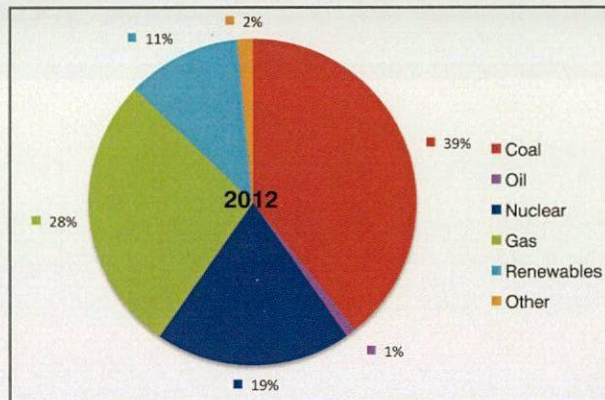


- 1.54 Oil fired stations, a sub-sea inter-connector cable to France and an increasing number of renewable energy plants (principally landfill gas and wind energy projects) supplement the dominant electricity sources, as shown in **Plate 6**.

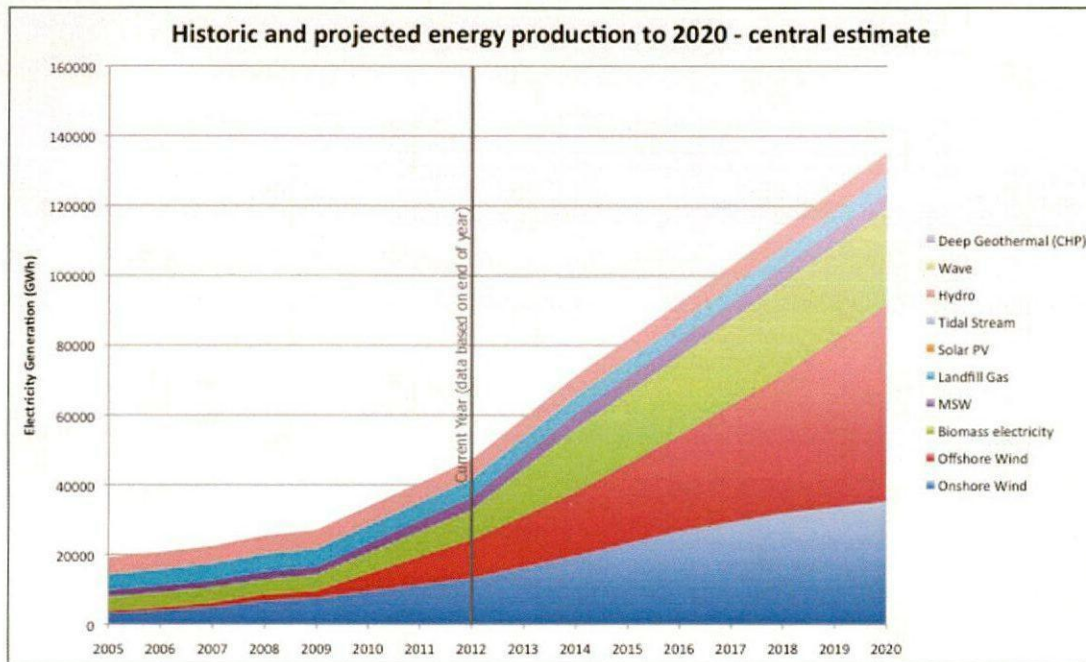
Plate 6 - The 2012 Energy Mix Baseline taken from the Department of Energy and Climate Change, Energy Trends, March 2013 (DECC, 2013b)



- 1.55 Drawing on the Kyoto Protocol, in January 2008 EU member states were allocated individual targets for increasing the level of renewable energy as part of Directive 2009/28/EC of the European Parliament and Council (European Parliament, 2009).
- 1.56 The United Kingdom was allocated 15% of energy to be derived from renewable sources by 2020.
- 1.57 The BBC reported that '*at 15% the UK target is lower than the EU average, but means it would have to achieve the biggest increase of any country - because it is starting from such a low base*' (BBC, 2008).
- 1.58 This renewable target also refers to 15% of energy which includes all sources of carbon emissions such as transport etc. and not just electricity. As electricity production is one of the easier methods of increasing the use of renewables, the Government has equated this to a need for 'around 30% of electricity demand, including 2% from small-scale sources' to come from renewables (The National Renewable Energy Action Plan, DCLG, 2009).
- 1.59 In addition to the above, the UK Government published the 'UK Renewable Energy Roadmap' in July 2011 (DECC, 2011c) followed by a Roadmap Update in December 2012 (DECC, 2012a). These documents update and extend the National Renewables Action Plan from 2009.
- 1.60 The executive summary of the 2011 Roadmap concludes:
'Even though we are starting from a low level, the UK can meet the target to deliver 15% of the UK's energy consumption from renewable sources by 2020.'
- 1.61 Furthermore, the 2012 Roadmap Update '*shows both strong growth in renewable electricity deployment over the last year and that the UK is on track to meet the first interim target on the way to the ambitious target of 15% renewable energy consumption by 2020.*'
- 1.62 There are presently six tangible renewable energy technologies available for the production of renewable energy, which will need to be implemented to meet the UK

target. The level of contribution that each of these forms is expected to make to renewable energy targets in the UK, taking into account the available resource, cost and maturity of the technology is shown in **Plate 7**.

