



**Interim guidelines when assessing proposals
for the development of wind turbines**

Revised version adopted in December 2012

Daventry District Council

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1. Introduction

Purpose of this document

- 1.1 The Government's Renewable Energy Strategy (2009) has committed the UK to sourcing 15% of its total energy from renewable sources by 2020. Projections suggest that by 2020 about 30% of our electricity could come from renewable sources compared with 6.7% in 2009. The Government believes that the deployment of renewables will help the UK tackle climate change by reducing emissions of carbon dioxide and help the country move towards a low carbon economy.
- 1.2 Renewable energy generation is likely to come from various sources including offshore and onshore wind, biomass, energy from waste, and wave and tidal. Of these, onshore wind generation is the most established though offshore wind is expected to provide the largest single contribution towards the 2020 renewable energy targets.
- 1.3 These national targets have led to considerable recent interest in proposing wind turbines in and around Daventry District and this trend is likely to continue. This document therefore focuses solely on this particular source of renewable energy.
- 1.4 When considering proposals for wind turbines the District Council has the difficult task of trying to balance objectives that are sometimes conflicting. On the one hand there is the national policy to increase the proportion of energy from renewable sources in order to address climate change. On the other hand there is the need to protect local heritage assets, attractive landscapes and sites of nature conservation value from any adverse impacts. Furthermore there is the possible effect of the development on visual and local amenity, particularly in respect of noise, shadow flicker and traffic generation. Whilst some of these issues may be reduced through mitigation, the overall impact might still be unacceptable. Any benefits arising from wind farm proposals must therefore be weighed against their potential harm.
- 1.5 This document therefore sets out the factors that the District Council will take into account when dealing with such proposals and the criteria that will be used in reaching a decision. In addition it is hoped that the guidance will provide a framework for both developers submitting planning applications as well as local communities and other interested parties invited to comment on a proposal.

Role of the Local Planning Authority

- 1.6 A planning application for a wind turbine development of up to 50MW of installed capacity will be determined by Daventry District Council under the Town and Country Planning Act 1990. The District Council may also be consulted on proposals in surrounding areas.
- 1.7 The Infrastructure Planning Commission previously considered applications for a development over 50MW and the District Council are then a statutory consultee.

- 1.8 Under the Localism Act 2011, the Infrastructure Planning Commission was abolished on 1 April 2012. Its functions were transferred to the Planning Inspectorate on that date and are now delivered by its National Infrastructure Directorate with decisions taken by the Secretary of State.

Response to the Consultation Draft

- 1.9 The District Council's Strategy Group considered the initial draft document at its meeting on 14 October 2010, and approved it as the basis for public consultation.
- 1.10 The six-week consultation period closed on 3 December 2010. There were 44 respondents from parish councils, the energy industry, statutory consultees, environmental bodies and various individuals. They provided nearly 500 individual comments, each ranging from a few sentences to very long and detailed responses.
- 1.11 The overall response was considered by Strategy Group at its meeting on 17 February 2011 along with the proposed modifications to the consultation draft in the light of comments received. The document was eventually adopted by full Council at its meeting on 3 March 2011.

Refresh of the Guidelines

- 1.12 Since that time the policy context has further changed, with the replacement of all national guidance (in the form of Planning Policy Guidance and Planning Policy Statements) with a single statement of policy, the National Planning Policy Framework. In addition work has progressed on the West Northamptonshire Joint Core Strategy. In particular Policy S11, which deals with low carbon and renewable energy. This particular policy was one of a number of proposed changes to the Pre-Submission version of the document. These proposed changes were the subject of further public consultation by the Joint Planning Unit during July and August 2012. It is intended that the Joint Core Strategy will be submitted to the Secretary of State for Examination in December 2012 and the plan adopted in October 2013.
- 1.13 Given these changes to the planning policy context since the adoption of the Interim Guidelines, it was felt appropriate to undertake a refresh. Prior to this the Council undertook a further period of public consultation in July 2012. The outcome of this consultation was reported back to full Council on 6 December 2012, who adopted this revised and updated version of the Interim Guidelines.

Status of the Document

- 1.14 This document is not a Supplementary Planning Document (SPD) and does not form part of the Local Development Framework.
- 1.15 Once adopted the Joint Core Strategy will provide the policy basis for assessing proposals for wind turbines. The Daventry Settlements and Countryside Local Plan will eventually supplement the policies and proposals in the Joint Core Strategy. In the meantime this document will be taken into account as giving practical or illustrative interim guidance. It is consistent with the National Planning Policy Framework, development plan policies and other

material considerations. The aim of this document is therefore to provide clarification not set new policy.

Structure of the document

- 1.16 Section 2 outlines the District Council's guidelines when assessing proposals for wind turbines. The rest of the document then provides further explanation as to how this framework has been derived. Section 3 briefly looks at the background to wind turbines and the technology involved. Section 4 then outlines the planning policy context at the national, regional and local level. Finally Section 5 looks at the criteria in more detail and covers such issues as potential national benefits and detailed design issues. For ease of reference, the criteria are listed in the same order as the guidelines in Section 2.
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2. Guidelines when assessing the development of wind turbines

- 2.1 The District Council acknowledges the seriousness of climate change and the need to reduce carbon emissions in the area. The District Council also accepts the potential contribution of renewable energy to cut CO₂ emissions.
- 2.2 However the District Council also acknowledges that wind turbines could also have an adverse impact on the locality. There is the possible effect of the development on visual and residential amenity, particularly in respect of the impact on the landscape (including any cumulative impact) and issues of traffic, noise and vibration, and shadow flicker. There could also be significant implications for nature conservation. The District Council therefore has to consider whether the benefits of the development would be outweighed by any harm identified.
- 2.3 In accordance with policies in the development plan, the National Planning Policy Framework and other material considerations, proposals for wind turbines will be assessed against the following guidelines:

The District Council will only support a proposal for the development of a wind turbine or wind farm in or around Daventry District if it meets the following criteria and issues of detail:

- a) **it brings demonstrable national and local benefits in terms of environmental, economic and social factors, and contributes to national renewable energy production targets in terms of addressing climate change;**
- b) **it does not have a significant adverse impact on:**
- **local amenity in respect of noise, vibration and shadow flicker**
 - **historic environment and heritage assets including their setting**
 - **visual amenity**
 - **landscape character**
 - **access to the countryside**
 - **biodiversity and nature conservation**
 - **soils, hydrology and water quality**
 - **flood risk**
 - **national and local designations;**
- c) **the siting and design of:**
- **access and the traffic generated during construction and operation**
 - **anemometer masts**
 - **grid connection**
 - **wind turbines, including their height, type and number**
 - **associated infrastructure and buildings**
- minimise intrusion to acceptable levels;**

- d) the cumulative effect of wind turbines in and around the District, including their collective visibility, is acceptable;**
- e) the developer has meaningfully engaged and responded to the local community on the layout and design of proposals; and**
- f) provision has been made for the removal of the facilities and re-instatement of the site when it has ceased to be operational.**

2.4 The remainder of the document provides context and further explanation as to how these guidelines have been derived.

3. Background

- 3.1 The following background information reflects the current position. However technological advances may soon render it out of date.

