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ENERGY STORAGE RIDES A WAVE OF GROWTH BUT UNCERTAINTY LOOMS: A GLOBAL OPPORTUNITY AND REGULATORY

A GLOBAL OPPORTUNITY AND REGULATOR ROADMAP FOR 2025



A Global Opportunity and Regulatory Roadmap for Energy Storage in 2025

The energy storage sector maintained its upward trajectory in 2024, with estimates indicating that global energy storage installations rose by more than 75%, measured by megawatt-hours (MWh), year-over-year in 2024 and are expected to go beyond the terawatt-hour mark before 2030.

Continued expansion of intermittent renewable energy, ESG-focused investments, the growing versatility of storage technologies to provide grid and customer services, and declining costs for key components like lithium-ion batteries all played a significant role in driving the investment and development of energy storage.

However, uncertainty looms due to two primary factors. First, potential trade policy impacts may increase short-term costs and dampen demand in the United States. Second, new battery safety requirements in response to battery fires may lead to additional permitting requirements that could slow down the pace of development. However, these developments also hold the potential to accelerate domestic production and lead to a safer product, both of which may actually be positives for the energy storage industry. Furthermore, policymakers in the United States and Europe continue to set supportive energy storage policies and prioritize energy storage deployment as a crucial element toward achieving grid stability or ambitious climate plans.

In this report, our lawyers outline key developments and emerging trends that will shape the energy storage market in 2025 and beyond.

ENERGY STORAGE

MARKET OVERVIEW

The US energy storage market continued its record-breaking growth in 2024, adding 3.8 GW of energy storage in the third quarter alone—an 80% increase from the prior year—bringing total annual installations to approximately 11.9 GW. Growth is expected to continue with the installation of more than 74 GW between 2024 and 2028.

Enactment of the Inflation Reduction Act of 2022 (IRA), which contains significant incentives for energy storage, including availability of the investment tax credit and new manufacturing credits, stimulated much of the expansion. Additionally, declining lithium-ion battery costs—hitting a record low of \$115/ kWh in 2024—have fueled deployment thanks to increased manufacturing capacity, lower raw material prices, and softened demand from the EV sector.

While increased tariffs and phase-outs of tax credits have the potential to reduce the base case for energy storage by 20% over the next five years, growth is expected to pick up thereafter. Despite near-term uncertainties, long-term projections remain strong, driven by increasing grid reliability needs, rising demand from AI and data centers, and potential acceleration of domestic manufacturing.

PROCUREMENT UPDATE

As the storage market grows, procurement strategies are evolving to manage supply chain risks, cost volatility, safety issues, and regulatory shifts. Utilities and developers are structuring agreements to balance financial risk and feasibility.

Power purchase agreements (PPAs) remain dominant, often as tolling arrangements where utilities manage charging costs. Hedging contracts are growing, particularly in Texas, offering financial stability in the energy-only market.

Engineering, procurement, and construction (EPC) contracts are favored for utility-owned projects, using full-wrap, turnkey, fixed-price structures to limit cost overruns. Build-transfer agreements (BTAs) are also gaining traction, allowing utilities to transfer ownership post-commercial operation.

Battery procurement strategies are also adapting, with master supply agreements (MSAs) and capacity reservation agreements (CRAs) helping to secure pricing and supply commitments. Developers and utilities must also navigate new safety regulations, longer permitting timelines, and evolving performance guarantees.

As policy and trade landscapes shift, strategic procurement will be key to sustaining energy storage growth.

Read more about the energy storage market >



TARIFFS AND TRADE

Application of tariffs and supply chain integrity are two major areas of international trade that will remain causes of concern for energy storage projects. While it remains to be seen what the US administration might impose under new or expanded tariff measures, companies can take steps toward developing their project documents and supply chain strategy to positively position themselves.

There are existing tariffs pursuant to Section 301 of the Trade Act of 1974 on some Chinese-origin lithium-ion EV batteries and non-lithium-ion battery parts, which were increased to 25% in September 2024. Tariffs on Chinese-origin lithium-ion non-EV batteries are scheduled to increase to 25% effective January 1, 2026. Otherwise, batteries of non-Chinese origin storage batteries have not been subject to multi-front targeted tariff or duty actions.

There have also been indications that the US administration may consider other tariff proposals impacting energy storage, such as a 10–20% universal tariff, tariffs of up to 60% across the board on Chinese-origin goods, and tariffs of 25% on Mexican and Canadian origin goods.

Read more about tariffs and trade >

IMPACT OF INFLATION REDUCTION ACT

The energy storage industry has continued to progress over the course of 2024 and into 2025, buoyed in significant part by the federal income tax benefits in the form of tax credits enacted under the IRA. Energy storage was one of the major beneficiaries of the IRA's new rules on both the deployment and manufacturing sides.

The IRA enacted the long-sought investment tax credit under Section 48 and 48E of the Internal Revenue Code (the Code) for standalone energy storage facilities. It also enacted a new "advanced manufacturing" production tax credit under Section 45X of the Code applying to US production of a variety of clean tech equipment and critical minerals, which include energy storage equipment and underlying materials and minerals. Moreover, the IRA broadly introduced new monetization methods for these and other clean tech industry tax credits of transferability and direct payment.

While the vitality of the IRA tax benefits in their current form is currently subject to uncertainty given the results of the 2024 federal general election, the existing market practice for financing energy storage facilities since the IRA's passage continues to evolve in reaction to the act's new requirements and opportunities.

