Design and Access Statement

Erection of Single 500kW Wind Turbine

At Rainsbutt Farm, Crowle, Scunthorpe,

North Lincolnshire, DN17 4BJ

For

Mr Dan Albone

May 2014

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1. Vision

1.1. The development is sought to enable the applicant to reduce the carbon emissions and energy bills of the farm business and to increase the self sufficiency of the business in terms of electricity production, as well as allowing the business to become more sustainable.

1.2. The proposed application site is located at Rainsbutt Farm, Crowle, Scunthorpe, North Lincolnshire, DN17 4BJ.

1.3. The proposed development is for the installation of a single 500kW wind turbine with a maximum tip height of 79m.The final turbine manufacturer has not yet been chosen and the planning authority will be notified once it has been decided. The development will have up to a 50m monopole or hub and a maximum blade tip height of up to 79m. The maximum power output is 500kW.

1.4. 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 resin.

1.5. This report should be read in conjunction with the Landscape and Visual Impact Assessment, Heritage Impact Assessment and other documents accompanying this planning application.

2. Introduction

2.1. This Design and Access Statement is submitted in conjunction with a set of plans for the proposed erection of a single 500kW wind turbine with a maximum tip height of 79m.

2.2. This report shows the principles used in selecting design and access criteria for the application, and fulfils the requirements of the Town and Country Planning Act 1990 (as amended).

2.3. The Applicant is Mr Dan Albone who owns a local potato farming business which grows approximately 120 tonnes of potatoes annually for a number of major retailers nationally. His business won the 'Nene Grower of the Year' award in 2011, for its sustainable working practices. Farming in general is currently undergoing significant changes, and in order to stay competitive by ensuring excellent standards of quality, in a global economy, means farmers including potato growers, must demonstrate their commitment to the environment, which includes responsible use of pesticides and respect for the safety and welfare of their employees, by completing audits to attain various accreditation such as 'Red Tractor' and 'Nurture'.

2.4. The local farming business has also recently been awarded the 'LEAF Marque' accreditation, enabling it to supply Waitrose, a highly regarded retailer for its quality produce. This prestigious certification guarantees its customers that its producers (including the Applicant), operates in an environmentally responsible way.

2.5. The proposed wind turbine would enable the local farming business to run its potato stores and its grain stores from its own clean green electricity generated on site, whilst reducing the importation of any 'dirty' fossil fuels, and thus the farm's carbon footprint, whilst demonstrating the farm's commitment to producing food for its high value customers with a significantly less impact on the environment.

2.6. The proposed location of the single 500kW wind turbine is located approximately 760m northeast of the farm house in an open large field in rural Isle of Axholme.

2.7. The application proposes the erection of a single 79m tip wind turbine which has a nominal output of 500kW. The power curve for the turbine is shown on Figure 2. Based on NOABL wind speed data, the turbine is capable of producing approximately 1,835,000 kWh of electricity per annum equating to the energy requirement of 430 no. of UK residential dwellings based on Ofgem's data on average domestic electricity consumption of 4,266 kWh per annum. The proposed turbine will save approximately 520 tonnes of CO2 per annum over the 25 years proposed life span of the turbine.

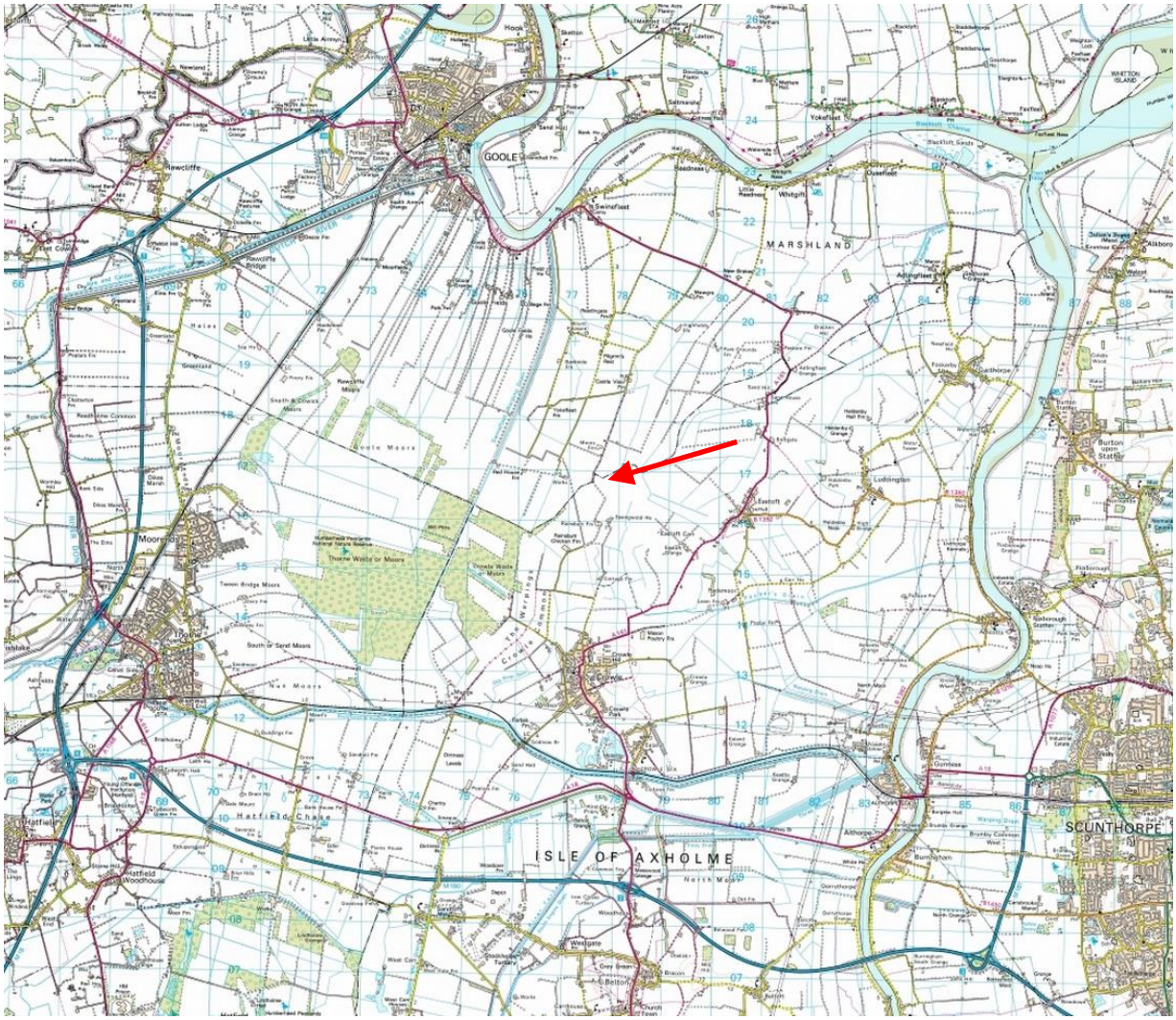

Figure 1: Site Location Map

Wind speed [m/s]	Power [kW]	Cp [-]
0	0	0,00
1	0	0,00
2	0	0,00
3	12	0,32
4	39	0,43
5	78	0,44
6	138	0,46
7	222	0,46
8	337	0,47
9	477	0,47
10	500	0,36
11	500	0,27
12	500	0,21
13	500	0,16
14	500	0,13
15	500	0,11
16	500	0,09
17	500	0,07
18	500	0,06
19	500	0,05
20	500	0,04
21	500	0,04
22	500	0,03
23	500	0,03
24	500	0,03
25	500	0,02

