

Moor House

Wind Farm Proposals

Non Technical Summary • September 2009



A 100m (to tip) turbine being constructed at Tow Law

Introduction

Moor House

Following community consultation Banks Developments has prepared proposals for the Moor House Wind Farm, which is located north of Darlington in Darlington Borough. It would utilise the area's natural wind resource to provide renewable energy for the local grid.

Banks Developments

The Banks Group of companies was founded in 1976 in County Durham; it now works throughout the UK from four offices employing 350 people.

Banks Developments is the development arm of the Group with in house expertise in identifying, preparing and successfully gaining planning permission for major projects in the renewable energy, property, mineral extraction and waste management sectors. Our 'development with care' approach ensures we develop sites in close consultation with the community, as well as carrying out extensive environmental assessments.

Banks Developments is exploring opportunities for generating renewable electricity throughout the UK. It is currently prioritising work in the biomass and wind energy fields, but is also looking at projects including energy efficient construction and design.



Renewable energy from wind turbines



Residential property development



Landscaping at a restored mineral extraction site

Why wind energy?

Capturing the wind's natural energy is the most proven form of renewable electricity generation in the UK, and therefore provides the opportunity for the most immediate way of reducing CO₂ (carbon dioxide) emissions from our electricity use.

The need to reduce CO₂ emissions is widely accepted due to the increasing changes in our climate and the impact it is already having on wildlife species, eco-systems, the weather and sea levels.

Aside from this, within the next 20 years the indigenous fossil fuels which we currently use to provide our energy will become more scarce and we will become ever more reliant on imports from overseas. This proposal will provide secure, reliable energy supplies in line with the government's national energy goals.

The Moor House Wind Farm will provide, on average, enough electricity to meet the domestic needs of between 11,000 and 14,000 households, depending on the final installed capacity of the proposal. This represents 24-30% of Darlington Borough households.

The UK has the best wind resource in Europe and capturing this to provide indigenous green energy whilst continuing research into energy efficiency and other renewable sources is a logical step forward.



Location plan, planning application outline in red

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Why Moor House?

We have identified a site at Moor House which is not subject to international or national landscape, ecological or cultural heritage designations.

