



OCEd
Office of Clean Energy Demonstrations

THE OFFICE OF CLEAN ENERGY DEMONSTRATIONS

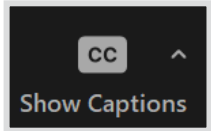


**Energy Improvements in Rural or Remote Areas Program
Midwest Regional Briefing**
Office of Clean Energy Demonstrations

U.S. Department of Energy
March 26, 2024

Webinar Logistics

How do I turn on live captions?

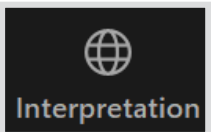


Click on the “**Show Captions**” button in the control panel at the bottom of your screen.

Is this webinar being recorded?

No, this webinar will not be recorded.

How do I turn on Spanish or ASL interpretation?



Click on the “**Interpretation**” button in the control panel at the bottom of your screen.

Will the slides be shared?

Yes, a copy of the presentation slides will be shared via email with registrants and on the OCED website within the next week.



Welcome!



Meeting Objectives



Introduce the **three Energy Improvement in Rural or Remote Areas projects** selected for award negotiations by the Office of Clean Energy Demonstrations (OCED) located in the Midwest region.



Provide transparency on the award process and opportunities to implementing clean energy projects in the United States.



Create an opportunity for participants to engage with DOE and selectees



Introductions



Emmanuel Taylor
Facilitator



Regina Galer
ERA
Program Manager,
OCED



Toniqua Hay
ERA
Stakeholder
Engagement Specialist,
OCED



Agenda

- Welcome
- Energy Improvements in Rural or Remote Areas Program Overview
- Regional Project Overviews
 - Mashkiiziibii Minigrid
 - Montezuma Microgrid
 - Resilience and Prosperity in Rural Northern Wisconsin
- Community Benefits and Engagement
- Next Steps & Resources
- Feedback Session
- Wrap-up & Close





Opening Remarks



Energy Improvements in Rural or Remote Areas (ERA) Program

ERA Program Overview

The Bipartisan Infrastructure Law (BIL) authorizes DOE to invest **\$1 billion in Energy Improvements in Rural or Remote Areas**. The DOE Energy Improvements in Rural or Remote Areas (ERA) Program is managed by the Office of Clean Energy Demonstrations.

Purpose

To provide financial assistance to improve, in rural or remote areas of the United States, the **resilience, safety, reliability, and availability** of energy and environmental protection from adverse impacts of energy generation.



Program Goals

- 1 **Deliver measurable benefits to households in rural or remote areas** by funding replicable energy projects that lower energy costs, improve energy access and resilience, and/or reduce environmental harm;
- 2 **Support new rural or remote energy system models** using climate-resilient technologies, business structures that promote economic resilience, new financing mechanisms, and/or new community engagement practices; and
- 3 **Build clean energy knowledge, capacity, and self-reliance in rural America.**



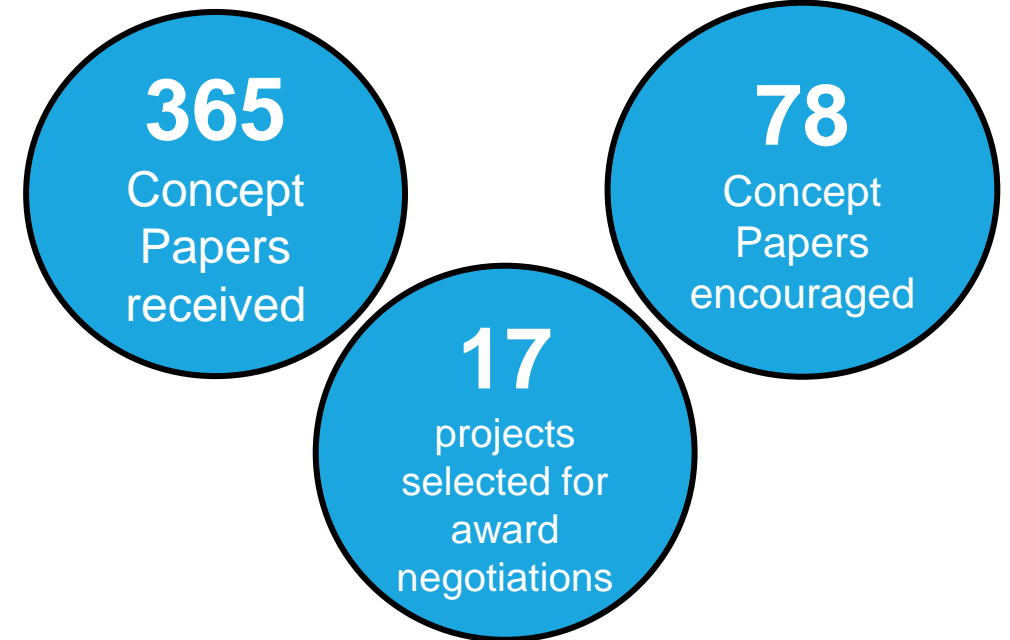
ERA \$300M Funding Opportunity

In March 2023, DOE announced **\$300 million** in total funding opportunity to increase energy affordability and promote climate resilience with an anticipated federal cost share ranging from **\$5 to \$100** million per project for single or multi-site demonstration project(s).