Operational and structural information

- 3.2 Almost all wind turbines that produce electricity have rotor blades, which rotate around a horizontal hub. The hub is connected to a generator (either directly or through a gearbox) that is located inside the nacelle, which is the large part at the top of the tower where electrical components are located. In some instances, turbines have electrical components outside of the turbine tower.
- 3.3 Wind turbines face into the wind that turns the blades round, spinning the shaft that connects to a generator that produces electrical energy from mechanical energy. The blades can rotate at up to around 22 revolutions per minute. The majority of modern wind turbines have three blades as this design has been found to have a greater aesthetic acceptability. The disadvantage is that each blade can add to the overall cost and weight and can be more difficult to install. Two bladed machines are cheaper and lighter with higher running speeds and they are easier to install. Two bladed machines can also be noisier and can appear 'jerky' when they turn. However two bladed machines are not typically used today.
- 3.4 The towers are mostly tubular and made of steel. The blades are made of glass-fibre reinforced polyester or wood-epoxy. The towers and blades are generally painted a matt light grey as this is regarded as the most inconspicuous colour under most lighting conditions. It also reduces reflected light.
- 3.5 Wind turbines are available in a range of capacities and sizes. The smallest, micro generators, have rotor diameters from about 1m to 5m. Turbines from about 5m rotor diameter to about 15 m diameter are commonly used singly and sometimes located near or associated with buildings. The Feed In Tariff program (which came into effect from April 2010) encourages organisations, individuals, companies and communities to generate their own electricity on a relatively small scale i.e. up to 5MW of capacity.
- 3.6 Large modern wind turbines have rotor diameters ranging up to 100 metres and towers tend to range from 25 to 120 metres in height, with bases up to 5m in diameter. Planning applications in the District have largely been for wind farms comprising 5 to 8 turbines with a tip height of up to 126m high.
- 3.7 Wind turbines usually start operating at wind speeds of 4 to 5 metres per second (around 10 miles an hour) and reach maximum power output at around 15 metres per second (around 33 miles per hour). At very high wind speeds turbines are shut down.
- 3.8 The country will need a mix of both onshore and offshore wind energy to meet the UK's challenging targets on climate change. The Renewable Energy Strategy (July 2009) identified that wind generation both onshore and offshore has an important role to play in the provision of renewable generation in the

UK. Wind energy is therefore a part of a wider strategy of reducing energy use, increasing efficiency and using other sources of renewable energy. At present, onshore wind is more economical compared with the development of offshore wind. Offshore wind farms take longer to construct, as the sea is a more difficult operating environment.

Climate change and wind power

- 3.9 Wind power is a relatively clean, renewable source of energy, which produces no greenhouse gas emissions or waste products whilst in operation. The UK currently emits 560 million tonnes of carbon every year and the Government target is to cut this by 60% by 2050 (Carbon Budgets announced April 2009). Power stations generate about a third of our carbon emissions and are the largest single contributor to carbon emissions, producing 170 million tonnes of carbon each year. Although wind turbines generate sustainable energy and no carbon is emitted during the production of electricity, from a life cycle perspective carbon will be emitted during manufacture, installation and decommissioning. However such carbon emissions are much less than those generated by conventional power stations.

Noise, health and safety

- 3.10 The evolution of wind farm technology over the past decade has produced much quieter mechanical noise from turbines, with the main sound being the aerodynamic noise of the wind passing the blades and the tower. There are guidelines on wind turbines and noise emissions known as ETSU-R-97 and any wind farm development must meet these noise requirements. Whilst sometimes criticised as being outdated, this is a commonly accepted benchmark for assessing proposals. The noise levels recommended by ETSU-R-97 are determined by a combination of absolute noise limits and noise limits relative to the existing background noise levels around the site at different wind speeds. Therefore noise limits will often influence the separation of wind turbines from residential properties.
- 3.11 Once constructed, wind energy has no associated emissions, harmful pollutants or waste products and land can continue to be used for growing crops or grazing livestock.
- 3.12 When the rotors of a turbine are between the sun and an observer they experience an intermittent shadow. This effect is known as 'shadow flicker'. The effect occurs when the shadow of the rotating blades falls over a building causing the light intensity within specific occupied rooms to fluctuate. This is not usually significant at distances of more than 10 rotor diameters from the turbine and usually lasts for only a relatively short time. The occurrence and duration of shadow flicker at a particular building is dependent upon wind speed (which determines frequency), wind direction (which causes a blade to be perpendicular to a building) and cloud cover (which must be thin enough to allow the sun to shine). However this effect can be disturbing to residents in homes, people in places of employment, or other sensitive locations. However, turbines can be programmed to shut down at times when flicker would occur and so there is no need for this to be a problem. Planning applications are expected to include measures that automatically prevent shadow flicker occurring at any residential dwellings or other sensitive locations, and a condition will normally be attached to any subsequent consent requiring that this be enforced.

Other sources of renewable energy

- 3.13 The technology associated with wind energy is relatively well advanced compared with other sources of renewable energy, and may change even further. In part this accounts for the recent emphasis on developing wind farms as the country seeks to address climate change. However other forms of renewable energy could emerge in the future as the technology improves. This might include bio mass and waste to energy. However this document only addresses the issues associated with proposals for the development of wind turbines.
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4. Planning Policy Context

- 4.1 This section briefly outlines the planning policy context at the national, regional and local level.

National Planning Policy Framework

- 4.2 The National Planning Policy Framework (known as the 'Framework') was published by the Government in March 2012 and replaced various national Planning Policy Statements and Planning Policy Guidance.
- 4.3 The Framework states that the Government continues to support a plan-led system with an emphasis on local plans. The Framework is a material consideration in planning decisions. It also points out that local plans must be consistent with the principles and policies set out in the Framework, including the presumption in favour of sustainable development.
- 4.4 To deliver sustainable development the Framework includes the following aims:
- Build a strong, competitive economy
 - Ensure the vitality of town centres
 - Support a prosperous rural economy
 - Promote sustainable transport
 - Support high quality communications infrastructure
 - Deliver a wide choice of high quality homes
 - Require good design
 - Promote healthy communities
 - Meet the challenge of climate change, flooding and coastal change
 - Conserve and enhance the natural environment
 - Conserve and enhance the historic environment
- 4.5 The Framework will be a material consideration when assessing planning applications, especially where is no up-to-date Local Plan in place.
- 4.6 The Framework states that Local Plans should be aspirational but realistic. They should address the spatial implications of economic, social and environmental change. They should also set out the opportunities for development and clear policies on what will or will not be permitted and where. Only policies that provide a clear indication of how a decision maker should react to a development proposal should be included in the plan.
- 4.7 Furthermore the Framework encourages early and meaningful engagement and collaboration with neighbourhoods, local organisations and businesses. It says that a wide section of the community should be proactively engaged, so that Local Plans, as far as possible, reflect a collective vision and a set of agreed priorities for the sustainable development of the area.
- 4.8 Section 10 of the Framework is entitled 'Meeting the challenge of climate change, flooding and coastal change'. Paragraphs 97 and 98 state as follows:

