

**Planning Statement including Design and Access Statement**

**Erection of Single Wind Turbine,  
Land at Sedgemoor Road, Eston, TS6 0UA**

**Future Energy Partnership**



May 2015

By

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## **1. INTRODUCTION**

### **1.1.PURPOSE OF THIS REPORT**

Entrust has been commissioned by the Future Energy Partnership to undertake a comprehensive environmental assessment of land at Sedgemoor Road, Eston TS6 0UA as part of a planning application for 1no. Enercon E44 500kW (downrated from 900kW) wind turbine and associated infrastructure.

This supporting Planning Statement, Design and Access Statement, together with the accompanying appendices are being submitted as part of the planning application to Redcar and Cleveland Borough Council for the proposed single wind turbine project.

### **1.2.DESIGN DETAILS**

The proposed development is for a single wind turbine. The final turbine manufacturer has not been decided yet, but will be chosen from the following list; Enercon, EWT or WTN. The development will have up to a 55m monopole or hub and a maximum blade tip height of up to 77m. The rotor diameter will be up to 44m depending on the final turbine model chosen. The maximum power output is 900kw. The estimated carbon savings is approximately 418 tonnes for the single turbine.

Visually the turbine is smooth and sleek with a non-industrial look mitigating many negative visual impacts some of which are associated with larger scale wind farm installations. The hub is comprised of galvanised steel and the turbine blades are made of fibreglass/epoxy.

## 1.3.PRE-APPLICATION ADVICE

### 1.3.1. REDCAR & CLEVELAND BOROUGH COUNCIL

A formal request for a screening opinion was submitted to Redcar and Cleveland Borough Council on the 25<sup>th</sup> February 2015 for a single 500kW wind turbine with a maximum blade tip height of 77m. Redcar and Cleveland Borough Council responded on the 12<sup>th</sup> March 2015, stating that insufficient information had been submitted for the Authority to be able to issue an opinion on whether an environmental impact assessment would be required to accompany this planning application. Following a follow up telephone conversation with Planning Officer Mrs. C. Griffiths it was suggested that the screening request be submitted at the time of the planning application submission along with supporting information as the application was unlikely to be considered EIA required under the Town & Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011 ("The 2011 Regulation").

*"Having regard to the details of the proposed development, the selection criteria set out in Schedule 3 to the 2011 Regulations and guidance in Circular 02/99 "Environmental Impact Assessment" the Local Planning Authority is of the view that the proposed development would not be likely to have significant effects on the environment".*

The screening request and response produced by Redcar and Cleveland Borough Council is contained within Appendix 13 of this document.

In addition to the screening request sent to Redcar and Cleveland Borough Council, formal pre-application advice was also sought from the Council. A request was sent to the Council by Entrust on the 13<sup>th</sup> August 2014. A response was received from the Council on the 29<sup>th</sup> January 2015 (PX0573/2014) containing detailed feedback on the proposed development and outlining an appropriate scope of works to accompany the forthcoming planning application.

The Council requested that the following information be submitted;

- Completed Application Form
- Site Location Plan
- Existing and Proposed Site Layout Plans

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- Existing and Proposed Elevations
- Design and Access Statement
- Planning Statement
- Noise Impact Assessment
- Landscape and Visual Impact Assessment
- Heritage Impact Assessment
- Shadow Flicker Assessment
- Swept Path Analysis
- Demonstration of Compliance with TIN051

All of the above information has been provided as part of this planning application in support of the proposed development.

The pre-application advice response issued by Redcar and Cleveland Borough Council can be found within Appendix 13 of this document.

### **1.3.2. STATUTORY and NON-STATUTORY BODIES**

Consultation with key statutory and non-statutory bodies is essential to the planning process, as this allows key issues to be identified and relevant mitigation measures to be carried out. Consultations have been carried out throughout the pre-app advice processes as well as during the compilation of this Planning Statement and application submission.

#### Landscape

The methodology and selection of viewpoints to be incorporated into the Landscape and Visual Impact Assessment (LVIA) were agreed with Claire Griffiths, Planning Officer, Redcar and Cleveland Borough Council, prior to the completion of the LVIA. A total of twenty one viewpoints were agreed for analysis within the LVIA.

#### Cultural Heritage

In relation to local cultural heritage, advice was sought from David Pedlow, Planning Officer, Redcar and Cleveland Borough Council, to determine the level of assessment deemed appropriate for such a development.

In line with this advice, a desk based assessment was conducted to determine the potential direct and indirect impacts upon Scheduled Ancient Monuments (SAMs),

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Listed Buildings and Conservation Areas. It was advised to assess all Grade I and II\* listed buildings within 5km of the application site and all Grade II listed buildings and conservation areas within a 2km radius.

Ecology

In relation to potential impacts on ecology, advice was sought from Natural England in order to establish any potential risks. The likely risk of impact on priority and protected species was deemed to be low. A suitably qualified ecologist was employed by Entrust to carry out an extended Phase 1 Habitat Survey in order to confirm this low risk and compliance with TIN051 on bats.

Highways

Advice was sought from David Pedlow and Local Transport Projects in order to establish a suitable scope of works that could demonstrate that the existing site junction with the public highway can accommodate the related delivery vehicles without alteration. As a result swept path analysis was carried out by Local Transport Projects on behalf of Entrust which demonstrates the suitability of the existing junction.

Joint Radio Communications (JRC)

JRC were consulted in order to establish if any potential interference may occur with their communication links. A response was received stating that no interference would be likely to occur as a result of the proposed development and therefore they would not object to any forthcoming planning application. Their response can be found in Appendix 12 which accompanies this document.

Ministry of Defence (MoD)

The MoD were consulted through their formal pre-application advice service and it was established that the proposed development is unlikely to impact on any of their defence radars. Their response can be found in Appendix 11 which accompanies this document.

## **1.4. SCOPE OF THE REPORT**

This supporting statement outlines the rationale for the proposed development, an assessment of the national, regional and local policy criteria and a comprehensive assessment of environmental, landscape, cultural heritage, ecological and technical impacts the proposed development may have. Mitigation measures have been proposed to address these impacts where they arise.

Several site visits have been undertaken and a thorough assessment by specialists within the various disciplines has been collated. This has helped define the design of the proposal and all of these factors have been taken into account when siting the turbine and refining the scheme.

Finally, this statement has been compiled in compliance with the various relevant statutory guidelines and policies set out by Redcar and Cleveland Borough Council.

## **2. DEVELOPMENT PROPOSAL & SITE SELECTION**

### **2.1. OVERVIEW**

The planning application is for a wind energy development consisting of one 900kW wind turbine with an operational lifespan of 25 years. The proposed development has the capacity to generate up to 1,633,000kWh of electricity annually, with the ability to power up to 350 average homes and offset approximately 418 tonnes of CO<sub>2</sub>.

The turbine will measure 77m to blade tip, with a hub height of 55m and a rotor diameter of 44m. A new access track to meet the existing road access is also proposed, together with turbine foundations; crane hardstanding; a meter house and underground cabling.

### **2.2. PROJECT JUSTIFICATION**

#### **2.2.1. RENEWABLE ENERGY TARGETS**

There is a need to increase renewable energy generation capacity across the whole of the UK in order to meet ambitious targets which have been set out in the UK Climate Change Act (2008). The UK have set a target of a reduction in harmful greenhouse gas emissions by 34% by 2020 and 80% by 2050.

The 2009 Renewable Energy Directive has set a legally binding target for the UK to achieve 15% of all energy consumption from renewable sources by 2020. The UK Renewable Energy Strategy (2009) sets out how meeting this target will be achieved, the construction of on-shore wind energy is highlighted as a principal technology.

The development at Land at Eston will generate an estimated 1,633,000kWh each year with the ability to power up to 350 average UK homes and offset approximately 418 tonnes of CO<sub>2</sub>. The wind turbine at Land at Eston will be connected directly into the National Grid, therefore energy produced will contribute towards both national and regional renewable energy generation and emissions reduction targets.

### **2.2.2. FARM DIVERSIFICATION**

The Redcar and Cleveland Local Development Framework Core Strategy and Development Policies (July 2007) both highlight the importance of agricultural diversification strategies for the rural economy. Such strategies enhance income from sources other than conventional agricultural production.

The applicant of the proposed wind turbine at Land at Eston, runs a family owned agricultural business, which at present mainly comprises arable crops. The installation of one medium sized wind turbine is compatible with current landuse at the site as the land will continue to be harvested throughout the proposed 25 year development using a tried and tested method of electricity generation to not only support its existing farming business but to help it to expand in order to be sustainable and environmentally responsible.

The applicant now wishes to take advantage of the natural wind resource which is available at Eston through the installation of a single wind turbine. A large portion of the energy generated by the proposed wind turbine will be exported directly to the National Grid, providing an additional source of income for the business. This will allow the farm to remain economically viable and can therefore be viewed as a form of sustainable farm diversification.

This additional income will compensate for the rising costs of inputs required for such a business including electricity and fuel. As the proposed wind turbine is of a medium scale it is therefore anticipated that impacts on the surrounding landscape, ecology, cultural heritage and amenity will be minimal. It is thought that the proposed benefits, including the additional source of income for the family business, the potential for job creation and the generation of clean, renewable energy will outweigh any perceived negative impacts.

Careful consideration has been given to potential effects which may arise from this development. The proposed wind turbine has been well sited and designed, potential impacts have been minimised and mitigated where possible.

## 2.3. SITE SELECTION

The proposed Eston development site is located within an area of agricultural grassland at an elevation of approximately 83.2m Above Ordnance Datum (AOD). The field in which the development will be located is bound by a dense well-defined tree line on the north-west and south-west sides. The northern boundary is lined with dotted trees and hedgerows, whilst the south-eastern boundary is bounded by an earth bank. At present the land is currently utilised for arable farming, during the construction period there will be some temporary disruption to harvesting activities. However, these activities can be resumed once the turbine has been installed.

Residential (mainly agricultural) properties are sparsely distributed within the largely agricultural landscape, the closest residential property to the proposed development lies approximately 390m to the north of the proposed turbine on the other side of the A174 road at Sedgemoor Road. Other residential dwellings within close proximity include Rose Cottage (710m to the SW) and Villa Marie (800m NE). Flatts Lane Centre is located 373m to the SW, however this is not a residential dwelling.

The settlement of Normanby lies approximately 1.4km to the north-west of the proposed development site. Residential dwellings at the southern edge of Normanby can be found approximately 400m from the proposed turbine on the northern side of the A174. The settlements of Ormesby and Eston can be found 2km west and 1.7km NNW respectively. Due to the scale of the proposal and separation distances involved the predicted impact on nearby residential properties is expected to be less than significant.

