

Renewable and Low Carbon Energy  
Generation in North Somerset

# Wind turbines



**Supplementary Planning Document**

Adopted July 2014

## **ADDENDUM**

### **Update to planning guidance to take effect from 18 June 2015:**

**Following a written statement made by Secretary of State for communities and Local Government, the council's advice on wind turbines will apply to comply with this. The written statement advises:**

*When determining planning applications for wind energy development involving one or more wind turbines, local planning authorities should only grant permission of:*

- 1. The development site is in an area identified as suitable for wind energy development in a local or Neighbourhood Plan, and*
- 2. Following consultation, it can be demonstrated that the planning impacts identified by affected local communities have been fully addressed and therefore the proposal has their backing.*

*In applying these new considerations, suitable areas for wind energy development will need to have been allocated clearly in a Local or Neighbourhood Plan. Maps showing the wind resource as favourable to wind turbines, or similar, will not be sufficient. Whether a proposal has the backing of the affected local community is a planning judgement for the local planning authority.*

**N.B. North Somerset Council has not identified suitable areas for wind energy development in the local plan or any neighbourhood plan. Therefore the above will apply when we determine wind turbine applications.**

**This does not alter the other guidance contained within the SPD.**

## **Consultation process**

This guidance is produced as part of our planning policy relating to renewable and low carbon energy generation in North Somerset. This Supplementary Planning Guidance provides detail specifically relating to wind turbine developments.

If you have any comments on this guidance, please send these to [planning.policy@n-somerset.gov.uk](mailto:planning.policy@n-somerset.gov.uk). Alternatively, if you'd like to send your comments in the post, please send these to: North Somerset Council, Planning Policy and Research, Post Point 15, Town Hall, Walliscote Grove Road, Weston-super-Mare, BS23 1TG.

Our consultation procedure is set out in our [Statement of Community Involvement](#).

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## **Section 1 – Background**

- 1.1 Onshore wind turbine installations are the most established large-scale source of renewable energy in the UK. Onshore wind turbine installations will continue to play an important role in meeting renewable energy targets.<sup>1</sup>

### **Renewable energy policy**

- 1.2 The EU Renewable Energy Directive suggests that if the UK is to meet its renewable energy target of 15% from renewable sources by 2020, all local authorities need to engage in identifying and approving appropriate renewable energy development.
- 1.3 The Government is committed to increasing the proportion of energy we use from renewable sources. Development of renewable energy resources on a commercial scale is a crucial element in meeting the Government's commitments on reducing emissions and combating climate change. The Climate Change Act sets the UK's legally binding targets to reduce carbon dioxide emissions by 80% by 2050 (34% by 2020), from a 1990 baseline. The Government expects each local authority to contribute to meeting the targets and reducing overall demand for energy.
- 1.4 The [UK Renewable Energy Roadmap](#) (update 2013) states that: *'onshore wind, as one of the most cost effective and proven renewable energy technologies, has an important part to play in a responsible and balanced UK energy policy.'* Government recognises that some people have concerns about onshore wind developments, and it remains committed to ensuring that projects are built in the right places, with the support of local communities and that they deliver real local economic benefits.
- 1.5 The Town and Country Planning (Development Management Procedure and Section 62a Applications) (England) Order 2013 came into force in December 2013 and required compulsory pre-application consultation with communities. This applies to all applications of two or more turbines and those over fifteen metres hub height.
- 1.6 The Department for Communities and Local Government (DCLG) published 'National Planning Practice Guidance' in April 2014. This is a web based resource which provides guidance on planning issues. This includes a category on [Renewable and low carbon energy](#). This supports policy set out in the National Planning Policy Framework (NPPF). This guidance can be a material consideration in planning decisions and should generally be followed unless there are clear reasons not to. The guidance states that: *'planning has an important role in the delivery of new renewable and low carbon energy infrastructure in locations where the local environmental impact is acceptable.'* The guidance also states that *'the expectation should*

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<sup>1</sup> National Policy Statement for Renewable Energy Infrastructure (EN-3) – June 2011

*always be that an application should only be approved if the impact is (or can be made) acceptable.'*

- 1.7 The NPPF sets out guidance to support the development of renewable and low carbon energy, by stating that local planning authorities should recognise the responsibility on all communities to contribute to energy generation from these sources. Paragraph 97 of the NPPF states that local authorities should:
- *have a positive strategy to promote energy from renewable and low carbon sources;*
  - *design 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;*
  - *identify opportunities where development can draw its energy supply from decentralised supply systems and for co-locating potential heat customers and suppliers.*
- 1.8 Paragraph 98 of the NPPF does state that when determining 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 (unless material considerations indicate otherwise) 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.*
- 1.9 North Somerset Council is committed to reducing carbon emissions and supporting renewable and low carbon forms of energy generation. The council is responsible for determining applications for onshore renewable energy schemes up to 50MW generation capacity. The Planning Inspectorate will determine applications for installations with a generation capacity greater than the 50MW threshold.
- 1.10 This Supplementary Planning Document (SPD) covering wind turbines is part of our planning policy guidance on renewable and low carbon energy

generation. It is both for developers proposing an installation, and North Somerset Council in determining applications received relating to wind turbines. Once adopted, this SPD will have statutory weight and be a material consideration in the determination of planning applications.

- 1.11 This SPD provides more detailed guidance to support [North Somerset Core Strategy policies](#): CS1: Addressing climate change and carbon reduction and CS2: Delivering sustainable design and construction. The overall aim of this is to provide guidance to facilitate renewable and low carbon energy development, while ensuring that adverse impacts are addressed satisfactorily. We have set out our intentions for policy objectives for individual applications in the draft [Sites and Policies DPD: Policy DM2: Renewable and Low Carbon Energy Generation](#).

### **Why do we need this guidance?**

- 1.12 Whilst we are in principle supportive of the installation of renewable and low carbon energy generation technologies, we recognise that wind turbine developments can have a variety of impacts. Particular consideration will be given to local opinions and views on proposed developments. We need to display appropriate control in their installation and are setting out clear parameters for the development of wind turbines within this document.
- 1.13 This SPD provides information to help applicants select and design proposals that can be appropriately sited in the locality, as per other policies of the North Somerset Local Plan. This guidance does not identify specific locations where wind energy developments will be acceptable. It does, however, offer guidance on the key considerations that shall be taken into account when siting wind energy developments. This guidance is not for the installation of micro-turbines associated with individual dwellings, but larger turbines that are subject to planning permission.

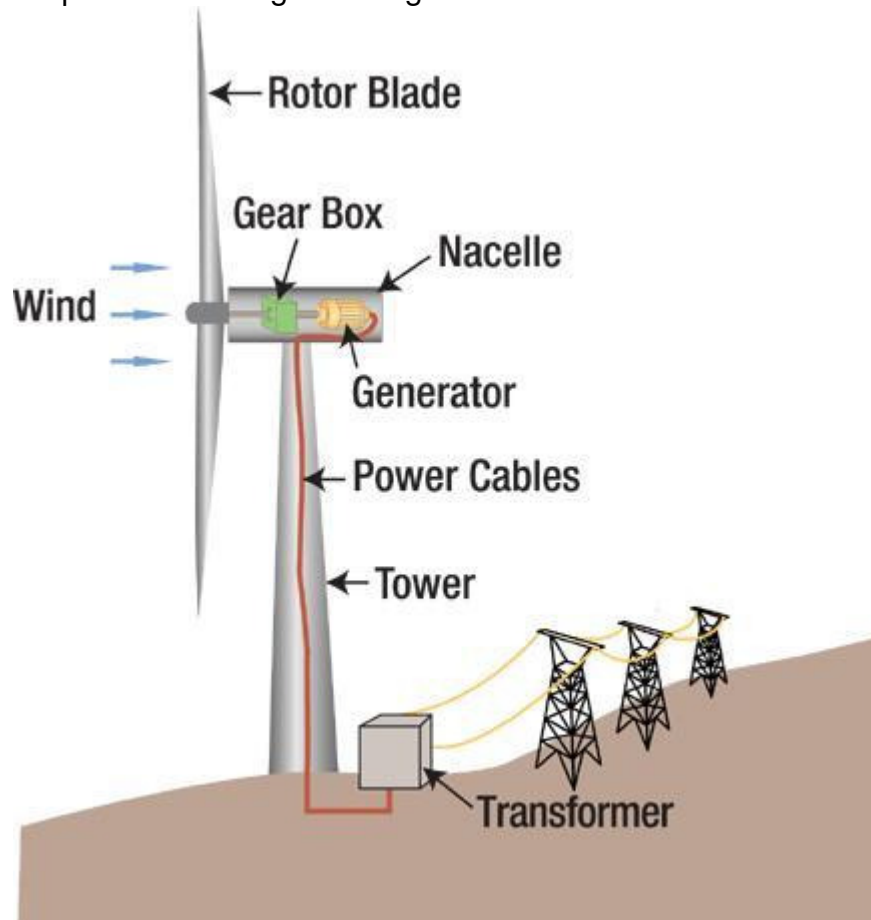
### **When is planning permission required?**