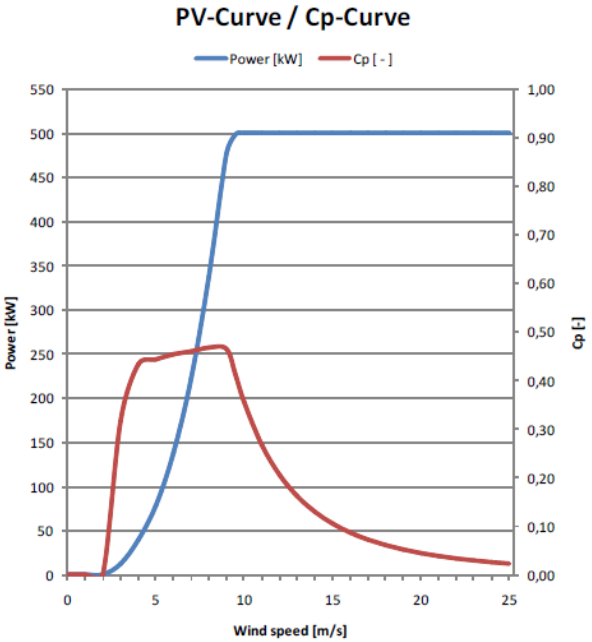

Figure 2: Energy Production Power Curve

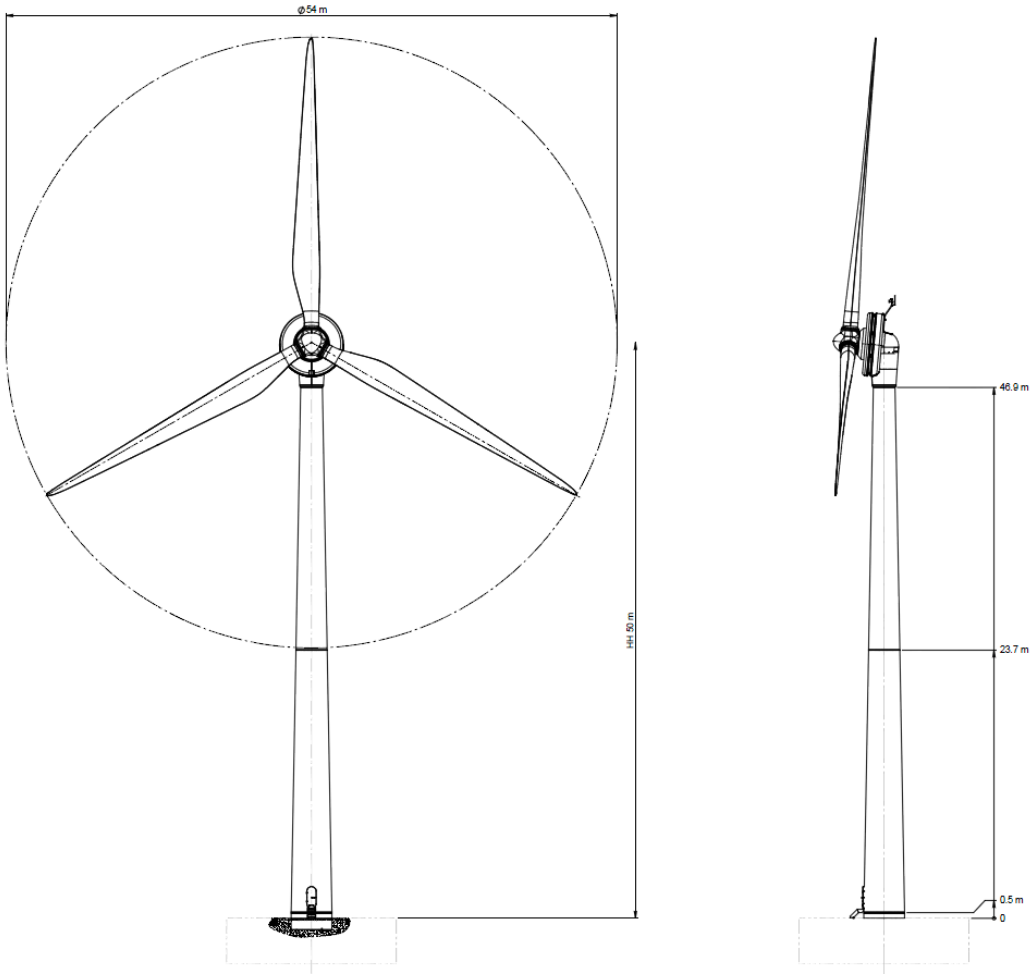

Figure 3: Indicative elevation of wind turbine with 50m hub height.

2.8. Renewable energy generation provides reduced energy costs and dependence on external sources of energy. The proposal would help to provide sufficient energy requirements and will help to secure the long term future of this local family business.

3. Site Details

3.1. Location

3.1.1. The proposed development is located on an agricultural field which is part of the Rainsbutt Farm holding; approximately 2.8km west of Eastoft and approximately 3km north of Crowle (see Figure 1). The field, in which the proposal is proposed, is located on the eastern side of the Oldlane Gate, approximately 760mfrom the Rainsbutt farmstead. Please see Appendix 6 for the Site Location Map.

3.1.2. The land on which the turbine would be located is low-lying, reclaimed farmland with many dykes and farm tracks. The land use is intensively farmed with scattered farmsteads in this large scale, expansive landscape.

3.2. Environmental and Cultural Features

3.2.1. The application site is located within the open countryside on the Isle of Axholme. From searching the Magic interactive map online and various other forms of research, the site does not appear to be located within any sensitive environmental designations such as Site of Specific Scientific Interest (SSSI), Special Areas of Conservation (SAC), Special Protection Area (SPA), National Nature Reserve (NNR), Local Nature Reserve (LNR), RAMSAR or National Scenic Areas (NSA). The nearest protected areas to the site is Humberhead Peatlands NNR circa. 1.8km to the west of the site. Other nearby designations also include: Thome Moor SAC, Thome, Crowle and Goole Moors SSSI both approximately 2.3km to the west of the site. There is also Thorne & Hatfield Moors SPA approximately 2.5km to the west of the application site.

3.2.2. North Lincolnshire Council published a North Lincolnshire Landscape Character Area Assessment in 1999, which covers the application site. The purpose of this report is to identify areas of distinct landscape character within the North Lincolnshire area and to make judgements about its quality, value, sensitivity and capacity for new development. The assessment for North Lincolnshire reflects the distinctions between different character areas of the county, and the assessment details the division of the study area into landscape character types, which have different landscape strategies and guidelines. The site is located within the 'Trent Levels' (TL) regional landscape character area. In the local context, the site is located in Flat Open Remote Farmland (FORF) landscape character type. The landscape strategy for FORF is as following:

> *"Ensure that the open character remains intact and historic features are protected whilst efforts are made to develop and enhance the landscape structure."*

3.2.3. Issues relating to landscape and visual assessment are addressed in more detail within the Landscape and Visual Impact Assessment (LVIA) which accompanies this planning application.

3.2.4. There are a number of listed buildings within a 5km radius of the application site. The closest listed building is the Grade II listed '*Moorend Farmhouse' and* stable, west of it, which are both approximately 2.2km northeast from the turbine site. From the accompanying Zone of Theoretical Visibility (ZTV) map, the proposed development is considered to be 'theoretically' visible from that location. The closest Grade II* listed building is '*Goole Hall'* which is located over 5km, 5.5km to be precise from the proposed turbine. On the accompanying ZTV map, it is illustrated that the proposed turbine will be theoretically visible from that location. The closest Grade I listed building is over 10kmto the east (Normanby Hall) from the proposed turbine, and according to the ZTV map, the turbine will be 'theoretically' visible. The ZTV map only takes into account the bare ground, with no landscape cover such as the built and natural environment. Further analysis with regards to

impacts on heritage assets has been assessed in the 'Heritage Statement' which accompanies this planning application.

