA).
2. National Planning Policy and any Section 28 Guidelines<sup>85</sup>, which are relevant to onshore wind energy development, should contain a detailed definition of Ireland's historic environment - both statutory and non-statutory - along with a description of the numerous multi-layered and inter-dependent heritage assets that make up the historic environment.

### Forward Planning and Development Management

3. National guidance on the assessment of the impact (direct, indirect, cumulative) of onshore wind farms and their associated elements on our national heritage is required, in order to inform the plan-making and planning application determination processes.
4. The Department of the Environment, Community and Local Government, Department of Arts, Heritage and the Gaeltacht, and the Environmental Protection Agency (EPA) should promote the formulation and implementation of national guidance on cumulative impact assessment (not just visual) and impact interactions, along with impact monitoring, for forward planning and development management processes.

### Landscape

5. It is clear that the need for a robust National Landscape Policy and Strategy is now critical. It would also appear that Ireland needs to invest adequate resources (i.e. staff, time and budget) in the research,

design, implementation and monitoring of a landscape management 'system' at all levels of government, in keeping with the key tenets of the European Landscape Convention (ELC) and the UNECE Aarhus Convention.

6. Robust Section 28 Guidelines are required in relation to Landscape Character Assessment including Historic Landscape Characterisation (HLC), Habitat Mapping, effective Public Participation Methods/Tools and Geographical Information Systems (GIS). The Guidelines should be informed by the Heritage Council and Partners multi-disciplinary LCA CPD Training Course.

### Resource and Technical Support

7. It is strongly recommended that the Department of Communications, Energy and Natural Resources, the Department of the Environment, Community and Local Government, and the Department of Arts, Heritage and the Gaeltacht, establish a joint, specialised technical team, operating within a proposed Renewable Energy Unit, to oversee and support the state-wide planning and development of the onshore (and off-shore) wind farm renewable energy sector in Ireland. This unit would inform local authorities and An Bord Pleanála.

Further Recommendation (16 no.) can be summarised as follows:

8. Landscape is considered a key environmental issue under the EU's SEA Directive and, as such, there is an overwhelming need for a summary booklet on 'SEA, Plans/Programmes and Landscapes'. The Heritage Council should consider preparing such a booklet in partnership with the EPA's SEA Unit as soon as possible.
9. The Irish government should prepare policy to establish a Community and SME incentive scheme for renewable energy in Ireland using Scotland's CARES as a model.
10. National guidance is required on how to undertake Landscape Capacity Studies in Ireland (at various scales) and also depending on the proposed type of development. This guidance should be informed by international best practice, including recent recipients of the ELC Landscape Award.
11. It is recommended that the introduction of a well-resourced national landscape management system (to include and embrace electronic 3D/terrain modelling

<sup>85</sup> Under the provisions of Section 28 of the *Planning and Development Act 2010*, as amended by Section 20 of the *Planning and Development (Amendment) Act 2010*.

and computer simulation) would go some way to enhancing the overall spatial planning system at a plan and programme level. This modelling could be assisted by the Heritage Council's GIS-based Heritage Viewer.

12. Clearer guidance is required on heritage impact assessment, as part of wider EIA, in relation to the definition, integrity, setting, and visual amenity of monuments and historic landscapes.
13. It is recommended that greater application of Historic Landscape Characterisation (HLC) in SEA for plans and programmes, and EIA for projects, as a means to understanding the receiving environment would be an advance in current practice.
14. The concept of amenity is under-developed within the Irish Planning System. Greater awareness and understanding of the concept of amenity and the implications for landscape management should be developed through SEA for plans and programmes and EIA for proposed projects, as a means of enhancing environmental assessment processes in Ireland. It would also be beneficial if Irish Planning Legislation provided a clear definition of amenity.
15. The concept of setting is under-developed within the Irish Planning System. Greater awareness and understanding of the concept of setting and the implications for landscape management should be developed through SEA for plans and programmes and EIA for proposed projects, as a means of enhancing environmental assessment processes in Ireland. It would also be beneficial if Irish Planning Legislation provided a clear definition of setting.
16. Wildlife Sensitivity Maps and/or modelling should be prepared in areas experiencing significant pressure for onshore wind farm development based on the selected categories of species and habitats listed under the EU Habitats and Birds Directives. These maps should inform SEA, EIA and AA in relation to wind farm proposals. The National Biodiversity Data Centre should assist in this regard.
17. National guidance on the role of public participation in environmental decision-making, delivery and monitoring is needed as soon as possible, in accordance with the UNECE Aarhus and the ELC Conventions. Guidance is also required in relation to the role of the public and public participation in the development of the wind energy sector in Ireland (see Denmark Case Study in Chapter 3). The Heritage Council believes that effective public participation delivers better planning and heritage management decisions.
18. Legislation and policy is required to ensure that there is a clear 'planning or community gain'<sup>86</sup> associated with the development of the onshore wind farm sector in Ireland, e.g. Energy Trusts. Public policy in relation to a desired social dividend should also be prepared in parallel with socio-economic, environmental and cultural policy, in accordance with the European Landscape Convention and the UNECE Aarhus Convention.
19. The Irish Government should investigate opportunities to collaborate with the Northern Ireland Environment Agency (NIEA) in relation to the emerging NI Landscape Charter, which is due to be issued for public consultation in January 2014 and/or final publication later in 2014.
20. Establish a technical working group to explore the potential for a national environmental portal/database in relation to capturing and sharing the valuable environmental information and data gathered during environmental assessment processes. This portal would meet the requirements of several EU Directives and International Conventions, including SEA, EIA, and AA, INSPIRE, along with the ELC and the UNECE Aarhus Convention, which includes as one of its three pillars, a requirement for public access to environmental information.
21. The 2006 Wind Energy Development Guidelines should be updated and include a methodology for an 'Integrated Landscape, Cultural Heritage and Natural Heritage Management Plan', rather than a limited natural heritage management plan for wind energy proposals, which should be prepared, implemented and monitored by national government.
22. It is recommended that the updated 2006 Guidelines should make reference to the range of heritage expertise within Local Planning Authorities (e.g. Heritage Officers, Architectural Conservation Officers, Archaeology Officers, Biodiversity Officers, Conservation Rangers (NPWS)) as these officers deal with sensitive sites and cultural landscapes of national and international renown (i.e. cultural and natural heritage) and work with community groups on a day to day basis.
23. Updated 2006 Guidelines should also include a reference to the methodology of Heritage Appraisals, a holistic approach to heritage management developed and introduced by the Heritage Council in 2000.