97. To help increase the use and supply of renewable and low carbon energy, local planning authorities should recognise the responsibility on all

communities to contribute to energy generation from renewable or low carbon sources. They should:

- have a positive strategy to promote energy from renewable and low carbon sources;*
- design their policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily, including cumulative landscape and visual impacts;*
- consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure the development of such sources;*
- support community-led initiatives for renewable and low carbon energy, including developments outside such areas being taken forward through neighbourhood planning; and*
- identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.*

98. When determining planning applications, local planning authorities should:

- not require applicants for energy development to demonstrate the overall need for renewable or low carbon energy and also recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and*
- approve the application if its impacts are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should also expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.*

National Policy Statement for Renewable Energy Infrastructure (EN-3)

4.9 A footnote to the above paragraphs in the National Planning Policy Framework states that when assessing the likely impacts of potential wind energy development when identifying suitable areas, and in determining planning applications for such development, planning authorities should follow the approach set out in the National Policy Statement for Renewable Energy Infrastructure (read with the relevant sections of the Overarching National Policy Statement for Energy Infrastructure, including that on aviation impacts). Where plans identify areas as suitable for renewable and low-carbon energy development, they should make clear what criteria have determined their selection, including for what size of development the areas are considered suitable.

4.10 EN-3 states that the key considerations involved in the siting of an onshore wind farm are likely to be influenced by the following factors;

- Predicted wind speed
- Proximity of site to dwellings
- Capacity of a site
- Electricity grid connection
- Access

4.11 In terms of impacts, the Statement covers the following factors:

- biodiversity and geological conservation
- historic environment
- landscape and visual
- noise and vibration
- shadow flicker
- traffic and transport

Regional Perspective

- 4.12 The East Midlands Regional Plan was adopted in March 2009 and took a positive approach towards the provision of renewable energy, including wind farms. It set out the Regional Priorities for Low Carbon Energy Generation as follows:

'Much of the Region could be suitable for the location of wind turbines subject to a number of criteria, including visual impact and the cumulative effect of a number of turbines and their actual size. Local Planning Authorities should not adopt policies that would in effect impose a blanket ban on on-shore wind energy projects. Instead they should establish the criteria, which guide and inform wind energy projects in order to achieve high quality, well planned developments. Policy 40 sets out the considerations that need to be addressed when drawing up local policies' (3.3.86).

POLICY 40

REGIONAL PRIORITIES FOR LOW CARBON ENERGY GENERATION

LOCAL AUTHORITIES, ENERGY GENERATORS AND OTHER RELEVANT PUBLIC BODIES SHOULD PROMOTE:

- **THE DEVELOPMENT OF COMBINED HEAT AND POWER (CHP) AND DISTRICT HEATING INFRASTRUCTURE NECESSARY TO ACHIEVE THE REGIONAL TARGET OF 511 MWE BY 2010 AND 1120 MWE BY 2020; AND**
- **THE DEVELOPMENT OF A DISTRIBUTED ENERGY NETWORK USING LOCAL LOW CARBON AND RENEWABLE RESOURCES.**

IN ESTABLISHING CRITERIA FOR ONSHORE WIND ENERGY, LOCAL PLANNING AUTHORITIES SHOULD GIVE PARTICULAR CONSIDERATION TO:

- **LANDSCAPE AND VISUAL IMPACT, INFORMED BY LOCAL LANDSCAPE CHARACTER ASSESSMENTS;**
- **THE EFFECT ON THE NATURAL AND CULTURAL ENVIRONMENT (INCLUDING BIODIVERSITY, THE INTEGRITY OF DESIGNATED NATURE CONSERVATION SITES OF INTERNATIONAL IMPORTANCE, AND HISTORIC ASSETS AND THEIR SETTINGS);**
- **THE EFFECT ON THE BUILT ENVIRONMENT (INCLUDING NOISE INTRUSION);**
- **THE NUMBER AND SIZE OF TURBINES PROPOSED;**
- **THE CUMULATIVE IMPACT OF WIND GENERATION PROJECTS, INCLUDING 'INTERVISIBILITY';**
- **THE CONTRIBUTION OF WIND GENERATION PROJECTS TO THE REGIONAL RENEWABLES TARGET; AND**
- **THE CONTRIBUTION OF WIND GENERATION PROJECTS TO NATIONAL AND INTERNATIONAL ENVIRONMENTAL OBJECTIVES ON CLIMATE CHANGE.**

- 4.13 However, the Government has announced that it intends to revoke Regional Strategies. Once revoked they will no longer form part of the statutory Development Plan or indeed the strategic planning context for Local Plans. Until that time, however, or the law is changed, all Local Plans have to be in 'general conformity' with the Regional Strategy for their area.

Northamptonshire Climate Change Strategy

- 4.14 The Northamptonshire Climate Change Strategy 2010-2014 sets out a framework for action by members of the Northamptonshire Partnership to:
- Raise awareness of the issue of climate change and its impact on Northamptonshire
 - Reduce greenhouse gas emissions across the county
 - Plan for and adapt to the predicted impacts of climate change.
- 4.15 The Strategy advocates that we plan for further reductions in the longer term. It aims to start the long-term process of achieving at least a 34% cut in emissions by 2020 and at least 80% reduction in emissions by 2050 compared to a 1990 baseline, in line with national targets and ultimately becoming a carbon neutral county.
- 4.16 In order to support action to adapt to climate change the strategy sets out to ensure that: key policies, strategies and plans, particularly for Northamptonshire's growth agenda, take account of the impact of climate change (are made "climate resilient").
- 4.17 In terms of renewable energy the document recommends that an 'Energy Strategy' is produced that draws together key information needed to understand the planning, transport and local issues surrounding the development of small and large-scale renewables throughout Northamptonshire. It suggests that an environmental constraints map is produced to show the locations in the county that are most feasible to accommodate renewable energy technologies, especially wind farms. It also asks that specific policies and guidance on the exploitation of renewable energy resources are included in all strategic and local development plans.
- 4.18 All the councils in Northamptonshire have adopted the strategy. It is not a formal planning policy document but could be a material consideration.
- 4.19 In 2012 the associated action plan was updated.

