

Rusholme Wind Farm



ENVIRONMENTAL STATEMENT

May 2004

VOLUME I: NON-TECHNICAL SUMMARY



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PREFACE

This Environmental Statement has been prepared in support of a planning application submitted by Wind Prospect Developments Ltd (Wind Prospect) to Selby District Council in May 2004 for a proposed wind farm at Rusholme near the villages of Drax and Airmyn, for the purpose of generating electricity from wind energy.

The Environmental Statement has been prepared in four volumes, and comprises:

Volume 1 (this volume)

- A Non-technical Summary

Volume 2

- The text

Volume 3

- Plans and photomontages

Volume 4

- Appendices

Inspection of the Planning Application and Supporting Documents

The application and the Environmental Statement are available for inspection at the offices of Selby District Council.

Copies of this Non-technical Summary, which explains the proposals and their environmental effects, are available free of charge from Selby District Council or from the address below, subject to availability.

Copies of the complete Environmental Statement may be purchased at a cost of £150 + VAT from:

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I INTRODUCTION

- 1.1 Wind Prospect proposes to erect twelve wind turbines and ancillary structures on land at Rusholme Farm and Pease Farm, Little Airmyn, for the purpose of generating electricity from wind energy. **Figure 1** illustrates the site location.
- 1.2 The wind farm, which is designed to be monitored remotely, would have an installed capacity of approximately 24MW, and would, on average, supply the domestic electricity requirements of 14,500 homes.

2 THE PROPOSED RUSHOLME WIND FARM

- 2.1 The proposed development, as illustrated in **Figure 2**, consists of twelve wind turbines, together with an underground cable network, access tracks, crane hardstandings, a wind monitoring mast, a switchgear building, a temporary construction compound and appropriate site signs.
- 2.2 The wind farm would be located within arable land, 2km east of the village of Drax; 1km northwest of Airmyn; and 10km southeast of Selby. It would be situated on land Rusholme Farm and Pease Farm, Little Airmyn. **Figure 3** shows the site with associated works.
- 2.3 The turbines proposed for the development are the 2 MW Vestas V80 or similar. They are three bladed variable speed pitch regulated wind turbines, with the rotor and nacelle mounted on a cylindrical steel tower. Each turbine is 60 metres to hub height, with blades up to 40 metres long. The turbines start to generate at a wind speed of 4 m/s and cut out in wind speeds greater than 25 m/s. The blades rotate at between 9 and 19 rpm, depending on wind conditions. The nacelles and rotors of the turbines rotate so as always to be facing the wind.
- 2.4 Access to the site would be gained from the Rusholme Grange Farm entrance, off Rusholme Lane, as illustrated on **Figure 2**. The construction route would leave the M62 at junction 36 and take the A614 west and then onto the A645. The route would then turn right onto New Lane and continue to Brier Lane where it would turn left towards the village of Drax. The route would then turn right onto Rusholme Lane and continue to the site entrance.
- 2.5 Underground cables would be installed at a depth of approximately 1.2m below the ground surface to conduct the electricity from the turbines to a switchgear building. The electricity would then be conducted underground to one of the three proposed connection points. These are:

- an 11kV connection at Goole
 - a 33kV connection at the Kirkhaw Lane substation, Snaith or
 - a 33kV connection on one of the Osgodby to Thorpe Road, Howden circuits
- 2.6 The point of connection will be determined by Yorkshire Electricity Distribution Limited when an application for connection is made.
- 2.7 Once the turbines are in operation, they would normally be monitored remotely, and would therefore be unmanned. Maintenance staff would make routine visits by car approximately once a month, with intermediate visits as and when necessary.