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<sup>86</sup> See Heritage Council *Community-led Village Design Statement Toolkit, Factsheet No. 8* for information on 'planning gain' and *Section 106 Agreements* in England - [www.heritagecouncil.ie](http://www.heritagecouncil.ie) - Planning.

## Appendix A: Heritage Council Landscape- Related Initiatives, 2008 to date.

1. Heritage Council Submission to the DoECLG in relation to Ireland's First Implementation Report for the UNECE Aarhus Convention - August 2013;
2. REPS 4 Traditional Farm Buildings Grant Scheme - ongoing;
3. Community-led Village Design Statements (VDS) in Ireland Toolkit, October 2012 and Multi-disciplinary Toolkit Training Programme - ongoing;
4. High Nature Value (HNV) Farming Initiative - ongoing;
5. Delivery of Bi-annual Multi-disciplinary LCA CDP Training Course 2009-2011<sup>87</sup>;
6. Best Practice Guidance for Habitat Survey and Mapping, 2011;
7. Detailed written submission in relation to the National Landscape Strategy (NLS) Issues Paper, November 2011;
8. Detailed Submission in relation to the proposed National Pediatric Hospital, Eccles Street, Dublin, 2011;
9. Detailed submissions in relation to the proposed Kilkenny Central Access Scheme (KCAS, formerly the Kilkenny Inner Relief Road/KIRR), July 2008 and revised scheme in April 2011;
10. Detailed Submission in relation to the draft SEA for the Off-Shore Renewable Energy Development Plan (OREDPA), March 2011;
11. Historic Landscape Characterisation (HLC) in Ireland: Policy and Best Practice Guidance, April 2010<sup>88</sup>;
12. Advice Note on the Determination of Curtilage, 2010;
13. Proposals for Ireland's Landscape, December 2010;
14. Landscape Conference Tullamore - Conference Report, January 2010;
15. The Irish National Landscape Conference 2009 -

Published Papers - Looking Around, Looking Ahead, October 2009;

16. International Landscape Conference, Tullamore, October 2009;
17. Landscape Character Assessment (LCA) in Ireland - update on 2006 Evaluation for Multi-disciplinary LCA CPD Training Course (2009-2011); and
18. Climate Change, Heritage and Tourism: Implications for Ireland's Coast and Inland Waterways (in partnership with Fáilte Ireland), April 2009.

## Appendix B: Main Elements of a Wind Turbine and a Wind Farm Development.

### 1. Wind Farm Developments in Ireland (2013)

The scale, i.e. height of wind turbines - from base to tip of blade in an upright position - has also increased in recent years. For example, the world's tallest wind turbines are located in Paproc, Poland at 210m, which were commissioned in December 2012. Previous to Paproc, the tallest wind turbine was the Furhlander wind turbine near Brandenburg, Germany at a height of 205m.

### 2. Wind Turbines

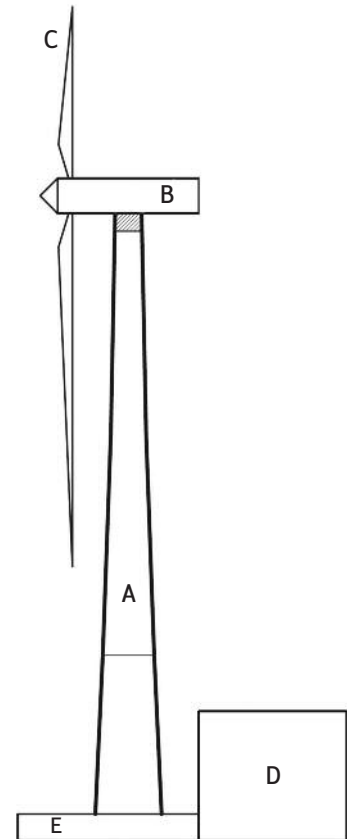
Turbine noise increases as wind speeds increase but at a lower rate than wind generated background noise increases. Areas down wind experience the highest predicted noise levels. At higher wind speeds noise from wind has the effect of largely masking wind turbine noise. However, advances in turbine technology and design have resulted in reduced noise emissions. Aerodynamic refinements that have combined to make turbines quieter include the change from lattice to tubular towers, the use of variable speed operations, and the switch to three blade turbine designs. Improvements in gear box design and the use of anti-vibration techniques since the mid-1990s have also resulted in significant reductions in mechanical noise emanating from the nacelle. For example, the most recent *direct drive* machines have no high-speed mechanical components and therefore do not produce mechanical noise (Source: *DoEHLG Wind Energy Development Planning Guidelines, 2006*.) Also, it should be noted that upwind turbines face into the wind and downwind turbines face away from the wind. A typical wind turbine normally includes the following components (as illustrated in the diagram on following page).

<sup>87</sup> The *Multi-disciplinary LCA CPD Training Course*, which was developed and delivered by the Heritage Council, involved 10 professional institutes (north and south) as project partners along with Clare County Council and the Landscape Observatory of Catalonia, Spain. The LCA CPD Course was conferred with the Irish Landscape Institute President's Award in November 2009.

