

U.S. DEPARTMENT OF
ENERGY

Office of
ENERGY EFFICIENCY &
RENEWABLE ENERGY

WINDEXchange and Regional Resource Centers (RRCs) M13

Ian Baring-Gould

NREL



FY17-FY18 Wind Office Project Organization

“Enabling Wind Energy Options Nationwide”

Technology Development

Atmosphere to Electrons

Offshore Wind

Distributed Wind

Testing Infrastructure

Standards Support and International
Engagement

Advanced Components, Reliability, and
Manufacturing

Market Acceleration & Deployment

Stakeholder Engagement, Workforce
Development, and Human Use Considerations

Environmental Research

Grid Integration

Regulatory and Siting

Analysis and Modeling (cross-cutting)

Project Overview

M13: WINDEXchange and Regional Resource Centers

Project Summary

- WINDEXchange and Regional Resource Centers (RRCs) are DOE's stakeholder engagement and outreach efforts. These efforts are focused on creating and disseminating credible and fact-based information about wind energy, which can be used by decision makers considering future wind energy deployments.

Project Objective & Impact

- There continues to be significant information gaps and misconceptions about wind energy among community members, decision-, and policy-makers. This can cause delays and increased project costs, potentially inhibiting the development of viable projects in key resource areas.
- Through access and dissemination of information to target stakeholders, WINDEXchange and the RRCs provide access to information and tools that can assist them in appropriate and responsible deployment of wind energy.

Project Attributes

Project Principal Investigator(s)

Ian Baring-Gould
Corrie Christol
Eric Lantz
Jeremy Stefek

DOE Lead

Maggie Yancey

Project Partners/Subs

Regional Resource Centers
High Desert Technical Communications
International Energy Agency
Lawrence Berkeley National Laboratory
National Association of Farm Broadcasters

Project Duration

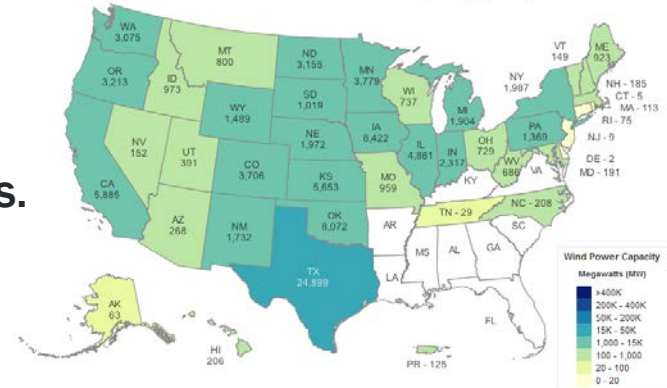
FY 2000 – FY 2018;
Merit Review FY2019

Technical Merit and Relevance

What is the problem?

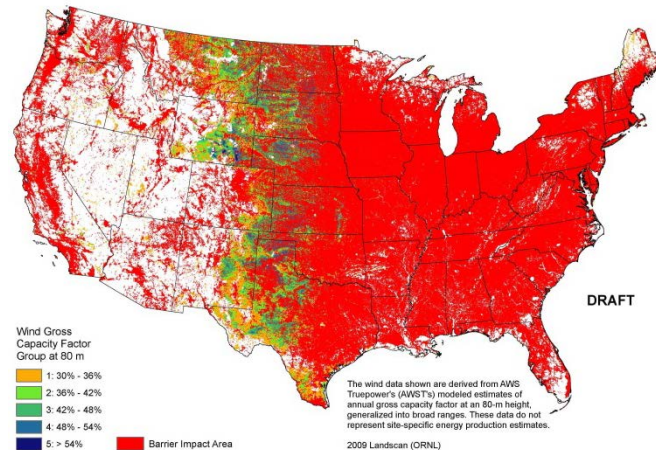
- As the easy-to-deploy sites are developed, developers will look to locations facing more deployment barriers, increasing development costs.
- Without credible sources of information, more initiated projects will be unsuccessful as project opponents propagate inaccurate information.
- DOE, NREL and associated organizations are seen as credible sources of un-biased information.

