Policy Council Meeting Agenda

September Meeting- 9/26/2023 @ 1:00 PM ET

I.	Welcome & Antitrust Guidelines	Josh Steinhardt, Operations Director
II.	Introduction	Karen Wayland, CEO
III.	Presentations on State Dockets	Lisa Schwartz, Senior Policy Researcher and Strategic Advisor, Electricity Markets & Policy Department, Lawrence Berkeley National Laboratory Ronny Sandoval, Principal, The Regulatory Assistance Project Cameron Brooks, President, E9 Insight and Executive Director, Think Microgrid
IV.	Questions and Discussion	All

GRIDWISE ALLIANCE

GridWise Alliance
Antitrust Compliance Program Guidelines

It is the policy of the GridWise Alliance to comply fully with the antitrust laws. The Sherman Act and other applicable antitrust laws are intended to promote vigorous and fair competition and to combat various restraints of trade.

Each person who participates in GridWise Alliance activities has a responsibility to his/her employers and to the GridWise Alliance to avoid any improper conduct from an antitrust standpoint. The following guidelines will assist in meeting this responsibility:

1. GridWise Alliance meetings and discussions generally cover topics related to the generation, transmission and distribution of electricity. Should related discussions ever have any potential for competitive impact, all due care shall be taken to avoid such discussion between competitors.

2. In view of antitrust considerations and to avoid any possible restraints on competition, the following legally sensitive subjects must be avoided during any discussion between competitors:

   (a) Future marketing plans of individual competitors should not be discussed between competitors;

   (b) Any complaints or business plans relating to specific customers, specific suppliers, specific geographic markets or specific products, should not be discussed between competitors;

   (c) Purchasing plans or bidding plans of companies in competition should not be discussed (except privately between two parties with a vertical commercial relationship such as supplier and customer); and

   (d) Current and future price information and pricing plans, bidding plans, refund or rebate plans, discount plans, credit plans, specific product costs, profit margin information and terms of sale should not be discussed between competitors. All of the above are elements of competition.

3. Any question regarding the legality of a discussion topic or business practice should be brought to the attention of the GridWise Alliance legal counsel or a company's individual legal counsel for advice.

State Regulatory Activities on Grid Modernization Planning: National Snapshot

Lisa Schwartz

GridWise Alliance Policy Council

September 26, 2023

This work was funded by the U.S. Department of Energy under Contract No. DE-AC02-05CH11231.

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High level of state activity

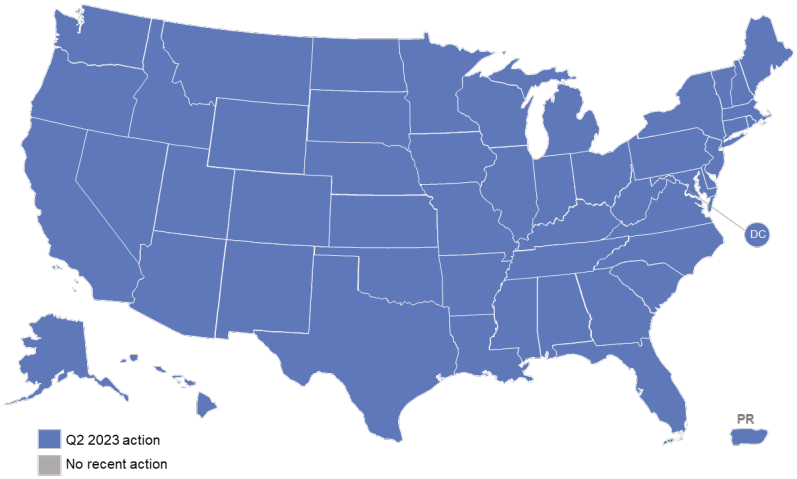
- Number of states requiring regulated utilities to file some type of grid plan — including planning to accelerate grid *modernization* — has grown rapidly
  - From a handful of states in 2017 to >20 today
  - By legislation or regulation, or both
- State goals and objectives for planning requirements share common themes.
  - Improve grid reliability and resilience
  - Increase customer choice and engagement in energy services
  - Support distributed energy resource (DER) integration and utilization for grid services
  - Reduce greenhouse gas emissions and support clean energy transition
  - Accelerate deployment of new technologies and services to optimize grid performance and minimize electricity system costs
- Requirements also reflect importance of transparency and stakeholder engagement

Photo courtesy of Sunrun

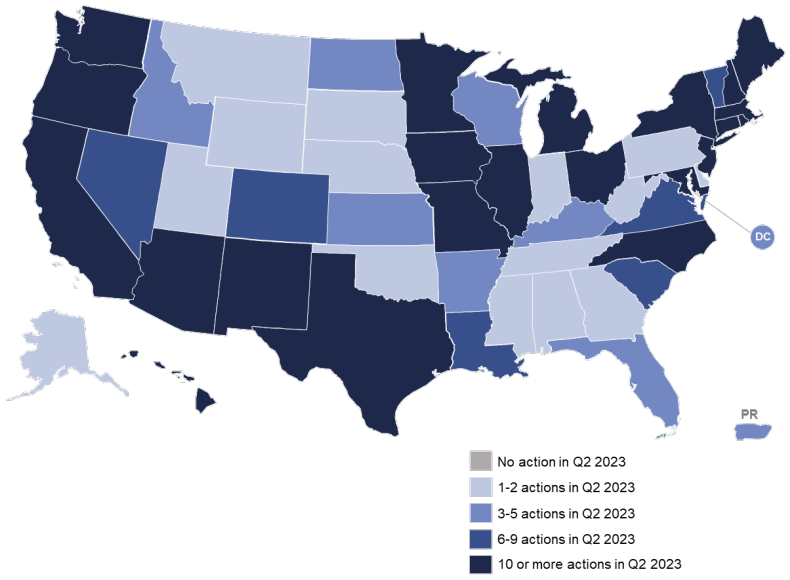
Legislative and regulatory activities on grid mod in all 50 states, plus DC and PR, in Q2 2023