3.2.5. There are no Scheduled Ancient Monuments (SAM) in the vicinity to the application site. The nearest SAM lies approximately 8km southeast in Keadby. The accompanying ZTV map illustrates that this particular SAM will have a 'theoretical' visibility of the proposed development. However, the impact is not considered to be significant, due to the separation distance and intervening landscape.

3.2.6. The nearest conservation area sits within the town of Crowle, located approximately 3km to the south of the proposed development site. The ZTV map indicates that the conservation area will have a theoretical visibility of the proposed turbine. It is envisaged however, that there will not be any adverse impact on these designated areas, due to separation distance and both man-made and natural screening. This will be illustrated in the accompanying Heritage Statement.

4. Business Case

4.1. Rainsbutt Farm belongs to Mr. Albone, of Dan Albone & Sons Ltd. Mr Albone is a successful local potato grower who supplies major national retailers, such as Waitrose with the highest quality produce. The potato farming business produces approximately 120 tonnes of potatoes per annum, and the business has been awarded for its sustainable working practices. Mr. Albone has recently attained his LEAF Marque accreditation enabling him to supply Waitrose who require sustainable and environmentally friendly production techniques.

4.2. LEAF (Linking Environment and Farming) is an environmental assurance scheme recognising sustainable farmed products, and looks at numerous areas of farm management including: Energy Efficiency, Water Management, Pollution Control, Organisation & Planning, Soil Management & Fertility, and Landscape and Nature Conservation. Retailers are looking for

farmers to adopt the LEAF mark ensuring that they are looking at carbon reduction and renewable schemes within their energy efficiency plans. Continuous monitoring of usage and comparison of previous years energy efficiency and generation from sustainable means are required.

4.3. The proposed wind turbine would be a next step in terms of investment in the Applicant's aim of becoming more environmentally friendly business and would enable it to run its potato stores and its grain stores from its own clean electricity generated by the proposed development. Potato store requires approximately 50,000 kWh per annum, and other farm machinery and buildings will also use the electricity generated by the turbine, with the excess transported to the National Grid for wider enjoyment of clean electricity generated.

4.4. A significant contribution of renewable electricity from the proposed wind turbine is required to offset other fossil fuel usage and is required to contribute to the successful growth of Rainsbutt Farm and its aim to become even more sustainable and environmentally friendly by reducing its carbon footprint.

4.5. The proposed turbine will provide the applicant with social, economic and environmental benefits as follows:

- The substitution of electricity from fossil fuels with green renewable electricity saving in excess 520 tonnes of CO2 per annum
- 1,835,000 kWh of clean energy generated per annum
- Contributing to the aims and objectives of the business and the applicant by producing its own low carbon energy
- Safeguarding the applicant from projected increases in energy costs in forthcoming years
- Contribution to the target set out in the Government's Renewable Energy Strategy of generating 15% of the UK's energy from renewables by 2020, which equates to 35-40% of electricity from

renewable resources. The focus of this strategy is the production of renewable energy from the UK's wind resources

- Security of electricity supply to the applicant, ensuring that it can produce its own energy demands on site and increase the sustainability of the farm business.

5. Proposed Development

5.1. Description

5.1.1. The proposed development aims to install a single 500kW wind turbine with a maximum tip height of 79m at Rainsbutt Farm, Crowle, Scunthorpe, North Lincolnshire, DN17 4BJ.

5.1.2. The final turbine manufacturer has not yet been chosen at the time of writing this report. The maximum turbine height will be 79m and for the purposes of this planning application we have submitted a full specification including drawings. The turbine has a rated output of 500kW, and based on the NOABL wind speed data for the proposed site, the turbine is expected to produce circa. 1,835,000kWh of electricity per annum.

5.1.3. The key components of the scheme are:

- 1 no. 500kW wind turbine
- Substation housing building
- The transformer housing
- An underground cable to the existing transmission system

5.1.4. 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	90m
Existing Length	None
Proposed Length	90m

Width	4m-20m
Surface Material	Hardcore

5.1.5. The following is the scale parameters the proposed turbine:

Turbine:

Scale Parameter	Scale
Hub Height	50.9 metres
Total Height to Tip	77.9 metres
Number of Blades	3
Rotational Axis	Horizontal
Rotor Diameter	54 metres
Swept Area Rotor Blades	2290 sq metres

Substation:

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

Transformer:

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

5.1.6. Scaled elevation drawings of a proposed wind turbine are provided in the Appendix 4.

5.1.7. The turbine assembly is mounted on a 50.9m high tower. The hub of the rotor is also at 50.9m. The rotor is a three blade design and is 54m in diameter. The Total height to turbine tip extends to 77.9m.

5.1.8. The nacelle (hub) housing contains the generator and other operating equipment and the transformer will be contained within the tower base. It is proposed that the finish of the wind turbine, tower and blades will be semi-matt and pale grey in colour.

5.1.9. The tower of the turbine is fastened to a concrete foundation below ground. The turbine foundations measure approximately 12m x 12m. These are then buried in highly packed earth. A permanent crane standing (35m x 15m) will be constructed at the turbine base to allow adequate working space for the erection of the turbine and the safe movement of vehicles across the site. It will also act as a biodiversity enhancement measure as it will prevent the foraging of small animals below the blades and the movement of birds/bats towards such prey.

5.1.10. The turbine will be connected to a transformer via an armoured underground cable duct buried at a depth of 1 meter and connected to the nearest grid connection point.

5.2. Site Selection

5.2.1. The site has been selected on the basis of optimising the turbine location in order to maximise energy production, ensuing that there is no undue disturbance at neighbouring properties, and minimising construction costs.

5.2.2. In functional terms, wind turbines require sufficient wind speeds and turbulence free wind to enable efficient operation. Most importantly, wind turbines need to be located within areas which have the following:

- Suitable wind speed
- Free from obstruction which would affect wind flow
- Suitable road network for turbine component deliveries
- Suitable ground conditions to support structures
- Availability of grid connection, and
- Suitable separation distances from residential properties to minimise noise effects.

- Not to be in a flood risk area.

5.2.3. The application site was chosen during taking these matters into account and has the following benefits:

- Land ownership – the developer is the landowner, land has been made available in an area of the farm considered preferable for the turbine.
- Wind resource – the NOABL wind speed database was checked to give indicative wind speeds, which in turn were used to provide estimates of the levels of energy produced from the turbine. The proposed development is expected to produce sufficient electricity to offset the annual electricity demands of the applicant.
- Road access- There must be adequate access for the large delivery vehicles used during the construction particularly the crane and the tower parts as the longest elements. Parts of the route proposed for the transportation is used for existing HGV's going to and from the farm and is considered suitable for the transportation of the component parts of the turbine (see the accompanying transport study).
- Proximity to designated sites – There are no National Parks, AONBs, SACs, SPAs and SSSIs within 2km. There are a number of heritage assets in the 3km vicinity with the nearest being a Grade II listed building approximately 2.2km from the turbine.
- Proximity to public roads and public rights of way–as a general guide, any turbine should be sited away from any Public Right of Way (PROW) by a distance equivalent to 1.25 x the height of the turbine to the tip at its highest point. There are no public footpaths in the immediate vicinity. There is a cycle route circa 240m away, which starts at the boundary of North Lincolnshire Council and East Riding of Yorkshire. No adverse impacts are predicted.
- Proximity to trees and hedgerows – in line with Technical Information Note TN051 Bats and Onshore Wind Turbines (2012) a minimum separation distance of 50m has been maintained from hedgerows, trees and ditches from the nearest part of the turbine (including blade). The actual minimum distance to the dyke/hedgerow is 90m.

- Proximity to local residences–the nearest residential property with no financial interest is located in excess of 600m of the turbine site.
- Flood risk– must ensure that the site is not prone to flooding. The site is located in Flood Zone 3 and therefore a Flood Risk assessment has been carried out.

