

Q&A

In this section, we provide answers to many of the most commonly asked questions about wind farms. To lodge your own questions or comments please get in touch using the contact details provided in this newsletter or log on to www.roos-windfarm.co.uk

How do wind farms influence tourism?

The evidence from wind farms operated by RES, and others, suggests that the general public is often interested in visiting wind farms, particularly in a holiday area. Where provision is made, wind farms can prove to be tourist attractions that can bring positive financial benefits to local businesses. For example, every year the Scroby Sands visitor centre in Great Yarmouth attracts over 35,000 visitors keen to find out more about the 30 turbine wind farm commissioned in March 2004.

The visitor centre at RES's head office, Beaufort Court, holds an annual open day for local residents to see inside the turbine and learn about Renewable Energy. In the first two years this attracted around 2,000-3,000 visitors on one day, with subsequent visitor days restricted due to numbers due to the size of the site. In addition, on average over a year around 2,500 visitors come to the office on accompanied visits from local community groups to schools and colleges.

Independent public attitude surveys were carried out in 1997 and 1998 respectively among residents living near to the Taff Ely Wind Farm, Mid Glamorgan and near to the Novar Estate Wind Farm, near Alness. The surveys found that in terms of people visiting the area, 62% said the Novar Estate wind farm has had no effect and 16% said visitor numbers had increased, whilst no-one thought visitor numbers had decreased as a result of the wind farm. At Taff Ely, 68% said the wind farm had had no effect on the number

of people visiting the area and 15% said visitor numbers had increased, whilst only 1% thought visitor numbers had decreased as a result of the wind farm (BWEA 2006).

Why build wind farms onshore, when there are other opportunities such as offshore wind, tidal or wave power?

So far, onshore wind is one of only a few renewable technologies to have become economically competitive with conventional supplies. It is commercially ready to start meeting our targets and international obligations right now.

Onshore wind is the most advanced, proven and economic renewable energy technology. Turbines generate electricity for about 85% of the time. The technology is beautifully simple, and provided it is well-maintained, very reliable. Offshore wind has a part to play too, but it's not a case of one or the other - we will need significant numbers of both onshore and offshore wind farms.

While tidal and wave technologies lag many years behind wind in terms of commercial viability, it is expected that both will play their part in the future in achieving a balanced mix of renewable energy generation.

How does the supply of electricity from wind farms fit in with existing supply and demand?

Seasonally, windy weather tends to mirror periods of high electricity consumption and claims that 100% back up is needed are simply not true. Wind farms add to the diversity and security of our energy supply. Undoubtedly, flexible plant, such as impounded or pumped storage hydro or fossil-based stations, are needed to provide balancing. That's a service they currently provide, to complement the relative inflexibility of nuclear which serves the so-called base-load function. Different generation methods complement each other rather than compete.

What about the visual impact of wind turbines?

A significant proportion of the British population finds wind turbines attractive to look at. Great care is taken in site selection and design to minimise visual impact. At the end of their design life of 25 years - unlike fossil and nuclear power generation - wind turbines can be quickly removed.

As part of the planning consent for a wind farm, a condition or agreement is normally put in place to cover the costs of turbine removal and re-instatement of the site.

Do wind farms cause any noise problems?

No, this is a common misconception and modern wind farms should not cause a noise nuisance. You can hold a normal conversation directly below the blades.

Can wind farms affect television reception?

There is a chance that, in some isolated locations, poor reception could be further degraded, although our studies have shown that this is very unlikely to occur. Solutions are generally simple and RES is experienced in identifying and rectifying any problems caused by the wind farm.

How long do wind farms take to pay back the energy used to manufacture and erect them?

A wind farm, like the one proposed here, will typically recoup the energy used in its manufacture and construction, in a period of less than a year. Over its 25 year life, that means the wind farm will produce up to 25 times more energy than was needed in its creation.

How will the Planning Application be dealt with?

It will be dealt with as an entirely new planning application by the East Riding of Yorkshire Council. We have produced a new and comprehensive Environmental Statement, which has been made available to all consultees and deposited in the following locations for public viewing:

East Riding of Yorkshire Council
County Hall
Beverley
East Riding of Yorkshire
HU17 9BA
Tel: 01482 393939
Fax: 01482 393375

Withernsea Library
Queen Street
Withernsea
East Riding of Yorkshire
HU19 2HH
Tel: 01964 612537

Beverley Library
Champney Road
Beverley
East Riding of Yorkshire
HU17 8HE
Tel: 01482 392750

Hedon Library
St Augustine Gate
Hedon
East Riding of Yorkshire
HU12 8EX
Tel: 01482 897651

Copies of the Environmental Statement will also be made available at **Beverley and Withernsea Council Customer Service Centres**.