Type of Action	# of Actions	% by Type	# of States
Policies	130	24%	30 + PR
Planning and Market Access	91	17%	30 + DC, PR
Financial Incentives	85	16%	29
Business Model and Rate Reform	84	16%	39 + DC
Deployment	76	14%	34
Studies and Investigations	73	14%	27 + DC, PR
Total	**539**	**100%**	**50 States + DC, PR**

Note: The "# of States/ Districts" total is not the sum of the rows because some states have multiple actions. Percentages are rounded and may not add up to 100%.

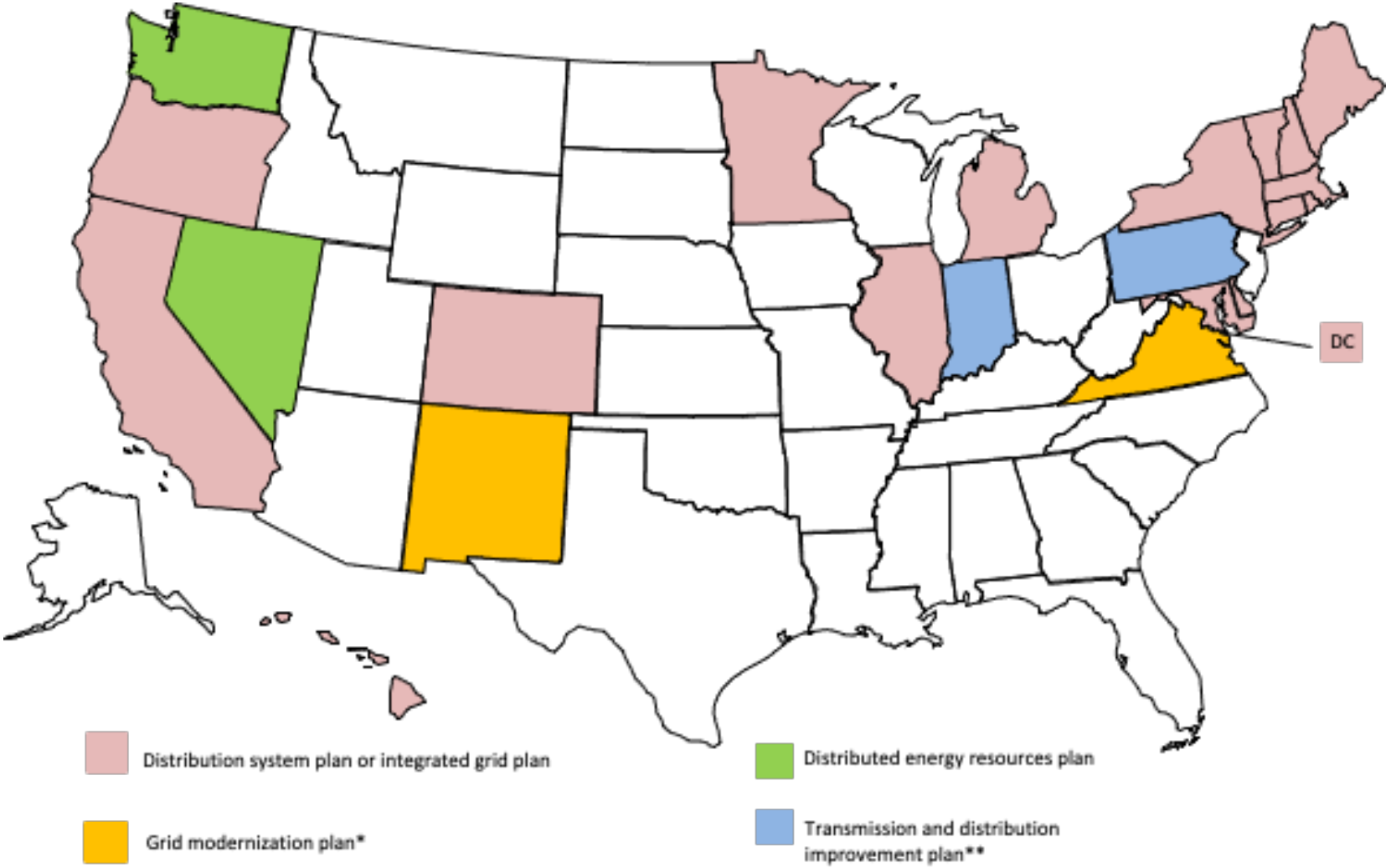


- Busiest states: CA, TX, ME, NY, MA, MN, NJ, CT, NC, MI, HI
- Topics in relative order of frequency: energy storage deployment, utility business model reform, distribution system planning, interconnection rules, integrated resource planning, wholesale market rules, advanced metering infrastructure, smart grid deployment, and time-varying rates
- *"Although many of the bills under consideration may not ultimately be enacted, these actions do indicate where policymakers are considering various aspects of grid modernization."*



Source: NC Clean Energy Technology Center, *50 States of Grid Modernization: Q2 2023 Quarterly Report*, July 2023

States requiring regulated utilities to file grid plans



*Some states that require distribution system plans also require grid modernization plans (e.g., Minnesota and California).
**Indiana also includes storage.

