Hill Top Farm, Parwich

A large family farm of 765 acres which was established in 1963 with ambitions to continue family farming long into the future.

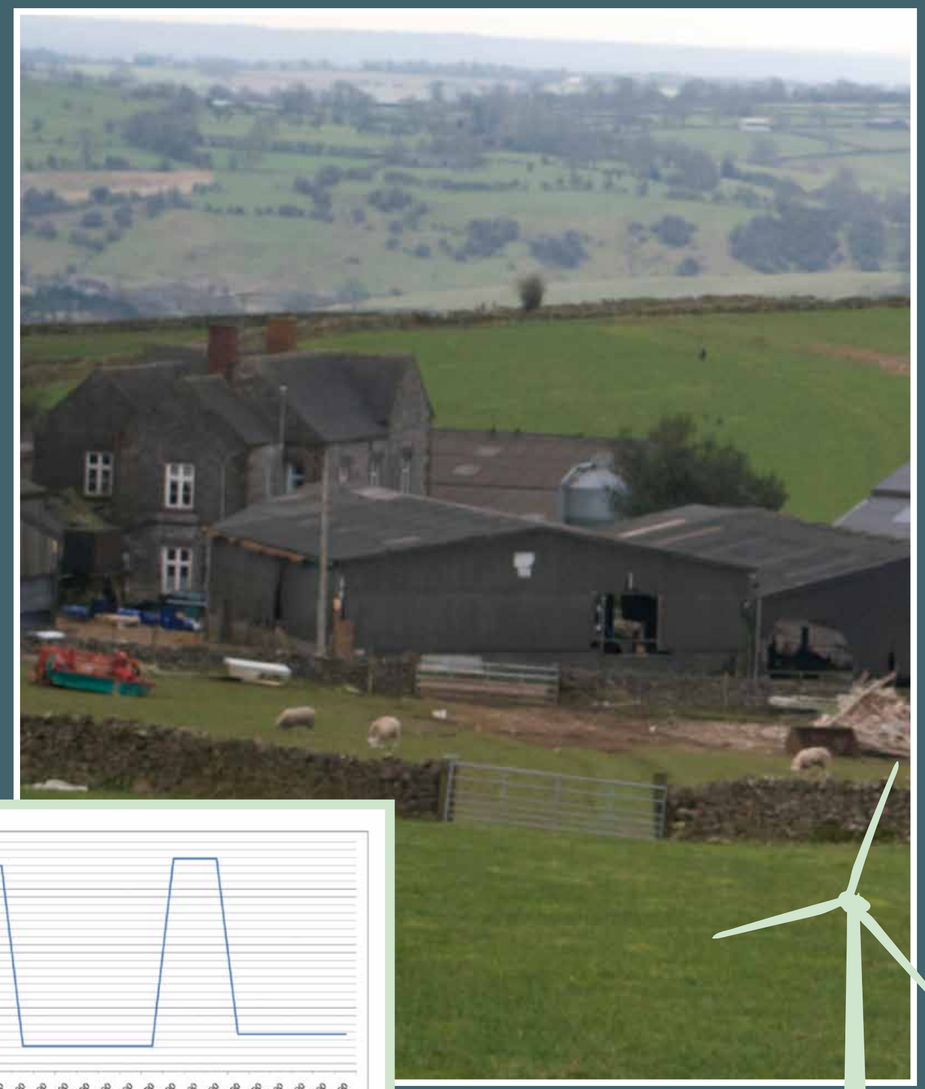
A dairy and beef farm with over 400 dairy cows and a further 400 beef cattle or followers. Producing 2,700,000 litres of milk per annum.

