Energy Storage Codes and Standards for Decisionmakers

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Topic: Regulatory | Vertical: Analytics, Safety and Reliability
Strategic Pathway: Grow grid capacity
Project start and finish: Ongoing

PROBLEM

- Decisionmakers' understanding of key codes and standards and their role in enhancing safe battery design and operation is limited.
- Concerns about safety and local impacts among members of the public and local authorities having jurisdiction (AHJs) over permitting and siting decisions have risen even as incident rates have declined. Local opposition has led to permitting delays, project cancellations, and moratoria.
- Many states and local AHJs lag in adoption of updated editions of relevant codes and standards containing current best practices. These gaps impact safety and local trust and are an obstacle to deploying energy storage projects that can meet key grid needs.

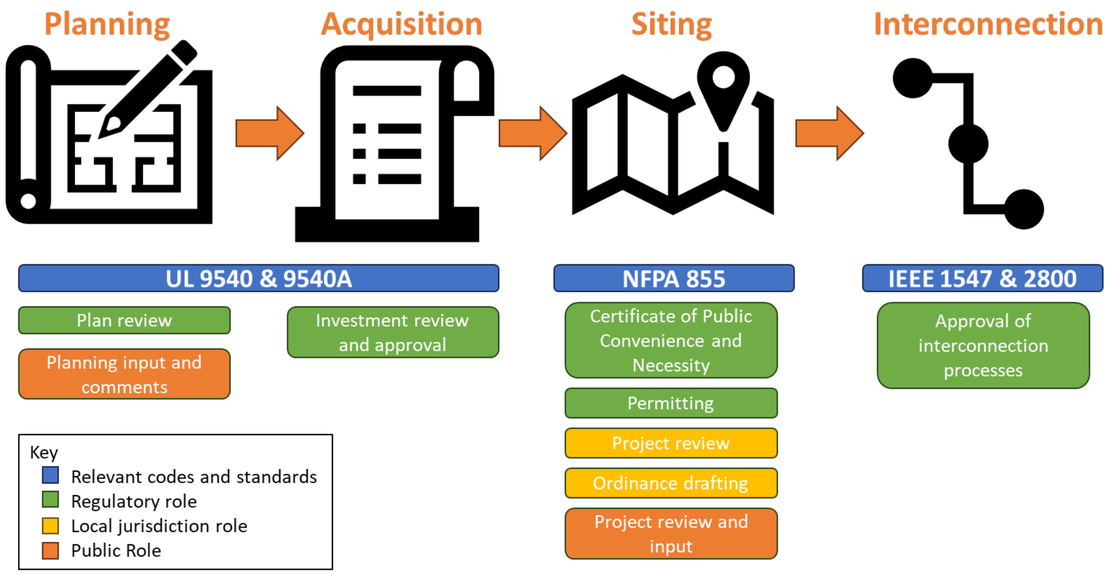
APPROACH

Socializing the benefits of codes and standards with regulators, local jurisdictions, and the public is critically important in providing a stable permitting environment for energy storage. This research aims to:

- **Identify information of highest importance:** Review relevant codes and standards and identify those with most relevance to decisionmakers and the public. Highlight topics in the context of local impacts.
- **Address adoption gaps and describe solutions:** Offer resources and pathways to help speed adoption of updated codes that reflect current best practices.

KEY CODES AND STANDARDS

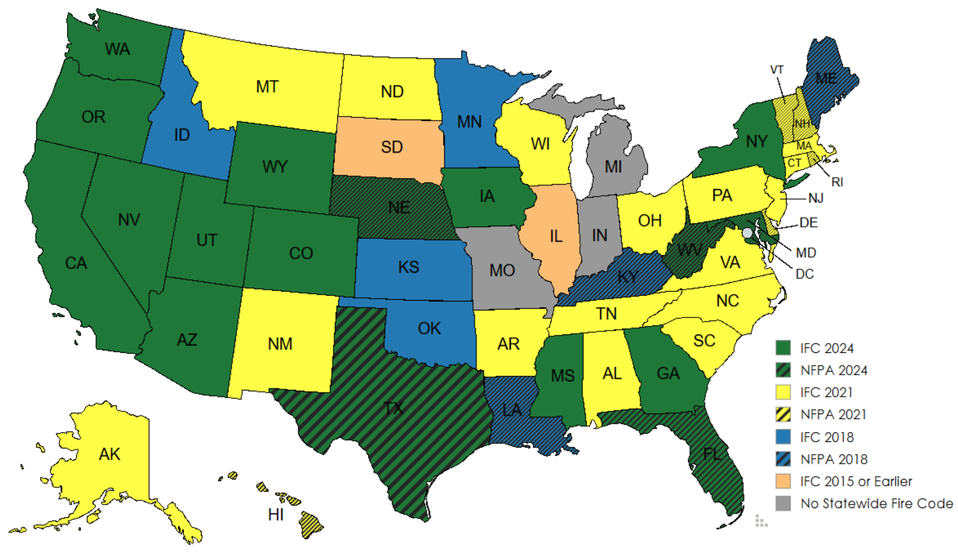
While there are many codes and standards related to energy storage safety, decisionmakers responsible for project approvals benefit most from working knowledge of a few key standards: UL 9540/9540A (design and testing), NFPA 855 (installation and operation), and IEEE 1547/2800 (safe and reliable interconnection)



An illustration of key energy storage codes and standards and their relevance to regulators, local planners, and the public.

CODE UPDATE STRATEGIES

State and local code update cycles can be time-consuming and expensive, and many states are several cycles behind. Battery energy storage technology is evolving rapidly, and latest versions reflect current best practices (e.g. new risk assessment and AHJ coordination requirements in NFPA 855 2026 edition).



Recent versions of fire codes contain key safety considerations for energy storage. However, many states are several cycles behind current editions.

Some states offer strategies for nimble code updates:

- **Authority Vested in State Agency:** Allows agency to more nimbly adopt new versions of the codes through simple rulemakings. *Examples: Michigan (Public Service Commission), Indiana (Department of Homeland Security)*
- **Emergency Temporary Rule:** Places new battery standards in effect until full code update process is completed. *Example: Washington ("emergency" adoption of 2023 NFPA 855 despite delays in full process)*
- **Supplemental Code Cycle:** Enables timely adoption of codes and standards on different cycles (such as IFC and NFPA). *Example: California (midpoint code updates allowed between three-year cycles)*
- **Adoption by Reference:** Places most current version of code in state statute, removing the need for updating each cycle. *Example: Nevada (law requires compliance with "most recently published version" of NFPA 855)*

CONCLUSIONS AND NEXT STEPS

- Accessible information tailored to concerns of key decisionmakers can help address safety concerns and reduce permitting delays.
- Publications and stakeholder engagement can socialize knowledge and mitigate gaps.

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