Program Outcomes

- 1 Uses clean energy technologies that improve **reliability and/or resilience of energy systems**
- 2 **Reduces energy poverty**
- 3 Improves environmental performance of **energy generation** in rural or remote communities

Status to Date





Project Overviews

Mashkiiziibii Minigrid



Daniel Wiggins Jr

Bad River Band Tribal Member and

Deputy Director of the Mashkiiziibii Natural
Resource Department



Mashkiiziibii Minigrid

Bad River Band of Lake Superior Chippewa
Bad River Reservation, Wisconsin

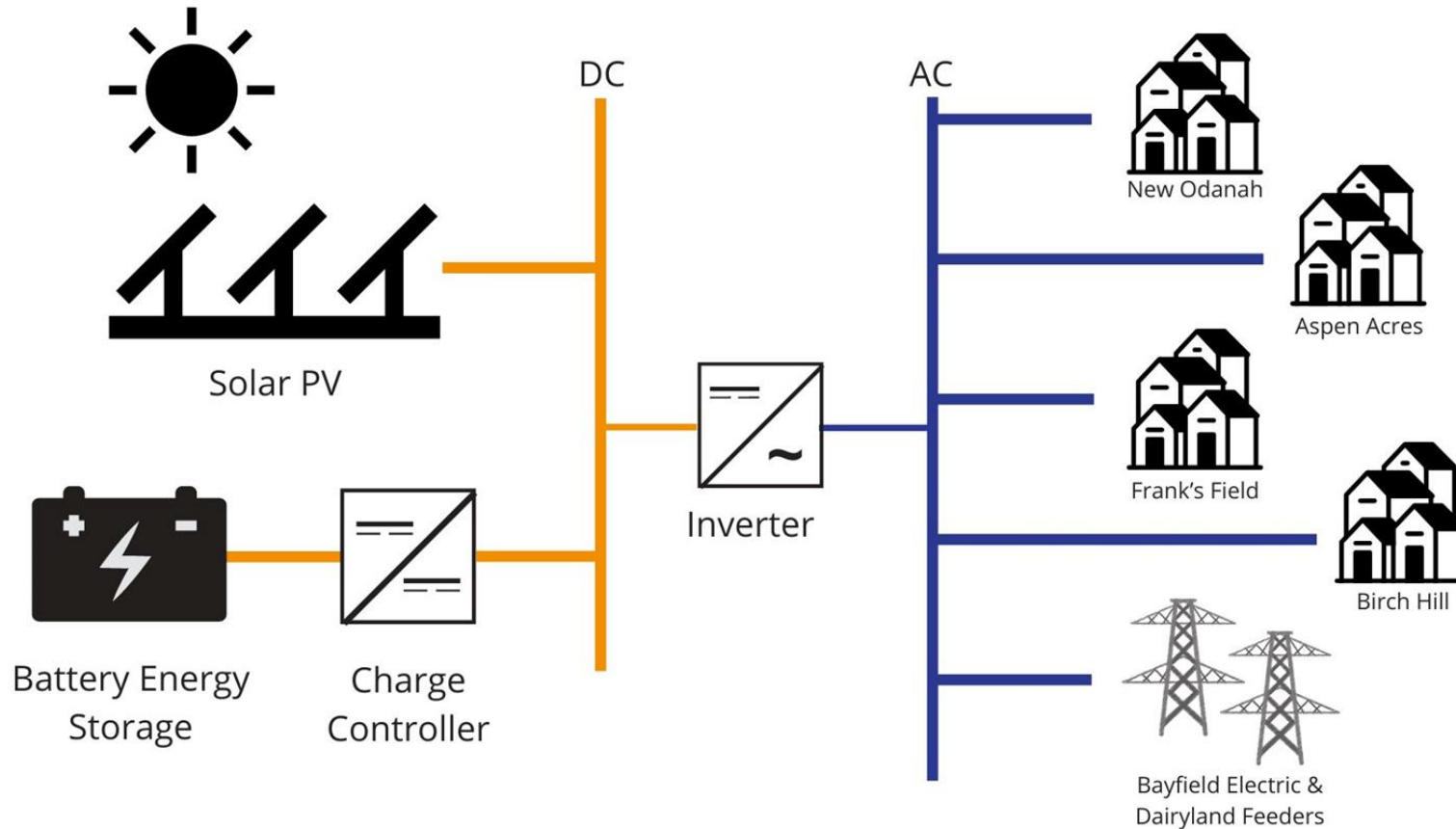


Project Summary

- The Bad River Band will install 5MW of solar PV and 8 MWh of battery energy storage at the end-of-the-line community at Birch Hill.
- Bayfield Electric Cooperative will extend buried 3-phase distribution line and install required switchgear to enable resilient islanding of the main Bad River tribal communities of Odanah and Birch Hill.
- The strategic position of solar and battery storage, and architecture of the switchgear, will allow the minigrid system to support the grid on two feeders with voltage, frequency, demand, and potentially black start.