- 1.14 Most wind turbine developments will require planning permission; however, some domestic micro-wind turbines (up to 50kW) may not require planning permission under Permitted Development Rights. A comprehensive guide to when both building mounted and stand alone domestic wind turbines are Permitted Development can be found on the [Planning Portal](#) website.

## Section 2 – Introduction

### How do wind turbines generate energy?

- 2.1 Wind is a clean renewable source of energy which can be harnessed to generate electricity using wind turbines. Wind turbines most commonly consist of two or three aerodynamically designed rotating blades sited on horizontal axis positioned on a free standing tower set in foundations. A less common design is the vertical axis turbine. Micro wind turbines used for domestic or business use can be sited on buildings.
- 2.2 Electricity is generated by the wind turning the blades which turns a shaft inside the nacelle. The shaft goes into a gearbox (although some turbines are direct drivers) which increases the rotation speed. The generator converts the rotational energy into electrical energy. A transformer is usually located within the base of the turbine or adjacent to it. The electricity produced will then be transmitted to a substation which will feed into the grid. The taller the tower the more effective the turbine is, due to wind speed increasing with height.



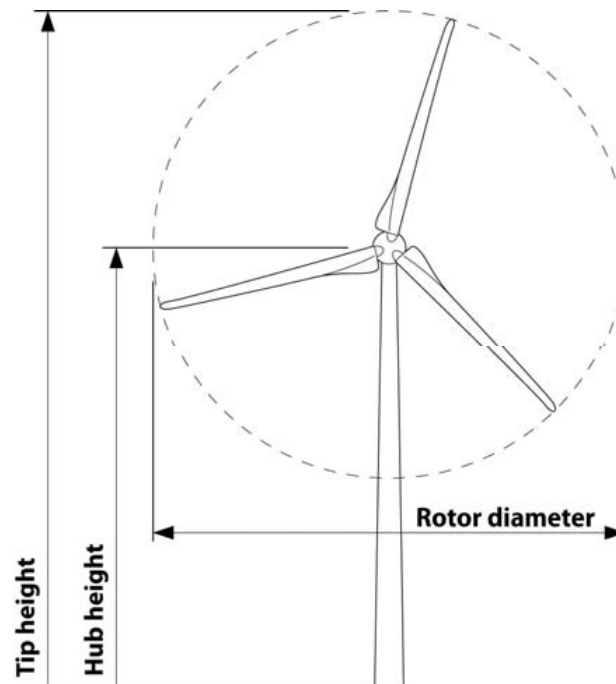
- 2.3 Most turbines will have an anemometer attached to them which sends the wind speed to the controller. The controller allows the turbine to work when



wind speed is above 6mph and below 55mph. A wind turbine will shut down in high winds for safety reasons.

### **Categorising turbines by size**

2.4 Wind turbines are rated according to their maximum electrical power output in kilowatts (kW) or megawatts (MW). Electricity (energy) production is measured in kilowatt hours (kWh), which are equal to 1,000 watt hours or megawatt hours MWh which equates to 1,000 kilowatt hours. Wind turbines are also defined by their hub height, tip height and the diameter of the rotor blades. Many different makes and models of onshore wind turbines are available. Each of these will have differing hub heights, tip heights, design and generating capacities. The need for external cabins adjacent to the wind turbines to house transformers can also vary depending upon make and model of wind turbines.



2.5 This guidance primarily relates to turbines classified as small through to those classified as large sizes, as per the classifications set out below. What size is appropriate will be influenced by local factors, for example large industrial areas may be capable of accommodating larger turbines. Given the North Somerset context, it is unlikely that very large turbines will be appropriate.

Size	Typical hub height	Typical tip height	Typical rotor diameter	Typical capacity rating
Small	20m	Up to 25m	4m and 12m	Up to 1.5kW
Medium	30m	26-60m	22m	1.5 - 500 kW
Large	50m	61-99m	48m	500 kW - 1MW
V Large	80m	100m and above	100m	1MW and over

- 2.6 Onshore wind farm proposals are currently likely to involve turbines from between two megawatts (MW) of generating capacity and up to three and a half MW individually, but as technology develops, this could increase. A 2.5 – 3MW wind turbine would produce greater than 6 million KWh a year, which is enough to supply 1,500 average households with electricity.
- 2.7 Wind turbines can also be classified by the number found in any one development. This ranges from a single turbine, a small cluster (two to five), a medium cluster (six to 10), a large cluster (11 - 25) and very large wind farms will comprise more than 26 turbines.
- 2.8 Wind turbines are typically given planning permission for 25 years. This represents the life of the turbine. An agreed [decommissioning schedule](#) will be required prior to any permission being granted.
- 2.9 Applicants will determine appropriate separation distances between turbines, so that a sufficient distance is provided from one turbine to another within the site to generate electricity efficiently. This spacing will depend on the prevailing wind direction and the physical characteristics of the site. A spacing of six rotor diameters is normally required in the direction of the prevailing wind direction, and four rotor diameters perpendicular to this.

### **Section 3 - Site selection**

3.1 This section outlines the key planning issues associated with wind energy and provides guidance for the siting and design of developments within North Somerset. The selection criteria for wind turbines development will include the following:

- Predicted wind speed
- Landscape and visual impact considerations
- Potential impact on living conditions
  - Noise implications and amplitude modulation
  - Shadow flicker
  - Distance from properties
- Biodiversity and ecology
- Green Belt
- Mendip Hills AONB
- Aviation considerations
- The historic environment
- Safety implications

#### **Predicted wind speed**

3.2 The predicted wind resource is a critical factor in identifying sites, as the electricity generated is directly affected by the wind speed. Most turbines require an annual average wind speed of at least 6 metres per second to be considered operationally viable. The amount of electricity generated increases in relation to wind speed. This in turn affects the carbon emission savings and the commercial viability of the site. Wind turbines ideally need to be sited in locations free from obstructions such as buildings, woodland, large trees or other obstacles that affect wind speed or cause turbulence. It would normally be expected that evidence of site suitability is provided in the form of wind speed measurements taken over a 12 month period in advance of any planning application. An anemometer mast may be used to measure data and average wind speeds at a designated height.

3.3 Where a temporary installation of a mast to support an anemometer is proposed, temporary planning consent will be required.

