
Severn Trent Water



Curborough Wind Turbine Development

Volume 1 - Non-Technical Summary

October 2009



Proposal	Construction, Operation and Decommissioning of 1No Wind Turbine together with other Ancillary Development.
Location	Land within a Sewage Treatment Works Compound at Curborough to the north of Lichfield
Applicant	Severn Trent Water Ltd

Non Technical Summary

An Environmental Impact Assessment (EIA) of the proposal has been carried out as required by Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999. Schedule 4 of the EIA Regulations requires that a summary of the EIA be provided in non-technical language. This document forms the Non-Technical Summary (NTS) to satisfy these requirements.

The planning application, the accompanying Environmental Statement (ES) and the corresponding submission documents have been prepared by TNEI Services Limited on behalf of Severn Trent Water Ltd. Copies of the full planning application and ES can be viewed during normal opening hours at the following address:

Lichfield District Council	District Council House, Frog Lane, Lichfield, WS13 6YZ
Lichfield District Library	Lichfield Library, The Friary, Lichfield, Staffordshire, WS13 6QG.

Printed copies of the Environmental Statement may be purchased at a cost of £250 (including post and packing) from Severn Trent Water Ltd at:

SEVERN TRENT WATER Ltd
Endeavour House
PO Box 51
Raynesway
Derby
DE21 7JA

Electronic copies of the documentation are available on CD from TNEI at the address below at a cost of £5 (including post and packing):

TNEI Services Ltd
Milburn House
Dean Street
Newcastle upon Tyne
NE1 1LE

E-mail: enquiries@tnei.co.uk

The Non-Technical Summary is available free of charge from Severn Trent Water or TNEI Services Ltd.

1 Introduction

1.1 The Proposal

The proposal is to construct a single wind turbine along with associated infrastructure at Severn Trent Water Ltd's Sewage Treatment Works on land at Curborough to the north of Lichfield. The principle components of the proposal are as follows:

- A single wind turbine operating for 25 years with an installed rated capacity up to 2.5MW comprising a hub height up to 80m and a rotor diameter of up to 92.5m giving a maximum tip height of 126.25m;
- An enhancement of an existing junction with Watery Lane to enable the construction and future decommissioning of the turbine;
- New access track within the site leading to the turbine area;
- A temporary construction compound during a four month construction phase;
- A lay down storage area and crane hard-standing area on-site; and,
- Underground cabling to connect the turbine to the national grid.

The temporary components would be required during the construction and decommissioning phases only. During the operational stage the temporary components would be removed and the land restored back to its original appearance. A location plan, proposed site plan and an elevational drawing of the proposed wind turbine are attached at Appendix A.

1.2 The Applicant

Severn Trent Water Ltd are the 2nd largest water utility in the UK serving over 8 million customers across the UK stretching from the Bristol Channel and Mid Wales, across the East Midlands region to the Humber. To maintain an efficient water supply and treatment service for their customers they require large amounts of electricity.

In the UK, traditional forms of electricity generation rely on fossil fuel combustion which gives rise to harmful emissions of carbon dioxide and other greenhouse gases. This process is recognised as a key driver of climate change. In line with UK Government guidance, Severn Trent Water Ltd wants to break this link with the past and utilise renewable energy technologies to help combat Climate Change.

In so doing Severn Trent Water Ltd will help mitigate the threat to their operation from the increasingly regular onset of severe weather events, increasing energy costs and the potential for supply disruption.

1.3 The Need for and Benefits of the Proposed Development

International action was taken in 1997 when worldwide Governments agreed the Kyoto Protocol which established legally binding targets for the reduction of greenhouse gases. As part of this, by 2010 the UK Government made a commitment to reduce carbon dioxide by 20% with an aspirational target of a 60% reduction by 2050. This has since been increased within the Climate Change Act 2008 to 80%.

Power generation is a major producer of carbon dioxide, promoting the increased use of renewable energy is a cornerstone of the UK's strategy for meeting the Kyoto target. In line with Government objectives, the proposal delivers:

- Carbon Off-Setting

The wind turbine will generate 6,570 MWh per annum, depending on the selected turbine model. On this basis, the CO₂ saving is estimated to be 2,825 tonnes annually¹. Based on an operational lifespan of 25 years the wind turbine could offset approximately 70,625 tonnes of CO₂².

- Renewable Energy Generation

The electricity generated would feed directly into the grid and is predicted to be equivalent to the approximate annual domestic needs of approximately 1,398 average households³.

1.4 The Approach to Site Selection and Design

The primary purpose of an Environmental Impact Assessment is to anticipate the likelihood of a proposal giving rise to significant effects. If this proves to be the case then the developer is obliged to consider how siting and design could be changed to minimise effects. In discharging this duty Severn Trent Water Ltd has:

- Identified areas of particular sensitivity such as noise, visual impact, ecological impact and cultural heritage for detailed assessment,
- Retained experts in every topic area to impartially assess the effects of the proposal and consider appropriate mitigation where necessary,
- Engaged with statutory consultees, the local communities and councils to gather opinion, act upon feedback and change the design or layout where necessary.