The Daventry District Local Plan

- 4.20 The local development plan consists of the saved policies of the Daventry District Local Plan (LP) adopted in 1997. Policies were last saved in 2007. However it does not contain a specific policy in respect of climate change and renewable energy. There are however a number of 'saved' policies in the Local Plan that may be appropriate when assessing the impact of such developments. For instance saved policy GN2 indicates that planning permission will normally be granted for development providing that, amongst other things, it will not adversely affect a building listed as being of architectural or historic interest and its setting. Similarly Policy EN1 designates certain areas on the Proposals Map as Special Landscape Areas,

where the District Council will seek to ensure that development does not adversely affect the character of the local landscape.

- 4.21 The adopted policies within the Local Development Framework will gradually replace the saved policies in the Local Plan.

West Northamptonshire Joint Core Strategy

- 4.22 The Joint Core Strategy (JCS) provides a planning framework for the West Northamptonshire area, which includes Daventry District, Northampton Borough and South Northamptonshire Council. It sets out the long-term vision and objectives for the whole of the area for the period up to 2026, and includes strategic policies for steering and shaping development. It identifies locations for strategic new housing and employment and details the infrastructure (such as transport improvements, schools, open space and community facilities) required to support this development.

- 4.23 In recent months there has been a number of significant reforms to the planning system as a consequence of the provisions in the Localism Act 2011 and the introduction of the Framework. Similarly, as a consequence of the Government's proposed revocation of the Regional Strategy, the amount of development now proposed in the Joint Core Strategy is significantly reduced from that proposed in earlier versions of the document. Within this context the West Northamptonshire Joint Planning Committee issued proposed changes to the Pre-Submission version of the Joint Core Strategy. The Proposed changes were published in August for public consultation. Submission of the Joint Core Strategy to the Secretary of State is anticipated in December 2012. Following the examination in public it is envisaged that the Joint Core Strategy will eventually be adopted in October 2013.

- 4.24 In terms of low carbon and renewable energy the draft WNJCS includes Policy S11 Low Carbon and Renewable Energy:

"A key part of the government's commitment to meet climate change targets is to reduce carbon emissions through greater use of energy efficiency in building construction and by increased use of low or zero carbon and renewable energy. The use of low carbon and renewable energy represents a significant opportunity over the plan period to reduce carbon emissions, help reduce fuel poverty and contribute to energy security. The Government has been working towards a target to achieve 15% of its total energy to be generated by renewable sources by 2020 and therefore, supports low carbon and renewable energy development across the UK, where the technology is viable and environmental, economic and social impacts are addressed satisfactorily.

To minimise the demand for resources and mitigate and adapt to climate change Objective 1 of this JCS encourages renewable energy production in appropriate locations. The use of low carbon and renewable energy and sustainable design approaches that enables adaptation to the effects of climate change over the lifetime of the development. This can be done through incorporating in buildings, low carbon "fabric first" approaches to energy efficiency, and then optimised on site or near site energy generation in appropriate locations. The use of low carbon sustainable building design and site planning of development also has a key role in optimising layouts to

increase passive solar energy gain, providing woodlands and trees and green infrastructure to act as windbreaks and carbon sinks and securing the integration of micro-generation technologies, such as solar thermal and/or photovoltaic panels.

A study has assessed the potential for the full range of renewable energy technologies in West Northamptonshire. With the exception of Northampton, onshore wind energy forms the largest potential renewable resource for West Northamptonshire. At the micro scale, combinations of solar/photo voltaic and heat pumps also have significant potential, especially when combined with fabric improvements to improve the energy efficiency of buildings sought through the Code for Sustainable Homes and Breeam (BRE Environmental Assessment Method) for non domestic buildings.

In the central areas of Northampton and Daventry, the greatest heat demand was identified, which could have potential for the development of decentralised energy networks. Daventry and South Northamptonshire were also identified as having potential for the generation of energy from biomass, in particular from energy crops and plant biomass. Northampton, as an urban area also has potential for the use of energy from waste, sewage gas and waste wood.

The deployment of larger scale low carbon and renewable energy schemes can have a range of positive or negative effects on nearby communities. They could provide landowners with the opportunity for rural diversification, deliver local jobs and opportunities for community based schemes and benefits. However, proposals can have a range of impacts that will vary depending on the scale of development, type of area where the development is proposed and type of low carbon and renewable energy technology deployed.

When considering planning applications for low carbon and renewable energy, an assessment will need to take account of impacts on landscape, townscape, natural, historical and cultural features and areas and nature conservation interests. Proposals should also use high quality design to minimise impacts on the amenity of the area, in respect of visual intrusion, noise, dust, and odour and traffic generation.

Low carbon and renewable energy provision to achieve Level 4 of the Code for Sustainable Homes is more viable than meeting higher Code levels and can be achieved through more stringent fabric standards and integrated dwelling level micro generation technologies. At higher levels of the Code for Sustainable Homes energy system options, include combinations of fabric improvements with a range of low carbon technologies, either at the building or at the neighbourhood scale.

For edge of town development, such as Sustainable Urban Extensions, there are a range of energy system options, using combinations of technologies both at the building and neighbourhood scales. In addition to building fabric and energy efficiency improvements on major development sites and in Sustainable Urban Extensions, opportunities for the deployment of combined Heat and Power and district level heating and cooling networks, should be taken where viable and appropriate.

From 2016, the Government proposes that all housing will need to meet the zero carbon homes standard when adopted, with potential on site; near site or off site low carbon and renewable energy schemes provided through a Community or Private Energy Fund. From 2019, it is also proposed that non-domestic buildings should meet the adopted zero carbon standard.

POLICY S11 - LOW CARBON AND RENEWABLE ENERGY

MAJOR DEVELOPMENT AND SUSTAINABLE URBAN EXTENSIONS SHOULD CONTRIBUTE TO REDUCTIONS IN CARBON EMISSIONS AND ADAPT TO THE EFFECTS OF CLIMATE CHANGE THROUGH THE SUSTAINABLE DEVELOPMENT PRINCIPLES (POLICY S10), SO AS TO MINIMISE ENERGY USING SUSTAINABLE DESIGN AND CONSTRUCTION, MAXIMISE ENERGY EFFICIENCY AND THE PROVISION OF LOW CARBON AND RENEWABLE ENERGY, INCLUDING WHERE FEASIBLE AND APPROPRIATE, PROVISION OF DECENTRALISED ENERGY.

LOCAL PLANNING AUTHORITIES SHOULD DEVELOP GUIDANCE TO SUPPORT THE DEVELOPMENT OF LOW CARBON AND RENEWABLE ENERGY RESOURCES. PROPOSALS SHOULD BE SENSITIVELY LOCATED AND DESIGNED TO MINIMISE POTENTIAL ADVERSE IMPACTS ON PEOPLE, THE NATURAL ENVIRONMENT, BIODIVERSITY, HISTORIC ASSETS AND SHOULD MITIGATE POLLUTION. IN ADDITION, THE LOCATION OF WIND ENERGY PROPOSALS SHOULD HAVE NO SIGNIFICANT ADVERSE IMPACT ON AMENITY, LANDSCAPE CHARACTER AND ACCESS AND PROVIDE FOR THE REMOVAL OF THE FACILITIES AND REINSTATEMENT AT THE END OF OPERATIONS.