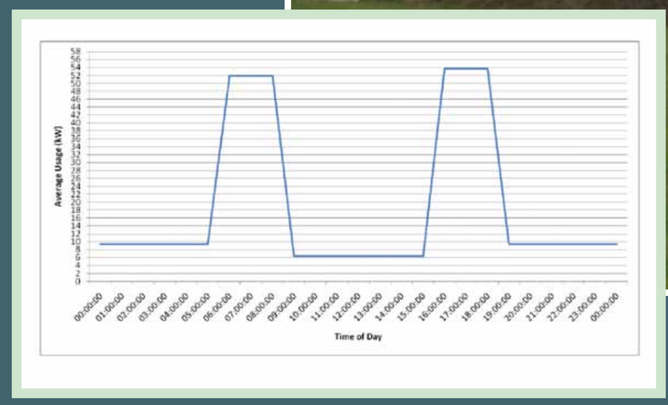
A daily electricity consumption of between 6 and 54 kWh per day. Peak electricity consumption twice per day during milking. There is an annual demand for 227,000 kWh of electricity.

Renewable energy essential to help to combat rising energy costs, comply with industry (carbon targets) and to help secure the future of the farm.

Industry requirement. The milk road map to which the farm belongs aims to reduce Co2 in the dairy supply chain by 50% in the next 10 years.

The Climate Change Act 2008 set legally binding emission reduction targets for 2020 (reduction of 34 percent in greenhouse gas emissions) and for 2050 (reduction of at least 80 percent in greenhouse gas emissions), and introduced five-yearly carbon budgets to help ensure those targets are met.





Average Site Usage

Hill Top Farm, Parwich - How well prepared is the UK for climate change?

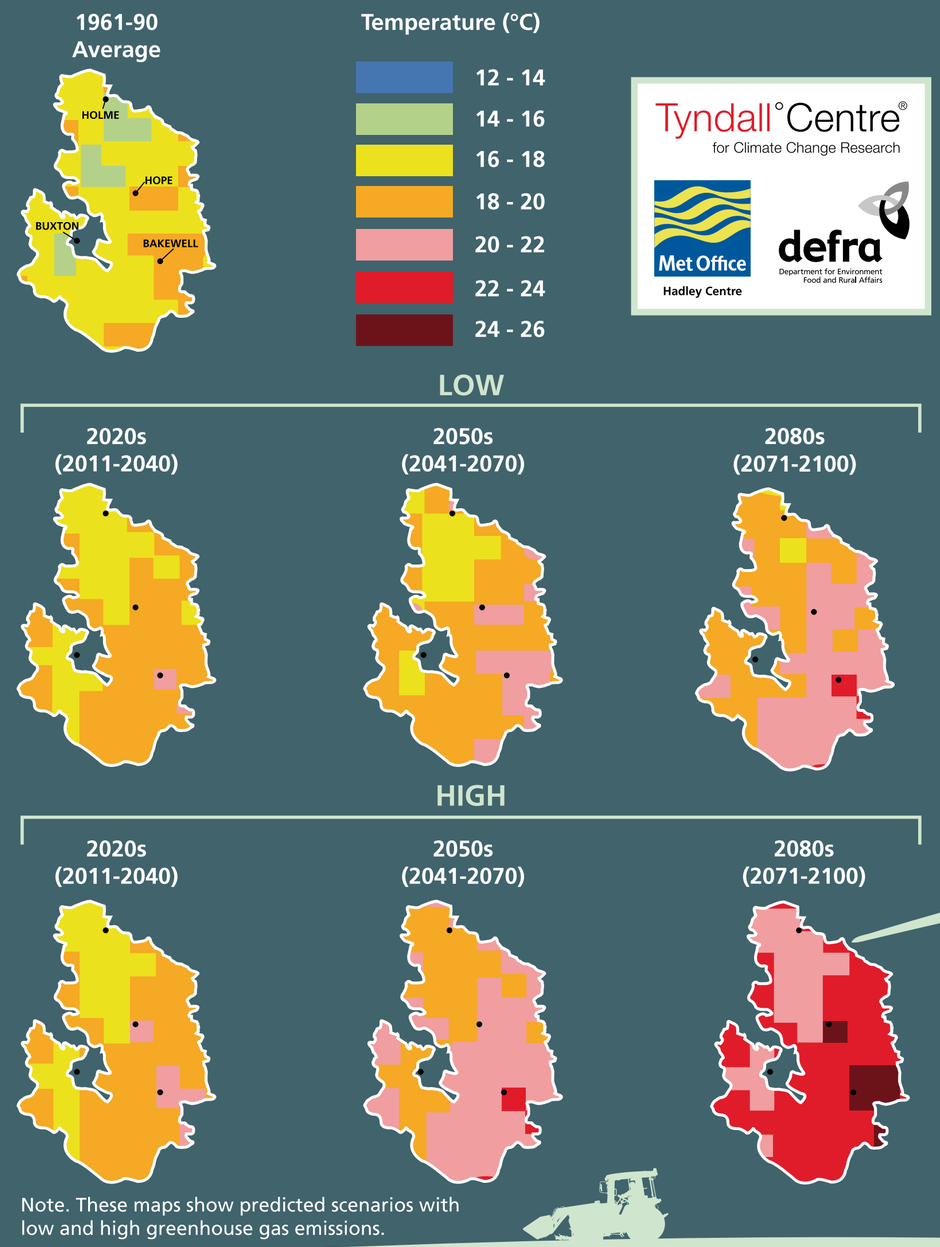
The Government have established an Adaptation Panel to oversee and control the compliance with the Climate Change Act 2008 and the need to significantly reduce carbon emissions and use. It's latest report was released a few months ago.

