

A Message From the Special Issue Editor

Welcome to another special issue on wind energy. I extend my heartfelt thanks to the authors and reviewers who have made this issue possible. Obviously, we cannot have journal articles without authors, but it is easy for the authors and readers to overlook the contributions made by the reviewers who work in obscurity, devoting many hours of their time to ensure that the printed articles are of high quality. The reviewers are truly the unacknowledged cornerstone of every technical publication.

The papers included in this issue come from an international cast of authors and cover recent work in many different aspects of wind energy. Many of the papers come from the 2002 *ASME Wind Energy Symposium*. The other papers were submitted to *JSEE* throughout the year and happened to complete the review process in time to appear in this issue. Those of you who attended the symposium may notice that this issue contains none of the symposium aerodynamics papers dealing with attempts to analyze, understand, and/or match the turbine performance and loads data acquired during the NREL test of a turbine in the NASA-Ames wind tunnel in July, 2000. That is because my co-worker Paul Veers, who just happens to be the editor for another wind-energy journal, collected those for a special issue addressing those efforts. The organizers of the symposium should take this as a real compliment to the quality of their papers—editors from two wind journals are competing to publish those papers! I am implementing heightened security measures to ensure that future raids on “my” territory will be less successful.

I invite all of you to submit contributions—technical papers, technical briefs, discussion articles, or photographs with captions (*Solar Scenery*)—on any aspect of solar or wind energy to *JSEE*. If you would like to have your contribution appear in the wind energy special issue, please note that in your cover letter. Otherwise, it will normally appear in the first available, general-topic issue.

2001 was another banner year for wind energy around the world, with approximately 6770 MW of new capacity installed, for a worldwide total of 24,500 MW. That is an increase of 38% in a single year and a compound annual growth rate over the last decade of 27%! Germany added 2659 MW to bring the German total to 8753 MW (a 44% increase), and the U.S. added 1675 MW to bring the U.S. total to about 4300 MW (a 64% increase). 936 MW of the U.S. total, including the largest wind farm in the world, the King Mountain project, was installed in Texas (mainly southwest Texas). The 278 MW King Mountain project, owned and operated by FPL Energy, contains 214 Bonus 1.3 MW turbines and generates enough energy to power about 39,000 homes. Other major U.S. developments included Trent Mesa (150 MW), Indian Mesa II (160 MW), and Woodward Mountain (160 MW) in Texas, and the Stateline project (261 MW) on the Oregon/Washington border. This construction in southwest Texas has loaded the grid there to its full capacity—many of these new wind farms operate under production curtailment nearly all of the time, so do not expect to see much additional development in that area in the near future. In fact, grid capacity limitations may well restrict wind development over the next few years for many locations throughout the U.S. In most cases, grid capacity improvements will take several years to implement. Many thousands of MW of wind development are on the planning boards throughout the U.S., so I would expect to see continued healthy development over the next several years, but I doubt that the 2001 level will be surpassed in the near future.

On the other side of the Atlantic, the onshore market in both Denmark and Germany is rapidly saturating. The future of wind throughout Europe appears to lie in large-scale development of offshore wind farms, now in the planning stages for many European countries. At this time, the world’s largest offshore development is the 40 MW Middelgrunden wind farm, shown on the cover of this issue, which went on-line in 2001. It will not remain the largest for long—that title will soon pass to the 160 MW Horns Rev development, located in the North Sea about 15 km west of the Danish coast, that is now under construction and is scheduled for completion later this year.

Although wind’s contribution to Danish electrical generation is about 17%, its contribution to the worldwide generation remains much, much less—about 0.32% (but growing) at this time. Nevertheless, wind is becoming big business and its continued growth is attracting the attention of many companies, some of them very big players. Last year I mentioned that Shell Oil had recently announced that it intended to become a major player in the wind power industry. Shell Oil’s subsidiary, Shell WindEnergy, has been actively pursuing that goal over the past year. WindEnergy now owns 80 MW of wind in northern Texas, 41 MW in Southern California, and 50 MW in Wyoming, and they are engaged in developing or operating an additional 1000 MW in the U.S. and Europe, according to the American Wind Energy Association. Meanwhile, GE, the largest corporation in the world, has re-entered the wind arena with the purchase this spring of Enron Wind, a healthy subsidiary of troubled former energy giant Enron. The former Zond Systems is now GE Wind Energy, a part of GE Power Systems, the leading supplier of power generation technology in the world. In addition, *WindPower Monthly* reports that major British-based international engineering conglomerate FKI plc has recently entered the wind industry by purchasing German turbine manufacturer DeWind. It will be interesting to see what impact these large companies will have on the wind-energy industry.

In closing, I would like to express my thanks to *JSEE* Editor Jane Davidson for the contributions she has made to the journal since she took over the position in 1999. At that time, the paper backlog was so low that she faced a real challenge in getting any papers for the first few issues. Now, just three years later, the backlog has grown to the point where Jane’s concern is publishing more papers in each issue to avoid paper publication delays. Jane challenged both new and experienced Associate Editors to solicit papers, streamline the review process, and publish special issues. She has added Discussion papers and Solar Scenery features to the journal and has refined the dual-review process as a way to speed conference papers into Journal publication. Jane and her assistant, Stephanie Clark, continually track the reviews of each Associate Editor and provide great support for those Associate Editors. Under Jane’s dynamic leadership, *JSEE* has grown from 25 papers and 212 pages in 2000 to an estimated 52 papers and 400 pages in 2002. Thanks to Jane, the future for the *Journal of Solar Energy Engineering* is looking bright.

Dale E. Berg
JSEE Associate Editor (Wind Energy)
Sandia National Laboratories
Albuquerque, New Mexico