<sup>88</sup> [www.heritagecouncil.ie/archaeology/news/view-article/article/historic-landscape-characterisation-policy-and-best-practice-guidance](http://www.heritagecouncil.ie/archaeology/news/view-article/article/historic-landscape-characterisation-policy-and-best-practice-guidance)

## A typical wind turbine normally includes the following components

Element	Description
<b>Tower (A)</b>	Turbines can vary in height from 35m upwards (including tower and blade). Tubular steel towers typically have a base diameter of 3-7 metres and display a slight tapering to the nacelle. Larger towers may require a larger base diameter.
<b>Nacelle (B)</b>	This contains the key mechanical components of the wind turbine including the gear box and generator. A yaw mechanism is employed to turn the nacelle so that the rotor blades face the prevailing wind.
<b>Blades (C)</b>	The blades, which capture and are set in motion by the wind, are most commonly made of glass reinforced plastic or wood epoxy but can be made of aluminium or steel. Modern turbines typically have three blades. These vary in rotor diameter from 35 metres upwards.
<b>Transformer (D)</b>	This is a device for changing the voltage of the alternating current (AC). Electricity is typically generated at less than 1,000 volts by the wind turbine and the transformer 'steps up' this voltage to match that of the national grid. This may be housed either inside or alongside the tower.
<b>Concrete foundation base (E)</b>	Turbines typically have bases of between 7 and 18 m <sup>2</sup> and a hardstanding area at the base of each turbine.



### 3. Wind Farm Development

A wind farm development normally includes the following elements:

Element	Description	Potential Impact on Landscape
<b>Wind Turbines</b>	<p>In Ireland the tallest onshore wind turbines are located at Lisheen in County Tipperary at 140m. The proposed Ardglass development in East Cork is 156m. (The only off-shore wind farm turbines in Ireland are located at Arklow Bank Wind Park &lt;=125m, the permitted Codling Wind Farm off the coast of Wicklow/Greystones is &lt;=160m, and the Dublin Array proposal is also &lt;=160m).</p> <p>The world's tallest turbines are two wind turbines in Paproc, Western Poland at 210m, which were launched in December 2012. Previous to Paproc, the tallest wind turbine was the Furhlander wind turbine near Brandenburg, Germany at 205m (lattice tower and blade).</p>	<p>Impact on landscape character, visual impact (and habitats) due to:</p> <ul style="list-style-type: none"> <li>• Spacing between wind farms;</li> <li>• Turbine groupings;</li> <li>• Turbine height;</li> <li>• Turbine colour;</li> <li>• Turbine siting, layout and design.</li> </ul>
<b>Wind monitoring mast</b>	Wind masts	Impact on landscape character and visual impact due to height and colour of mast.
<b>Transformers</b>	Serving each turbine - for onshore wind turbines this is normally at the base of the tower.	Impact on landscape character, visual impact and habitats.
<b>Internal tracks and roads</b>	Giving access to the turbines	Impact on landscape character, visual impact and habitats.
<b>Substation compound</b>	<p><i>Operational phase:</i> houses transformers, circuit breakers, control building and fencing.</p> <p><i>Construction phase:</i> temporary earth works, site offices, workers' hut and toilets, materials, site compound and construction traffic.</p> <p><i>Decommissioning phase:</i> removal of pylons, cables and substation compound. Reinstatement of site.</p>	Impact on landscape character, visual impact and habitats.
<b>Power cables</b>	Usually underground within the site.	Impact on landscape character, visual impact and habitats.
<b>Poles/pylons</b>	<p>Connecting wind energy development site to national grid, e.g. wooden poles and lattice towers.</p> <p>N.B. for 10kV or 20kV lines - wayleave clearance is required but is exempt from planning permission, except in particular circumstances.</p> <p>A 38kV line requires wayleave and planning permission.</p>	Impact on landscape character, visual impact, and habitats.

## Appendix C:

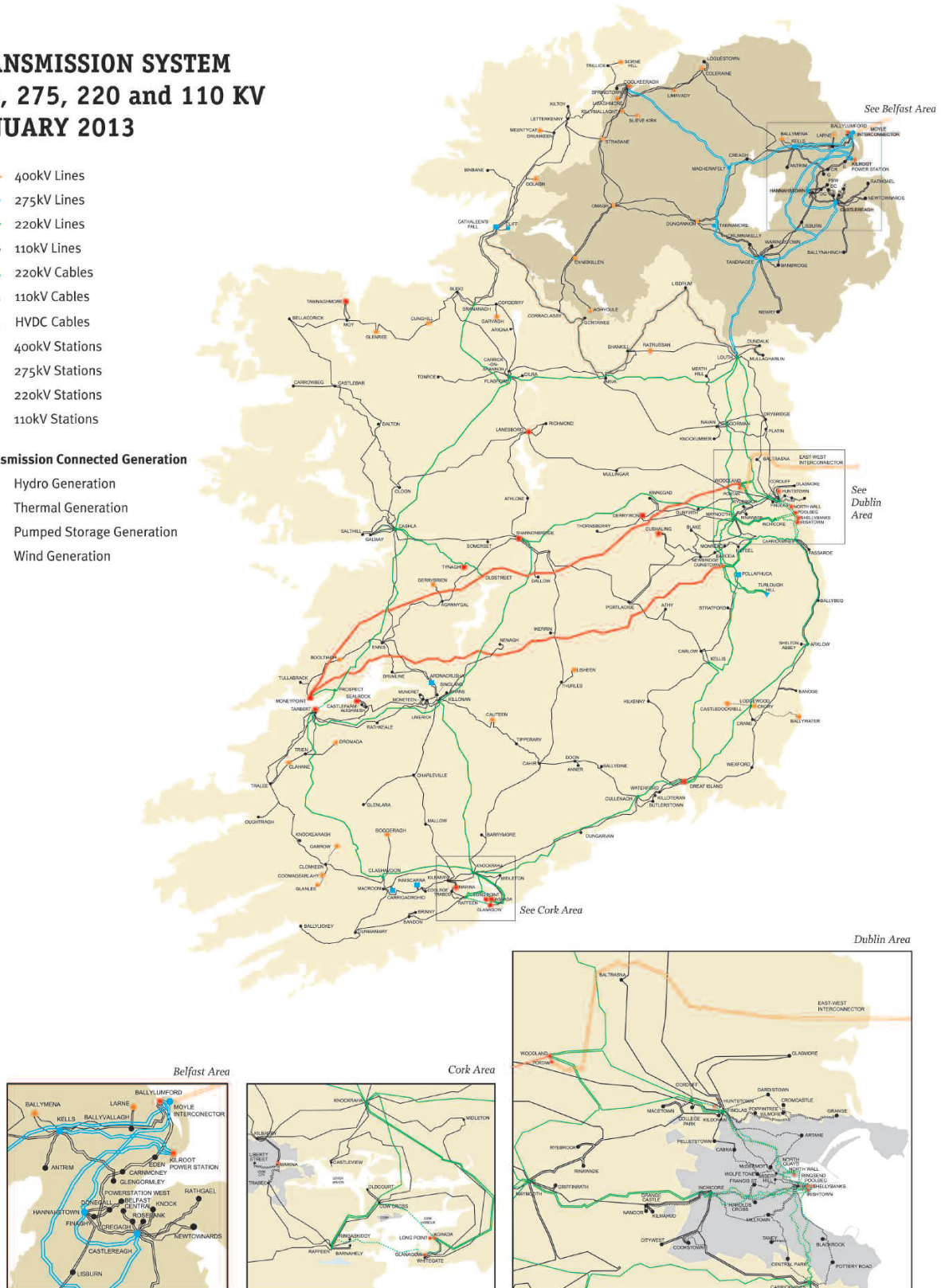
Map of Ireland's national electricity grid, operated/managed by EirGrid, and regulated by the Commission for Energy Regulation (CER). SONI operates the system in the north.