You can also download a copy of the non technical summary of the Environmental Statement from the **Roos Wind Farm website: www.roos-windfarm.co.uk** or request a copy of it from RES's offices.

You may wish to comment on our plans. If so, please write to the Planning Officer:

Hannah Coldwell
Principal Development Control Officer
Strategic Development Control
East Riding of Yorkshire Council
County Hall
Beverley
HU17 9BA

You must quote the planning reference number 08/05692/STPLFE in all correspondence.

The Planning Officer will also consult authorities such as Natural England, the Environment Agency and other Council departments such as Highways and Rights of Way. The Planning Officer's final report will be presented to the elected members of the East Riding of Yorkshire Council's Planning Committee, some time in 2009, and the planning application will be decided by vote.

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February 2009

Roos Wind Farm update

In 2006, RES submitted a planning application to erect 11 turbines, on land around Sunderland Farm, between Roos and Burton Pidsea. The application was the result of over 4 years of intensive work by RES, during which time the site's suitability and detailed environmental aspects had been assessed.

The East Riding of Yorkshire Council turned down the planning application in December 2007, mainly due to its concerns over visual impacts.

Despite this refusal, RES firmly believes that this is a good site for a wind farm and for the past year, we have been working hard to resolve the issues which were highlighted by the Council in its refusal. As a result of this work, we submitted a new planning application in December 2008.

What's being proposed?

In response to the Council's concerns over the potential visual impact of the wind farm as a whole and its concerns over potential visual impacts on the Constable Mausoleum, we have removed two of the turbines from the plans, and are now proposing to erect 9 turbines, instead of the original 11.

Each turbine will have three blades and will have a maximum height of 126.5m. The ratings of the turbines could be up to 2.3MW each, giving a potential installed capacity of 20.7MW for the site. Government wind modelling data¹ suggests that the proposed wind farm is likely to generate enough green electricity to power approximately 11,900 homes, equivalent to 9% of the annual consumption of all the houses in East Riding (based on 2001 UK census data). Site specific wind speed measurements have been carried out by RES which indicate that this figure could be even higher in reality.

The plan (top right) shows updated layout of the proposed 9 turbines and the bottom right plan shows the location of the site within East Riding.

We are maintaining the same access route (so avoiding the villages) and the same grid connection route, as these were particular strengths of the project.

Why is this a good site for a wind farm?

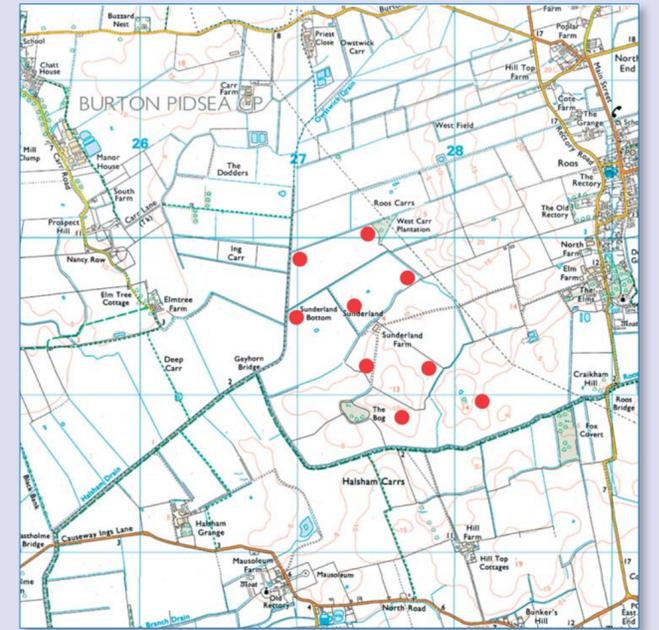
RES has always had absolute confidence that this is an excellent site for a wind farm. Finding suitable sites is a complex and time consuming process. The land around Sunderland Farm was identified as a good location for a wind farm in country-wide surveys of potential English wind farm locations carried out by RES.