Types of distribution plans filed (1)

- **Transmission and distribution improvement plan**
  Enables expedited cost recovery for certain system improvements
  - Indiana's Transmission, Distribution, and Storage System Improvement Charge can include new or replacement transmission, distribution, or utility storage projects for safety, reliability, system modernization, or economic development.

- **Distributed energy resources plan**
  Evaluates benefits and costs of DERs, considers ways to increase deployment of cost-effective DERs, and facilitates better integration of DERs in distribution planning
  - Regulated utilities in Nevada must submit a Distributed Resource Plan to the Public Utilities Commission every three years as part of their integrated resource plan, including recommendations for utility infrastructure upgrades and non-wires alternatives (NWA)* to identified constraints.

*DERs that provide specific services at specific locations to defer some traditional infrastructure investments, leveraging customer and third-party capital

Types of distribution system plans filed (2)

- **Grid modernization plan**
  Reasoned strategy linking technology deployment roadmap to stated objectives
  - Examples: CA, MA, MN, NM, RI, VA
  - A primary focus is replacing aging infrastructure with advanced grid technologies.
  - Plans may include request for approval of grid modernization investments and programs.
  - Some states allow for expedited cost recovery of grid mod investments.

- **Integrated distribution system plan**
  Systematic approach to satisfy customer service expectations and state objectives
  - Includes grid mod strategy & DER planning
  - May coordinate across planning domains (e.g., HECO's 2023 Integrated Grid Plan, Maine Integrated Grid Plan law)

Source: EPRI

Trend toward integrating grid mod planning with other types of planning

- NY Distributed System Implementation Plans support 2019 Climate Act and 2022 Scoping Plan
- CA rulemaking on Distribution Resources Planning (DRP) in part required grid mod plans filed with GRCs (2018 decision). New DRP rulemaking to support high levels of DERs (incl. managed EV charging):
  - Utility roles and responsibilities and utility and aggregator business models
  - More holistic planning process
  - Grid mod investments, smart inverters to provide grid services, and aligning GRC filings with infrastructure needs in DRP
- MN requires grid mod plan and transportation electrification plan filed with IDP
- HI requires planning across domains (G, T, D) and across *procurement, pricing and programs* (e.g., HECO's 2023 Integrated Grid Plan)