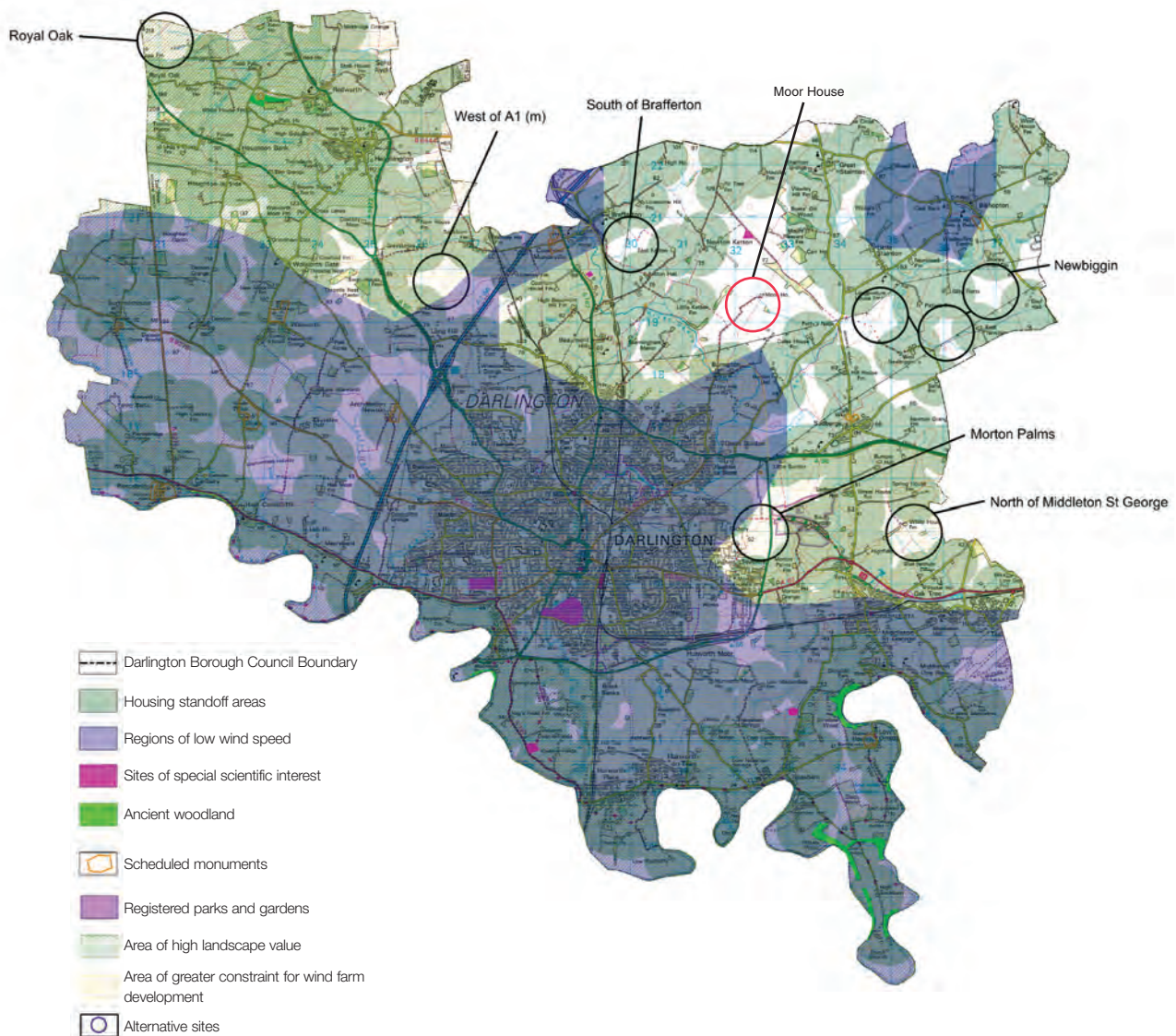
A landscape assessment carried out on behalf of the North East Assembly demonstrated that this part of Darlington had 'some potential' for a wind farm in this location. Emerging planning policy in Darlington also identifies this part of the district as the area where turbines will have the least landscape and visual impact.

In addition, the environmental statement demonstrates that the site has suitable highway access and is a sufficient

distance from residential properties to protect residents from unacceptable noise or shadow flicker effects. A detailed mapping exercise undertaken by Banks Developments has highlighted that there are few suitable sites for commercial wind energy development in Darlington. Once the various constraints to development were combined onto one map only seven areas in the borough area were identified.

We have looked at each of these areas in more detail and in our opinion the Moor House site is considered to be the best site to accommodate a commercially viable wind farm development.

The Regional Spatial Strategy for North East England sets a challenging target of ensuring that approximately 20% of electricity consumed in the region is generated from the region's renewable resources by 2020. It is estimated that approximately 908MW of renewable energy capacity will be required to be installed if the region as a whole is to achieve targets.



Feedback

Feedback from the scoping and consultation process

We submitted a scoping report to Darlington Borough Council in July 2008 in order to identify all the relevant issues to be considered in the environmental impact assessment (EIA) process.

Statutory consultees, the local authorities and the local community were all consulted on this document. Public exhibitions were held in Sadberge and Darlington in July 2008 to encourage the local community to participate in shaping the proposal. The results of the EIA will be presented in further exhibitions in September 2009.

Following consultation on the scoping report, we considered the responses received. The following are the most common points of concern raised at the public exhibitions and in other consultations, together with information on how Banks Developments has responded to each of them.

Comment

Wind turbines are inefficient and don't produce enough power to justify their impact.

Developer Response

The turbines proposed for the site are likely to produce electricity for around 85% of the year over a lifespan of approximately 25 years. The UK is the windiest country in Western Europe and the site identified has a suitable wind resource.

Comment

The possibility of the depreciation of house prices.

Developer Response

There is currently no evidence in the UK that wind farms have a lasting effect on house prices in their locality. Applications for any new type of development can cause a degree of uncertainty in property values, but as confirmed by recent surveys by the RICS any negative effect on values lessens over time as the form of a development is confirmed.

Comment

Concern about visual impact.