Plate 7 – Renewable Energy Generation Mix (2005-2009) and AEA Projections to 2020 (AEA - Analysis of Renewables Growth to 2020 produced for Renewable Energy Roadmap) (DECC, 2011c)



- 1.63 As can be seen from this plate, it is recognised that onshore wind represents a large proportion of renewable energy production in the UK at present and that wind energy (onshore closely followed by offshore) is expected to make by far the greatest contribution to the 2020 target. With respect to the current situation, the recently published 'Onshore wind call for evidence' (DECC, 2012b) states:

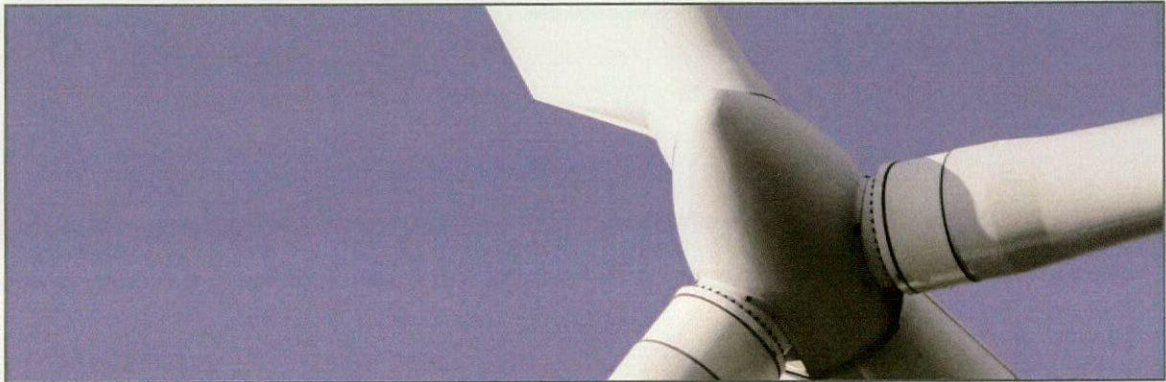
'In 2011, onshore wind already contributed 3% (10TWh) of the UK electricity supply (up from 1.9% in 2010), enough to power 7.7 million homes.'

- 1.64 This is primarily as a result of the level of resource in the UK (approximately 40% of the European resource), the technical and commercial maturity of wind turbines and their ability to be widely implemented across the country and its waters.

- 1.65 In terms of the specific on-shore technology plan within the Roadmap:

'The UK has more than 4GW of installed onshore wind capacity in operation (generating approximately 7TWh of electricity annually). The central range for deployment indicates that onshore wind could contribute up to around 13GW by 2020.'

- 1.66 To meet the 15% internationally binding obligation, the UK Government has presently two structures for promoting renewable energy in the UK, the Renewables Obligation to promote large scale projects and the Feed-in-Tariff to promote small scale projects, including small scale wind such as this proposal.



CURRENT NATIONAL RENEWABLES POLICY

- 1.67 The complete planning framework relevant to this application is outlined within the separate Planning Statement that accompanies this environmental assessment report. A summary of the National Policy for planning renewables is described below.
- 1.68 The UK Government published the National Planning Policy Framework (NPPF) on 27th March 2012. This replaces previous Planning Policy Statements (PPS) and Guidance (PPG) and sets out an overall framework for planning in England, largely drawing on the National Policy Statements (NPSs).
- 1.69 The NPPF explains in Paragraph 14 that *'at the heart of the National Planning Policy Framework is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking. ...'*
- 1.70 With regards to Renewable Energy, the NPPF states at Paragraph 97 that:
- 'To help increase the use and supply of renewable and low carbon energy, local planning authorities should recognise the responsibility on all communities to contribute to the energy generation from renewable and low carbon sources. They should:*
- Have a positive strategy to promote energy from renewable and low carbon sources;*
 - Design their policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily, including cumulative landscape and visual impacts;*
 - Consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure the development of such sources;¹⁷*
 - Support community-led initiatives for renewable and low carbon energy, including development outside such areas being taken forward through neighbourhood planning; and*
 - Identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.'*

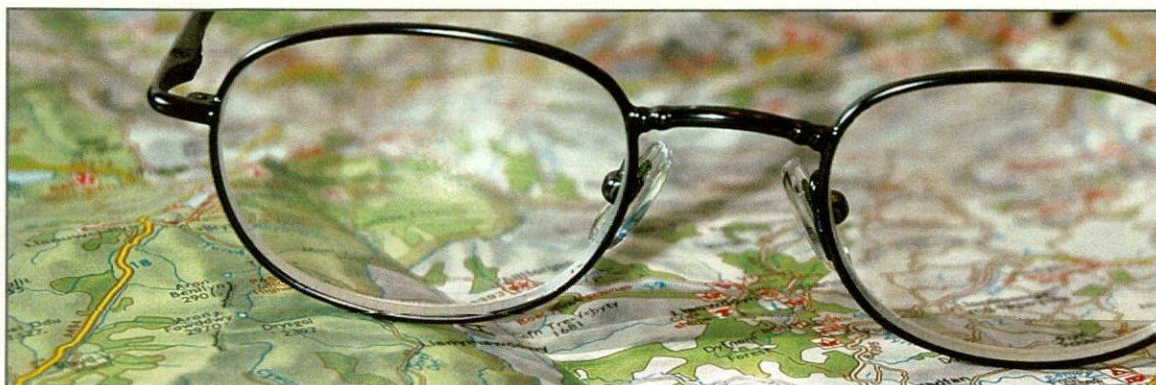
¹⁷In assessing the likely impacts of potential wind energy development when identifying suitable areas, and in determining planning applications for such development, planning authorities should follow the approach set out in the National Policy Statement for Renewable Energy Infrastructure (read with the relevant sections of the Overarching National Policy Statement for Energy Infrastructure, including that on aviation impacts). (DCLG, 2012a)

