



## Let Renewables Compete with Each Other – by Dan Lewis

It may come as a surprise to readers, but in spite of the Renewables Obligation Certificate (ROC), today's UK Renewable Energy market is anything but free. Riven with distortion and non-market-aligned subsidy, powerful lobbies have severely curtailed Britain's renewable potential. Lacking faith in competition, they look to the European model of massive government subsidies and central planning, at the expense of local choice and price-lowering competition. It matters because all Britain's political parties are committed to producing 10 per cent of our electricity from renewable resources – wind, solar, small hydro, biomass, wave and tidal, by 2010. But can it be done?

It is a huge increase from just under three per cent. Today, to put this in context, annually, the United Kingdom consumes on average some 35,000MW an hour equal to some 580W per person – very low by international comparison. But less than 200W are consumed at home. Allowing for increasing consumption of one per cent a year, the ability to meet peak demand in winter of up to 53,000MW without blackouts, the target is approximately an always available 6,000MW. So, on a pure numbers basis, how do the different renewables compare?

### Wind

Wind is the cheapest. Its true cost is hidden by subsidy, which in a level playing field it would not need. Although there have been many plausible aesthetic objections to windfarms, much can be done to change the framework of profit, ownership and planning to win local support. Ten per cent of Britain's electricity from wind would cost £13bn (18,000MW capacity due to 30-35 per cent

load factor) and would require 36,000 acres of land. At sea, though, much less space is required due to higher windspeeds. True, there will also have to be additional transmission investment that will cost approx £4bn. But that is about the same as the nearly £4bn the National Grid has invested since 1990 for existing fossil fuel and nuclear plant.

### Biomass

Energy crops – coppiced willow or miscanthus – grow quickly and are burnt to create heat and thus power turbines. But are they the farmers' last refuge?

To generate 10 per cent of electricity would require between three and 10M acres out of Britain's 60M. This seems highly unlikely. However, existing poultry manure and landfill-gas plants work well as the fuel is distributed over a small area, saving transport costs.

### Wave and tidal

Hydroelectric is very reliable, but almost all the best sites are now taken, mostly in Scotland. Refurbishment will be their best chance to increase output, usually by 10 per cent. Wave systems are still at the Research and Development stage, and will make no difference to 2010.

A Severn tidal barrage would add huge capacity (8,600MW) quite cheaply at £15bn, but initially may have to run at a high cost to shorten the payback period. Yet while it has been on the drawing board since 1923, environmental objections have waxed and its prospects have waned. Probably the best chance for expanding water power is with offshore tidal turbines – 300MW will be installed by 2010.

### Solar

Solar is the clear loser, so far. It currently costs six times more than wind and produces most of its electricity in summer when demand is low. UK electricity demand peaks in winter between five and seven pm. For the UK, solar has the lowest availability at 17 per cent and the equipment is not made here, but usually in Japan. Solar power is a typical example of how the technologically feasible is assumed to be economically viable.

If the different renewables are allowed to compete, the losers in the UK will be solar and biomass. Let the numbers determine the renewable-energy debate. Only then can renewables fulfil their potential. Government must drop costly bureaucratic grants to home- and community-generation plants. It is business that consumes most electricity. A system-neutral tax credit is the least interventionist pro-market solution and has been proven in America to add green power quickly. For Britain, cutting rather than raising taxes is the way to increase renewable capacity. Britain should also set a target date to end all energy subsidies.

The future for Britain is more energy, not less. The right competitive framework will ensure it is clean as well □

*Dan Lewis is author of 'Recharging The Nation – the challenge and cost of increasing renewable electricity generation' published by the Economic Research Council. For further details, visit: [www.ercouncil.org](http://www.ercouncil.org)*

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