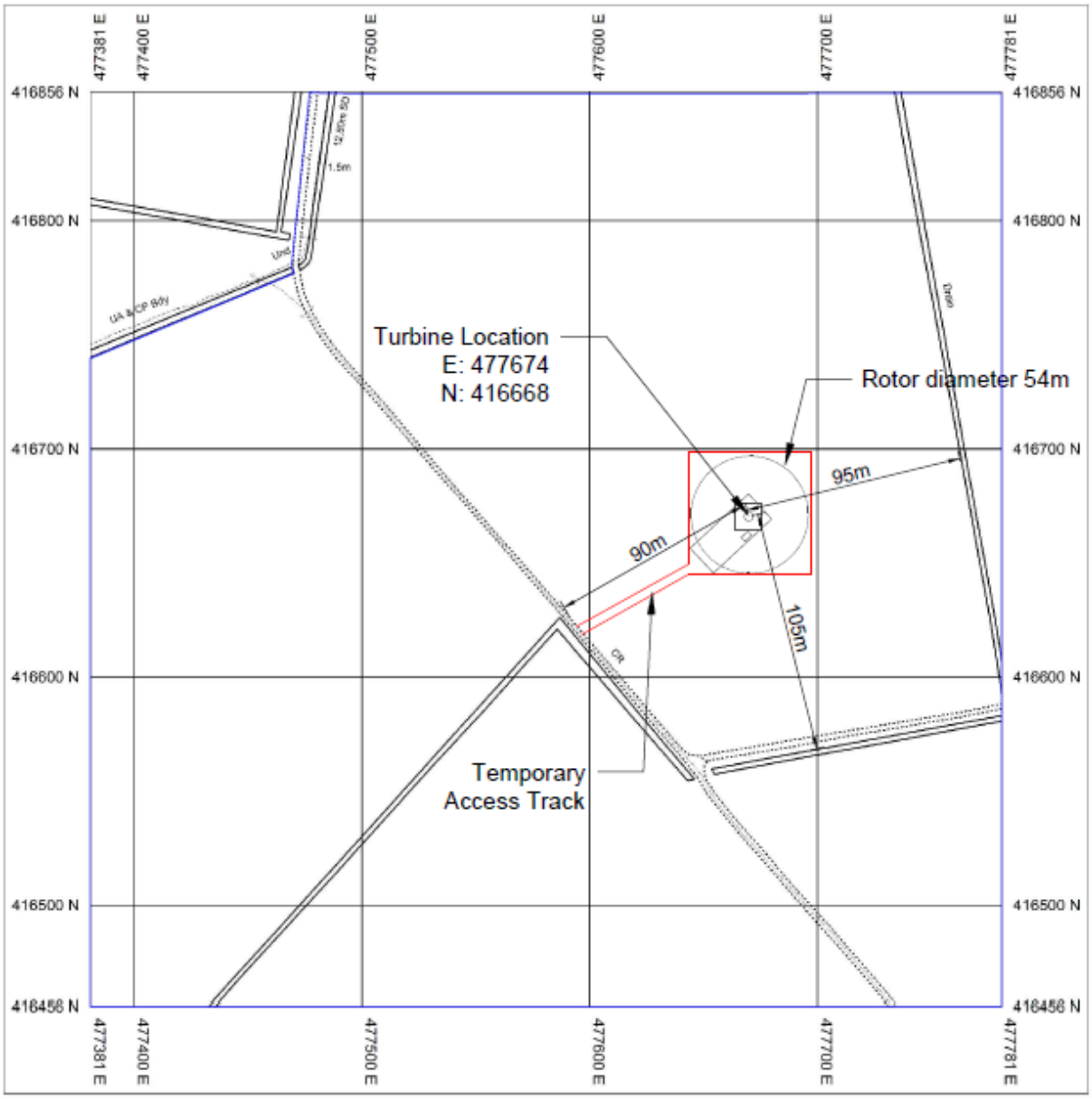

Figure 4: Proposed turbine location at Rainsbutt Farm

5.2.4. The table below shows the exact location of the single 500kW wind turbine:

Turbine	Easting	Northing
T1	477674	416668

6. Pre-Application Consultation

6.1. Pre-Application Meeting with the Planning Authority

6.1.1. A pre-application meeting with the Planning Authority took place on the 26th of March 2014 in the Council building in Scunthorpe, between Kieran Tarpey, the Managing Director of Entrust and Bill Hill, the Principal Planner from the North Lincolnshire Council along with Mr Dan Albone and his brother.

6.1.2. The scope and content of the application and its supporting documents were discussed at the pre-application meeting including the scope of the aviation, ecology statement, heritage statement, transport statement, community engagement, and landscape and visual impact assessment. It was also advised by the Planning Authority to contact council's ecologist, historic and environmental officers in regards to the ecology statement requirements, and proposed photomontage locations from sensitive local receptors which would have to be assessed as part of the Landscape and Visual Impact Assessment.

6.1.3. Entrust has liaised with the aforementioned individuals prior to submission and agreed on photomontage locations from important local viewpoints which are later addressed in the LVIA and Heritage Statement.

6.2. Environmental Impact Assessment Screening

6.2.1. The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 came into force on 24th August 2011 (the Regulations).

6.2.2. An Environmental Impact Assessment (EIA) will be required by the council if it is decided the turbine has a significant effect on the environment. This will depend on the scale of the development, visual impact as well as potential noise. EIA is more likely to be required for commercial development of five or more turbines, or more than 5MW of generating capacity. The proposed development has combined output of 0.5MW.

6.2.3. Schedule 2, Part 3 (i) in relation to wind energy projects which are to be screened for EIA if (i) the development consists of more than two turbines, or (ii) the hub height of any turbine exceeds 15 metres. In this instance the hub height exceeds 15m and proposal is to erect more than two turbines.

6.2.4. A Screening Opinion has been requested on the 14Th of April 2014. The Planning Authority has allocated a following reference number SCR/2014/0011 for this application. As of 27th of May, Entrust was advised that the case officer has been off sick and due to the shortages of staff there wasn't anyone else allocated to the case. It is however anticipated that the planning application at Rainsbutt Farm would not require an EIA.

6.3. Community Engagement

6.3.1. Changes to the Town and Country Planning (Development Management Procedure and Section 62A Applications) (England) (Amendment) Order 2013 came into force at the end of 2013. In light of these changes, pre-planning consultation with the local community is compulsory on all wind turbine developments of two or more turbines or one turbine exceeding 15m in hub height.

6.3.2. Pre-application public consultation was carried out by way of written correspondence, as advised by the Planning Authority during the pre-application consultation, with Eastoft Parish Council, and Crowle Parish Council whereby both parish councils were notified of the proposed development 3 weeks prior to the submission of the planning application and the parish councils were invited to send their comments to us which will be taken into account before/during the planning process if required and in consultation with the Planning Authority.

6.3.3. At the time of the submission, only Eastoft Parish Council has commented on the proposal and raised no objections. After initial contact with the clerk of the Crowle Parish Council, no comments regarding the proposal have been

received. It is anticipated that more detailed comments will follow up after the submission of the planning application.

6.3.4. Comments from Eastoft Parish Council are contained in the Appendix 10

7. Energy and Climate Change Context

7.1. Climate Change is widely recognised as being the most significant long-term threat facing the modern world today. Therefore, there is an urgent need to reduce global greenhouse gasses in order to combat climate change which is now a globally supported concept by legally binding targets set by United Nations. There is also a need to ensure security of energy supply and increasing and developing renewable energy generation is one of the key steps to help reduce that threat.

7.2. In the mid-1990sseveralcountries joined an international treaty, the United Nations Framework Convention on Climate Change (UNFCCC), to begin to consider what could be achieved to reduce global warming and climate change. In addition to this treaty was the Kyoto Protocol which was approved by number of nations which has powerful and legally binding measures. Under this protocol the UK is obliged to reduce it greenhouse gas emissions by 12.5% by 2008-2012 (based on 1990 emission levels) with a reduction of at least 34% in greenhouse gas emissions by 2020 and at least 80% by 2050.

