

NextStep: A Web-based Site Feasibility Analysis Tool for Behind-the-meter Wind Power Systems

PRIMARY CONTACT INFORMATION

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1. Contact Information Online

No

2. Membership Status

Non-member

3. Personal Bio

Brian Rapp, recent graduate of the Integrated Science and Technology Program at James Madison University, balances ambitious efforts at both technological innovation and community outreach aimed at developing sustainable approaches to energy and environmental resource management. A consistent leader within JMU's sustainability community, Brian organizes conferences like PowerShift, Earth Day educational events and rallies, and fundraising efforts. Brian led student energies prompting JMU's President to create the Institute for the Stewardship of the Natural World. He leveraged his considerable technological savvy to build a web-based system designed to facilitate and encourage investment in Virginia's wind energy resources.

4. Co-author Information

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ABSTRACT INFORMATION

1. Title

NextStep: A Web-based Site Feasibility Analysis Tool for Behind-the-meter Wind Power Systems

2. Purpose of the Presentation

This poster presents results of a pilot program targeted at educating under-served populations in Virginia, such as residential property owners. Attendees of this presentation should:

1. Better understand the dynamics of interacting with populations targeted for small-wind development projects
2. Learn about a relatively low-cost tool for helping identify and develop viable small-wind projects within a state.
3. Learn how Virginia used this tool to better allocate federal stimulus funds to small wind projects.

Attendees will benefit by interacting with a team who can offer guidance in the implementation of similar projects in other states.

The presenters will actively engage participants by role-playing interactions with typical residential property owners to illustrate the difficulties of working with this population. The presenters will also be able to describe in detail the steps needed for other states to implement a similar system.

3. Preferred Presentation Format

Only Poster

8. Abstract

This project developed and implemented a public domain, web-based site feasibility analysis tool for behind-the-meter wind power systems. The tool is designed as a site prescreening/suitability calculator for property owners, and enables them to assess the technical and economic feasibility of a property for wind power before engaging in costly and time consuming site characterization and analysis. The tool was prototyped for the Commonwealth of Virginia.

The web-based tool:

- * Focuses on an under-served population of small and community-scale constituents who are candidates for behind-the-meter wind power generation systems
- * Accelerates the market by earning greater “mindshare” in areas where resistance to wind power is less regulatory and more cultural
- * Aids state agencies in prioritizing the use of limited MET station resources
- * Is user friendly and accessible following federal section 508 compliance guidelines
- * Incorporates wind resource data for different hub heights from NREL and AWS TrueWind
- * Provides detailed and realistic forecasts of both the potential energy outputs and economic payback period possible for a given set of criteria, including turbine types and tower heights
- * Educates site visitors on the basics of wind power generation, and also introduces them to more sophisticated topics in a clear and accessible fashion
- * Aids consumers in making decisions about whether or not to invest in more in-depth site analysis in preparation for installing a turbine

11. Target Audience

Turbine Manufacturers
Utilities
Consulting Companies
Investment / Financial Institutions
Government Agencies
Academic Institutions
Land Owners

12. Technical/Scientific Topic

Yes

13. Audience Level

Intermediate

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