



Resilience Planning Playbook

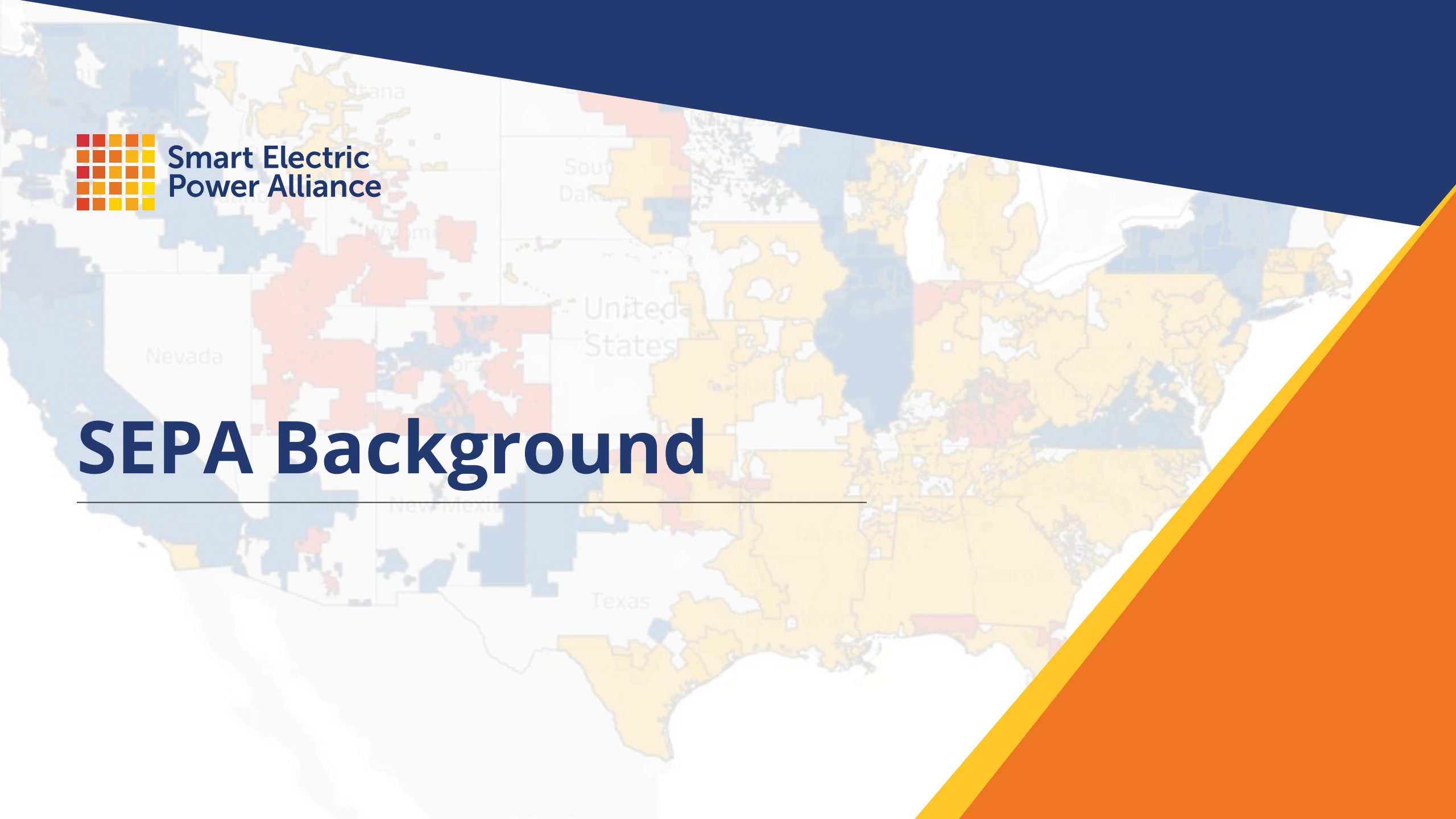
Wisconsin Distributed Resources Collaborative

October 18th, 2024



Smart Electric
Power Alliance

SEPA Background





What the Resilience team does at SEPA

SEPA envisions a carbon-free energy system that is safe, affordable, reliable, resilient and equitable.



Who Are We?

SEPA is a **membership organization** comprised of utilities, industry partners, regulators and other stakeholders.

