

Wind Power Report Shows Facts Instead of Myths

London, August 8, 2006 – ABS Energy Research's 2006 Wind Power Report details an eventful year in this sector of the renewable energy industry.

While generating capacity is up, solid new evidence suggests that some of the costs of producing electricity using the breeze sometimes mean that wind generation is not always unambiguously good. So are industry critics quoting facts or tilting at windmills?

The Report shows continued growth in wind power generating capacity. Capacity in this type of renewable energy increased by 11.3 GW in 2005 to reach a total of 59 GW. Germany is the world leader, with 31 percent of the world's installed capacity, followed by Spain, the USA, India and Denmark.

The big surprise among the five leaders was the recovery and surge in production in the USA after years of stagnation. Guaranteed production tax credits, valid for a three year period instead of annually as before have justified the new investment in renewable energy.

Growth is expected to continue. As the leaders consolidate and re-power smaller installations with larger turbines, the market is now widening and entering a new phase with many new countries entering the market for renewable energy resources, such as wind.

The most important findings of this report highlight studies that raise critical concerns challenging some of the claims made for wind power. Badly needed evidence is now available after three years of large-scale operation of wind turbines in five countries. In one such country, Ireland, the government placed a moratorium on wind power development, although this has been rescinded.

These studies are the first real evidence showing how wind actually works, as opposed to what has been claimed, and come from some of the most authoritative voices on energy in the world. Reports from E.On Netz, the system operator with the largest wind power feed-in in the world, and Eltra of Denmark, which had the largest percentage wind power contribution, show disturbing results.

E.On cites a study from the Deutsche-Energie Agentur. The report was sponsored by the German government and all sides of the industry. Among bombshells contained inside, the study suggests that while wind power capacity will reach 48 GW by 2020 in Germany, the source is so intermittent and unreliable that it is equivalent to only 2 GW of stable fossil fuel capacity.

The evidence also shows a mismatch of supply and demand. High-pressure weather systems bring cold winters and hot summers, which unfortunately coincide with low wind levels. These meteorological realities mean that wind makes its maximum contribution when demand is lowest and its minimum contribution when demand is highest. In 2004, wind accounted for 20 percent of total electricity production in Denmark but supplied only 6 percent of consumption, because it produced a surplus at periods of lowest demand. What's more, 84 percent of Danish wind-generated electricity was exported to Norway, and sold at a loss for Denmark. Furthermore, the Norwegian electricity system uses carbon free hydropower, so the effect of carbon reductions realized in power produced by windmills was nullified.

Also, because of this variability in wind, back-up fossil fuel plants must be operated at low load to maintain system reliability. There is new evidence that shows that switching base load fossil fuel plants on and off to balance a system produces higher carbon emissions than continuous operation, certainly not a supposed benefit from switching to renewable energy sources.

Because wind installations tend to be concentrated in areas with high wind speeds, regional grids are heavily overloaded at times of maximum feed-in. Each country studied reported extreme difficulties in balancing the grid. A further 2,700 km of costly high voltage transmission lines will be required in Germany to accommodate new wind capacity.

It is clear that wind-generated electricity can only work as part of a generation portfolio. The US Department of Energy advocates small local targets within states, most recently proposing targets of 100 MW in each of the 30 states, rather than the huge wind parks favored in Europe.

ABS Energy Research's report does not relegate wind power to the dustbin. But it does show how essential proper analysis is to establish what renewable energy can and cannot deliver and how it must be accommodated within a total electricity generation system. Objective analysis is essential. Nearly every one of the points described in the study has been labeled a "myth" by a lobby group.

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ABS Energy Research's extensive report was compiled through a comprehensive literature search, the help of the regulators and assistance from governments, energy organizations and metrological bureaus.

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