ALL NEW RESIDENTIAL DEVELOPMENTS (INCLUDING MIXED USE) ARE REQUIRED TO ACHIEVE A MINIMUM OF LEVEL 4 STANDARD IN THE CODE FOR SUSTAINABLE HOMES AND TO ACHIEVE THE ZERO CARBON STANDARD FROM 2016 OR NATIONAL EQUIVALENT STANDARD, INCLUDING WHERE APPROPRIATE A CONTRIBUTION TO COMMUNITY OR PRIVATE ENERGY FUNDS.

ALL NEW NON-RESIDENTIAL DEVELOPMENTS OVER 500M² GROSS INTERNAL FLOORSPACE ARE REQUIRED TO ACHIEVE A MINIMUM RATING OF AT LEAST BREEAM (BRE ENVIRONMENTAL ASSESSMENT METHOD) VERY GOOD STANDARD (OR EQUIVALENT) OR ANY FUTURE NATIONAL EQUIVALENT ZERO CARBON STANDARD FROM 2019.

THESE REQUIREMENTS WILL APPLY UNLESS IT CAN BE DEMONSTRATED THAT THEY WOULD MAKE THE DEVELOPMENT UNVIABLE.

Daventry Settlements and Countryside Local Plan

- 4.25 This Local Plan will cover the entire District with the exception of the Northampton Related Development Area, which has been identified in the Joint Core Strategy to meet the housing needs of Northampton town. The proposed Sustainable Urban Extensions within this area will be dealt with through the associated masterplans.

- 4.26 The Local Plan will supplement the policies and proposals in the West Northamptonshire Joint Core Strategy. It can therefore only proceed to adoption if the Core Strategy has already been adopted. The programme for the preparation of this document is therefore dependant on progress being made on the completion of the Core Strategy.
- 4.27 The Local Plan will include policies to:
- establish a rural settlement hierarchy to support the retention and provision of local services and facilities;
 - distribute the agreed rural housing provision identified in the Joint Core Strategy across the District (which is likely to be in the order of 1,355 dwellings between 2011 and 2026);
 - support employment and the rural economy;
 - protect and enhance the natural, built and historic environment;
 - address sustainable development and climate change
 - regenerate and improve Daventry town.
- 4.28 It is intended that the Local Plan will be adopted in 2014. It will then become a statutory planning document that will supplement the strategic policies and proposals in the Joint Core Strategy and form part of the statutory Development Plan for the area. The Development Plan is the starting point in the consideration of planning applications for the development and use of land. Once adopted policies in the Local Plan will therefore have significant weight when assessing planning applications in the future.
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5. Planning Considerations

- 5.1 The criteria listed in the guidelines outlined in Section 2 are further described below, and follow the same overall headings and structure.

National and local benefits

- 5.2 The environmental benefits of wind energy are mainly linked to the contribution it has towards reducing the harmful impacts of climate change. National Policy states that such development should be promoted and encouraged rather than restricted, and it encourages renewable energy development across England where the technology is viable and environmental, economic and social impacts can be addressed satisfactorily.
- 5.3 The District Council therefore needs to take into account the national, regional and local benefits (environmental, social and economic) including the contribution to the need for energy infrastructure, job creation, and any long term or wider benefits. In order that the proposal can be properly evaluated, the District Council will expect applicants to demonstrate the overall net benefits of the proposal by providing suitable evidence. This should include supporting information in terms of how the proposal would contribute to national targets for renewable energy and CO₂ emissions over its lifetime. The predicted estimate of power generated (as opposed to power generation capacity) should be based on the disclosed wind data measured on site.

Impact on local assets

- 5.4 The District must also consider any adverse impacts (environmental, social and economic) including local impacts identified in the application or elsewhere.
- 5.5 Everyone in the country shares the benefits of renewable energy and the associated reduction in CO₂ emissions. However, it is local communities that are most directly affected by the development of wind turbines.
- 5.6 Wind energy developments could have a range of positive or negative effects on nearby communities. They could provide opportunities for rural diversification, provide local jobs and opportunities for community based schemes. However, a range of planning related issues are often raised as concerns by the local community. These include landscape and visual impacts over a wide area, noise, shadow flicker and effects on the local economy. Although the negative effects may be localised in nature or could be mitigated, developers need to consider if wind schemes will have a positive, negative or neutral effect on such issues.
- 5.7 If the District Council is satisfied that the adverse impacts identified (including any cumulative adverse impacts) outweigh the benefits of the proposed development (taking into account measures to avoid, reduce or compensate for those adverse impacts) consent will be refused.

Local amenity in respect of noise, vibration and shadow flicker

- 5.8 Commercial scale tip heights are large structures and can range from tip heights of 100m up to 150m. Similarly all wind turbines generate sound during their operation. As such, appropriate distances should be maintained between wind turbines and residential properties to protect residential amenity. The two main issues that determine the appropriate separation distances are therefore visual amenity and noise.
- 5.9 Factors that will determine the likely noise impact include:
- the inherent operational noise from the proposed development, and its characteristics
 - the proximity of the proposed development to noise sensitive premises (including residential properties, schools and hospitals) and noise sensitive areas (including certain parks and open spaces)
 - the proximity of the proposed development to quiet places and other areas that are particularly valued for their acoustic environment or landscape quality
 - the proximity of the proposed development to designated sites where noise may have an adverse impact on protected species or other wildlife.
- 5.10 Wind farms should be located so that any increase in ambient noise levels around noise sensitive developments are at acceptable levels in relation to existing background noise levels. The National Policy Statement for Renewable Energy Infrastructure (EN-3) states that an applicant's assessment of noise from the operation of the wind turbines should use ETSU-R-97, taking account of the latest industry good practice. The noise levels recommended by ETSU-R-97 are determined by a combination of absolute noise limits and noise limits relative to the existing background noise levels around the site at different wind speeds. Therefore, noise limits will often influence the separation distance of wind turbines from residential properties. Government advice is that ETSU-R-97 remains the applicable guidance for assessing and rating noise from wind energy developments. However the Government are reviewing its use.
- 5.11 Although it is commonly perceived that noise will cause an adverse impact on local amenity, well-specified and designed schemes can be sited with sufficient distance from noise sensitive development to ensure increases in ambient noise levels are acceptable. Improvements in technology have significantly reduced the level of mechanical noise produced.
- 5.12 When considering a proposal, developers should identify any noise sensitive receptors, such as residences, or quiet leisure based businesses, and carry out a noise assessment to determine whether or not there might be any potential impacts on them. If necessary, turbines should be sited at a suitable distance from such development so as not to cause undue harm. If this is not the case, developers should carry out design alterations to mitigate any unacceptable noise impacts.
- 5.13 Similar considerations may also apply to any vibration, which could potentially cause damage to buildings in the immediate locality. There is also concern that vibration from turbines can affect ground conditions. For instance if a turbine was located close to a railway then Network Rail would want to be assured that there is no potential instability of the embankments. They may therefore request that turbines be repositioned. The construction of the

towers, heavy blades, gearbox and generator as well as guy lines to hold the tower in place put strain on the ground at the base of the structure.

