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## Report doubts future of wind power

**Luke Harding in Berlin, John Vidal and Alok Jha**

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Wind farms are an expensive and inefficient way of generating sustainable energy, according to a study from Germany, the world's leading producer of wind energy.

The report, which may have ramifications for the UK's rapidly growing wind farm industry, concludes that instead of spending billions on building new wind turbines, the emphasis should be on making houses more energy efficient. Drawn up by the German government's energy agency, it says that wind farms prove a costly form of reducing greenhouse gases.

It costs €41-€77 (£28-£53) to avoid emitting a tonne of carbon dioxide by using wind energy, the report says.

The study is likely to feed the bitter debate on whether Britain should continue to emulate Germany and dramatically expand its wind farm programme. Germany has the largest number of wind farms in the world, producing more wind energy than Denmark, Spain and the US put together.

The UK's wind power movement is the fastest growing in the world, with up to £10bn expected to be invested in the next five years, attracting government subsidies of roughly £1bn.

But more than 100 national and local groups, led by some of Britain's most prominent environmentalists, including David Bellamy, Sir Crispin Tickell, and James Lovelock, have argued that wind power is inefficient, destroys the countryside and makes little difference to Britain's soaring carbon emissions.

"At last. This report confirms what we have been saying," said Angela Kelly, director of Country Guardian, an umbrella group for the anti-wind-power lobby. "Wind power is three times more expensive than conventional electricity. It is a scandalous waste of taxpayers' money."

The report comes when the British government is promoting wind power as a means of getting 10% of energy need from renewables by 2010.

The German report estimates that it will cost €1.1bn to link Germany's existing wind farms to the national grid if it is to meet its target of producing 20% of its electricity from renewable sources by 2015.

About 800 miles of cables will have to be laid or upgraded, and power plants will have to be replaced or adapted to cope with the large fluctuations in wind-derived energy. This programme will cost each German household €16 a year, it says.

"Wind energy is expensive. That's true. You can't dispute it," Stephan Kohler, the

head of Germany's energy agency told the Guardian. "Conventional methods are cheaper. But you have to do both."

In the past 15 years Germany has constructed more than 15,000 turbines, half of them in the past five years. The number is due to double again by the end of the decade.

In November British and German ministers announced plans for cooperation on alternative energy development.

The 1,034 big turbines now running in Britain produce about 700MW of electricity - about as much as one conventional power station - but in the next seven years more than 7,000MW of generating power will be installed on 73 new farms.

Last year 22 onshore wind farms with a capacity of 475MW were built, but developers are increasingly moving to shallow water off the coasts. Altogether, 9,000MW of new wind power is planned to be installed by 2010, enough to meet the government's targets.

Critics of wind energy in Germany said it would be cheaper and more environmentally efficient to insulate old houses or to renew existing power stations.

"The problem with wind farms is that you have to build them in places where you don't need electricity. The electricity then has to be moved somewhere else," Klaus Lippold, a Christian Democrat opposition MP, said.

"There is growing resistance in Germany to wind farms, not least because of the disastrous effect on our landscape."

The German environment minister, Jürgen Trittin, of the Green party, hit back, saying that the "central parts" of the report vindicated his claim that an expansion of wind energy could be done quickly and cheaply. "There are no grounds for pessimism," he said.

Last year more than 10% of Germany's energy consumption came from renewable sources, a record.

Jim Footner of Greenpeace said the German study would inevitably be used by opponents of wind power as an argument against further investment. But he remained confident that wind power was the best option for Britain's energy needs.

"You can't energy-efficiency your way out of climate change," he said. "You need to have clean forms of energy generation, and wind power is the technology that's competitive, current and it's the one that's available now."

The British Wind Energy Association said it was wrong to compare wind energy in Britain and Germany.

"The UK has a far greater wind resource than Germany. The winds blow harder and therefore the economics of wind power in the UK will be better than those of our European neighbours", said Richard Ford of the BWEA.

The National Audit Office, reporting on renewable energies last week, said wind was

the most expensive way to fund carbon emission reductions in Britain. It gave a figure of £70-£140 a tonne of carbon saved - more than in Germany.

But it did not condemn wind, saying that a mix of renewable energies and energy savings was needed.

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