Mashkiiziibii Minigrid

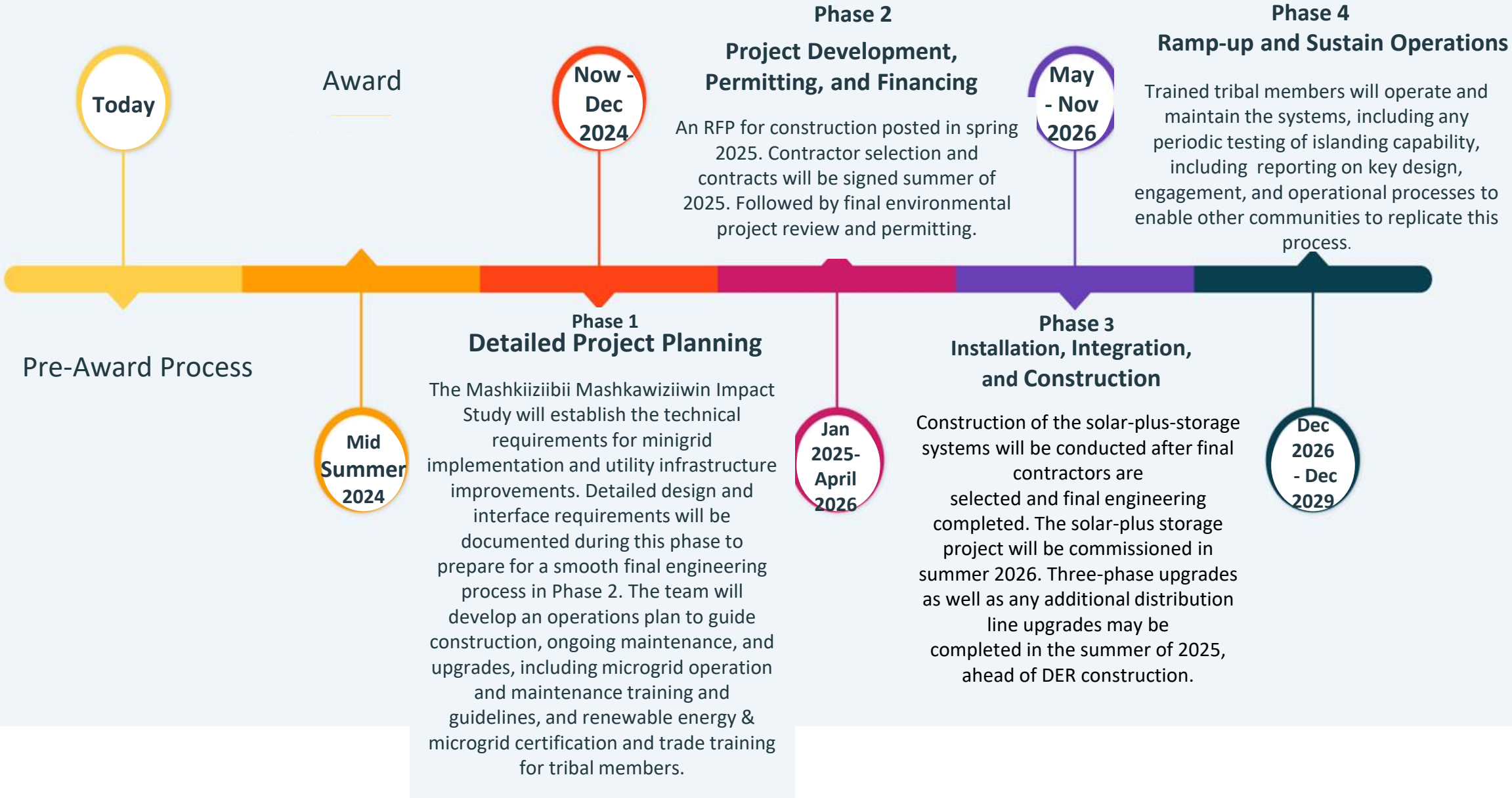
Bad River Band of Lake Superior Chippewa
Bad River Reservation, Wisconsin



Key Components:

- Solar PV
- Battery Storage
- Mini-Grid
- Distribution Line Upgrade to create islanding capability

Estimated Project Timeline – approximately 5.5 years

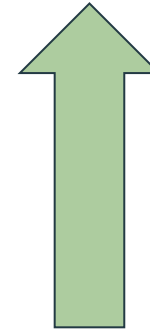




Project aims to help the Bad River Band reach its goal of net zero carbon emissions with 100% renewable electricity generation by 2027

Energy Resilience Impacts:

Increase



- Energy affordability
- Weather/outage resilience
- Access to reliable energy supply
- Progress toward U.S. and Wisconsin clean energy goals

Reduce



- Utility bills (by 10%)
- 3,543 metric tons of CO₂ annually
- Energy burden

Health and Environmental Impacts:

- Improve air quality
- Lower GHG emissions
- Enhance environmental justice in communities overburdened by legacy of air pollution and climate change impacts

