

**FINANCIAL ASSISTANCE  
REQUEST FOR INFORMATION**



**U.S. Department of Energy  
Office of Energy Efficiency and Renewable Energy**

**Manufacturing and Supply Chain Barriers and Opportunities for  
Wind Technologies**

**Request For Information: DE-FOA-0000929  
CFDA Number: 81.087**

**Issue Date: 05/21/2013**

**Closing Date: 06/30/2013, 5:00 PM Eastern Time**

**Responses Submitted to: [MSC@go.doe.gov](mailto:MSC@go.doe.gov)**

This is a Request for Information (RFI) only. DOE will not pay for information provided under this RFI and no project will be supported as a result of this RFI. This RFI is not accepting applications for financial assistance or financial incentives. DOE may or may not issue a Funding Opportunity Announcement (FOA) based on consideration of the input received from this RFI.

### **Program Area:**

Wind and Water Power Technologies Office (WWPTO), Office of Energy Efficiency and Renewable Energy (EERE), U.S. Department of Energy (DOE)

### **Requested Information Topics:**

The Department of Energy (DOE) seeks input from the public related to the manufacturing and supply chain for both land-based & offshore wind turbines. Improvements in manufacturing processes could significantly improve the viability of next-generation turbines and reduce the levelized cost of energy (LCOE) for these technologies, as well as increase U.S. competitiveness in clean energy technologies. DOE seeks to improve these areas and is requesting information to identify the most promising investment opportunities based on industry needs. Please see ***Requested Information*** below for a list of specific questions related to this topic area.

### **Wind and Water Power Technologies Office Background:**

The WWPTO is within the Department of Energy's Office of Energy Efficiency and Renewable Energy. The WWPTO's mission is to focus the passion, ingenuity, and diversity of the nation to enable rapid expansion of clean, affordable, reliable and domestic wind and water power to promote national security, economic vitality and environmental quality. To find more information about the WWPTO, please visit the [Wind Power Program \(http://www1.eere.energy.gov/wind/\)](http://www1.eere.energy.gov/wind/) and [Water Power Program \(http://www1.eere.energy.gov/water/\)](http://www1.eere.energy.gov/water/) websites.

### **Request for Information Guidelines:**

**PURPOSE:** The information collected by this RFI will be used for market baseline information and internal DOE planning. Interested parties to this RFI might include, but are not limited to original equipment manufacturers (OEMs), developers, state development agencies, and suppliers in the Wind markets. The sole purpose of this Request for Information (RFI) is to gain public input regarding manufacturing challenges and opportunities for land-based and offshore wind technologies.

**DISCLAIMER AND IMPORTANT NOTES:** This is an RFI issued solely for information and program planning purposes; this RFI does not constitute a formal solicitation for proposals or abstracts. Your response to this notice will be treated as information only. In accordance with the Federal Acquisition Regulations, 48 C.F.R. 15.201(e), responses to this notice are not offers and cannot be accepted by the Government to form a binding contract. DOE will not provide reimbursement for costs incurred in responding to this RFI.

**PROPRIETARY INFORMATION:** Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, may be included in responses to this RFI. The use and disclosure of such data may be restricted, provided the respondent includes the following legend on the first page of the response narrative and specifies the pages of the response which are to be restricted:

“The data contained in pages \_\_\_\_\_ of this response have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for information and program planning purposes. This restriction does not limit the government’s right to use or disclose data obtained without restriction from any source, including the respondent, consistent with applicable law.”

However, DOE urges all submissions to be free of business-sensitive, proprietary, or otherwise confidential information as it cannot guarantee that it will be able to withhold this type of information from the public.

**RFI GUIDELINES:** This RFI does not constitute a solicitation for specific project proposals. Responses to the RFI will be treated as informational only and will not be viewed as a binding commitment for the respondent to develop or pursue the project or ideas discussed. This is not a Funding Opportunity Announcement (FOA) and DOE is not accepting applications for financial assistance or financial incentives under this RFI. DOE may or may not decide at a later date to issue a FOA or other type of solicitation based on consideration of the input received from this RFI, but there is no guarantee that future funding opportunities or other activities will be undertaken as a result of this RFI. Because information received in response to this RFI may be used to structure future funding opportunities and/or may otherwise be made available to the public, respondents are strongly advised to not include any information in their responses that might be considered business-sensitive, proprietary, or otherwise confidential. If, however, a respondent chooses to submit business-sensitive, proprietary, or otherwise confidential information, it must be clearly and conspicuously marked as such in the response pursuant to the instructions above.

In order to avoid any possible conflict with future funding opportunities, DOE will not reply to any respondent questions or contacts received after the closure of the submission period for this RFI. Respondents are advised that DOE is under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this RFI. Responses to this RFI do not bind DOE to any further actions related to this topic. DOE thanks you for your assistance and input.

**EVALUATION AND ADMINISTRATION BY FEDERAL AND NON-FEDERAL PERSONNEL:** Federal employees are subject to the non-disclosure requirements of a criminal statute, the Trade Secrets Act, 18 USC 1905. The Government may seek the advice of qualified non-Federal personnel. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The respondents, by submitting their response, consent to DOE providing their response to non-Federal parties. Non-Federal parties given access to responses must be subject to an appropriate

obligation of confidentiality prior to being given the access. Submissions may be reviewed by support contractors and private consultants.