### TRANSMISSION SYSTEM 400, 275, 220 and 110 KV JANUARY 2013

- 400kV Lines
- 275kV Lines
- 220kV Lines
- 110kV Lines
- - - 220kV Cables
- - - 110kV Cables
- - - HVDC Cables
- 400kV Stations
- 275kV Stations
- 220kV Stations
- 110kV Stations

#### Transmission Connected Generation

- Hydro Generation
- Thermal Generation
- ▼ Pumped Storage Generation
- Wind Generation



To view the All-island Electricity Grid map, please visit: <http://www.eirgrid.com/media/All-IslandTransmissionMap.pdf>

## Appendix D: Overview of SEA, EIA and AA and relevance to National Heritage.

This appendix examines the main methods and processes of environmental assessment in Ireland, under the provisions of a number of EU Directives, as they relate to our national heritage, including:

1. **Strategic Environmental Assessment (SEA);**
2. **Environmental Impact Assessment (EIA); and**
3. **Appropriate Assessment (AA).**

The term *biodiversity, cultural heritage* (including architectural and archaeological heritage), and *landscape, and the inter-relationship between these factors* are used throughout this paper as this is the wording used in the *EU SEA Directive 2001/42/EC*<sup>89</sup> of 27th June 2001, i.e. Strategic Environmental Assessment of Plans and Programmes. For example, the SEA Environmental Report (SEA Directive, Article 5 - Annex 1 (f)) requires an assessment of:

*'the likely significant effects\* on the environment including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors...'*

*\*These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative.*

In addition, the SEA Directive makes provision for the assessment of the effects of plans and programmes *"on areas or landscapes which have a recognised national, community or international protection status"*.

(Source: SEA Directive 2001/42/EC, Annex I (f) and Annex II (2)). The EU SEA Directive and its relationship with heritage planning and management are examined below along with EIA and AA.

### 1. Strategic Environmental Assessment (SEA)

In Ireland, the environmental assessment of proposed on-shore wind farm development is dealt with at a *plan/programme level* through Strategic Environmental Assessment (SEA), as required under the *EU SEA Directive 2001/42/EC*. SEA was introduced into Ireland in July 2004 through S.I. Nos. 435/436 of 2004, as amended by S.I. Nos. 200 & 2001 of 2011.

SEA aims to provide for a high level of protection of the environment and to promote sustainable development<sup>90</sup> or sustainability, by contributing to the integration of environmental considerations into the preparation and adoption of specified Plans and Programmes (Source EPA). Essentially, Strategic Environmental Assessment/SEA looks at the broad picture. 11 sectors are specified in the EU SEA Directive including energy and town & country planning or land use, e.g. Off-shore Renewable Energy Development Plan (OREDPP), County Development Plans (CDPs)<sup>91</sup>.

The core principle of SEA is to ensure that plans and programmes likely to have significant effects on the environment are made subject to an environmental assessment, prior to their approval or authorisation. In addition, consultation with the public and key stakeholders is a key feature of the assessment - it is likely that enhanced public participation and engagement in the SEA system and process will become more important due to Ireland's ratification of the *UNECE Aarhus Convention* in June 2012. According to EPA SEA Guidance (2003<sup>92</sup>), SEA has four key stages as summarised below.

### Summary of SEA Stages

Stage	Overview	Output
Stage 1	Screening of Plans and Programmes - applying environmental significance criteria	Screening Statement
Stage 2	Scoping of SEA	Scoping Report
Stage 3	Identification, Prediction, Evaluation and Mitigation of Potential Impacts, e.g. nature of impact, scale, geographic scope, duration, reversibility, and probability	Draft SEA Environmental Report (including Quality Review)
Stage 4	Consultation, Revision and Post-Adoption Activities, e.g. ongoing monitoring.	SEA Statement

N.B. This guidance was prepared before Ireland ratified the UNECE Aarhus Convention in June 2012.