- 1.71 The National Policy Statements provide the primary policy framework for determining applications for onshore energy generation infrastructure in excess of 50MW. Whilst the proposal under consideration here is not in excess of 50MW, it is clear from the NPPF Paragraph 97 footnote that the NPS series is applicable. This proposal will be determined under the provisions of the Town and Country Planning Acts (TCPA), which also qualify the NPS series as a material consideration for determining applications - as noted in paragraph 1.2.1 of NPS EN-1.
- 1.72 With respect to the proposed wind turbine, EN-1 (the Overarching Statement) and EN-3 (Renewable Energy Infrastructure) are relevant and material.
- 1.73 The Overarching Statement (EN-1) sets out general matters relating to all energy related proposals. It covers topics to be considered in determining any application, such as: air quality; biodiversity; civil and military aviation interests; the historic environment; landscape and visual; land use; noise; socio-economic impacts; traffic and transport; and water quality and resources. It also:
- considers the need for nationally significant energy projects;
 - reinforces the Government commitment to cutting greenhouse gas emissions, delivering secure energy on the way to a low carbon future and driving ambitious action on climate change; and
 - sets out the assessment principles for the determining body to follow when making decisions on applications for consent.
- 1.74 Renewable Energy Infrastructure (EN-3) provides policies additional to those set out in EN-1. Onshore wind is considered in Section 2.7 and it initially refers to aspects that are generic to wind farms, including the effect of the time-limited nature of most wind farm developments on the environmental impacts and the need for flexibility in the design of proposals both in terms of turbine choice and precise location of the wind farm elements. In addition, the same range of issues identified in EN-1 are detailed specifically to onshore wind.
- 1.75 As stated in **Paragraph 1.49** of this report, the NPPF continues (in Paragraph 98) to consider the need for renewable energy and the contribution that small scale projects, such as Shafton, can make to the national need for renewable generation.
- 1.76 Although the publication of the NPPF has replaced the PPG and PPS series, it is important to note that some of the Companion Guides have not yet been withdrawn and there is currently no Government programme for reviewing and updating or withdrawing guidance. As such, the PPS5 Practice Guide (DCLG, 2010) remains relevant.
- 1.77 On 29th July 2013 the Department for Communities and Local Government issued

Planning practice guidance for renewable and low carbon energy. (DCLG, 2013). At Paragraph 2 of this guidance it is stated that:

'Government planning practice guidance can be a material consideration in planning decisions and should generally be followed unless there are clear reasons not to. 'Planning for Renewable Energy: A Companion Guide to PPS22' is cancelled.'

- 1.78 This new guidance document provides general advice on planning matters associated with renewable energy development, including how local planning authorities can develop a positive strategy to promote the delivery of renewable and low carbon energy. Consideration is also given to the technical parameters which influence the appropriate siting of biomass, hydro-electric, active solar (photovoltaic and solar water heating), large scale ground-mounted solar photovoltaic farms, and wind turbine developments. With respect to wind turbines, this is noted further at **Paragraph 1.79** where relevant.



SITE LAYOUT AND DESIGN

1.79 The initial suitability of the landholding for a wind turbine and the initial site design, within the boundaries of the landholding, were based on consideration of the following technical and environmental constraints as guided by National Policy Statement for Renewable Energy Infrastructure (EN-3) (DECC, 2011b), Planning practice guidance for renewable and low carbon energy (DCLG, 2013) and best practice:

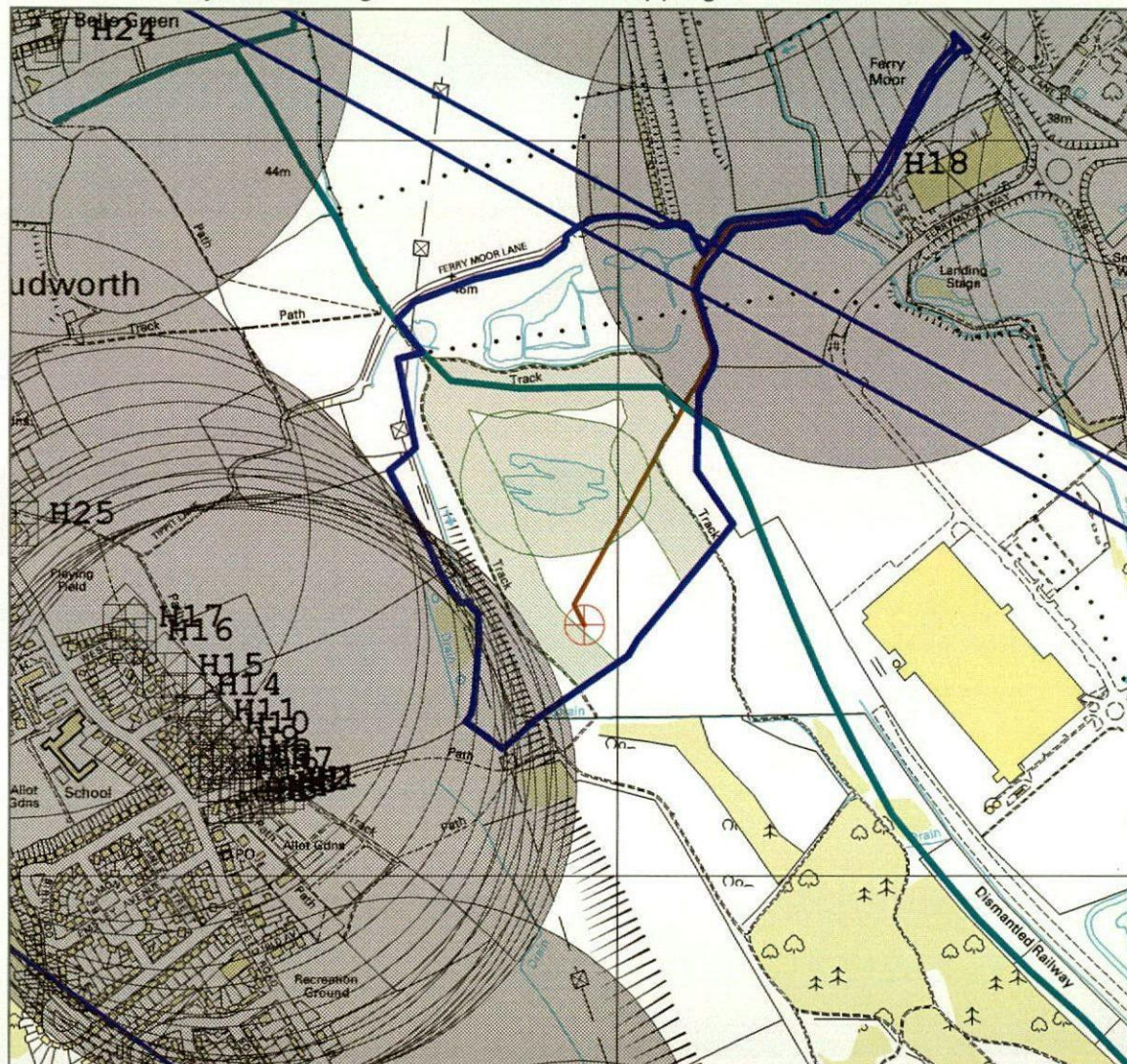
- Land availability - The siting of the turbine was limited to the landholdings of Harworth Estates. Land was made available at Shafton in areas considered preferable for the turbine, given existing land and environmental uses.
- Wind resource - As stated in **Paragraph 1.45** the UK Wind Speed Database was consulted to provide indicative wind speeds, which in turn were used to provide estimates of production levels from the turbine (please see CD **Appendix 1**).
- Road access - There must be adequate access for the large delivery vehicles used during construction particularly the crane and the blades, as the longest turbine elements. The route proposed for this site utilises the major road network. This has been assessed for turbine deliveries and is considered suitable, requiring no modifications to the highway. A short section of the route will be passed in contra-flow to avoid temporary removal of street furniture but all large deliveries will be escorted for the full length of the route (please see the Transport section (from **Paragraph 1.92** later in the document for a detailed route description).
- Known aviation constraints - Defence Estates were consulted on the development. National Air Traffic services maps were also consulted to determine the suitability of the site and height of the turbine in aviation terms. Topographical Aviation Charts were consulted to identify nearby airfields and civil aviation interests.
- Proximity to designated sites - Data for designated sites was obtained from the Multi-Agency Geographic Information for the Countryside (MAGIC) database to provide initial information on the proximity of the proposal to designated sites (search results at **Appendix 1**). There are no National Parks, Areas of Outstanding Natural Beauty, World Heritage Sites, Ramsar, Special Protection Areas, Special Areas of Conservation, National Nature Reserves, Registered Battlefields or Registered Parks and Gardens within 5km of the proposal. There are two Sites

of Special Scientific Interest and eight Scheduled Ancient Monuments and Greenbelt within 5km. The closest Site of Special Scientific Interest is Carlton Main Brickworks which is approximately 1.1km east of the site. The closest of the Scheduled Monuments is Hallsteads Moated Site, Grimethorpe, which is approximately 2.4km east of the site. Other Scheduled Monuments are over 3km from the site. Full listings for the designations within 5km are provided in **Appendix 4 and Appendix 6**.