7.3. Under the European Commission *Energy for the Future: Renewable Sources of Energy* (1997) the European Union has created a Community framework for promoting renewable energy sources for electricity production. It set an objective for renewables to contribute21% of all electricity production and laid down specific measures relating to evaluation of the origin of the electricity, connection to the grid and administrative measures, among others.

7.4. In November 2008, the Climate Change Act was published and this act has established a new legal framework for the UK to achieve a mandatory 80% cut in UK's carbon dioxide (C02) emissions and other greenhouse emissions by 2050. This made the UK the first country in the world to have a legally binding long-term framework to cut carbon emissions. The Planning Act 2008 and the Energy Act are also supporting renewable energy with a range of measures to assist with their delivery and implementation.

7.5. The *UK Renewable Energy Strategy (2009)* states that renewables could provide more than 30% of our electricity by 2020, compared to only around 6.7% today. Wind energy is seen as the most significant renewable energy source for achieving these targets in the short and medium term and more than two-thirds of the target is expected to come from onshore and offshore wind. Wind power does not create C02 emissions during its operational life and displaces other fuel sources which generate greenhouse gas emissions.

8. Planning Policy Context

8.1. When considering this planning application, the Local Planning Authority should take into account all material planning considerations including those arising from the comments of any statutory or non-statutory consultees, public representations about the application and Government Guidance and Policy. The planning hierarchy consists of the National Planning Policy Framework (NPPF), saved policies of the North Lincolnshire Local Plan (2003), North Lincolnshire Core Strategy (June 2011), and Planning for Renewable Energy Development SPD (2011)

8.2. National Planning Policy Framework (NPPF)

8.3. The Government's National Planning Policy Framework (NPPF) was adopted on the 27th of March 2012 and represents the principal national planning policy document and is the overarching material consideration which must be taken into account, where relevant, in determining planning applications. 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-making. Sustainable Development encompasses concepts of sustainable economic, social and environmental development which run concurrently with the spatial approach to planning.

8.4. Paragraph 93 of the NPPF 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'.

8.5. Paragraph 95 of the NPPF states that;

'To support the move to a low carbon future, local planning authorities should:

- *Plan for new development in locations and ways which reduce greenhouse gas emissions'*

8.6. Paragraph 97 of the NPPF states 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 energy generation from renewable or low carbon sources. They should:

- *have a positive strategy to promote energy from renewable and low carbon sources;*
- *design their policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily, including cumulative landscape and visual impacts;*
- *consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure the development of such sources;*

- *support community-led initiatives for renewable and low carbon energy, including developments outside such areas being taken forward through neighbourhood planning; and*
- *identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy*.

8.7. The NPPF acknowledges the key role planning has to play in helping to 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 authority 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)

8.8. <u>Renewable Energy</u>

The Core Planning principles should underpin decision-making. 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 proposed turbine will produce approximately 1,835,000kWh of clean electricity per annum to meet the demands of the land owner's farming business while saving

approximately 520 tonnes of CO2 per year, equating to 13,000 tonnes over the 25 year lifetime of the turbine.

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 have a valuable contribution to nationwide renewable energy targets, and regional targets.

8.9. The NPPF also states that 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)

The proposed development will provide carbon savings of approximately 520 tonnes per annum.

8.10. 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 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 of a single wind turbine and its siting has been selected to ensure that there will be no significant adverse effects on the cultural, historic built environment of the area. The proposed turbine will assist in achieving the broader National and International environmental objectives on climate change.

8.11. North Lincolnshire Local Plan 2003

8.12. The North Lincolnshire Local Plan was adopted in May 2013 and is used to make planning decisions. The plan is being gradually replaced by the Local Development Framework, and some policies were deleted in 2007 or replaced with the adoption of the Core Strategy.

8.13. The Local Plan has the strategic aim to:

"Improve and enhance the environment of North Lincolnshire by enabling development to be undertaken in the most economically, socially and environmentally sustainable way."

The proposed development which generates electricity by the power of natural resource of wind will not only meet this objective, but it will also benefit the local community by reducing emissions and by providing a more diverse supply of energy, which helps to reduce the overdependence on any one source of electricity.

8.14. Relevant to this application and contained within the Structure Plan are policies:

- DS21 – Renewable Energy
- RD2 – Development in the Open Countryside
- RD7 – Agriculture, Forestry and Farm Diversification
- LC7 – Landscape Protection
- DS1 – General requirements
- DS16 – Flood Risk

8.15. **Policy DS21- Renewable Energy**

Proposals for the generation of energy from renewable resources will be permitted provided that:

- *any detrimental effect on features and interests of acknowledged importance, including local character and amenity, is outweighed by environmental benefits; and*
- *proposals include details of associated developments including access roads and other ancillary buildings and their likely impact upon the environment*

Where appropriate, conditions will be imposed requiring the restoration of the site to its original condition or the implementation of an agreed scheme of after-use and restoration.

In response to Policy DS21, the proposed wind turbine will not have any detrimental impact on the local landscape character, any ecological or landscape designation and will bring wider environmental benefits to the applicant by clean energy and additional income which would secure the long-term future of the farming business. Ancillary buildings will include a transformer and substation housing. Access to the turbine will be from the main farm track used by the farm machinery on daily basis and will only need about 90m of access track.

8.16. **Policy RD2 – Development in Open Countryside**

Development in the open countryside will be strictly controlled. Planning permission will only be granted for development which is:

- *Essential to the efficient operation of agriculture or forestry;*
- *Employment related development appropriate to the open countryside;*
- *Affordable housing to meet a proven local need;*
- *Essential for the provision of outdoor sport, countryside recreation, or local communities;*
- *For the re-use and adaptation of existing rural buildings;*
- *For diversification of an established agricultural business;*
- *For the replacement, alteration or extension to an existing dwelling;*

- *Essential for the provision of an appropriate level of roadside services or the provision of utility services.*

Provided that:

- *The open countryside is the only appropriate location and development cannot reasonably be accommodated within defined development boundaries;*
- *The proposed development accords with the specific requirements set out in the relevant policies of this chapter and elsewhere in this Local Plan;*
- *The development would not be detrimental to the character or appearance of the open countryside or a nearby settlement in terms of siting, scale, massing, design and use of materials;*
- *The development would not be detrimental to residential amenity or highway safety; and*
- *Account is taken of whether the site is capable of being served by public transport; and*
- *The development is sited to make the best use of existing and new landscaping*

In response to Policy RD2; the proposed development is a farm diversification scheme which wills helps to sustain a successful rural business. The turbine would be within the boundary of the farm complex, however it would be at a sufficient distance from both financially and non-financially involved properties, so not to have a detrimental effect on the local amenity. It would be an additional vertical feature in the landscape, however it is considered that the landscape is capable of absorbing such development.

8.17. **Policy RD7 – Agriculture, Forestry and Farm Diversification**

A proposal for agriculture, forestry and farm diversification will be acceptable in principle provided that:

- *The proposal does not conflict with the operational requirements of the agricultural or forestry enterprise;*
- *There is no adverse impact on high quality agricultural land;*

- *The proposal should wherever possible, re-use existing farm buildings, or if new building is necessary, should be sited in, or adjacent to, and existing group of buildings and be of a design, scale and construction appropriate to its surroundings; and*
- *The likely level of traffic generated by the proposal is acceptable taking account of the suitability of existing access and approach roads; and*
- *Any parking associated with the proposal would not be visually intrusive.*

In response to Policy RD7; the proposed development would not compromise the current operations on the field where the turbine would be located. The footprint for the turbine is relatively small and therefore it will not adversely affect the agricultural enterprise. The only anticipated traffic would be during the construction phase, but it will not have any adverse impact on the local amenities.

