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The Wind Power Advantage

Special Report

Wind power is primarily a utility-scale technology, with hundreds of turbines arrayed in large "wind farms." And these wind farms offer a number of advantages over fossil fuel in powering the grid:

- Wind is a vast, free, and inexhaustible resource.
- Wind helps reduce our use of the primary fuels for grid power: natural gas, coal, and to a lesser extend, petroleum. Recognizing that all fossil fuels will peak within the next 20 to 30 years, and skyrockets in cost, it is important that we reduce their consumption as much as possible.
- Electric power from wind in most cases is already cheaper than power from coal and nuclear plants. Even locations that do not have adequate wind resources can benefit from wind generation elsewhere, which helps to hold down grid power costs overall.
- Once a turbine is erected, wind requires no fuel.
- Like solar and geothermal power, most of the costs are up front to build a wind system. After that, the maintenance and operations costs are minimal and predictable. Son financing wind-power projects can be low-risk compared to fossil-fueled plants, where the cost of the fuel is volatile and unpredictable, and thus an investment risk.
- Once in place, a wind farm creates no greenhouse gas emissions.
- Wind power needs no water. Traditional power plants of all kinds require significant amounts of water, as much as several billion gallons per day each, which is used in the condenser cycle to turn steam back into water. During hot summers, such as the 2006 heat wave in Europe, and periods of drought like the American Southeast experienced in 2007, power plants have been shut down due to lack of water.
- Wind power can be a large part of a diversified energy mix. The more diversified the supply, the better for energy security, by reducing conflict over energy resources and adding resiliency to the grid.
- Wind production is fairly predictable, so its costs are fairly steady. This helps to buffer the impact of volatile fuel costs.
- The wind industry is a major economic boost and a source of well-paying new jobs.

Like solar and geothermal resources, the available global wind resource is positively vast. According to the U.S. Department of Energy, wind could provide 5,800 quadrillion BTUs (quads) of energy each year – about 15 times the current global energy demand of roughly 400 quads.

The World Energy Council calculated in 2007 that using just 1 percent of the million gigawatts or so available "for total land coverage" with wind farms running at 15 to 40 percent of the time, wind power could supply all of the world's current electrical needs.

Offshore capacity is also enormous, enough for Europe to supply all of its electrical needs within 30 km off shore.

Of course, there is the issue of intermittency, which some have labeled as a major hurdle for wind development. But we simply look at it as yet one more opportunity to profit.. And that opportunity is utility-scale energy storage. You can read more about that **here**, in our free report, *Investing in Energy Storage.*

You can view the HTML version here: The Wind Power Advantage