#### **Landscape and visual impact considerations**

3.4 Wind turbines are substantial vertical structures and to access the best wind resource, need to be higher than the nearest surrounding structures. This means that some visual impact is unavoidable. The impact on the landscape will vary according to the size and number of turbines and the type of landscape involved. In contrast to pylons and other stationary structures, turbine blades are moving features in the landscape. The landscape and visual effects should be minimised by appropriate siting, design and landscaping schemes. Developments should not dominate, overwhelm or

prevent the appreciation or understanding of distinctive land forms or landmark buildings.

- 3.5 When assessing the significance of landscape and visual impacts, a number of criteria should be considered including the sensitivity of the landscape and visual resource and the magnitude or size of the predicted change. Some landscapes may be more sensitive to certain types of change than others and it should not be assumed that a landscape character area deemed sensitive to one type of change cannot accommodate another type of change.
- 3.6 In assessing the impact on visual amenity, factors to consider include: establishing the area in which a proposed development may be visible, identifying key viewpoints, the people who experience the views and the nature of the views. Larger scale turbines may have significant landscape and visual effects for a number of kilometres around the site. An assessment will need to be made on whether the degree of harm outweighs or is outweighed by the benefits the development would achieve.
- 3.7 The following are factors which will be considered when determining applications:

*Orientation:*

- 3.8 Direct views are considered more likely to cause harm than oblique ones. Therefore the orientation in respect of residential properties will be taken into consideration. For example, the direction of the windows of a property will have an impact on decisions, with those directly facing any proposed site having a greater impact.

*Spacing/clusters of turbines:*

- 3.9 The preference will be for turbine layout to follow the shape of the terrain where possible, in preference to straight rows of turbines which are likely to be more visually invasive.

*Scale and openness of the receiving landscape:*

- 3.10 No application should change the openness of the receiving landscape so dramatically that the impact is significantly detrimental. The availability of other features where present in view, (such as pylons and industrial buildings) to provide a comparison of the scale and perspective will be made.
- 3.11 The planning application should be accompanied by a landscape and visual impact assessment. This should include:

- A *base plan* of all existing consented developments and applications received, showing all schemes within a 5km radius of the centre of the proposal under consideration, and
- *Photomontages* showing the proposal under consideration, plus all existing and consented wind turbine developments, and those for which planning applications have been submitted. The viewpoints used could be those identified using maps of cumulative zones of visual influence (the area from which a development is theoretically visible).
- Where appropriate, an *assessment of cumulative effects* should be made to include:
  - the scale of development in relation to the landscape character or designations;
  - sense of distance;
  - existing focal points in the landscape;
  - sky-lining (where additional development along a skyline appears disproportionately dominant);
  - sense of remoteness or wildness.

3.12 The submitted assessment must adhere to the current guidelines issued by the [Landscape Institute and the Institute of Environmental Management & Assessment](#).

### **Potential impact on living conditions**

#### **Noise implications and amplitude modulation**

- 3.13 Wind turbines do emit some mechanical and wind-generated noise. Applicants will need to conduct noise assessments for assessing and rating the noise of potential sites, in accordance to [The assessment and rating of noise from wind farms](#) (ETSU-R-97). In May 2013 the Institute of Acoustics (IOA) published a [Good Practice Guide](#) this provides support on technical issues to all users of the ETSU-R-97 method for rating and assessing wind turbine noise and is endorsed by Government.
- 3.14 Well specified and well designed wind turbine sites can minimise the noise associated with sites. They should be located so that increases in noise levels around noise sensitive developments are kept to acceptable levels with relation to existing background noise. This will normally be achieved through good design and through allowing sufficient distance between the turbines and any existing noise sensitive development.
- 3.15 Absolute noise limits and margins above background noise should relate to the cumulative effect of all wind turbines in the area contributing to the noise received at the properties in question. Any existing turbines should not be considered as part of the prevailing background noise.

- 3.16 Noise limits should be applied to external locations and should apply only to those areas frequently used for relaxation or activities for which a quiet environment is highly desirable.
- 3.17 Contractors should consider any potential noise impact during construction at an early stage and implement measures to minimise instances of significant residential disturbance. Actions to be implemented will include avoidance of weekend working, provision of reliable information on the commencement of noisy development and avoidance of early morning disturbance.
- 3.18 Amplitude modulation refers to the thump or swish noise made by the blades of the wind turbine. There is currently no requirement in ETSU-R-97 to include any correction for amplitude modulation although further research in this area has been recommended. DECC guidance states that current methods used in practice to implement the ETSU-R-97 guidelines will continue to apply until supplementary best practice guidance is published. Developers will be required to comply with any such guidance.

### **Shadow Flicker**

- 3.19 It is acknowledged, that under certain combinations of geographical position and time of day, the sun may pass behind the rotors of a wind turbine and cast a shadow. When the blades rotate, the shadow flicks on and off; this impact is known as 'shadow flicker'. Only properties within 130 degrees either side of north relative to the turbine can be affected at latitudes in the UK. Turbines do not cast long shadows on their southern side.
- 3.20 The potential significance of the shadow flicker is dependent on a number of factors:
- the location of the relevant building relative to the path of the sun and the turbines;
  - the distance of turbines from such buildings; the size of the window apertures and their location in the building relative to the turbines;
  - the turbine height and rotor diameter;
  - the presence of intervening topography, buildings or vegetation;
  - the frequency of bright sun and cloudless skies;
  - the time of the year; and
  - the prevailing wind direction and hence usual rotor orientation.
- 3.21 National Planning Practice Guidance (2014) states that:

*'Modern wind turbines can be controlled so as to avoid shadow flicker when it has the potential to occur. Individual turbines can be controlled to avoid*

*shadow flicker at a specific property or group of properties on sunny days, for specific times of the day and on specific days of the year.*

- 3.22 The occurrence and duration of shadow flicker at a particular occupied building is dependent upon:
- wind speed – which will determine its frequency;
  - wind direction – must allow the rotor to be perpendicular to the dwelling for a shadow flicker effect to take place; and
  - cloud cover – must be sufficiently thin to allow the sun to shine brightly enough for shadow flicker to occur.
- 3.23 Where wind turbines have been proposed within 10 rotor diameters of an existing occupied building, a shadow flicker assessment should be carried out by the applicant. There is unlikely to be a significant impact at distances greater than ten rotor diameters from a turbine. Therefore, if the turbine has 80m diameter blades, the potentially significant shadow flicker effect could be observed up to 800m from a turbine.
- 3.24 Mitigation measures to prevent shadow flicker can include:
- Careful site design
  - Turbine shut down at times when properties could be affected
  - Screening via installation of blinds/landscaping (tree/shrub planting) at affected properties
- 3.25 Where the possibility of shadow flicker exists, mitigation can be secured through the use of conditions, such as:

*'The operation of the turbine shall take place in accordance with the approved shadow flicker mitigation assessment, unless we give prior written consent to any variation.'*

**Distance between a turbine and residential property:**

- 3.26 There are no statutory separation distances in England for turbines from residential development. Therefore, each proposed scheme will be subject to an assessment of its own particular context and may be varied according to local circumstances. The factors that will determine appropriate separation distances will include topography, the orientation of nearby properties and the nature of landscaping and vegetation at each site.

**Biodiversity and Ecological Considerations**

- 3.27 The development of wind turbines could have implications for habitat loss or fragmentation and for displacement of species. Developers are advised to avoid areas of ecological importance, especially those areas with local, national or international designations.

