The Oil Drum
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

More on the long term UK situation

Posted by Heading Out on November 29, 2005 - 5:53pm
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Since it is always useful to find numerical data, there is an interesting column in the Guardian, that cites some of the data on renewable energy and its relative contribution for the UK.

> The UK has an installed electricity-generating capacity of 77 gigawatts (GW). Demand for electricity peaks on winter evenings between 5pm and 7pm, when we use some 61.7GW. A recent report by Oxford University's Environmental Change Institute estimates that if we do everything possible to improve energy efficiency in the home and install mini wind turbines and small "combined heat and power" boilers, we could reduce our demand from big power plants by 25GW, or 40%, by 2050.

By making what appear to be reasonable assumptions he arrives at the conclusion that not only will there need to be some serious investment in renewable energy, but that there will also need to be a build in nuclear power if this target is to be met.

> if either the market or the government swung behind energy storage then something like half the output from our variable power sources could be turned into a reliable supply of electricity. That means 109,000GWh.
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> To this we could add 17,000GWh from willow plantations grown on the farmland currently under set-aside, 6,000GWh from farm and forestry waste, 6,000 from hydro power and 5,000 from landfill gas, to give a total for reliable electricity generation from renewables of 143,000GWh. Assuming very conservatively that this is evenly distributed across the year (in reality much of it can be held over to meet peak demand), and that at any one time 85% of it is available, this gives us 19GW of installed capacity. We needed 41.9GW, so our shortfall is some 23GW at peak demand and 34.8GW of total capacity. (The need for spare capacity could be greatly reduced if we managed demand rather than supply, as the great free thinker on energy systems Walt Patterson has suggested.)