

Reaping the wind and the waves

There has been a lot of talk about renewable energy sources but, in the UK, little action. But now wind and wave power is ready to be unleashed

If column inches supplied electricity, the entire country would be powered by renewable energy – the subject has generated a huge amount of newsprint over the last few years.

However, this is out of all proportion to the amount of power actually generated from renewable sources – government figures show that in 2006 just 4.55 per cent of electricity came from these sources. This proportion is worse than any other country in the EU except Malta and Luxembourg, says Leonie Greene of the Renewable Energy Association, and “it is pretty frustrating, especially when we have such good renewable resources.”

She compares the situation with Germany, a similar-sized economy that a decade ago had about 1 per cent of its energy generated by renewables – a similar level to the UK. Now,

Germany is up to about 8 per cent, while the UK total from wind, wave, solar and biofuels is just 3.5 per cent.

At the moment, renewables in the UK (excluding hydro, where the potential for growth is limited) is split between wind power and waste-to-energy projects. There’s a big push to increase offshore wind installation, with 558MW currently being built and a total target by 2020 of 25,000MW.

Fresh biomass capacity is also being installed rapidly but without much fanfare, says Angus McCrone, editor in chief at analysts New Energy Finance.

One example is Drax, the UK’s largest coal-fired power station, which plans to be using biomass to generate 10 per cent of its power by 2010, while a £350m woodchip burning power plant at Port Talbot is due to come on stream in 2011.

Wind power today

Projects	171
Turbines	1,972
Capacity	2,430 megawatts
Homes powered	1,358,550
Annual CO2 reduction	5,491,260 tonnes

Source: BWEA

Wind power



The wind power generation industry faces a number of barriers to expansion. “We are happy with the government’s commitment to wind power, but it will be very challenging to meet the offshore target,” says Peter Kruse, vice-president of Vestas, the Danish wind turbine maker. Demand for wind power is so strong around the world that there are bottlenecks at just about every stage of the process, from sourcing components such as gearboxes, to getting hold of the specialist ships used to install the turbines – there are just three purpose-built vessels in Europe.

As a result, says Mr Kruse, the UK will have to build more wind farms onshore – but here there are problems, too, most notably with the planning system. Gordon Edge of the British Wind Energy

Association says “the planning system is very tricky and makes it difficult to know when to order turbines – a real problem given that capacity is so tight. The EU’s target for 20 per cent of electricity to come from renewable sources by 2020 means the government has to get serious about this.”

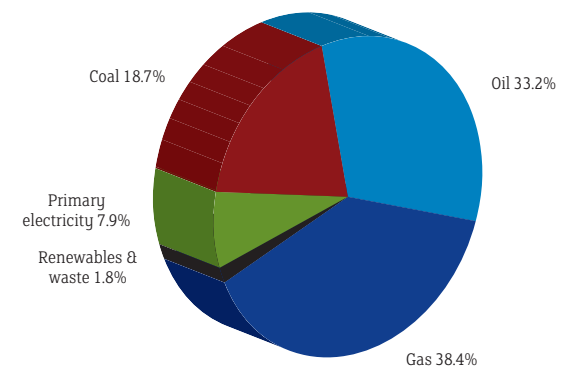
“The EU’s target for 20 per cent of electricity to come from renewable sources by 2020 means the government has to get serious about this”

It is a political issue, says Mr Kruse of Vestas. “Politicians have to stand by what they have agreed.” And, according to Vestas’ own data, while it has seen around 900 wind turbines installed or commissioned in the UK, it has similarly placed over 5,000 turbines in Germany. While Mr Kruse acknowledges that turbines should be installed in such a way

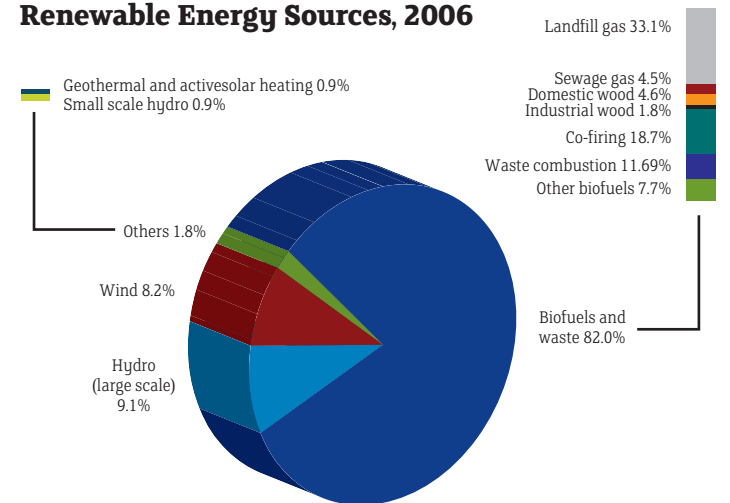
as to minimise the impacts, “turbines are not the only man-made structures on the landscape,” he points out.

While the Planning Bill currently going through Parliament should improve the approval rate of renewables projects, another major problem is the grid infrastructure – it is set up to deal with large power stations sited near the big cities that need power, while renewable projects are generally small-scale and sited a long way from where they are needed. Major structural reforms are needed to encourage more decentralised and smaller scale projects. Because project developers have to pay the costs of connection, many of the sites with the best wind or waves become economically unattractive – in some cases, connection costs can exceed the cost of the actual project. The REA wants the remit of Ofgem, the grid regulator, to be changed to make connecting renewable energy a priority. If not, the government “is effectively declaring that it would rather the demand for electricity be met by fossil-fired generation than new renewable generation,” the organisation told the government’s Transmission Access Review.

UK Energy Consumption, 2006



Renewable Energy Sources, 2006



TOTAL RENEWABLES USED = 4.43 MILLION TONNES OF OIL EQUIVALENT

Source: BERR