- 3.28 In terms of key natural environment asset designations, North Somerset has:
- 4 Special Areas of Conservation (SAC)
  - 1 Special Protection Area (SPA)
  - 41 Sites of Special Scientific Interest (SSSIs)
  - 2 National Nature Reserves (NNR)
  - 13 Local Nature Reserves (LNR)
  - 205 Local Wildlife Sites (LWS)
  - 77 Local Geological Sites (LGS)
- 3.29 You can view the locations of these site designations on the North Somerset [interactive planning map](#) by selecting the environment and cultural heritage legend. Information on biodiversity in North Somerset can be found in the [Biodiversity and Trees Supplementary Planning Document](#).
- 3.30 The NPPF stipulates that the planning system should ‘*Contribute to and enhance the natural and local environment by...minimising impacts on biodiversity and providing net gains in biodiversity where possible.*’ Policy CS4 in the North Somerset Core Strategy reaffirms this by stating that ‘*biodiversity will be maintained and enhanced and any net loss should be avoided.*’
- 3.31 Developers will be expected to maximise the ecological potential offered by their site, whilst ensuring there is no adverse impact on protected species. An appropriate ecological impact survey, assessing the potential effects of the development of habitat and species, will be submitted with all planning applications. The survey should identify local biodiversity networks to avoid restricting access and movement of native wildlife and include suggestions to mitigate the impact on both habitat and species.

### **Birds**

- 3.32 If inappropriately located wind turbines could have an impact on birds through collision, disturbance or habitat damage. The Royal Society for the Protection of Birds (RSPB) has stated that it supports a significant growth in onshore wind power generation in the UK, provided that it is located and designed to minimise impacts on bird populations. This means avoiding locating turbines close to major migration pathways and important habitats.

### **Bats**

- 3.33 Wind turbine developments can be detrimental to bat populations. Increased risk of mortality may be caused by bats actively investigating wind turbine structures; or because the turbine is in the path of a bat migration or navigation route; or within a foraging habitat. The factors involved in bat mortality at wind turbines are currently an area of ongoing research.



- 3.34 Bats are widespread across North Somerset and the district is generally regarded as a stronghold for bats. All species of bat and their roosts are protected in the UK under the Conservation of Habitats and Species Regulations 2010, which implements the Habitats Directive, making them European Protected Species (EPS). As a planning authority, we are required to have regard to the requirements of the Habitats Directive when determining applications that could harm EPS (under Regulation 3(4) of the 1994 Habitats Regulations).
- 3.35 In areas where there is known bat activity and in any event within 5 kilometres of a known bat colony or SSSI, applicants will be required to demonstrate by means of a properly constituted survey, that risk to bats is considered minimal. Applicants will be required to seek prior approval from our biodiversity officer.
- 3.36 Applicants need to consider the likely requirements and costs for sufficient habitat and bat surveys on site. Desk top studies should also contribute to an understanding of the bat activity in the wider vicinity. Collision risk monitoring is likely to be required to cover the construction and operational phases of onshore wind farms. Such monitoring results should be made publicly available. The parameters to be used in such modelling should be discussed with [Natural England](#).
- 3.37 Natural England's Technical Information Note [TIN051: Bats and onshore wind turbines](#) states that the majority of bat foraging and commuting activity occurs close to habitat features (trees, hedgerows, etc) with a decline in bat activity 50 metres away. It is therefore recommended that any habitat features should have a 50 metre buffer zone (from blade tip). If there are any circumstances where this buffer is not being adhered to, a Phase 1 Protected Species Survey must be conducted.

### **Green Belt**

- 3.38 Proposals for wind turbines in the North Somerset Green Belt in most circumstances will be refused on the grounds that they comprise inappropriate development, by virtue of their impact on openness and on the purposes of Green Belt designation. Paragraph 88 of the NPPF states that when considering planning applications, '*local planning authorities should ensure that substantial weight is given to any harm to the Green Belt*' and that very special circumstances will not exist unless the potential harm to the Green Belt '*is clearly outweighed by other considerations*'. While the NPPF acknowledges that in principle very special circumstances may be put forward, in practice it is extremely unlikely that any such circumstances would outweigh the harm to the Green Belt.
- 3.39 This is in accordance with Paragraph 91 of the NPPF, which states:

*‘When located in the Green Belt, elements of many renewable energy projects will comprise inappropriate development. In such cases developers will need to demonstrate very special circumstances if projects are to proceed. Such very special circumstances may include the wider environmental benefits associated with increased production of energy from renewable sources.’*

### **Mendip Hills Area of Outstanding Natural Beauty**

- 3.40 The Mendip Hills Area of Outstanding Natural Beauty (AONB) is a significant local landscape which has national recognition, safeguarded by statutory designation. The AONB is a key resource for residents and visitors, providing important landscape, environmental and health benefits. The AONB lies within the southern boundary of North Somerset. It is the character and quality, along with views to and from the AONB that will be of particular relevance in North Somerset. It is as much for the views offered within the AONB as the views out from the Mendip Hills that the area is valued. Unsympathetic, incongruous development in these landscapes can act as a visual detractor; having an adverse impact on the character of the AONB.
- 3.41 We are unlikely to support applications for wind turbine developments in areas covered by national designations, such as the Mendip Hills AONB. This is unless they do not compromise the objectives of the designation and they will need to demonstrate this.

### **Aviation considerations**

- 3.42 Because of their physical size, in particular their height, wind turbines can have an effect on aviation. Additionally, rotating wind turbine blades may have an effect on certain aviation operations, particularly those involving radar. The aviation community has procedures in place to assess the potential effect of development such as wind turbines on its activities, and where necessary to identify mitigation measures.
- 3.43 Any proposed wind turbine development within 30km of all safeguarded civil aerodromes will be subject to consultation with the airport operator.
- 3.44 Further information on aviation safety with wind turbine developments can be gained from the [Civil Aviation Authority guidelines](#) on wind turbines and the Department for Energy and Climate Change publication [Wind Farms: aviation interests and guidance for stakeholders](#).
- 3.45 Developers are encouraged to consult with Bristol Airport (and other civil aerodromes) prior to submitting a planning application for wind turbine developments so that the potential effects on aviation interests and possible mitigation strategies can be identified at an early stage in the development process.

## **The historic environment**

- 3.46 When selecting potential sites for wind turbines, historic, cultural and landscape sensitive assets should be avoided. These include Conservation Areas, Listed Buildings and Scheduled Monuments, Areas of Archaeological Importance, Registered and other Historic Parks and Gardens. You can view these site designations on a North Somerset [interactive map](#) by selecting the environment and cultural heritage legend.
- 3.47 Below ground archaeology must not be compromised by any wind turbine installation and where potential archaeological interest is identified, the impact of the development on the site must be evaluated.
- 3.48 Heritage assets could be affected by wind turbine developments, either by causing direct physical change or by a change in their setting and therefore altering people's experience of it. The scale, design and prominence a wind turbine has within the setting of a heritage asset may cause substantial harm to the significance of the asset. Proposals must not have an unacceptable impact on heritage assets or their setting and will therefore need to assess the nature, extent and importance of a heritage asset and the contribution of its setting. Where it is assessed that substantial harm will be caused, consent will be refused unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss. Where a development would lead to less than substantial harm to the significance of a heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.
- 3.49 A heritage statement will need to be submitted with all applications. This will need to include an assessment of the impact on the significance of the relevant heritage asset taking account of the individual circumstances of each application. [English Heritage](#) can provide guidance on this.

## **Highway/rail safety**

- 3.50 The Highways Agency recommends that any turbine should be set back from the nearest highway boundary, at a distance of at least the tip height plus 50 metres or height multiplied by 1.5, whichever is the lesser. A similar distance can be considered appropriate from rail infrastructure. In certain circumstances, variation to the above set back may be considered appropriate, subject to the findings of a site specific assessment. In particular this may apply where there is a significant difference in elevation between the highway and the proposed turbine location. The applicant would be expected to demonstrate that any relaxation on the suggested set back distance poses no unacceptable risk. Applications which fall into the above category must consult the [Highways Agency](#) on their proposals. Where a proposal is located within the vicinity of rail infrastructure, Network Rail requests pre-application discussion to determine if the proposed

development impacts upon their landholdings and the safety, integrity and operation of the railway and its infrastructure.