Developer Response

A landscape and visual impact assessment has been carried out as part of the EIA. This assessment includes the preparation of photomontages and other visual assessment tools. The assessment has been undertaken by a professional landscape architect in accordance with the Landscape Institute and other guidelines.

Comment

Concern about shadow flicker.

Developer Response

A shadow flicker assessment has been undertaken as part of the EIA process. Mitigation measures can be implemented where deemed necessary. A suitable management programme will be a condition of the planning permission to ensure no unacceptable impact occurs to residents of the affected community.

Comment

Concern about noise from the turbines.

Developer Response

The design meets the requirements of the government's guidance on noise. An assessment of the noise which would be created by the turbines during both day time and night time has been carried out in accordance with the appropriate government guidance on wind farm noise and residential amenity (ETSU-R-97). The proposal would be fully compliant with this guidance. Noise levels from wind farms are usually on a par with rural background noise at night time and it is possible to have a normal conversation without raising your voice whilst standing directly underneath a turbine.

Comment

Concern about interference with TV reception.

Developer Response

Consultation with the BBC who act in the interest of terrestrial TV has indicated that the proposal is unlikely to significantly affect television reception. Nevertheless, we undertake to monitor any effects after the wind farm becomes operational and commit to rectifying any reception problems caused by the wind turbines at our expense.

Key facts

Site Area

276 hectares of which 2.5 hectares will be occupied by the wind turbines and their associated infrastructure when the wind farm is operational (1% of total site area).

Number of turbines

10

Rated output of turbines

2 - 2.5MW

Dimension of turbines

6 turbines with a hub height of around 60m and maximum total of 100m. 4 turbines with a hub height of 70m and maximum total height to blade tip of 110m.

Length of access tracks

5 km

Duration

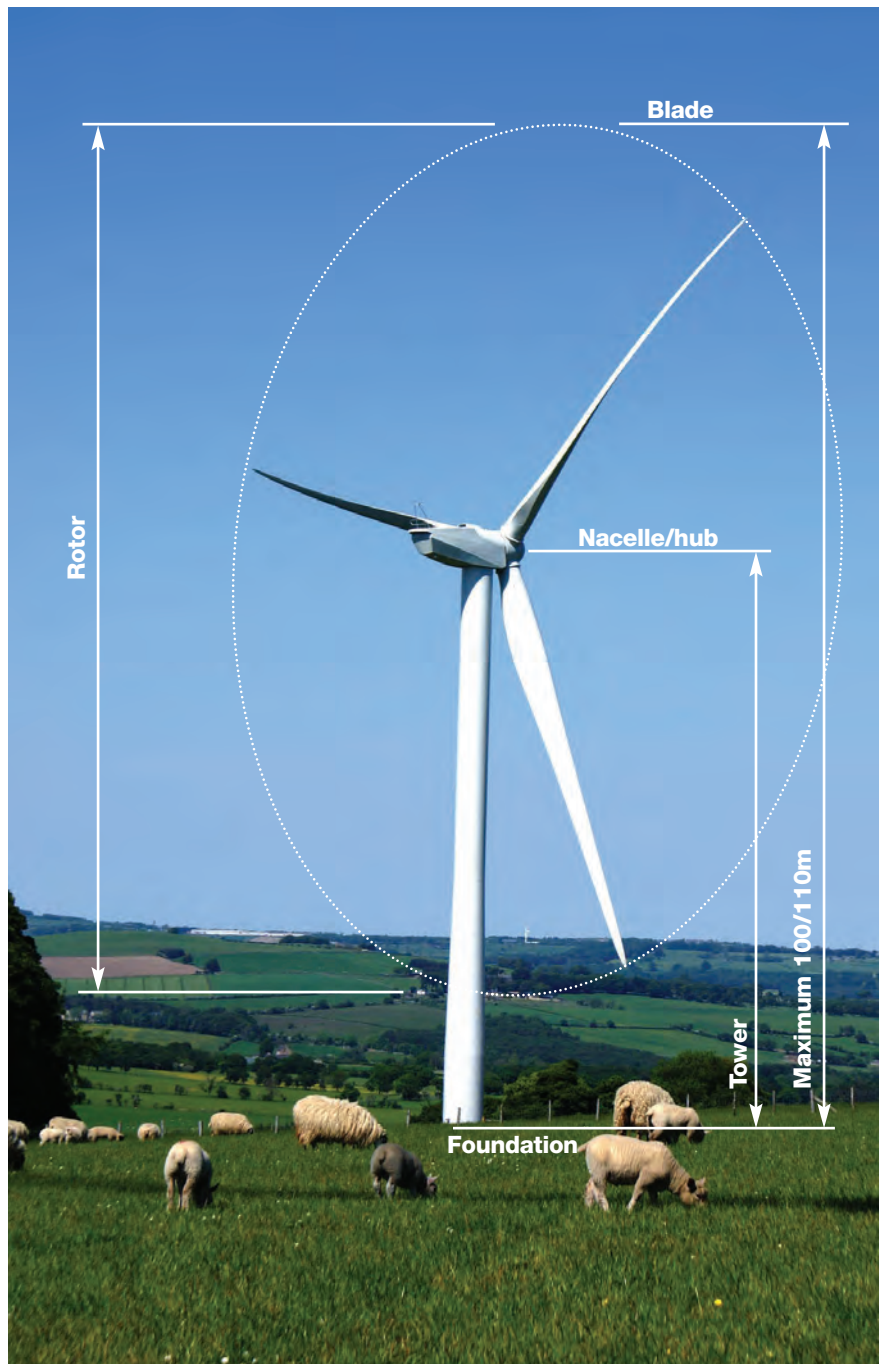
25 years plus two years construction and decommissioning.