The proposed development at land at Eston lies in close proximity to the local road network which will be utilised for the delivery of the wind turbine components. The site can be accessed from Flatts Lane to the south-west of the proposed site. The site is also bordered by the A174 to the North, which runs the length of the northern filed boundary.

A desk based feasibility assessment and site visit were undertaken prior to deciding upon the location of the wind turbine; the proposed site has been selected based on the following criteria:

**Table 2.1 - Site Selection Criteria**

Criteria	Description
<b>Topography</b>	- The turbine is situated at 83.2m AOD on flat land at a high enough altitude to receive a good wind resource of approximately 6.3 m/s.
<b>Ecology</b>	- The turbine is at least 50m from blade edge to any potential sensitive wildlife habitat in line with Natural England's TIN051 guidelines. - The site has been assessed as being of low ecological value.
<b>Nearby Structures</b>	The turbine is a safe distance from: - Nearest non-residential buildings (approximately 373m SW) - Electricity Pylons (over 3 x rotor diameter to National Grid Pylons)
<b>Landscape and Visual Impacts</b>	- The site is not located within or in close proximity to any special or protected landscape designations. - The relatively flat landscape which the turbine is sited on, along with vegetation and the natural backdrop of the Eston Hills will ensure no significant landscape and visual impacts occur as a result of the proposed wind turbine. - Cumulative Landscape and Visual Impacts will be reduced to less than significant due to the siting of the turbine at least 2.7km from the nearest other development.
<b>Hydrology</b>	The proposed turbine is not within close proximity to any water features nor is it within a flood risk zone.
<b>Noise</b>	- The nearest non-financially involved residential property lies 390m from the development. - Required distance from noise sensitive receptors has been achieved. (Noise levels will not exceed the 45dB(A) as set out by ETSU-R-97 (A fixed lower limit of 45dB(A) or a maximum increase of 5dB(A) above existing background noise is deemed acceptable in particularly noisy areas) - Background noise on site is on average approximately 55dB (A) as a result of the A174 road.
<b>Shadow Flicker</b>	- The nearest non-financially involved property lies 390m from the development. - Required distance from shadow sensitive receptors has been achieved. (10 x Rotor Diameters is a rule of thumb used which would equal 440m in this instance. The nearest property is 390m away, however due to the direction and angle of this property from the proposed turbine, the shadow flicker limits of 30 minutes per day or 30 hours per year will not be exceeded)
<b>Radar</b>	- The turbine is located outside the view of any civil and military radars. Mitigation may be required with Durham Tees Valley Airport if they deem the turbine visible.

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<p><b>Cultural Heritage</b></p>	<ul style="list-style-type: none"> <li>- There are 2no. Grade I and 9no. Grade II* listed buildings and 3no. Scheduled Ancient Monuments as well as 18no. very small round/bowl barrow SAMs within 5km and 22no. Grade II listed buildings within 2km. There are no Conservation Area within 2km.</li> <li>- There are no heritage assets within the application site and the nearest heritage asset is some 600m away.</li> </ul>
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Based on the criteria outlined in Table 2.1 and in accordance with current land use at the proposed site, the selected location provides the most viable option for harnessing wind energy whilst maintaining agricultural productivity. The proposed land take is minimal, however a short access track will be required to the site along with a crane pad for construction.

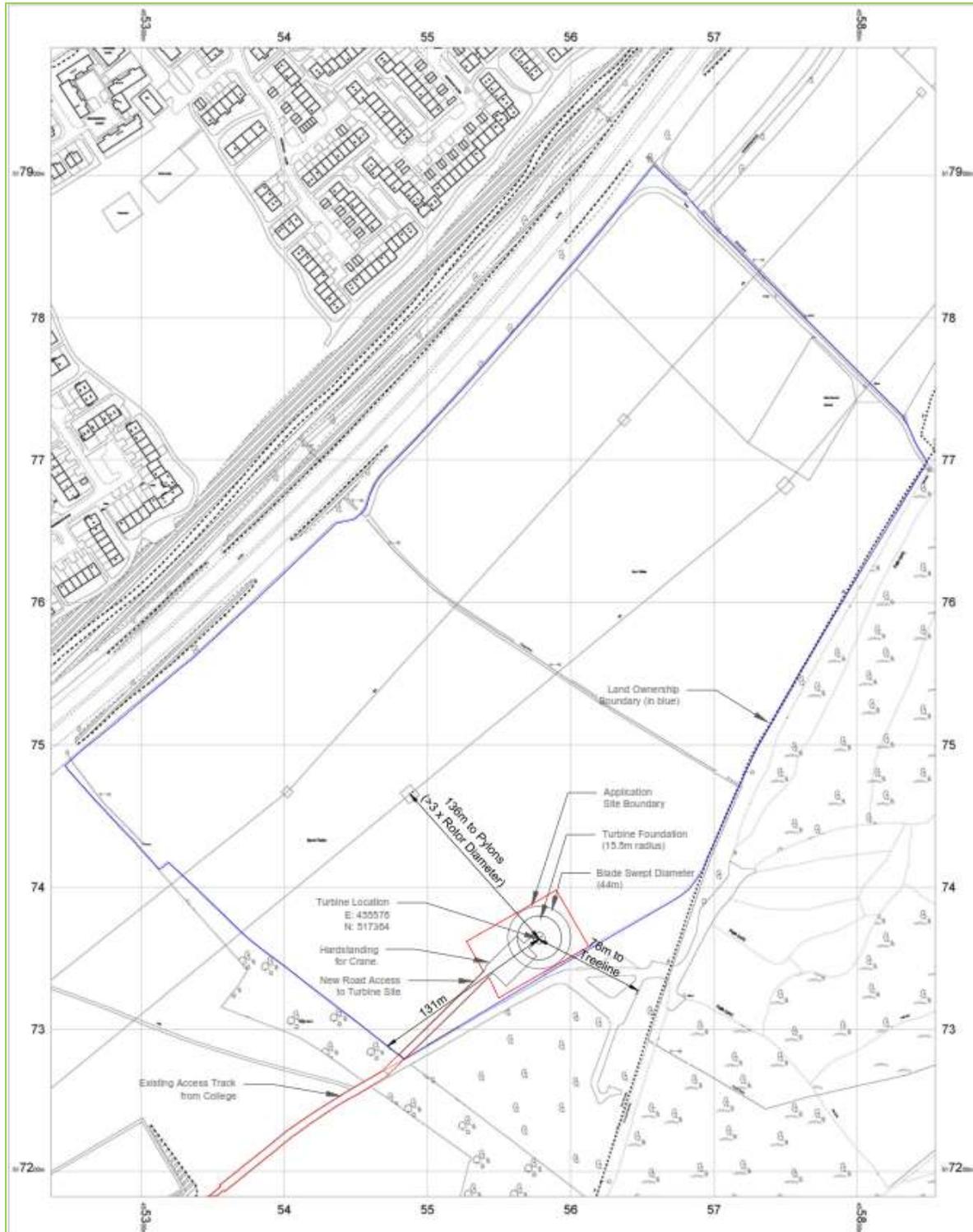
Below is a constraints and buffer map which demonstrates the unconstrained site location chosen for the proposed wind turbine.



## 2.4. SITE LAYOUT

The layout of the proposed wind energy development is highlighted in figure 2.1 below, indicating: the proposed access track leading from unnamed road / Flatts Lane to the south-west, crane hardstanding, turbine foundations and the meter house.

**Figure 2.1 - Proposed Turbine Site Layout**



### **2.4.1. WIND TURBINE**

The wind turbine selected for this development is an Enercon E44 900kW machine, the specifications of which are outlined below:

- Turbine: 1
- Number of Blades: 3
- Height to Hub: 55m
- Rotor Diameter: 44m
- Blade Tip Height: 77m
- Output: 900kW (to be downrated to 500kW)
- Colour: Semi-matt pale grey

### **2.4.2. TURBINE FOUNDATION**

The turbine foundation design will depend on specific ground conditions at the site. Before construction begins exploratory site investigations will be carried out to determine the characteristics of the underlying soil structure and the foundation will be designed accordingly.

A typical foundation for a wind turbine of this size will measure 15.2m in diameter and 1.6m in depth. The foundation materials will consist of approximately 155m<sup>3</sup> of concrete, a reinforced steel cage and a steel anchor ring to support and attach the tower of the turbine.

The soil removed for the construction of the foundation will be stored onsite and used later for reinstatement of the crane pad and in any landscaping required.

### **2.4.3. CRANE HARDSTANDING**

An area of hardstanding is proposed at the base of the foundation to support a crane and to provide a working and laydown area. This will also provide sufficient space for vehicles turning and thus negate the need for vehicles reversing back onto

the public highway. The crane hardstanding dimensions will measure 20m by 30m in order to enable vehicle turning. Exact structure of the hardstanding will not be decided until geotechnical investigations are carried out, but a typical example would be made from crushed hardcore to a depth of approximately 25cm with a more granular compressed surface of approximately 5cm. Only the top soil should require stripping for the hardstanding and this will be stored close to the site and used after construction for re-instatement of the land.

The re-instatement will consist of covering the crane-pad with the excavated soil and reseeded this with species rich grass. Therefore the topsoil can be re-stripped from the crane pad for future maintenance if required.

#### **2.4.4. ACCESS TRACK**

The access track will be constructed utilising the same materials as the crane hardstanding. It will measure approximately 83m in length and 5m in width. A site survey will be required before construction of the track in order to ascertain the exact depth of stone required in order to provide sufficient bearing capacity for the larger loads and crane, however this is not expected to exceed 0.3m in depth.

Upon completion of the development the track will be reduced in width to 3m to allow for maintenance. Top-soil removed during construction of the track will be used to re-grade each verge and sown with species rich grass. The landscaping of these development features will reduce the overall footprint of the project and therefore the visual impact of the crane pad and access track.

The access track and crane hardstanding will be constructed utilising type 1 stone aggregate. Due to the porous nature of the site access track and crane working pad; there will be no change in the ground water flow. An initial site survey has shown no surface water accumulation near the application site, eliminating the need for any site drainage. Any field drains found during construction will be re-connected to ensure that the drainage system is maintained.

#### **2.4.5. SUBSTATION/METER HOUSE (Proposed Control Unit)**

The meter house will be constructed next to the turbine foundation. The building will measure 3.4m by 9.44m by 4.49m and will be located on a concrete foundation raised slightly above ground level. A drawing of the meter house/substation can be found in Appendix 3.