3 THE NEED FOR THE DEVELOPMENT

- 3.1 The need for generation of electricity from renewable resources stems from the need to combat global climate change. Renewables are internationally recognized as providing a direct and readily available means of reducing greenhouse gas emissions.
- 3.2 The latest Government thinking at the national level on renewables is embodied in the Energy White Paper, "Our Energy Future – Creating a Low Carbon Economy", published in February 2003.
- 3.3 The overriding new policy commitment is "that the UK should put itself on a path towards a reduction in carbon dioxide emissions of some 60% from current levels by about 2050"(1.10).
- 3.4 Renewables are seen as a key part of the strategy. *"If we are to achieve a 60% reduction in carbon emissions by 2050, we are likely to need renewables by then to be contributing at least 30% to 40% of our electricity generation and possibly more. We therefore need to develop a framework which encourages the development of a wide range of renewable options and to make significant changes to our institutions and systems"* (4.5).
- 3.5 As a result, strong and effective policies to encourage the development of renewables have emerged at European, UK and regional levels, cascading down through the planning system to specific targets for each region. The proposed target for onshore wind in the Yorkshire and Humber Region would require the development of 7 new wind farms consisting of 10-20 wind turbines (200MW) with four of these being in North Yorkshire (100MW) by 2010.

- 3.6 In this context the proposed development represents a significant contribution to regional and national targets, meeting 24% of the target for onshore wind farms consisting of 10-20 wind turbines for North Yorkshire. It would, on average, meet the equivalent domestic needs of 14,500 households in the area and avoid the emission of around 59,035 - 67,865 tonnes of carbon dioxide per year.

4 PLANNING THE DEVELOPMENT

- 4.1 A range of factors were considered during the development of this proposal including:
- Capacity within and ease of connection to the electricity distribution network
 - Suitable wind resource
 - Effect on the operations of the Ministry of Defence and the Civil Aviation Authority
 - Effect on the transmission of microwave and other electromagnetic signals
 - Availability of land
 - Access and general ground conditions
 - Proximity to residential properties and the character of surrounding land uses
 - Designated areas of international, national and local importance
 - All aspects of landscape
 - Nature conservation, archaeology and heritage
- 4.2 The precise size, number and layout of the wind turbines evolved from consultation with various consultees including the local community and the landowner.
- 4.3 Two of the wind turbines originally proposed have been omitted in the final design, in order to mitigate the predicted effects of the wind farm in views from Airmyn and to minimise the disruption to farming activities.
- 4.4 The site was also analysed in relation to the operational, environmental and safety requirements of each element of a wind farm development, leading to a preferred design, shown in **Figure 3**.

5 CONSTRUCTION

- 5.1 The construction of the wind farm would be completed within a period of approximately 43 weeks. Prior to construction, a number of works would be undertaken, including excavation of trial pits for geotechnical

investigations, construction of site access signs, and the careful stripping and storage of soils for re-use.

- 5.2 Noise impacts would be very slight during the construction phase of the development, and special mitigation measures other than good site management practice are unlikely to be required.
- 5.3 The impacts of construction traffic would be mitigated through the adoption of specific routing and control measures.
- 5.4 The most significant construction traffic impacts are likely to occur during the construction of the access roads and turbine bases. The worst-case scenario would be if pad foundations were used for all turbines, leading to a four-month period when an average of approximately 30 trucks per day would be expected to enter the site. If the concrete foundations and access tracks are laid on the same day, then a maximum of 65 truck trips to site would be expected on no more than 12 days.
- 5.5 All drains disrupted by construction works would be diverted, or temporarily maintained prior to reinstatement after completion of the construction works.

6 DE-COMMISSIONING

- 6.1 The Rusholme Wind Farm is likely to have an operational life of approximately 25 years. After this time, the development would be decommissioned in order to return the site to its former use as arable land. There would be no residual environmental effects arising from the decommissioning of the wind farm.

7 LAND USE

- 7.1 Following construction, land surrounding each of the turbine towers would be reinstated for future agricultural use.
- 7.2 Approximately 4.1 hectares of arable land would be lost to agricultural use for the duration of the economic life of the wind farm. This magnitude of loss of land within the agricultural holding would not significantly affect farm productivity.

