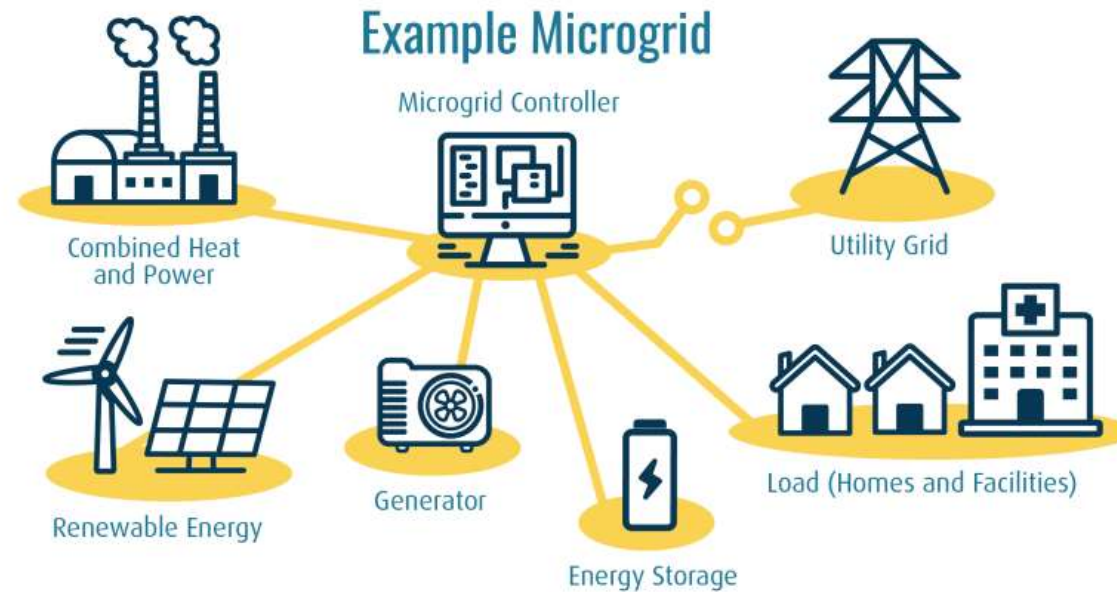


Sandia Microgrids and Energy Storage for Emergency Grid Resilience Webinar NASEO NARUC Presentation



About NASEO

- The only national non-profit association for the governor-designated energy officials from each of the 56 states and territories
- Serves as a resource for and about the State Energy Offices through topical committees, regional dialogues, and informational events that facilitate peer learning, best practice sharing, and consensus building
- Advances the interests of the State and Territory Energy Offices before Congress and the Administration
- Learn more at www.naseo.org

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About NARUC

- National non-profit membership association for state utility regulators (public utility/service/commerce commissions) from all 50 states, DC, and territories
- Serves as a resource for and about state utility regulators through topical committees, regional dialogues, and informational events that facilitate peer learning, best practice sharing, and consensus building
- Advances the interests of state utility regulators before Congress and the Administration
- Learn more at www.naruc.org