- Proximity to telecommunications links - Telecommunications operators were consulted and links within the area mapped, where identified. A suitable separation distance between the turbine and any proximate links was ensured. Please see the Telecommunications section (from **Paragraph 1.326**) later in this document.
- Proximity to utilities infrastructure (e.g. water, sewage and gas pipes and high voltage power lines) - Utilities operators were consulted and identified no pipelines within the site area. (Please see the Utilities section (from **Paragraph 1.334**) later in the document for further details).
- Proximity to public roads and rights of way - Draft guidance from the Department for Transport (2013) seeks a separation from the Strategic Road Network of tip height plus 50m for 'commercial scale wind turbines'. There are no such roads in proximity to the proposed turbine and as such this separation distance does not apply. There is currently no separation distance stipulated in UK planning policy for the non-strategic road network or public rights of way. Previous planning policy and guidance recommended a separation distance of tip height. This has been adopted for the purposes of constraints mapping, with an additional 10% buffer, which equates to a clearance of 84.7m, based on the 500kW EWT DW 54 wind turbine. This distance is exceeded at Shafton and there are no bridleways in proximity to the proposed turbine location.
- Proximity to trees, hedgerows and ditches - In line with Natural England Bat Guidance TIN051 (Natural England, 2012) a minimum separation distance (from the blade tip) of 50m was maintained from all hedgerows, trees and ditches.
- Proximity to local residences - Paragraph 2.7.6 of EN-3 states that '*the two main impact issues that determine the acceptable separation distances are visual amenity and noise.*' There is no statutory separation distance between a residential dwelling and a wind turbine. This is confirmed by the Planning practice guidance for renewables and low carbon energy (DCLG, 2013) which dismisses the use of buffer zones (Paragraph 16) and suggests that greater than tip height plus 10% is generally desirable (Paragraph 31). The initial site design was based upon a separation distance of 450m from residential properties. For a single wind turbine project, this distance negates the need for background noise monitoring as the most stringent available noise limits under the noise guidance for wind energy can be met (Please see the noise assessment which is summarised from **Paragraph 1.175**).

- 1.80 **Plate 8** shows the proposed site layout with the initial constraints mapping applied. **Figure 3** shows an aerial view of the proposed turbine location.

Plate 8 - Site Layout Showing Initial Constraints Mapping



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	Turbine Location
	Access Track
	Land Ownership
	400m separation from residential dwellings
	TIN051 linear feature clearance for bats (61m buffer drawn)
	Green Way
	JRC Telecommunications links



DESIGN AND ACCESS STATEMENT

- 1.81 The importance of considered site location and design is clearly highlighted in National Policy Statement for Renewable Energy Infrastructure (EN-3) (DECC, 2011b). Through careful site selection and a considered approach to site design that inherently mitigates potential impacts, where possible, the applicant has aimed to ensure full compliance with this guidance.
- 1.82 The following Design and Access Statement is provided to explain the turbine position and design process. It is produced in accordance with Circular 01/06 Guidance on Changes to the Development Control System (DCLG, 2006). As recommended by The Commission for Architecture and the Built Environment (CABE) publication *'Design and Access Statements - how to write, read and use them'* (CABE, 2006), this statement concentrates on seven Key Issues and answers a set of Key Questions for each one. Questions shown in square brackets are not considered relevant to the wind turbine development.
- 1.83 In addition, in 2010, the Town and Country Planning (General Development Procedure) (Amendment) (England) Order 2010 (SI 2010/567) (which was superseded by The Town and Country Planning (Development Management Procedure) (England) Order 2010, SI 2010 No. 2184) introduced the term 'context', to be discussed with respect to the development as a whole rather than with respect to the sub-components discussed by the CABE guide. The DCLG document *'Guidance on information requirements and validation'* (DCLG, 2010) discusses the requirements.
- 1.84 For ease of use the Design and Access Statement for the single community wind turbine at Shafton has been tabulated in **Table 2**.

Co-operative Wind Turbine at Shafton Two Gates

Table 2 - Design and Access Statement in Tabular Form

KEY ISSUE	KEY QUESTIONS (CABE, 2006)	RESPONSE
The Process	Have the physical characteristics of the scheme been informed by a rigorous process which should include assessment of the site's full context (physical, social and economic characteristics and relevant planning policies); involvement; evaluation and design?	As stated in Paragraph 1.79 the suitability of the landholding for a wind turbine and the initial site design, within the boundaries of the landholding, was based on consideration of technical and environmental constraints as guided by National Policy Statement EN-3, Planning practice guidance for renewable and low carbon energy (DCLG, 2013), and best practice. This is described further within the 'Layout' section of this Statement. Energy Prospects Co-operative commissioned Farmwind to consider the potential, if any, for wind energy development across Harworth Estates' landholdings in central and northern England. In the first phase of work, the feasibility of nine separate site locations across different counties was assessed. The desk based part of the studies considered factors such as wind speed, landscape designation and proximity to aviation interests. Site visits further investigated other potential environmental constraints such as land availability and likely access issues. This resulted in some six sites being identified as worthy of more detailed evaluation in both environmental and technical terms. It was considered that the current proposal provides a balance between landscape and ecological factors, separation from residences, access to site and current land use. The environmental effects were considered in detail and they are provided in summary in this application. The planning policy impacts of the development are described in full in the separate Planning Statement included with the application.