- 3.51 Most turbines can be constructed with materials that eliminate dazzle, and this should be easy to establish and eliminate as a concern. Evidence of this technology on the proposed turbines should be provided. As far as technologically possible, rotating blades should not be reflective (other than in terms of countering effects on radar).
- 3.52 Wind turbines should not be located where they might provide visual distractions or have any potentially negative influence to motorists and their need to focus attention on road conditions, especially in the vicinity of road junctions, sharp bends and crossings for pedestrians, cyclists and horse riders.

### **Interference with electromagnetic transmissions**

- 3.53 Wind turbines have the potential to affect electromagnetic transmissions (e.g. radio, television and phone) signals. Specialist organisations are responsible for the operation of electromagnetic links and typically require a 100 metre clearance each side of the line of sight link from the swept area of the turbine blades. OFCOM acts as a central point of contact for identifying specific consultees relevant to the site.

### **Power lines**

- 3.54 An assessment of whether any potential cumulative impact of wind turbines and existing or planned pylons should be made. This must be carried out to establish what cumulative impact (if any) would occur as a result of the likely impacts of the proposed development interacting with the impacts of pylons in the vicinity. The likely significant impacts should be identified and assessed against a baseline position.
- 3.55 National grid will be able to offer advice on the required standards for wind turbines being separated from overhead power lines.

### **Public rights of way/ Bridleways**

- 3.56 There are no statutory separation distances between wind turbines and a public right of way or bridleways. However, it is generally accepted that the fall over distance (the height to the tip of the turbine) is considered to be an acceptable separation distance. The movement of turbine blades should not oversail public rights of way under any circumstances.

## **Section 4 - Site detail**

- 4.1 It is important that wind turbine developments are sympathetic to the existing environment and there must be minimal disruption during the construction and operational phases of any development. There are a number of considerations and requirements that need to be taken into account with any proposed development, as detailed below.

### **Flood risk assessment**

- 4.2 Any wind turbine development should, where possible be sited outside flood zones or within Flood Zone 1. If the location of a proposed wind turbine does fall within flood zone 2 or 3 (land defined as having a medium or high annual probability of flooding), then the planning application for the site must be accompanied with a Flood Risk Assessment (FRA). Before carrying out the assessment, developers should contact the council to determine who the relevant operating authority is, so that information can be made available on any flood risk at the proposed development site.
- 4.3 Details about local flood risk can be found on the [flood pages](#) on our website and further information in the [development and flood risk issues advice note](#). Flood risk within North Somerset has been assessed, detail of this can be found in the [Strategic Flood Risk Assessment](#).
- 4.4 Wind turbines are categorised as 'essential infrastructure' in the flood risk vulnerability classification of the National Planning Policy Framework (NPPF). This means that where located in higher flood risk areas, they should be designed and constructed to remain operational and safe in times of flood. To help achieve this, it is recommended that the development is resilient up to the 1:1000 year flood event. This could include measures such as key controls/electrics raised above the 1:1000 year flood level so that the site remains operational.
- 4.5 Details should be provided on the proposed surface water drainage strategy for the site as part of the Flood Risk Assessment. It is beneficial that proposals are located at least 9 metres from any watercourse. If this cannot be achieved then details of the proposed siting location together with details of the proposed maintenance regime will need to be included within a formal [land drainage consent application](#) to the Internal Drainage Board (IDB). Additionally, if upgrading is required to existing culverts or access gates, details will need to be agreed and consented.
- 4.6 If the wind turbine will feed directly into the national grid, it is important to notify the [Environment Agency](#) the details of the route of underground apparatus where this is required.

## **Ancillary infrastructure**

- 4.7 Detail of all accompanying infrastructure to any wind turbine development should be submitted with all applications. This is likely to include details of the following:
- Road access to the site and on-site tracks. It may be necessary to create new access into a field or to widen an existing field entrance, if a permanent access/maintenance track is created, this will require planning permission. Generally, service vehicles should be capable of servicing these facilities without the need to construct access tracks. The installation of additional access tracks should certainly be kept to an absolute minimum and where they need to be provided, permeable tracks should be used, and localised sustainable drainage methods (SuDS) utilised to control any run-off.
  - A temporary construction compound and lay down area for the major components.
  - A concrete foundation pad for each turbine. An area of hard standing next to each turbine to act as a base for cranes during turbine erection. Any site levelling works necessary to facilitate a wind turbine development should be discussed at the pre-application stage and detailed within any planning application.
  - One or more anemometer masts (where used) to monitor wind direction and speed.

## **Grid connection**

- 4.8 A control building and a substation will need to be connected to the nearest suitable point on the national grid. The District Network Operator (Western Power Distribution) is responsible for establishing the connection between the substation and the grid and this forms part of a separate consenting process.
- 4.9 Development proposals should provide a broad indication of the route of connection to the grid with details of underground cables connecting the turbines (buried in trenches) to the substation. The nature and extent of that connection should be indicated on the site plan.
- 4.10 Grid connection should avoid areas of high landscape, ecological or archaeological sensitivity, and not be extensive or visually intrusive. Connection to the grid may cause an accumulation of overhead wiring, if this occurs in sensitive areas, the cumulative impact will need to be assessed.
- 4.11 The capacity of the local grid network to accept the likely output from a proposed wind farm is critical to the technical feasibility of a development. [Western Power Distribution](#) should be contacted to discuss your proposal at an early stage.

## **Site Access/transportation**

- 4.12 Some onshore wind farms may be located in areas served by a minor road network. Modern wind turbines are large structures and some components, notably the rotor blades, can currently only be transported to sites as complete structures. The construction of a wind turbine development will therefore require sufficient access for long and wide load items. Some individual components of the wind turbines 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.
- 4.13 The applicant should have assessed the various potential routes to site for delivery of materials and components, where the source of the material is known at the time of the application, and selected the route that is considered to be the most appropriate. It is possible that the exact location of the source of construction materials, such as crushed stone or concrete will not be known at the time of the application. In these circumstances, the impact of additional vehicles on the likely potential routes should have been assessed. The [Highways Agency](#) provides a system that simplifies the process of notifying abnormal load movements.
- 4.14 Access routes and deliveries will need to be designed to prevent damage to the character of rural lanes, avoiding impact on characteristic hedgerows and boundary features that contribute to the character of the area. Any sections of the route which will require modification to allow for the transportation of components to site should be identified and potential effects assessed as part of the [environmental statement](#).
- 4.15 Once consent has been granted, applicants should liaise with the highway authority regarding the start of construction and the broad timing of deliveries, to minimise the disruption to traffic flows. It may be necessary for an applicant to agree a planning obligation to secure appropriate measures.
- 4.16 Once wind farms are in operation, traffic movements to and from the site are generally very light, in some instances as little as a few visits each month by a light commercial vehicle or car. The need to replace machine components will generate heavier commercial vehicle movements, but these are likely to be infrequent.

## **Decommissioning**

- 4.17 Any development must be temporary and capable of being removed from the landscape to enable full restoration of the site to its original state once the installation is decommissioned. Generally the wind turbines themselves will always be decommissioned with the concrete foundations in the ground dug out to a certain depth to ensure that the use of the site, typically for agriculture can continue. Any removal of existing vegetative field boundaries, including mature trees will not be permitted. This will be a

condition of any planning permission granted. More detail on the requirements of decommissioning can be found in the [planning permission](#) (paras 6.12-6.14) section.

### **Ground conditions**

- 4.18 Where a site is affected by land stability issues, the developer must ensure that the site is safe for development. Account will need to be taken of existing ground conditions and land instability, which will include those from natural hazards and former activities such as mining.



