

Announcement of a Cooperative Research and Development Agreement Opportunity for the Research and Development of Systems and Components for Utility-Scale Wind Turbines and Ocean Energy Technology¹

Description

The U.S. Department of Energy (DOE), through the National Renewable Energy Laboratory (NREL) and Sandia National Laboratories (SNL), is seeking companies or organizations interested in entering into a research and product development partnership. The motivation for this partnership is to support the U.S. wind industry's development of more reliable and higher performing wind turbines for the land-based bulk power market in all wind classes. Additionally, this effort will seek technology solutions that would improve wind turbine capacity factor and firm wind generated electricity. DOE is also seeking proposals for partnerships to support the development of ocean energy technology and will provide laboratory-based testing and engineering assistance. This effort is subject to congressional appropriations in fiscal year 2008 for an Ocean Energy Program. Interested parties should respond to this Cooperative Research and Development Agreement (CRADA)² announcement with a proposal by November 5th 2007.

Background

Reducing barriers to the expansion of wind and ocean energy is an important goal for the DOE Wind and Hydropower Technologies Program.

¹ Subject to FY08 Congressional Appropriations for an Ocean Energy Program

² NREL CRADA model agreement terms and conditions can be accessed at <http://www.nrel.gov/wind/news/2007/522.html> and more information on CRADA's at <http://www.nrel.gov/technologytransfer/cradas.html>



Wind Turbine Drive Train Under Test at the NWTC 2.5-MW Dynamometer Test Facility

One large wind turbine market barrier is rising costs driven by increasing commodities, exchange rates, and full production capacities. Technology improvements in reliability and performance are required to reduce the cost of, and thus the cost of energy from, wind energy systems. This effort hopes to expand on the Wind Program's activities in these areas.

Modern ocean energy generators are still relatively immature technologies. Activities to further understand and develop these emerging energy technologies will allow for greater deployment and contribute to an improved scientific understanding.

Objective

The objective of this CRADA solicitation is to make laboratory based resources available to companies or organizations interested in the further development of large wind turbine systems or components and investigation of ocean energy technologies. The CRADA targets research and

development on components and systems that could be incorporated into commercially available land-based wind turbine architectures to improve industry market success in the near future and to accelerate deployment by increasing turbine capacity factors, firming wind generation and improving dispatchability. The program will not consider solicitations that focus development efforts on offshore or low wind speed technologies. In addressing ocean energy technologies the program hopes to support product improvement at a commercial or pre-commercial level.

Partners selected for CRADAs will receive technical assistance and/or testing services from NREL/SNL.

Although not defined specifically, possible areas of assistance include:

- Testing of systems or components
- Analysis of systems or structures
- Development, modification, and/or use of analysis codes
- Data gathering on turbines or components
- Aerodynamic, hydrodynamic, and other analysis



- Design or technical system review
- Other technical support

Up to six awardees will be selected during the first phase of this CRADA. DOE will contribute testing, laboratory support, or other technical assistance in the total amount of \$1,000,000. The resources committed by the company or organization must be equal to or greater than the value of the assistance provided by DOE. If assistance over the DOE funded amount is required, it will be provided by the requesting party as payment for services provided to NREL or SNL. The duration of each CRADA project is expected to be less than two years from the time of the award.

NREL is the nation's primary laboratory for renewable energy and energy efficiency research, development, and deployment and works closely with SNL. SNL's primary renewable energy research has been focused on wind and PV technology development. Further information regarding the facilities and services provided by NREL's National Wind Technology Center and SNL's Wind Energy Technologies Program can be found at www.nrel.gov/wind/ and www.sandia.gov/wind/.

The program will work with CRADA recipients to apply a program defined technology pathways analysis methodology to document the performance and other improvements that result from the collaborative effort.

Intellectual Property and Proprietary Data Security

DOE, NREL, and SNL respect the importance of corporate intellectual property and data security while balancing the need to document the benefits of public expenditures. Provisions relating to proprietary information and intellectual property are set forth in the CRADA.

Proposal Preparation

CRADA proposals should be submitted by 4:00 p.m. Mountain Time, November 5th. CRADA

proposals submitted thereafter may be considered if suitable CRADA collaborators are not selected from among the timely responses. Final negotiations of CRADA agreements, terms, and conditions will be completed after initial discussions have concluded. The proposal and inquiries should be directed to:

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National Renewable Energy
Laboratory, MS3811,
1617 Cole Blvd., Golden, Colorado
80401-3393.
303-384-7021
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If necessary, new information regarding this CRADA announcement will be posted at <http://www.nrel.gov/wind/news/2007/522.html>.

Proposals should be limited to 10 pages and should include the following components:

- Identification of partners, a description of their qualifications, experience, and contributions to the partnership, and letters of commitment.
- Summary description of the problem or issue to be addressed and the general methodology for approaching a solution.
- Delineation of expected DOE/laboratory resources requested, including proposed work areas, staff time and/or testing needs.
- Budget including expected person hours and needed equipment development activities.
- Expected performance increase; reliability, operability, or manufacturability improvement; or other benefit and the expected cost of energy reductions based on the improvement undertaken.
- Approach to market introduction for the specific products/components being developed/refined.
- Statement of why the required support cannot be obtained from private sector sources.

CRADA proposals should also include: the names, addresses, telephone numbers, facsimile numbers, and email addresses of the primary contact person. Single page résumés of key project participants and a company profile should be included but are not counted in the 10 page maximum proposal length.

Proposal Evaluation

CRADA partnerships will be selected by NREL, SNL, and DOE. The primary criteria used to evaluate submissions will be:

Technical Criteria:

- The potential impact of the proposed work in terms of overall cost reductions, performance improvements, increased capacity factors and firming of the output from wind systems.
- The potential to lead to technology and science advancements in ocean energy systems, and their likelihood they will provide new or improved commercially available systems.
- The ability of DOE, NREL, and SNL to provide the services requested, and the relevance of the work to supporting DOE objectives and goals.
- The likelihood that the successful completion of the project will lead to technology improvements and result in commercial products.

Programmatic Criteria:

- Level of support requested from the laboratories.
- Likelihood of near-term market introduction.
- Importance of technology development to general market acceptance.
- Distribution of laboratory support among companies and technical approaches.
- Alignment of proposed work to stated DOE priorities.³

³ Wind Energy Program Multiyear Program Plan 2007 - 2012 - www.nrel.gov/docs/fy07osti/40593.pdf