8 LANDSCAPE AND VISUAL AMENITY

- 8.1 The wind farm site lies on the Wharfe – Ouse river floodplain within the Humberhead Levels regional character area. It is not located within a landscape designated at national, regional or local level.

- 8.2 The design of the wind farm has incorporated a number of measures that would help to reduce or mitigate effects on the landscape and visual character of the local area. This includes the omission of two of the wind turbines originally proposed, in order to mitigate the predicted effects of the wind farm in views from Airmyn.
- 8.3 The construction of 12 wind turbines in Newland parish would create a group of tall vertical structures within the open countryside of the Humberhead Levels. The wind farm would be seen in the context of, but not appear to be at odds with power stations, 400kV overhead lines, motorways and associated structures, and industrial development at Goole, all of which are widely visible and located in the vicinity of the site. These features make the local area rather less sensitive to a wind turbine development of this type than some other parts of the Humberhead Levels landscape.
- 8.4 There would be effects on landscape character. Within and in close proximity to the site, where the degree of change would be greatest, effects on character are likely to be of 'moderate' or 'substantial-moderate' significance. Further afield, up to 3-5 km or so of the wind turbines, localised impact on character is likely to be of no more than moderate-slight significance. The Rusholme wind farm would not have a 'significant impact' on the overall character of the Selby district / Humberhead Levels landscape.
- 8.5 In general terms, the wind farm would potentially be widely visible within the local landscape, except where minor landform (including flood defences), tree cover, woodlands and built development interrupt views. In many of these views, the wind turbines would be seen against the skyline. From many locations in villages and towns, potential views towards the site are often screened by intervening buildings, and by mature tree cover that often fringes local settlements. **Figure 4** provides a representative view of how the wind farm may look from Airmyn.
- 8.6 In conditions of good visibility the wind farm may be seen in relatively distant views, including from the Hambleton Sandstone Ridge to the west of Selby, from the West Selby Ridge on the district boundary, from Thorne Moors and Crowle Moors to the south-east, and from the hills of the Yorkshire Wolds to the north-east. In these views the wind farm would appear as a relatively small element in a wide panorama that contains many other features, including other large scale elements.
- 8.7 Visual impacts would vary; glinting may occur, but is unlikely to be of great significance. There is potential for shadow flicker to occur at Rusholme Grange, however the effect of intervening farm buildings and tree cover at Rusholme Grange would limit the occurrence of

shadow flicker within the farmhouse property. Given the relatively limited occurrence predicted, shadow flicker effects would not be a significant visual impact of the wind farm development proposals.

- 8.8 Visual impacts will also occur in some views from local rights of way, recreation routes and amenity sites. The significance of impacts in views from these routes would vary from 'substantial' to slight or nil, depending on the distance of view and the extent of intervening tree cover, buildings and flood embankment structures that intermittently interrupt or filter views when moving through the landscape.
- 8.9 Apart from the minor 'cul de sac' roads that lead from Drax village to Newland and Little Airmyn and to Rusholme Grange Farm, the most prominent views of the wind farm from the road network would be obtained by passing motorists on the M62 and from the A645 road. Generally the wind turbines would be seen in the context of the Drax power station, road infrastructure and industrial development at Goole, which would tend to reduce the visual impact of the wind turbines. Resulting visual impacts in unobstructed views would be of no more than moderate significance, although intervening roadside trees and buildings would often interrupt views of the wind turbines from other roads in the area, such as the A63(T), and levels of impact would often be reduced to no more than slight significance.
- 8.10 Overall, the Rusholme wind farm would be located within a landscape that is of relatively low sensitivity to the proposal and has a relatively high capacity to accommodate it. No nationally or locally designated landscapes would be affected. The tall engineered structures of the wind turbines would be generally consistent, rather than at odds with, the other large scale infrastructure features that are acknowledged to be 'key characteristics' of the local landscape. 'Significant impacts' would be restricted to landscape effects within the site and immediate vicinity and to visual effects in unobstructed views from some residential properties and some footpath routes up to 5-6km from the wind farm. There would be variations in impacts on views caused by local circumstances including the localised effects of vegetation and buildings in interrupting potential views. At greater distances, landscape and visual impact significance would generally reduce to moderate or moderate-slight levels which are not regarded as 'significant impacts'.

