

The puzzle to me is with such potentially loaded air driving almost directly onto the Clwyds, a renowned orographical hill range there was no rain. Further confirmation of this odd effect came also from a friend travelling from Anglesey during the afternoon. He only met 'poor' weather on the Clwyd section of the A55 road coming down into Queensferry. I can also confirm that that rain did not fall over the Denbigh Moors during the rest of the day.

With these observations I wonder if the subsequent north of England storms later in the day may have been triggered by some odd setup over the Dee and Mersey estuaries with North Wales playing no part.

M. H. O. Hoddinott

Chester,
Cheshire

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In the July issue of Weather the Viewpoint was written by James Lovelock. We print two letters responding to aspects of Prof. Lovelock's article, addressing aspects of wind power and sustainable energy.

Something nasty in the greenhouse

I read with great fascination James Lovelock's contribution to your Viewpoint section, "Something nasty in the greenhouse" (*Weather*, 60, pp. 195–196). As always he writes with grace and lyricism about the problems of the world. I particularly enjoyed his analogy between our attitude towards global warming today and the world's attitude of appeasement towards Hitler in the 1930s. Certainly, his conclusion that we are currently at war with the Earth itself is an inescapable one.

However, I am forced to disagree with James Lovelock when he turns to his secondary conclusion that nuclear power is the key to a safe future. About this he is very wrong. Back in the 1970s the great Anglo-American environmental campaigner Amory Lovins wrote that nuclear power would be safe if it were operated by a kind of "nuclear priesthood", people totally dedicated to safe and efficient running of these potentially highly dangerous installations, but that unfortunately the reality is that they are run by ordinary people with all their fallibilities, as for example, the 'normal' fallible people that were responsible for the terrible accidents at Windscale, Three Mile Island and Chernobyl.

Also, he has little to say about the deep irresponsibility of leaving highly dangerous nuclear waste as an unpleasant legacy for future generations to deal with and has refrained from commenting on, what for me is, the most important direction that the

world must take – that of 'sustainable' energy production, particularly wind and wave power – and of course the issue of conservation and wise use of energy.

It is my belief that the spirit of Gaia is best served by looking at these options and not nuclear power.

Dr Stephen Glascoe

Cardiff

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Global warming and nuclear power

I agree with Prof. Lovelock's views on the seriousness of the threat posed by climate change (*Weather*, July, 2005), but I disagree with his comments on what to do about it. This is a topic which deserves a rational debate, and simply dismissing those who disagree with his advocacy of nuclear power as "deep Green", whatever that might mean, does not do it justice. Reducing energy waste is generally acknowledged as the easiest way to bring about short-term reductions in fossil fuel usage.

No-one doubts, however, that we will continue to require large quantities of electricity, no matter how much we reduce waste. Prof. Lovelock expresses concern that wind turbines might have some adverse effect on the atmosphere. A turbine will supply the energy needs of 400 houses, and it is, surely, reasonably clear that a 100 m turbine is not going to be a major impact on the environment compared to the 400 houses it is supplying. The winds are dissipated by friction at the Earth's surface. Turbines will move the source of this friction a little higher into the atmosphere. The rate at which the atmosphere loses energy through surface friction is around 900 Tera Watts: around the power of 900 million large wind turbines (James 1994). So what might we expect the effect of a mere one million turbines to be? In any case, new wind turbines generate rather less vorticity than

those of an earlier generation: this has nothing to do with worries about the state of the atmosphere, but is designed to reduce the level of noise generated when the vortices trailing off the turbine wing tips run into the supporting tower.

Prof. Lovelock implies that those who favour renewable energy over nuclear power are opposed to science. I cannot understand how he can have fallen into such a mistaken conviction. Today's wind turbines are a miracle of modern engineering. From the aerodynamics of the 60 m wings to the material science which makes them strong enough to withstand all weather conditions, this industry is exploiting the best of scientific knowledge.

Rapid advances in photo-voltaic cell technology have produced a ten-fold price reduction in each of the last three decades. In 40 years time, if this continues, it will be possible to equip a house with its own electricity supply for less than the price of a pint of beer. This may look simplistic, but it is more realistic than the fantasies used by the nuclear industry in their attempts to justify further subsidies.

There is some interesting psychology in our national response to the problems of electricity supply. Imagine that you had to invest £1000 on essential house maintenance. Would this need endless debates and Government intervention? £1000 is about what it costs to set up enough generating capacity on a wind farm to match, in the annual mean, the consumption of an average British household. Why don't we just do it?

Reference

James, I. N. (1994) *Introduction to circulating atmospheres*. Cambridge University Press

Dr Martin Juckes

Cowley,

Oxfordshire

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Advanced Met Training for Glider Pilots

Lasham Gliding Society (www.lasham.org.uk) is looking for an enthusiastic met. person to help set up and run advanced met training courses for its members on a professional basis.

Lasham is the largest gliding club in the country with good facilities and is located near Basingstoke in Hampshire. The club has around 600 friendly members who are keen to develop their understanding of the weather that affects soaring flight.

An interest in gliding would be useful together with a sense of humour, internet/pc skills and some course presenting experience. If interested please email Bruce Nicholson at jbrucenicholson@hotmail.com