Community Benefits Plan

Continuous Community Engagement:

- Discovery workshops, meetings, presentations, and surveys
- Site visits and tours
- Educational programs
- Public relations
- Community advisory group engagement
- Continuous feedback
- Contribute \$200,000 to workforce development training for local Tribal members

Workforce Development:

- Create high-quality clean energy jobs
 - 50% hiring preference for Tribal community
 - Short and long term jobs
- Connect to local and statewide higher education pipelines
- Develop workforce for key technology in the clean energy transition
- Establish a partnership between Lac Courte Oreilles Ojibwe University and the University of Wisconsin Madison College's CREATE Energy Center
- Create accessible pathways to clean energy careers
- Cultivate Diversity, Equity, Inclusion, and Accessibility (DEIA) with approach rooted in Tribal culture

Prior Community Engagement:

- Energy Workgroup
- In person facilitated planning workshops with Tribal Council
- Virtual Energy Strategic planning public forum
- Collaboration with Utilities
- Presentations in webinars
- Planning and Study efforts



Meet the team.



Daniel Wiggins Jr



Jillian Wilde

Project Leads



**Bad River Band of
Lake Superior Chippewa**



Madison Solar Consulting

Montezuma Microgrid



Zhaoyu Wang

A Northrop Grumman Endowed
Associate Professor at Iowa State
University

Where is Montezuma?

About City of Montezuma

- The county seat of Poweshiek County in southern Iowa.
- Total population of 1,460 people.

About Montezuma Municipal Light and Power (MMLP)

- A community-owned utility founded in 1939.
- Buys electricity from the MISO market.
- Distributes electricity via seven 2.4-kV and three 13.2-kV feeders.
- Has 706 residential, 201 commercial, and 2 industrial meters.

MMLP's Energy Challenges

- Market vulnerability: energy price volatility, capacity reserve requirement, transmission cost.
- Aging infrastructure: 60-year-old substation switchgears and mechanical relays.
- Exposure to extreme events: MMLP is tied to the grid by a single radial 69-kV line, hit by 2020 Derecho



Project Overview

Goals

1. Transform Montezuma to be the first community microgrid in rural Iowa with the best reliability and resilience.
2. Demonstrate renewable MG as a technically and financially feasible solution.

Team members

- Iowa State University
- Montezuma Municipal Light and Power
- 40 community partners
- DGR Engineering
- Warren McKenna Consulting

Impacts

- Stabilizing electricity rates for Montezuma residents.
- Improving reliability and resilience.
- Transitioning to renewable energy.
- Demonstrating replicability of the technology.

Budget:

- Federal funding:
\$ 9,484,385
- Cost share: \$2,376,570

Duration: 48 months

Technologies

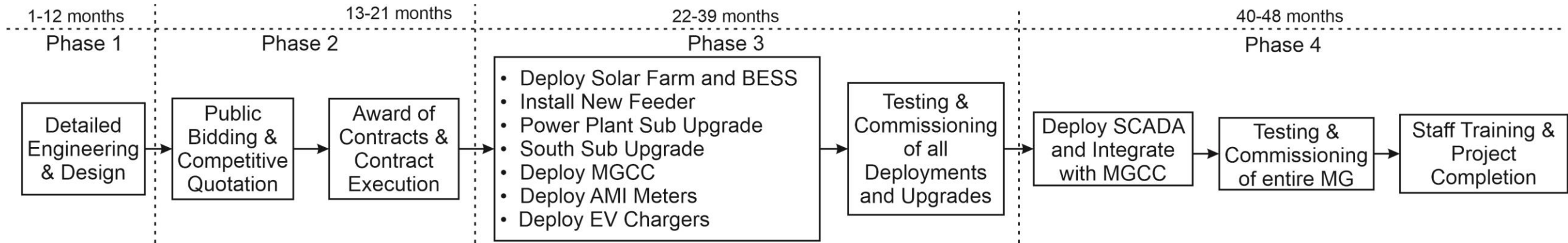


- 2.5 MW solar PV
- 1.5 MWh battery energy storage system (BESS)
- Intelligent microgrid controllers
- New SCADA, AMI-enabled load control
- EV chargers
- New substation switchgear and relays to automate operations and enable islanding from its single radial 69-kV transmission line when conditions force it to operate as a self-sustainable microgrid

Technologies

	Status quo	After project completion
Generation	No Solar, No BESS	2.5 MW Solar PV, 1.5 MWh BESS
Carbon Emission	Normal operation: 10,521 metric tons/year, Isolated operation: 51.5 metric tons/day	Normal operation: 8,818.5 metric tons/year, Isolated operation: 29.6 metric tons/day
Substation	Vintage substation switchgear built in 1960s, old oil switch breakers, mechanical relays are obsolete	New metal clad switchgears with 15kV circuit breakers & digital relays. Islanding and auto synchronization functionality as a microgrid
Load	AMR system, no load control capability	AMI system with load control
Control	No SCADA, manual control/check	SCADA + microgrid Controller
EV	No charging station	Two level-3 chargers

Project Schedule



Community Benefits Plan

All economic and environmental benefits of the project will flow to Montezuma residents.