The process has been an iterative one. As the proposal matured both siting and design decisions were changed to ensure effects were minimised. The process 'designs in' the necessary mitigation to deliver a proposal that minimises environmental effects while making a positive contribution to the renewable energy targets of the West Midlands region.

¹ Based on fuel generating mix which may change over time

² Included as per advice from the ASA to the BWEA (September 2008). The CO₂ estimate for the lifetime of the development is an estimate and is subject to an approximate margin of error (5%)

³ Based on the BWEA recommended average UK household consumption of 4,700KWh.

2 Site Selection

Severn Trent Water Ltd has a land portfolio comprising over 5,000 sites. All were subjected to a Two-Phase Sieve analysis to identify sites with the potential to accommodate a wind turbine.

- Phase I Constraint Sieving: an assessment of direct effects upon areas of designated natural or built heritage and those areas technically constrained by virtue of low wind speeds, unsuitable topography or the lack of a suitable access,
- Phase II Proximity Sieving: an assessment of indirect effects by measuring the proximity of areas designated for their natural or built heritage, residential properties, transport routes, footpaths, bridleways and other sensitive land-uses.

From the 5,000 site portfolio, 196No sites made it through giving rise to a 96% site mortality rate at this stage. The 196No sites were then tested for compliance with the Development Plan. 12No emerged as sites of true potential, less than 1% of the original 5,000.

The majority of sites failed to negotiate a way through sieving analysis because of their proximity to residential property, natural and built heritage designations or conflict with the character of the landscape. Curborough was one of the 12No. sites identified as having true potential.

3 Planning Policy

The Government remains fully committed to the plan-led system, and this is given statutory force by Section 38 (6) of the Planning and Compulsory Purchase Act 2004. This legislation requires decision makers to have regard to the Development Plan in the determination of planning applications unless material considerations indicate otherwise. In this case the relevant documents are:

- The West Midlands Regional Spatial Strategy (adopted June 2004),
- Staffordshire and Stoke-on-Trent Structure Plan (adopted May 2001),
- Lichfield District Local Plan (adopted June 1998).

While the county and district plans have many policies in place to control development the most relevant and therefore dominant policy in place is West Midlands Regional Spatial Strategy policy EN1: Energy Generation.

4 Environmental Effects

4.1 Ecology

Assessment of the site has included a range of habitat and protected species surveys conducted during 2008 and 2009. These surveys indicate that the site is dominated by habitats of limited ecological value. The exceptions to this are mature broad leaved trees that are present within and adjacent to the site and a number of hedgerows that exist along Watery Lane.

Surveys have recorded the presence of bats within the site. In the woodland east of the site the presence of otter was recorded although the habitat within the Sewage Treatment Works has been recognised as being less suitable.

The ecological assessment identifies a number of measures that will minimise the impact of the development on ecology and concludes that by following such measures the proposed development will not have significant impacts on any protected species known to be present.

4.2 Ornithology

An assessment of ornithology on and in proximity to the site has been conducted. The assessment identified valued species with potential to be affected by the proposed development and has concluded that no significant effects are expected with the exception of one species, the tree sparrow, likely to experience positive significant effects due to the proposed provision of additional nesting boxes.

4.3 Archaeology and Cultural Heritage

There are no known archaeological remains within the proposal site and the potential for such remains to exist is low. After appropriate preservation by record of any remains encountered during construction or other ground works, it is expected that there will be no significant direct impacts on finds or features of cultural heritage value.

In respect of indirect impacts, the visual relationship between the proposed turbine and the spires of Lichfield Cathedral has been found to be the only setting issue of note as seen from the public road in the narrow gap alongside Wood End Farm. However, taking into account the fleeting nature of this single view and the beneficial impact of renewable energy upon the cultural heritage in the face of climate change, on balance it is considered that the proposal will not give rise to significant indirect effects.

4.4 Geology and Hydrology

The assessment has incorporated a site hydrological survey in addition to baseline geological, hydrological and a hydrogeological assessment. The assessment has been informed by consultations with the Environment Agency who confirm that a flood risk assessment is not required for the proposal.

It concludes that the potential impacts on local geology, surface water and groundwater systems during the construction, operational and decommissioning phase of the proposed development can be fully mitigated by the adoption of good working practices on site. On this basis, it is anticipated that the proposal will not give rise to significant effects.

4.5 Landscape and Visual

The landscape and visual impact assessment concludes that siting of the turbine has minimised the effect on the local landscape fabric and that impacts would be limited during construction and operation and fully reversible following decommissioning. The assessment identified no significant effects on landscape character or on the Cannock Chase AONB.

Significant visual effects would be limited to views from settlements out to 3km from the proposed development and for road users out to 2km. A number of recreational receptors, the furthest from the turbine being 2km away, were identified as experiencing significant visual impacts.

However, each type of receptor visibility is often restricted by local topography, tree cover and intervening buildings and this limits the potential for significant effects.

The assessment has considered the potential cumulative impacts of the proposal and the turbine proposed at Fradley Park and concludes that there would be potential for localised significant effects within 3.5km of the Curborough turbine.