## **Section 5 – Consultation and Community engagement**

- 5.1 Effective dialogue about wind turbine proposals between developers, the local authority, stakeholders, local communities, interest groups and statutory consultees is essential to explore issues of concern and discuss the options for mitigation and provision of any benefits to the local area. The scale of public engagement required will vary according to the scale of the proposal and the potential controversy this is likely to generate. However, it is now a statutory requirement that any development of two or more turbines and/or those of greater than fifteen metres in height must consult the local community before any planning application is submitted.<sup>2</sup> The developer needs to ensure that there is an effective mechanism for community liaison during the development, operation and decommissioning of the scheme. Prospective developers need to be aware of the time required for effective engagement and allow sufficient time in their project planning to allow for responses.
- 5.2 Local people are likely to have unique knowledge of the place where they live and could provide useful input to enhance the design of projects. The purpose is to ensure that the views of local communities are taken into account at an early stage, and to give local people a genuine opportunity to influence, shape and change decisions about more significant onshore wind projects affecting their area. We recommend that any developer contacts the relevant Parish or Town council at an early stage and organises a community consultation event in the local area.
- 5.3 We require evidence of community consultation, which can be done by submitting a statement of community involvement. This will need to set out how the community has been consulted and what the outcome of the consultation was. This should include reference to the comments made through consultation and how the submitted proposal has sought to address concerns, or where agreement has not been reached on matters arising from consultation.
- 5.4 The council can guide developers on appropriate methods for how best to engage with the local community on request.

### **Ministry of Defence**

- 5.5 It is recommended that wind turbine developers consult the [Ministry of Defence](#) at pre-application stage to determine whether there are any safeguarding issues with a proposed development. We are required to consult the MoD with all wind turbine applications of eleven or more metres to blade tip and/or where the rotor diameter is of two or more metres.

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<sup>2</sup> In accordance with: The Town and Country Planning (Development Management Procedure and Section 62A Applications) (England) (Amendment) Order 2013

## **Community Schemes**

- 5.6 There is an opportunity for communities to bring forward their own renewable and low carbon energy generating proposals. Community supported generation can extend the benefits of renewable energy to households in the form of cheaper energy, revenue streams and employment with the additional benefit of profits generated by the investment being retained within the local community. Many community groups are already working on energy related activities, pursuing behaviour change, demand reduction and energy efficiency measures in addition to promoting renewable energy.
- 5.7 North Somerset Council is keen to assist community renewable energy schemes and will consider favourably those applications that have a community ownership model as an integral aspect within the development, subject to these meeting all other criteria as set out in this guidance. This is in line with the National Planning Policy Framework (NPPF) guidelines, which recommends that local authorities *give 'support for community-led initiatives for renewable and low carbon energy.'*
- 5.8 Details of community ownership models can be found in the [appendix](#).

## **Community Benefits**

- 5.9 Developers of large scale schemes often offer a community fund, with an appropriate body set up to manage the use and distribution of the money. The council would expect a financial contribution proportionate to the scale of the wind turbine development. The recommended community benefit package in England is £5,000/MW of installed capacity per year, for the lifetime of the wind turbine development.
- 5.10 As of April 2013, local communities will retain the business rates paid by commercial wind turbine developments which are given planning permission in their area. This will be paid for the first six years of operation.
- 5.11 Communities and developers are encouraged to work together to decide how the money should be used. This could include providing households with money off their energy bills, to pay for energy efficiency initiatives, establish local training projects or fund other community initiatives. The community energy strategy<sup>3</sup> offers guidance on this.
- 5.12 Consideration should be given to employing local labour in development schemes and using locally sourced and/or recycled materials wherever practical to do so.

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<sup>3</sup> <https://www.gov.uk/government/publications/community-energy-strategy>

## **Section 6 - The planning application**

### **Pre-application discussions**

- 6.1 Potential developers are encouraged to engage in dialogue with North Somerset Council before submitting detailed proposals. This is advised so that an agreement can be reached on the information that will be required to accompany the planning application and the contents of the [environmental statement](#). Pre-application enquiries should indicate the potential wind turbines site in plan form, and outline the likely scale of development, its height (both hub and to blade tip), installed capacity and any accompanying structures. The authority undertakes to provide an initial response to specific site enquiries, to indicate any sensitivity associated with the site and, if requested, to provide an opinion on whether an environmental screening report is required. Details of this can be found on [our website](#).
- 6.2 Any proposed wind turbine and its location should therefore be carefully considered before any planning application is prepared and submitted, and to avoid any unnecessary delays it is recommended that a formal EIA screening opinion is obtained (see 6.4 below).

### **Planning Performance Agreement (PPA)**

- 6.3 A Planning Performance Agreement (PPA) may be put in place. This agreement between the developer and us identifies key milestones and timescales for the delivery of a planning decision. It provides greater certainty and transparency to the development of scheme proposals, the planning application assessment and decision making. Any applicant can request a PPA if this is felt necessary for a development proposal.

### **Environmental Impact Assessment (EIA)**

- 6.4 An Environmental Impact Assessment (EIA) is a systematic process used to identify, predict and evaluate the environmental effects of a proposed project. In the context of wind turbine developments, it is a formal process that aims to protect land and semi-natural areas from permanent damage, and to guard against possible negative environmental effects from these developments.
- 6.5 Wind turbines are not listed as Schedule 1 developments in the 2011 [EIA Regulations](#) therefore do not automatically require an EIA. However, if a turbine is over 15m to hub height and/or if the application is for two or more turbines, it falls within Schedule 2 of the [EIA Regulations](#) so may need to submit an EIA. This will depend on whether the criteria Schedule 3 of the regulations are matched. The applicant will need to request a screening opinion from us to determine this and information on how this is determined can be found in the [Regulations](#).

- 6.6 For smaller wind energy proposals that do not require an EIA, a landscape and visual assessment/appraisal shall still be undertaken but the level of information required will reflect the sensitivity of the site and the potential effects of the scheme (including cumulative impact with any other turbines). Visualisations/photomontages will be required for all wind turbine proposals.
- 6.7 If the council considers the proposal to fall under Schedule 2 of the 2011 EIA Regulations, an [Environmental Statement](#) needs to be prepared so that it can be considered with a planning application.

### **Submitting a Planning Application**

- 6.8 Sufficiently detailed information should accompany the planning application to allow us to fully assess any potential impact to the site and its surroundings during construction, operation and decommissioning phases of development.
- 6.9 Planning applications for all renewable technology developments should give details of the energy generation potential, stated as:
- The installed capacity (in MW or kW).
  - The estimated annual production (MWh pa), (it is accepted that this will be dependent on weather conditions).
- 6.10 It would be helpful to provide an indication of the number of residential properties electricity equivalent that will be provided by the development, to allow non-experts to understand the potential impact of the scheme. Such a statement should be indicative only. The assumptions used to calculate this figure should be included.
- 6.11 The information the council require to be submitted with any application is explained in more detail on our website. Supporting information should include but not be limited to those items listed in the [Appendix](#).

### **Decommissioning wind turbines**

- 6.12 In the case where a wind turbine development is permitted, this will only be for a time limit of 25 years from the date that electricity is first generated. A further planning application will need to be submitted if the applicant wishes to extend this 25year period. A decommissioning method statement will be required to be submitted and approved in writing by the council. The statement shall include the timing for decommissioning if it ceases to be operational (for 12 months or longer or upon expiry of the time period of the permission), along with the measures and a timetable for their completion, to secure the removal of turbines, plant and equipment and restoration of the site, including how resources will be secured for decommissioning and restoration at a future date.

- 6.13 Any planning permission will therefore be subject to the following (or similar) condition:

*'No development shall be commenced until a decommissioning method statement has been submitted to and approved in writing by the Local Planning Authority. Within 25 years of the commencement of electricity generation, or within six months of the cessation of electricity generation, whichever is the sooner, the wind turbine, foundations, inverter housings and all associated structures shall be dismantled and removed from the site, and the site restored to its former condition in accordance with the approved decommissioning method statement.'*

- 6.14 Any waste generated on site during construction must be disposed of in accordance with the Waste (England and Wales) Regulations 2011.