APPLICATION DOCUMENTATION AND ENVIRONMENTAL REPORT

KEY ISSUE	KEY QUESTIONS (CABE, 2006)	RESPONSE
Use	What are the buildings and spaces used for? Would the application help to create an appropriate mix of uses in the area? Would different uses work together well, or would they cause unacceptable annoyance?	The proposal is for infrastructure to allow for the generation of electricity from renewable energy. The application is for the generator itself and those other aspects which allow for its erection and maintenance. The site on which the turbine is proposed is currently reclaimed industrial land and informally used by the public for dog walking and similar activities. The operation of a wind turbine would have minimal impact upon other uses of the land on-site, taking up less than 0.5ha of land. The use of renewable energy in the UK is supported through the National Planning Policy Framework (DCLG, 2012a), which states at Paragraph 97 that '<i>to help increase the use and supply of renewable and low carbon energy, local planning authorities should recognise the responsibility on all communities to contribute to energy generation from renewable or low carbon sources. They should: have a positive strategy to promote energy from renewable and low carbon sources; design their policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily...</i>' The location of the proposal is technically and economically viable and the site has been designed to minimise environmental and social impacts where possible, with resultant impacts determined in the studies contained within this Environmental Report.

Co-operative Wind Turbine at Shafton Two Gates

KEY ISSUE	KEY QUESTIONS (CABE, 2006)	RESPONSE
Amount	The planning application will say how much development is being applied for. Why is this the appropriate amount? Is the density appropriate?	A single wind turbine has been applied for, which qualifies for the Feed-in Tariff introduced in April 2010. The landscape and visual assessment provided within this environmental report assesses the impact of this single turbine and its associated infrastructure on local landscape and visual receptors.

APPLICATION DOCUMENTATION AND ENVIRONMENTAL REPORT

KEY ISSUE	KEY QUESTIONS (CABE, 2006)	RESPONSE
Layout	How will the buildings and public and private spaces be arranged on the site, and what is the relationship between them and the buildings and spaces around the site? [Will public spaces be practical, safe, overlooked and inclusive?] [Will private spaces be adaptable, secure and inviting?] Do all spaces have a purpose?	As stated in Paragraph 1.79 the suitability of the landholding for a wind turbine and the initial site design, within the boundaries of the landholding, was based on consideration of the following technical and environmental constraints as guided by National Policy Statement for Renewable Energy Infrastructure (DECC, 2011b), Planning practice guidance for renewable and low carbon energy (DCLG, 2013), and best practice: • Land availability; • Wind resource; • Turbine siting requirements; • Road access; • Known aviation constraints; • Proximity to designated sites; • Proximity to telecommunications links; • Proximity to utilities infrastructure (e.g. water, sewage and gas pipes and high voltage power lines); • Proximity to public roads and rights of way (please see section on access); • Proximity to trees, hedgerows and water bodies (please see ecological report); and • Proximity to local residences. The environmental impact of the proposal is examined in the following sections of this Environmental Report. The elements forming this application are only those which are necessary for the generation and transport of electricity or for the access to and maintenance of the wind turbine. The proposed arrangement of these elements is shown on Figure 2 at the A3 section of this document.

Co-operative Wind Turbine at Shafton Two Gates

KEY ISSUE	KEY QUESTIONS (CABE, 2006)	RESPONSE
Scale	The statement should explain and justify: the height, width and length of [buildings]; the size of spaces in relation to each other and their surroundings; and [the size of parts of a building or its details]. The statement should provide clear evidence that the planned scale has been influenced by the existing character of the local area or, where relevant, opportunities to improve that character. Will the [buildings] sit comfortably with their surroundings? [Will they, and parts like doors and windows, be of a comfortable scale for people?]	Modern wind turbines of a commercial (rather than 'domestic') nature range from approximately 50m to tip to 150m to tip in the UK. This turbine has been proposed with a tip height envelope and associated available rated capacity to allow it to qualify for the Feed-in-Tariff and also to minimise potential visual impacts. As mentioned in the layout section of this statement, the spacing of the turbine relative to its surroundings has been primarily driven by separation distances from various constraints such as dwellings, trees, hedgerows and roads. These separations, in combination, minimise potential environmental impacts. A scale drawing of the EWT DW 54 turbine is provided as Figure 5 of the A3 section. Commercial wind turbines are by their very nature tall structures. Equally, this form of development has the unusual characteristics of a very open form combined with moving elements and can not be compared directly to other types of development. Impacts on landscape and visual amenity are inevitable as a result of any wind turbine development, as with any tall structure located in an open location, but must be weighed against the benefits of such a development. The landscape and visual assessment provided in this Environmental Report sets out the specific effects of this proposal in detail.

