

Frequently asked questions about wind energy

How many households' electricity needs can a turbine meet?

On average, a 2.5MW wind turbine can generate enough electricity to meet the needs of up to 1538 houses, with enough wind resource.

How long does it take to pay back the energy used for the production and installation of wind turbines?

Depending on factors such as the wind resource, the type of turbine and the actual site, the typical payback period is 3–10 months.

Are turbines safe?

Wind energy is one of the safest energy technologies. No member of the public has ever been injured by wind energy or by any of the 50,000 turbines operational worldwide.

Do birds fly into turbines?

Sadly, there may be isolated incidents, in a similar way that birds fly into power lines and buildings.

Why are turbines grey?

In bright sunshine, turbines appear white but they are actually painted light grey because this colour is the most inconspicuous in typical British daylight. The paint finish is matt to reduce reflected light.

How strong does the wind have to be for the turbines to work?

Wind turbines start operating at wind speeds of around 7mph and reach maximum power output at around 34mph. At high wind speeds over 56mph, they automatically shut down. To be commercially viable, wind farms are generally required to be located in areas with an average wind speed of at least 6m/s.

How noisy are wind turbines?

Virtually everything with moving parts creates sound, and wind turbines are no exception. Nevertheless, it is possible to stand underneath a wind turbine and conduct a normal conversation without raising your voice to be heard. According to industry body RenewableUK, "Advances in wind turbine technology mean noise levels are difficult to detect or inaudible at distances to housing prescribed by planning guidelines."

About Peel Energy

Peel Energy is at the forefront of delivering low-carbon energy in the UK. We have a balanced portfolio of more than 3GW in generation or development, including wind, tidal power, biomass and multi-fuel power plants with carbon capture and storage. That is enough to power the average electricity needs of 3 million homes in north-west England, or, put another way, every home in the city regions of Glasgow, Liverpool and Manchester combined.

Peel Energy is part of the Peel Group. The Peel Group has a rich history that started in the north-west in the late 18th century. After a career in the family textile business at Peel Mills, Sir Robert Peel later became prime minister and founded the Metropolitan Police Force. The name bobbies derives from the name Robert. The current Peel Holdings chairman, John Whittaker, originates from Bury.

The Peel Group has been investing in communities for over 40 years by creating employment opportunities and assisting in wealth creation. Peel has a long-term philosophy to invest in the natural assets of land, air and water. Environmental innovation is a guiding principle for Peel and part of its commitment to low-carbon growth. The group continues to investigate new opportunities and technologies to realise this vision. Central to our future is a commitment to measure and manage our environmental impacts.

"Peel is a family-owned group and we retain family values. We believe in providing our people with careers not jobs, and encourage and support them to make a difference in their communities."

John Whittaker, Chairman, The Peel Group

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Scout Moor Wind Farm

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Introduction

The Scout Moor wind farm is a 26-turbine site on open moorland between Edenfield, Rawtenstall and Rochdale. The wind farm was officially opened on 25 September 2008. In 2010, Peel Energy and HgCapital, a leading private equity investor in the renewable sector, created a joint venture to own and operate the wind farm

Energy for 40,000 homes

The wind farm is predicted to generate enough renewable electricity for up to 40,000 homes roughly half the houses in a town the size of Rochdale (forecast based on an output average per year, over 25 years).

Enhancing the local environment

Throughout the life of the wind farm, Peel Energy will provide funding to enhance the environment and habitats of up to 500 hectares (about 700 football pitches) in the surrounding area. Up to £500,000 will be available to local landowners to assist in creating biodiverse habitats such as upland blanket bog and areas suitable for skylarks and wading birds on the moorland fringe. For more information, please see our habitat enhancement plan fund leaflet.

Land use

The site can continue be used by cattle for grazing as before, as the turbines take up only a very small area of land.

Leisure access to the moor is improved through more hard-surface tracks to benefit walkers and mountain bikers. The moor and the wind farm are accessible via a public footpath from the parking area on Edenfield Road opposite the Owd Betts pub.

Ecology

Monitoring the ecology at the site has continued since the wind farm was constructed. Peregrine falcons, kestrels and buzzards are frequently seen hunting over the moor. Ground-nesting wading birds, including curlew, snipe and jack snipe, breed on the wetter parts of the area. Flocks of wintering and migrating golden plovers can often be encountered on South Pennine Moor. During the spring and summer, skylarks and meadow pipits are common on the site. Reed buntings nest in rushes to the north-west of Higher Hill, and wheatears can be seen on rocky outcrops and drystone walls. Summer visitors may also be fortunate enough to hear the red-listed twite flying overhead; it breeds in small numbers on the moorland edges.

The landscape can be restored

At the end of the life of the wind farm, the turbines can be removed and the site can be reinstated to its previous landscape. The improved access can be maintained by keeping the track through the site.

Cultural heritage of the landscape

Scout Moor also has an interesting cultural heritage, in particular, coal mining and stone quarrying.

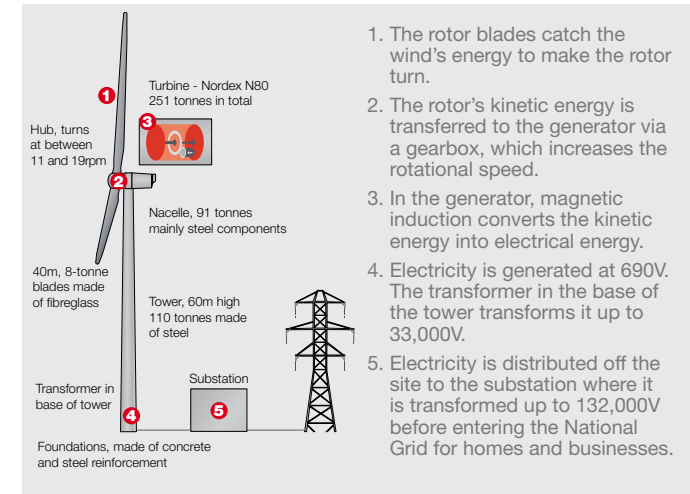
Coal under the moor led to shallow mining in the area during the 18th and 19th centuries. There are remnants of mine shafts, dams, sluices and reservoirs around Scout Moor and Whittle Hill.

Scout Moor Quarry has existed for many years, and minerals were transported out via its own railway and tramway until the 1950s. Today the quarry, a 250-acre (100-ha) open pit owned by Marshall plc, still operates for the extraction of gritstone and sandstone. Stone for access tracks through the wind farm was sourced from the quarry, which reduced transport emissions during construction.



How renewable electricity is generated

The wind farm has 26 Nordex N80 turbines. Each turbine has a total maximum height of 100m and can generate 2.5MW of electricity, which means that the wind farm can generate up to 65MW.



Why we need renewable energy

It is a government priority to raise the amount of energy being generated from renewable sources, such as onshore wind. This is essential for increasing the security of the nation's energy supplies and reducing carbon dioxide emissions.

Stated government intentions include plans to

- source 15% of all energy from renewable sources by 2020
- generate up to 35% of electricity from renewable sources, such as wind power, biomass and tidal power, by 2020
- reduce carbon dioxide emissions by 34% by 2020 and 80% by 2050.

It is expected that, in the short to medium term, the largest proportion of this electricity will come from onshore wind farms. Onshore wind is one of the most affordable renewable energy technologies in the world today. In the UK, we have the best wind resources in Europe.