

# STATE AND FEDERAL REGULATORY SUPPORT

Presentation #604  
2025 DOE Peer Review

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# Project Overview

**Project Goal:** We engage directly with state and federal regulators to obtain and share perspectives on best practices in energy storage practices. By providing this information, we support regulators and legislators as they continue to define regulatory pathways for the emerging energy storage sector.

**Current Practice:** We do not advocate specific policy or regulatory reforms; in fact, we are prohibited from taking any positions on specific policy measures. Rather, our mission is to provide independent, objective, and neutral analysis on industry best practices, lessons learned from specific regulatory and legislative proceedings, and cross-state comparisons.

**Why?** Sandia and its external partners (other national labs and industry organizations) include national-scale experts from around the country.

**Innovation:** Sandia operates within the nexus of the energy sector's technological revolution, developing, testing and evaluating a full range of emerging technologies and providing this deep knowledge to regulators as they work to migrate to a modern electricity grid.

**Impact:** We help commissions and related institutions around the US develop the expertise they need to more quickly and efficiently integrate energy storage into their regional operations.

**Alignment:** This work directly supports the DOE's broad mission to accelerate the development, commercialization, and utilization of next-generation energy storage technologies.

# Our engagements include federal and state regulatory issues.

## FEDERAL

FERC, Congress, DOE

- Rules governing wholesale markets / RTOs (FERC)
- Rules governing transmission lines (FERC)
- R&D funding, deployment grants, resilience programs (DOE)

## STATES

PUCs, state legislatures, executive directives from governors

- Retail markets
- Operations of distribution networks
- Utility rates
- Other enabling policies

# Relevant regulatory constructs

➤ Existing regulatory constructs drive energy storage policymaking:

❖ Regulated states may instinctively emphasize distribution system applications, with an emphasis placed on reliability / resilience applications:

✓ *“ES needs to solve a problem.”*

❖ Restructured states may place greater emphasis on developing a market, through revenue-generating applications:

✓ *“ES needs to make money.”*

**Example:**

Southern Company  
(Southeastern US)

**Example:**

Competitive Power  
Generator (AES) > Retail  
Electric Provider (Gexa  
Energy) > T&D utility (Oncor)

# What are the indicators of a strong energy storage marketplace?

- ✓ **Robust policy frameworks:** States with more than one policy lever: e.g., states with procurement targets, financial incentives, and other enabling regulations.
- ✓ **Large-scale projects:** States like California and Texas have seen the development of massive battery storage projects, which significantly contribute to their overall capacity.
- ✓ **Decreasing costs:** The falling costs of batteries and other energy storage technologies are making deployment more economically viable.
- ✓ **Grid reliability:** Energy storage helps maintain grid stability, especially during periods of high demand or other forms of energy generation is low. Examples could be utility VPP programs.

# Where is energy storage being developed?

## Which states added the most battery capacity in 2024?

Utility-scale battery storage capacity additions by state

	State	Capacity additions (MW) ▼	Energy capacity additions (MWh)
1	CA	3,152	11,237
2	TX	2,832	4,536
3	AZ	976	3,837
4	NV	565	742
5	ID	280	320
6	NM	150	761
7	CO	78	313
8	HI	73	290
9	GA	65	260
10	MS	50	200

Of these 10 states, six have at least one energy storage (or related) policy in place\*:

- Procurement policy
- Energy storage incentives
- Inclusion of energy storage in utility IRPs