### **Planning permission**

- 6.15 There are a number of issues specific to wind turbine developments that need to be considered when determining an application for planning permission. A wind turbine development of 50MW or less installed capacity will need planning permission granted by North Somerset Council, as per the Town and Country Planning Act 1990. This is unless it is an installation, alteration or replacement of a building mounted wind turbine, which can be considered to be permitted development.
- 6.16 It is the responsibility of developers to address technological issues, such as wind speed and the legislative requirements for separation distances from infrastructure such as power lines, road, and railways and taking account of advice from the Civil Aviation Authority, MoD and Highways Agency in relation to radar and aviation. The council will need evidence that all of the above issues have been addressed before considering any planning application.
- 6.17 Wind speed monitoring is advisable prior to developing a wind energy project, to obtain more accurate data on wind speeds at the height of the proposed turbine, to allow energy output to be estimated. Ideally, monitoring will be undertaken for a full year. A temporary planning consent will be required for the wind monitoring (anemometer) mast.
- 6.18 The cumulative impact of turbines will also be a factor in decision making, with particular reference to existing wind energy developments in the area and other proposed wind energy developments. It is best to separate out different landscape characteristics, recording which factors are in contention in a particular place and why.

## **Section 7 - Monitoring and Review**

- 7.1 As a Local Planning Authority, we are required to publish an Annual Monitoring Report (AMR) to assess the effectiveness of policies and guidance that forms part of the local development plan. We will monitor the provision and delivery of renewable energy technologies as part of the AMR process and report accordingly. This guidance will be reviewed as and when necessary in light of all material information.
- 7.2 The council will maintain a map of planning applications and decisions for wind turbines in order to inform assessment of cumulative impact when planning applications are received.

## **Appendix**

If an anemometer mast is used, it will need to be mounted at an appropriate height to record data and allow potential visual impacts to be identified. Where chosen, a temporary planning consent will be required.

### **Planning application and EIA submission requirements**

Irrespective of whether the development falls within EIA regulations or not, North Somerset Council considers the following items to be necessary for submission with either a planning application or as part of an Environmental Statement:

#### **a) Design and layout:**

##### **Plan – Site Plan**

- Location plan – surrounding features, field boundaries, including trees and hedgerows and topographical information.
- Programme of site preparation, construction, operation and restoration.
- Access proposals for construction, maintenance and decommissioning.
- Presence of any existing utilities, underground cables, pylons etc and impact during construction.
- Specification and design of any associated roads, hard standing or storage buildings, temporary and permanent.
- Specification of any inverter buildings, sub-stations, control facilities and grid connection.
- Specification of any additional security and lighting features.

#### **b) Assessments and mitigation**

- Justification of location.
- Landscape/Visual Impact Assessment.
- Landscape enhancement and mitigation proposal, including a 25 year site-management plan.
- Assessment of cumulative impact.
- Ecological survey and assessment.
- Transport Assessment: to include construction, operation and maintenance and decommissioning schedule and predicted vehicle movements during all stages of the proposal. Also to include an assessment of the impact on existing infrastructure (including rail).
- Investigation into the potential presence of features of archaeological interest or cultural heritage.
- The extent of survey and assessment material should reflect the extent and sensitivity of the site.
- Noise & shadow flicker assessment/statement

### **c) Additional Requirements**

- Predicted annual generation capacity.
- Decommissioning method statement.
- Details of Electricity Generating Capacity.
- Details of Grid Connection.
- Confirmation from the Distribution Network Operator that the required capacity is available at the selected site and identification of point of connection.
- A statement of community engagement and the identification of any proposed wider community benefits.

### **Environmental Statement**

The Environmental Statement needs to cover the requirements above as well as the following:

#### **1. Description of the development incorporating:**

- The proposed development.
- The purpose of the development.
- Relevant plans showing the site location and area involved with the development.
- Method of construction/installation.
- Reasonable estimates of quantity and type of traffic, which will be generated through construction and operation.

#### **2. Site Description**

- Description of the main reasons for the site selection and any alternatives in site design or layout which have been considered.
- The area of proposed land which the turbine(s) will occupy clearly described and indicated on a map or diagram.
- An illustrated description of the land use of the surrounding area.
- Description of the policies, plans and designations which are relevant to the proposal.

#### **3. Impacts and their significance**

The Environmental Statement must assess the impact of the proposal and the significance of this impact. This will include short, medium and long-term effects, permanent and temporary effects and positive as well as negative effects. The following factors should all be considered within the Environmental Statement:

- Fauna
- Flora
- Soil



- Water
- Air
- Climatic factors
- Material assets e.g. architectural and archaeological heritage
- Landscape
- Population
- Inter-relationship between all the above

### **Environmental Impact Assessment:**

Wind turbines are projects which are listed under Schedule 2.3(i) to the Environmental Impact Assessment (EIA) Regulations 2011. We are therefore required to screen applications for EIA where the development involves:

- More than 2 turbines located in the same development;
- If the hub height of any turbine exceeds 15 metres;
- Developments that have a generating capacity of more than 5MW.

If an Environmental Impact Assessment (EIA) is deemed necessary, the potential issues should be covered in an Environmental Statement. For developments that do not require a full EIA, we will require some or all of the issues to be addressed in an Environmental Report.

If turbines are proposed within or adjacent to 'sensitive areas' as defined in the EIA regulations, they will usually always constitute development that requires an EIA. A 'sensitive area' means any of the following:

- (a) Land notified as a Site of Special Scientific Interest (SSSI)
- (b) Special Protection Area (SPA)
- (c) Special Areas of Conservation (SAC)
- (d) A property appearing on the World Heritage List
- (e) A scheduled monument
- (f) An Area of Outstanding Natural Beauty (AONB)
- (g) National Nature Reserves (NNR)

In addition to the bodies which would be statutory consultees for any planning application, Natural England and the Environment Agency must be consulted in all cases where an Environmental Impact Assessment is undertaken.

The likelihood of significant impacts will generally depend on the scale of the development and its visual impact, as well as potential noise impacts. EIA is more likely to be required for large scale developments of more than 5 turbines.

Some of these factors will have no impact; if this is the case then a short explanation of why it is not relevant is required.

#### **4. Mitigation Measures**

- All turbines within a group should be of the same appearance and size to create visual harmony.
- Turbines should be coloured off-white or light grey with a matt finish to minimise visual impacts in the most prevalent weather and lighting conditions.
- Ancillary clutter relating to the turbines should be housed within the turbine structure as far as possible. Any structures should be constructed from materials that are local to and in harmony with the area.
- Where appropriate, landscape planting and management proposals within the application area should be included as part of the proposed scheme to mitigate landscape and visual impacts. Proposals should be in keeping with the character and strategy for management of the landscape. Offsite planting by agreement should also be considered to mitigate impacts on individual residential locations or key views.
- Mitigation of the effects that have been identified must be covered within the Environmental Statement. The most suitable format may be to focus on one issue at a time, discussing the effect; its significance and its mitigation. For example a wildlife survey will identify what the impacts of the development are on wildlife, then go on to discuss the significance of the impact and then propose mitigation measures, finishing with a conclusion. This should be done for each issue.

#### **5. Conclusion of Impacts**

This can be included with each report/assessment of the area under examination.

#### **6. Alternatives**

- Demonstrate that other sites have been considered and provide reasons why other sites have been dismissed and why the proposed site is considered to be the most appropriate.
- Report on any alternatives within the scheme that have been considered and dismissed, for example: different accesses and location of buildings within the site etc.

#### **7. Methods**

How the development will be implemented, including site preparation, drainage, maintenance, timescale for implementation and the phasing of work.