Jobs

Approximately 20-30 on site during construction and extra jobs in transport and services. Approximately one operation and maintenance job during the life of the site.

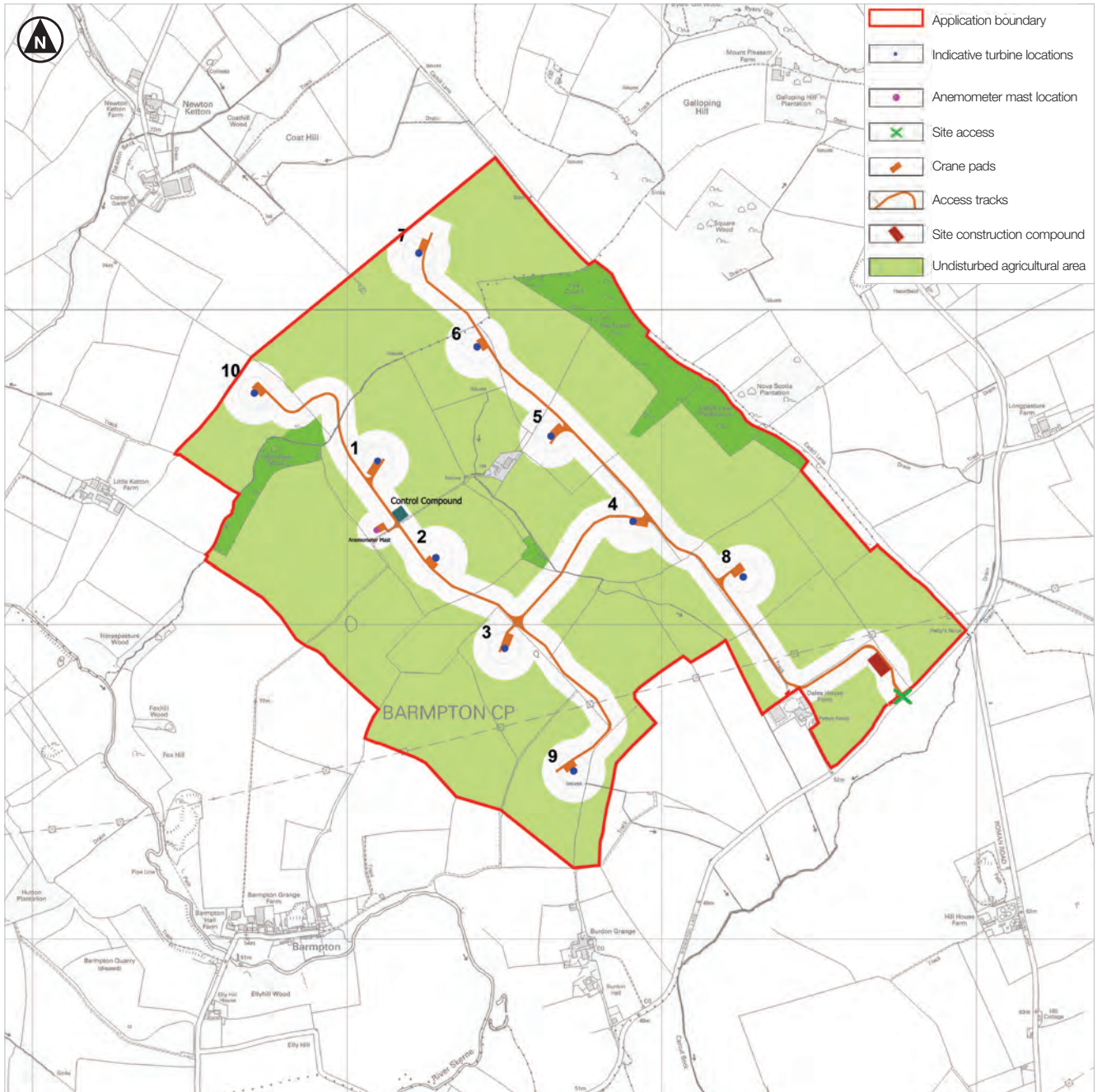
Heavy goods traffic

A maximum of around 63 heavy goods vehicle movements per day during construction is anticipated. The number of daily loads will vary considerably over the construction period. This maximum would only occur during a single month. Average daily heavy goods vehicle movements calculated over the construction period would be around 25.



Dimensions of proposed wind turbines, (photo of a 100m (to tip) turbine at Tow Law).

Site layout



Site layout plan

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Main elements

Turbines

Each of the 10 turbines proposed for the site will begin generating power at wind speeds of around 3-5 metres per second (m/s) and would shut down at wind speeds around 25 m/s. They will generate power for approximately 85% of the time.