Source: CleanView

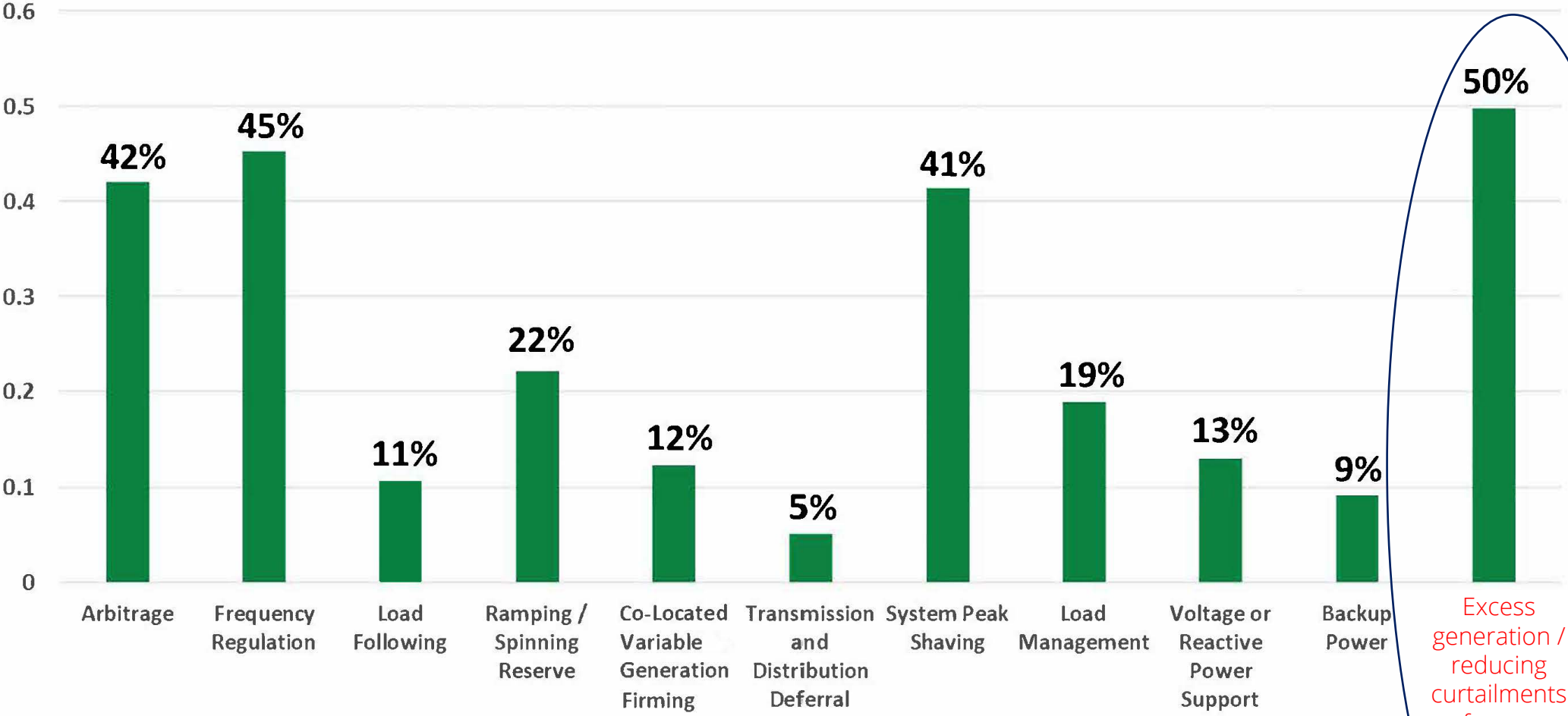


# Is there a correlation between ES policymaking and ES deployment?

➤ The data clearly shows that the answer is “yes.” There are also exceptions but for the most part there is a “build it and they will come” sensibility that continues to play out with regard to policies driving ES development. While there may not be direct causality, the data suggests a strong correlation.

California #1	Arizona #3	Nevada #4	New Mexico #6	Colorado #7	Hawaii #8
<ul style="list-style-type: none"> <li>✓ Procurement policies.</li> <li>✓ Subsidies and incentives offered.</li> <li>✓ State-sanctioned procurements through the CEC.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Established policy support for energy storage via the state’s Energy Storage Policy</li> <li>✓ Utility investments in energy storage that have been approved by the Arizona Corporation Commission.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Procurement policies.</li> <li>✓ State tax credits.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Energy storage as an established resource type.</li> <li>✓ Interconnection queue reform.</li> <li>✓ Mandated consideration of storage in utility IRPs.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Established consumer “right” to install energy storage.</li> <li>✓ Consideration of ES in utility IRPs.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Financial incentives for customers who install BTM storage.</li> </ul>

# How is energy storage is being used?



**Percentage of battery energy storage projects reporting each use case (EIA)**  
(Projects may select multiple use cases, which can be referred to as “value stacking”)

Excess generation / reducing curtailments of excess generation

# Our accomplishments in FY25—State Webinars

- ✓ Webinar series with the California Energy Commission.
- ✓ Six Webinar series customized for the CEC.
- ✓ Presentations by SMEs at Sandia, Argonne, DOE-OE, CESA, UL Research Institutes, Quanta Technologies, and Ascend Analytics
- ✓ 100+ attendees on average

*Feedback:*

- ❖ *“Excellent sessions”*
- ❖ *“Very educational for our team.”*



<b>9/20/2024</b>	<b>Session 1: Introduction to Long Duration Energy Storage</b>
<b>10/4/2024</b>	<b>Session 2: Deep Dive into Long Duration Energy Storage Technologies</b>
<b>10/18/2024</b>	<b>Session 3: Policy &amp; Regulatory Issues</b>
<b>11/1/2024</b>	<b>Session 4: Battery Safety Codes &amp; Standards</b>
<b>11/15/2024</b>	<b>Session 5: Economics &amp; Financing</b>
<b>11/22/2024</b>	<b>Session 6: Debrief &amp; Q&amp;A</b>