8.18. **Policy LC7 – Landscape Protection**

Where development is permitted within a rural settlement or within the open countryside, special attention will be given to the protection of the scenic quality and distinctive local character of the landscape. Development which does not respect the character of the local landscape will not be permitted.

In response to Policy LC7,the proposed turbine would be located in the Flat Open Remote Farmland (FORF) landscape character type. It is not considered that the proposed development would have any detrimental impact on the landscape character. This is an open, large scale landscape which can absorb this medium size turbine. The landscape and visual impacts are further investigated in the LVIA accompanying the planning application.

8.19. **Policy DS1 – General Requirements**

A high standard of design is expected in all developments in both built-up areas and the countryside and proposals for poorly designed development will be refused.

In response to Policy DS1, the proposed development will be of sleek and modern design finished with the colouring which can be agreed with the Planning Authority. The turbine will be located near the Rainsbutt Farm, and will not have any adverse impact on the local and residential amenity, in the form of shadow flicker, noise. No pollution of water, air or land is also expected.

8.20. **Policy DS16 – Flood Risk**

Development will not be permitted within floodplains where it would:

- *Increase the number of people or buildings at risk; or*
- *Impede the flow of floodwater; or*
- *Impede access for the future maintenance of watercourses; or*
- *Reduce the storage capacity of the floodplain; or*
- *Increase the risk of flooding elsewhere; or*
- *Undermine the integrity of existing flood defences*

Unless adequate protection or mitigation measures are undertaken.

In response to Policy DS16, the proposed wind turbine is located in the Flood Zone 3. The Flood Risk assessment has been carried out as part of the planning application and will be accompanying the planning document. No significant flood risks are anticipated and once completed it will be provided to the Planning Authority.

8.21. North Lincolnshire Core Strategy June 2011

8.22. The Newark and Sherwood Core Strategy was adopted in March 2011.Key policies to this proposal contained within the Core Strategy are:

- Core Strategy Policy 18 – Sustainable Resource and Climate Change

8.23. **Core Strategy Policy CS18 – Sustainable Resource and Climate Change**

The Council will actively promote development that utilises natural resources as efficiently and sustainably as possible. This will include:

1. *Meeting high efficiency standards, and incorporating new technologies to recycle and conserve water resources.*
2. *Requiring the use of Sustainable Urban Drainage Systems (SUDS) where practicable.*
3. *Supporting the necessary improvement of flood defences and surface water infrastructure required against the actions of climate change, and preventing development in high flood risk areas wherever practicable and possible.*
4. *Meeting required national reductions of predicted CO2 emissions by at least 34% in 2020 and 80% in 2050 by applying the following measures on development proposal. Requiring all industrial and commercial premises greater than 1000 square meters to provide 20% of their expected energy demand from on-site renewable energy until the code for such buildings is applied nationally. Where developers consider these Codes and targets cannot be met on the basis of viability they will be required to provide proof through open book discussions with the council at the planning application stage.*
5. *Ensuring building design reduces energy consumption by appropriate methods such as high standards of insulation, avoiding development in areas subject to significant effects from shadow, wind and frost, using natural lighting and ventilation, capturing the sun's heat, where appropriate.*
6. *Supporting development that minimises the consumption and extraction of minerals by making the greatest possible reuse or recycling of materials in new construction, and by making best use of existing buildings and infrastructure.*
7. *Supporting development that seeks to minimise waste and facilities recycling and using waste for energy where appropriate.*
8. *Ensuring that development and land use in areas close to the Humber Estuary and rivers responds appropriately to the character of the area, in the interests of preserving and making best use of limited resources.*

9. *Supporting development that will help to reduce the need to travel for people using that development.*
10. *Ensuring development and land use helps to protect people and the environment from unsafe, unhealthy and polluted environments, by protecting and improving the quality of the air, land and water.*
11. *Supporting renewable sources of energy in appropriate locations, where possible, and ensuring that development maximises the use of combined heat and power, particularly at the South Humber Bank employment site and where energy demands for more than 2MW are required for development.*
12. *Supporting new technology and development for carbon capture and the best available clean and efficient energy technology, particularly in relation to the heavy industrial users in North Lincolnshire, to help reduce CO2 emissions.*
13. *Promote the use of greenspace strategy and a green infrastructure plan, where applicable, which could help reduce the effects of climate change.*

In response to Policy CS18, the proposed wind turbine provides sustainable, clean energy from wind and would help to tackle the effects of climate change. The turbine would not cause any pollution to the environment and will help to meet regional and national CO2 reduction targets.

8.24. Planning For Renewable Energy Development – Supplementary Planning Document, November 2011.

8.25. Onshore wind has been identified to be the main renewable energy technology in North Lincolnshire. This is due to the area being identified as having significant potential for wind development in the 2004 study "Planning for Renewable Energy Targets in Yorkshire & Humber".

8.26. The SPD identified key planning issues in terms of onshore wind technology which include:

- Impact on landscape and visual amenity
- Impacts on biodiversity

- Noise from operational turbines
- Shadow flicker and reflected light from operational turbines
- Impact on aircraft/radar and telecommunications
- Impacts on highway networks
- Impact on heritage assets

8.27. It is considered that proposed development would not have an adverse impact on the landscape and visual amenity. It is proposed to be sited in an open large scale landscape which already consists of other wind energy development. LVIA accompanying the application will comprehensively assess the impacts in terms of landscape and visual. There are no adverse impacts anticipated in regards to biodiversity. Entrust has commissioned Wild Frontier to undertake 12 months survey work preceding the application submission which concluded that there will be no adverse significant impact. The turbine has been sited in more than a sufficient distance to any non-affiliated property not to cause any noise or shadow flicker impacts. JRC has been consulted with at pre-planning stage and their assessment was that the proposed turbine would not have any adverse impacts on telecommunications. Local Transport Projects has been commissioned to undertake a Transport Study, which concluded that there would be no adverse impacts on highways, and that the turbine would come from the north, through Goole, down towards Moor Farm, and then down the Oldlane Gate to the site. The turbine is located a sufficient distance to the nearest heritage assets (over 2km) therefore no adverse impacts are anticipated on the heritage assets and its setting, however a Heritage Statement has been prepared and accompanies this planning application.

9. Assessment of Key Planning Issues

9.1. Introduction

9.1.1. This section of the report will examine what are the key planning considerations and other relevant issues are with regards to this proposed development.

9.2. Sustainable Development

9.2.1. 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.

9.2.2. According to the suggested turbine manufacturer, the proposed wind turbine will produce approximately 1,835,000 kWh of clean electricity per annum to meet the demands of the land owners' farming business. It would also save approximately 520 tonnes of CO2 per year, equating to 13,000 tonnes over the 25 year lifetime of the turbine.

9.2.3. 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.

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

9.3. Supporting Rural Businesses

9.3.1. The business aspect of this planning application has been thoroughly explained in Section 4 of this report. This proposal will help the applicant to use the electricity generated from the proposed wind turbine to off-set the energy used by the constantly expanding farm business. This will allow the applicant to reduce his carbon footprint, stabilise energy prices and help to achieve Government's climate change agenda.

9.4. Community Benefits

9.4.1. 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.

9.5. Socio-Economic Considerations

9.5.1. The NPPF clearly sets out support for economic growth in rural areas (paragraph 28.) Local planning Authorities should '*promote the development and diversification of agriculture and other land-based rural businesses.'*

9.5.2. As described in this document, the proposed turbine does not cause any undue concern in terms of landscape, wildlife or historic features, i.e. environmental and social elements of sustainability.

9.5.3. The wind turbine, proposed on land at Rainsbutt Farm, has been carefully selected and assessed in order to ensure that it will benefit the applicant's farm sustainability, thus promoting sustainable rural development and contributing to the diversity of rural England. The proposed development benefits the business which is seeking to become a lower producer of carbon, with the aim of becoming more efficient and environmentally friendly by reducing the reliance on energy produced from fossil fuels.