1,100+

Total Members

67%

Of U.S. customer accounts served

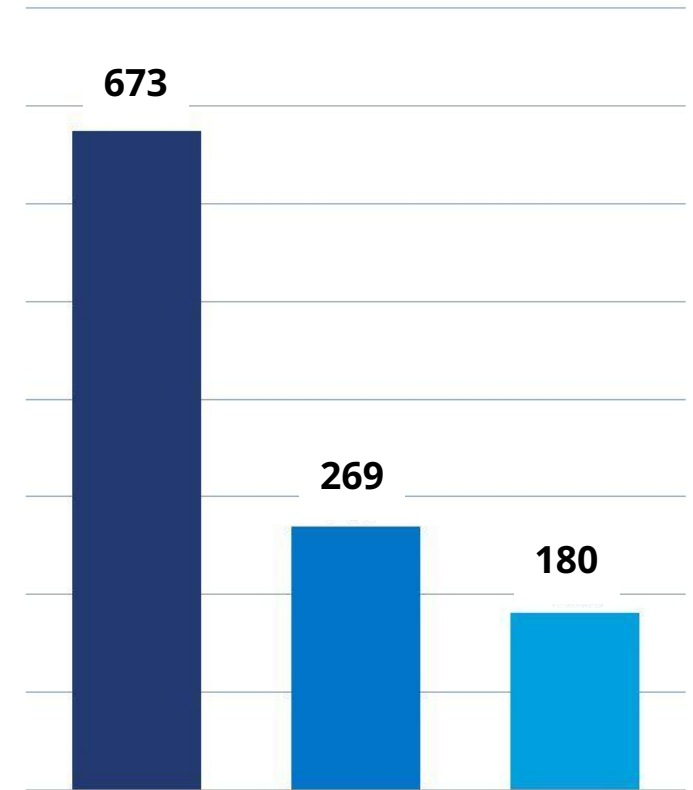
83%

Of utilities with carbon-free or net-zero emissions goals

84%

Of utility commissions

- Utilities
- Corporations
- Government / Non-profit Education



SEPA's Resilience Triangle

Communities value avoiding power interruptions and assuring critical services – access to clean and resilient power for all communities.

- National Security
- Critical Infrastructure
- Public Institutions

- Public Health and Safety
- Emergency Preparedness

Utilities value maintain safe and efficient operations with highly reliable service – leveraging grid edge assets for distribution grid services.

Customers value avoiding power interruptions and maintain critical operations and economic productions – energy cost savings and energy efficiency.