<sup>89</sup> The EU SEA Directive 2001/42/EC can be accessed at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2001:197:0030:0037:EN:PDF>

<sup>90</sup> It should be noted that the *Planning and Development Act 2000* does not provide a definition of 'sustainable development'.

<sup>91</sup> It should be noted that the *National Development Plan 2007-2013* was not subject to a SEA. The Heritage Council had recommended that the plan should be subject to a SEA.

<sup>92</sup> *Development of Strategic Environmental Assessment (SEA) Methodologies for Plans and Programmes in Ireland*, prepared on behalf of the EPA by ERM, 2003.



### SEA and our National Heritage

SEA examines the impact of a plan/programme on *landscape, cultural heritage and natural heritage/biodiversity* and the inter-relationship between heritage elements and other environmental considerations. It should be noted that SEA **does not cover policy in Ireland**. The potential impact of onshore wind farms on landscape and cultural heritage is examined further below.

**Landscape** is considered a key environmental issue under the provisions of SEA. However, Ireland is currently without a National Landscape Policy and Strategy, or National Landscape Plan, or any Regional Landscape Assessments, as part of the National Spatial Strategy (NSS, scrapped in February 2013) or Regional Planning Guidelines (RPGs) process. In addition, Ireland is without any finalised landscape character assessment guidelines as the current Section 28 Landscape and Landscape Assessment Guidelines have been in draft format since their publication in 2000 - the guidelines also predate the European Landscape Convention (ELC).

The EPA SEA Unit undertook a review of the effectiveness of SEA in Ireland, which was published in 2012<sup>93</sup>. Consultation with the Unit in July 2013 confirms that the **protection of cultural heritage under SEA is less robust than desired in Ireland compared to the protection of natural heritage, which is given significant protection under various EU Directives** - we return to the management of natural heritage in the following section. The EPA's *SEA Action Plan 2012-2016*, which was prepared as a result of the SEA Review, recommends the formulation of *Key Performance Indicators (KPIs) to evaluate SEA Effectiveness in Ireland*. It is anticipated that these KPIs will be prepared by 2015. The Heritage Council is collaborating with the EPA in this regard.

### Environmental Monitoring

In Ireland, there are a variety of sources of environmental monitoring data at county, regional and national levels, and the EPA produces a range of indicator data in the following reports:

- State of the Environment Reports (every 4 years, next report due 2016);
- Environment in Focus Reports (every 4 years, next report due 2014);
- Sectoral Indicator Reports (e.g. Transport, Rural Indicators); and
- Annual Water Quality, Air Quality and Waste Reports.

## 2. Environmental Impact Assessment (EIA)

Environmental Impact Assessment (EIA) was introduced under EU Directive 85/337/EEC and transposed into Irish Planning Law in 1988. An overview of EIA implementation is provided below.

### EIA in Ireland

EC Directive 85/337/EEC came into force in Ireland on the 3rd July 1988. The European Communities (Environmental Impact Assessment) (Motorways) Regulations, 1988 gave effect to the Directive for motorway projects. The European Communities (Environmental Impact Assessment) Regulations 1989 provided for the incorporation of the Directive into Irish law. The Local Government (Planning and Development) Regulations, 1990 which came into effect on 1st February 1990, set out the detailed requirements for EIA in respect of application for planning permission and planning appeals and also established procedures for EIA with regard to developments by or on behalf of local authorities.

EIA or 'Project EIA' as it is often known, is an important precautionary procedure to ensure that the likely effects and impact of new development on the environment (including national heritage) are fully understood and taken into consideration before the development is permitted to go ahead. EIA addresses specific, direct cause-effect relationships between a proposed development and the *receiving environment*. Broadly speaking, the more environmentally sensitive the location, the more likely it is that the effects and impact of development will be significant and that EIA will be required. Ultimately, EIA seeks to promote a sustainable pattern of physical development and landuse. The key differentiation between EIA and EIS is as follows:

- Environmental Impact Assessment - the '*Process*'; and
- Environmental Impact Statement - the '*Output*' (including Non-Technical Summary), which is normally submitted to support the Planning Application.

The provisions for EIA (EIS) in Ireland are set out in Part X of the *Planning and Development Act 2000*. The thresholds for an EIA are set out in Schedule 5 of the *Planning and Development Regulations 2001*. Sub-threshold EIAs can also be prepared, if deemed necessary by the local authority or An Bord Pleanála. Information to be contained in an EIS is set out in Schedule 6 of the *Planning and Development Regulations 2001*.

<sup>93</sup> See <http://www.epa.ie/pubs/advice/ea/reviewofeffectivenessofseainireland-mainreport.html>, authors RPS Group.

### EIA/EIS and our National Heritage

An EIA/EIS must contain a description of the aspects of the environment likely to be significantly affected by the proposed development, including in particular:

- human beings, **fauna and flora**,
- soil, water, air, climatic factors and **the landscape**,
- **material assets, including the architectural and archaeological heritage, and the cultural heritage**,
- the inter-relationship between the above factors.

An EIS also must contain a description of the likely significant effects and impacts including **direct, indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative of the proposed development on the environment resulting from:**

- the existence of the proposed development,
- the use of natural resources,
- the emission of pollutants, the creation of nuisances and the elimination of waste, and a description of the forecasting methods used to assess the effects on the environment.

However, it is submitted that EIA in Ireland is not robust enough in relation to landscapes and cultural heritage. The EPA's SEA Action Plan 2012-2016 recommends the preparation of a Best Practice Guidance Note on the Role of SEA in informing Project Level EIA during 2013-2016.

### 3. Appropriate Assessment (AA)

Appropriate Assessment or AA applies at plan and project level. AA is the primary mechanism for ensuring the protection of Natura 2000 sites (i.e. natural heritage) and their conservation objectives when considering whether to authorise or adopt a plan or project. The requirement for AA derives from the Birds Directive 2009/147/EC (codified version of 79/409/EEC) and the Habitats Directive 92/43/EEC.