Extract from Forward by Lord John Krebs Kt FRS - September 2010

''The overwhelming majority of experts agree that the global climate is changing, and that most of this is caused by human activity. If we do nothing to tackle climate change, there is a significant risk that the world will be a much less hospitable place for our children and grandchildren. ''

''In brief, our headline finding is that whilst the UK has started to build capacity for adaptation through advice and information to a range of public and private sector organisations, there is little evidence that this is translating into tangible action on the ground in a systematic way. We suggest that the priorities for action now are assets or institutions that are sensitive to current climate risks and decisions that have long lasting consequences. These two criteria lead us to identify five priority areas for immediate action in preparing for climate change: land use planning, national infrastructure, natural resources, design and renovation of buildings, and emergency planning. In these areas, if the UK waits, it will be too late to effectively manage the risks of future climate change. Preparing for climate change primarily involves organisations and people at the local level, but central government also has a key role to play. We advise the Government that it should build on the work of raising awareness, remove barriers and provide stronger signals to enable action. It should also ensure that responsibilities are clearly allocated for the delivery of adaptation and that the different players are cooperating to take adaptation action.''

Extract from Peak District Climate Change Action Plan 2009-2011



Note. These maps show predicted scenarios with low and high greenhouse gas emissions.

Hill Top Farm, Parwich - Renewable energy sources considered

Anaerobic Digestion The site does not have a sufficient waste resource to make an AD system suitable and capable of producing sufficient electricity.

Biomass A biomass heating system requires a steady heating demand in order to be deemed suitable, in addition this would only be suitable for the main farmhouse and would not offset the highest energy demand from the electric milking systems.

Heat Pump This system requires a low heat delivery system which is able to operate at temperatures of circa 40 degrees. This would not be suitable for any of the existing heat delivery systems.

Hydroelectric No suitable water source in the vicinity.

Solar PV The outputs of solar photovoltaic panels are smaller and in order to offset demand a solar array of many hundreds of square meters would be required. This would require the use of a substantial field area, alterations and structural improvements to farm buildings.