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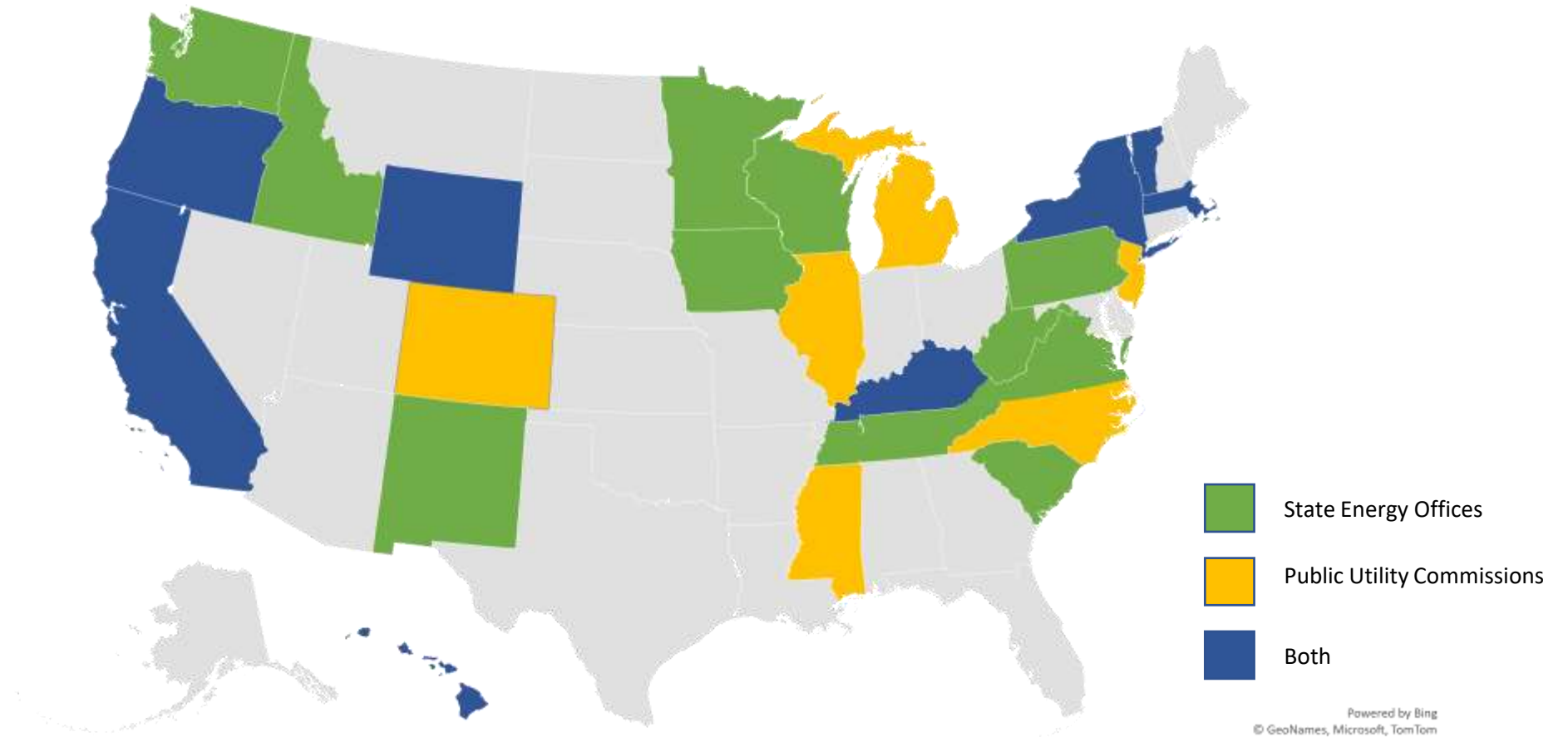
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About NARUC

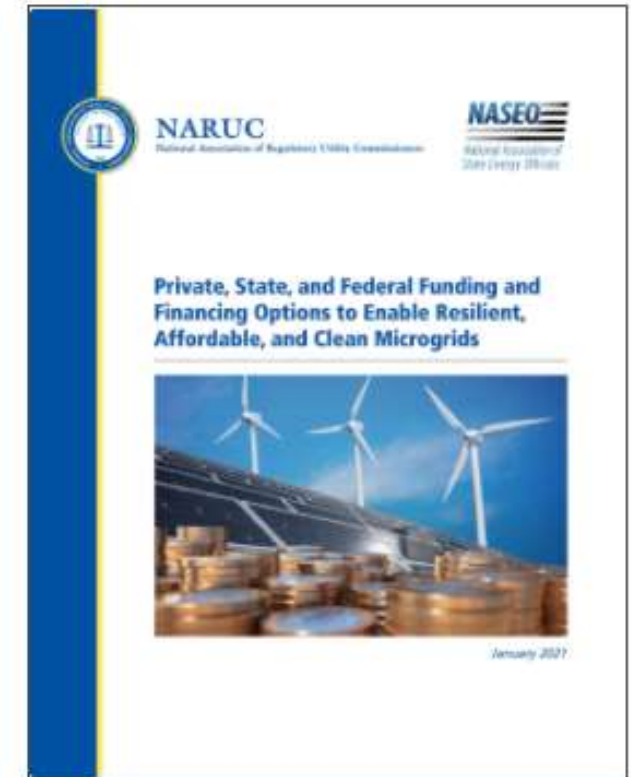
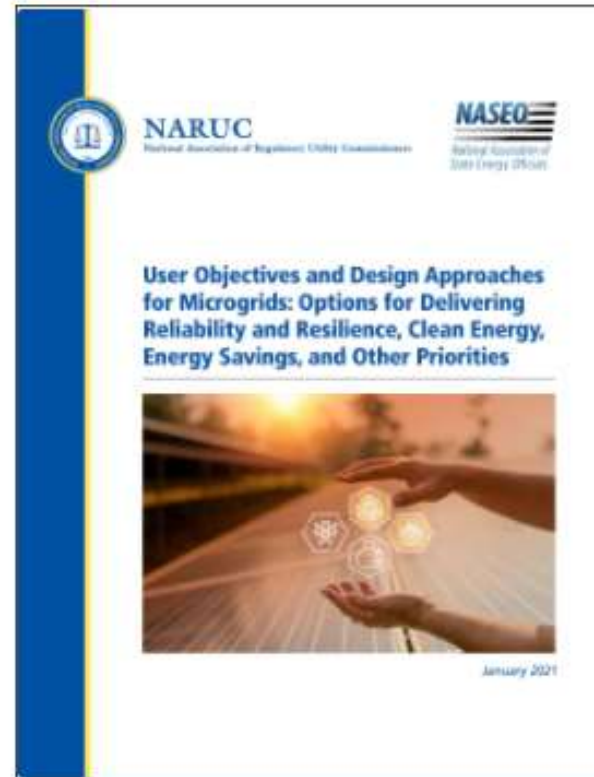
- Eight topical committees: Gas, Electricity, Energy Resources and the Environment, Critical Infrastructure, International Relations, Consumers and the Public Interest, Telecommunications, Water
- Subcommittees and staff subcommittees on more granular topics
- Center for Partnerships & Innovation serves as grant-funded technical assistance office with active programs on cybersecurity, electricity regulation, natural gas, nuclear energy, coal, microgrids, and more