**RFI RESPONSE INSTRUCTIONS:** Responses to this RFI must be submitted electronically to [MSC@go.doe.gov](mailto:MSC@go.doe.gov) by 5:00 PM Eastern Standard Time on June 30, 2013. Responses should include: cover page, 1 page executive summary, and up to a 5 page full response. Responses must be provided as attachments (in Microsoft Word or Adobe PDF Format) to an email. The subject line should read "Manufacturing and supply chain barriers and opportunities for wind technologies (insert name-organization)." One inch margins and 12 point font should be used. Please indicate the questions being addressed (e.g., Section A.1. or Section B.2.). Questions regarding the content of this RFI must be submitted to the email address provided above with the email subject line "Question". Respondents are requested to include the following information in their responses to this RFI: Company/institutional name; individual contact (mailing address, phone number, e-mail address); facility location(s) (zip code); and area of expertise/interest. The WWPTO recognizes that all listed questions may not be applicable to all respondents, and respondents may provide responses to all or a portion of the RFI questions. WWPTO requests that respondents focus only on the questions for which they can provide concise information.

**Requested Information:**

DOE-EERE WWPTO invites comments and suggestions on all aspects of manufacturing and supply chain for land-based and offshore wind. Responses may address, but are not limited to, some or all of the questions and subject areas listed in the following table:

#	Targeted Audience	Question(s)for Comment By Respondents:
1	All	U.S. wind manufacturing competitiveness is determined by a mix of factors, some of which include labor costs, transportation distances, and the ability to manufacture to prescribed quality standards. How could DOE best support or enhance domestic wind manufacturing competitiveness?
2	All	What new or enhanced wind energy equipment manufacturing processes will require government investment to fully realize their potential to positively impact wind energy cost and/or performance? Broad examples of topics that could be addressed in responses include additive manufacturing, automation, and increased carbon fiber usage in blades.
3	OEMs, developers, suppliers	<p>One of the main drivers of cost reduction in the industry to date has been scaling up of turbine size. However, while larger turbines continue to be developed, primarily for the offshore market, growth in height and ratings of land-based turbines has been leveling off due to a mix of regulatory, logistics/ transportation, and manufacturing constraints stemming from the size and weight of larger system components.</p> <ul style="list-style-type: none"> <li>a) Which specific advances or innovations in manufacturing techniques or processes could address the barriers to larger wind turbines (e.g. self-erecting towers, segmented blades, modular generators, on-site manufacturing, etc.)?</li> <li>b) What technology development or refinement areas related to component manufacturing is your company supporting?</li> <li>c) How would you characterize the potential value to the industry of specific public/private R&amp;D partnerships or testing initiatives that DOE might facilitate to pursue such innovations?</li> <li>d) Regardless of the funding sources, how would you characterize the logical steps required in these types of development initiatives, and the rough costs of carrying out each of them? Key steps could include, for instance: technical concept, detailed engineering, modeling and simulation, proof of concept fabrication and testing, or full-scale prototyping.</li> </ul>
4	OEMs	<p>Market analysis at Lawrence Berkeley National Lab (LBNL) suggests that the U.S. wind market has become increasingly domestic, increasing from roughly a nationwide 1/3 to 2/3 of total component value within the past six years.</p> <ul style="list-style-type: none"> <li>a) As an original equipment manufacturer (OEM), what domestic content (as a percentage) ranges do you typically see for your U.S. installed turbines?</li> <li>b) How have those values trended over time, and what do you see as the primary drivers of change?</li> <li>c) What remaining components are the most difficult to source in the U.S., and why?</li> </ul>

5	OEMs, suppliers	<p>As a US wind industry supplier,</p> <ul style="list-style-type: none"> <li>a) Have you identified opportunities to export your wind system components to international markets?</li> <li>b) If so, which components (gearboxes, blades, towers, etc.) demonstrate the greatest potential for export and to which global region(s)?</li> <li>c) Are these opportunities small or large relative to your current business volume?</li> <li>d) What market-related, logistical, technical or regulatory barriers do you feel prevent you from being better able to serve international markets?</li> <li>e) What specific activities could federal or state agencies support in partnership with industry to help realize or maximize export opportunities?</li> </ul>
6	OEMS, blade suppliers	<p>As a blade designer or manufacturer,</p> <ul style="list-style-type: none"> <li>a) Do you feel that modular, segmented blades could prove to be a viable industry solution in addressing transportation and installation constraints, as well as the increased costs of very long (&gt;80m) blade molds?</li> <li>b) Is there an opportunity to use a common root section mold with a variety of blade tip variants, such as extended lengths for lower wind class sites, or pre-bent for tower clearance?</li> <li>c) To what extent could these types of innovations expedite introduction of a suite of next-generation blades, while also facilitating cost savings in molds, and from the benefits of process refinements for optimized/standardized blade root sections?</li> </ul>
7	OEMs, blade suppliers	<p>As a blade designer or manufacturer,</p> <ul style="list-style-type: none"> <li>a) How significantly do you feel existing manufacturing tolerances impact operational performance?</li> <li>b) How well characterized are the impacts of blade manufacturing variations on aerodynamic performance and response to structural design loads?</li> <li>c) As both land-based and offshore blades continue to lengthen, do you expect issues of manufacturing conformity to become more important to the industry?</li> <li>d) Are there general research areas or specific technical issues related to manufacturing tolerances that DOE could help address through research partnerships for the benefit the entire industry?</li> </ul>