



Sherborne Wind Energy Project

Who are we?

A group of independent private individuals living in and around Sherborne who are interested in addressing the challenge of climate change through a locally-funded project.

What is the Sherborne Wind Energy Project?

It aims to erect a large wind turbine in an appropriate site, near to Sherborne. This would generate clean, carbon dioxide free electricity to be fed into the local electricity network. It would provide electricity equivalent to the consumption of up to a quarter¹ of Sherborne's homes, close to the point of use, maximising efficiency. It would be a commercially viable enterprise benefiting local investors, terminating with decommissioning after 25 years.

Why do this?

Climate change has been called "the biggest collective challenge that civilization has ever faced" by Sir David King, chief scientific adviser to the government.

There is a growing sense of urgency that we have a narrowing window of opportunity over the next decade, to avert a vicious cycle of greenhouse gas emissions and global temperature rise spiralling out of control. Flooding and violent weather patterns may become the norm.

At present our electricity supply depends increasingly on gas from other parts of the world but global supplies are limited. The next generation of nuclear power stations is probably 20 years away.

FACTS & FIGURES

Wind Turbine Characteristics

Tip height: up to 110m (360ft)

Hub height: (i.e. centre of turbine) up to 70m (230ft)

Blade diameter: up to 80m (260ft)

Rotation rate: typically 6-22 RPM, i.e. one revolution every 2.7 to 10 seconds

Tower diameter at base: about 5m (16ft)

Base: a submerged reinforced concrete 'disk' of between 14m (46ft) and 28m (92 ft) diameter and 2m (7ft) deep

Note: the higher the turbine is the better as the wind speed is stronger and less turbulent producing more power

Electricity Production

Estimated annual production²:
4.2 – 5.2 million kWh

Average power output³:
480 – 600kW

Equivalent number of SW households⁴:
840 – 1,040

Note: electricity is fed from the turbine into the electricity network and bought by the SWEP's chosen electricity supplier. Individual households will still keep their existing electricity supplier, in the knowledge that a proportion of the electricity will have been produced by our own turbine.

We need to work on both improved energy efficiency and electricity from renewable sources, which can come in several forms:

- Wave and tidal energy has great potential but is still being researched.
- Biodiesel can be a useful fuel for transport but may divert fertile land from food production.
- Waste incineration can provide heat and power.
- Wind is a plentiful resource with a mature technology for generating electricity.

A single wind turbine is a small but significant step forward with which Sherborne can take a lead and set an example for other communities.

How?

We currently expect to need around £2M to fund the project. We hope to raise this primarily in the local community through a co-operative organisation, giving people a commercially attractive investment. We propose to donate a significant proportion of annual profits to local good causes.

Where?

In identifying a suitable location for a turbine, a great proportion of a given area is ruled out, either through less than optimum wind speeds, or proximity to housing. Various sites in the Sherborne area are being considered.

Timescales

With sufficient local support we are hoping to gain planning permission during 2008. There would then be a phase of funding and tendering, followed by what we expect to be up to 3 year waiting list to receive the turbine. Therefore we hope to have a turbine in Sherborne producing CO₂-free electricity by 2012.

Contacts

For further information please contact Mike Keatinge on 01935 389377.

<http://SherborneWind.co.uk>

Environmental Benefit

Coal-fired power stations produce the most CO₂ per kWh generated. E.g. Drax power station currently generates 7%⁵ of UK's electricity and in producing 4.7 million kWh, the annual equivalent of the wind turbine, it emits⁶ 3900 tonnes of CO₂, 5 tonnes of Sulphur Dioxide and 11 tonnes of Nitrogen Oxides. In comparison, the wind turbine has none of these emissions and uses negligible fossil fuel after construction. The CO₂ produced during turbine manufacture, transport and construction of foundations is saved well within its first year of operation. The savings in CO₂ are equivalent to over 3000 passenger return trips⁷ from London to New York each year.

References

¹ Approximation based on 4,152 households (2001 census, Sherborne Parish: <http://www.dorsetforyou.com/index.jsp?articleid=324567>)

² Based on DTI NOABL average windspeed and Digest of UK Energy Statistics average load factor data. More accurate forecasts will be made by sampling wind speed data at the site prior to funding.

³ This is the electrical output when averaged over every hour in a year. Peak output is likely to be 2MW but this is only achieved during the windiest days.

⁴ Average consumption for households in South West in 2004 is 5,019 kWh pa (compared to 4,628kWh pa UK average) – see DTI/Digest of UK Energy Statistics 2006 at <http://www.dtistats.net/energystats/dukes06.pdf>

⁵ See <http://www.draxgroup.plc.uk/dp/>

⁶ Drax environmental performance review, 2005 http://www.draxgroup.plc.uk/files/Environmental_1_Performance%20_2005_FINAL.pdf

⁷ The UK Dept. of Transport says that long-haul flights produce 110gm of CO₂ per passenger kilometre <web link required>. New York is 5585km from London.