Overall the assessment concludes that the proposed development would give rise to significant landscape and visual effects but that these would be localised due to natural screening and that scheme design has minimised potential impacts.

4.6 Residential Amenity

Residential amenity has been assessed taking into account the likelihood of impacts due to noise and shadow flicker.

Measurements of existing background noise levels and modelling of predicted noise levels generated by the proposed turbine have indicated that the development will not lead to any significant effects on local residents. The potential noise levels should the proposed Fradley Park turbine also be built have been modelled and no significant noise effects are predicted.

Assessment of shadow flicker has established that under worst case conditions the most affected property could be subject to shadow flicker effects for 29.3 hours per year. In reality varying weather conditions and barriers such as trees and buildings will lead to lower levels of shadow flicker than predicted.

4.7 Traffic and Transport

This traffic assessment concludes that there would be short-term increases in traffic levels on the delivery routes to the proposed development and that these increases would be most pronounced during the construction phase. However given the relative small scale and temporary lifespan of the construction programme the increases are within acceptable daily variation levels and therefore the overall effects of construction traffic is not anticipated to be significant.

Turbine delivery vehicles would be timed to run during off-peak periods to mitigate against such trips being the source of delay or congestion. On this basis the overall effects of turbine delivery traffic movements are not anticipated to be significant.

Traffic generated due to the operational and decommissioning phase of the proposal would be minimal. Overall, the access and traffic effects associated with the proposal are not anticipated to be significant

4.8 Aviation

The impact of the proposed turbine on nearby aviation stakeholders has been assessed. Consultation has been conducted with the Civil Aviation Authority, Ministry of Defence, Birmingham International Airport, National Air Traffic Services and the privately owned and operated Roddige Airfield.

The turbine would be within the official consultation zones afforded to Birmingham International Airport as a safeguarded aerodrome and the Clee Hill Primary Surveillance Radar operated by National Air Traffic Services En-Route Ltd as a safeguarded civil en-route technical site.

Birmingham International Airport are taking advice from National Air Traffic Services as to the effect of the proposal upon the airports own Primary Surveillance Radar. National Air Traffic Services En-Route Ltd, who operate the Clee Hill Primary Surveillance Radar, are also yet to formally respond but the applicant does not anticipate an objection from either body on the grounds that the impact of a single turbine upon a Primary Surveillance Radar is not anticipated to give rise to significant effects.

4.9 Radio and Telecommunications

The proposed development has the potential to affect one radio-communication link operated by Airwave Solutions Ltd. The necessary pre-submission investigation has been conducted and has shown that the proposal will not give rise to any significant impacts upon the link and therefore Airwave has not objected to the scheme.

The proposed development has the potential to affect television reception in the area. Issues of interference or degradation of reception can be completely resolved and reception restored should it be proven to be the result of the proposal. Following such mitigation any residual impact is anticipated to be negligible. On this basis, it is anticipated that the proposal will not give rise to significant effects.

4.10 Health & Safety

The wind industry has a good safety record. The Health and Safety Executive have combined with the British Wind Energy Association to produce industry guidelines with which this proposal would be in full compliance. Throughout the construction, operation and decommissioning phase issues of health and safety will be constantly monitored and managed to minimise the risk of an event.

The greatest risk to human health and safety emerges during the construction phase but with the adoption of industry good practice techniques on site, the risk of an event can be completely mitigated.

During the operational phase past failures would point to three areas of risk worthy of further assessment, namely infrasound, icing and lightning strike. In all three cases, the risks posed by the proposal are considered to be low. On this basis, it is anticipated that the proposal will not give rise to significant effects.

4.11 Wider Social & Economic Benefits

Our nation's biodiversity, coast lines and landscapes are a source of enormous environmental, economic, and cultural value. All are threatened by climate change. Renewable energy generation is recognised as being part of a solution to address the adverse effects of climate change.

The proposal gives rise to a whole host of sustainable benefits contributing to our environmental, economic and social well being. However, there is one further

benefit which is unique to this proposal and that is the customer benefits that Severn Trent Water Ltd can secure by way of this proposal.

The uncertainty brought by extreme weather events is a threat to Severn Trent Water Ltd's core business which is to supply water and water treatment services. Uncertainty set to continue if nothing is done. To neutralise this threat Severn Trent Water Ltd regard renewable energy as part of the solution. By being

- more efficient with energy use across the whole company,
- generating renewable energy from its own systems such as energy from waste, hydro sources, energy crops and anaerobic digestion and by,
- off-setting the energy traditionally drawn in from fossil fuel burning power stations with new forms of renewable energy generated from zero emission technologies such as wind turbines,

Severn Trent Water Ltd believe they can make a meaningful contribution in reducing the amount of carbon released into the atmosphere which in turn would help stabilise climatic conditions and help secure a safer future for both water supply and treatment services.

Only with a concerted effort across many fronts (namely energy efficiency, reduced demand for travel and more renewable generation) and over many years would we adapt safely and securely to climate change. This proposal is part of the solution to climate change and as such it will contribute in meeting both national and regional renewable energy targets.