



# **Improved Tools for Wind Resource Assessment with Remote Sensing Sodar Device**

**Cooperative Research and  
Development Final Report**

**CRADA Number: CRD-09-363**

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## Cooperative Research and Development Final Report

In accordance with Requirements set forth in Article XI, A(3) of the CRADA document, this document is the final CRADA report, including a list of Subject Inventions, to be forwarded to the Office of Science and Technical Information as part of the commitment to the public to demonstrate results of federally funded research.

**Parties to the Agreement:** Second Wind, Inc.

**CRADA Number:** CRD-09-363

**CRADA Title:** Improved Tools for Wind Resource Assessment with Remote Sensing Sodar Device

### **Joint Work Statement Funding Table Showing DOE Commitment:**

<b>Estimated Costs</b>	<b>NREL Shared Resources</b>
Year 1	\$ 52,800.00
Year 2	\$ 65,000.00
Year 3	\$ 50,000.00
TOTALS	\$ 167,800.00

### **Abstract of CRADA Work:**

Under this Agreement, NREL will work with the participant to characterize wind resource assessment measurement systems needed for the design, construction, and integration of wind energy conversion systems to produce electricity for utility grid applications. This work includes, but is not limited to, research and development of hardware and software systems needed to advance wind energy resource assessment technology at speed and scale for use by electric utilities and wind power system integrators.

### **Summary of Research Results:**

A Second Wind Triton sodar system was deployed at the National Wind Technology Center (NWTC) for testing. The sodar was compared to the meteorological towers at the NWTC. During the 2-year stay at the NWTC the sodar was upgraded and used to test new software and hardware. Data from the sodar was also used to support field campaigns at the NWTC, including the Turbine Wake and Inflow Characterization Study (TWICS) led by Prof. Julie Lundquist of NREL and the University of Colorado at Boulder, in collaboration with Lawrence Livermore National Laboratory and the National Oceanographic and Atmospheric Administration. In addition, Vaisala (Second Wind) conducted internal instrument performance tests for environmental effects and signal characteristics utilizing the NWTC test tower data over the past three years.

**Subject Inventions Listing:** None

**Report Date:** 2/2/15

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