APPLICATION DOCUMENTATION AND ENVIRONMENTAL REPORT

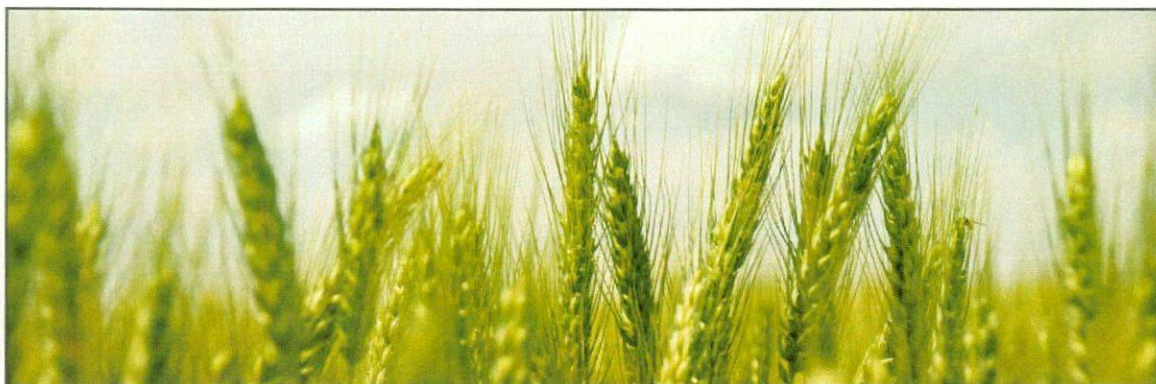
KEY ISSUE	KEY QUESTIONS (CABE, 2006)	RESPONSE
Landscaping	This section is not applicable to wind energy developments.	Due to the scale of wind turbines, landscaping on land available to the landowner, and thus likely close to the proposal, will commonly have an impact only on visibility from very near views. Consequently no landscaping is proposed with this application.
Appearance	The statement should explain and justify the appearance of buildings and spaces, and show how they relate to their surroundings. It should cover: architecture, materials, [decoration], lighting, colour and texture... How will the development visually relate to its surroundings? Will it look attractive?	The appearance of a wind turbine is largely functional, with materials primarily chosen for their weight, strength and practicality. It is proposed that the turbine be painted a semi-matt off-white colour, such as RAL 7035 or RAL7038, to minimise visibility and reflection from the turbine. It is proposed that the substation is painted 'Hollybush' green (BS14C39). Aviation stakeholders do, on occasion, request aviation lights on wind turbine structures. Infra-red lighting, which is invisible to the naked eye, is generally acceptable to the MoD. Landscape and visual impacts are assessed in detail in the landscape and visual assessment provided in this Environmental Report. Numerous public opinion surveys have been carried out (please see the Socio-economic section of this environmental report), which consistently show a high level of support for wind turbines. However, while some may see them as elegant structures, others may consider them obtrusive, particularly in a countryside setting. The latest publication, undertaken by Ipsos MORI on behalf of RenewableUK, found that 66% of respondents were in favour of the use of wind power in the UK (MORI, 2012).

Co-operative Wind Turbine at Shafton Two Gates

KEY ISSUE	KEY QUESTIONS (CABE, 2006)	RESPONSE
Context	A design and access statement should demonstrate the steps taken to appraise the context of the proposed development. It is important that an applicant should understand the context in which their proposal will sit, and use this understanding to draw up the application.	The immediate and wider context of the site was evaluated during the site selection and design process, as discussed in Paragraph 1.79 of this Environmental Report. A description of the site's context is provided by the Landscape and Visual Assessment, as summarised from Paragraph 1.236. The social and economic aspects of the proposal are discussed from Paragraph 1.347. The effects of climate change are now being experienced at all levels – global, national, regional and local. Similarly, the socio-economic effects of the proposal will also have effects at the global, national regional and local levels. The relevant planning policies associated with the proposed single wind turbine are discussed in the separate Planning Statement. Consultation with the Local Planning Authority was undertaken throughout the pre-planning assessment phase of the application. This included correspondence with Matthew Woodward, former Planning Officer at Barnsley Council, to expand upon the Screening Opinion and to discuss the landscape viewpoint locations. A detailed site design process was followed, allowing mitigation to be incorporated within the design which evolved to avoid or reduce the significance of identified impacts.

APPLICATION DOCUMENTATION AND ENVIRONMENTAL REPORT

KEY ISSUE	KEY QUESTIONS (CABE, 2006)	RESPONSE
Access	The design and access statement will need to cover two potential aspects of access vehicle and transport links, and [inclusive access...] Will the place be safe and easy for everyone to move around? Will it make the most of the surrounding movement network? Has the applicant clearly described their policy approach and consultation process, whether carried out or planned?	Road access - the access route for this proposal will be provided from motorways and A roads as required. The route proposed for this site exits the A1(M) at the junction with the A628 and travels eastbound through Barnsley and to the A6195 where the route briefly travels north before turning back north-westbound which leads directly to the site entrance on the left (to the west of Grimethorpe). More detail can be found in the traffic and transport section of this documentation. Separation from public roads and rights of way - This site is over 455m from the nearest public road and approximately 450m from the nearest definitive right of way. This exceeds the draft recommendations of the Department for Transport (DfT, 2013) (tip height +50m for the Strategic Road Network) and previous planning policy guidance adopted as industry best practice (no less than blade oversail and typically tip-height). The approach to the consultation process followed in the development of this proposal is described in the project screening section of this document. The planning policy impacts of the development are described in full in the separate Planning Statement included with the application.