- 5.14 In terms of shadow flicker, account has to be taken of the impact on occupiers of dwellings in nearby settlements and properties around the proposed development. Concerns include the potential for visual distraction at home, in schools, places of work and other infrastructure (such as railways and roads). A key factor would be the distances involved and the particular orientation of buildings relative to the proposal, and whether it might present any noticeable problem. Regard must be had to the number of dwellings affected at certain times of the day, and impact through the year.
- 5.15 A planning condition will normally be imposed to ensure that shutting down the turbine when flicker would otherwise occur prevents any nuisance.

Historic environment and heritage assets

- 5.16 The historic environment is one of the District's greatest assets. It includes a varied and attractive historic landscape rich with a variety of archaeological features and a high quality built environment. Developers should consider the impact of their proposals for wind energy development, both during and after construction, on archaeology and cultural heritage, and the historic landscape, including designated Conservation Areas, Scheduled Ancient Monuments and Listed Buildings, and other non-designated sites and remains.
- 5.17 Effects may occur through direct damage to any underlying features from turbine foundations, access tracks, substation buildings and other associated structures. Development could also affect the settings of historic sites and compromise the setting of an historical landscape. Any development should therefore consider the effects it may have on the following aspects as part of the design and environmental assessment processes:
- archaeological remains
 - historical structures and buildings
 - designed gardens and landscapes
 - designated and undesignated sites and areas
 - effects on settings of designated and undesignated sites and areas
 - effects on the historic landscapes

Visual amenity

- 5.18 Large wind turbines close to residential properties are more likely to be dominant features and may be considered unacceptable in terms of visual amenity. In some instances existing features such as built form, topography and vegetation may be able to locally reduce the visual impacts of turbines. Nevertheless the local community may still consider the visual impact of the proposal unacceptable. The District Council will consider a range of viewpoints including significant residential locations, open space, public roads, rights of way and promoted routes. These viewpoints will have varying degrees of sensitivity. Residential properties and users of recreational routes/facilities are likely to be considered more sensitive as receptors. Road/rail users and industrial areas are likely to be considered less sensitive. Any visualizations (such as photomontages) prepared by the

developer to support this process must be accurate, follow best practice and include agreed viewpoints.

- 5.19 At this stage the District Council will not apply a minimum separation distance from all properties for visual amenity purposes (or indeed for noise or shadow flicker). The District Council will include a policy on windfarms in the Daventry Settlements and Countryside Local Plan, which may include reference to minimum separation distances. In the meantime each planning application will be considered on its individual merits and its impact on visual amenity assessed accordingly.
- 5.20 However the District Council will pay particular attention to the impact on visual amenity of residential properties (and other sensitive receptors) within a distance of 10 times the blade tip height of a wind turbine.

Landscape character

- 5.21 In considering the landscape effects of wind energy developments, the District Council will assess the immediate landscape impacts of the project, the impacts of related secondary developments such as power lines and transmission stations, and the cumulative effects of existing or planned renewable energy developments and their infrastructure. The character of the landscape, including its historic character, should be taken into account in determining the location, scale and extent of renewable energy developments.
- 5.22 Effects will vary depending on the size and number of turbines in a scheme, its location, the landscape characteristics and the sensitivity of viewpoints. Effects may be minimised or mitigated through careful siting and design.
- 5.23 In considering proposals for wind turbines the District Council will have regard to the views of Natural England and their publication entitled 'Making space for renewable energy: assessing on-shore wind energy development' (2010). This guidance is primarily intended for Natural England's own staff but also to inform developers, planning authorities and the wind energy industry about how Natural England develops the statutory advice it provides in assessing wind energy proposals and their impact on the natural environment. This document sets out a systematic and transparent way of assessing the key factors that influence the degree to which the natural environment can accommodate wind energy development and is concerned with how on-shore wind energy might be successfully accommodated within the natural environment at both a strategic level and for individual proposals.
- 5.24 The Report states that: "Wind energy developments together with their ancillary infrastructure such as grid connections and access tracks, will have impacts upon the natural environment. These impacts may affect sites, habitats, species and/or whole landscapes and the way people perceive and use them. There may also be changes to landscape character. These impacts may be positive or adverse, temporary or permanent, direct or indirect. The significance of impacts will vary from place to place depending on the magnitude of potential impacts and the sensitivity of the receiving environment".
- 5.25 The District Council will also have regard to the Northamptonshire Character Assessment. This helps to identify what in a landscape sense gives a locality

its own sense of place, as well as what makes it different from its neighbouring area, and should help to ensure that these qualities of the landscape can be retained and enhanced. It thereby provides an evidence base on which planning and other decisions can be made concerning the physical environment.

Access to the countryside

- 5.26 For public rights of ways care should be taken to ensure an adequate distance is provided between them and turbines. Fall over or 'topple' distance of a wind turbine plus a particular percentage is often considered an appropriate measure i.e. turbine height to blade tip plus 10% or more. Any proposal to move a public footpath or bridleway should involve consultations in the normal way.

Biodiversity and nature conservation

- 5.27 Wind energy schemes have the potential to enhance or adversely affect biodiversity and nature conservation interests. It is crucial for any development to take these interests into account, avoiding and mitigating adverse effects as far as possible and considering opportunities for enhancement.
- 5.28 Effects on biodiversity can take place during the construction, operation or decommissioning phases of a wind energy scheme. They can arise from any element of the development including the foundations, access roads, moving turbines and ancillary buildings. Cumulative effects may also impact on biodiversity arising from both wind energy and other development or activities.
- 5.29 The main effects of wind turbines on biodiversity that need to be considered are:
- direct habitat loss or damage from any part of the development;
 - indirect damage to habitats, e.g. from hydrological changes;
 - disturbance and displacement to protected species (during the operational life of a wind farm, this can amount to habitat loss if species avoid using an area for breeding, roosting or feeding because of disturbance);
 - collision risk between rotating turbine blades and flying birds and bats.
 - potential to hamper or block effective Green Infrastructure network delivery, creation of new Northants Biodiversity Action Plan (BAP) habitats and landscape scale conservation projects.
 - the scope to enhance local habitats over and above any requirement to mitigate and compensate for adverse effects
- 5.30 The impact on bats and birds is of particular interest when assessing wind energy development. All bats and some birds are protected species that need to be considered when developing a wind energy scheme. Measures should be identified to avoid or mitigate harm to these species and secure their conservation and enhancement.
- 5.31 New wind energy schemes may also provide the opportunity to enhance existing habitats and create new ones to support a range of species. These opportunities should be pursued where possible.