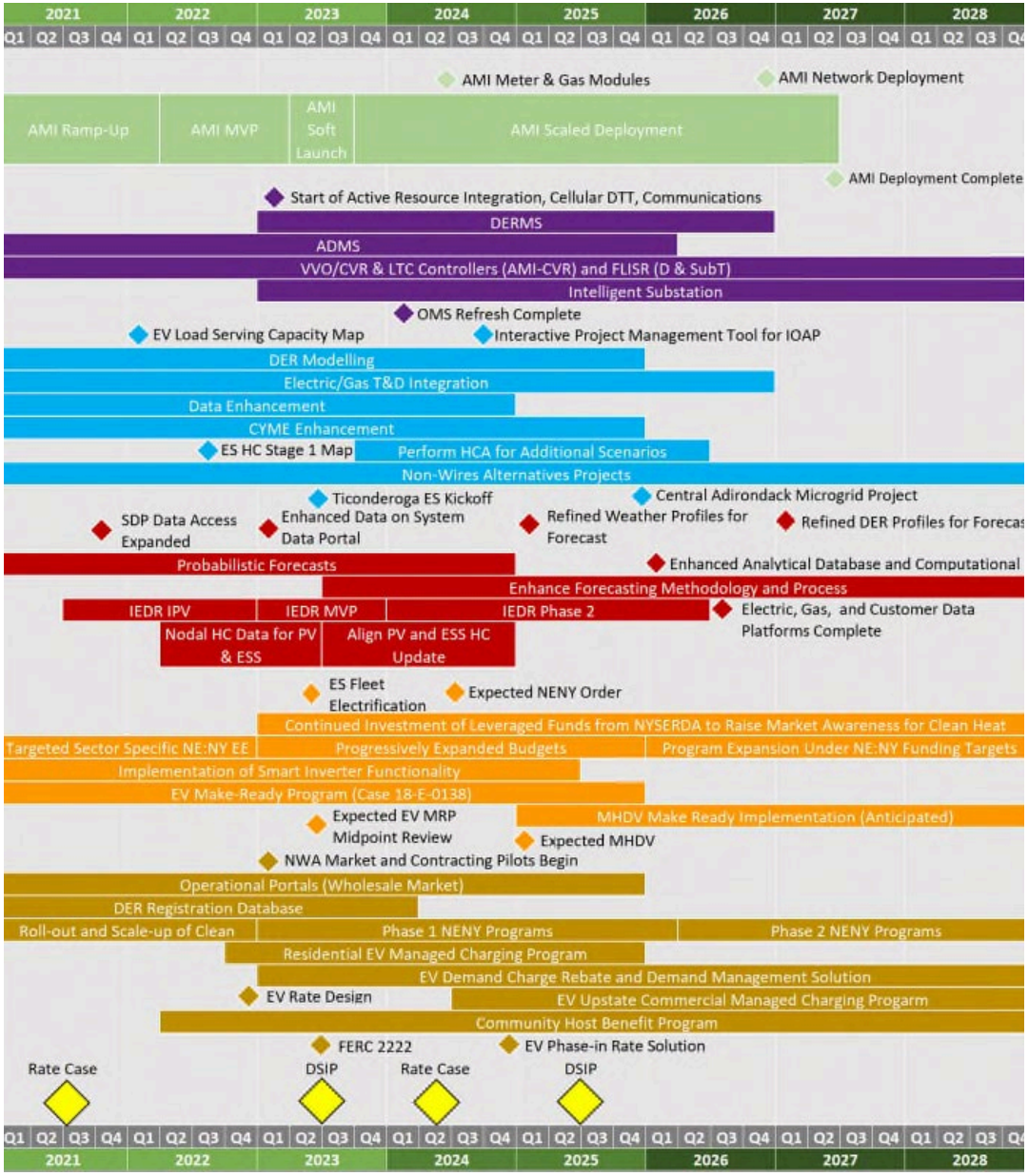


Figure source: National Grid Distributed System Implementation Plan (June 2023)

ENERGY MARKETS & POLICY

Contact

Lisa Schwartz: lcschwartz@lbl.gov

For more information

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September 26, 2023

State Activities in Advancing Grid Modernization

GridWise Alliance Policy Council Meeting

Ronny Sandoval
Principal
Regulatory Assistance Project (RAP)®

50 State Street
Suite 3
Montpelier, VT, 05602

+1 802 216 4606
rsandoval@raponline.org
raponline.org

Agenda

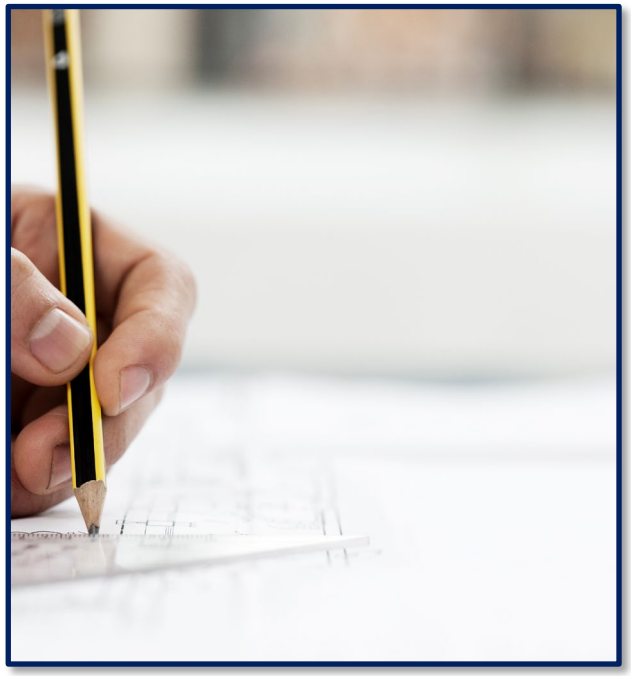
- Definitions and Level-setting
- Regulatory Venues for Advancing Grid Modernization
- Elements of Effective Grid Modernization Plans
- Regional Case Studies
- Key Takeaways

Benefits of Grid Modernization Technologies

- Increased system efficiency
- Low-cost, reliable energy service
- Resilience in the face of major disruptive events
- Greater customer choice of energy products and services
- Supports an increasingly electrified economy

Regulatory Venues for Advancing Grid Modernization

- Rate Cases
- Grid Modernization Cases
- Integrated Distribution Plans
- Integrated Grid Plans
- Demonstration Projects
- Utility Requests for Authorization to Commit Funds associated with Federal Awards
- State Legislative Activities



Source: Microgrid Solutions| Arizona Public Service |Accessed April 24, 2023 | Microgrid Solutions (aps.com)

Elements of Effective Grid Modernization Plans

- Investments proposed demonstrate a clear value-add for utility customers
- Selected solutions are aligned with or advance state and local policy goals (enhanced resilience, greater system efficiency, lower costs, improved quality of service etc.)
- Design of customer products and services enabled by proposed investments are detailed and clearly communicated
- Relevant stakeholders are engaged and can inform the scope or direction of grid modernization programs
- Plan outcomes are measured through metrics and allow opportunities for course-correction

Source: Resilience Through Planning| Cybersecurity and Infrastructure Security Agency | Accessed April 24, 2023 | https://www.cisa.gov/resilience-through-planning

Case Study:
CenterPoint Energy Distribution Automation

- In 2017, Hurricane Harvey brought 52 inches of rain to Texas and Louisiana
- Distribution automation, including intelligent switches, helped CenterPoint energy isolate power quickly – avoiding 41 million outage minutes for customers
- Other technologies including smart meters provided increased visibility and efficiency of response