Partners

- 8 state/county/city authorities
- Meskwaki Nation
- Labor union: IBEW Local Union 405
- 4 Community Colleges/K12
- 2 Community Organizations
- 21 Local Businesses (including women, minority & veteran-owned)

Investing in the American Workforce

- Develop a renewable microgrid curriculum using Montezuma microgrid as a demonstration site.
- Establish a digital twin of the microgrid operation for workforce training.
- Develop training opportunities through apprenticeship programs of Iowa and Meskwaki Nation.

Community Benefits Plan - continued

Community & Labor Engagement: Conduct public meetings; develop community projects.

DEIA: Recruit minority students; implement energy assistance programs for low-income customers.

The Justice40 Initiative: Monetize solar generation and allocate a certain percentage to support women, veterans, and minority-owned businesses.

Accomplished Community Engagement

Proposal stage

- Held two meetings with Montezuma City Council and MMLP Board of Trustees and received approval.
- Exchanged information with 40 community partners and received support letters.

Post-selection

- On Feb 29, 2024, Montezuma held a public session to brief the project to the community, which was followed by a Q&A session. More than 40 residents and the MMLP Board have actively engaged in the discussion and expressed excitement about the project.
- The team has been interviewed by KCCI 8 News at Six, KMA Radio Morning Show, Iowa Public Radio River to River Show, WHO 13 News, The Gazette, and Ames Tribute.



Resilience and Prosperity in Rural Northern Wisconsin

Maria Redmond

Director

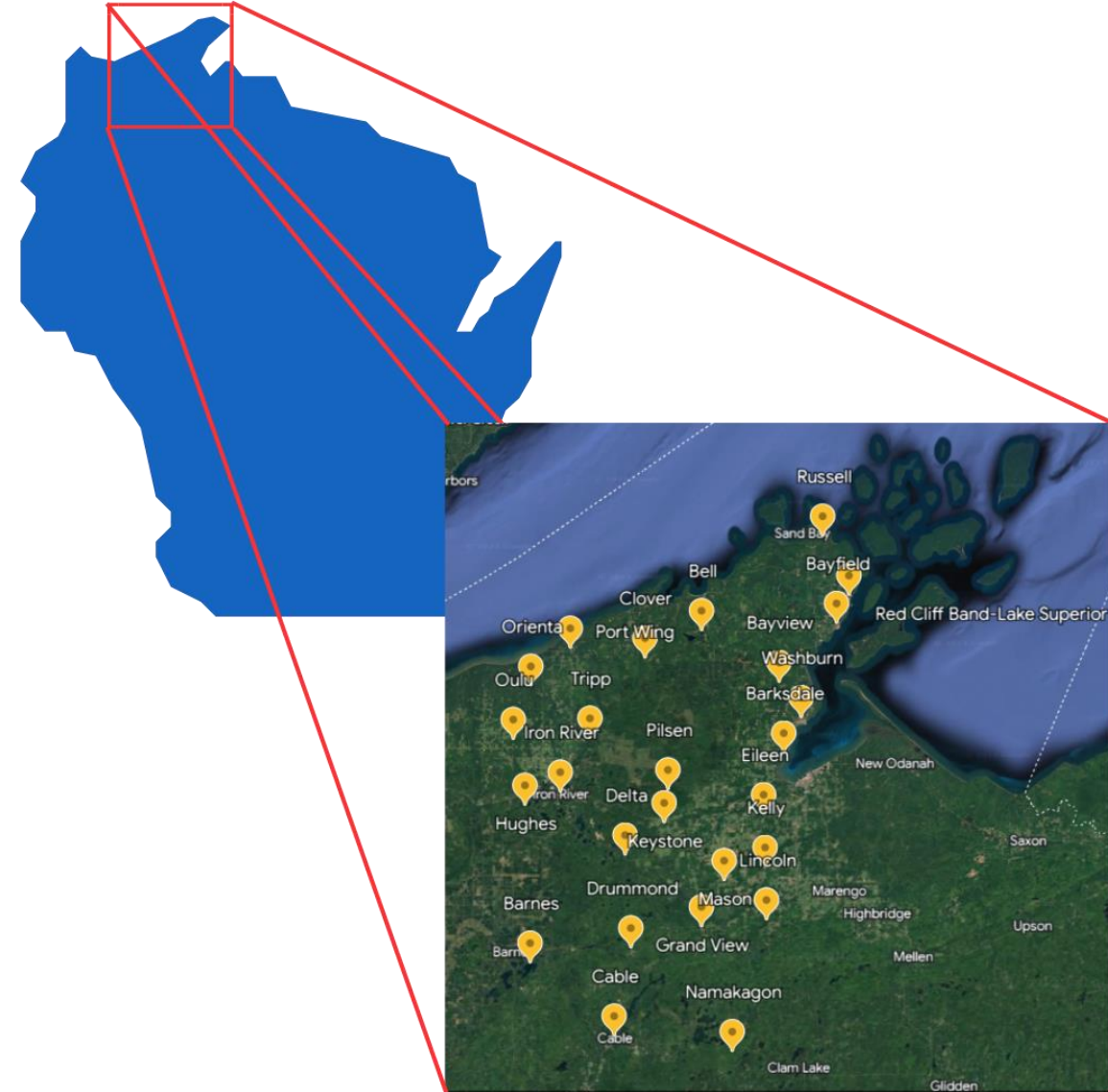
Wisconsin Office of Sustainability and
Clean Energy



Resilience and Prosperity in Rural Northern Wisconsin

“We are Stronger Together”

Small microgrid projects have too much overhead to be feasible for individual communities. When combined into a county-wide distributed energy initiative with tribal collaboration, everyone wins.