#### **2.4.6. TRANSFORMER**

A further small enclosure measuring 2.4m x 4m x 2.6m will house a transformer, associated switchgear and electrical protection equipment. This enclosure will be located close to the base of the turbine tower and will be connected to the grid connection via underground cabling.

#### **2.4.7. SITE ACCESS**

Existing road networks will be used to deliver the materials required for the turbine development. The turbine loads will exit the local road at the existing entrance to Flatts Lane Centre to the south-west.

A more detailed look at the delivery load sizes and amounts can be found in the Traffic and Transport section of this report and within the Design and Access Statement within this report.

#### **2.4.8. DECOMMISSIONING**

The operational period of the turbine will be 25 years; at the end of this period decommissioning will take place, which will entail removing the turbine components. If an extension of the operational period is sought it must be carried out in accordance with relevant planning legislation and regulations.

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If an extension is not required, the site will be reinstated as closely as practicable to its original condition within 6 months. This will involve aboveground components being dismantled and removed from the site. Parts are commonly recycled or refurbished and resold to the second hand market. Cabling will be removed from the ground and recycled at a suitable recycling plant, leaving only the ducting in-situ. Turbine foundations will be removed to approximately 1m below the surface and access tracks may be covered by topsoil or left as they are if they provide benefits to the landowner.

The ease and rate at which wind turbines can be decommissioned allows for site restoration leaving no visible trace of the developments existence.

### 3. LEGISLATIVE & PLANNING POLICY FRAMEWORK

#### 3.1. LEGISLATIVE FRAMEWORK

An application for the development of a wind energy generation project should be assessed in the context of national, regional and local planning policy, legislation and supplementary planning guidance. Table 3.1 below sets out the relevant legislative framework.

**Table 3.1 - Relevant Legislative Framework**

Legislation	Description
<b>Town &amp; Country Planning (Environmental Impact Assessment) Regulations 2011</b>	The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 was developed in response to the EU Directive and states that: the level of assessment should correspond to the scale of the development.
<b>The UK Climate Change Act (2008)</b>	The UK have set a target of a 34% reduction in emissions by 2020 and an 80% reduction by 2050. This equates to a reduction in emissions of 1.4% each year.
<b>The 2009 Renewable Energy Directive</b>	This sets a target for the UK to achieve 15% of all energy consumption from renewable sources by 2020.
<b>The UK Renewable Energy Strategy (2009)</b>	This describes how the UK will meet its legally binding target to supply 15% of all of the energy it uses from renewable sources by 2020. The contribution of on-shore wind energy is highlighted as the principal technology. An increase from 3GW produced in 2008 to just under 15GW by 2020 is needed - a fivefold increase - to reach the target.
<b>The Energy White Paper (2007)</b>	<p>"Meeting the Energy Challenge" a white paper published in May 2007 which sets international and domestic energy strategy in the shape of four goals:</p> <ul style="list-style-type: none"> <li>• Aiming to cut CO2 emissions by 60% by about 2050, with real progress by 2020.</li> <li>• Maintaining the reliability of energy supplies.</li> <li>• Promoting competitive markets in the UK and beyond.</li> </ul>

	Ensuring every home is heated adequately and affordably.
<b>The Energy Act (2008)</b>	<p>This implements the legislative aspects of the Energy White Paper (2007). The Act covers:</p> <p><b>Renewables:</b> Strengthening the Renewables Obligation to increase the diversity of our electricity mix, improve the reliability of our energy supplies and help lower carbon emissions from the electricity sector.</p> <p><b>Feed-in-tariffs:</b> enabling the government to offer financial support for low-carbon electricity generation in projects of up to 5MW.</p>

### 3.2. PLANNING POLICY FRAMEWORK

Table 3.2 - Relevant Planning Policy Framework

Legislation	Description	Level
<b>National Planning Policy Framework (NPPF) (2012)</b>	<p>The NPPF sets out the government's planning policies for England. This was adopted on 27th March 2012 replacing the majority of previous National Policy Statements and Planning Policy Guidance notes (PPGs) reducing the complexity of the planning system. Emphasis is placed upon the purpose of the planning system to contribute towards the key principals of sustainable development; environmental, economic and social. Key sections to consider for this project are:</p> <p><b>NPPF Part 1: Building a strong, competitive economy</b> - states that the planning system should do everything it can to support sustainable economic growth. Local Planning Authorities are expected to support existing business sectors, taking into account whether they are expanding or contracting.</p> <p><b>NPPF Part 7: Requiring good design</b> - attaches great importance to the design of the built environment, which is viewed as being indivisible from good planning. It is seen as important to plan positively for the achievement of high quality and inclusive design for all development, including individual buildings, public and private spaces and wider area development schemes.</p>	National

	<p><b>NPPF Part 10 - Meeting the challenge of climate change, flooding and coastal change</b> - states that planning plays a key role in helping shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development.</p> <p>Applicants for energy development are not required to demonstrate the overall need for renewable or low carbon energy, and there is a recognition that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions. Such proposals should be approved, unless material considerations indicate otherwise if impacts are acceptable or can be made so. Once suitable areas have been identified 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 locations meets the criteria used to identify suitable areas.</p> <p><b>NPPF Part 11 - Conserving and enhancing the natural environment</b> - states the planning system should contribute to the natural and local environment by protecting valued landscapes, recognising the wider benefits of the ecosystem, and minimising impacts on biodiversity. Where the significant development of agricultural land is deemed to be necessary, that of poorer quality should be used in preference to that of higher quality. In determining planning applications the aim should be to conserve and enhance biodiversity.</p> <p>Whilst existing businesses should not have unreasonable restrictions imposed on them, an unreasonable level of noise should be avoided and mitigated against where necessary.</p>	
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	<p><b>NPPF Part 12 - Conserving and enhancing the historic environment -</b></p> <p>Local planning authorities should set out in their Local Plan a positive strategy for the conservation and enjoyment of the historic environment. In doing so, they should recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance.</p>	
<p><b>Redcar and Cleveland Borough LDF Core Strategy and Development Policies (July 2007)</b></p>	<p><b>CS3 - Spatial Strategy for Eston -</b> is centred on a number of aims under the headings of regeneration, sustainable communities, access, economy and environment. Of most relevance to this application are;</p> <p>(z) Protect and enhance the character and special qualities of the Eston Hills; and</p> <p>(aa) Improve the environment and security of the employment areas;</p> <p><b>CS12 - Rural Economy -</b> states that in the countryside, development of an appropriate scale and nature will aim to;</p> <p>(j) Diversify the rural economy particularly through the development of land and food related businesses e.g. forestry and timber, local food businesses, energy crops;</p> <p>(l) Support agricultural businesses and appropriate farm diversification;</p> <p><b>CS20 - Promoting Good Design -</b> states that good quality and inclusive design will be promoted in all new developments. Of particular relevance to this development are;</p> <p>(a) Be designed to respect or enhance the character of the local area to contribute to the sense of place and, where applicable, meet the specific design objectives for individual regeneration areas, towns or villages; and</p> <p>(c) Incorporate sustainable construction techniques and design</p>	<p>Local</p>

	<p>concepts for buildings and their layouts to reduce the local and global impact of the development particularly on climate change.</p> <p><b>CS21 - Renewable Energy</b> - states renewable energy will be supported and encouraged where they help to meet the Government's climate change objectives and the Tees Valley sub-regional target for electricity generation from renewable sources set out in the RSS.</p> <p>The scale of the proposal will reflect the capacity and sensitivity of the landscape to accept the proposed renewable technology. Due to character of the Heritage Coast, opportunities for commercial renewable energy generation will not be appropriate in that area unless the requirements of the PPS22 are fully met.</p> <p>The following broad areas of least constraint have the potential for onshore wind farm development:</p> <ul style="list-style-type: none"> <li>a) South Tees for medium scale development; and</li> <li>b) East Cleveland for small scale development.</li> </ul> <p><b>CS22 - Protecting and Enhancing the Borough's Landscape</b> - states that the overall approach will be to protect and enhance the Borough's landscape based on the character areas identified through the Landscape Character Assessment. Priority will be given to the protection and enhancement of the landscape character and natural beauty of the North Yorkshire and Cleveland Heritage Coast.</p> <p>Development will not be allowed if this would lead to the loss of features important to the character of the landscape unless the need for development outweighs the landscape considerations. Where development is justified, proposals will include measure to enhance, restore or create the special features of the landscape. In such circumstances, priority will be given to the creation of habitats to support local and regional biodiversity targets and the planting of new hedgerows, trees and woodlands to support the Tees Forest Strategy will be encouraged.</p>	
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	<p><b>CS24 - Biodiversity and Geological Conservation</b> - states that the main aim is to protect and enhance the Borough's biodiversity and geological resource and development will be encouraged to include measures to contribute positively to the overall biodiversity in the Borough.</p> <p><b>CS25 - Built and Historic Environment</b> - states that development proposals will be expected to contribute positively to the character of the built and historic environment of the Borough.</p> <p>The character of the built and historic environment will be protected, preserved or enhanced. Particular protection will be given to the character and special features of:</p> <ul style="list-style-type: none"> <li>a) Conservation areas;</li> <li>b) Listed buildings;</li> <li>c) Historic parks and gardens;</li> <li>d) Archaeological sites; and</li> <li>e) The historic landscape of the Eston Hills.</li> </ul> <p>Development which preserves or, where appropriate, enhances the character of important historic buildings and their settings will be encouraged.</p> <p><b>DP1 - Development Limits</b> - states within development limits, development will generally be acceptable where it accords with site allocations and designations in the Local Development Framework.</p> <p>Development beyond development limits will be restricted to:</p> <ul style="list-style-type: none"> <li>c) An appropriate diversification of an existing agricultural or forestry activity; or</li> <li>i) Other development requiring a countryside location due to technical or operational reasons.</li> </ul>	
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	<p><b>DP2 - Site Selection</b> - states that in assessing the suitability of a site or location. development will be permitted where it:</p> <ul style="list-style-type: none"> <li>a) Accords with site allocations and designations in other DPDs;</li> <li>b) Meets the requirements of Policy CS2 Locational Strategy;</li> <li>c) Does not cause a significant adverse impact on the amenities of occupiers of existing or proposed nearby properties;</li> <li>d) Does not result in the unacceptable loss or significant adverse impact on important open spaces or environmental, built or heritage assets which are considered important to the quality of the local environment</li> <li>e) Minimises and adverse impact on the overall character of the streetscape or landscape of the area;</li> <li>f) Minimises the loss of best and most versatile agricultural land and follows the sequential test set out in PPS7;</li> <li>g) Avoids locations that would put the environment or human health or safety at unacceptable risk; and</li> <li>h) Has adequate infrastructure, services and community facilities to serve the development.</li> </ul> <p><b>DP3 - Sustainable Design</b> - states that all development must be designed to a high standard. Development proposals will be expected to:</p> <ul style="list-style-type: none"> <li>a) Respect or enhance the character of the site and its surroundings in terms of its proportion, form, massing, density, height, size, scale, materials and detailed design features;</li> <li>b) Include a layout and design that takes into account the potential users of the site and does not cause a significant adverse impact on residential amenity;</li> <li>c) Create a safe and secure environment;</li> <li>d) Respect or enhance the landscape, biodiversity, geological and heritage designations or assets that contribute positively to the site and</li> </ul>	
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	<p>the surrounding area;</p> <p>e) Incorporate sustainable design and construction techniques to meet high standards for energy efficiency, water efficiency, water management and waste management and to minimise vulnerability to climate change. The Council will require major developments to provide at least 10% of their predicted energy requirement from renewable sources;</p> <p>f) Contribute to a sense of place and quality;</p> <p>g) Ensure pedestrian, cycling and public transport access is safe, convenient and attractive, linked to existing networks and includes appropriate facilities for cyclists and public transport users;</p> <p>h) Make appropriate access provision for disabled people and those with restricted mobility;</p> <p>i) Fully incorporate, where appropriate, biodiversity and geological interests, landscaping and public and private open spaces which meets the Council's open space standards;</p> <p>j) Incorporate infrastructure and services to serve the development including recycling and waste facilities and Sustainable Drainage Systems if appropriate; and</p> <p>k) Provide vehicular access and parking suitable for its use and location</p> <p>l) A design and access statement will be required for all proposals</p> <p><b>DP6 - Pollution Control</b> - states that development that would give rise to increased levels of noise or vibration or which would add to air, land or water pollution, by itself or in accumulation with existing or other proposed uses, will only be permitted if it is acceptable in terms of:</p> <p>a) Human health and safety;</p> <p>b) Environment; and</p> <p>c) General amenity</p> <p><b>DP9 - Conservation Areas</b> - seeks to preserve or enhance the setting, character and appearance of conservation areas.</p> <p><b>DP10 - Listed Buildings</b> - seeks to preserve or enhance the setting,</p>	
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	character and appearance of listed buildings.	
<b>Redcar and Cleveland Local Development Framework Landscape Character SPD (March 2010)</b>	<p>This document forms part of the Redcar and Cleveland Local Development Framework and applies to development in that part of Redcar and Cleveland outside of the North York Moors National Park.</p> <p>The SPD explains the role of landscape character and sets out guidance to be used in designing development and new landscape features in each area building on the 'Redcar and Cleveland Landscape Character Assessment' (2006).</p>	