Foundations

The turbine base would typically be an 18 metres x 18 metres square of concrete around 3.5 metres deep. Following construction, the layer of topsoil and turf originally excavated from the foundation area would be reinstated.

Wind Monitoring Mast

An anemometer mast is required to monitor the performance of the wind turbines by gathering data on wind speeds and direction. The mast will be of a free standing steel lattice design and will be a maximum of 80 metres in height.

Access Tracks

To access and service the wind turbines, approximately 5 km of new access tracks will be constructed to link the turbines to the public road network. The tracks will typically be five metres wide.

Compound & Traffic

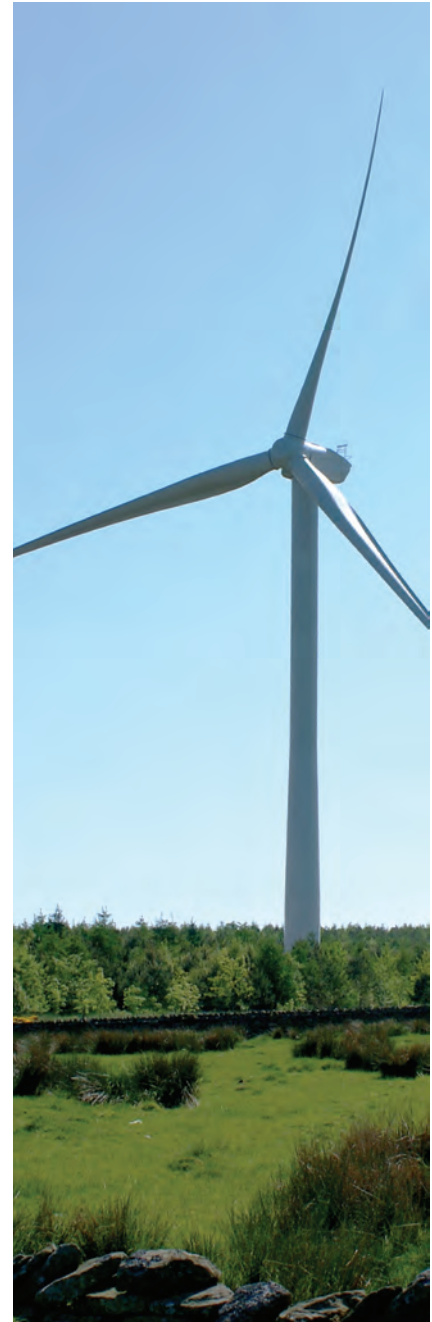
A temporary compound will be needed during the construction phase for the storage of plant and materials.