According to the DoAHG (NPWS)<sup>94</sup> (formerly within the DoEHLG), it is '*a basic responsibility of all agencies of the state, including planning authorities, to act diligently to ensure that their decisions in the exercise of their functions, as well as their actions, comply fully with the obligations of the Habitats Directive*' (Source: DoEHLG, 2009).

Article 6(3) of the *Habitats Directive* requires an appropriate assessment (also referred to as 'Habitats Directive Assessment' or 'Natura 2000 Assessment') to be carried out, where any plans or projects that are not directly linked to the management of a Natura 2000 site, may have a significant effect (either on its own or in combination with other plans or projects) on the conservation objectives and would ultimately affect the integrity of the site.

Integrity can be defined as '*the ability of the site to fulfil its function to continue to support protected habitats or species*'. Annex I to the *Habitats Directive* includes a full list of protected habitats and Annex II of protected species. The Natura 2000 Network in Ireland is made up of European Sites, which include:

### Natura 2000 Sites:

<b>Special Area of Conservation (SAC)</b>	A Special Area of Conservation (SAC) is a site designated under the European Union Habitats Directives. The main aim of the Habitats Directive is to conserve the best examples of natural and semi natural habitats and species of flora and fauna throughout the EU. Each member state is required to designate Special Areas of Conservation to protect those habitats and species which are listed in the annexes of the Directive. Irish annexed habitats include raised bogs, blanket bogs, turloughs, sand dunes, machair (flat sandy plains on the north and west coasts), heaths, lakes, rivers, woodlands, estuaries and sea inlets. The 25 Irish species which must be afforded protection include Salmon, Otter, Freshwater Pearl Mussel, Bottlenose Dolphin and Killarney Fern.
<b>Candidate Special Area of Conservation</b>	These are candidate sites for designation under the EU Habitats Directive. They are fully protected by law once the Minister has given notice of his intention to designate the sites, and are part of the Natura 2000 network.

(Source: Heritage Council Community-led VDS Toolkit, Fact Sheet No. 2.

[http://www.heritagecouncil.ie/fileadmin/user\\_upload/Publications/Planning/VDS\\_Toolkit\\_2012/Factsheet\\_No2\\_Web.pdf](http://www.heritagecouncil.ie/fileadmin/user_upload/Publications/Planning/VDS_Toolkit_2012/Factsheet_No2_Web.pdf))

<sup>94</sup> The 2009 Guidelines were produced as a result of ECJ Case-418/04 - see <http://curia.europa.eu/juris/liste.jsf?language=en&jur=C,T,F&num=418/04&td=ALL>.

## Natura 2000 Sites (cont.):

<b>Special Protection Area (SPA)</b>	A Special Protection Area or SPA is a site designated under the European Union Directive on the Conservation of Wild Birds. The objective of the Directive is to protect and manage all species of wild birds within the European Union. Member States have to take measures to maintain bird populations. Different species of bird are included in different Annexes to the Directive and the Annex in which a species is included determines the type of protection that applies to the species.
<b>Candidate Special Protection Area</b>	This is similar in principle to the Candidate Special Area of Conservation - cSAC.

(Source: Heritage Council Community-led VDS Toolkit, Fact Sheet No. 2.

[http://www.heritagecouncil.ie/fileadmin/user\\_upload/Publications/Planning/VDS\\_Toolkit\\_2012/Factsheet\\_No2\\_Web.pdf](http://www.heritagecouncil.ie/fileadmin/user_upload/Publications/Planning/VDS_Toolkit_2012/Factsheet_No2_Web.pdf))

It is important to note that the Natura 2000 network is not static but varies. The DoAHG is monitoring the requirements re. additional designations and re-designations, etc. AA Guidance for local authorities was published by the DoEHLG (now the DoAHG) in 2009<sup>95</sup>.

### AA and National Heritage

AA is relevant to the planning and management of natural heritage assets and their role in the creation of living landscapes. Of particular importance for this study are natural heritage assets in upland areas and bogs but the evolution in wind turbine technology has recently resulted in lower altitudes also being considered for wind farm developments. The EPA's *SEA Action Plan 2012-2016* recommends convening an annual SEA/AA Conference every 3 years (the first one will be held in 2014) and annual Regional SEA/AA Fora for Land use Plans. **It should be noted that unlike natural heritage, there is no equivalent or stand alone environmental assessment process for the protection of 'cultural heritage' in Ireland.**

all three approaches adopt the 'precautionary principle' to environmental protection and have significance relevance to the on-going management of our national heritage. A summary of the approaches and their relevance to national heritage is provided in the table below.

## 4. Summary of SEA, EIA and AA

In summary, SEA, EIA and AA are important statutory environmental assessment procedures aimed at promoting the delivery of sustainable development and environmental sustainability in Ireland - as noted above,

### Summary of SEA, EIA and AA and relevance to National Heritage

Approach	Plans	Project-level	Landscapes	Cultural Heritage	Natural Heritage/ Biodiversity
SEA	✓	X	✓	✓	✓
EIA	X	✓	✓	✓	✓
AA	✓	✓	✓	X	✓

<sup>95</sup> See <http://www.npws.ie/planning/appropriateassessment/>.

## Appendix E: Potential Impacts of Onshore Wind Farms on Bats.

### Possible impacts on bats relating to siting

Impact	Summer Time	During Migration
Loss of hunting habitats during construction of access roads, foundations, etc.	Small to medium impact, depending on the site and species present at that site.	Small Impact
Loss of roost sites due to construction of access roads, foundations, etc.	Probably high or very high impact, depending on the site and species present at that site.	High or very high impact

### Possible impacts related to operating the wind farm

Impact	Summer Time	During Migration
Ultrasound emission.	Probably a limited impact.	Probably a limited impact
Loss of hunting areas because the bats avoid the area.	Medium to high impact.	Probably a minor impact in spring, a medium to high impact in autumn and hibernation period.
Loss or shifting of flight corridors.	Medium impact.	Small impact.
Collision with rotors.	Small to high impact, depending on the species	High to very high impact.

