Utility-Scale Battery Storage in 2025:
Navigating Tariffs, Tax Incentives, and Regulatory Risk

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Lucian Gavriliuc, P.E., serves as E3's Executive Director of Energy Storage, where he offers technical advisory services to developers, lenders, investors, and other stakeholders in the energy storage industry. In this article Lucian provides an overview of the current policy and regulatory environment for utility-scale BESS projects.

EXECUTIVE SUMMARY

Battery Energy Storage Systems (BESS) have become a cornerstone of modern energy infrastructure in the United States. As the national grid lessens its dependence on fossil fuels and integrates more renewable energy sources, utility-scale batteries provide essential services such as frequency regulation, energy arbitrage, and capacity support. However, 2025 represents a pivotal year, as federal tariffs, tax incentive structures, and domestic sourcing requirements are significantly reshaping the commercial and technical strategies behind these systems.

This article provides an overview of the current policy and regulatory environment for utility-scale BESS, highlighting the key federal and state-level developments impacting project economics and risk management. It also outlines best practices for developers navigating these uncertainties.

BESS IN THE CURRENT ENERGY LANDSCAPE

By the end of 2024, utility-scale battery deployments in the U.S. exceeded 40 GW of capacity, according to the Electric Power Research Institute estimates (EPRI)[i]. Most new projects utilize 4-hour lithium iron phosphate (LFP) batteries, with typical system sizes ranging from 100 to 400 MWh. These assets are commonly co-located with solar photovoltaic (PV) plants or directly connected to the transmission grid at voltages of 34.5 kV to 345 kV.

While drivers like renewable integration, grid resilience, and capacity market participation remain robust, shifting trade policies and regulatory oversight are increasingly affecting the financial viability of these projects.

TARIFFS AND TRADE POLICY

One of the most significant pressures on BESS costs comes from tariffs under Section 301 of the Trade Act of 1974, which grants the Office of the United States Trade Representative (USTR) a range of responsibilities and authorities to investigate and

take action to enforce U.S. rights under trade agreements and respond to certain foreign trade practices.
Some of these recent actions include:

- A 25% tariff on lithium-ion battery cells and modules, including both lithium iron phosphate (LFP) and lithium nickel manganese cobalt oxide (NMC) chemistries.
- A 25% tariff on power conversion systems (PCS), inverters, and integrated container systems originating from China.
- Potential future tariffs on upstream manufacturing equipment (e.g., tab welders, cell stackers) if linked to Chinese entities.

The Biden administration had paused certain tariffs on clean energy projects, but in 2025, the political sentiment shifted with the new Trump administration. Proposals circulating in Congress and through executive order drafts may reimpose or expand duties to cover indirect sourcing pathways, particularly targeting "foreign entities of concern" (FEOC). This includes stricter tracking of the origin of subcomponents and scrutiny of supply chains that route through Korea, Vietnam, or Southeast Asia.

Developers using suppliers such as CATL, BYD, Sungrow, LG, or SK Innovation may face ineligibility for federal tax credits if they cannot verify that their equipment complies with foreign entity restrictions and sourcing requirements.

TAX INCENTIVES: IRA SECTION 48 AND THE DOMESTIC CONTENT OVERLAY

The Inflation Reduction Act (IRA) of 2022 created a standalone 30% Investment Tax Credit (ITC) for battery storage systems under Section 48 [ii, iii,iv].
In addition, projects may qualify for stackable adders of 10% [iv] or more if they meet certain requirements, including:

- Satisfying domestic content requirements.
- Being located in designated energy communities (areas affected by fossil fuel closures).
- Serving low-income communities (in the case of PV+BESS projects).

IRS guidance (Notice 2023-38) [v] introduced detailed compliance thresholds:

1. Structural iron and steel must be 100% manufactured in the U.S.
2. Manufactured products must meet a minimum U.S. content by cost of 45% in 2025, 50% in 2026 and 55% thereafter.
3. Detailed origin documentation is required for battery cells, modules, enclosures, and power electronics.

Failure to meet these requirements not only disqualifies projects from the tax credit adders but also increases exposure to IRS audits and potential tax credit disallowance or even clawbacks.

STATE-LEVEL REGULATORY DYNAMICS

Several states have introduced their own layers of regulation:

- Texas enacted the Lone Star Infrastructure Protection Act (LSIPA) [vi], prohibiting entities from China and Russia from owning or operating critical infrastructure, including energy assets.
- New York, through NYSERDA [vii, viii], applies Environmental, Social and Governance (ESG) criteria and gives preference to projects with documented domestic sourcing.
- California imposes operational requirements, such as decommissioning plans and performance guarantees tied to capacity markets and resource adequacy (RA) obligations as may be found in the 2025 Resource Adequacy and Slice of Day Guide [ix].

On the federal side, the Department of Energy's Loan Program Office (LPO) now considers Foreign Entity of Concern (FEOC) screening and labor documentation as critical components of loan eligibility.