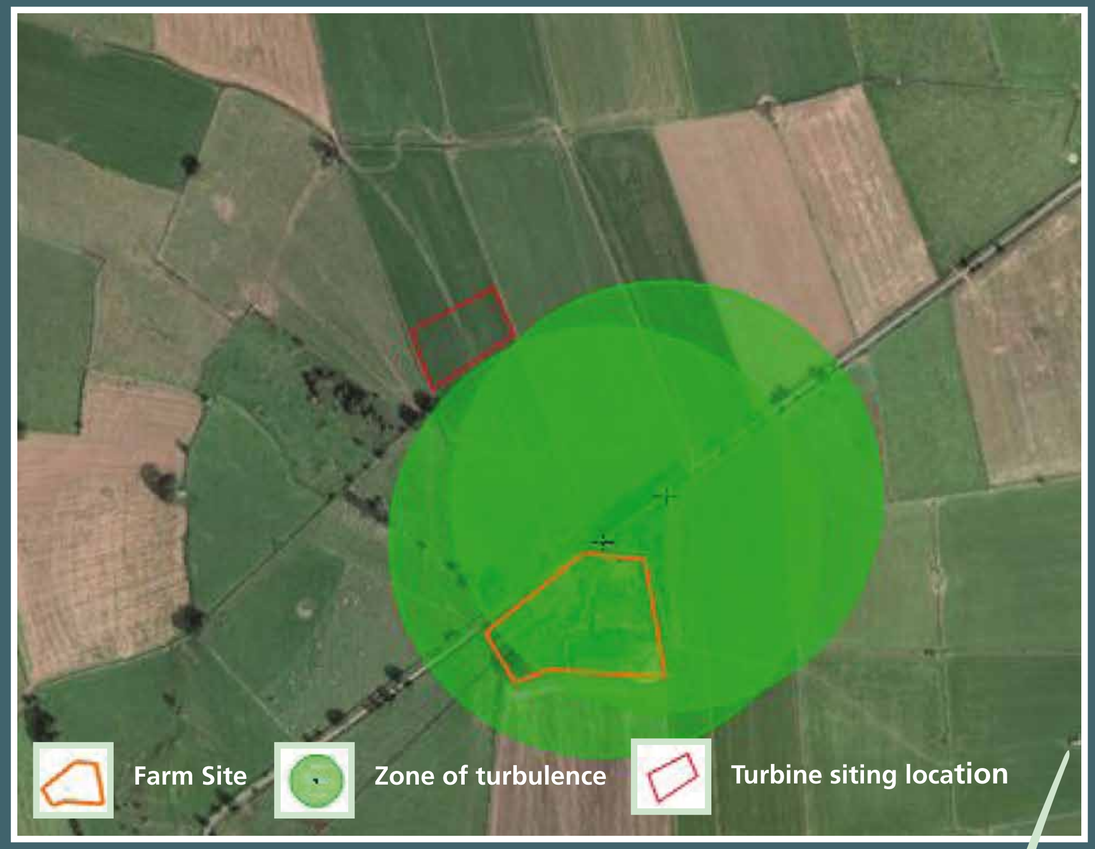
Wind power Average wind speed projections indicate that sufficient power can be generated on an average day to power peak electricity demand on the farm by erecting a modest sized wind turbine.

Hill Top Farm, Parwich - Siting location assessment (2)

There are only a few locations where wind turbines can be suitably sited. A location is proposed at present which has taken account of the following key factors:

- **Wind speed**
- **Any site or local ecology or archeology**
- **Compatibility with aircraft and aviation**
- **Impact on telecommunications**
- **Visibility from public viewpoints such as roads, footpaths, cycleways and bridleways**
- **Any possible acoustic issues**
- **And finally the impact on landscape and possible mitigation that might be helpful**