### 3.2.1. NATIONAL PLANNING POLICY FRAMEWORK (NPPF)

The overarching principle of the NPPF is sustainable development. Section 10 “Meeting the Challenge of Climate Change, Flooding and Coastal Change” highlights the role of the planning authority in reducing greenhouse gas emissions and promoting renewable energy developments. The proposed development at land at Eston will displace approximately 418 tonnes of CO2 per annum, thus aiding Redcar and Cleveland Borough Council in contributing towards emissions reduction targets which have been set at a national and regional scale.

At the heart of the NPPF is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking. Sustainable Development encompasses concepts of sustainable economic, social and environmental development which run concurrent with the spatial approach to planning.

The following excerpts are applicable to this proposal:

#### **Pre-application engagement and front loading**

The NPPF considers pre-application engagement and front loading of applications as an important part of decision-taking;

*'Local planning authorities should publish a list of their information requirements for applications, which should be proportionate to the nature and scale of development proposals and reviewed on a frequent basis.*

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*Local planning authorities should only request supporting information that is relevant, necessary and material to the application process.'* (Paragraph 193).

This planning application is accompanied by a suite of relevant documents. The scope of which was pre-agreed with Planning Officers and informed by the pre-application advice received, which should aid the Local Planning Authority in making a determination. Should any further information be required the Applicant will provide any necessary information.

**Renewable Energy**

The Core Planning principles should underpin decision-taking. This includes:

*'Supporting the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example by the development of renewable energy)'* (Paragraph 17).

The proposed scheme is such an example of where there will be considerable wider environmental benefits. The 900kW wind turbine would produce a significant annual yield of electricity from a renewable source at low wind speeds of 5m/s. The area, typically would enjoy wind speeds in excess of 6.3m/s (Source: NOABL), which would imply an even greater production of renewable energy.

It is proposed as part of the scheme that any surplus energy produced from this scheme would also be directed into the national grid. This would share the energy produced with the rest of the country, and essentially provide a valuable contribution to nationwide renewable energy targets, and regional targets.

The Government;

*'is committed to securing economic growth in order to create jobs and prosperity, building on the country's inherent strengths, and to meeting the twin challenges of global competition and of a low carbon future'.*  
(Paragraph 18)

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The proposed development will provide carbon savings of approximately 418 tonnes per annum as previously stated.

*'planning plays a key role in helping shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development'. (Paragraph 93)*

The NPPF acknowledges the key role planning has to play in helping shape places to secure radical reductions in greenhouse gas emissions, and supporting the delivery of renewable and low carbon energy.

When determining planning applications, local planning authorities should:

- *'Not require applicants for energy development to demonstrate the overall need for renewable or low carbon energy and also recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and*
- *Approve the application if its impacts are 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.'* (Paragraph 98)

### **Heritage Assets**

Chapter 12 of the NPPF considers the importance of conserving and enhancing the historic environment.

*'When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. As heritage assets are irreplaceable, any harm or loss should require clear and*

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*convincing justification. Substantial harm to or loss of a grade II listed building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, grade I and II\* listed buildings, grade I and II\* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.'* (Paragraph 132)

The proposed development is not in close proximity to any grade I, grade II\* or grade II listed heritage assets, scheduled monuments, protected wrecks, battlefields or World Heritage Sites.

Within the general vicinity there are 2no. Grade I, 9no. Grade II\* listed buildings and 3no. Scheduled Ancient Monuments as well as 18no. very small round/bowl barrow SAMs within 5km and 22no. Grade II listed buildings within 2km. There are no Conservation Areas within 2km. The predicted impact on these heritage assets can be considered insignificant, as is demonstrated in the accompanying landscape and visual impact assessment and cultural heritage assessment.

Whilst there may be some minimal impacts on a small number of heritage assets, when weighed against the wider environmental benefits of the proposed development, the impacts can be considered acceptable and in line with the NPPF.

### **Community Engagement**

The NPPF outlines that there needs to be more of an emphasis on community engagement when Applicant's are submitting a planning application. This is to allow members of the local community to have some input into projects and for any concerns raised to be addressed in the best possible manner.

The Applicant in this instance has taken an innovative and inclusive approach to community engagement and has sent letters to each of the nearest neighbouring properties outlining the proposed development and inviting comments to be submitted within the 21 day community consultation period. Any concerns raised will then be taken on board where possible and fed into the final design of the proposed scheme.

A letter was posted to the nearest residential properties to the proposed development inviting comments more than 21 days in advance of the submission of

this planning application. All comments raised have been addressed through the various details and information provided throughout this planning statement. The statement of community consultation can be found in Appendix 16.

### **3.2.2. Redcar and Cleveland Borough LDF Core Strategy and Development Policies (July 2007)**

The Development Plan for the area remains, for the time being at least, the Core Strategy and Development Policies from the Redcar and Cleveland Borough Council Local Development Framework (July 2007).

Local policies not adopted in accordance with the Planning and Compulsory Act 2004 cannot be given full weight, as set out in Annex 1 of the NPPF.

The Local Development Scheme (LDS) sets out a programme and timetable for the preparation of the local planning documents during the period of 2015-2018, however no local plan policies have emerged yet that could be considered materially relevant to this application.

#### **Renewable Energy**

In terms of single wind turbine developments there are currently no specific policies relevant within the Core Strategy and Development Policies. However Policy CS21 "Renewable Energy " can be considered relevant. This states that wind turbines will be supported and encouraged where they help to meet the Government's climate change objectives and the Tees Valley sub-regional target for electricity generation from renewable sources set out in the RSS.

Significant weight should be given to the achievement of wider environmental and economic benefits. Some of these benefits include but are not limited to;

- Carbon savings of 256 tonnes per annum;
- Contributes to the target set out in the Government's Renewable Energy Strategy of generating 15% of all the UK's energy from renewables by 2020,
- Contributes to the aims and objectives of the business, by producing their own green sustainable energy, which in turn will lead to job creation;

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- Direct and indirect job creation will occur during the pre-construction, construction and operational phases of the wind turbine, which is expected to be 25 years;
- The proposal will benefit from the Government's Feed-in-Tariff scheme which will ensure employment through a diversified source of income and provision of energy to enable the businesses to become more competitive and expand within the market place.
- Contribute to the provision of a secure energy supply in the U.K. and will help to increase affordability of renewable proposals as outlined by the Energy White Paper 2007.

It is clear the proposed wind turbine will offer significant wider environmental and economic benefits.

The policy goes on to state that the preferred area for wind turbine development is away from the Heritage Coast.

The following broad areas of least constraint have the potential for onshore wind farm development:

**a) South Tees for medium scale development; and**

b) East Cleveland for small scale development.

The proposed development can be identified on land within the South Tees in an area which is relatively unconstrained. The site is not within any protected landscape or other designation and due to the careful site selection and design it is considered that the proposed turbine can be accommodated without any significant adverse affect on residential amenity or transmitting or receiving systems. A number of specialist reports accompany this supporting planning statement which demonstrate this and therefore the proposed development can be considered to be compliant with Policy CS21.

**Landscape and Farm Diversification**

The proposed wind turbine is not located within any special landscape designations. Through careful siting and design of the proposed wind turbine particular attention has been given to the landscape qualities of the area, in accordance with Policies CS3 "*Spatial Strategy for Eston*", CS20 "*Promoting Good Design*", CS22 "*Protecting and*

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*Enhancing the Borough's Landscape*", DP1 "*Development Limits*", DP2 "*Site Selection*", DP3 "*Sustainable Design*" and DP6 "*Pollution Control*". The proposed turbine height has been limited to 77m to tip ensuring that it remains within the medium scale category, sited within an appropriate medium scale restoration landscape. The proposed development is not within any protected or designated landscape, however is in close proximity to a sensitive landscape. A full landscape and visual impact assessment accompanies this application which demonstrates the full potential impacts on the local and wider landscape, which are considered acceptable in this instance when weighed against the wider environmental benefits of the proposal.

