

Wind Energy Opportunities at Sandia

Energy, Climate &
Infrastructure Security

In order to reduce the cost of wind energy, Sandia seeks to expand the nation's knowledge base and capability in the design and advancement of composite wind turbine blades and turbine reliability.



By partnering with universities and industry, Sandia works to advance the state of knowledge in the areas of materials, structurally efficient airfoil designs, active-flow aerodynamic control and sensors.

Sandia's Wind Energy Program

Sandia National Laboratories conducts applied research to increase the viability of wind technology by improving wind turbine performance and reliability and reducing the cost of energy. Sandia specializes in all aspects of wind turbine blade design, manufacturing and system reliability.

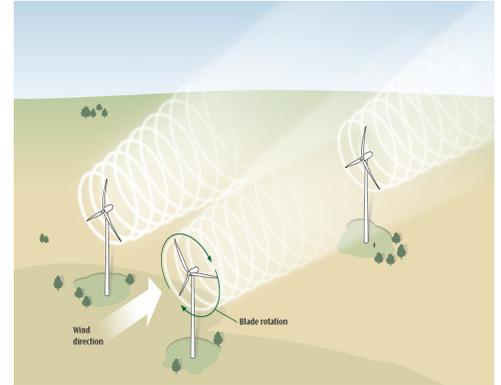
Turbine Coatings and Radar Testing

Sandia has a number of emerging partnership and collaboration opportunities in the area of wind energy technology as it relates to radar testing. Currently, radar systems cannot easily discriminate between turbine blade movement and similar movements that might indicate a threat to aviation safety. In order to mitigate this significant problem, Sandia is actively developing technology options to reduce the reflectivity of wind turbines.

With a focus on rotors, Sandia is identifying materials and coating mitigation options for pre- and post-manufactured blades. Leveraging technology developed from other applications, this technique layers specialized coatings to mitigate radar cross sections and reduce radar interference. As these innovative techniques are refined and matured, they will require further manufacturing and testing in the industrial sector in order to be fully realized and made commercially available.

Advanced Wind Energy Projects Test Facility

Sandia's wind energy test facility, located near Texas Tech University in Lubbock, Texas, supports advanced wind energy projects. Although the facility will be primarily used to perform experimental work in turbine-to-turbine interactions and to evaluate innovative rotor technologies, it can also be used to investigate areas such as aero-acoustics, aero-



elasticity and structural health monitoring using embedded sensor systems.

Considered a class five wind research site, the facility's year-round energetic winds are ranked as the most preferred wind conditions for research and harvesting energy. Ultimately, this facility could allow researchers to examine how individual turbines and whole wind farms can become better 'citizens of the grid,' as well as how to increase productivity and collaboration. Additionally, direct pathways for technology transfer to industry are expected to result from the participation of Group NIRE in the facility's operations.

Commercialization Path

Sandia looks forward to contracting with companies and research institutions to assist them with testing their ideas for new novel technologies. In addition, Sandia seeks partnerships to jointly explore new technologies by making proposals to DOE or other funding agencies.

Please contact David Minster, manager of Sandia's Wind Energy Technologies group, for more information.

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