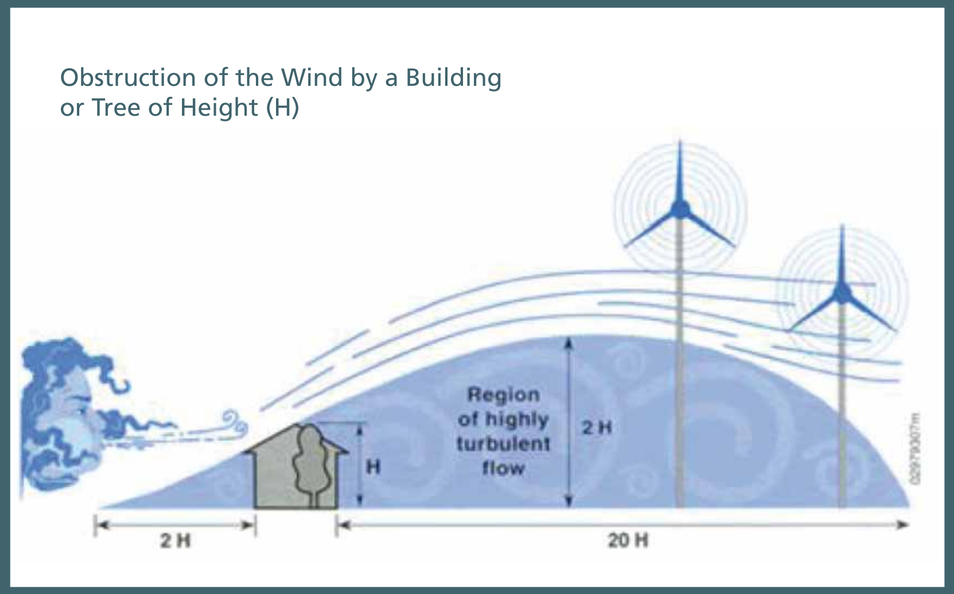
This exhibition focuses mainly on visual matters as this is often the area of greatest public concern. The figures on this board and the next board show the acceptability of the proposal in terms of noise, wind speed and siting



Turbulence Analysis: Proposed Site

Hill Top Farm, Parwich - Siting location assessment (3)

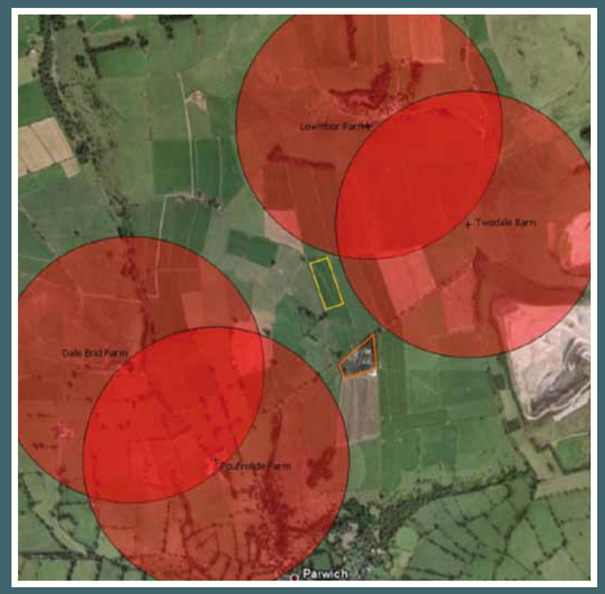
Siting Location Assessment



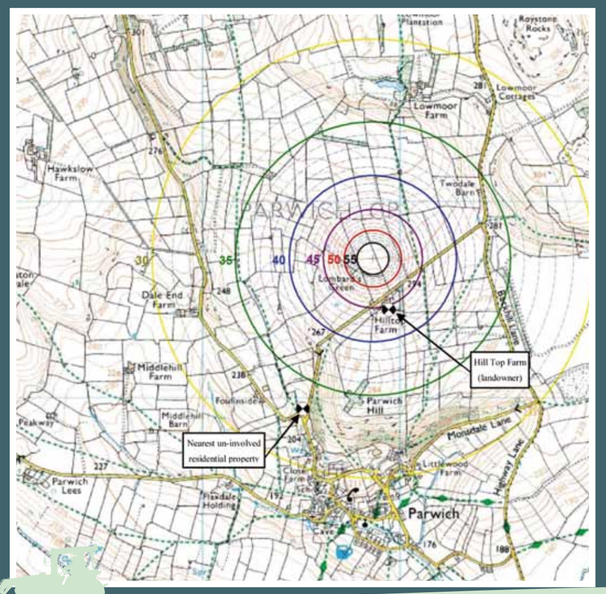
Examples of Indicative Noise Levels

Source/Activity	Indicative noise level dB (A)
Threshold of pain	140
Jet aircraft at 250m	105
Pneumatic drill at 7m	95
City traffic	90
Truck at 30 mph at 100m	65
Busy general office	60
Car at 40mph at 100m	55
Wind farm at 350m	35-45
Quiet bedroom	20
Rural night-time background	20-40
Threshold of hearing	0