RES's site selection process seeks to identify sites where a good wind resource is balanced with environmental, technical and other constraining factors. Sites are designed to maintain minimum distances from houses, to have good transport access and a suitable connection point to the electricity grid. We seek to ensure that the environmental impacts of the wind farm will be absolutely minimal, and this rules out large areas of the country which are designated for landscape or conservation reasons. Even where sites are not designated, we need to make sure that we won't be affecting particular species or habitats.

The land around Sunderland Farm is a particularly good site for a wind farm. It is a large area of agricultural land, with relatively few properties around it. For those properties which are closest to the site, we have maintained a minimum separation distance of 850m. There are no nature conservation areas which will be affected, as we are giving the Roos Bog Site of Special Scientific Interest a wide buffer zone. Furthermore, according to the Council's landscape character assessment, it is within one of the better areas in East Riding in which the landscape could accommodate a wind farm.

Environmental Impact Assessments are a compulsory part of the planning process for projects such as this. They include detailed investigations into the potential impacts on local people, archaeology, habitats, wildlife and hydrology to name a few. The studies are co-ordinated by RES's in house team of environmental scientists, but the majority are carried out by external consultants with relevant professional expertise. The whole process is brought together in a very detailed Environmental Statement, which the Council will use in its consultations. A shorter non-technical summary of this is also available. We have given details on the back page of where you can view the full Environmental Statement and how to get a copy of the non-technical summary.

We now hope that in addressing the concerns raised previously, by reducing the number of turbines, this smaller wind farm will be approved by the East Riding of Yorkshire Council.



¹The Department for Business, Environment and Regulatory Reform (DBERR) manages the NOABL database of average wind speeds for different areas of the UK. This has been used to derive the predicted capacity factor for this site on which these calculations are based.



For further information, please contact:

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RES UK & Ireland Ltd
Beaufort Court
Egg Farm Lane
Kings Langley
Hertfordshire WD4 8LR

Tel: 01923 299328
email: roos.windfarm@res-uk.com

www.roos-windfarm.co.uk

is a website dedicated to the Roos Wind Farm proposal where you can read about the project in more detail and look at maps and photomontages. You can also view a summary of the Environmental Statement. We are keen to receive your comments and have provided a short online feedback form where you can register your views and receive a response. Please keep an eye on the site as it will be updated regularly.

For further information on wind power, please visit one of the following sites:
www.bwea.com www.res-group.com www.windpower.dk www.yes2wind.com

For those receiving this newsletter by post, we obtained your address through a national post code database. If you do not wish to receive further information from us about this proposal, please write to us and let us know.



Leading by example

RES is one of the world's leading wind energy companies and is part of the Sir Robert McAlpine Group, a British, family owned construction firm. At the time of writing, RES has successfully built over 2,700 MW of wind power capacity around the world and has developed or constructed over 10% of the UK's installed wind power capacity. From long term involvement in the wind industry, RES has gained a high level of expertise in the technical, environmental and financial disciplines essential for the development of a successful wind farm.

RES recognises that renewable energy has to go hand-in-hand with improving energy efficiency and reducing energy demand. That is why RES's UK head office is a pioneering example of a 'carbon neutral' office, with electricity provided

from its own wind turbine and solar panels, with cooling and heating from a variety of techniques, including solar power, borehole water extraction and energy crops that are grown on site.

RES has been awarded a Queen's Award for Enterprise in the Sustainable Development category, recognising RES's 'comprehensive approach to the environmental and social impact assessment prior to the commencement of every wind farm project'.

To find out more about RES please visit www.res-group.com.



The role of renewables and Roos Wind Farm

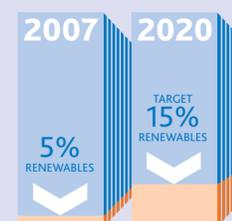
Tackling climate change requires a wide range of measures. These include reducing energy demand, energy efficiency, recycling, sustainable transport and the use of renewables to make clean, green electricity.

Governments at all levels are taking action. At a local level East Riding of Yorkshire Council have strong recycling and climate change programmes both in terms of providing information and taking action.

These types of programmes complement the generation of renewable energy.