9.5.4. The planning application has clear environmental and economic benefits in the renewable energy it will produce and is directly aligned with the policy support of the NPPF, local policy and other economic considerations.

9.6. Heritage Considerations

9.6.1. There are a number of heritage assets in the local area. However, none of them are in any significant proximity to the proposed wind turbine, and therefore it is regarded that the proposed development will not have any

adverse negative impact on any sensitive cultural, historical or archaeological assets.

9.6.2. The nearest heritage assets to the proposed development site are as following:

- Grade II listed '*Moorend Farmhouse' and* stable west of it which are both approximately 2.2km northeast from the turbine site. From the accompanying Zone of Theoretical Visibility (ZTV) map, the proposed development is considered to be 'theoretically' visible from that location.

  Impacts on this listed building are considered to be **Minor**. The ZTV map in the LVIA shows that there will be theoretical visibility of the proposed wind turbine from this listed building, as well as from its immediate setting, however due to the separation distance, screening and existing vertical infrastructure, the impacts of the turbine are lowered. The impacts are therefore deemed as not significant.

- The closest Grade II* listed building is '*Goole Hall'* which is located over 5km, 5.5km to be precise from the proposed turbine. On the accompanying ZTV map, it is illustrated that the proposed turbine will be theoretically visible from that location.

  Impacts on this listed building are considered to be **Minor**. The accompanying ZTV map reveals that the proposed turbine will be theoretically visible but due to the separation distance, intervening buildings and land cover, the impacts are therefore deemed as not significant.

- The closest Grade I listed building is over 10km to the east (Normanby Hall) from the proposed turbine, and according to the ZTV map, the turbine will be 'theoretically' visible.

Impacts on this listed building are considered to be **Minor.** The ZTV map in the LVIA indicates that the church will have a theoretical visibility of the proposed turbine. However, this particular property is set within very dense woodland enclosing much of the views. Apart from that, due to the separation distance to the proposal it is deemed that the impacts are not significant.

- There are no Scheduled Ancient Monuments (SAM) in the vicinity to the application site. The nearest SAM lies approximately 8km southeast in Keadby. The accompanying ZTV map illustrates that this particular SAM will have a 'theoretical' visibility of the proposed development. However, the impact is not considered to be significant, due to the separation distance and intervening landscape.

  Impacts on this scheduled ancient monument are considered **Negligible** and therefore not significant.

- Conservation Area – Crowle Conservation Area lies approximately 3km to the south of the proposed site.

  Impacts on this Conservation Area are regarded to be **Negligible**. The ZTV map in the LVIA indicates that the conservation area will have some theoretical visibility of the turbine. However, due to sheer separation distance, intervening topography and existing landcover as well as existing vertical infrastructure, it is regarded that the impacts from the proposed turbine are not significant.

No significant impacts on these heritage assets are considered due to the proposed development. It is regarded that due to the separation distance, natural and man-made screening provided around these assets, absorbing landscape and existing windfarm, the proposed turbine would not harm the appearance and setting of aforementioned assets. Please see Heritage Impact Assessment for more comprehensive assessment.

9.7. Ecology

9.7.1. The application site of Oldlane Gate lies within, and is surrounded by, arable fields. The site is not located within any sensitive ecological designations. The proposed wind turbine would be located on land with very limited ecological value. The turbine will be in excess of approximately 90m from the nearest water courses and will not have any direct or indirect impact on it.

9.7.2. Wild Frontier Ecology has been commissioned by Entrust to undertake an Extended Phase I Habitat Survey, 9 months of vantage point surveys, a 5 visit CBC (Common Birds Census), 2 bat/nightjar transects and the deployment of a static bat (SM2+) recorder over 2 periods of 6 days, were all undertaken over the course of a 12 month survey period.

9.7.3. The report concluded that the proposed development is deemed unlikely to result in negative ecological impacts beyond a minor magnitude for some species at the local/parish geographic scale. Therefore the development at Rainsbutt farm is predicted to have no significant impacts on valued ecological interests.

9.7.4. Prior to submission North Lincolnshire Council's Ecologist has assessed the likely significant effects of this turbine on the habitats, and concluded that there will be no likely significant effects on any identified habitats. The Council's report is attached to this planning application and is contained in the Appendix 8.

9.8. Flood Risk

9.8.1. The proposed location of the turbine is located within the Flood Zone 3. Flood risk assessment has been commissioned by Entrust and will be provided to the Planning Authority once received. No adverse impacts are anticipated.

9.9. Landscape and Visual

9.9.1. 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.

9.9.2. The wind turbine is designed to exploit wind energy and is an elevated vertical structure which will always have an impact on the landscape. It is therefore important to carry out a comprehensive assessment of the significance of the impact of the proposed wind turbine at Rainsbutt Farm and the potential impacts it will have on and around the surrounding landscape. A comprehensive Landscape and Visual Impact Assessment (LVIA) has been carried out as part of this planning application.

9.9.3. North Lincolnshire Council published a North Lincolnshire Landscape Character Area Assessment in 1999, which covers the application site. The site is located within the Trent Levels (TL) regional landscape character area. In the local context, the site is located in Flat Open Remote Farmland (FORF) landscape character type. The landscape strategy for FORF is as following:

> *"Ensure that the open character remains intact and historic features are protected whilst efforts are made to develop and enhance the landscape structure."*

9.9.4. The proposed wind turbine has been sited to minimise the impact on the landscape. The site has not been identified to be within any protected landscape and is in considerable distances to different designations and in sufficient distance to the nearest residential properties.

9.9.5. As part of the LVIA, the Zone of Theoretical Visibility has been produced which takes into account the dimensions of the turbine and the topography of the land to indicate where the turbine may theoretically be visible from. It should be noted however, that a ZTV map does not take into account natural features such as woodland or man-made features such as buildings; consequently the actual visibility of the proposed wind turbine is likely to be less than demonstrated on the ZTV map.

9.9.6. The impacts of the proposed wind turbine at Rainsbutt Farm, on the landscape character of the area are considered not to be significant. There might be some moderate indirect impacts on the immediate surroundings due to introduction of vertical structure. However, this will be limited to the immediate vicinity of the proposed development and will reduce quite quickly with distance. The existence of commercial sized wind turbines in the vicinity helps to absorb the smaller in size proposal creating an harmonious effect.

9.9.7. No significant impacts are predicted on landscape designations such as the SSSIs, SPAs or SACs.

9.9.8. No significant impacts are expected on listed buildings which are in excess of 2km from the development site.

9.9.9. No significant impacts are expected on the settlements of Crowle, Eastoft, Goole or Scunthorpe. On the ZTV map, these settlements will theoretically 'see' the proposed turbine, however, having physically surveyed each settlement during the pre-planning stage, it is safe to say that the proposed turbine will have a minor impact on these settlements due to intervening landscape, tree and building cover, as well as being viewed against larger wind turbines which help to absorb the visual impact of the turbine.

9.9.10. No significant impacts are predicted on road receptors, especially road users of the A161. The turbine will be visible by motorists at intervals at a number of points along the road and will not be a sudden distraction to

drivers and thus a danger to drivers. There will be no significant impact on local road users due to the intervening landscape topography and screening from trees. It should also be noted that although the proposal will be visible at momentary glances along the A161, this is the lowest form of sensitive receptor in policy.

9.9.11. The visual impact of proposed wind turbine was considered through a viewpoint analysis. The photomontage and wireframes assessment concluded that there will be some localised impacts but they will decrease considerably with distance. Short and mid-range viewpoints enable one to visualise the impact that the proposal will have on the immediate surroundings which is scarcely populated and since the proposal will be seen in the context of much bigger wind turbines in the vicinity, it will be assimilated and absorbed by the landscape character. Therefore, there are no harmful visual impacts on any sensitive receptors anticipated.