Source: Corporate Responsibility Report | CenterPoint Energy |2017 | 2017-Corporate-Responsibility-Report.pdf (centerpointenergy.com)

Case Study:
Massachusetts Electric Sector Modernization Plans

- A 2022 Massachusetts Law requires each electric distribution company to develop plans to proactively upgrade the distribution system
- Initiative standardized grid modernization requirements, including on disclosure of prior system investments and forward-looking proposals
- A Grid Modernization Advisory Council (GMAC), appointed by the Governor for a term of five years, reviews and provides recommendations on Massachusetts' electric-sector modernization plans
- Distribution companies filed their responsive plans in September 2023

Source: Grid Modernization Advisory Council| Massachusetts Department of Energy Resources |Accessed September 25, 2023 | https://www.mass.gov/info-details/grid-modernization-advisory-council-gmac#electric-sector-modernization-plans-(esmps)-information-

Case Study:
Xcel Energy Resilience as a Service Pilot

- Program designed for Commercial and Industrial customers seeking energy resilience and business continuity through power outages
- Xcel Energy of Wisconsin pays most of the upfront costs of these systems and is paid back by participant over 10 years
- Through 2022, one government project is under construction, with projects at manufacturing, wastewater, airports, and other facilities are in the study stage
- Technologies include solar, storage, microgrids and back-up generators

Source: Resilience as a Service Program Annual Compliance Report | Xcel Energy |2022 | 4220-TE-106 RaaS Annual Report 2022.docx (wi.gov)

Key Takeaways

- Grid modernization technologies go beyond addressing aging grid infrastructure by introducing new capabilities to the grid
- Through strategic investments and solutions, customers can benefit from maximizing the use of the grid they already have
- Proposed solutions should account for the local context and demonstrate clear alignment with local priorities
- Options to expand grid modernization capabilities should involve various stakeholders and should coordinate public and private investments to maximize impact
- Metrics that reflect desired plan outcomes should be established on the front-end to ensure solutions deliver the intended value

About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org

Ronny Sandoval
Principal
Regulatory Assistance Project (RAP)®

50 State Street
Suite 3
Montpelier, VT, 05602

+1 802 216 4606
rsandoval@raponline.org
raponline.org

ThinkMicrogrid

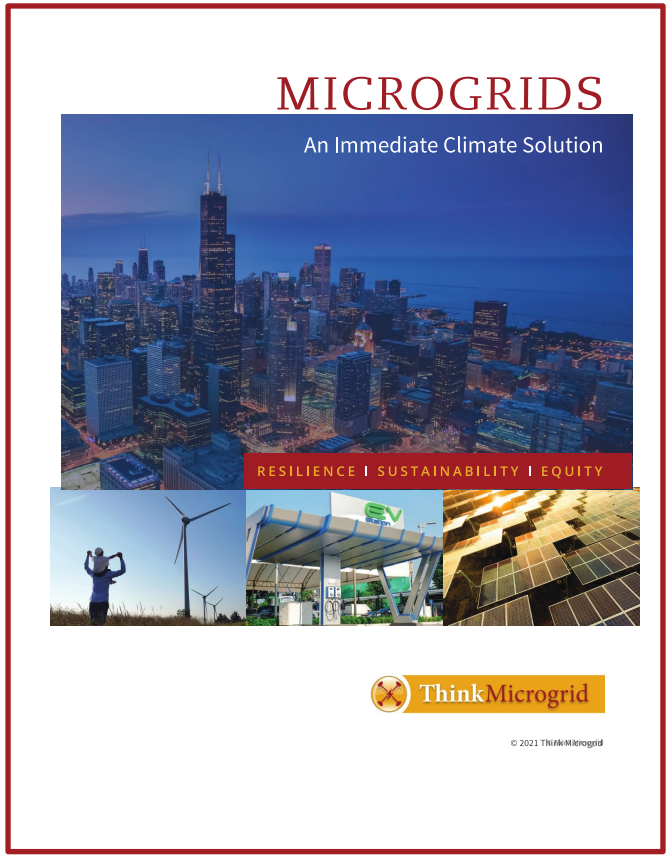
GridWise Alliance Policy

September 26, 2023

Priority Activities

- **EDUCATION:** resources and editorial strategy for media and political sphere
- **EVANGELISM:** commissioners, executive leaders and energy influencers
- **ENGAGEMENT:** convening leaders and participating in proceedings, roundtables and policy development

