

# 2011 Wind Turbine Reliability Workshop

(August 2-3, 2011— <http://windpower.sandia.gov>)

*Operations-Driven Reliability and the Journey to Excellence:  
How Quality, Data and Prioritization Benefit Operations and  
Maintenance*

## Sessions

### **The National Perspective: Executive Leadership Acting to Improve Wind Plant Reliability**

*As a dynamic wind turbine market matures reliability is more important than ever. Leading executives will set the stage for the necessary ingredients for continued progress. National programs, regulatory frameworks, market forces and the role for R&D supported by data analysis will build the foundation for an in-depth workshop on having a US fleet of wind plants dependably generating an enlightening future.*

### **The Grid Connection: The 3 R's of Wind and the Grid: Redefining Wind's Role in Reliability of the Nation's Largest Machine (moderated by Charlton Clark)**

*The reliable and expeditious delivery of wind energy to customers across the US presents a challenge. Wind penetration levels of 20% or more will necessarily require an infrastructure that accepts and delivers the energy into appropriate market structures. Transmission will be key and access to highly energetic wind resources and access to load centers, while balancing other generation assets, is and will be a challenge.*

### **Innovative Manufacturing and Supply Chain Concepts: Panel, How to Balance Novel Component Designs and Still Ensure Reliability**

*From design to market is a considerable undertaking. With the investment of millions of dollars, how do R&D, standards, testing and certification all come together to advance technology and simultaneously deliver quality and reliability? A panel of wind turbine OEMs will address these questions and more as they share insights on qualification of suppliers and the "adjacent space" of R&D.*

## **Operations and Maintenance: Panel, Sustaining Operations for Sustainable Systems**

*Managing wind plants poses the logistical challenge of operating many gigantic, complex, electricity generating devices and collecting the output energy for seamless integration into the utility system. About half of the plants are still under the manufacturers warranty and operators will share their reliability observations ranging from the practical to analytical.*

## **What's happening with the Major Components? Looking at the Source of Turbine Reliability**

*The major components are the organs of the turbine system. Their effectiveness drives expectations for turbine efficiency and power performance. The DOE has partnered with industry to address these issues through specific program efforts.*

## **Electrical systems: Getting the Most out of Generators, Power Converters, Controls**

*These components convert the energy into useable electricity and interconnect the plant to the grid. This session will address the electrical systems, their importance, and operational issues.*

## **Data to Information to Profits: Information Hierarchy as Applied to Wind Plants -- Reliability Analysis from Data Collection**

*Frequency, duration, and consequence of events (how often, how long, how much) are key to establishing baseline statistics for reliability performance. Discussions will investigate not only how to feed critical information to improve operations, but also how to guide technology improvement efforts.*