9.9.12. In summary, the impacts of the proposed wind turbine on the landscape character and sensitive visual receptors will be localised and will be reduce with distance.

9.10. Cumulative Impact

9.10.1. 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 developments taken together. The main issues which will need careful consideration by developers include:

- The degree of acceptable landscape change in particular landscape character area and the wider area having regards to the zones of Natural Heritage Sensitivity;
- Effects on international, national, regional and local designations and their setting, 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 development in terms of scale;
- Effects on seascape character; and
- Potential for skyline clutter.

9.10.2. A Cumulative Impact Assessment has been undertaken as part of the Landscape and Visual Impact Assessment (LVIA) (Section 4.2 of the LVIA).

9.10.3. The LVIA recognises the relative proximity a number of windfarms in the surrounding area, such as Tween Bridge Moor, Keadby and Bagmoor. The proposed development, unlike the aforementioned projects is a single medium sized wind turbine which will generate electricity for the expanding farm business. It would be much smaller compared to the commercial size wind turbines that make up the nearby windfarms. The CZTV assessment showed that the addition of a single wind turbine at Rainsbutt Farm would only add 0% of the theoretical visibility. It is therefore considered, that a single wind turbine would not cause any adverse cumulative impacts and would not cross the threshold of significance. Further investigation is considered in the LVIA.

9.11. <u>General Safety</u>

9.11.1. 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, a full blade failure. Many blades are composite structures with no bolts or other separate components and therefore blade failure is most unlikely.

9.11.2. 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.

9.11.3. The application site is not located close to any public right of way and the turbine would be in sufficient distance to any paths or tracks so not to cause any danger. The turbine located within the applicant's private land, therefore it is beyond the range which may provide any residual danger from the turbine collapsing or from flying ice. Standard industry guidelines recommend wind turbines are situated away from any public right of way by a distance equivalent to tip height + 10%. As demonstrated in this location the turbine is more than this distance away from the public access and therefore considered not to be a risk to human safety.

9.12. Design

9.12.1. The chosen wind turbine will be of a high quality, proven modern and sleek design which is safe, efficient but also quiet. It is considered that the final details of the finish and the manufacturer of wind turbine will be agreed with the planning authority post planning approval. The proposed turbine elevation drawing is contained in the Appendix 4.

9.13. Access and Transport

9.13.1. A Transport Statement was prepared by Local Transport Projects on behalf of Entrust and forms part of the planning application. The Transport Statement concluded that:

It is considered that the most appropriate route for the transportation of the proposed wind turbine from the port to the site would be via:

- The M62 to Junction 36 near Goole;
- The A614 (Rawcliffe Road) heading towards Goole;
- Andersen Lane, Normandy Way and Bridge Street through Goole;
- Swinefleet Road through Old Goole;

- Swinefleet Road and Goole Road in a generally eastbound direction towards Swinefleet;
- Low Street through the village of Swinefleet;
- King's Causeway in a generally southeast bound direction; and
- Generally southbound on Old Lane and Oldlane Gate to the access to the proposed turbine site at Rainsbutt Farm.

An outline assessment of this route has indicated that the transit of these loads

- *Prior to transportation arrange appropriate specific traffic management to remove potential conflict between vehicles at the Rawcliffe Road / Andersen Road and Normandy Way / Bridge Street junctions;*
- *Prior to transportation arrange the temporary removal of the demountable traffic bollards on two refuges on the A161 (Low Street), through Swinefleet unless the generator is mounted at an adequate height on the trailer;*
- *Apply to police for the provision of no waiting cones within the village of Swinefleet on day(s) of abnormal load transit;*
- *Prior to transportation confirm with the haulier the blades vehicle configuration in order to determine the extents of temporary reinforcement / protection (and levelling) of the verge at the King's Causeway / Old Lane junction and undertake necessary works to accommodate the vehicle body overhang and wheel track overrun;*
- Temporarily remove street furniture located within the north-western verge of the
- *King's Causeway / Old Lane junction to accommodate the necessary reinforcement / protection works;*
- *Prior to transportation confirm with the haulier the generator vehicle configuration to ensure the load can oversail the parapet wall on Old Lane;*
- *Confirmation should be sought prior to transportation with the relevant statutory undertaker to confirm appropriate clearance to apparatus on Old Lane / Oldlane Gate;*

- *Confirm requirements for appropriate carriageway width on Old Lane / Oldlane Gate with the turbine manufacturer / crane supplier prior to transportation;*
- *Confirm the extents of the public highway in order to inform the proposed access arrangement; and Construct access in line with turbine manufacturer's specification.*

The full Transport Statement is attached to this planning application in the Appendix 9.

9.14. Residential Amenity

9.14.1. The location of the turbine has been chosen to minimise any negative impacts on non-affiliated properties. The proposed turbine would be circa. 650m north of Easingwold House and approximately 660m south of Moors Farm complex. The site visit and desktop study has confirmed that none of the dwelling's principal elevation would have a direct view of the turbine and that existing vegetation would provide sufficient screening to minimise the impact. No adverse visual impacts are predicted.

9.15. Shadow Flicker

9.15.1. The potential for flicker occurs where turbines cast shadows from the sun's rays onto other lands. The potential for flicker is generally thought to be limited to a distance of 10 times the rotor diameter. The potential for flicker at this site has been assessed and is thought to be negligible on all of the surrounding farmland within the Applicant's control.

9.15.2. There are no dwellings identified within 10 times the rotor diameter (10 x 54m = 540m) of the proposed turbine, 130˚ either side of north, where such effect might be predicted. As such it is considered that the site does not require any further attenuation measure in terms of shadow flicker.

9.16. Noise

9.16.1. 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.

9.16.2. The proposed wind turbine is located within a large scale rural landscape. The only anticipated sources of noise would come from farm machinery 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 properties which are in excess of 600m from the turbine site.

9.16.3. A professional desktop Noise Assessment has been undertaken by Entrust and is submitted as part of this application. 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.

9.16.4. 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.

9.16.5. 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.

9.16.6. For all of the modelled receptors, including the nearest financially and 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 35dBa was used for all properties not financially involved in the proposed development. The recommended threshold of 45dBa was used for all financially involved properties. None of the surrounding and evaluated non-affiliated or financially involved properties go above the statutory threshold. No adverse noise impacts are predicted.

10. Conclusion

10.1. North Lincolnshire Council is presented with a development opportunity that strongly adheres to the requirements of national and local planning policy which outline considerable and sustained support for renewable energy developments.

10.2. The proposed development has been assessed against planning policy and other material considerations. The applicant is taking positive steps to increase reliance on renewable energy without adversely affecting the amenity of nearby residents or having an unacceptable impact on the landscape, which already contains much larger wind turbines.

10.3. The proposed development at land at Rainsbutt Farm is justifiable following all national, regional and local policies and it addresses the need for renewable energy resources, and the development would not have a significant impact on the local community or the environment.

10.4. The development site is not located within any environmental or landscape designations. The proposed single 500kW wind turbine with a maximum tip height of 79m should not cause a detrimental impact in a social or economic environment. The nearest neighbouring property that

theoretically could be affected lies in excess of 600 from the turbine and does not face the turbine site.

10.5. It is considered that there will not be any adverse impact on the landscape character.

Appendices

Appendix 1	Viewpoints, Wireframes and Illustrative Photomontages
Appendix 2	WindPRO ZTV and CZTV Figures
Appendix 3	Plans 01-03
Appendix 4	Turbine Elevation Drawings and Brochures
Appendix 5	Block Plan – 1:500
Appendix 6	Site Location Map – 1:2500
Appendix 7	Noise Assessment
Appendix 8	Ecological Report
Appendix 9	Transport Statement
Appendix 10	Community Engagement Comments