Vision Paper

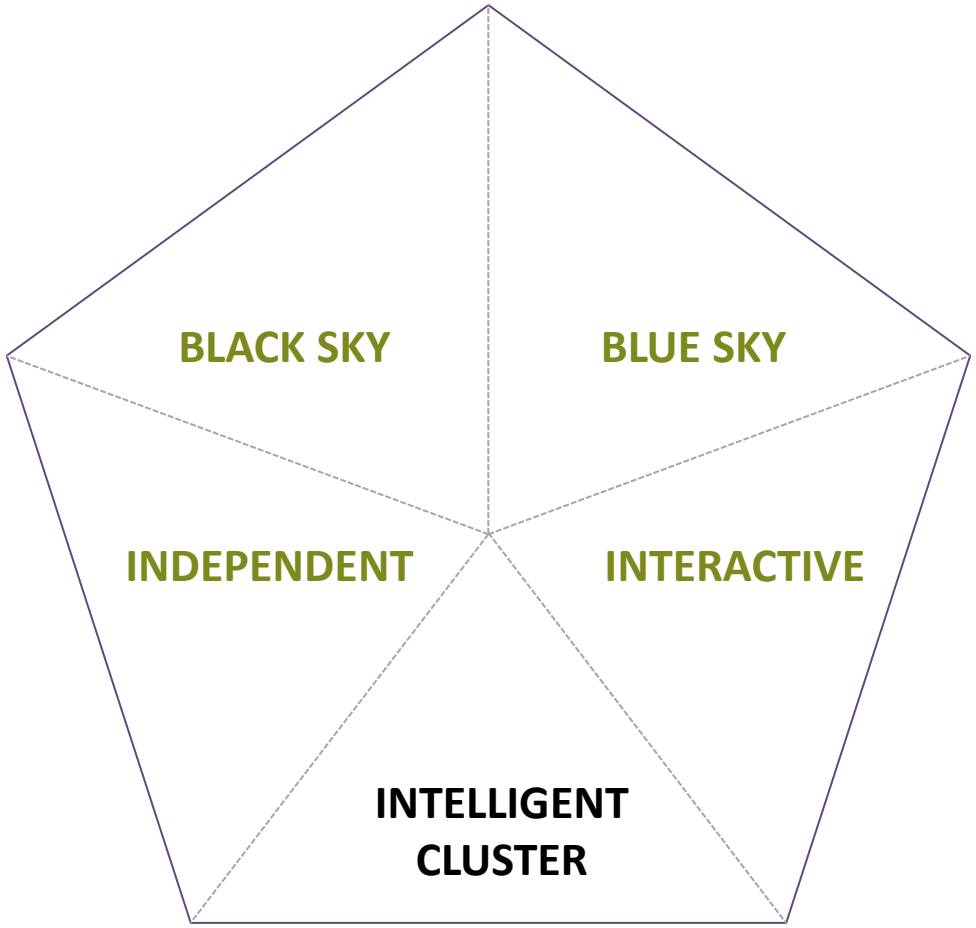


Microgrids: An Immediate Climate Solution

- Opportunity Highlights
- Project Profiles
- Policy Topics
- *NARUC meeting workshop and interactive discussion*

https://e9radar.link/thinkvision

Microgrid: Defining Characteristics



Political Enthusiasm

"**I'm very supportive of microgrids**…. Those solutions are very exciting and could be, and certainly should be, part of the national system. We should be incentivizing communities to think about that so that they are not so dependent on poles with wires atop that were constructed 70 years ago."

- Jennifer Granholm

The Washington Post ›lm has advice for Texas — and for the oil industry"
February 2021

A Shared Vision?

Office of
ELECTRICITY

Microgrid Program Strategy

Office of Electricity

The DOE Microgrid R&D Program vision is to facilitate the nation's transition to (1) a more resilient and reliable, (2) more decarbonized electricity infrastructure, in which (3) microgrids have a reduced cost and implementation times, while ensuring that microgrids support an equitable energy transition through prioritized provision of at least 40% of microgrid benefits going to disadvantaged communities in a secure manner. These three enumerated strategic goals are developed in the context that the United States' electricity system is becoming more distributed in nature, and that disruptions to the electricity delivery system (EDS) are occurring more frequently and with greater severity. The vision statement follows.

> *By 2035, microgrids are envisioned to be essential building blocks of the future electricity delivery system to support resilience, decarbonization, and affordability. Microgrids will be increasingly important for integration and aggregation of high penetration distributed energy resources. Microgrids will accelerate the transformation toward a more distributed and flexible architecture in a socially equitable and secure manner.*

The vision assumes a significant increase of DER penetration during the next decade, reaching 30-50% of the total generation capacity. In that context, the Microgrid R&D program seeks to accomplish these three goals:

Goal 1: Promote microgrids as a core solution for increasing the **resilience and reliability** of the EDS, supporting critical infrastructure and reducing social burdens during blue and black sky events

Goal 2: Ensure that microgrids serve as a driver of **decarbonization** for the US EDS by acting as a point of aggregation for larger number of DERs, with 50% of new installed DER capacity within microgrids coming from carbon-free energy sources by 2030.

Goal 3: **Decrease microgrid capital costs** by 15% by 2031, while reducing **project development, construction and commissioning** times by 20%.