2018 Installed Wind Power Capacity (MW)



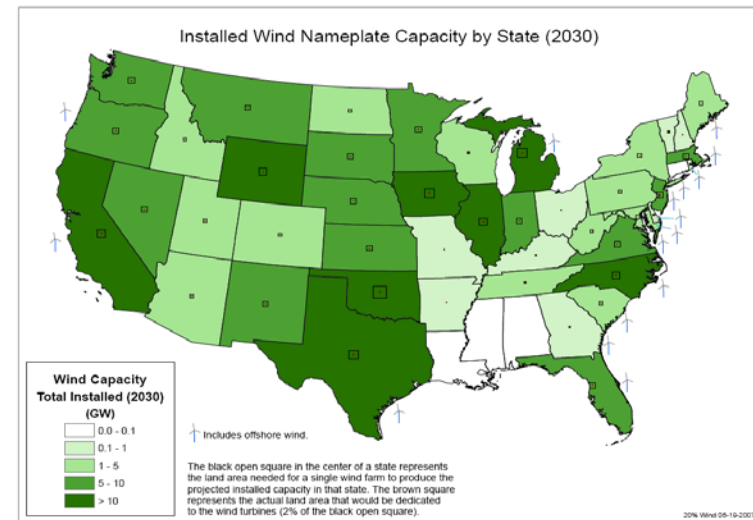
Total Installed Wind Capacity: 96,487 MW

Source: American Wind Energy Association Market Report



2,500-ft setback-permitting scenarios demonstrate the potential impact of not addressing concerns

Installed Wind Nameplate Capacity by State (2030)