Traffic travelling to and from the site will use an agreed route. The preferred access route for turbine delivery is from the A66 south of the site, onto Bishopton Lane for the later part of the journey.

Cabling & the Grid Connection

Underground cables linking the turbines will generally be laid alongside the access tracks to minimise the extent of disturbance. A control building will be built in a compound area from which the electricity generated by the turbines will be fed into the local grid.

The electrical output of the proposal is such that the grid connection will be routed a short distance to the North West of the site to join the national grid. If above ground this would be on wooden poles.



Visual impact

Viewpoint 1

View from Barmpton, Hall Farm



Viewpoint 2

View from Hauxley Farm





Visual impact cont.

Viewpoint 3

View from Bishopton Lane



Viewpoint 4

View from Sadberge Village Hall





Environmental impacts

Landscape & Visual Impacts

One inevitable consequence of constructing wind turbines is that they will be visible over a relatively large area. Their scale and man made appearance mean they will not naturally 'fit in' with a rural landscape. It is however recognised that certain types of landscape are more capable of accommodating wind turbines than others.

The local landscape has already been selected as having some potential for wind turbines by an independent survey. The site location has been carefully chosen and the wind farm layout has been designed to take account of the landscape and visual impacts of the proposal.

The impact of the proposal on both the character and appearance of the local landscape has been assessed.

It has been found that there would not be significant effects on the landscape resource as a whole within the area studied. The assessment has however found that there would be adverse landscape and visual effects on some receptors close to the site, as would be expected for any wind farm proposal. The site is not in an area designated for its landscape value.

Noise (see page 16)

The type of wind turbines proposed for the application site are designed for use in quiet rural areas where noise levels are generally lower than the background noise levels found around the application site.

An assessment of predicted noise levels from the proposed wind turbines has been carried out in accordance with the government's latest guidance on the calculation and assessment of noise from wind farms ('The assessment and rating of noise from wind farms' ETSU-R-97).

Seven properties around the site were selected in consultation with the council's environmental health officer and these have been used to represent properties in the area.

The predicted noise levels at all of the representative properties are less than the day time and night time limits specified in Government guidance for all of the wind speeds considered. As a result it is not anticipated that there will be any significant disturbance to local residents caused by noise from the wind turbines.

Ecology & Ornithology

A number of specialised ecological surveys have taken place on the site in order to gain a full understanding of the ecology of the application site and the sensitivity of species in the area.

The application site lies outside any designated areas for nature conservation. The layout of the proposed wind farm has been designed to avoid any sensitive habitats. The effect of the proposal on designated areas, habitats and species within the site would not be significant.

The ornithology assessment has concluded that potential effects on important bird species (sensitive and protected species) would be not significant. To protect bat populations a small area of hedgerow would need to be removed. This would be replaced elsewhere on site.

Safety

Wind turbines have an excellent safety record. Experience indicates that properly designed and maintained wind turbines are a safe technology. There is no record of a member of the public being injured by an operational wind turbine in the UK.

Shadow Flicker

The potential for the blades of the proposed turbines to cause flickering inside properties around the site has been considered and the amount of time where this could theoretically occur has been calculated. The turbines can be programmed to switch off during periods when it is theoretically possible that flickering may occur.

Archaeology & Cultural Heritage

A cultural heritage and archeological assessment has been carried out. The assessment looked at the potential for direct effects (physical) and indirect effects (setting), on known features of historic importance and also the potential for uncovering and affecting unknown archaeological features.

There are no scheduled ancient monuments, listed buildings, conservation areas or other nationally designated sites or archeological features within the site.

The wind farm would not have any significant direct or indirect effects on cultural heritage features.

Surface and Groundwater

The small footprint of the proposed development, together with careful management of construction and operational works in line with an environmental management plan mean the proposed development will have no significant effects on watercourses or groundwater including local private water supplies.