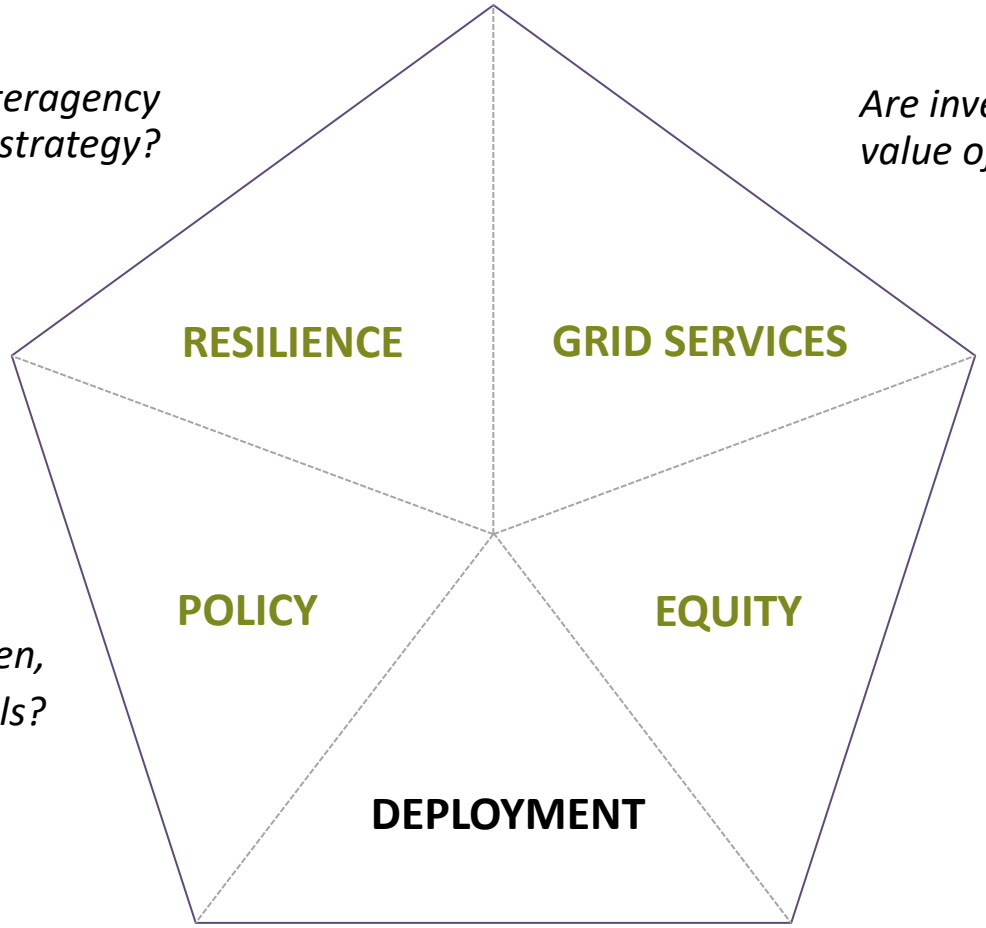
"By 2035, microgrids are envisioned to be essential building blocks of the future electricity delivery system to support resilience, decarbonization, and affordability….

The vision assumes a significant increase of DER penetration during the next decade, reaching 30-50% of the total generation capacity."

State Assessment Framework

Is there a coordinated, interagency strategy?

Are investments able to receive the value of the services they enable?



Is regulatory treatment open, fair and aligned with policy goals?

Are the benefits and opportunities fairly distributed?

Are all configurations and investments encouraged?

Scorecard 2023

Score	Grade	**Metric, Features and Characteristics** (general)
A	4	Proactive, urgent action to address long-term reform of existing barriers across regulatory, legislative and financial dimensions.
B	3	Precedent-setting market, policy and program solutions with broad stakeholder engagement and identified goals.
C	2	Passive or limited program and pilot-level activity with little coherent plan or coordination.
D	1	No identifiable activity.
F	*0*	*Notably regressive or obstructive activities.*

