

SPEN VALLEY SPORTS COLLEGE WIND TURBINE

The idea for the wind turbine came from a project which Kirklees Metropolitan Council ran in 2003 with the support of CREATE (Centre for Research, Education and Training in Energy), the education charity. Aimed at schools with high energy emissions in comparison with their floor areas and benchmarks for other schools, the project:

- was free to schools
- offered an energy education programme linked to the National Curriculum which did not add to teachers' workload
- increased the energy awareness of our adult consumers of tomorrow
- engaged young people in energy issues and helped them identify energy savings in their schools
- provided practical measures to improve the energy efficiency of the school buildings.



Working with CREATE at a local secondary school - Spen Valley Sports College - the Student Council carried out an energy audit of their school and made a successful bid to Kirklees Council's Energy and Water Conservation Fund for £38,127 to install a variety of energy saving measures, including automatic lighting controls and thermostatic radiator valves.

Subsequently, funding from the DfES 'Building Schools for the Future' programme meant that the school was scheduled to be largely rebuilt, so the plan to improve the existing structure was abandoned.

Nothing daunted, the Spen Valley Renewable Energy Committee (SVREC) was very enthusiastic about the prospect of having a renewable energy demonstration project, and decided to investigate the viability of installing various forms of renewable energy such as biomass, solar panels and wind turbines. After considering all the options, approaching planning officers for advice and by logging local wind speeds, the school decided that a wind turbine would be the best option for their site. They then carried out a community consultation, visiting local residents and discussing the wind turbine, conducting questionnaires and holding an open evening. The Council's Renewable Energy Fund set aside £65,000 for the project, but because of the external funding which the students and Council attracted, only £35,000 of this was needed.

A meeting at the school, which included structural and electrical engineers, representatives from the school and a planning officer, decided on the preferred model and the location for the turbine – a 15 kW grid connected Proven WT15000 with a 15m mast and a 9m blade diameter. The site was expected to achieve an average annual wind speed of 4.5m/s to 5m/s which would produce around 29,000kWh/year, thus accounting 10% of the school's electricity, with an emissions saving of around 12.5 tonnes of CO₂.

The Council agreed to prepare a Clear Skies application on behalf of the school and, as part of it, SVREC wrote a mission statement:

- To make Spen Valley Sports College an energy efficient user of renewable sources of power
- To make Spen Valley Sports College a driving force in the promotion of alternative forms of energy.
- To educate our school and our community about renewable energy by making Spen Valley Sports College a working example of how an organisation can effectively use renewable forms of energy
- To help ensure that our future generations have a future.

Clear Skies awarded the school £26,949.

The Council also made the successful application for planning permission and in May 2005, the turbine was installed in the school grounds and linked to the grid system so that extra energy generated can earn income for the school.

A weather station was mounted on the roof which relays information to a display panel situated next to another display showing the electricity being generated by the turbine and the reduction of CO₂ emissions which has resulted. The turbine features largely in the educational curriculum:

- Science - as practical lessons on energy production and consumption
- Maths - using the information gathered from the weather station and the display panels
- Geography - looking at local and global weather conditions, the contours of the land and the way man uses his environment
- Design and Technology and Art – the turbine has provided creative inspiration
- Citizenship - students are given the opportunity to be 'citizens in action' by raising awareness of environmental issues for the benefit of the local community as a whole.

The pupils have since appeared on local television, in the press and featured in the Times Educational Supplement. It has been a useful lesson to them to see how bureaucracy works and to learn how to form partnerships in order to move forward.

It has been important to keep elected Members informed and involved in the process and this has resulted in their support not only for this project, but a positive enthusiasm to install renewable energy in schools throughout the Council's area. The project was rated as one of the top 10 energy projects of 2005 by the Energy Minister, Malcolm Wicks.

Since installation the manufacturer identified a fault with the 15kW model which has caused a significant under performance, the Council has continued to work with the installer and

manufacturer whilst this fault is rectified. In the meantime the Council has been compensated for loss of production and the turbine continues to be used as an educational aid.

Produced by Kirklees Council
Environment Unit, updated May
2009.