PROJECT SCREENING

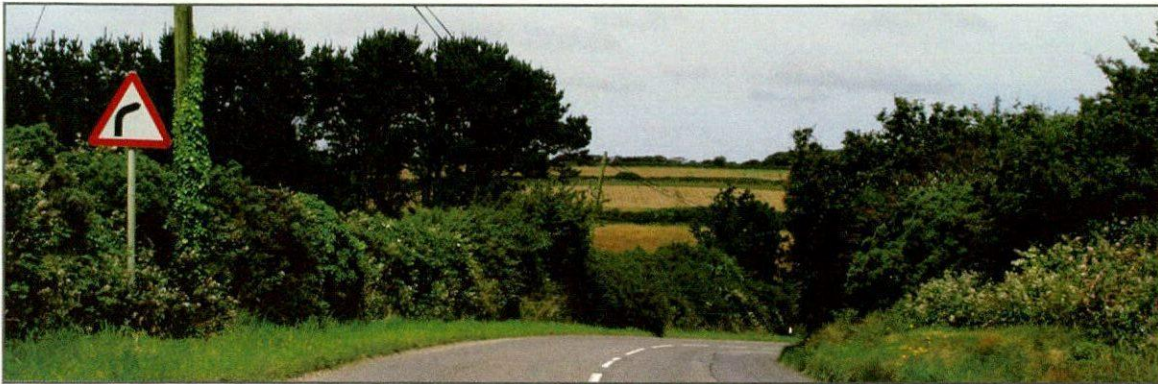
- 1.85 National planning policy for wind energy projects is guided by the 'National Planning Policy Framework' (DCLG, 2012a), its accompanying 'Technical Guidance to the National Planning Policy Framework' (DCLG, 2012b), 'Overarching National Policy Statement for Energy (EN-1)' (DECC, 2011a), 'National Policy Statement for Renewable Energy Infrastructure' (EN-3)' (DECC, 2011b) and Planning practice guidance for renewable and low carbon energy (DCLG, 2013).
- 1.86 Given the scale of the proposal, a screening opinion was applied for on the 21st January 2013 to Barnsley Council, as provided for in the Town and Country Planning Regulations, 2011 (please see **Appendix 2** of the CD Appendix).
- 1.87 A response was provided on 28th February 2013, which stated that an environmental impact assessment was not required (please see **Appendix 2** of the CD Appendix).
- 1.88 The Screening Opinion provided by Barnsley Council states that:
'In conclusion, the proposed development in introducing a new feature into the local landscape and as a result of its size may have a significant landscape and wide visual impact. It may also have indirect impacts on local biodiversity. However, in the round, the project is unlikely to give rise to significant environmental effects and, accordingly, EIA is not required.'
- 1.89 As such this Environmental Report has been prepared.

THE FINDINGS OF THE ENVIRONMENTAL STUDIES

1.90 Environmental reports have been produced for the following topics by the following authors;

- Traffic and transport - Engena Ltd;
- Geology and soils, and flood risk - Engena Ltd;
- Coal Mining Risk Assessment - Dunelm Geotechnical & Environmental Ltd.
- Contaminated Land - Nott Group;
- Ecology - E3 Ecology Ltd;
- Noise - Ion Acoustics Ltd;
- Archaeology and Cultural Heritage - CgMs Consulting;
- Landscape and visual effects - Optimised Environments (OPEN);
- Shadow flicker - Engena Ltd;
- Telecoms, utilities and television reception - Engena Ltd;
- Aviation - Engena Ltd; and
- Socio-economic effects - Engena Ltd.

1.91 Where reports are undertaken by an external consultant, a summary of the findings is presented within this documentation including relevant consultation responses. Electronic versions of the full external reports are provided on the CD Appendix, which is included on the back page of this report. All assessments undertaken by Engena are incorporated into this document, with the exception of shadow flicker which is summarised in this document and provided in full at CD **Appendix 9**.



Traffic and Transport

1.92 The construction traffic, wind turbine and associated infrastructure deliveries are anticipated to be as shown in **Table 3**. The monthly traffic flows associated with the construction process is outlined in **Table 4**.

1.93 Maximum delivery requirements for the EWT DW 54:

The longest element = blade at 26.2m (including trailer)

The heaviest element = bottom tower section at 48T

The highest element = bottom tower section at 4.6m (including trailer)

1.94 Approximately 31m of new access track will be required to join the turbine location to the existing track on site. A further 734m of existing track will be upgraded to facilitate delivery of the turbine components and allow access for the other required construction vehicles. This brings the total length of new or upgraded access track required (from the point of highway exit to the turbine base) to approximately 765m.

1.95 The typical construction programme is expected to take a total of four months. As can be seen from **Table 4**, deliveries are well spaced throughout the period. The highest level of traffic would be for one day during month two, in which the foundation would be cast in a single pour. This would require 18 HGV deliveries within one day, totalling 36 movements.

1.96 Should ground conditions require the turbine to be mounted on piled foundations, it is anticipated that the construction programme would be extended by approximately one week. Typical piled foundation designs retain a requirement for a concrete pad similar to the described slab foundation and so concrete deliveries are not expected to differ greatly from those discussed below. It is not anticipated that a piled foundation design will generate additional excavated material from that discussed for a typical pad foundation. Approximately 15 additional deliveries (30 movements) would, however, be required to deliver pre-cast piles together with the pile driver itself.