NASEO NARUC Microgrids State Working Group



Resources from NASEO and NARUC

- Webinar Recordings
- Publications
- Complication of Models and Other Technical Resources



Resilient Maryland Program



Microgrid installed at Montgomery County Public Safety Headquarters Photo Credit: Montgomery County, MD

New Jersey: Microgrid Town Centers and NJ Transit

Microgrid Type	DERs	Facilities	Meters	Facility Owners
Level 1 single facility	1 - 2+	1	1	1
Level 2 campus	1 - 2+	2+	1 - 2+	1
Level 3 multi-user community	1 - 2+	2+	2+	2+





Rhode Island: Resilient Microgrids for Critical Services

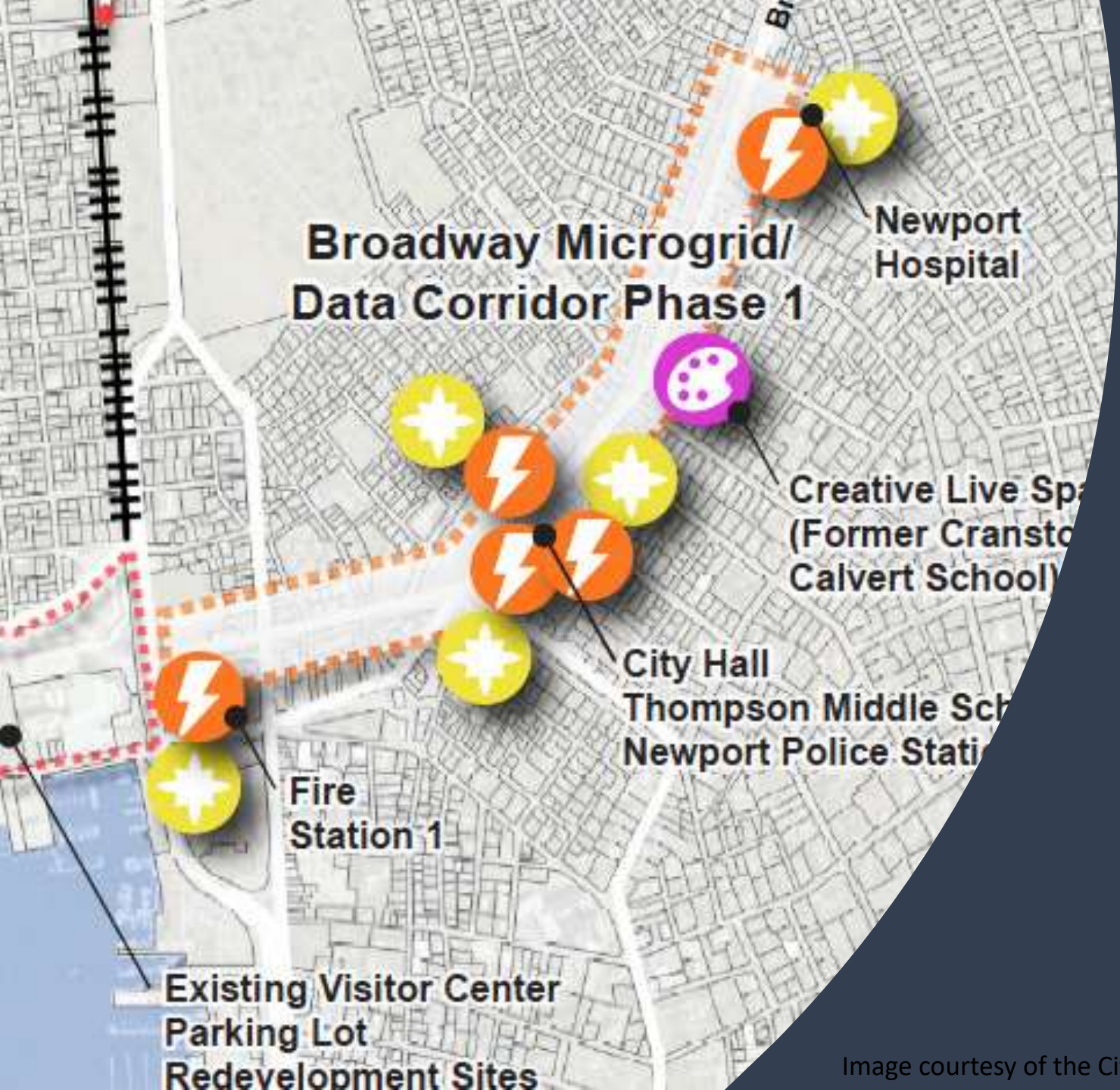


Image courtesy of the City of Newport

Role of PUCs in Resilience

- Core role of PUCs is to consider utility investments made with ratepayer dollars and ensure ratepayers are benefiting in a manner that is proportional to their electricity costs
- Unlike State Energy Offices, PUCs do not disburse grants or develop policy
- PUCs set objectives or performance standards for utilities and approve prudent costs / just and reasonable rates to achieve expectations

Role of PUCs in Resilience

- Some examples of utility-proposed resilient community microgrids have come before commissions
- Response from regulators has generally been skeptical: if resilience benefits to ratepayers are not quantified, it is not something ratepayers should pay for. Costs can instead be borne by individual customers or utility.
- Estimating the value of resilience for ratepayers – i.e., how much customers will pay to maintain some level of energy service during an outage – is a key step for regulators to consider approving these types of projects

Valuing Resilience

- Resilience for multiple customers/society at large is difficult to quantify: no universally accepted valuation method. Challenges measuring impacts of long-duration outages (>24 hours), costs of outages to society, and costs where more services (e.g., water treatment, transportation, natural gas service, communications) rely on electricity
- Some methods have been recently developed or are in progress for PUCs and State Energy Offices to use to better guide investments in resilience, whether from ratepayers or taxpayers, and ensure benefit-cost analysis justifies investments

Valuing Resilience

Method / Tool	Advantages / New Additions	Available