Site Plan



Typical Turbine Noise Contours for Wind Speed of 9m/s at 10m Height



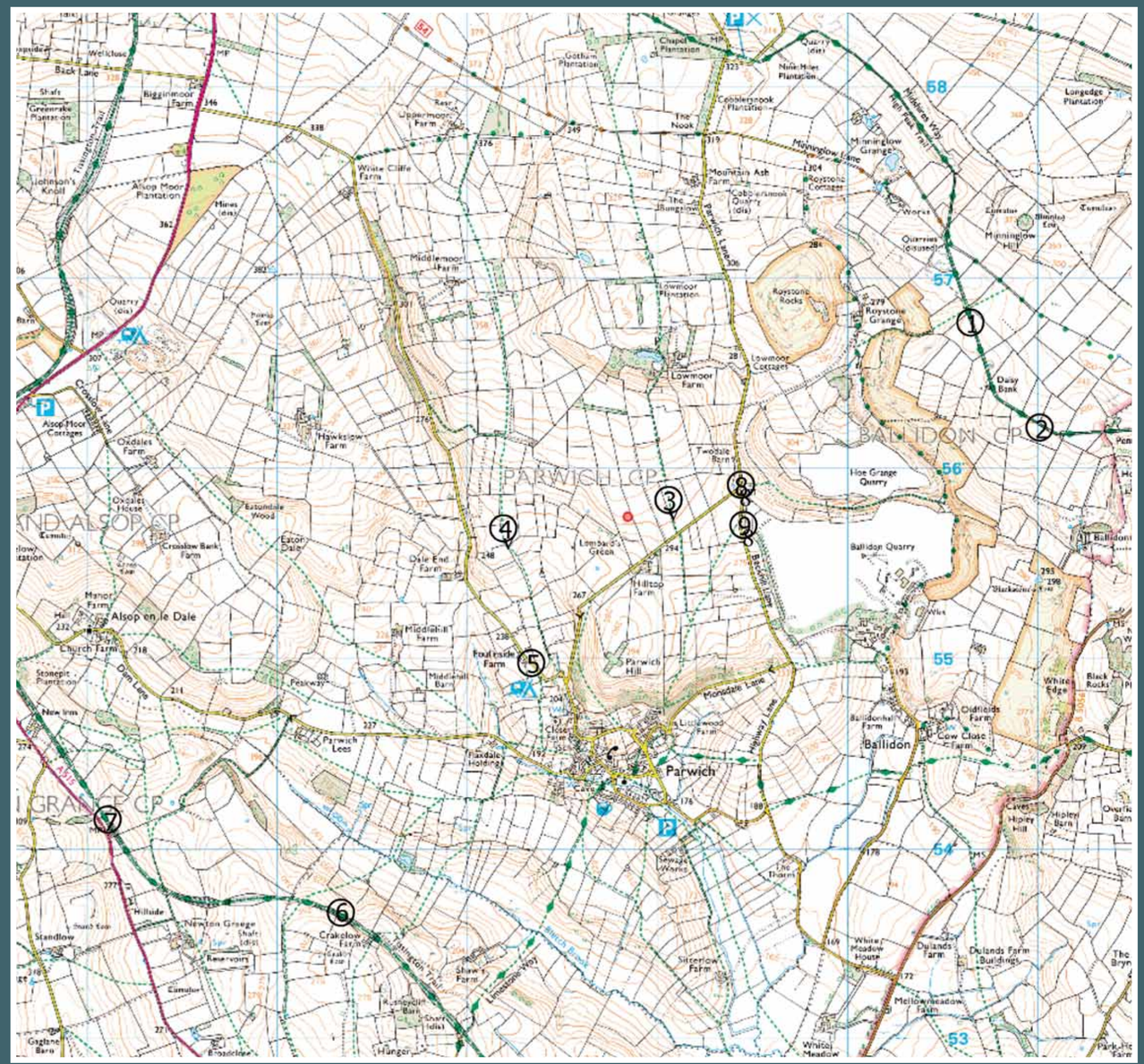
(Downwind propagation in all directions simultaneously)