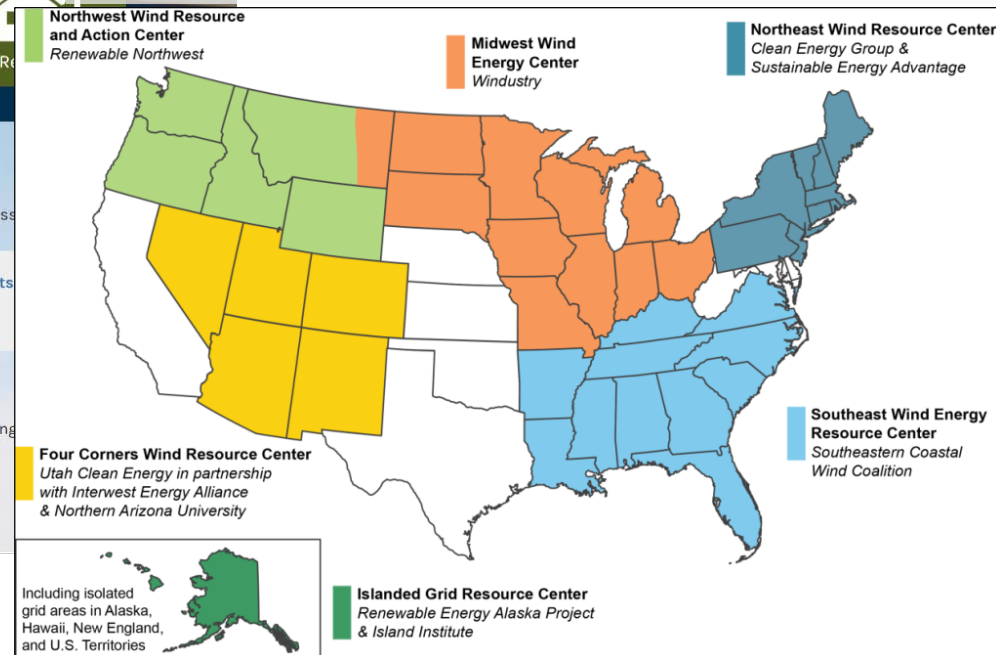


Approach and Methodology

National Outreach: WINDEXchange

The screenshot shows the WINDEXchange website interface. At the top, there is a navigation bar with the logo for the Office of Energy Efficiency & Renewable Energy and the text 'WINDEXchange'. Below this, there are several menu items: 'Market Sectors', 'Project Development', 'Technical Assistance', 'Education & Workforce Development', 'Maps & Data', 'Policies & Incentives', 'Publications', and 'News & Events'. The main content area features a 'Wind information by state' section with a dropdown menu to 'select a state' and a map of the United States. Below this, there are four icons representing different wind energy categories: 'Land-Based', 'Offshore', 'Community', and 'Distributed Wind'. The 'Maps & Data' section includes four maps: 'Land-Based Wind Resource Maps (80m)', 'Installed Capacity Wind Maps', 'Offshore Wind Maps (90m)', and 'Wind Potential Resource Maps (100m, 140m)'. The 'Project Development' section offers 'Site Selection', 'Economic Costs & Incentives', and 'Wildlife Impacts'. The 'Technical Assistance' section provides access to models, data, tools, and guidebooks for wind energy projects.

Regional Outreach: Regional Resource Centers



Accomplishments and Progress

Task	FY 2017				FY 2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
WINDEXchange Stakeholder Outreach	[Dark blue bar]							
Communication products, newsletter and outreach	[Light blue bar]							
WINDEXchange website redesign	[Light blue bar]							
Economic analysis and JEDI model updates	[Light blue bar]							
Rush Creek Wind Farm economic impact analysis	[Light blue bar]							
State of the Regions reports	[Light blue bar]							
Regional Resource Centers	[Dark blue bar]							
Collect and analyze engagement metrics	[Light blue bar]							
RRC Engagement activities, Y3-4	[Light blue bar]							
Finalize analysis of Y1-3 engagement metrics	[Light blue bar]							
RRC Retrospective Report	[Light blue bar]							

- National outreach through the WINDEXchange platform continues to provide updated information and resources to stakeholders such as the “State of the Region” reports, new slideshows, and factsheets.
- This includes ongoing maintenance and updates of tools and resources including the ordinance database and the JEDI model.
- Regional outreach activities conducted by the RRCs were initiated in FY14 and concluded in FY18. RRCs provided direct technical and information support to states in their regions.
- Concluded collection and analysis of RRC engagement metrics.

Approach and Methodology

Guiding Principles:

- Understand the issues facing the industry and wind development at state, regional, and international levels.
- Develop products providing fact-based information, allowing stakeholders to make informed decisions.
- Work actively to get appropriate and timely information into the hands of stakeholders who can use resources to inform project development and good decision making.
- Develop and implement collaborative partnerships to engage and leverage existing stakeholder networks which allows a transition from strictly a creator of content to a portal of content.
- Increase and maintain publicly accessible wind resource information and accompanying impact analysis.
- Develop, conduct, and disseminate market analyses, tools, and results, including information on local economic impact using the JEDI model, a widely used model in assessing the economic impacts of wind development.
- Engage state-of-the-art marketing metrics to measure and fine-tune impacts.