Policies CS12 "*Rural Economy*" and DP1 "*Development Limits*" support farm diversification and imply that development in the countryside will only be allowed for the purposes of agriculture, farm diversification and forestry. The proposed turbine is well suited to the landscape it is in as previously stated and is a fine example of farm diversification. The proposal will allow the landowner to diversify their income whilst reducing costs such as electricity and fuel at the same time. It is anticipated that the proposed turbine will not lead to a significant impact upon the surrounding landscape, cultural heritage, ecology or amenity value and is a good example of farm diversification and therefore can be considered to be fully compliant with policies CS12 and DP1.

### **Cultural Heritage**

A desk based assessment and field walkover have been conducted in line with consultation undertaken with Redcar and Cleveland Borough Council's Planning Officers. The level of assessment was confirmed with David Pedlow. Scheduled Ancient Monuments (SAMs), Grade I and Grade II\* Listed Buildings have been assessed to within 5km and Grade II listed buildings have been assessed to within 2km of the proposed wind turbine location.

It was established that the proposed development is not within or immediately adjacent to any Conservation Areas, Historic Landscape or Heritage Assets. The proposal is a standalone single wind turbine development located at least 600m away from the nearest heritage asset. There are no nationally or locally important archaeological remains or sites contained within the footprint of the development. The cultural heritage assessment which accompanies this application concludes that

the proposed development would not inflict a significant impact upon the setting of any of the heritage assets contained within the study area. Therefore the proposed wind turbine fully complies with policies CS25 "*Built and Historic Environment*", DP9 "*Conservation Areas*" and DP10 "*Listed Buildings*".

### **Ecology**

A full desk based ecological assessment and Phase 1 Habitat Survey have been conducted for the proposed wind turbine development at land at Eston. The development is not contained within or adjacent to any sites of national, regional or local importance. Therefore it is not anticipated that the development will impact upon the integrity of any SPAs, SACs, NNRs or SSSIs. The field in which the wind turbine will be contained, is currently utilised for agricultural purposes and it has been assessed as being of low ecological value. Therefore the proposed development can be considered fully compliant with policy CS24 "*Biodiversity and Geological Conservation*".

### **3.3. POLICY COMPLIANCE**

Well sited, small-medium-scale, single wind turbine developments, such as the proposed development, should be encouraged in order to aid National renewable energy targets. This type of development improves business efficiency, helps to reduce greenhouse gas emissions, improves the sustainability of the local energy supply; and the income generated will be invested in the local economy.

The proposed development at land at Eston complies with the overarching sustainability principles of the NPPF and the relevant environmental policies contained within the Redcar and Cleveland Borough Council LDF Core Strategy and Development Policies and will assist in achieving their targets for reducing overall carbon emissions and increasing renewable energy generation. Whilst there will be some adverse impacts as a result of the proposed single wind turbine, which are unavoidable, it is believed that these impacts on balance will be outweighed by the wider environmental and economic benefits of the proposal, as demonstrated in this supporting Planning Statement.

## **4. KEY ISSUES and SITE SPECIFIC PLANNING CONSIDERATIONS**

### **4.1.OVERVIEW**

This section of the Planning Statement considers key issues relating to the consideration of the application proposals and the merits of the proposed development when considered against policy criteria contained in the National Planning Policy Framework and other relevant planning policy documents.

### **4.2. SUSTAINABLE DEVELOPMENT**

As previously discussed, sustainable development is the core principle underpinning planning in the UK. The main objective of sustainable development is to secure a better life for everyone both now and for future generations.

According to the manufacturers, the proposed turbine will produce approximately 1,633,000 kWh of electricity per annum to meet the demands of the land owner's farming business at land at Eston; saving in excess of 418 tonnes of CO<sub>2</sub> per year, equating to 10, 450 tonnes over the 25 year lifetime of the turbine.

The reduction of carbon emissions of the local business is based on sound principles of sustainable development and is a material consideration in the determination of the application.

The proposed turbine is therefore clearly in accordance with the aims of the Government in facilitating adaptation to climate change, achieving lower carbon emissions and realising the potential of the United Kingdom's energy resources.

As such, the application meets the Government criteria for sustainable development and therefore approval (in accordance with the NPPF's presumption in favour of sustainable development), particularly as there is no conflict with the Local Development Framework's relevant policies.

### **4.3. RENEWABLE ENERGY**

National planning policy set out in the NPPF confirms that increased development of renewable energy resources is vital to facilitating the delivery of the government's commitments on both climate change and renewable energy production. The NPPF seeks to encourage the appropriate development of renewable energy schemes in order to meet the Government's Energy White Paper targets for renewable production

The construction of the turbine at land at Eston will contribute to the Government's target for a reduction in carbon emissions and will play a part in ensuring the progress towards the 2020 target continues.

### **4.4. SUPPORTING RURAL BUSINESSES**

The farming business at Eston has been in operation for many years. This application very much supports the next phase of the business development plan by diversifying their existing incomes to allow future investment as well as to become more sustainable.

The farm owners will be able to use the electricity generated from the proposed wind turbine to off-set the energy used by their farm machinery, farm buildings and dwelling in their respective locations.

There are a number of local businesses in the area which have significant electricity requirements. The applicant is interested in exploring the idea of selling the excess green energy produced by the turbine to local businesses. This means that the electricity produced by the turbine will be used locally and the production of green electricity will in turn benefit these local businesses by reducing their carbon footprint, stabilising energy prices and safeguarding employment.

The farm owner and his family are keen to become less reliant on fossil fuels and to offset the carbon footprint created by their farming activities by producing renewable energy to be fed back into the grid to be used locally.

The business is seeking to become carbon neutral and would like to enhance energy efficiency and reduce the use of energy from fossil fuels. Green energy produced will be used to supply electricity to the farm businesses and surplus green energy produced will be exported to the national grid providing a diversified income. The NPPF clearly sets out support for economic growth in rural areas (paragraph 28). LPA's should "*promote the development and diversification of agriculture and other land-based rural businesses*".

#### **4.5. LANDSCAPE AND VISUAL IMPACT ASSESSMENT**

The visual effects of wind turbines vary according to the size, and number of turbines in a scheme, location, the landscape characteristics and the sensitivity of viewpoints or visual receptors. Effects may be reduced through careful siting and design. Visual impacts can have an effect over a wide area and a variety of landscapes.

Wind energy developments are often sited in open countryside in high or exposed locations. Such areas may be valued for their wildness, remoteness, tranquillity or well preserved historic remains and effects on these need to be assessed carefully. Development may also affect the settings of historic sites and the associated visual amenity of a landscape. Although the footprint of wind turbines are small and often require areas of open land around them, they do not blend naturally into the landscape and therefore would not be regarded as development of an open nature.

Entrust was appointed to carry out the Landscape and Visual Impact Assessment (LVIA) of the proposed wind turbine on Land at Eston. The methodology and analysis used follows the Landscape Institute and Institute of Environmental Management and Assessment Guidelines for Landscape and Visual Impact Assessment (3rd Edition) and takes account of the Scottish Natural Heritage guidance Visual Representation of Windfarms, version 2, July 2014, the Redcar and Cleveland Borough Council's Landscape Character SPD (2010) and Redcar and Cleveland Landscape Character Assessment (2006).

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The report sets out the existing landscape and visual conditions affecting the study area, and describes the landscape and visual effects of the proposed turbine in order to determine the overall Landscape and Visual Impact likely to occur.

A study area of 25km was selected for this proposal which aims to assess the impacts of the proposal on the landscape and visual resource of the area.

The effects of the proposed turbine on landscape character, designated landscapes and visual amenity were assessed. The fact that the proposal is for a single wind turbine, in a flat, medium scale, open landscape means that impacts are generally expected to be significant in close proximity to the site reducing with distance. The assessment concluded that:

- No significant impacts are expected on Local Landscape Character Types or National Character Areas;
- The only significant impact for Landscape Character is to the character of the site which is considered to be within around 750m of the turbine, but the impact will reduce rapidly with distance.
- No significant impacts are predicted for Landscape Designations. The lack of nearby sensitive receptors results in only limited effects.
- No significant impacts are predicted on listed buildings, of which the nearest is approximately 800m away.
- No significant impacts are expected for visual receptors. Recreational receptors within the area consist largely of public rights of way, bridleways and cycle ways of which none will be significantly impacted.
- No significant impacts are expected on settlements, including Eston, Normanby and Ormesby. The majority of properties in the general vicinity are located in these settlements, however the majority of properties in these villages are screened by topography, vegetation and built form.
- No significant impacts are predicted on road receptors, which are largely unclassified roads used only for local and farm access. There will be no significant impact on users of the A174, A171 and A66 roads due to high levels of screening from trees and tall hedgerows along the road boundaries.

#### 4.5.1. CUMULATIVE IMPACT

Cumulative impact is an issue which may occur as a result of more than one scheme being constructed within a particular area and is defined as the combined effect of all the developments taken together. The main issues which will need careful consideration by developers includes:

- The degree of acceptable landscape change in particular landscape character area and the wider area having regard to the zones of Natural Heritage Sensitivity;
- Effects on international, national, regional and local designations and their settings, including landscape, nature and the historic environment and their location within the Zones of Natural Heritage Sensitivity;
- The need to maintain the integrity and quality of the landscape;
- Whether developments could be experienced as being overbearing or dominant;
- Effects on local communities - residents and visitors;
- Compatibility between existing and proposed developments in terms of scale;
- Potential for skyline clutter and sequential views.

The consideration of cumulative effects can only be undertaken on a case-by-case basis in the light of existing baseline conditions, accurate descriptions and visualisations of effects on key receptors and relationships with other developments.

A Cumulative Impact Assessment has been undertaken as part of the Landscape and Visual Assessment (LVIA) (Section 4 of the LVIA). The LVIA concludes that no significant impacts are predicted from cumulative visual effects. The main impact on visual amenity resulting from cumulative effects is expected due to intervisibility between the proposed development and the developments at ASDA Teesport and Kirkleatham Business Park. The impact is not expected to be significant.

The LVIA recognises the proximity of single turbines at Upsall Grange Farm, Newham Grange Leisure Farm, Easterside Primary School, St. Thomas Moore School and Sandy Flatts to the rear of Teeside Crematorium however no intervisibility or sequential views between the developments and the proposed development is predicted.

The LVIA goes on to say that developments such as Upsall Grange Farm, Newham Grange Leisure Farm, Easterside Primary School, St. Thomas Moore School, Sandy

Flatts to the rear of Teeside Crematorium, ASDA Teesport and Kirkleatham Business Park and the proposed development are generally at a sufficient distance away from each other, such that combined and sequential views are limited by a combination of the rolling landscape, woodland screening and the overall low sensitivity of receptors in areas from which views of this and other developments are expected. Impacts are largely confined to receptors with open views, such as roads and public footpaths.