Hill Top Farm, Parwich - Impact on local landscape - photomontage positions

On display are images selected to show a broad East to West section thru the proposed siting. Other views are available if you wish to look at those too Note that these are based on digitised topographical data and may not always show every tree and building.

They are produced in accordance with accepted codes and standards.

The location of the photomontages have been agreed with the Peak Park Planning Authority.



Hill Top Farm, Parwich - Impact on local landscape - photomontage selection 1

Position 1

Position 2

Hill Top Farm, Parwich - Impact on local landscape - photomontage selection 2

Position 4

Position 5

Hill Top Farm, Parwich - Impact on local landscape - photomontage selection 3

Position 7

Position 9

Hill Top Farm, Parwich - Future generations!

Educating children The wind turbine proposal at Hill Top Farm could present an opportunity for local children to see renewable power generation in action. If a planning application is submitted, approved and then built it is proposed that local schools be invited to attend the site. They could visit during the construction phase and then again later when the turbine is in action to see how the electricity generated was being used on the farm.

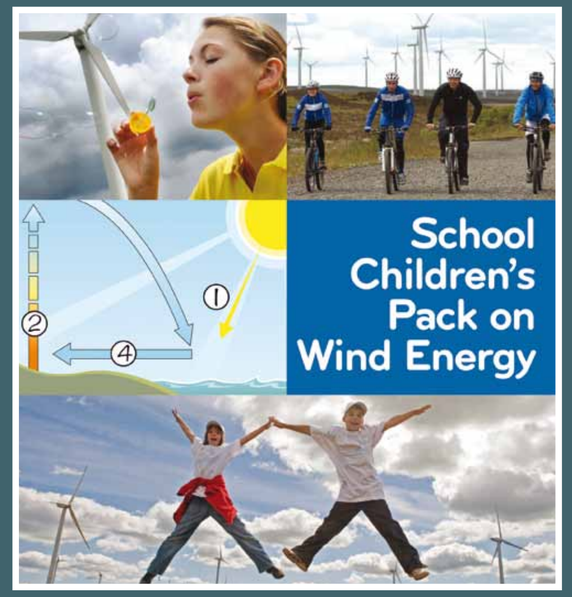
Do you think that would be a good idea.? Would other groups like to be involved in learning about wind power and renewable technology?

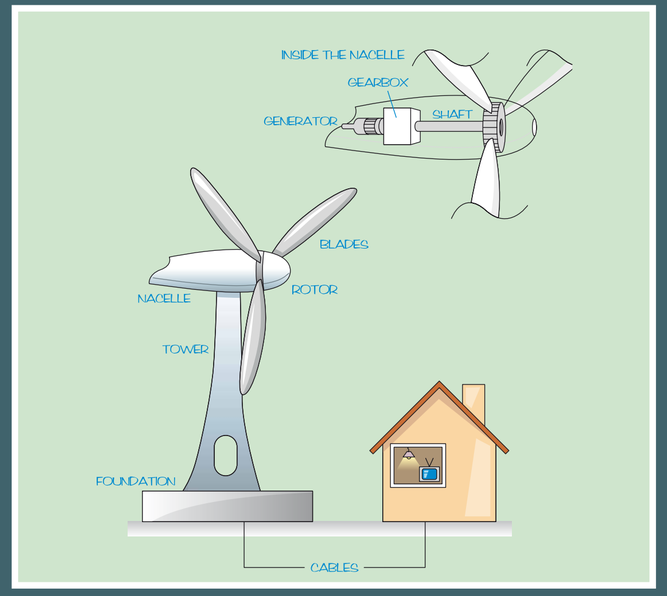
Future use of renewable electricity. Hill Top Farm is already looking to replace cars, tractors and other plant that run on carbon fuels on the farm with electric vehicles which are charged at non peak times.