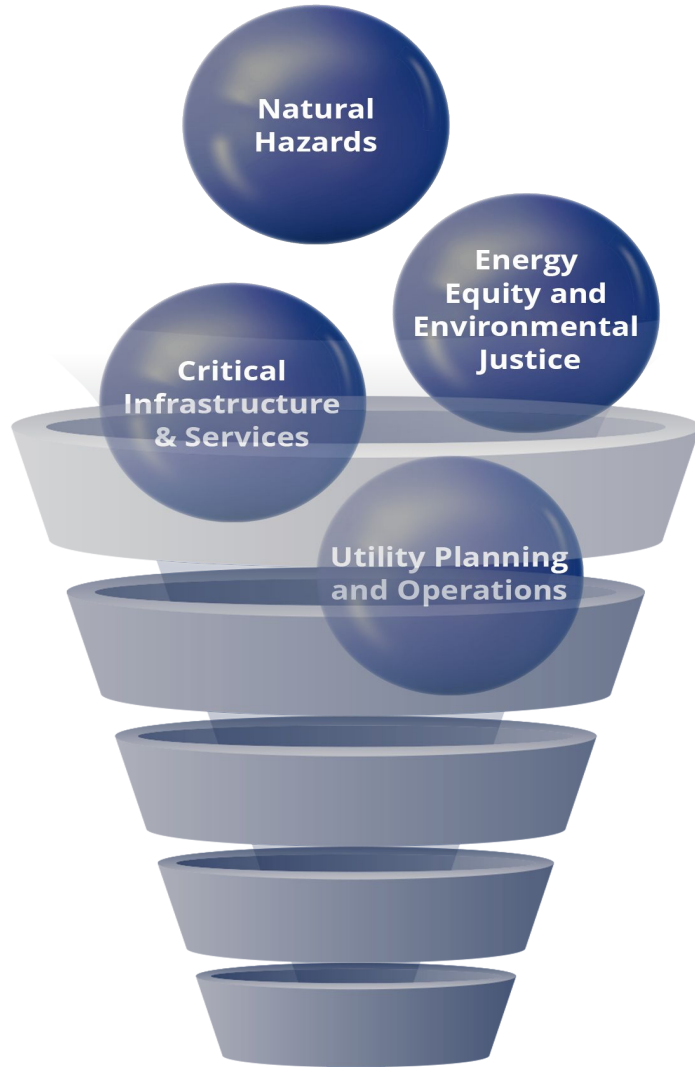


Reliability • Continuity • Lower Consumption

Resilience Playbook Key Takeaways

- Support state energy offices and electric utilities in planning and deploying carbon-free and resilient energy projects.
- Enhance statewide energy and utility planning by overlaying resilience and equity data with grid data to identify energy storage, solar PV, microgrids, and other non-wires alternatives.
- Identify key stakeholders necessary for technical requirements, regulatory frameworks, market dynamics, and utility and customer interest of resilience solutions.
- Identify the state and federal publicly available energy equity datasets to prioritize resilience investments within disadvantaged communities
- Highlight state and federal resilience funding initiatives that support the economic viability of microgrid projects and programs

Resilience Suitability via GIS



Utility Planning and Operations

Evaluating utility system data such as reliability metrics, hosting capacity analysis, and load forecasts can help stakeholders identify system vulnerabilities where resilience investments can potentially provide value.

Critical Infrastructure & Services

The critical infrastructure deemed critical by a community, the location of critical infrastructure, and their concentration to one another in a given area play important roles in which facilities across a state or utility service territory should be considered for resilience investment.

Natural Hazards

Drought, floods, freezing temperatures, severe storms, tropical cyclones, wildfires, winter storms continue to cause billions of dollars in damages and claim countless lives. The communities and parts of the system that are most at-risk to extreme weather events may benefit the most from increased resilience.

Energy Equity & Environmental Justice

Many states and the federal government have cemented energy equity and environmental justice in energy planning, prioritizing clean and resilient investments in disadvantaged communities who are often disproportionately impacted by power disruptions.

Federal Funding



- **Grid Deployment Office**

- As a part of BIL, the DOE Grid Deployment Office (GDO) designed the Grid Resilience State and Tribal Formula Grant Program to distribute up to \$2.3 billion over five years towards states, territories, and federally recognized Indian tribes.
- The Grid Resilience and Innovation Partnerships (GRIP) Program was also developed in 2023 under the GDO to distribute \$10.5 billion in grant funding towards projects that enhance grid flexibility and improve the resilience of the power system against growing threats of extreme weather and climate change.



- **FEMA**

- The Federal Emergency Management Agency (FEMA) developed the Building Resilient Infrastructure and Communities (BRIC) program. In 2023, \$1 billion was allocated under BRIC funding to address risks of natural disasters and enhance community resilience.



- **Office of Clean Energy Demonstrations**

- Falling under the DOE Office of Clean Energy Demonstrations, the Energy Improvement in Rural or Remote Areas (ERA) program designated \$1 billion to improve the resilience, reliability, and affordability of energy systems in communities with 10,000 or fewer people.

Consortium Building & Partnerships

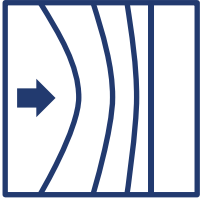


Microgrid Capabilities

UTILITY

COMMUNITY

CUSTOMER



Microgrids can provide resilience benefits from energy storage, backup generation, and increased grid flexibility



Microgrids can provide cost savings from on-site generation and peak reductions (customer), load flexibility (utility), and reduced resource adequacy costs (utility/community)



Microgrids with on-site solar PV can help communities, utilities and customers reach their renewables goals

Successfully Deploying Resilience Solutions

Conduct Resilience Suitability

- Utility Planning and Operations
- Critical Infrastructure & Services
- Natural Hazards
- Energy Equity & Environmental Justice



Build Consortia and Partnerships

- Utility and End-Use Customer Interest
- Define Stakeholder Roles, and Responsibilities
- Identify Customer and Site Needs
- Conduct Preliminary Feasibility



Identify Possible Solutions

- Grid Hardening
- System Automation
- Customer-Sited and Grid-Scale Solar PV and Energy Storage
- Microgrids
- Virtual Power Plants
- Non-Wires Alternatives



Leverage Funding and Implementation

- Utility Investments
- Pilot Projects
- Research and Development
- Business Models and Financing Options





Questions?

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