More distant views of other proposals may be available from a small number of elevated locations. However any impacts are predicted to be insignificant.

#### 4.6. CULTURAL HERITAGE and ARCHAEOLOGY

English Heritage's publication '*Wind Energy and the Historic Environment*' published October 2005 has been considered. This guidance is intended for use by developers of wind energy projects which may affect any aspects of the historic environment. With regards to the impact of wind energy on setting and visual amenity, a number of factors are identified which should be considered. These include:

- **Visual Dominance** - considering the overall height of the proposed turbine in relation to other tall historic features on the landscape;
- **Scale** - the extent of the wind farm and the number of turbines will contribute to visual impact;
- **Intervisibility** - certain historic features are intended to be seen from other historic sites. Construction of wind turbines should respect this;
- **Vistas and Sight lines** - some designated landscapes involve key vistas, prospects, panoramas and sight-lines, of the use of topography. Turbines should be sited to respect this;
- **Movement, Sound or Light Effects** - the movement associated with wind turbines as well as their scale may be a significant issue in certain historic settings. Adequate distance should be provided between historic sites and wind turbine developments to avoid being overshadowed by noise and shadow flicker effects;
- **Unaltered Settings** - the setting of some historic sites may be little changed from the period when the site was first constructed, used and abandoned. Largely unaltered settings for certain types of site, particularly more ancient

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sites, may be survivors and especially vulnerable to modern intrusions such as wind turbines, particularly in upland areas; and

- **Reversibility** - one important feature of wind energy developments is their general reversibility (in terms of landscape if not archaeological impacts). LPA's should therefore make provision, as part of the planning permission, for the longer term protection of the landscape by requiring legal agreements for the remediation and restoration of wind farm and turbine sites and their infrastructure when they are decommissioned.

The Landscape and Visual Impact Assessment considers landscape and heritage designations within the 25km study area. There are no areas with statutory designation for national landscape value within the study area.

- Impacts on Scheduled Ancient Monuments (SAM) are limited to twenty one within a 5km area. The SAMs include; Earthworks at Nunthorpe Hall (4.5km SSE), Pinchinthorpe Hall Moated Site and Post Medieval Gardens (3.54km SE), Eston Nab Hill Fort, Palisaded Settlement and Beacon (1.36km NE), Ring Cairn on Eston Moor 1.3km north of Mill Farm (600m East), Round Barrow on Upsall Moor known as Mount Pleasant and 16no. Bowl Barrows (at a range of 900m - 3.6km in an ENE direction). The nearest SAM is 600m east of the site (Ring Cairn on Eston Moor 1.3km north of Mill Farm) where the nature of the receptor (sensitivity) is high, the nature of effect (magnitude of change) is Negligible, and the impact is Negligible, which is not significant.
- There are no Historic Parks or Gardens within 5km of the proposed site. The nearest Historic Park or Garden is Albert Park (Grade II Listed) located 5.9km north-east of the proposed turbine. The nature of this receptor (sensitivity) is high, the nature of effect (magnitude of change) is Negligible, and the impact is Minor/Negligible, which is not significant. This is due to the significant screening from woodland surrounding Albert Park and the separation distance between the Park and the proposed development.
- There are a number of listed buildings within the immediate study area, however the majority of these are in excess of 1km from the application site. This is a consequence of the sparsely settled nature of the landscape. The nearest listed buildings are Powder Magazine and Adjoining Blast Walls (Grade II - 855m NE) and a Boundary Stone 1280 Metres to North of Cross Keys Inn (Grade II - 1.05km SE). The nature of these receptors (sensitivity) is High, the

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nature of effect (magnitude of change) is Negligible, and the impact is Negligible, which is not significant.

There are a 22no. Grade II listed buildings within 2km and 2no. Grade I and 9no. Grade II\* listed buildings within 5km, in particular two clusters of listed buildings in Normanby, and Ormesby. The impacts on these listed buildings, are assessed in full in the accompanying Cultural Heritage Assessment and Landscape and Visual Impact Assessment attached, which demonstrates that no significant impacts on listed buildings or their settings are likely to occur.

There no Conservation Areas within 2km of the application site. The nearest conservation area is Ormesby Hall Conservation Area which lies approximately 2.5km west of the proposed site. The nature of this receptor (sensitivity) is High, the nature of effect (magnitude of change) is Negligible, and the impact is Negligible, which is not significant. There is significant screening available from the built and natural environment ensuring that views from the Conservation Area to the proposed development will be difficult and that no significant impacts will occur on the cultural heritage assets.

#### **4.7. SITE ACCESS, TRAFFIC and TRANSPORT**

Based on a desktop study, on-site observations and advice received from Local Transport Projects 02<sup>nd</sup> March 2015 a Transport Statement was prepared, which forms part of the supporting documentation for this planning application (see Appendix 9). The Transport Statement which was prepared by Entrust and Local Transport Projects includes the following:

- The type of vehicles proposed for transporting the turbine components, construction plant and materials for the construction, maintenance and decommissioning of the turbine;
- The weights of vehicles plus loads;
- The number of trips required;
- The route to be used for transporting the turbine and construction plant and materials;
- Swept path analyses where required

It is anticipated that normal vehicular traffic associated with the construction of the wind turbine will access via the existing access from Flatts Lane to the south-west of the application site. Once constructed, the wind turbine is designed to operate automatically, with only occasional maintenance required. The number of trips associated with the maintenance of the wind turbine is likely to be negligible.

Please refer to the Design and Access Statement (below) and the Transport Study (Appendix 9) for further details.

## 4.8. ECOLOGY AND NATURE CONSERVATION

The application site on Land at Eston is bordered to the north by the A174 trunk road. To the south of this road the landscape is predominantly agricultural extending to woodland (plantation) and heathland. To the north of the A174 the landscape is urban with dense residential housing with some amenity grassland areas.

An initial desktop survey was undertaken by JCA Ltd. in order to identify any potential ecological constraints to the proposed construction of a single wind turbine. The results of the desktop study informed an Extended Phase 1 Habitat and Protected Species Survey and Bird Risk Assessment, also completed by JCA Ltd. and included as part of this application (see Appendix 8).

The survey is submitted with this application; the following comprises a summary of the conclusions with regard to ecological receptors:

- Bats - the site design and turbine location has primarily followed Natural England recommendations, ensuring a buffer zone of at least 50m between the blade tip and all potential roost sites. The data search revealed records of various bat species within a 2km radius of the site. The site does not contain any roosting habitat for bats and there is very limited foraging potential within the development footprint. There are hedgerow features to the north and east boundaries and a linear woodland to the west boundary which could be used as commuting routes however these lie a sufficient distance from the development activity to avoid any impact from the proposal.

Given the low number of records for bats and the fact that there are no particularly suitable roosting or nesting places for bats from within 50m of the proposed turbine site, it is considered that the potential risk to bats from the proposed turbine would be low and bats would not be considered a constraint to the proposed turbine placement. As such no further survey work is considered necessary.

- Great Crested Newt and Common Toads - the risk of harming Great Crested Newts and Common Toads is concluded to be low and the risk of the

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development causing a detrimental effect upon Great Crested Newt and Common Toad populations, if present, without mitigation is highly unlikely. As such no further survey work is considered necessary.

- Water Vole - The site does not contain any aquatic habitat which is required to support water voles. As a result no further survey for Water Vole is considered necessary.
- Badgers - There was no evidence of badger activity within the site and no suitable habitat for badgers to excavate a sett. The frequent human activities on the site which include off-roading and dog walking will act as a severe deterrent to badgers. As such badgers are not considered to pose a constraint to the proposed works.
- Nesting Birds - The scrub, hedgerows and trees have the potential to support nesting birds, however the development does not impact upon these habitats.

Mitigation measures have been recommended as part of the survey carried out as outlined above. Such mitigation will be adhered to and incorporated into the construction of the wind turbine and consequently the risk of disturbance to habitats and species during the construction process, and throughout the lifespan of the wind turbine, will be minimal.

The ecological survey work carried out effectively demonstrates that the application poses no significant risk to any ecological receptors and as such falls within the requirements of all relevant planning policies.

## 4.9. NOISE AND VIBRATION

Since the early 1990s, there has been a significant reduction in the mechanical noise generated by wind turbines and it is now usually less than, or of a similar level to aerodynamic noise. Aerodynamic noise from wind turbines is generally unobtrusive – it is broadband in nature and in this respect is similar to, for example, the noise of the wind in the trees.

The proposed wind turbine is located in an area of relatively low population density. The noise environment in the surrounding area is generally characterised by the A174 and Flatts Lane and to a lesser extent natural sources such as wind, rustling vegetation and birds. Other noise sources include business activities on the local road and agricultural vehicle movements and farm operations. The location of the proposed wind turbine has been chosen to ensure any increase in noise levels has a minimal effect on surrounding residential property.

A professional desktop Noise Assessment has been undertaken by Entrust and is submitted as part of this application (Appendix 6). The noise assessment was carried out to establish the noise levels at the nearest noise sensitive receptors due to the operation of the proposed turbine and to assess the impact of these noise levels against the requirements of ETSU-R-97, “The Assessment and Rating of Noise from Wind Farms” and other industry standards.

The report models noise emissions from the proposed turbine and transposes them onto the surrounding area; it then compares the results with the adopted criteria. Noise emissions from the turbine have been determined in test conditions and a high degree of confidence can be ascribed to the values used, which are guaranteed by the manufacturer.

The methodology provides the worst case scenario by assuming downwind noise towards each receptor. In practice, actual noise levels may vary with wind direction so that receptors upwind of the turbine might reasonably expect levels up to 10dBA less than predicted. Additionally, no attenuation due to screening of trees and other barriers has been taken into account. Noise modelling is an industry accepted method of determining potential impacts and a high degree of confidence can be attributed to the outputs.

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For all of the modelled receptors, including the nearest non-financially interested noise sensitive receptors, the calculated turbine noise level is within the daytime and night time noise criteria recommended by ETSU.

In line with ETSU-R-97 guidance a threshold of 45dBa was used for all properties not financially involved in the proposed development. The recommended fixed lower limit of 45dBa can be used when the existing background noise levels are in excess of 40dBA. According to Defra background noise on site is on average approximately 55dB (A) as a result of the A174 road.

It is not expected that further investigation into noise levels is required.