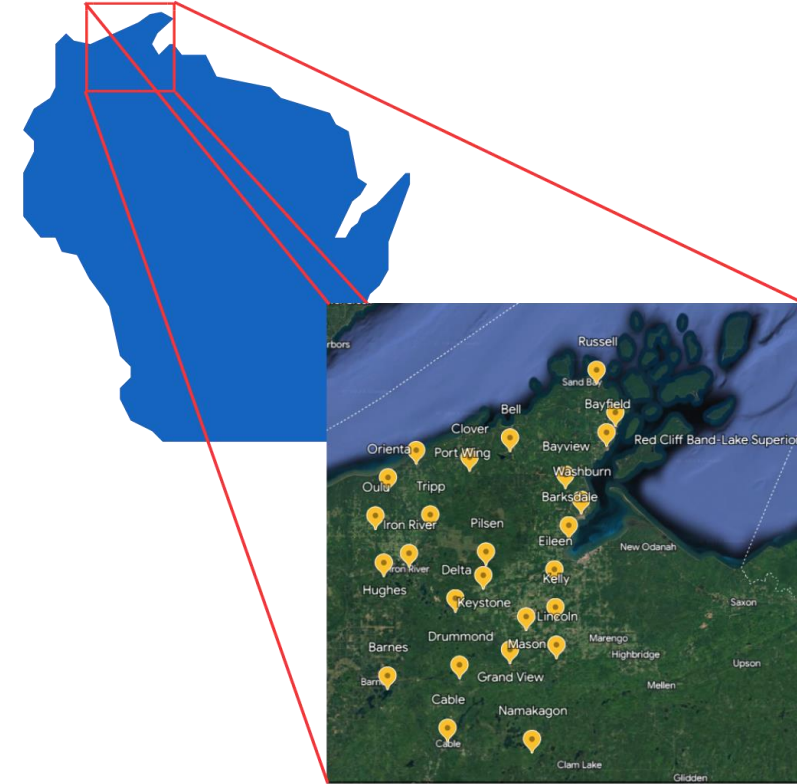




Resilience and Prosperity in Rural Northern Wisconsin

Serving 28 Cities, Villages and Towns in Bayfield County, Wisconsin; Red Cliff Band of Lake Superior Chippewa Indians – community populations range from 101 to 2051.

- The Red Cliff Tribal Lands and communities of Bayfield County are located on the extreme northernmost point of rural Wisconsin along the windswept shores of Lake Superior, disproportionately at risk for direct impacts from climate change.
- An increased prevalence of lake-enhanced severe weather events frequently creates energy disruptions in this area.
- These distributed energy projects will provide more resilient, cleaner critical services to these areas.





Project Goals



Reduce carbon emissions both locally and on the grid through the deployment of region-wide electric vehicle charging infrastructure for the public and for fleets and through the deployment of local solar PV electricity production.



Increase community resilience by implementing clean solar-plus-storage microgrids at critical facilities.



Reduce carbon emissions locally by converting diesel snowplows to CNG.



Project Partners

State of Wisconsin



Office of Sustainability and Clean Energy
Prime Applicant



Public Service Commission



Bayfield
County



Red Cliff
Band



muGrid Analytics
(Program Leadership and Community
Support)



Towns and Villages



muGrid Analytics
(Project Technical
Support)



Cheq Bay Renewables



Wisconsin Economic Development
Corporation (WEDC)
Office of Rural Prosperity (ORP)