Television, Telecommunications & Radar

It is possible for wind turbines to cause interference to local TV reception and telecommunication links. Liaison with the BBC and telecom operators has formed the basis of the assessment of possible impacts.

Any TV reception impact can be overcome by realignment or upgrading the viewer's television aerial or by installing a new mast. We will carry out these works if television reception is affected by the proposed development.

Telecommunications links near the site have been identified and avoided in the site design process.

Through consultation and assessment it is predicted that the proposed wind farm would not have a significant effect on the safe working or operation of either military or civil aviation radar systems.

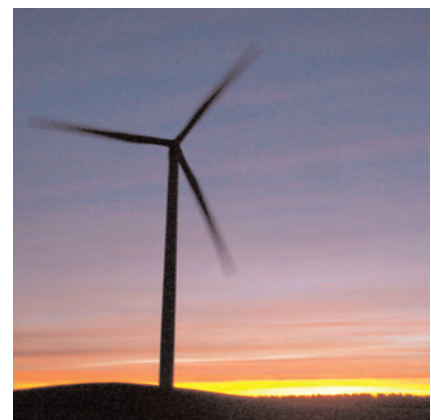
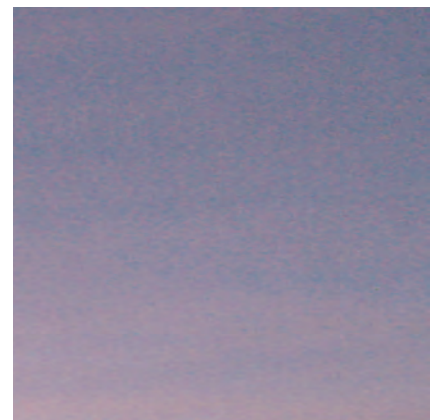
Traffic

The construction traffic and transport statement concludes that there would be a short term, insignificant increase in traffic levels during the construction at the proposed development (and during decommissioning). It is recommended that this is controlled by means of a traffic management plan. Abnormal (large) loads will be escorted and will arrive at times agreed with the police and the highway authority.

