



Sandia
National
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Sandia National Labs Policy & Outreach Initiatives; Energy Equity

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Equity, Resilience & Policy Session

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ENERGY STORAGE PROGRAM ANNUAL PEER REVIEW

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I appreciate this opportunity to share SNL's Policy & Outreach activities.



In this brief introduction, I will cover the following topics:

- Overview of SNL Policy & Outreach Project
- Analysis of Energy Equity as an emerging policy topic
- Q&A
- Acknowledgements

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SUMMARY:

The SNL Policy Team continues to provide independent, objective, and analytical educational material to state regulatory commissions through webinars that address policy, technology and economic issues at the core of energy storage development. This service directly assists commissions (without advocacy) in developing a substantive record in regulatory proceedings pertaining to energy storage, thereby creating sound policies that enable ES technologies to achieve related clean energy objectives.

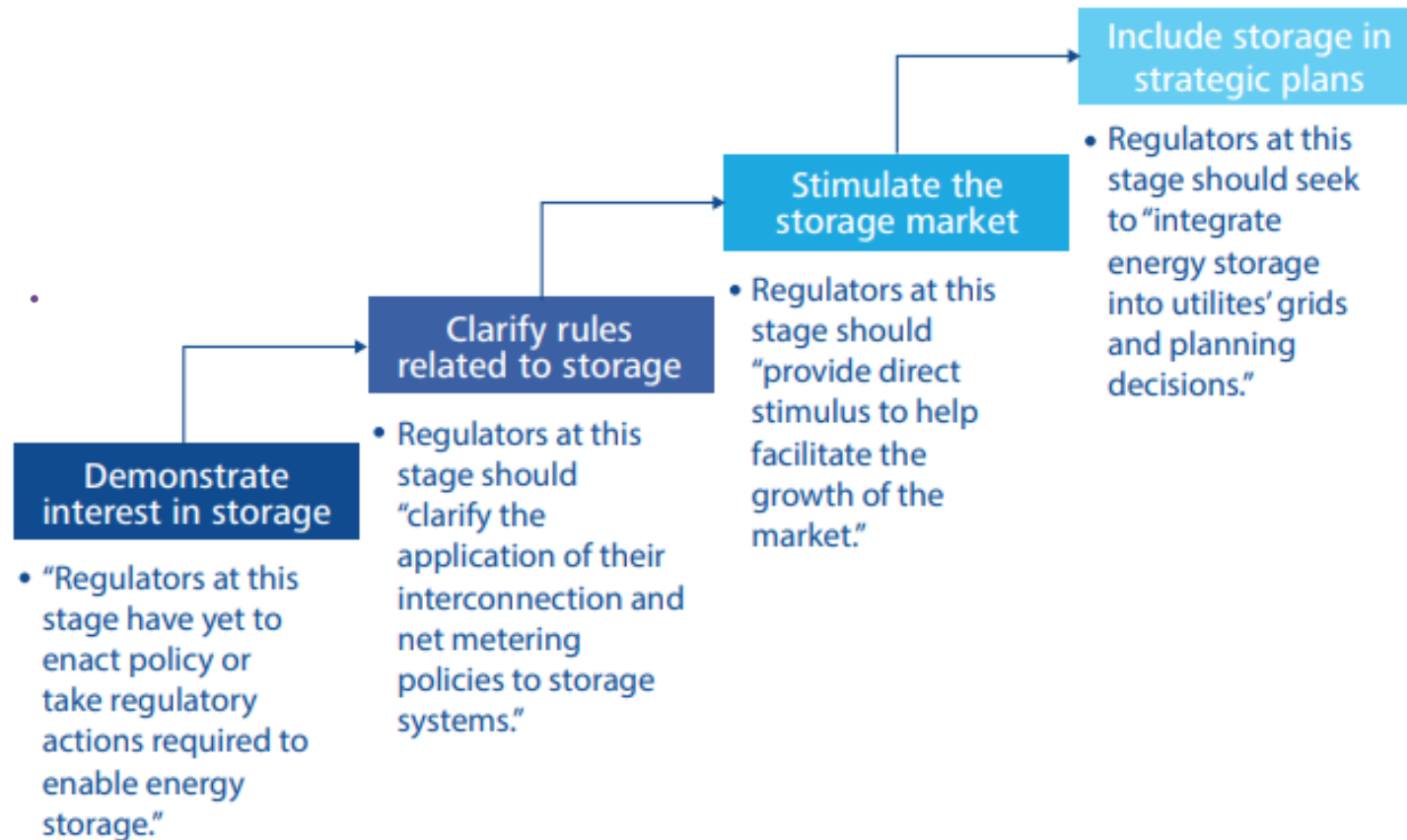
SIGNIFICANCE:

- State regulatory commissions are the hub around which “real-world” energy storage applications are developed.
- State commissions create policies for retail transactions, distribution grid operations, and regulate the rates and services of public utilities.
- Technical expertise of commissions varies: many commissioners do not come from within the E&U sector, and thus there is a knowledge gap.

ALIGNMENT WITH CORE MISSION OF DOE OE:

- Supports the transition of ES technologies from the lab to the marketplace, by focusing on identifying, analyzing, and helping state regulators remove the barriers that continue to limit opportunities for energy storage.

State-level policymaking specific to ES is still quite nascent.



- The majority of U.S. states are still at the far left of this trajectory, and may not have even taken the first step yet.
- This becomes even more the case when energy storage policymaking is in question.
- Arguably less than a handful have reached the top level (CA, NY, HI)

Energy storage policy “gaps” can be found in every U.S. state.