- 5.32 Applicants should have early consultation with Natural England and other nature conservation stakeholders such as Northamptonshire Wildlife Trust and the RSPB, to ensure they are following the most up-to-date guidance and that appropriate survey work is carried out. Consultation should take place at the Environmental Assessment scoping stage, if not earlier. Pre-scoping stage consultation provides an early opportunity to discuss any likely concerns and consider the scope to avoid adverse effects through the location of development, before embarking on a formal planning application process or expending large sums on environmental assessment of projects in clearly inappropriate locations.

Soils, hydrology and water quality

- 5.33 Consideration should be given to effects on soils, hydrology and water quality in and around a site. Water quality, drainage patterns and water storage capacity may be adversely affected causing ecological harm including loss of biodiversity especially in areas with sensitive soils or poor drainage which may take a long time to recover. Development should avoid harming soils, hydrology and water quality that would negatively affect habitats of principal importance for the conservation of biodiversity, or other protected species or habitats.
- 5.34 In addition the Environment Agency ask that applications be supported by details of the foundation type. Any deep or piled foundations have the potential to disturb underlying water supply aquifers and should be fully assessed with mitigation measures proposed, where necessary, to ensure no unacceptable detrimental impact to groundwater quality or flows by the proposal. Similarly they point out that electrical cables serving wind turbines contain insulating oils that have the potential to contaminate the ground and groundwater. Details should therefore be provided on the measures to be taken during construction and decommissioning to ensure that contamination does not occur.

Flood Risk

- 5.35 Issues Technical Guidance to the National Planning Policy Framework (March 2012) provides additional guidance to local planning authorities to ensure the effective implementation of the planning policy set out in the Framework in areas at risk of flooding and in relation to mineral extraction. This guidance retain key elements of planning Policy Guidance 25 : Development and Flood Risk.

Siting and design

- 5.36 It is important for any scheme to take into account the full range of issues associated with wind energy development when determining site selection and the best design for a proposal.

Access and traffic generation

- 5.37 Site access will be required during construction and maintenance, and finally during decommissioning.
- 5.38 During the construction phase access to a site is an important consideration to ensure that the local network of roads can accommodate the large vehicles

needed to transport the turbine components. Blades currently range from 30m to 45m in length so the construction of a wind farm will therefore require sufficient access for long and wide load items. Furthermore, some individual items can weigh in excess of 100 tonnes and it is important that all sections of roads and bridges on the proposed delivery route can accommodate the weight of the loads. The delivery of components during construction therefore needs to be achieved without causing irrevocable damage to buildings and other structures en route, as well as protecting wildlife habitats or landscape features.

- 5.39 It may be necessary for the developer of any proposal for a wind turbine or turbines to gain consent from Network Rail's Abnormal Loads team to gain permission to cross their infrastructure such as a bridge prior to construction on site. Consent may be needed as bridges have a maximum load and a wind turbine(s) plus blades and vehicle transporting such equipment may be over the limit for that bridge.
- 5.40 Developers will usually need to construct access tracks to connect wind farms to the public road network. Planning applications need to describe the full extent of the access tracks necessary and an assessment of their effects.
- 5.41 In terms of overall traffic generation, the highway considerations associated with wind energy development are largely similar to those considered for other forms of development and any scheme will need to satisfy the Highway Authority that it is acceptable.

Anemometer Masts

- 5.42 To enable proper assessment, proposals for individual wind turbines or groups of turbines will need to be supported by information on both on-site wind speed and direction data. This may involve the erection of an anemometer mast to provide continuous readings over a period usually not less than six months. The energy rating of the proposed turbines and projected energy output based on wind speed data should also be indicated. Although not generating renewable energy itself, an anemometer mast is therefore an integral part of assessing the feasibility of wind generation on a particular site.
- 5.43 An anemometer mast is therefore not part of a future wind farm application but will require temporary planning permission. Any decision to grant temporary planning permission would not prejudice any decision that the District Council may subsequently make in respect of a future application for the erection of wind turbines.

Grid connection

- 5.44 To facilitate competition in the supply and generation of electricity, National Grid is legally obliged to offer a connection to any proposed generator, major industry or distribution network operator who wishes to generate electricity. The effects of any such connections should be regarded as material to the overall scheme design. In certain cases, undergrounding such power lines may be preferable in landscape and visual impact terms. However, other environmental, technical and economic factors must also be considered when determining the best approach to take for a scheme, including the adverse

impact of undergrounding on flora and fauna, the high additional cost of undergrounding as well as technical, operational and safety issues.

- 5.45 Any proposed scheme that included the installation of cables under the railway to facilitate any works on site or any methods of electricity transmission would invariably be objected to by Network Rail as this would necessitate works that could damage or undermine the safety, operation and integrity of the railway. Any proposal for a wind turbine(s) that necessitated any cabling/high tension lines over the railway would also be objected too pending negotiation/consents/agreements with Network Rail.
- 5.46 As part of the assessment of cumulative impact (see next page) the District Council will have regard to the potential proliferation of overhead cables and associated transformer stations.

Wind turbines

- 5.47 Site location and the size, design, layout, spacing density and colour of wind turbines are all important considerations in terms of visual impact. These elements will include:
- type of wind turbine
 - blade length and number of blades
 - height of the tower
 - need for lighting
 - layout and orientation of the turbines
 - turbine colour
 - wind monitoring mast design
- 5.48 Generally large modern towers are constructed from galvanised steel in a tubular form. The colour of turbines should reflect the setting of the turbines within the locality and be designed so as to appear the least intrusive when considered with the landscape character.
- 5.49 The form and pattern of the landscape into which they are to be located is therefore also relevant. By their nature wind farms require a prominent location to be effective. They cannot be easily hidden behind tree belts, and the local landscape makes it difficult to reduce visual impact against the skyline. However using the natural topography of the land may in certain circumstances be used to good effect, while still ensuring that turbines receive good 'wind runs'.

Associated infrastructure and buildings

- 5.50 Infrastructure and ancillary development, including road access, foundations, transformers and substation buildings, fencing and electrical connections could effect a range of environmental issues. Sensitive vegetation and soil types may not readily recover from construction disturbance and could be vulnerable in both ecological and landscape terms. On sensitive soils ongoing consequences may arise from erosion or disruption to the integrity of natural drainage patterns. The effects of infrastructure need to be assessed as part of the overall design process.

Mitigation

- 5.51 Mitigation can primarily be achieved through careful siting and an iterative design process following the guidance above. However, in some cases it may not be appropriate to mitigate on site alone, and secondary mitigation measures may be employed to address residual impacts. These could include off-site planting to screen specific receptors or provide a compensatory habitat if a loss is likely as a result of a development.