9 NATURE CONSERVATION

- 9.1 The ecological study area is illustrated in **Figure 2**. There are three ways in which the proposed wind farm might have an adverse effect

on birds: direct loss of habitat; increased mortality rate through collision with the turbines; and, loss of habitat through disturbance.

- 9.2 Direct loss of habitat would be an effect of negligible magnitude, with only a very small area taken up by the turbine bases and access tracks. The more sensitive wet ditch habitat has been avoided, with the take including only arable land and marginal vegetation.
- 9.3 With the comparatively low densities of birds in and around the proposed Rusholme wind farm site, the fact that the development is relatively small and that bird numbers over-flying the site are low, mean that it is unlikely that bird collisions would be a problem at this site. In addition, the risk of collision will be further reduced as the turbines will be widely spaced, and the towers will be tubular and not guyed.
- 9.4 Disturbance caused by the wind farm could have a greater effect than that of direct habitat loss. Nine very high sensitivity species were found during the winter within the 800m buffer around the site: cormorant, shelduck, wigeon, teal, mallard, oystercatcher, golden plover, lapwing and redshank. Three of these, shelduck, oystercatcher and redshank, occurred in only very low numbers and would therefore clearly not be at risk of a significant disturbance impact. Cormorant were present in low numbers and has been shown to roost in close proximity to wind turbines, hence any disturbance effect would not be significant. Wigeon, Teal and Mallard distributions were centred away from the proposed wind farm. Any disturbance effect on these species would be of at most negligible magnitude and not significant. Golden plover and lapwing used the open farmland habitats, which exist across most of the area and would be able to readily accommodate the relatively low numbers of displaced birds should any such displacement occur. Thus even this worst-case effect would be one of negligible magnitude (and not significant).
- 9.5 During the site visits the main drains were walked and signs of water vole activity searched for, but none were seen. The habitat that this species uses would not be affected by the development, since the access tracks and turbine bases would avoid all the watercourses by at least 2m and 7m respectively. No effects would occur on the river systems as these have been avoided by at least 100m.
- 9.6 English Nature (1995) state in their guidelines that heavy machinery should not be used within 30m of a badger sett. Signs of badger activity within the study area were searched for during the site visits but none were found. The site would be checked again prior to construction.

- 9.7 The proposed development would not affect any vegetation communities or habitats of particular ecological value.
- 9.8 Two years' breeding bird surveys after construction will be carried out, using the same methodology as the baseline data collection for the ES. Bird distributions before and after construction will then be compared, in relation to the distance from the wind turbines, to determine whether any disturbance effect has taken place.

10 CULTURAL HERITAGE

- 10.1 There would be no impacts on the character or appearance of Rawcliffe Conservation Area nor to the Howden Conservation Area.
- 10.2 No Listed Buildings are located within the wind farm site. There will therefore be no direct impacts on Listed Buildings.
- 10.3 The nearest Listed Buildings are located at Airmyn. Their setting is provided by the village itself in its location on the banks of the River Aire. Although the wind turbines may be visible in some views from Listed Buildings, their physical separation from the wind farm, and the intervening presence of the river Aire and its flood embankments and of farm buildings at Little Airmyn means that no impacts on the historic settings of individual Listed Buildings would occur.
- 10.4 The nearest Scheduled Monuments to the proposed wind farm are the medieval moated sites at Scurff Hall and Castle Hill, at a distance of 1km and 2km to the west of the wind farm respectively. Given the existing nature of these monuments and their immediate landscape settings it is considered that the impact of the wind farm upon their settings would be negligible.
- 10.5 No recorded archaeological sites of finds of prehistoric, Romano-British, medieval or post-medieval date will be affected by the construction of the proposed wind farm.
- 10.6 The potential for previously unrecorded archaeological remains to be encountered during construction is considered largely to be limited to sites or finds of prehistoric date, and particularly to turbines on or adjacent to the sand ridge to the east of Rusholme Grange. Areas of lesser potential include the turbines to the east of a Romano-British farmstead and in the vicinity of Fort Hill, a possible Civil War structure.
- 10.7 A staged programme of mitigation is proposed which will allow further evaluation of selected turbine locations by means of archaeological trial trenching. The results of the evaluation will allow a more detailed