#### **4.10. SHADOW FLICKER**

Shadow flicker occurs when the shadow of a moving blade passes over a window causing a flicker. A single window is likely to be affected for a short period at certain times of the day during certain periods of the year. The likelihood of this occurring and duration of such occurrence is dependent upon:

- The direction of the residence relative to the turbine;
- The distance from the turbine;
- The turbine hub-height and rotor diameter;
- The frequency of bright sunshine and cloudless skies; and
- The prevailing wind direction.

Flickering may cause potential disturbance and annoyance to residents. Less than 5% of photo-sensitive epileptics are sensitive to the lowest frequencies of between 2.5 – 3 Hz with the remainder being sensitive to higher frequencies. The new generation of turbines are known to operate at levels below 1 Hz and therefore well below the frequencies known to trigger epilepsy.

The potential for flicker is generally thought to be limited to a distance of 10 times the rotor diameter, 130° either side of North. With a rotor diameter of 44m, potential shadow flicker is limited to a radius of 440m from the proposed turbine location. The nearest property is 390m away, however due to the direction and angle of this property from the proposed turbine, the shadow flicker limits of 30 minutes per day or 30 hours per year will not be exceeded.

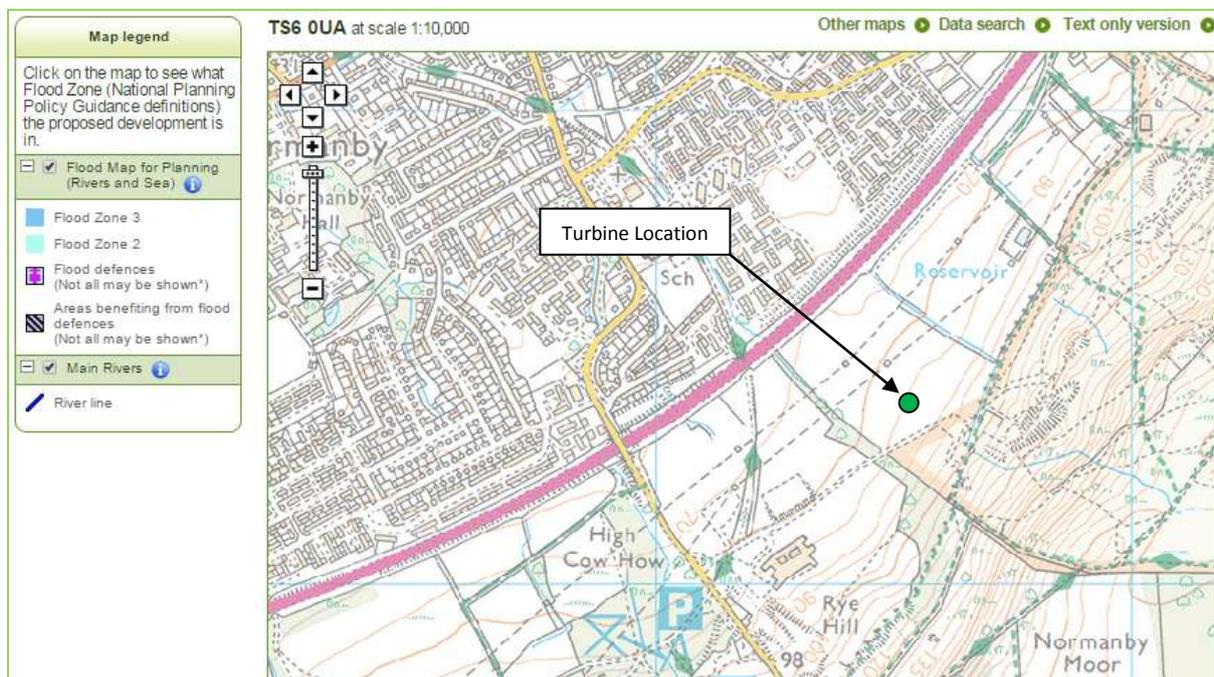
The shadow flicker plan submitted as part of this application demonstrates that no significant or unacceptable shadow flicker is likely to occur on any of the nearby properties.

#### 4.11. FLOOD RISK

The NPPF advocates a risk-based approach when considering development proposals in potential flood risk areas.

The proposed location of the turbine is not located within a Flood Risk Zone 2 or Flood Risk Zone 3 Area. No part of the development or proposed access track will be located within a Flood Risk Area. Therefore the risk of flooding for this site can be considered low/negligible and no further Flood Risk Assessment is considered necessary.

**Figure 4.1 - Environment Agency's Flood Risk Extract**



#### **4.12. AVIATION and RADAR**

The process of obtaining planning permission to build a wind turbine involves many considerations, including consultation with various aviation stakeholders. Wind turbines may have an adverse effect on two aspects of air traffic control movement and safety. Firstly they may represent a risk of collision with low lying flying aircraft, and secondly, they may interfere with the proper operation of radar by limiting the capacity to handle air traffic and aircraft instrument landing systems.

Decisions made regarding the likely impact that a wind farm may have upon radar operations are currently based upon assumptions. The electromagnetic interactions between a wind turbine and a radar signal are complex and there is currently limited understanding in this area and no accepted method for quantifying this potential impact. A conflict of interest currently exists between the desire to encourage wind farm development as a renewable energy source and the desire to maintain the operational safety of air traffic.

Any large structure is liable to show up on radar but wind turbines can present a particular problem as they can be interpreted by radar as being a moving object, which is only intermittently seen. Because of this, they might either be mistaken for an aircraft or interfere with the ability of the radar to track an aircraft in the same sector. The effect diminishes with distance, and hence there is a 15km consultation zone, and a 30km or 32km advisory zone around every civilian and military air traffic radar respectively, although objections are often raised to developments that lie beyond the 32km advisory zone.

Entrust consulted Aviation and Radar specialists Aerostat Ltd. to carry out an aviation risk assessment for the proposed turbine (see Appendix 10). The results of the assessment concluded that there are is one radar within 30km of the proposed development.

The CAA's Durham Tees Valley S-band Radar lies 17.9km away, however any interference with the airport's radar systems is unlikely. Should there be any minimal interference this can be mitigated using the airport's Thruput system. As such the

likelihood of the proposed turbine interfering or having a significant impact on the operation of the radar can be considered negligible/low.

Should mitigating measures be required by Durham Tees Valley the Applicant will provide any details and information that may be required.

The MoD were also contacted at a pre-planning stage in order to ascertain if the proposed turbine would be likely to cause any interference to their defence radars, however the feedback stated that they were unlikely to have any issue with the proposal (see Appendix 11 for relevant correspondence).

#### **4.13. ELECTROMAGNETIC INTERFERENCE**

Wind turbines contain electrical machines producing power. They will therefore also produce electromagnetic radiation. This is at a very low level and presents no greater risk to human health than most domestic appliances. An electrical machine can cause interference to other electrical devices (particularly radios and TVs) and there is no difference between a wind turbine and any other electrical machine in this respect. Most wind turbines and their components comply with the European Commission Directive on Electromagnetic compatibility (89/336/EEC) and the turbine should not give rise to any unusual problems.

Wind turbines can potentially affect electromagnetic transmissions in two ways:

- By blocking or deflecting line of site or radio or microwave links; or
- By scattering of transmission signals

There are a plethora of line and sight radio and microwave signals throughout England including radio and TV links to local transmitters, telecommunication links and police and emergency services links (managed by JRC). Generally, the siting of a wind turbine can mitigate any potential impacts as the separation distance required to avoid the problem is generally a matter of a few hundred metres.

Scattering of signal mainly affects domestic and TV and radio reception. Experience has shown that when this occurs it is of a predictable nature and can generally be alleviated by the installation or modification of a local repeater station or cable connection.

Most characteristics of a wind turbine play a part in determining the nature and degree of signal scattering including the rotor diameter, the number of blades, the rotational speed, the blade construction and machine geometry. The tower and blades may scatter radiation and the blades may further interfere with the radiation scattered by the tower. The interference effects can often be reduced.

Since a large number of bodies use communications systems and some of the users are commercially sensitive or of strategic or military importance, it is often difficult to obtain a definitive picture of all the transmission routes across a potential site. The Office of Communications (OFCOM) holds a central register of all civil radio communications operators in the UK and acts as a central point of contact for identifying specific consultees relevant to a site. As there are no masts within the immediate vicinity of the application of note OFCOM were not consulted.

The JRC were consulted at a pre-planning stage with positive feedback received stating that the proposed turbine would not cause any interference to their communication links (see Appendix 12 for relevant correspondence).

It is not predicted that any significant impacts will occur on radio or microwave links in the area.

#### **4.14. GENERAL SAFETY**

It is recognised that properly designed and maintained wind turbines are a safe technology. The only source of possible danger would be the loss of a piece of blade or, in most exceptional circumstances, the whole blade. Many blades are composite structures with no bolts or other separate components and therefore blade failure is most unlikely.

The build up of ice on turbine blades is unlikely to present problems on the majority of sites in England. In those areas where icing of the blades does occur, fragments of ice might be released from the blades when the machine is started. Most wind turbines are fitted with vibration sensors which can detect any imbalance which might be caused by the icing of the blades.

The site lies approximately 105m from the nearest public access, a public footpath to the east, equating to over fall distance +10% of the total height of the turbine. As such it is beyond the range which may provide any residual danger from the turbine collapsing or from flying ice. As a general guide, wind turbines should be situated away from any public right of way by a distance equivalent to 1.25 times the total height of the turbine. As demonstrated the chosen site is at least this distance away from the public access and therefore considered not to be a risk to human safety.

#### **4.15. COMMUNITY BENEFITS**

The presence of renewable energy encourages and promotes environmental improvement good practices in the surrounding locality. The potential effects of which can be far reaching in terms of personal behaviour and attitudes towards green living and being more environmentally conscious in day to day practices.

## 5. DESIGN AND ACCESS STATEMENT

### 5.1. USE

The land owner and his family have farmed in the area for many years and are constantly seeking opportunities to create a diversified source of income and become more sustainable into the future. Renewable energy production is one such enterprise that can assist in achieving the goals of their business and their progeny.

The proposed turbine will provide renewable energy to offset the carbon usage on the farm and to supply green electricity to any nearby businesses that may require it. Much of the farming business is energy reliant and uses large amounts of diesel fuel; but the aim of the landowners is to decarbonise operations by converting to powering by renewable electricity from the proposed turbine. This is expected to cut localised noise and diesel emissions, provide a buffer against the rising cost of diesel and further reduce the businesses' carbon footprint (energy consumption and fertiliser usage); allowing the business to market low carbon produce and effectively tender for future contracts.

The proposed turbine will support and strengthen the land owner's existing farming operations by providing renewable energy for the day to day requirements of the business enterprises and facilitate the decarbonising of existing diesel generation as well as diversifying the farm's income by supplying electricity to the national grid or local businesses should they require it.