Accomplishments and Progress

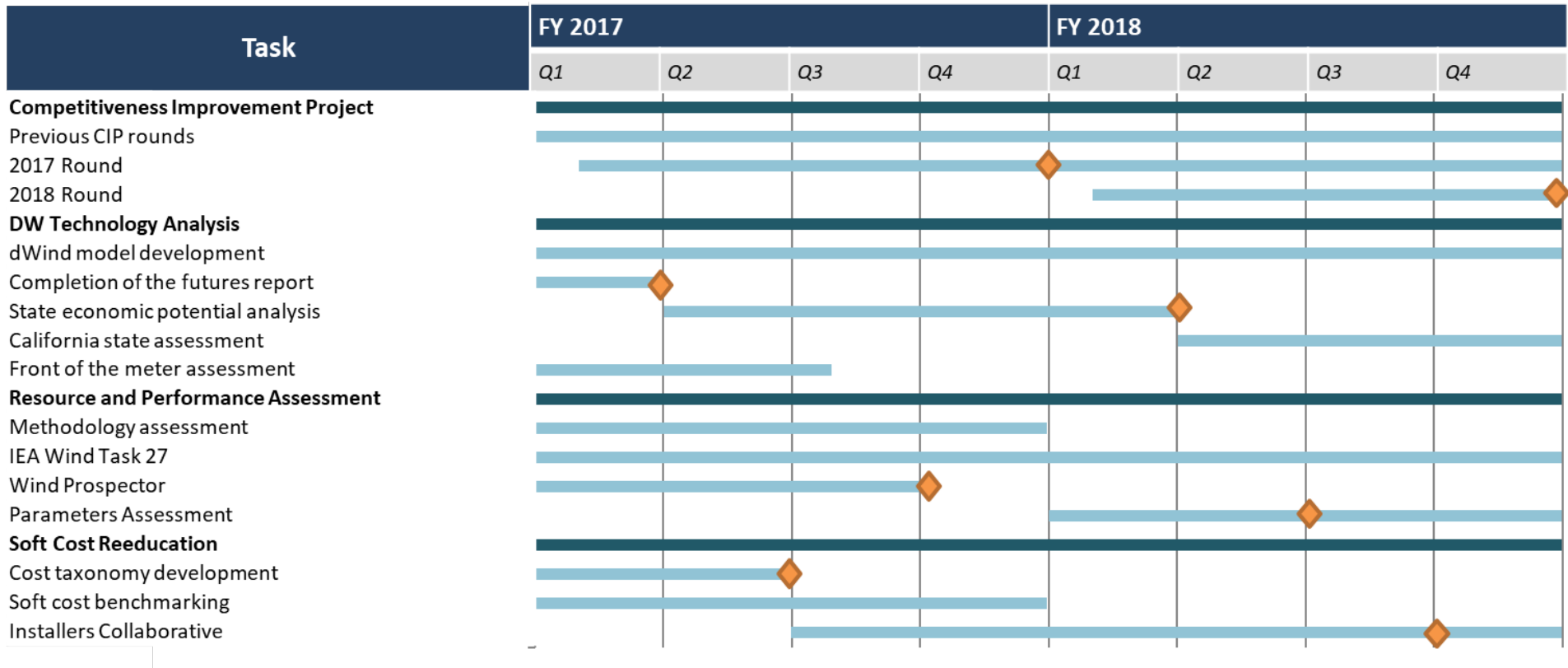
National outreach

- A relaunch of the WINDEXchange website was completed in FY17.
- New slideshows and factsheets were added to the website.
- Partnership with NAFB to develop audio interviews on topics relevant to rural communities.
- Completion of the Rush Creek Wind Farm economic analysis impact research and incorporation of data into JEDI model.

Regional outreach

- Engagement metrics collected from RRC activities during years 1–3 were analyzed and finalized in FY18.
- These metrics were combined with RRC direct experiences to develop the draft RRC Retrospective report.

Accomplishments and Progress



All milestones met, although some were delayed due to process and staffing issues

Go / No-Go milestones were more process oriented, relation to analysis decisions

Communication, Coordination, and Commercialization

Partnerships

- NREL partnered with the Regional Resource Centers, academia, other regional wind-focused organizations, national labs, and federal agencies.
- WINDEXchange also works directly with other national and international organizations addressing wind deployment issues including AWEA, AWWI, DWEA, IEA, NWCC, and ESIG.

Information Dissemination

- WINDEXchange website: <https://windexchange.energy.gov/>
- Wiki-based appropriate wind development guides: <https://openei.org/wiki/Gateway:Wind>
- 2016 and 2017 “State of the Region” reports.
- National and state advanced wind technology capacity maps.
- Biweekly e-newsletter with more than 22,000 subscribers.
- Slide shows and factsheets on wind development challenges.
- Full suite of JEDI models maintained and available.
- Interviews produced in partnership with the National Association of Farm Broadcasters.

Upcoming Project Activities

- WINDEXchange will continue to provide fact-based resources to stakeholders, work with partners to bolster dissemination, and develop and implement strategies that increase engagement with key stakeholders in key market segments for the duration of the next merit review period of FY19–22. Specific areas of focus are still under negotiation.
- Building off of the JEDI tool and the analysis of the Rush Creek Wind Farm, NREL will work to better understand the local economic impacts of wind development while providing tools to local leaders on how to expand that local impact.