# Our accomplishments in FY25—State Webinars

- ✓ Webinar series with the Colorado Public Utilities Commission (CO PUC)
- ✓ Presentations by SMEs at Argonne, DOE-OE, CESA, and Sandia
- ✓ Five Webinar series customized for the CO PUC
- ✓ 75+attendees on average

*Feedback:*

- ❖ *“Extremely valuable for our team”*
- ❖ *“Loved to hear and gather all the knowledge from the experts”*



**COLORADO**  
 Department of  
 Regulatory Agencies  
 Public Utilities Commission

Date	Topic
Oct. 3, 2024	Introduction to Energy Storage Technologies & Applications
Oct. 10, 2024	Energy Storage Economics & Modeling
Oct. 17, 2024	Energy Storage Case Studies & Demonstration Projects
Oct. 24, 2024	Energy Storage Policies & Equity Approaches
Nov. 7, 2024	Q&A and Debrief

# Our accomplishments in FY25—Industry Conferences

- ✓ Presented at the Organization of PJM States (OPSI) 2024 Annual Meeting in Columbus OH (*October 2024*).
- ✓ Presented at the National Association of Regulatory Utility Commissions (NARUC) Annual Meeting, Anaheim CA (*November 2024*)
- ✓ Participated at the DOE Deploy Dialogue at Deploy24 (per invitation from Vanessa Chan, former Chief Commercialization Office and Director, Office of Technology Transitions), Washington DC (*December 2024*)
- ✓ Panelist at the 13th IEEE Electrical Energy Storage Applications and Technologies (EESAT) conference, Charlotte NC (*January 2025*)
- ✓ Presented at the DOE Energy Storage Financing Summit, New York NY (January 2025)
- ✓ Presented at the Energy Storage Summit, Dallas TX (March 2025)
- ✓ Presented and provided 3-hr tutorial on energy storage regulatory frameworks at the IEEE PES Energy & Policy Forum, Washington DC (April 2025)

# Our accomplishments in FY25—Industry Conferences

## (2)

- ✓ Presented at the Battery Council International (BCI) Convention + Power Mart Expo 2025, San Antonio (May 2025)
- ✓ Presented at the CESA National Energy Summit for States: Navigating Energy Trends and Federal Programs, Washington DC (May 2025)
- ✓ Presentation delivered to the Massachusetts Office of Energy Transformation (virtual) (June 2025)
- ✓ Panel Moderator at Alaska Energy Conference, Anchorage AK (June 2025)
- ✓ Co-Chair of the Energy Storage Symposium Track at the TechConnect Innovation Conference and Expo, Austin TX (June 2025)
- ✓ *Upcoming:* Panel Moderator at Utah Energy Week, Salt Lake City UT (September 2025)

# Our accomplishments in FY25—**Innovative Approaches**

- ✓ New Jersey Board of Public Utilities (BPU)—Provided input on cost allocations for community scale microgrids, specifically regarding cost allocation for interconnection and distribution system upgrade costs. (May 2025)
- ✓ Michigan Public Service Commission (PSC)—Contributed significantly, along with Sandia Analytics team and colleagues from PNNL, by drafting multiple sections of a legislatively mandate report exploring potential for LDES in the state of Michigan, as published by the Michigan PSC. (February 2025)
- ✓ Co-developed, in partnership with CESA, a new Energy Storage Working Group for utility regulators and staff. This will be a free, monthly, private online meeting for state regulators to gather, share information, and learn from experts who will address specific topics of interest identified by the group. Participating regulators will have the opportunity to share important updates on their work, and to share resources with their peers from other states. (Fall 2024)

# Our accomplishments in FY25—Innovative Approaches

- ✓ Partnered with Ted Ko at Energy Policy Design Inc (EPDI) to offer EPDI’s “regulatory roadmap” development framework for state regulatory offices (January-May 2025).

## 1.

Put on the hat of a state legislator, regulator, regulatory staff, or ISO staff

“What are the next things we should do to develop the market for energy storage?”

Thought Process

1. Locate themselves in the policy space: Market structure
2. Understand their priorities for energy storage: Use Cases and Policy Topics
3. Assess current state of their market with respect to top priority Policy Topics:
4. For markets in your particular situation, these are the next policy milestones you should focus on
  - ✓ For each milestone, here are a set of actions you can take to achieve it

## 2.

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### Review: Roadmap Framework

- Market Structures: ISOs are not their own market structure, but an aspect of restructured markets
  - Market Segments: FTM-T, FTM-D, BTM
  - Use Cases – Benefits (aka grid services)
  - Policy Topics
    - Policy Milestones, “crawl, walk, run”
- > State of Your Market: What Use Cases are enabled + What Policy Milestones have been achieved
- > Prioritized Milestones determine next steps

# Acknowledgements

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