At the heart of the UK Renewable Energy Strategy, which was subject to a major consultation in 2008, is the acknowledgement that renewable energy resources are a vital part of the government's strategy in both ensuring a secure supply of energy and tackling climate change. The Strategy suggested that the UK target for generating all energy from renewable resources should be 15% by 2020. This could require 30-35% of all our electricity to be generated by renewables. Currently less than 5% of our electricity is generated by renewables so to meet the 2020 target, the UK's current wind generation capacity needs to increase by a factor of ten (BERR 2008).

As the most technically and commercially proven renewable energy generation technology, wind turbines have a vital role to play in progress towards achieving the Government targets.



Climate Change Matters

The UK is currently undergoing a radical change in the way it generates electricity. A transition is underway from large centralised conventional generators; coal, gas, and nuclear to smaller, more geographically dispersed renewable generation, such as wind and biomass.

When RES first started looking at the potential of Roos, the debate over the issue of global warming was largely at an academic level until 1997, when the signing of the 'Kyoto Protocol' brought the issue to the forefront of the public news agenda.

Since then there has been significant debate about climate change among scientists, politicians and environmentalists and now, in 2009, few people question that climate change is under way and that mankind's love of fossil fuels and the consequential rising of atmospheric CO₂ levels is a significant factor.

Sir David Attenborough has summed up the feelings of many scientists:

"If you take one moment in time, you can't be sure what the trend is. Now, when we look at the graphs of rising ocean temperatures, rising carbon dioxide in the atmosphere and so on, we know that they are climbing far more steeply than can be accounted for by the natural oscillation of the weather. What people must do is to change their behaviour and their attitudes. If we do care about our grandchildren then we have to do something."

Even though governments are now enacting policies that will change the way we generate and use energy, there is plenty of evidence that more still needs to be done. The US National Oceanic and Atmospheric Administration (NOAA) analysis of air samples from around the world indicates that 2005 saw one of the largest increases of CO₂ concentrations on record.

Recently, scientists have predicted that, should



global temperatures rise by just 3°C, we could reach the point of no return. If the ice caps melt, sea levels will rise and the lives of billions of people will be affected. In these circumstances the world's coastline will recede substantially and heavily populated areas will be flooded.

Global sea level rise is only one of the impacts of climate change. In a European context, changing patterns of weather appear to be starting to affect the historic timings of the traditional seasons. In turn, this could affect wildlife and lead to the loss of some types of plants or animals from certain regions.

The proposed wind farm at Roos is one step towards creating a low carbon emission, sustainable energy supply. The UK is the windiest country in Europe, and in East Riding there is an inexhaustible, plentiful supply of wind coming in straight from the sea. This is a valuable resource which can supply a local source of pollution-free electricity.

What will Roos Wind Farm do for our environment and community?

Our electricity supply needs to diversify, not just for environmental reasons, but also to ensure security of supply. Our reliance on imported energy is increasing and a proportion of this imported energy comes from less stable regions. Renewable energy is playing a vital role in diversifying our energy supplies and the proposed Roos Wind Farm will make a significant contribution.

We can be certain that, over the course of its lifetime, green electricity from wind energy will offset large amounts of CO₂ that would have otherwise been produced if that electricity had been generated using fossil fuels like coal and gas.

Wind benefits the environment by reducing the demand for other sources of electricity, thereby replacing significant amounts of brown energy with green. Wind energy predominantly replaces energy generated by coal and gas fired power stations. The UK's electricity generating mix will change over time, making it impossible to give a precise estimate of the savings over the life time of the project, but we can see from the government's commitment to renewable

energy that wind energy will be an important part of the UK's drive to reduce its CO₂ emissions.

We know that, based on current figures for the different types of electricity generation in the UK, Roos Wind Farm, if in operation last year, could have offset approximately 24,000 tonnes of CO₂.

Direct benefits to the local community will come primarily from a community fund. Funds are passed from the income generated by the wind farm to an appropriate vehicle such as a Parish Council or a special trust. These funds can then be used by the community on projects which benefit the community. At Roos it is proposed to provide a minimum fund of the value £1000 per MW per annum, potentially realising up to £21,000 per annum over the lifetime of the wind farm.

RES also has a track record of using local contractors. This ensures commercial benefits are realised locally and it would be RES's intention to continue this policy at Roos.

* This is based on a emissions factor of 430g/kWh, which is the Government's long term marginal plant figure.



View from the Manor, Roos. Turbine visibility has been digitally enhanced. For illustrative purposes only.