Business and Technology Frequently Asked Questions (FAQ)

October 2020

Participation Opportunity: Rural Area Distributed Wind Integration Network Development (RADWIND) Project

Key Highlights

- U.S. DOE awarded a $3 million research grant for a two-year initiative led by NRECA to study distributed wind resources for cooperatives and other rural utilities.
- We are seeking co-op advisors to actively participate as part of a Member Stakeholder Group to provide guidance in the identification of gaps and creation of solutions.
- Interested cooperatives are asked to contact our team at: RadwindProject@nreca.coop.

The following Q&A provides detailed information about this opportunity for electric cooperatives.

BACKGROUND INFORMATION

Q: What is RADWIND?

A: RADWIND stands for the Rural Area Distributed Wind Integration Network Development project. It is grant-funded project supported by the Department of Energy (DOE) Wind Energy Technologies Office as part of their WIRED (Wind Integration for Rural Economic Development) initiative.[1] NRECA will lead a project team including national lab and industry partners to assess the current state of deployment of distributed wind systems by electric cooperatives and their members, identify gaps and barriers to wider deployment, and produce resources to address these with the goal of making distributed wind a more cost-competitive, reliable resource for electric cooperatives and other rural utilities.[2]

Q: What was the catalyst for RADWIND?

A: RADWIND is building off of the successful Solar Utility Network Deployment Acceleration (SUNDA[3]) project, which ran from September 2013 through April 2018, focus on helping to lower the barriers to entry for co-ops interested in owning solar PV. The SUNDA program offered tools and resources to cooperatives, that is credited with accelerating the advancement of solar deployment in rural America. In

[1] ***This material is based upon work supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Wind Energy Technologies Office Award Number DE-EE0008958.***

[2] In this FAQ, "cooperatives" and "co-ops" are used as shorthand, but participation by NRECA's rural public power and other utility members is open and encouraged.

[3] https://www.cooperative.com/programs-services/bts/sunda-solar/Pages/default.aspx

the same spirit, the RADWIND project aims to assist cooperatives in determining how they might pursue wind generation deployment options. NRECA and co-op staff participated in a DOE kickoff workshop for the WIRED initiative in October 2018, which identified the need for a SUNDA-like project for distributed wind, which led to the funding opportunity and proposal that became RADWIND.

Q: What is the focus of RADWIND?

A: The objective of RADWIND is to reduce the balance of system costs (i.e., "soft costs") of deploying distributed wind technologies of various scales on rural distribution grids, either as standalone projects or in combination with other distributed energy resource (DER) technologies, including solar, storage and demand-side resources, including as part of an integrated microgrid. Distributed wind solutions can utilize various wind technologies, ranging from small off-grid or residential scale turbines of 10 kilowatts or less, to one or more multi-megawatt turbines.

The project aims to increase awareness of the potential benefits of distributed wind, reduce the market barriers for the adoption of these technologies in rural areas, and provide tools and resources for rural utilities to analyze the feasibility of deploying distributed wind in their service territories. Like the SUNDA project, which resulted in materials to spur utility-scale solar across rural America, NRECA believes this research project could result in a significant increase in the number of electric cooperatives incorporating distributed wind applications into their future resource planning.

Q: What are current barriers to wind deployment?

A: While DOE has identified high technical potential totaling over 10 GW of distributed wind capacity on rural distribution grids, distributed wind deployment may be limited due to the following factors:

- Cost competition from other distributed and large-scale renewable technologies;
- Incomplete understanding of the full spectrum of technology options;
- Limited availability of local vendors for service and maintenance of smaller turbines;
- Lack of documented Return On Investment (ROI) data regarding distributed wind services; and
- Absence of in-house expertise.

Q: How will RADWIND aim to reduce these barriers?

A: By standardizing business processes, developing feasible financing models and educating co-op personnel, the RADWIND project aims to improve the cost-competitiveness of small-scale wind projects.

Q: What types of wind projects will be considered through RADWIND research?

A: The project will include consideration of distributed wind projects using small (< 100 kw), mid-size (100 kW<1 MW), and large (1 MW+) scale turbines, with total projects of up to 10-15 MW of total output located on the distribution grid, either in front of or behind the meter. These projects can be owned or

under power purchase contracts by distribution or G&T cooperatives, through community ownership or in partnerships with agricultural, commercial, and industrial consumer-members.

Q: Who is the Project Team for RADWIND?

A: NRECA is the lead for the project team that consists of Pacific Northwest National Laboratory (PNNL), Hoss Consulting, and Mana Group LLC.

Q: Who is funding RADWIND?

A: The research is funded by the Department of Energy's Office of Energy Efficiency and Renewable Energy – Wind Energy Technologies Office - which aims to maximize stakeholder confidence in turbine performance and safety and improve project performance, while reducing installed cost in order to be competitive with retail electric rates and other forms of distributed generation. The grant providing the funding requires a cost share by stakeholder participants, to cover the costs of participation including time and expenses for attending meetings.

Q: How will cooperatives be involved in RADWIND?

A: Electric cooperatives and other rural utilities are identified as prime candidates to evaluate wind as a distributed generation resource that may provide added resiliency and offer other benefits, such as electricity from cleaner energy sources. Through RADWIND, NRECA will work with co-ops and industry stakeholders around the country to evaluate the market, challenges, opportunities, and gaps for distributed wind deployment, and collaborate in identifying actionable solutions that can assist in successfully deploying diverse types of distributed wind projects and reducing soft costs. The project team (PT) will engage with member stakeholders, so that the work is responsive to rural utility needs, relevant to the current state of the industry, and offers "right sized" actionable solutions for co-ops of all sizes that can be shared with others to improve chances of success and broaden their impact. Input will also be gathered from the distributed wind industry representatives and other stakeholders from the wider DER and finance communities.