Slipstream, Inc

Project Summary

24 Projects

23 Microgrids

1 CNG fueled
snowplows

5 Bayfield
County Highway
Garages

2 Red Cliff Band
Facilities

15 facilities in
8 municipalities

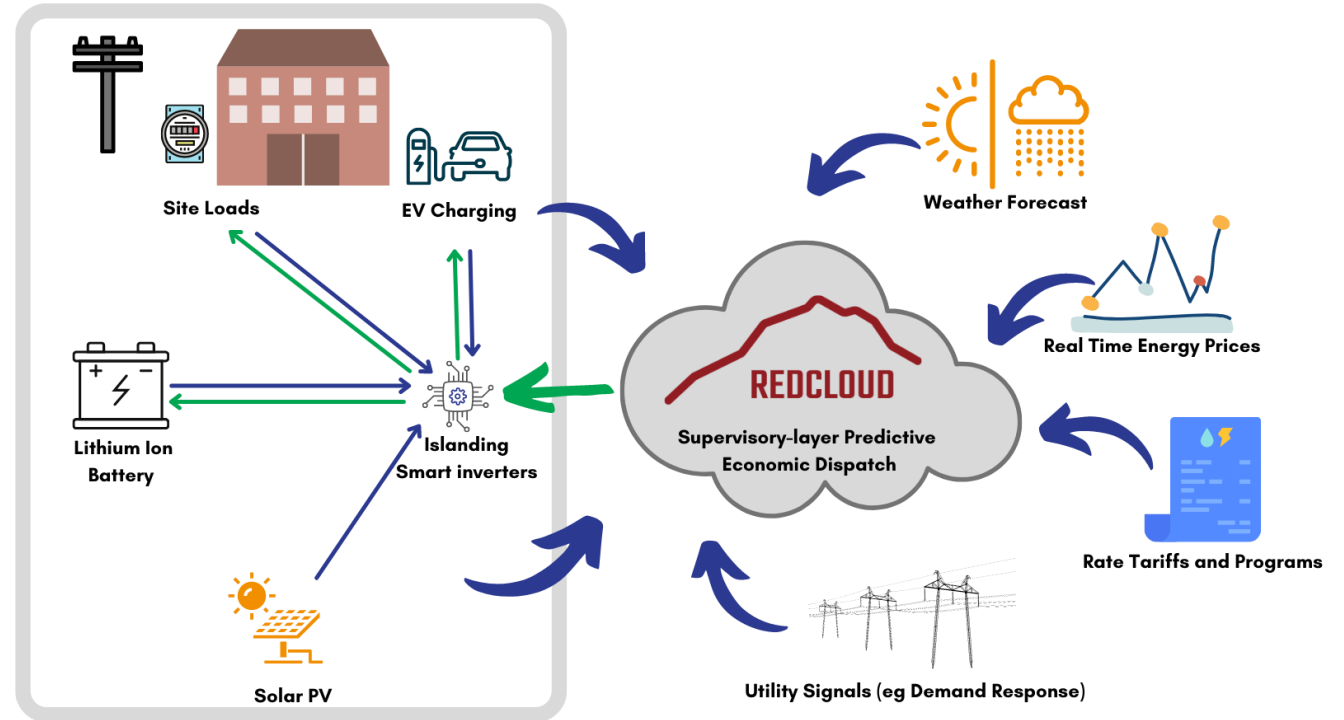
1 Bayfield
County Highway
Garage

Technology Summary

13 communities will host:

- 23 microgrids incorporating solar, battery energy storage, and EV charging for highway maintenance fleet, transit fleets, and public charging.

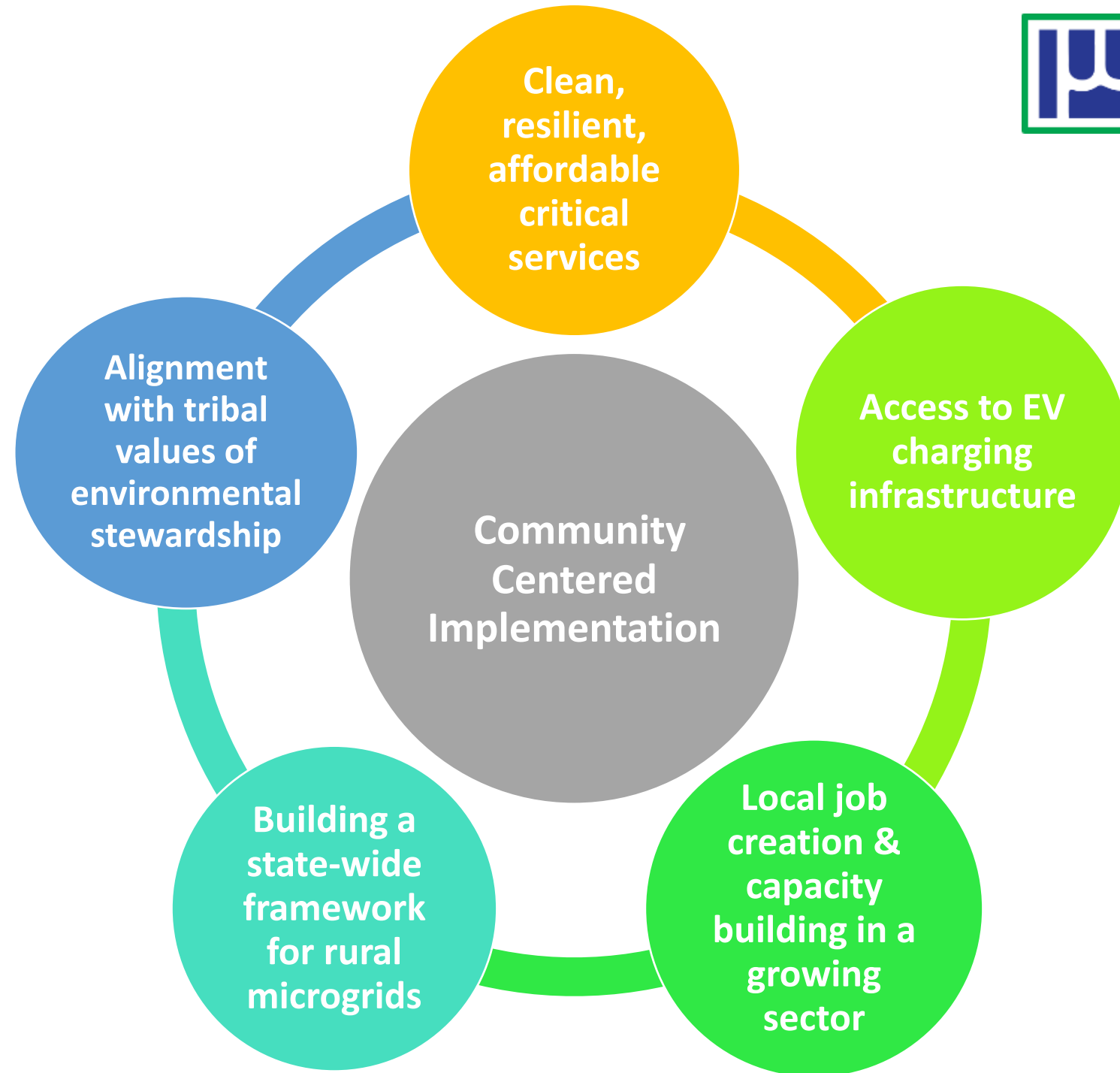
The microgrids will contain combinations of solar PV, battery energy storage, electric vehicle charging, islanding smart inverters, and the level of intelligent control required by the complexity and size of each microgrid system