ECONOMIC IMPACT AND MODELING CONSIDERATIONS

The combination of tariffs and ITC exclusions can significantly alter project economics. For example, a 25% tariff on PCS, battery containers, and modules can increase engineering, procurement, and construction (EPC) costs by approximately $60 to $85 per kilowatt-hour. For a 300 MWh project, this implies over $20 million in additional capital expenditure.

Additionally, disqualification from the 30% ITC or its adders may reduce a project's net present value (NPV) by 15% to 20%, depending on the tax equity structuring. **As a result, financial models now typically include:**

- Base and stress scenarios with/without tax incentives.
- Tariff sensitivity analyses.
- Adjustments to tax equity yield based on documentation risk.

Tax Equity Investors and Independent Engineers (IEs) are demanding more robust documentation, including bills of materials (BOMs), certificates of origin, customs records, and affidavits from vendors.

RISK MITIGATION STRATEGIES

To manage compliance and economic risks, developers are increasingly adopting the following approaches:

1. Vetting OEMs for traceability and U.S.-based production capabilities.
2. Maintaining dual sourcing strategies for key components.
3. Utilizing bonded warehouses or Foreign Trade Zones (FTZs) to delay tariff exposure.
4. Consulting tax advisors on insurance products for potential ITC disqualification and clawbacks.
5. Disaggregating procurement (e.g., buying cells, BMS, and PCS separately) to optimize compliance by component.

FORWARD OUTLOOK: A DIVIDED POLICY FUTURE

The outlook for 2025–2026 depends largely on federal leadership. A pro-climate administration is likely to preserve or expand IRA provisions, including ITC and LPO access. In contrast, a protectionist or deregulatory Congress could dismantle ITC adders, increase tariff enforcement, or revisit eligibility rules.

A major shift occurred in January 2025 when Executive Order 14148 rescinded several foundational Biden-era climate and energy directives. **These included:**

- Executive Order 14008, which had established the Justice 40 Initiative, Climate and Economic Justice Screening Tool (CEJST) screening, and the National Climate Task Force;
- Executive Order 13990, which reinstated the social cost of carbon and directed agencies to prioritize science-based climate assessments;
- Executive Order 14096, which had mandated agency-wide environmental justice reviews;
- Executive Order 14057, which committed the federal government to 100% carbon-free electricity by 2030.

As of mid-2025, none of these rescinded orders have been replaced by equivalent initiatives. This rollback ends key interagency programs that supported clean energy and equity-focused investment, potentially reducing the availability of climate-screened federal support for BESS.

Furthermore, contributing to the short-term uncertainty, House Resolution (H.R.) 1 of 2025 — referred to as the 'One Big Beautiful Bill Act' — as of this writing, has passed the U.S. House of Representatives and is currently under consideration in the Senate. This topic will be discussed in a later article once the bill's fate has been determined.

Meanwhile, major battery OEMs are hedging their position by investing in U.S.-based manufacturing (e.g., SK in Georgia, LG in Michigan, CATL in Arizona). Domestic suppliers may gain competitive advantages as regulatory pressure mounts.

CONCLUSION

The utility-scale BESS sector is maturing, shaped by technological progress and policy, trade, and regulatory developments. Developers must now operate with a deep understanding of tariff exposure, tax credit eligibility, and compliance documentation.

Success in this environment requires interdisciplinary fluency across engineering, finance, and law. As the energy transition accelerates, the rules around who supplies and builds storage assets will be as influential as the technologies themselves.

Stakeholders—developers, OEMs, investors, and policymakers alike—must act now to harden their supply chains, future-proof their financing strategies, and engage proactively with regulators. The window to shape project outcomes in 2025–2026 is narrow. Aligning legal, technical, and commercial decisions today will determine which projects reach their commercial operation dates (CODs) and which are left behind.

ABOUT THE AUTHOR

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i EPRI BESS Failure Incident Database: **https://storagewiki.epri.com/index.php/BESS_Failure_Incident_Database**
ii US Department of the Treasury: **https://home.treasury.gov/news/press-releases/jy2736**

iii Internal Revenue Service (IRS) – Clean Electricity Investment Credit: **https://www.irs.gov/credits-deductions/clean-electricity-investment-credit**
iv Environmental Protection Agency (EPA) – Summary of Inflation Reduction Act: **https://www.epa.gov/green-power-markets/summary-inflation-reduction-act-provisions- related-renewable-energy**
v IRS Guidance Notice 2023-38: **https://www.irs.gov/pub/irs-drop/n-23-38.pdf**
vi Lone Star Infrastructure Protection Act (LSIPA): https://capitol.texas.gov/tlodocs/87R/billtext/pdf/SB02116I.pdf
vii NYSERDA Voluntary REC Sales: https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Standard/Voluntary-REC-Sales?utm_source=chatgpt.com
viii GreenNY Purchasing Requirements and Tools: **https://ogs.ny.gov/greenny-purchasing-requirements-and-tools**
ix 2025 Resource Adequacy and Slice of Day Guide: **https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/resource-adequacy-homepage/resource-adequacy-complance-materials/guides-and-resources/2025-ra-slice-of-day-filing-guide.pdf**