NRECA is seeking multiple distribution and generation and transmission (G&T) co-op partners who can actively participate and provide feedback and guidance throughout the life of the project. Cooperatives are invited to participate in a **Member Stakeholder Group**, to engage with NRECA and other project participants in the RADWIND research. In addition to this formal advisory group, the project seeks to build a community of electric cooperatives who are interested in learning more about distributed wind as a resource through conferences, webinars, and project materials.

Q: Who will be able to use the tools and resources developed through RADWIND?

A: The tools and resources developed in the project will be made available to electric co-ops nationwide, as well as the broader utility industry.

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Q: What approach will be used to work with cooperatives and other stakeholders in RADWIND?

A: The project follows a path of listening, identifying, and responding to needs of rural utilities to consider distributed wind

1. **Convene** co-ops and industry stakeholders to understand needs (through surveys, conference calls/webinars, and in-person "listening" sessions as needed) and establish clear metrics to determine the success of the project's efforts.
2. **Compile** associated issues to address and to inform the development of solutions.
3. **Discuss** issues and potential solutions with a larger stakeholder base to establish common practices
4. **Address** issues, through groups focused by topics, to create common materials, case studies, and common practices for both technical and financial aspects of any project.
5. **Present** clear use cases, value cases, business cases, solutions, and shareable information resources (including technical assistance program, common practices) to inform electric cooperatives as well as industry stakeholders seeking to provide services or products to them around distributed wind.

Q: What are the benefits to cooperatives participating in the RADWIND Member Stakeholder Group?

A: NRECA expects that cooperatives who participate directly in the RADWIND project through the Member Stakeholder Group will gain significant benefits, including those listed below:

- Ability to provide input into, and help shape the creation of, innovative solutions that utilize distributed wind;
- Gain understanding of the use cases for distributed wind projects, along with the value propositions;
- Be among the first to test and use tools and resources created for assisting cooperatives to evaluate distributed wind projects;
- Network with other cooperatives to share lessons learned on utilizing distributed wind;
- Obtain valuable knowledge from the key players in the distributed wind industry on the technical, financial and business model aspects of implemented distributed wind-based projects;
- Have opportunities for exploring collaboration with stakeholders for investigating potential distributed wind projects in their service territories; and
- Be better positioned to offer innovative distributed wind-based solutions to their member-consumers.

Q: What are the requirements to cooperatives participating in the RADWIND Member Stakeholder Group?

A: In support of the research effort, cooperatives participating in the Member Stakeholder Group will be expected to:

1. Participate for the entire duration of the Project through July 31, 2022.

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2. Regularly participate in RADWIND meetings with other group members and wider project stakeholder groups and DOE[4], which will be in-person (subject to travel limitations caused by COVID), one-on-one and group virtual meetings, and teleconferences.

3. Provide review and feedback of project materials as required.

4. Contribute cost share to include time, labor, travel and other related expenses incurred through participation in the Member Stakeholder Group. This project is a grant-funded effort from the Department of Energy, and the costs incurred by cooperatives in attending meetings, providing input, etc. will form part of the cost share requirement for this award.

Q: What are the key project deliverables that will require Member Stakeholder Group input and review?

A: Key project deliverables that will involve significant stakeholder input and review include:

a. Initial survey of Electric Cooperatives.

b. Creation of a Database of Co-op Distributed Wind Projects.

c. Production of Case Studies of Distributed Wind Projects.

d. Define and Review Use Case, Value Case, and Business Case for Distributed Wind.

e. Define and Review metrics for measuring the value of distributed wind deployments.

f. Define and Review case studies of financing methods for distributed wind projects.

g. Review distributed wind project screening templates and support materials.

h. Review standardized guides for project financing, investment, use cases, screening templates, DER integration, hybrid power plants, and engineering assistance.

i. Contribute to/review journal article manuscript.

Q: How do interested cooperatives request participation on the Member Stakeholder Group, and what is the process for selection?

A: Expressions of interest are requested to be sent to RadwindProject@nreca.coop.

NRECA will then provide a draft participation agreement for review and signature.

Interested NRECA members will formalize their involvement in the RADWIND Member Stakeholder Group through a participation agreement that will be provided by NRECA.

[4] The Project Advisory Group will comprise the Member Stakeholder Group, as well as an Industry Stakeholder Group from the distributed wind and associated industries.

Q: What happens if a cooperative wishes to join the Member Stakeholder Group after the deadline?

A: Interested cooperatives who would like to become involved later during the project are encouraged to contact our team at RadwindProject@nreca.coop. NRECA can enable their participation at that time as participants in the member stakeholder advisory group.

Q: Are there additional opportunities for cooperatives to be involved in RADWIND besides participating on the Member Stakeholder Group?

A: Yes. Cooperatives interested in staying informed of the RADWIND project and contributing their input are encouraged contact our team at RadwindProject@nreca.coop and request participation in the community of interested stakeholders.

Q: Where is more information about RADWIND available?

A: For more information about the DOE award for RADWIND research and the project's details:

- **DOE Selects NRECA for Wind Energy Research Initiative**, NRECA Press Release (Oct. 2019) https://www.electric.coop/doe-selects-nreca-for-wind-energy-research-initiative/

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