Bayfield County will convert heavy duty snowplows from diesel to CNG and install CNG fueling and maintenance capability to serve 28 communities with critical winter services.



Community Benefits





Community Centered Implementation Action Plan

Public Meetings and
Presentations

Community Surveys

Site Visits and Tours

Educational Programs

Public Relations

Community Advisory Boards

Continuous Feedback





Community Benefits Plans

Prioritizing Community Benefits in OCED Projects

OCED **requires** applicants to include a Community Benefits Plan (CBP) to help ensure broadly shared prosperity in the clean energy transition.

By **prioritizing community benefits**, we can ensure the next chapter in America's energy story is marked by greater justice, equity, security, and resilience.

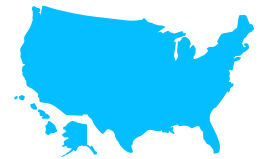
Community & Labor Engagement



Diversity, Equity, Inclusion, & Accessibility



Investing in the American Workforce



Justice40 Initiative





Next Steps & Resources

Get Involved

How could this project impact me?

Learn more about OCED's Community Benefits Plan Framework →

Is there an ERA project near me?

Learn more about the selected projects here →

Project selected

★ WE ARE HERE

Announcement and Negotiations
Projects have been selected, but awards have not been made

What is an ERA project?

Learn more →

Project awarded

When are the ERA project-specific briefings?

Learn more and register here →

NEPA engagement during phase 2 →

Ongoing community engagement throughout each phase

1 ~5 years

Phase 1: Project Planning
Community Benefit Commitments Public

2 ~5 years

Phase 2: Project Development
Community Benefit Commitments Public

3 ~2-4 years

Phase 3: Install, Integrate, Construct
Community Benefit Commitments Public

4 ~2-4 years

Phase 4: Ramp-Up & Operate
Community Benefit Commitments Public

Anticipated phases

Learn more about project phases →

How do I stay informed?

Sign up for updates →



Feedback Session

Ground Rules for Discussion

Submit questions using the Q&A feature

Reserve judgement

One idea at a time

It is okay to build on the ideas of others-
Clarifying questions are okay





For more information

- For questions regarding ERA projects in the Midwest Region
Midwest_ERA2970@hq.doe.gov

- OCED Website & Newsletter Sign-up
energy.gov/oced
Scroll to bottom to sign up here:

Sign Up for OCED News & Alerts

Subscribe and stay up-to-date on all upcoming funding opportunities, news announcements, upcoming events, and more.

- OCED Exchange (RFIs, NOIs, and FOAs)
oced-exchange.energy.gov
- Follow us on LinkedIn
linkedin.com/company/doe-oced/

Resources

- **ERA Program**
 - [OCED ERA Program Webpage](#)
 - [ERA Selections for Award Negotiations | Department of Energy](#)
 - [Federal Energy Funding for Rural and Remote Areas: A Guide for Communities](#)
 - [Rural or Remote Areas Geospatial Dashboard](#)
- **Justice40 Initiative**
 - <https://www.energy.gov/diversity/justice40-initiative>
- **Energy Justice Dashboard (BETA)**
 - <https://energyjustice.egs.anl.gov/>
- **Climate and Economic Justice Screening Tool**
 - <https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5>



Thank you!



OCED
Office of Clean Energy Demonstrations

For more information, please visit energy.gov/OCED