- *Gap analysis:* The method of comparing the actual of performance with the desired level of performance.
 - At this time, only about 15 states have developed what we could call substantive or robust energy storage policymaking.
 - In other words, the majority of states have NO energy storage policymaking framework whatsoever.
 - Policy levers at the federal and state level can help ease the burden of these costs with subsidies, low-cost financing, etc.
 - However, the general lack of state-level regulatory policies may leave many ES developments to stagnate.
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- **Lack of policy support is a barrier against ES development.**
 - **The national labs have an opportunity to help states identify and address these gaps and barriers.**

Overview of SNL Policy & Outreach activities.



Topics

- Introduction to Energy Storage Systems, Economics, and Policy
- Energy Storage Economics, Valuation, and Cost Benefit Analysis
- Policy Issues
- Energy Equity
- Interconnection, Codes, and Standards
- Federal and Regional Issues (e.g., FERC Orders 840, 2222)
- Decarbonization and Energy Storage (a growing number of states are adopting 100% decarb/clean energy goals).

Format

- Custom tailored sessions based on state's needs
- 5 to 7 Sessions
- 2 hours per session
- Q&A

Speakers

- National Labs
- Industry Experts
- Local Experts
- Other PUC Staff

Webinars Conducted in FY 21

- **New Mexico Public Regulation Commission** - November 2020 – February 2021
- **New Jersey Board of Public Utilities** - January – March 2021
- **New England Conference of Public Utilities Commissioners** - March – June 2021
- **Wisconsin Public Service Commission** - April – July 2021

Some states are now including equity in ES policymaking.



- - Dr. Gyuk has introduced the topic in multiple PUC workshops.
 - Policy & Outreach team is assisting state regulators with defining equity issues
 - Supporting federal initiatives such as “Equity in Energy,” and internal SNL efforts (Justice40 and JEDI (Justice, Equity, Diversity & Inclusion))
 - Key findings:
 - Underserved communities often incur an array of burdens from electricity generation that are unique to their communities .
 - ES technologies and policies can be a critical tool for achieving energy equity:
- - ❖ BTM applications can provide reliability and resilience for households and businesses,
 - ❖ FTM applications can reduce ratepayer costs for new generation, transmission, and distribution infrastructure.
 - ❖ Along with removing barriers to ES and developing enabling policies for ES, policymakers at the state level should be encouraged to incorporate equity into their policymaking.

States are including energy equity issues in ES policymaking.



➤ Examples:

- ❖ **California** has earmarked \$100 million of state funding specifically for 100 MW of stalled BTM battery projects in low-income communities.
- ❖ **Massachusetts** is revamping its solar subsidy program to increase incentives for projects in disadvantaged communities.
- ❖ **New Jersey**, per legislative mandate, established an Energy Equity Office within its regulatory commission.
- ❖ In **Virginia**, legislation requires the executive branch to advise the governor on developing policies that are intended to ensure equity and environmental justice.
- ❖ At the **federal level**, The Justice40 Initiative is part of a U.S. presidential executive order with a goal of delivering 40% of the overall benefits of federal investments to disadvantaged communities, which includes energy investments.

Program Accomplishments



FY 21 PUC Workshop Presentations:

- “Policy Issues for Using Energy Storage for Peak Load in New Mexico,” presented to the New Mexico Public Regulatory Commission.
- “Policy Issues Associated with Electrification in New Mexico,” presented to the New Mexico Public Regulatory Commission.
- Overview of State & Federal ES Policy and Deployments Across the U.S. “ presented to the New England Conference of Public Utility Commissions
- “Reflections on State (Policy) Presentations,” presented to the New England Conference of Public Utility Commissions.
- “Introduction to State ES Policy Issues,” presented to the New Jersey Board of Public Utilities
- “MN, AZ, TX, CA Policies Supporting ES for Peaker Plants, and Impacts on Overburdened Communities,” presented to the New Jersey Board of Public Utilities
- “Overview of State & Federal ES Policy and Deployments Across the U.S.,” presented to the Wisconsin Public Service Commission
- “Energy Storage Benefit Cost Analysis in the United States,” presented to the Wisconsin Public Service Commission

Program Accomplishments



FY 21 Other Presentations:

- IEEE PES Training Session for FERC, “An overview of emerging policies at the state level,” (October 2020)
- “Analysis of Texas Winter Power Outage and its Policy Ramifications,” presentation made available to the entire Sandia work population (February 2021)
- 2021 IEEE Power & Energy Society Virtual General Meeting, presentation on state regulatory trends and moderator role in panel discussion with state representatives (July 2021)
- Energy Storage Grand Challenge Policy & Valuation Community of Practice, presentation on SNL Policy & Outreach program and state policy trends,” (September 2021)

Program Accomplishments



FY 21 Publications:

- “Issue Brief: Energy Storage and Resource Adequacy” September 2020, [SAND2020-10369 O](#).
- “Issue Brief: State Level Incentives for BTM Storage” October 2020, [SAND2020-11477 O](#).
- “Issue Brief: Energy Storage to Replace Peaker Plants” November 2020, [SAND2020-12371 O](#).
- “Issue Brief: Long-Duration Energy Storage” January 2021, [SAND2021-0371 O](#).
- White paper “Seeking Equity Through Energy Storage,” (co-authored with H. Passell, M. Montes, B. Jeffers, and I. Gyuk), submitted to The Electricity Journal, October 2021
- White paper, “Long-Duration Energy Storage in a Decarbonized Future – Policy Gaps, Needs, and Opportunities,” (co-authored with B. Chalamala, R. Byrne, V. DeAngelis and R. Masiello), submitted to the Materials Research Society for publication, October 2021

The energy storage policy landscape continues to evolve.

Sandia National Labs monitors and analyzes activity at the federal and state levels and publishes information in the Global Energy Storage Database, available at this link:

<https://www.sandia.gov/ess-ssl/global-energy-storage-database/>

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Thank you!

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