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## Highlights

- Lower costs through increased predictive maintenance
  - Minimize downtime and unplanned repairs
  - Improve visibility and control of wind operations by applying industry standards to aggregate data from multiple turbines into a single view
  - Increase revenue through improved turbine availability and wind farm production
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## IBM Wind Power Suite

Wind power is fast becoming a game-changer worldwide. In the U.S., the wind power business is increasing total capacity by 30 - 50 percent annually, putting it on a trajectory to generate 20 percent of the nation's electricity by 2030.\* Wind farm operators need a way to integrate data from different turbine manufacturers into a standard format for real-time analysis and an overall view of their farm operations.

### Standardized, single-view asset management

Demand for wind turbines has outpaced their production, and owners are forced to order from multiple vendors. The multivendor wind farm is likely to remain the norm in this fast-growing industry. Each vendor/supervisory control and data acquisition (SCADA) system has its own protocol and representation. Data is typically conveyed as flat tags that have little semantic meaning.

As the number of turbine controller/SCADA systems increases, the ability to understand the notations of the aggregate becomes overly complicated. Sometimes the same type of measurement, provided by different systems, has different units of measure, which further complicates integration and the overall business process.

The IBM® Wind Power Suite provides asset management capabilities to deliver a smart solution for today's wind farm operations. Using digital technology, intelligent sensors and analytics tools, the IBM Wind Power Suite allows wind farm operators to monitor, maintain, analyze and improve their equipment and asset performance in real time.



Utilizing a service oriented architecture (SOA) platform and the IBM Solution Architecture for Energy (SAFE), the IBM Wind Power Suite integrates available operating and maintenance data from supervisory control and data acquisition (SCADA) systems, real-time historians and maintenance management systems to turn data into actionable information. This allows operators to reduce time spent correlating data across disparate applications. Because the IBM Wind Power Suite applies industry standards to aggregate data into a single comprehensive view, the standardized format makes it easier for energy producers to make strategic decisions, track key performance indicators, identify trends and predict equipment breakdowns.

### Instrumented, interconnected, intelligent

In virtual and real-world wind farms, IBM has demonstrated how the IBM Wind Power Suite can turn a conventional wind farm into a smart farm that runs more efficiently and profitably. Turbines are instrumented with sensors and are monitored with IBM Cognos® Now! In a typical scenario, field data from instrumented turbines is interconnected into a comprehensive data repository using the SISCO Utility Integration Bus (UIB) adapter. If abnormal readings occur, alerts can be directed immediately to operators who utilize the OSIsoft PI System to begin a troubleshooting process that results in notification to the wind farm maintenance team. IBM Maximo® asset management software then notifies a technician of the service request and a work order is created and planned. Finally, the @hand Field Mobility System (FMS) allows the technician to use a global positioning system-equipped field device to find the correct turbine, diagnose the condition, repair it and coordinate with operations to return the turbine to service.

### Conclusion

IBM is a leading innovator in asset management solutions and has pioneered efficiency solutions for the energy and utilities industry, including wind, on a global basis. We can help you manage all of your farm assets and business processes in one solution that can adapt to your changing farm needs and help protect your investment.

### For more information

To learn more about IBM Wind Power Suite, please contact your IBM representative or IBM Business Partner, or visit: [ibm.com/energy](http://ibm.com/energy)



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\*American Wind Energy Association, 2008: Another Record Year for Wind Energy Installations, and the American Wind Energy Association Annual Wind Industry Report, 2008.



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