Scorecard 2023…*deployment*

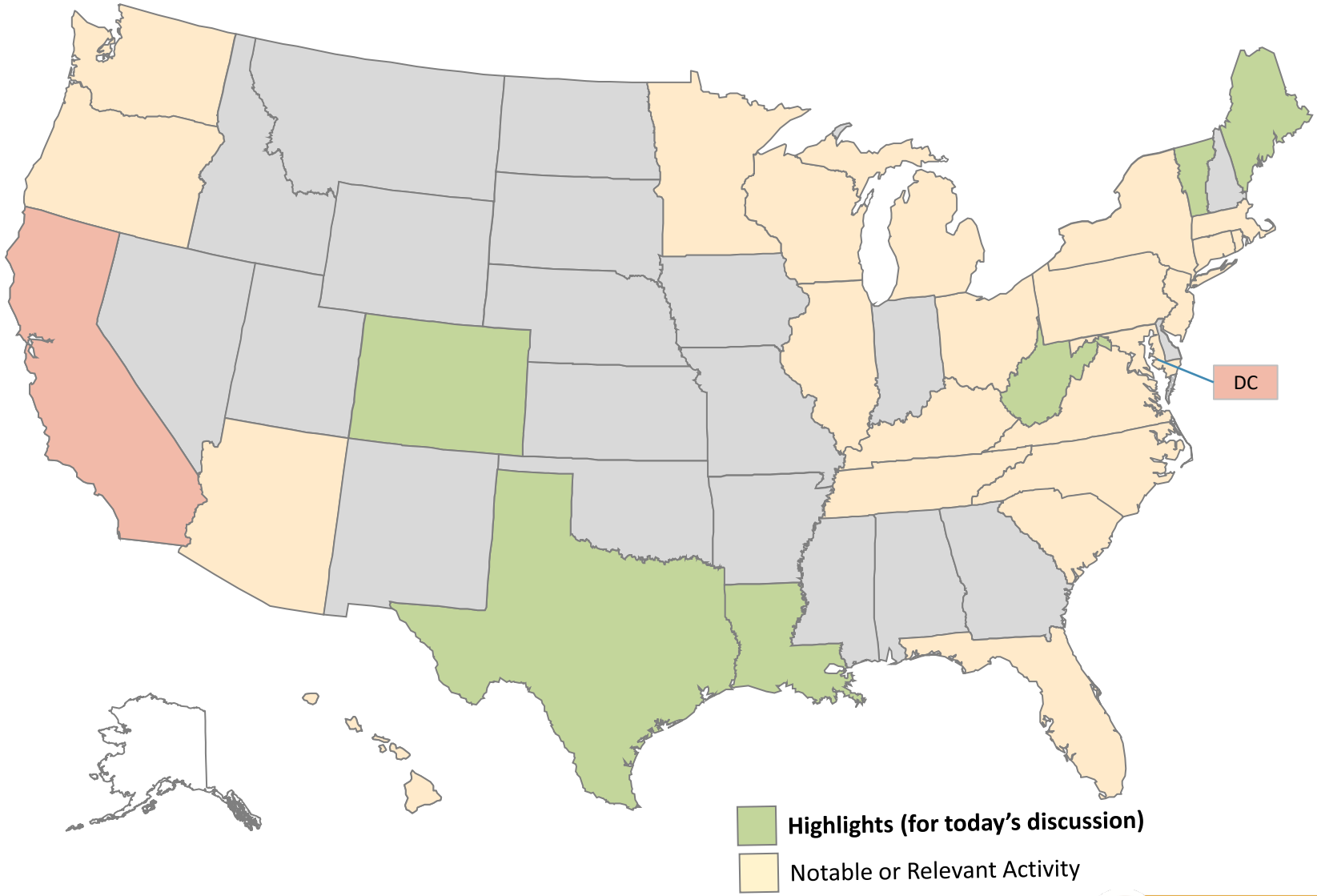
Score	Grade	**Metric, Features and Characteristics** (general)	MW:peak
A	4	Innovative deployment incentives (such as "resiliency enterprise zones") Significant private investment in infrastructure and projects. Active deployment in all sectors. Microgrids are integral resource for grid operations and services.	>10%
B	3	Significant project deployment.	<10%
C	2	Limited projects.	<1%
D	1	No identifiable activity	<0.1%
F	0		

Policy "Fault Lines" (or 'paradoxes')

1. **Resilience and Clean Energy**
2. **Utility Distribution Infrastructure**
3. **Multi-Customer Microgrids**
4. **Microgrid Export Value**
5. **Equity and Public Funding**

Summary of discussions captured in "Opportunity Statements"

Microgrid Policy Dashboard



Recommended Actions for State Officials

Think Microgrid

2022 Policy Summit
Philadelphia, Pennsylvania

Background

On May 31, dozens of experts from across industry, government, academia, and more met in Philadelphia to discuss and brainstorm actions to advance the future of microgrid policy. After several hours of dynamic discussion about topics spanning the value of resilience, role of clean energy, prioritization of equity, barriers to progress, and role of private investment, attendees reconvened to highlight policy steps and best practices across offices and agencies positioned to affect microgrid policy. Below, Think Microgrid outlines some ideas that came out of this exercise, including examples of trailblazing action across the country.

Executive

Executives should act as convenors on microgrid policy. Too often, opportunities for policy progress get lost in translation and fall flat. In addition to leveraging the powers of executive order and budget design, executive offices can establish working groups and task forces, convene conferences, or forge informal relationships across offices and agencies that lead to more collaboration and ultimately positive policy outcomes.

1. *Establish a task force and/or office on resiliency.* Executive offices should establish grid resiliency task forces to identify challenges and propose solutions for the electrical system's greatest resiliency needs. *Example:* Former Maryland Gov. O'Malley created the state's Grid Resiliency Task Force in 2012 by executive order. Recommendations of the task force contributed to the establishment of the Maryland Energy Administration's microgrid and resiliency hub grant program, which has facilitated the deployment of community and critical facility projects in the state.

2. *Convene strategic conferences.* Governors should host conferences that bring together stakeholders and experts invested in driving microgrid deployment and policy. *Example:* In May 2022, Alaska Governor Dunleavy's office convene the Alaska Sustainable Energy conference. The event brought together microgrid champions from around Alaska and the nation to discuss policy and technology within the state's uniquely rural, community-based microgrid landscape.

3. *Direct investigations into microgrid technology.* Executive offices should designate portions of their budget towards investigating and developing microgrid technology. *Example:* In New York, Gov. Hochul used her executive budget to make the state a green hydrogen hub. She directed state agencies to develop a green hydrogen microgrid regulatory framework and facilitate the distribution of $27M for product development and pilot projects.

Consensus Document

- Developed in Policy Summit Workshop (May 2022)
- Including contributions from a wide range of industry and regulatory perspectives
- Incorporated into outreach efforts

https://e9radar.link/thinkstateactions

Anticipated State Actions

1. **Resilience Planning Requirements**
2. **Community & Multi-Customer Reform** (e.g., “resilience districts”)
3. **Project Funding & Microgrid Roadmaps**
4. **Resilience-as-a-Service Offerings**
5. **Equity-Based Program & Funding Allocations**

We anticipate increasing interest in open-access market models

ThinkMicrogrid

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Thank You!

Cameron Brooks

cameron@thinkmicrogrid.org

303.957.7667