mitigation strategy to be formulated in conjunction with the planning authority which relates both to any identified impacts and the preferred construction methodology.

11 NOISE

- 11.1 Noise monitoring took place for various periods at three locations near the site; these can be seen in **Figure 2**.
- 11.2 The wind speed dependent noise levels predicted at the properties nearest the proposed wind farm site are comparable with the existing background levels at the same wind speed.
- 11.3 The Vestas V80 machines currently proposed are the latest generation of wind turbines from a well-established company. They are electrically and aerodynamically very efficient, and are constructed with noise emissions in mind. The improvements introduced over the years have led to a highly developed design with minimum acoustic impact.
- 11.4 The ETSU recommendation for limiting noise from wind farms, which would restrict the noise emissions in terms of LA90,10min values to no more than 5dB above the quiet daytime background, would be met by the proposed site design.
- 11.5 Noise from the operational wind farm would not be detrimental to the amenity of local residents.

12 ELECTRO-MAGNETIC SIGNALS

- 12.1 No impacts on microwave signals would occur.
- 12.2 There is a possibility of degradation of TV signals in the immediate vicinity of the site. In view of this potential risk, Wind Prospect is prepared to resolve any such problems should they arise as a result of construction of the wind farm.

13 SOCIO-ECONOMIC ISSUES

- 13.1 The development of the proposed wind farm would result in a number of socio-economic effects on the local economy, which would be largely beneficial. These include:
 - Opportunity to participate in the project through investment.
 - Enhanced agricultural viability of the farm through rental income from the wind farm.

- Local employment in both the construction of the wind farm, and in its subsequent maintenance, which would be to the value of approximately £3,500,000.