Cumulative effects

- 5.52 Cumulative effect is a complex issue that will become relevant to the assessment of wind energy schemes as more are constructed. Cumulative effects should also be considered with neighbouring areas.
- 5.53 Cumulative effects may present an eventual limit to the extent of wind energy development in particular areas. The case could arise where it can be demonstrated that cumulative effects are unacceptable and may, on its own, provide sufficient justification to refuse a scheme that is otherwise acceptable. Paragraph 97 of the National Planning Policy Framework states that local planning authorities should design their policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily, including cumulative landscape and visual impacts.

Community engagement

- 5.54 A range of planning related issues are often raised as concerns by the local community. These include landscape and visual effects, noise, shadow flicker and effects to the local economy. It is important that developers meaningfully engage with local communities early on and pre-application, and throughout the development process. Gaining an insight into local concerns early on in the process can help to identify potential community benefits, assist with planning the overall scheme and mitigate against any identified negative impacts.
- 5.55 Developers are therefore expected to carry out positive engagement with community stakeholders early on in the process, both before a planning application is prepared and after it has been submitted to the local council for consideration. The District Council will carefully monitor the engagement and its effectiveness.
- 5.56 However, it is also helpful to continue liaison with the local community during the construction and operational stages too. As part of this process, developers might consider inviting people who live near wind energy development to meet with local communities to discuss any operational issues that emerge.

Re-instatement of the site

- 5.57 Planning consent will require sites to be decommissioned as soon as possible after cessation of energy production. Restoration of a site should be considered as part of the decommissioning process. Details should be included within a planning application and should consider the pre development characteristics of the site and the landscape and nature conservation aims and objectives of the area. For example, sites on

productive arable land may require the complete removal of turbine bases and access tracks in order to return the land to the level of productivity achieved before the development took place.

- 5.58 The District Council is currently considering the introduction of a new financial bond with developers of wind turbines to ensure that site restoration effectively takes place.

Other legislation

- 5.59 Non-planning legislation may place statutory requirements on planning authorities or may set controls that need to be taken into account. Planning authorities, in exercising their functions, will also need to have regard to the general requirements of other legislation. Whilst the District Council may not take some of these issues into account when assessing planning applications for wind turbines, it would want to be assured that such issues have been satisfactorily resolved.

Aircraft and radar

- 5.60 The movement of a wind turbine can interfere with radar as it may be interpreted as a moving object. This could cause it to be mistaken for an aircraft or reduce the ability to track aircraft by radar in the vicinity of a wind energy development. Developers should therefore enter into early dialogue with aviation stakeholders to identify any key issues that need to be addressed.

Communication and electromagnetic interference

- 5.61 Developers need to consider the effects a scheme might have with radio signals, local TV reception and telecommunication systems as they have the potential to cause interference. This includes systems used by the police and emergency services.
- 5.62 Disturbance to TV reception may arise, particularly if wind turbines are sited between buildings and the local transmitter. Developers need to establish if this is likely to be the case and provide mitigation measures to reduce any negative impact. These might include the provision of satellite, cable or a more sensitive antenna to householders affected, repositioning of antennae to receive from a different source emitter, or the installation of a community re-broadcast facility. Many telephone and other communications systems rely on microwave radio links and wind turbines can affect these.

Distances from other infrastructure

- 5.63 Developers need to take into account the legislative requirements on topple distances from other infrastructure such as powerlines, roads and railways prior to submitting a planning application.
- 5.64 For instance Network Rail would wish to see wind turbines sited so that the lateral distance from railway boundary to foot of mast is greater than height of mast plus length of propeller blade. Wind turbulence may also be a factor to be considered by Network Rail and the applicant would need to ensure that the design and position of a wind turbine did not present a potential problem for any railway in the vicinity. Similarly asset protection may be needed when

constructing or undertaking maintenance of the wind turbine if they present a potential risk to an operational railway.

- 5.65 Similarly the Government's Companion Guide to Planning Policy Statement PPS22, 'Planning for Renewable Energy', advises that wind turbines should be located at a distance from overhead lines in accordance with the Electricity Council Standard 43-8 'Overhead Line Clearance'. (Whilst the National Planning Policy Framework has replaced PPS22, the companion guide is still extant.) This document provides advice on the level of clearances required with overhead lines for electrical safety, National Grid advise that it takes no account of the impact of turbulence created by wind turbines on overhead lines. They argue that commercial wind turbines produce significant turbulence in their wake, while conductors on overhead lines are susceptible to damage from vibration initiated by wind. National Grid therefore has a policy which sets out measures to reduce the likelihood of premature wear on conductors and fittings which, if uncontrolled, may lead to a significant reduction in asset life, increased maintenance, unplanned outages or ultimately conductor failure. The National Grid policy introduced a requirement that seeks to ensure that all new wind turbines should be constructed at a distance of more than three times their rotor diameter away from any transmission overhead line.

House prices

- 5.66 Finally, local communities often raise concerns relating to a reduction in house value. However this is not a relevant planning issue and is not therefore addressed by this guidance.

Environmental Statements

- 5.67 Many of the issues outlined in this section should be addressed in the Environment Statement that accompanies the planning application. All proposals for projects that are subject to the European Environmental Impact Assessment Directive must be accompanied by an Environmental Statement (ES) describing the aspects of the environment likely to be significantly affected by the project. Annex 2 of the Directive applies to industrial installations for the production of electricity and the transmission of electrical energy by overhead cables.
- 5.68 The Directive specifically refers to effects on human beings, fauna and flora, soil, water, air, climate, the landscape, material assets and cultural heritage, and the interaction between them. The Directive requires an assessment of the likely significant effects of the proposed project on the environment, covering the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects at all stages of the project, and also of the measures envisaged for avoiding or mitigating significant adverse effects.
- 5.69 The Overarching National Policy Statements for Energy (EN-1) published in July 2011 states that the IPC (which has now been replaced by the National Infrastructure Directorate – see paragraph 1.8 of these Guidelines) will find it helpful if the applicant also sets out information on the likely significant social and economic effects of the development, and shows how any likely significant negative effects would be avoided or mitigated. This information could include matters such as employment, equality, community cohesion

and well-being. The District Council would similarly request such information as part of these guidelines.

- 5.70 The ES should also cover the environmental, social and economic affects arising from pre-construction, construction, operation and decommissioning of the project. The District Council would need to be satisfied that likely significant effects, including any significant residual effects taking account of any proposed mitigation measures or any adverse effects of those measures have been adequately assessed.
 - 5.71 When considering cumulative effects, the ES should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other developments (including projects for which consent has been sought or granted, as well as those already in existence).
 - 5.72 Where some details are still to be finalised the ES should set out, to the best of the applicant's knowledge, what the maximum extent of the proposed development may be, and assess, on that basis, the maximum potential adverse effects which the project could have to ensure that the impacts of the project as it may be constructed have been properly assessed.
 - 5.73 In cases where the EIA Directive does not apply to a project, and an ES is not therefore required, the applicant should instead provide information proportionate to the project on the likely significant environmental, social and economic effects.
-