



WIND TURBINES

Statement by Derbyshire Dales Group

We note that,

1. it is widely accepted that temperatures on earth are rising;
2. this global warming will have adverse consequences for Britain as well as other countries;
3. global warming is considered to be principally due to an increase in the amount of carbon dioxide released into the atmosphere from the burning of fossil fuels;
4. the reduction in carbon dioxide (CO₂) emissions requires a reduction in the quantity of fossil fuels burned;
5. wind turbines generate electricity without, except in their manufacture and construction, producing CO₂.

Thus notwithstanding arguments advanced in some quarters against turbines, if wind power can provide an efficient and cost effective means of producing electricity that will reduce carbon dioxide levels to an extent that will combat global warming, opposition to turbines must give way to considerations of the national, and global, interest.

Government target

1. The government target is for 10% of electricity to be produced from renewable sources by 2010. Of this 10% it is likely that renewable sources other than wind could produce 2%. The present rate of generation in the UK is 45,000 MW. For 8% of electricity to come from wind an installed wind, capacity of about 12,000 MW is (as a result of the load factor, see below) required.
2. A large turbine typical of those at present in operation (2.0 - 2.5 MW) is about 394 feet in height (120 metres). The rate of electricity generation from such a turbine when the wind is blowing at optimum speed is 2.0 MW.
3. Existing turbines have an installed capacity about 1,315 MW. Thus an additional 10,700 MW of installed capacity will be required for the target to be met.
4. Currently there are about 1,300 turbines in operation. To meet the government target will require the construction of at least 5350 additional 2.0 MW turbines.

Effectiveness

1. According to the Department of Trade and Industry, due to fluctuations in wind speeds, the percentage of maximum yield achieved in the UK is 25% - 30%. Thus over a year the turbine cited at 2 above produces electricity at the rate of 0.75MW.
2. Further, the times when electricity is most in demand, when it is very hot or very cold, are the times when, because of anti-cyclonic conditions, turbines generate no electricity.
3. Electricity is lost in transmission. The largest turbine sites are in the west and far north of Britain, far from the main area of demand with its epicentre between Birmingham and London. A substantial amount of power generated from remote sites is lost in this way.
4. The National grid must continuously match demand with supply. The unpredictability of output from wind presents increasing problems in enmeshing this with the national grid system.
5. The fact that a turbine site is producing electricity does not mean that the equivalent level of generating power from a fossil fuel power station can be turned off, since conventional power stations must be kept running in the background to cater for fluctuations in wind speeds. In its 2005 Wind Report the German company E.ON Netz, stated that in providing back-up "traditional power stations with capacities equal to 90 per cent of the installed wind power capacity" are needed to be permanently online.
6. Thus the more turbines that are constructed the more back-up power must be available from conventional power stations. As the Irish Grid (ESB) reported in 2004, "As wind powered generation increases additional or surplus generation capacity is required to maintain security of supply. If wind powered generation increases to 1,500 MW, an additional 1,160 MW of conventional plant is required for generation adequacy purposes".

Cost

1. Generation of electricity by wind, at nearly £60 per MWh for onshore wind and more than £70 per MWh for offshore wind, is more expensive than generation by either nuclear power (less than £35 per MWh) or gas (£40 per MW) or clean coal (less than £50 per MWh).
2. Wind turbines are built because of the government requirement (under the 'renewables obligation') that 10 % of electricity supplied by generating companies must by 2010 come from renewable sources, in practice wind. Paul Golby, the Chief Executive of E.ON UK (formerly Powergen), has written, "Without the renewable obligation certificates nobody would be building wind farms."
3. The Public Accounts Committee of the House of Commons found that "The Renewables Obligation has the effect of transferring substantial sums from consumers to the renewables industry. ... Requiring users to source supplies from uneconomic providers has the same affect as taxing users to subsidise the providers, but is not as transparent or amenable to parliamentary control. ... By 2010, the cost of the Renewables Obligation, which does not appear on electricity bills and is not explained to consumers, is expected to reach £1 billion per annum (at 2002 prices)." The National Audit Office states that most onshore wind farms could operate on half the level of available subsidies.

Reduction in reduce carbon dioxide emissions

1. If, when wind was blowing, conventional power stations could be 'switched-off', the saving of CO₂ would be equivalent to the emission of fossil-fuel generation displaced by the realised wind generation in the UK.
2. But output from conventional stations cannot be reduced by an amount equivalent to the electricity being generated from wind, since, as noted above, conventional stations have to be kept running to provide back up for when the wind drops (or becomes too strong).
3. Thus conventional stations produce CO₂ while providing cover for wind fluctuation. So although the generation of electricity from the turbine achieves a certain reduction in carbon dioxide emission, the reduction is far from that which at first sight might appear. As ESB, the Irish National Grid, has stated, "As wind contribution increases, the effectiveness of adding additional wind to reduce emissions diminishes; the cost will be very substantial because of the back-up need."
4. If the government target of 10% of energy to be produced from renewable sources by 2010 is attained, DEFRA figures show that CO₂ emissions in the UK would be reduced by 9.2 million tonnes a year. This is less than four ten-thousandths (0.0004) of global total CO₂ emission and therefore an amount so minuscule as to be incapable of altering atmospheric concentrations to an extent that would affect global climate.

Conclusion

Since wind turbines –

1. are a means of generating electricity that is intermittent, expensive and can have no relevance to world climate change;
2. cause nuisance and distress for people living nearby, and have possibly harmful effects on health;
3. are imposed by the government under section 36 of the Electricity Act 1989, frequently in the face of strong local opposition, thereby overruling the decisions of democratically elected local authorities;
4. harm wildlife habitats;
5. damage tourism and hence the local economy;
6. entail the disfigurement of Britain's finest landscapes; - for many people the country's most precious asset, not only by the turbines themselves (described by Prince Charles as 'monstrous blots on the landscape'), but also by the hundred of miles of pylons that will march across the uplands of Britain's last remaining wilderness areas,
 - the Derbyshire Dales Group of the Ramblers' Association gives its full support to -
 - the CPRE in its backing for the House of Commons Early Day Motion 1031 (which calls for the amendment of section 36 of the Electricity Act 1989);
 - the Association's current campaign to secure the ending of the renewables obligation in its present form; and,
 - the resolutions of the Association's General Council in 1997 and 2002 against major wind turbine developments in areas of high landscape value.