Do you think this is a good idea? Do you have similar thoughts?

Community involvement Is there any other way that the local community would like to learn more or get involved in a renewable energy scheme that Hill Top Farm can assist with?

Do you have any views on improved and sensitive tree planting (such as shelter belts) in the area that might assist in helping to visually anchor the proposal in the landscape?





Hill Top Farm, Parwich - What happens next and how to have your say?

In attending this exhibition you will contribute to the understanding of local perspectives on renewable energy, wind turbine technology and sustainable local energy production in addition to of course the proposal itself.

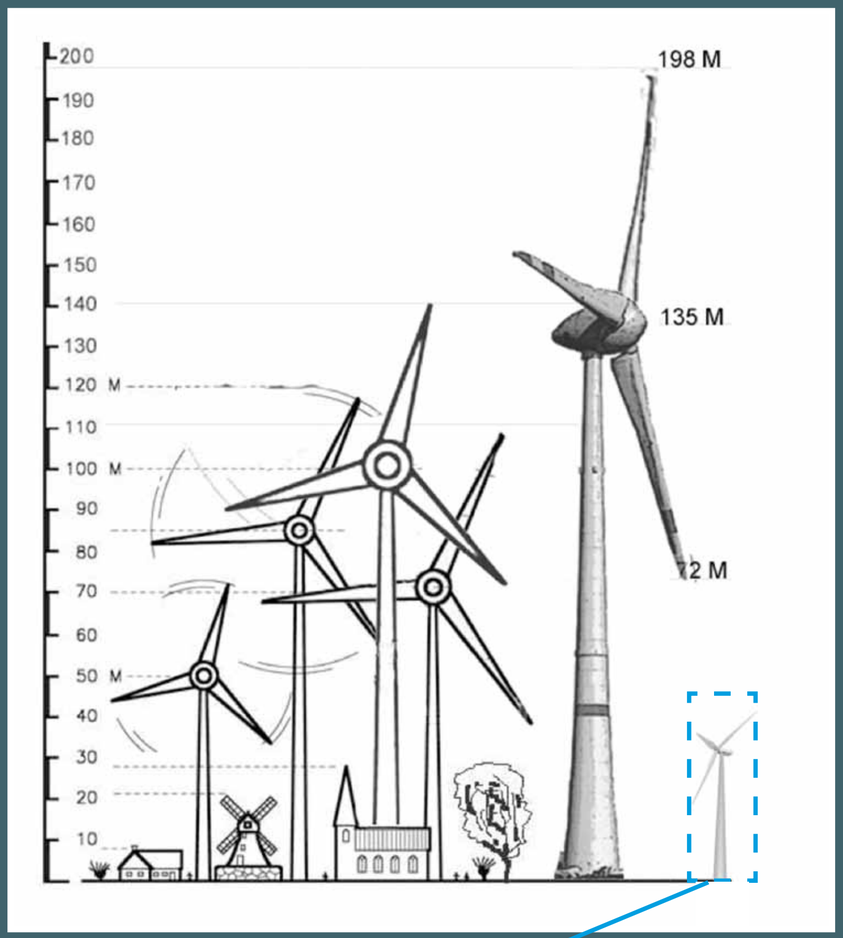
The views you express at the exhibition and which you leave on the questionnaire will be carefully examined and weighed before any submissions are made to the council.

Any suggestions for alteration or for landscape works, for other improvements changes or community involvement will be considered carefully.

If a planning application is subsesquently made to the council your views and this exhibition will be material considerations that the council will take account of before they determine any such application.

Thank you for attending the exhibition.

Size comparison of various wind production wind turbines



- **Indication of proposed turbine height**
- **Proposed turbine is 32.4 metres to the rotor and 48 metres to the blade tip**