Figure 1

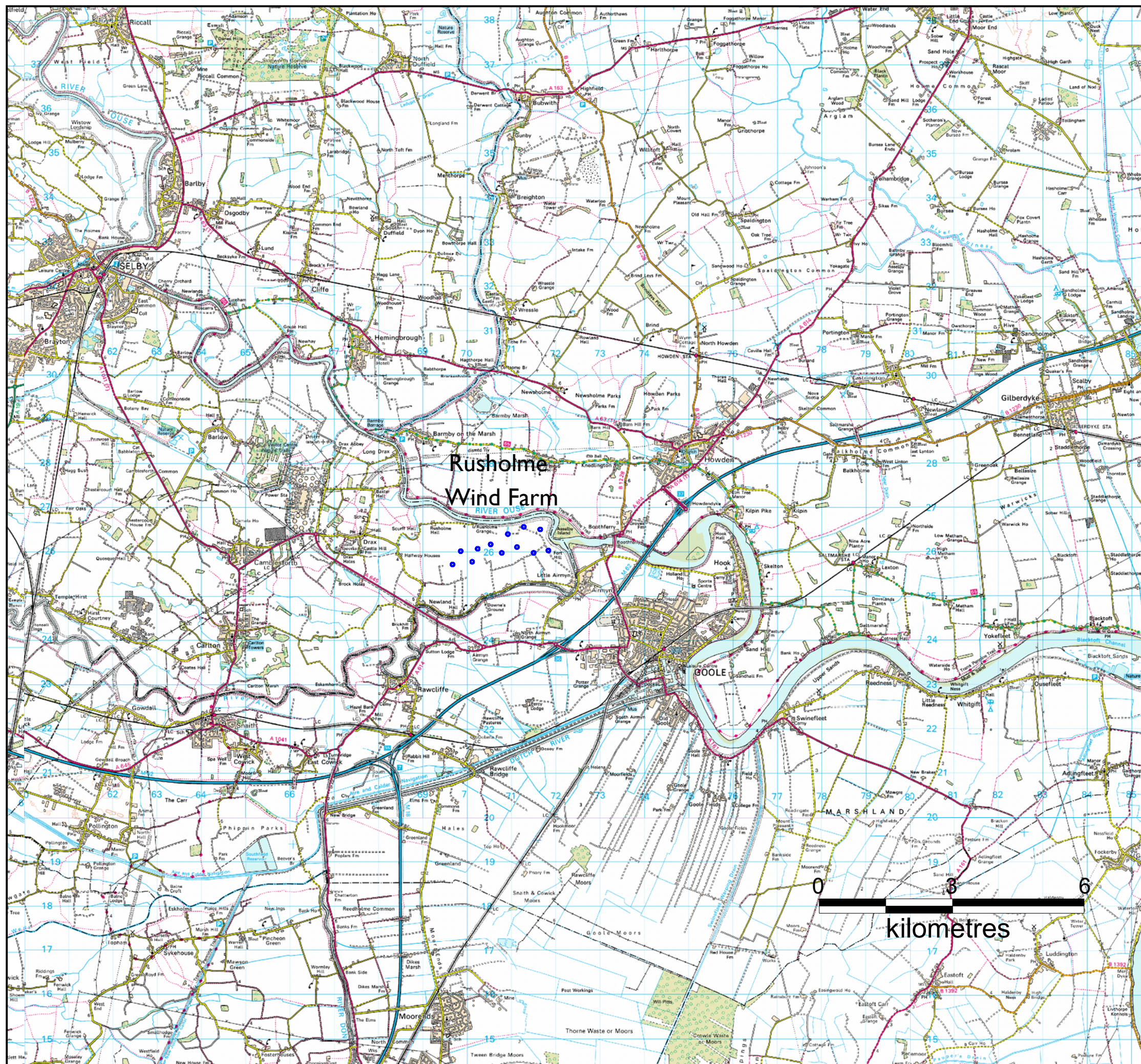
Rusholme Wind Farm

Site Location and Regional Context

Legend