The turbine will provide the business with social, economic and environmental benefits as follows:

- The substitution of electricity from fossil fuels with green renewable electricity, saving in excess of 418 tonnes of CO per year assuming 6.3m/s average wind speed;
- Contributes to the aims and objectives of the business, by producing their own green sustainable energy;

- Buffers the farm businesses from projected increases in energy costs in forthcoming years;
- Contributes to the target set out in the Government's Renewable Energy Strategy of generating 15% of all the UK's energy from renewables by 2020, which equates to 35-45% of electricity from renewable resources. The focus of the Strategy is production from the UK's wind resources;
- The proposal also seeks to take advantage of the Feed in Tariff (FIT) scheme, which came into force on 1st April 2010;
- The businesses are looking to supply electricity to local businesses where possible and any excess electricity will be sold to the grid, providing additional revenue to the farming business. This will help diversify and buffer the farming income from increasingly volatile commodity markets; and
- Secures employment through a diversified source of income and provision of energy to enable the businesses to become more competitive and expand within the market place.

## 5.2. AMOUNT

The proposed development consists of a wind turbine measuring up to 77metres to the blade tip in the vertical position. The wind turbine has a rated output of approximately 900kW (downrated to 500kW). Land take would be required for the new access track, turbine foundation and associated infrastructure and would amount to 0.10 hectares. The new access track will measure 120m long with a minimum width of 4m to join the existing access track which runs south-west to Flatts Lane. The site is currently agricultural land and the proposed development would occupy only a minor proportion of this.

The capacity of the site to accommodate the development has been considered throughout the design process, taking account of particular technical, environmental and more aesthetic issues relating to landscape and visual impacts.

### 5.3. LAYOUT

Layout has been a key consideration of the development and has been considered throughout the process. A number of matters were considered during the design process as follows:

- The turbine position within the site should respond to prevailing wind resource;
- The turbine position in terms of landform features, contours and boundaries;
- The scale of the landform and appropriateness for the overall landscape scale;
- The local landscape context (taking into account the characteristic of the Local Landscape Character Area) with a clear rationale for the turbine position, particularly from key local receptors; and
- The turbine should be sited as far from local residential properties as possible and seek to minimise environmental effects on the wider landscape.

The proposed layout takes into account environmental constraints and technical constraints whilst at the same time minimising any negative visual effects on the surrounding landscape. The site selection process is set out within this Statement. Other sites were considered within the landholding, including locations closer to the farm, these however were all discounted due to noise and shadow flicker restrictions.

### 5.4. SCALE

The scale of the development in terms of the height of the turbine has also been considered as part of the design process. The proposed turbine will have a hub height of 55m and a maximum height to tip of 77m. The following are the scale parameters of the Candidate turbine and substation (see Appendix 3 turbine elevation drawings and substation elevation drawings submitted as part of this application):

Turbine

Scale Parameter	Scale (metres)
Hub Height	55m
Total Height to Tip	77m
Number of Blades	3
Rotational Axis	Horizontal
Rotor Diameter	44m

Substation

Scale Parameter	Scale (metres)
Height	3.4m
Width	9.44m
Depth	4.49m

Transformer/Proposed Control Unit

Scale Parameter	Scale (metres)
Height	2.4m
Width	4m
Depth	2.6m

In addition to the proposed turbine, the application also proposes the installation of an access track and electricity connections as necessary to install, maintain and connect the turbine to the electricity grid.

Scale Parameter	Scale (metres)
Total Length	580m
Existing Length	460m
Proposed Length	120m
Width	4m-5m
Surface Material	Hardcore/Tarmac

## 5.5. LANDSCAPE

In the case of this proposed renewable energy development, it is not considered that new planting is a particular requirement, since the loss of vegetation is generally minimised by the small footprint occupied by a wind turbine, external switchgear and access track. New planting is also less effective at screening an individual wind turbine from a range of locations.

## 5.6. APPEARANCE

The candidate turbine is a wind energy converter with a three-bladed rotor with rotor diameter of 44m and tower to hub height of 55m. The turbine mast will be galvanized steel, colour to be agreed with the Local Planning Authority (dark grey most likely). The turbine is three bladed and the blades are glass reinforced epoxy. The concrete foundation to support the turbine would be approximately 15.2m in diameter, dependent upon ground conditions. The crane pad/hardstanding, measuring 20m x 30m, will be constructed out of compressed hardcore. Cabling leading from the turbine to the external transformer housing will be buried beneath the ground which will minimise the visual affects of the associated infrastructure. Electrical connections will be made via underground cables in trenches to the sub-station which is marked on the plan. The proposed siting of the substation is shown on the site layout plan (Appendix 2).

A permanent crane hard-standing/turning area will be constructed at the turbine location as appropriate to allow adequate working space for the erection of the turbine and the safe movement of vehicles across the site.

During operation, the agricultural function of the majority of the surrounding land would be retained.

## 5.7. ACCESS

A Transport Study has been prepared by Entrust and Local Transport Projects and forms part of this application (see Appendix 9). The Transport Study provides an assessment of the proposed delivery route, setting out the most appropriate abnormal indivisible load vehicle delivery route through the Redcar and Cleveland Borough Council area and providing conclusions and recommendations as to the most appropriate route and the actions required to facilitate the transportation of the wind turbine.

The following loads will require transportation to the development site:

- Tower Anchor;
- Lower Tower Section;
- Upper Tower Section;
- Generator;
- Nacelle;
- Hub;
- Converter; and
- Pack of 3 rotor blades.

In terms of turning circle, the rotor blades are considered to be the most onerous as they are the longest part. For the purposes of swept path analysis, it is assumed that the component parts will be transported on the following vehicle combination:

- A 25m long twin-axle rear-steerable trailer, towed by a standard tractor unit (the blades themselves would overhang the rear of the trailer);
- The vehicle combination having a wall-to-wall turning radius of 24m and an overall length of 30m; and
- The overall width of trailer and load being 2.7 metres.

In terms of width, the generator is expected to be the most onerous load. For the purposes of a swept path analysis, it is assumed this will be transported on the following vehicle combination:

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- An 13.8m long tri axle trailer, towed by a standard tractor unit;
- The overall width of trailer and load being 2.7m.

Details of the crane expected to move the turbine components into position during the turbine construction and decommissioning phases are as follows:

<b>Guidelines for Tower Hub Height 35, 40 and 50 m</b>	
<b>Main Crane</b>	
<b>Requirements</b>	Depending on the type of crane used the tonnage of the crane needed is between 250 to 400 metric tons.  Typically the type of crane, the age of the crane and the set-up will determine what crane is suitable.
<b>Typically used crane</b>	Liebherr LTM 1400-5, Liebherr LTM 1300-1, Demag AC 350  OR  Liebherr LR 1250, Demag CC 1500
<b>Tail Crane</b>	
<b>Requirements</b>	Hydraulic crane with minimum capacity of 90 metric tons
<b>Typically used crane</b>	Liebherr LTM 1090

The following route has been identified as being the most appropriate for the transportation of the proposed wind turbine to the site:

- A66 to Normanby Road
- Normanby Road to Flatts Lane
- Flatts Lane to proposed site

It is anticipated that normal vehicular traffic associated with the construction of the wind turbine will access via the existing access from Flatts Lane to the south-west of the site. Once constructed, the wind turbine is designed to operate automatically, with only occasional maintenance required. The number of trips associated with the development of the wind turbine is likely to be negligible.

## 5.8. DECOMMISSIONING

The decommissioning of the turbine will involve a similar number of trips similar to the construction phase. The movements will be timed to occur outside of peak periods so that the impact of these movements on the local network will be reduced. The design of the wind turbine and the choice of location have been consciously made to facilitate ease of the dismantling of the equipment and the end of its useful life – 20/25 years. Annual maintenance will be required and measures will be taken to ensure that this is carried out in accordance with health and safety requirements and to protect the safety and security of the public.

## 6. CONCLUSION

Redcar and Cleveland Borough Council is presented with a development opportunity that strongly adheres to the requirement of National Planning Policy Framework and other relevant planning policy documents including the Core Strategy and Development Policies for the area. The NPPF and Core Strategy/Development policies outline considerable and sustained support for renewable energy developments.

The applicant is taking positive steps to minimise the landowners' reliance on non-renewable energy without adversely affecting the amenity of nearby residents or having a significant negative impact on the landscape.

The proposed application will help support and grow a rural business which in turn supports a local family who have farmed and resided in the area for a considerable amount of time.

The development of 1 no. 900kW wind turbine is a relatively diminutive proposal, that will not only provide economic benefits in the day to day running of the farm businesses, but the estimated carbon savings would be approximately 418 tonnes per annum. This will contribute to a reduction in the use of fossil fuels and grid electricity.

This application should not be mistaken for a large wind farm but that of an application of a small-medium scale wind turbine that will contribute to the areas overall plan to promote more sustainable forms of energy generation from a bottom up approach. We do not believe that there is a better location in the vicinity for this site. There shall be no significant impact on the residential amenity or visual amenity of the area and the site is not located within any nationally designated or protected area.

The application is supported by a robust evidence base which demonstrates the harm posed by the proposals is minimal and is within acceptable limits when assessed from all receptors. Any minimal harm is far outweighed by the wider environmental and economic benefits of the proposed development, leading to a "*sustainable development*".

APPENDICES

APPENDIX 1	SITE LOCATION PLAN
APPENDIX 2	SITE LAYOUT PLAN
APPENDIX 3	ENERCON E44 900KW ELEVATION DRAWING AND METER HOUSE/SUBSTATION SPEC
APPENDIX 4	MANUFACTURERS BROCHURE
APPENDIX 5	LANDSCAPE AND VISUAL IMPACT ASSESSMENT
APPENDIX 6	SITE SPECIFIC DESKTOP NOISE ASSESSMENT
APPENDIX 7	SITE SPECIFIC SHADOW FLICKER IMPACT ASSESSMENT
APPENDIX 8	ECOLOGICAL PHASE 1 HABITAT SURVEY REPORT
APPENDIX 9	TRANSPORT MANAGEMENT PLAN AND SWEEP PATH ANALYSIS
APPENDIX 10	AVIATION ASSESSMENT
APPENDIX 11	MOD CORRESPONDENCE
APPENDIX 12	JRC CONSULTATION RESPONSE
APPENDIX 13	SCREENING REQUEST AND RESPONSE
APPENDIX 14	PRE-APPLICATION ADVICE CORRESPONDENCE
APPENDIX 15	CULTURAL HERITAGE ASSESSMENT
APPENDIX 16	STATEMENT OF COMMUNITY CONSULTATION