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Wind RD&T: On Site Wind for Rural Load Centers

February 2023

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Changing the World's Energy Future

Idaho National Laboratory

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U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

INL/MIS-23-71539

FY-23 RD&T Program Review Meeting
Feb 14th -16th 2023
RASEI, Boulder Colorado

On-Site Wind for Rural Load Centers

Megan Culler (INL)
Caitlyn Clark (NREL)
Sarah Barrows (PNNL)

Introduce Multi-lab Team and Key Contributors

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

- Hybrid system design
- Add features for HOPP

INL
Idaho National Laboratory

- Resilience needs of different load types
- Resilience boosters for distributed wind
- Lead TA and case study engagements

Pacific Northwest
NATIONAL LABORATORY

- Valuation of distributed wind
- Valuation service as a user tool
- Energy equity

IOWA STATE UNIVERSITY

- Connect labs to community interests
- Resilience analysis
- Rural applications for distributed wind

NRECA
America's Electric Cooperatives

- Leverage previous DW work with co-ops

Mana Group LLC

- Stakeholder engagement
- Coordination with other projects
- Outreach

Project Overview, Approach, & Budget

Engage with Stakeholders:

- Provide technical assistance to promote inclusion of distributed wind in proposals for federal funding
- Identify case studies to implement technical design with real system considerations
- Distribute outputs to relevant audience

Technical Design:

- Match load needs to generation for maximum resilience according to customer type
- Enhance resilience web application for more accessible analysis
- Create hybrid design templates

Distributed Wind Hybrid Toolkit

Justifying the Cost

- Develop user interface for valuation service to promote full understanding of relevant value streams
- Energy equity impacts
- Risk mitigation

Streamline Processes for Adoption

- Lessons learned from technical assistance engagements
- Tools made available online
- Templates available for use

Expected Outcomes

- **New applications for DW will be unlocked by showing each customer type the value case and resilience benefits of DW used to meet their needs.**
- **Prepare co-ops and communities to invest in DW-hybrid systems.**
- **Help the federal government identify communities where DW-hybrid systems could be most impactful and vet for well-designed systems.**

Planned Publications:

- Fact sheets on resilience, valuation, and hybrid design
- Energy equity report
- Resilience needs for rural load centers
- Guide for hybrid design
- Demonstration of valuation tool
- Toolkit for Rural Communities to Leverage Distributed Wind Potential

Major Milestones & Deliverables, Project Status

Task	FY23 Q1	FY23 Q2	FY23 Q3	FY23 Q4	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4
Stakeholder Engagement Strategy	◆							
Hybrid Energy Webinar		◆						
Technical Assistance Cohort			◆					
Energy Equity Report				◆				
Resilience Web Application				◆				
Enhancements to HOPP					◆			
Case Study							◆	
Valuation Tool							◆	
Toolkit for Hybrid Design								◆
University & Industry Outreach								◆

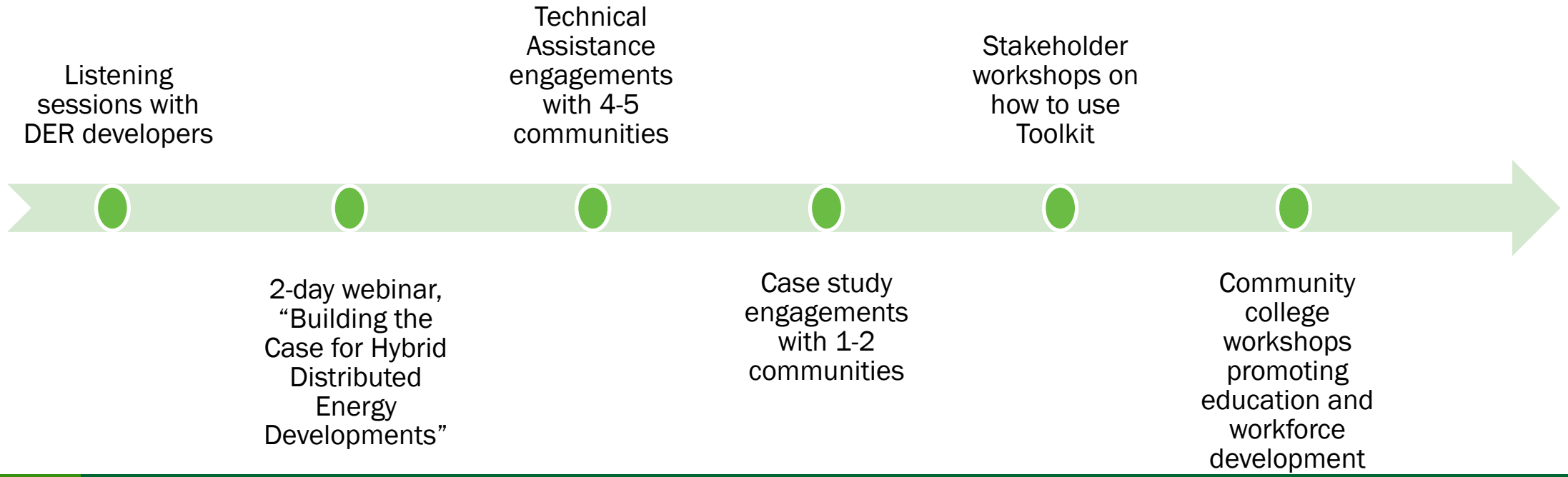
Related Projects, Dependencies, and "Catchers"

Related Projects

- Close coordination with the SEND project
- Alignment with Sandia WHIP project

Target Audiences

- Industry group (like DWEA)
- NRECA
- Counties
- Joint action agencies



Questions for WETO RD&T Community

- What strategies have been successful in the past for recruiting engaged, motivated case study partners?
- What other stakeholders, beyond those already identified, might be useful for us to reach out to for engagement and distribution efforts?