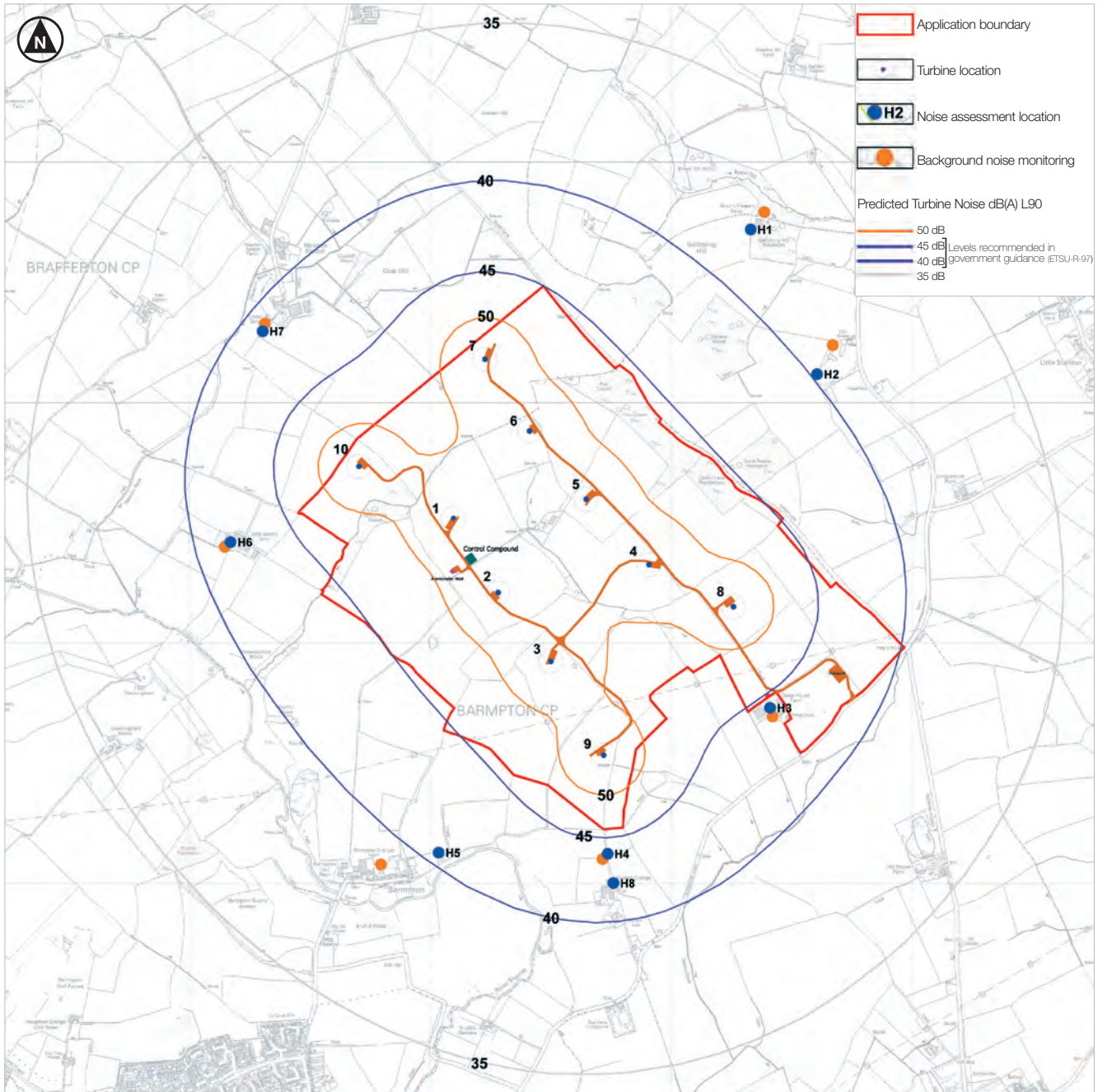
Socio-economic Considerations

The proposed development will have a positive effect on the local economy in terms of providing opportunities for local employment during the construction phase and support for local businesses, including accommodation and services. In the longer term benefits will also derive from operational and maintenance support work.

A community development fund will be established to provide tangible benefits to the local communities nearest the site. This will enable initiatives and local facilities to be funded throughout the proposed life of the wind farm.



Noise levels



Predicted noise levels

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Benefits of the project

The project will provide the following benefits:

- Introduce a locally-scaled renewable energy scheme which would provide enough electricity, on average, for between 24 and 30% of the Darlington households in the surrounding area.
- A reduction in greenhouse gas emissions from electricity generation by harnessing wind as an alternative to the burning of fossil fuels in line with the government's national energy goals.
- Potential to substantially contribute to the local sub-regional and regional 2020 targets for renewable electricity generation in line with UK Government aims.
- An indigenous, secure and reliable source of energy at a time of rising international energy prices and increasing instability of supply.
- Significant investment in the local economy during construction of the wind farm, with opportunities for employment.
- Provide long term income to agricultural businesses, supporting farm diversification.
- Establishment of a Community Development Fund targeted at addressing the causes and effects of fuel poverty in local communities.



Carleton Community High School received advice and a £1,500 grant to fund the installation of a smart lighting system along the schools main corridor.



Employment and investment through renewable energy.



Addressing the cause and effect of fuel poverty issues.

Conclusion

The proposal for a wind farm at the Moor House site has been the subject of an extended site identification and design process involving consultation with statutory consultees, local interest groups and the local community. The site identification process has highlighted that there is a lack of unconstrained sites in Darlington which could help deliver the region's 2020 target of 908MW of renewable energy generation.

The proposal has been the subject of an environmental impact assessment, which has examined the potential environmental effects. These are reported in the environmental statement along with a detailed description of the proposal.

The environmental statement concludes that the wind farm proposal would have only a small number of individual significant adverse effects, all limited to a relatively small area surrounding the site. The development of commercial scale wind turbines has similar effects wherever they are located because of the inherent nature of the technology and the sites that are suitable for their operation. The detailed design and assessment process has ensured that any adverse effects would be minimised.

When considered within the context of the substantial amounts of renewable energy that would be produced at a local scale and the wider environmental benefits that the Moor House proposal would have, the project has considerable merit.



A 100m (to tip) turbine at Tow Law

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development with care

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