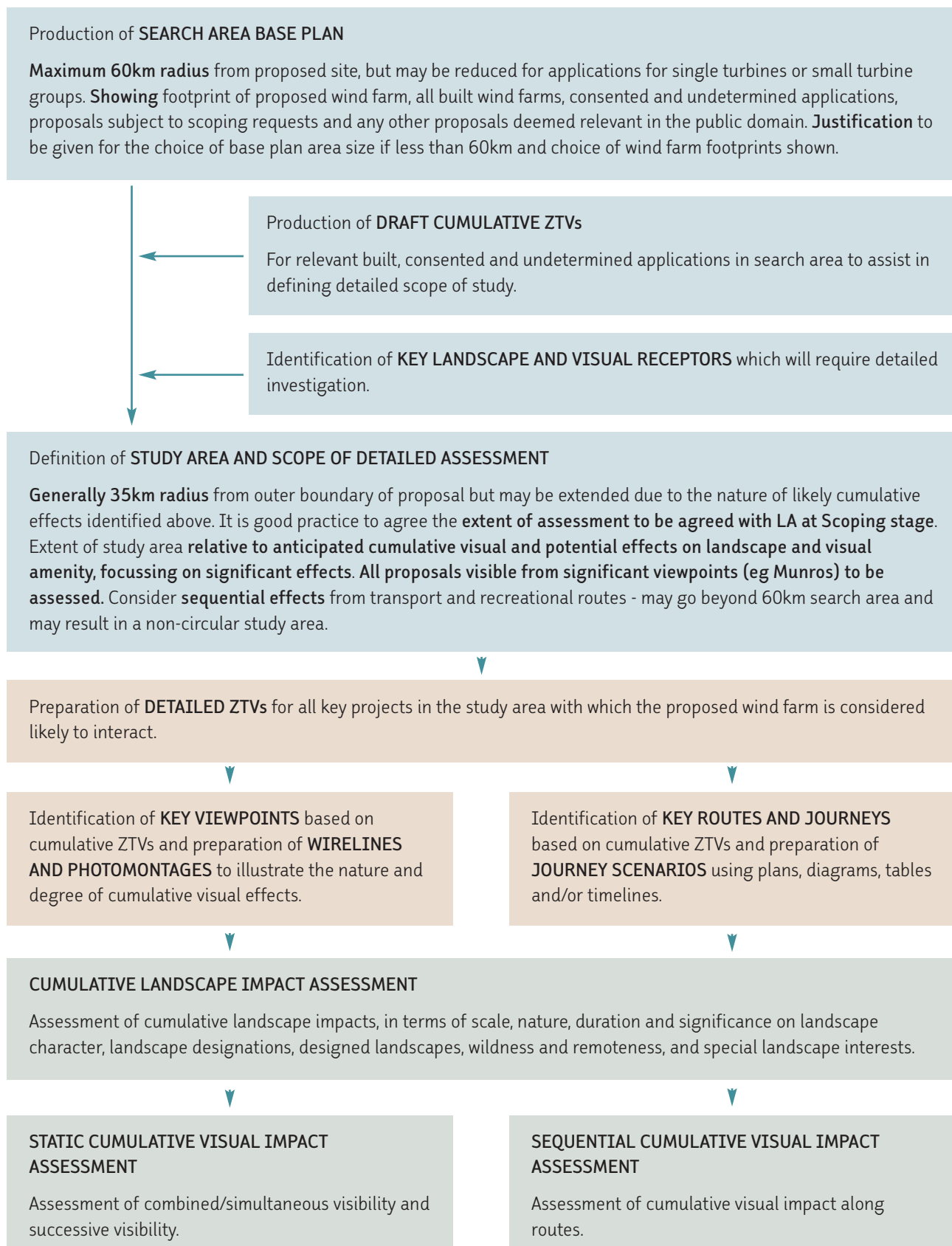
(Source: EU Guidance Document, *Wind Energy Developments and Natura 2000*, 2011, page 38.)

## Appendix F: Overview of relevant EU Climate and Energy Policy – Directives, Green Papers (2009-to date).

Title	Adopted	Actions Required
Green Paper 2030	Mar 2013	<p>The aim of the <i>EC Green Paper – A 2030 Framework for Climate and Energy Policies</i> is to consult stakeholders to obtain evidence and views to support the development of the 2030 Framework including lessons from the current energy framework. The 2030 Framework is important for three main reasons:</p> <ol style="list-style-type: none"> <li>1. In order to provide certainty for investors and to reduce regulatory risk;</li> <li>2. To support progress towards a competitive economy and secure energy system by creating demand for low carbon technologies, R&amp;D, etc., thereby reducing the economic cost (direct and indirect); and</li> <li>3. The Framework is also required in order to negotiate on a planned legally-binding international agreement on climate action in 2015.</li> </ol> <p>In addition, the Green Paper asks the following questions:</p> <ul style="list-style-type: none"> <li>- What type, nature and level of climate and energy targets should be set for 2030?</li> <li>- How can coherence between different policy instruments be attained?</li> <li>- How can the energy system best contribute to EU competitiveness?</li> <li>- How can Member States' different capacities to act be taken into account?</li> </ul> <p>On the basis of the views expressed by Member States, EU institutions and stakeholders, the Commission intends to table the EU's 2030 framework for climate and energy policies by the end of 2013.</p>
Energy Roadmap 2050	Dec 2011	<p>The EC Roadmap states that the pattern of energy production and use in 2050 is already being set, the task of developing post-2020 strategies at a European level is urgent as infrastructure built 30-40 years ago needs to be replaced. The Roadmap is concerned with:</p> <ul style="list-style-type: none"> <li>- transforming the energy system in Europe - e.g. switching to renewable energy sources including ocean energy and increasing the size of off shore wind turbines and blades ;</li> <li>- rethinking energy markets - creating an interconnected and integrated internal energy market;</li> <li>- mobilising investors - adopting a unified and effective approach to energy sector incentives;</li> <li>- engaging the public is crucial; and</li> <li>- driving change at the international level and define 2030 policy framework.</li> </ul>
Energy 2020	Nov 2010	<p>This strategy, a precursor to the Energy Roadmap 2050, highlights that the EU is the world's largest energy importer. It sets out initial policy decisions which will be needed to meet existing 2020 energy objectives, including five priorities:</p> <ol style="list-style-type: none"> <li>1. Achieving an energy efficient Europe;</li> <li>2. Building a truly-pan European integrated energy market;</li> <li>3. Empowering consumers and achieving the highest level of safety and security;</li> <li>4. Extending Europe's leadership in energy technology and innovation; and</li> <li>5. Strengthening the external dimension of the EU energy market.</li> </ol>
EU Directive 2009/28/EC	Apr 2009	<ul style="list-style-type: none"> <li>- Requires Member States to prepare National Renewable Energy Action Plans (NREAPs) - including strategic goals, targets and key actions underway and planned for 2020. These action plans must be submitted to the EC by the 30th June 2010; and</li> <li>- Requires Member States to prepare Progress Reports every two years - including updates on policy and regulatory changes and barriers to progress.</li> </ul>