Proposed Turbine Locations



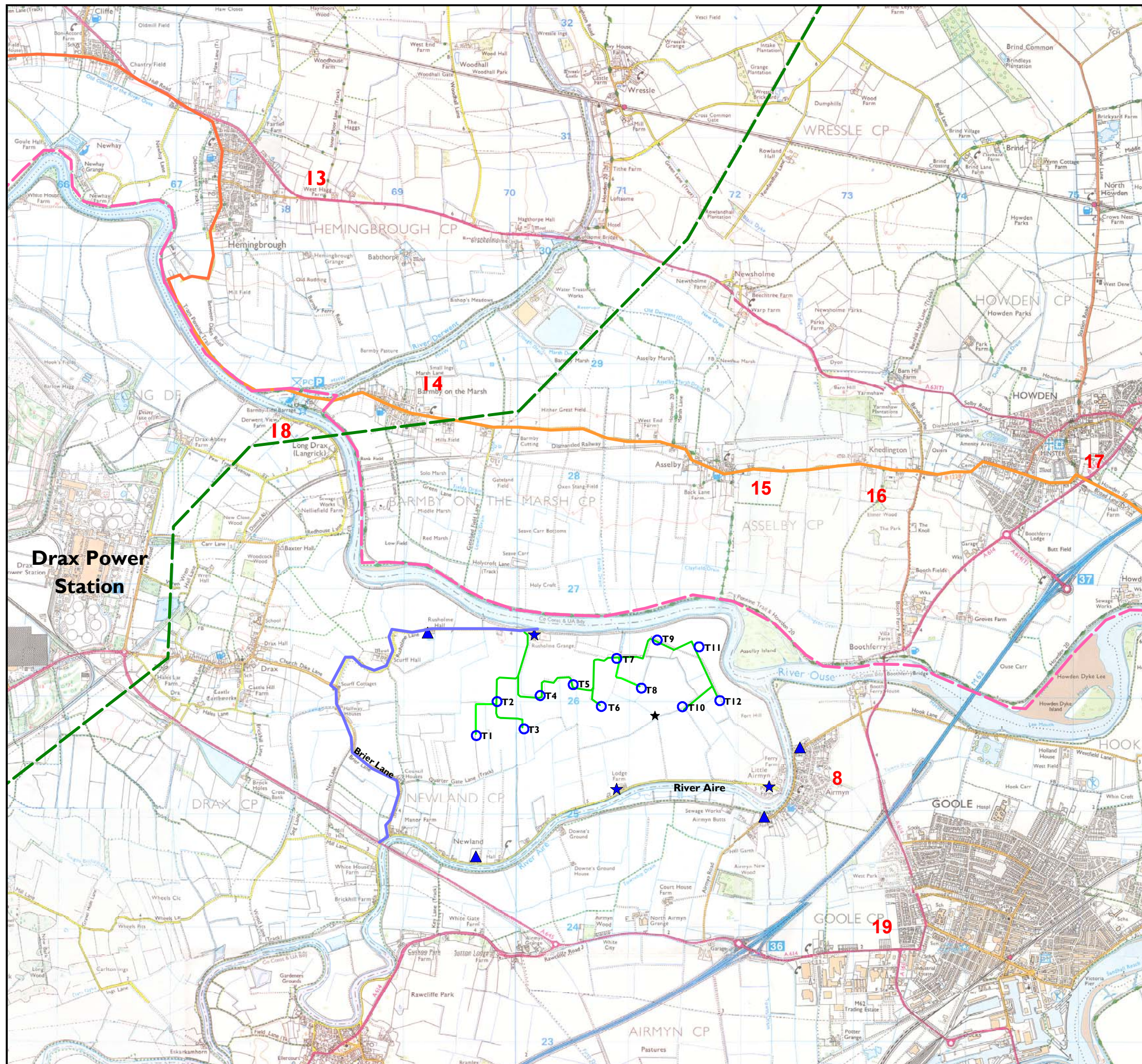
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Figure 2