<u>Interruption Cost Estimator 2.0 Tool</u>	<ul style="list-style-type: none"> • Updated calculations of power interruption costs. • New willingness-to-pay surveys that will populate the tool with more recent data and more geographic specificity for power interruption cost estimates. • New data on customer responses to longer-duration power interruptions 	2023
<u>Customer Damage Function Calculator Tool</u>	<ul style="list-style-type: none"> • Helps individual facilities (or groups of similar facilities) calculate power interruption costs, based on the specific losses that they project will occur. • Guided questions lead facilities through their own assessments. 	2021
<u>Social Burden Method</u>	<ul style="list-style-type: none"> • Provides a metric for the social burden of power outages that emphasizes the needs of communities during power outages, rather than protecting critical infrastructure for its own sake. • Adopts a more neutral treatment of the ability to pay for resilience, rather than willingness to pay. 	Pilot 2021-2022
<u>FEMA Benefit-Cost Analysis Tool</u>	<ul style="list-style-type: none"> • Provides quantitative values for lost emergency services, such as police, fire, and emergency medical response. • New pre-calculated values specifically for hospitals published in 2021. • The use of FEMA values aligns with the application requirements of FEMA grant programs. 	2021
<u>Power Outage Economics Tool (POET)</u>	<ul style="list-style-type: none"> • Estimates the economic impacts of longer-duration power outages. • Accounts for how utility customers adapt their behavior during long-duration power interruptions. • Uses surveys of utility customers to collect data on how they would behave during a power outage. 	Pilot 2021-2022

Next Steps

- PUCs and State Energy Offices can:
 - Use an existing method, recognizing shortcomings
 - Wait for new approaches to emerge
 - Gather input from utilities on strengths/weaknesses of current approaches
 - Gather data from existing microgrids and other resilience investments
 - Gather input from stakeholders on defining, measuring, and investing in resilience

Contact Information



Kirsten Verclas
Managing Director
NASEO
kverclas@naseo.org



Kiera Zitelman
Technical Manager
NARUC
kzitelman@naruc.org

Wisconsin: Critical Infrastructure Microgrid and Community Resilience Center Pilot Grant Program

WISCONSIN



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GOVERNOR'S TASK FORCE ON CLIMATE CHANGE REPORT



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