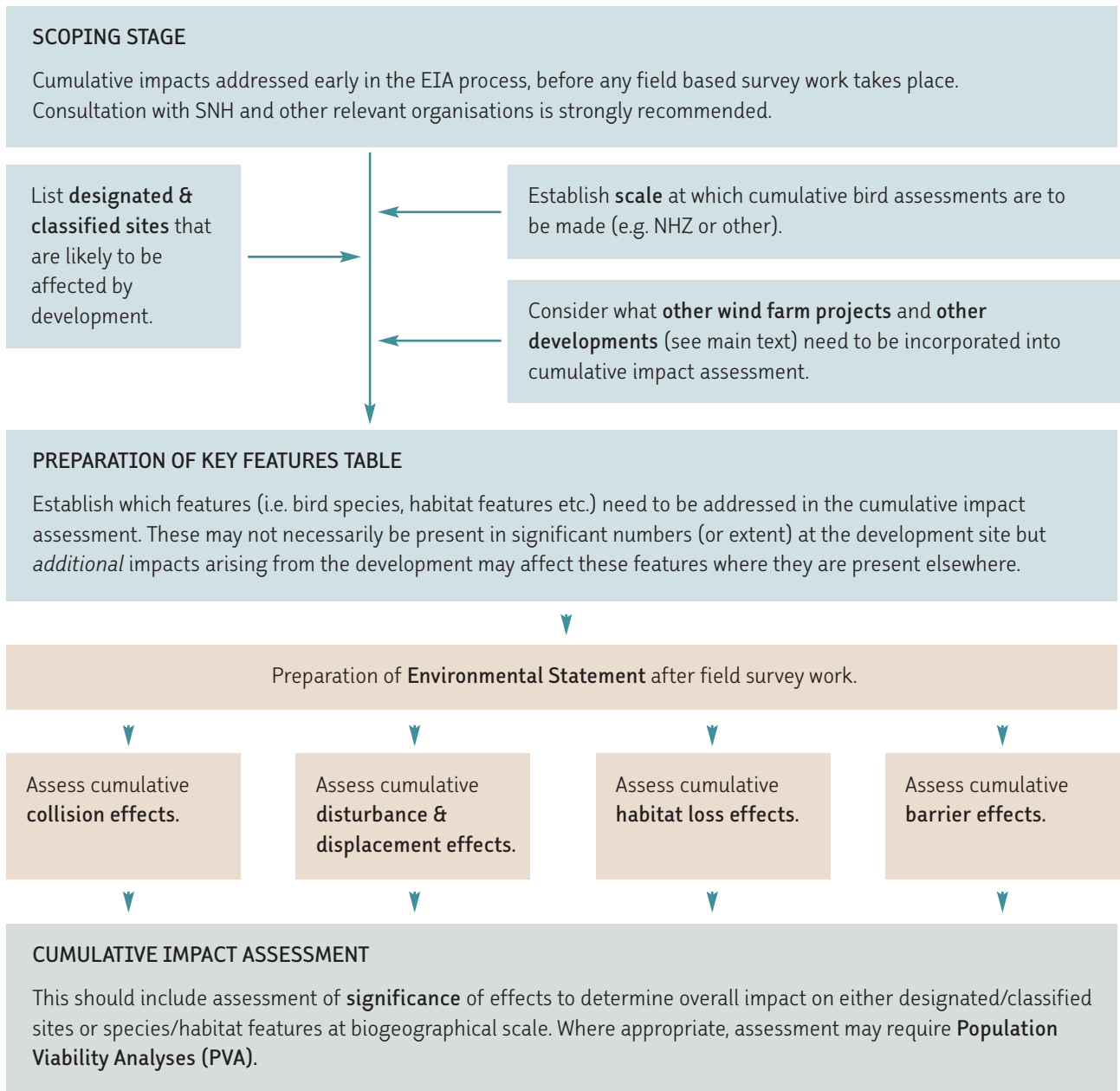
## Appendix G: Scottish Natural Heritage Flowcharts from Assessing the Cumulative Impact of Onshore Wind Energy Development, (March 2012).

Figure 1 - Flow chart summarising Cumulative Landscape Visual Impact Assessment (CLVIA) for wind farms



Source: <http://www.snh.gov.uk/docs/A675503.pdf> page 13.

Figure 2 - Flow chart summarising cumulative assessment for birds



Source: <http://www.snh.gov.uk/docs/A675503.pdf> page 28.

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