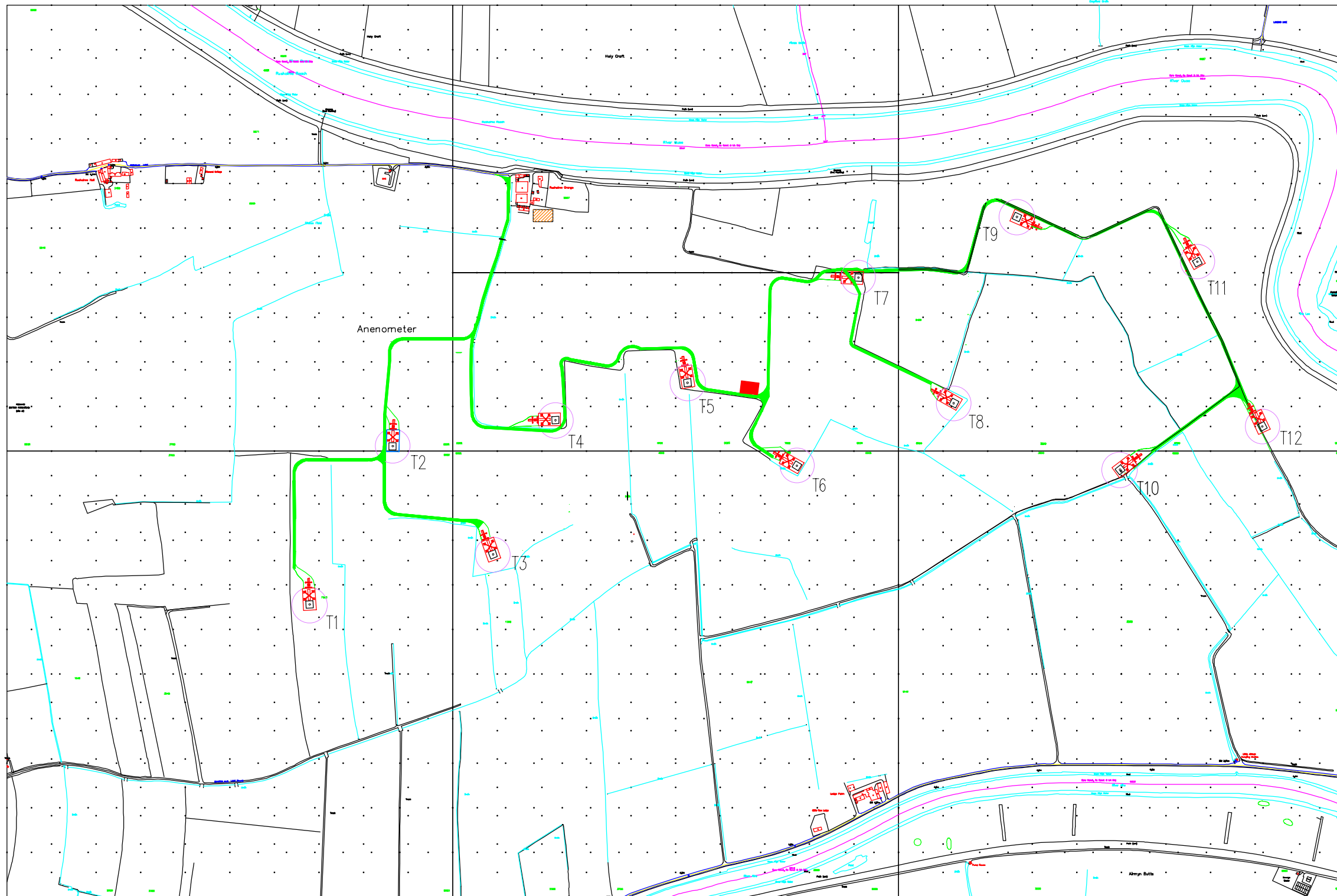
Rusholme Wind Farm

Local Context









Legend

-  Proposed Turbine Locations
-  Noise Measuring Locations
-  Noise Prediction Locations
-  Wind Monitoring Mast
-  Site Access Route
-  Construction Route
-  Locations referred to in Chapter 8 - Landscape and Visual Amenity
-  400kV Powerline
-  Trans-Penine Trail (Footpath)
-  NCN Route 65
The Trans Penine Trail



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-  Wind Turbine
-  Crane Hardstanding
-  Access Track
-  Compound
-  Switchgear House
-  Gate

COMPANY

WIND PROSPECT DEVELOPMENTS LTD

TITLE

Figure 3

Rusholme Access Tracks and Wind Farm Layout

SIZE

A3

CAGE CODE

DWG NO

Version 7

SCALE 1 : 10,000



Existing View



Predicted View

Figure 4 : Viewpoint 1 - View from flood embankment, Airmyn

RECOMMENDED VIEWING DISTANCE:	250mm	NEAREST TURBINE NUMBER:	12	GRID REFERENCE OF	472500
HEIGHT OF CAMERA ABOVE GROUND:	c. 1.5m	DISTANCE TO NEAREST TURBINE:	890m	VIEWPOINT LOCATION:	425440
VIEWPOINT ELEVATION AOD:	c. 2m				

DATE PHOTO WAS TAKEN: 08/01/2004

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