#### **8. Difficulties**

An indication of any difficulties encountered through technical deficiencies or lack of expertise encountered in compiling the information required in the Environmental Statement.

## **9. Summary**

An Environmental Statement needs to be accompanied by a non-technical summary of the information provided above. The non-technical summary needs to contain:

- Purpose and nature of the project.
- An area summary.
- A brief description of information presented in the Environmental Statement, detailing key issues relating to environmental elements and the final determination of impact significance.
- Conclusions.

For further guidance the formal requirements on the content of environmental statements are set out in [Schedule 4 of the 2011 EIA Regulations](#).

### **Community Ownership Models:**

#### **Co-operative Share Offers**

- 6.19 A developer offers the project for co-operative investment at the construction stage. The offer could be for the entire project, or a share of the entire project. Investors receive a rate of return over the project's life, plus the return of their capital at the end of the project. This model only benefits those able to invest.

#### **Social Enterprise Models**

- 6.20 The project is community initiated and the community are involved in the development process. If it is a small project it may be owned and managed by the community. A larger project is likely to be managed and owned by a specialist social enterprise company for the benefit of the community. Profits must be allocated to a stated social cause such as carbon reduction and sustainability initiatives. The project can be funded by grants, co-operative share offer, commercial loans or a combination of these.

**Sources of further information:**

E-consult page for consultation:

[http://consult-ldf.n-somerset.gov.uk/consult.ti/wt\\_dspd/consultationHome](http://consult-ldf.n-somerset.gov.uk/consult.ti/wt_dspd/consultationHome)

UK Renewable Energy Roadmap – Update 2013:

<https://www.gov.uk/government/publications/uk-renewable-energy-roadmap-second-update>

National Planning Practice Guidance:

<http://planningguidance.planningportal.gov.uk/blog/guidance/renewable-and-low-carbon-energy/>

The North Somerset Core Strategy: [www.n-somerset.gov.uk/corestrategy](http://www.n-somerset.gov.uk/corestrategy)

North Somerset Council Consultation Draft Sites and Policies Development Plan Document: [www.n-somerset.gov.uk/sitesandpolicies](http://www.n-somerset.gov.uk/sitesandpolicies)

Feed-in-Tariff (Gov.uk website): <https://www.gov.uk/feed-in-tariffs/overview>

Renewables Obligation Certificates:

<https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/the-renewables-obligation-ro>

Electricity Market Reform: <https://www.gov.uk/government/policies/maintaining-uk-energy-security--2/supporting-pages/electricity-market-reform>

Planning portal for guidance on when planning permission is required:

<https://www.planningportal.gov.uk/permission/commonprojects/windturbines/>

Guidelines for Landscape and Visual Impact Assessment (2<sup>nd</sup> Edition)

<http://www.persona.uk.com/a5dunstable/deposit-docs/DD051-DD075/DD-061.pdf>

Guidelines for Landscape and Visual Impact Assessment (3<sup>rd</sup> edition 2013) are:

<http://www.landscapeinstitute.org/PDF/Contribute/GLVIAedition3pressrelease.pdf>

The assessment and rating of noise from Wind turbines (ETRSU-R-97):

<https://whitehall->

[admin.production.alpha.gov.co.uk/government/uploads/system/uploads/attachment\\_data/file/49869/ETSU Full copy Searchable .pdf](http://admin.production.alpha.gov.co.uk/government/uploads/system/uploads/attachment_data/file/49869/ETSU_Full_copy_Searchable.pdf)

A Good practice guide to the application of ETSU\_R\_97 for the assessment and rating of wind turbine noise:

<http://www.ioa.org.uk/sites/default/files/IOA%20Good%20Practice%20Guide%20on%20Wind%20Turbine%20Noise%20-%20May%202013.pdf>

Biodiversity and Trees Supplementary Planning Document (listed under supplementary planning guidance): [www.n-somerset.gov.uk/spds](http://www.n-somerset.gov.uk/spds)

TIN051: Bats and onshore wind farms guidance note:  
<http://publications.naturalengland.org.uk/publication/35010>

North Somerset Council proposals map: <http://map.n-somerset.gov.uk/LocalPlan.html>

Natural England:  
<http://www.naturalengland.org.uk/ourwork/planningdevelopment/default.aspx>

English Heritage: <http://www.english-heritage.org.uk/>

The National Air Traffic Service: <http://www.nats.aero/services/>

Civil aviation guidelines on wind turbines: <http://www.caa.co.uk/docs/33/Cap764.pdf>

Wind Farms, aviation interests and guidance for stakeholders (DECC publication):  
<https://www.gov.uk/government/publications/wind-farms-aviation-interests-and-guidance-for-stakeholders>

Highways Agency: <http://www.highways.gov.uk/about-us/contact-us/>

National Grid:  
<http://www2.nationalgrid.com/Contact-Us/>

Environment Agency Flood risk Assessment: <http://www.environment-agency.gov.uk/research/planning/93498.aspx>

Environment Agency External Relations team:  
<http://www.southwestenquiries@environment-agency.gov.uk>

Flooding page on the North Somerset Council website: <http://www.n-somerset.gov.uk/Environment/flooding/Pages/Flooding.aspx>

Development and flood risk advice note: [http://www.n-somerset.gov.uk/Environment/Planning\\_and\\_development\\_management/Documents/Advice%20and%20guidance%20notes/flood%20risk%20advice%20notes%20\(pdf\).pdf](http://www.n-somerset.gov.uk/Environment/Planning_and_development_management/Documents/Advice%20and%20guidance%20notes/flood%20risk%20advice%20notes%20(pdf).pdf)

Axe Brue Land Drainage Consents:  
<http://www.somersetdrainageboards.gov.uk/?s=consent>

Strategic Flood Risk Assessment:  
[http://www.n-somerset.gov.uk/Environment/Planning\\_policy\\_and\\_research/researchandmonitoring/Documents/Level%201%20study%20of%20North%20Somerset%20\(pdf\).pdf](http://www.n-somerset.gov.uk/Environment/Planning_policy_and_research/researchandmonitoring/Documents/Level%201%20study%20of%20North%20Somerset%20(pdf).pdf)

Highways Agency: Electronic Service Delivery for Abnormal Loads:  
<http://www.highways.gov.uk/specialist-information/abnormal-loads/>

The MOD Defence Infrastructure Organisation (DIO) Safeguarding Team [DIO-Safeguarding-Wind@mod.uk](mailto:DIO-Safeguarding-Wind@mod.uk)

Western Power Distribution: <http://www.westernpower.co.uk/Contact-us.aspx>

North Somerset renewable energy information: [www.n-somerset.gov.uk/renewables](http://www.n-somerset.gov.uk/renewables)

North Somerset Council Statement of Community Involvement: [http://www.n-somerset.gov.uk/Environment/Planning\\_policy\\_and-research/localplanning/Documents/Statement%20of%20community%20involvement/statement%20of%20community%20involvement%20\(pdf\).pdf](http://www.n-somerset.gov.uk/Environment/Planning_policy_and-research/localplanning/Documents/Statement%20of%20community%20involvement/statement%20of%20community%20involvement%20(pdf).pdf)

North Somerset Council Development Management information: [http://www.n-somerset.gov.uk/Environment/Planning\\_and\\_development\\_management/Pages/Planning-Home-page.aspx](http://www.n-somerset.gov.uk/Environment/Planning_and_development_management/Pages/Planning-Home-page.aspx)

EIA regulations: Statutory Instrument 1824:  
<http://www.legislation.gov.uk/uksi/2011/1824/made>

EIA regulations: Schedule IV Preparing Environmental Statements:  
<http://www.legislation.gov.uk/uksi/1999/293/part/IV/made>

This publication is available in large print, Braille or audio formats on request.

Help is also available for people who require council information in languages other than English.

Please contact 01275 888 811.