Read more about the IRA >



ENERGY STORAGE INVESTMENT TRENDS

As investment in renewable energy generation continues to rise to match increasing demand, so too does investment, and the opportunity to invest, in energy storage. Continued energy storage development, together with the broader industry focus on dissociating generation from consumption, decreasing development costs, innovation with respect to new storage solutions, the current political landscape, and, in many respects, a fragmented market, present opportunities for venture capital, private equity, and M&A alike.

Through the first three quarters of 2024, 83 energy storage financing and investment deals were reported completed for a total of \$17.6 billion invested. Of these transactions, 18 were M&A transactions, up from 11 transactions during the same period in 2023. Venture capital transactions took a back seat to debt and public market financings, which demonstrates further acceptance of the technology being deployed.

With developers continuing to add new capacity, including 9.2 GW of new lithium-ion battery storage capacity in 2024 through November 2024 and comparable levels of growth expected through the fourth quarter of 2024, energy storage investments and M&A activity are expected to continue this trajectory through 2025.

Read more about energy storage investments >



ENERGY STORAGE FINANCING

The rapid growth in the energy storage market continues to drive demand for project financing, and like any other project-financed asset class, lenders will analyze both the amount and probability of receiving cash flows generated by energy storage. Energy storage resources present a distinct set of challenges given their unique nature: unlike conventional or renewable generation, energy storage resources must be charged with electric power, which will sometimes (but not always) be provided by the offtaker.

Additionally, energy storage resources are limited in their ability to dispatch by the number of megawatts that can be used to charge the project, as well as the total number of MWh that can be stored. Energy storage resources are typically capable of providing capacity and other ancillary services, thus making them stronger candidates for multiple revenue streams than traditional generation. Each of these revenue streams will be subject to lender analysis. Moreover, there are certain additional considerations when structuring a project finance transaction for an energy storage project.

Read more about energy storage project financing >



US REGULATION

Amid ongoing conversations about grid reliability amid growing electricity demand driven in part by booming expansion of data centers and continuing interest in moving away from fossil fuels toward intermittent renewable resources, energy storage development will continue to grow across the United States.

FERC

The Federal Energy Regulatory Commission (FERC) has issued reforms to guide energy storage participation in the wholesale energy market—Order No. 841, which requires grid operators to implement storage-specific reforms in wholesale capacity, energy, and ancillary service markets, and Order No. 2222, requiring grid operators to facilitate the participation of distributed energy resource aggregations in wholesale markets, which can include storage resources. FERC has also taken steps to keep pace with the development of energy resources on the grid, convening a technical conference in late 2024 to evaluate issues related to generator co-location, including grid reliability, customer affordability, and cost allocation.

Given its versatile applications as a simultaneous load, generation, and ancillary service resource, energy storage is poised to provide flexibility to large electricity customers that seek to pursue co-location configurations. For instance, energy storage can alleviate some of the immense backup power needs for behind the meter data center configurations, thereby limiting the need for a data center operator to rely on the grid and increasing the operator's ability to be a "flexible" load. Data centers may also consider developing microgrid campuses that combine intermittent low- or zero-carbon clean energy with battery storage to be self-sufficient in lieu of paying for the costly and time-consuming transmission upgrades needed to power their facilities.

Read more about FERC energy storage policies >

STATES

Supportive state laws and policies have fostered energy storage growth and will continue to provide market stability and may become even more important amidst changing trade and tax policies. In the US, 23 states, plus the District of Columbia and Puerto Rico, have 100% clean energy goals in place. Storage can play a significant role in achieving these goals by serving as a "non-wires alternative" that can provide added reliability and grid services as renewable resources such as wind and solar replace fossil fuel baseload resources.

The most significant battery energy storage resource development has occurred in states that have adopted some form of incentive for development, including through utility procurements, the adoption of favorable regulations, or the engagement of demonstration projects. Approximately 17 states have adopted some form of energy storage policy, which broadly fall into the following categories: procurement targets, regulatory adaption, demonstration programs, financial incentives, and consumer protections.

Read more about state energy storage policies >



EUROPE REGULATION

The European Union and United Kingdom in recent years have taken action to develop energy storage, with measures aimed at incentivizing development and fostering more sustainable, secure development of energy storage resources.

EUROPEAN UNION

The EU regulation of energy storage is generally spread across several regulatory acts, many of which require implementation at the level of the EU member states. These acts include:

- **EU Batteries Regulation.** Adopted in 2023, the regulation is the first piece of European legislation taking a full lifecycle approach in which sourcing, manufacturing, use, and recycling are addressed and enshrined in a single law. The EU Commission also published a series of recommendations on energy storage, with concrete actions that EU member states can take to encourage greater deployment of energy storage.
- Net-Zero Industry Act. Entered into force in 2024, this act focuses on net-zero technologies, including batteries. Net-Zero Technologies Manufacturing Projects (NTZ Projects) will benefit from streamlined permitting procedure, while strategic NTZ Projects will have further benefits. The NTZ Projects will likely facilitate access to public funding. Further, state aid rules have been temporarily relaxed to support investments in equipment and technology relevant for net-zero economy transition, including batteries.
- Critical Raw Materials Act. This requires EU member states to, by May 2025 (and within 12 months of each update to the list of strategic raw materials), identify major companies operating on their territory that use strategic raw materials (such as lithium) to manufacture batteries for energy storage. Such companies will be required to carry out a risk assessment of their raw materials supply chain for strategic raw materials and, subject to such risk assessment, may be required to take measures to mitigate any identified risks (e.g., diversify its raw materials supply chains or substitute the strategic raw materials).

Further development of energy storage regulation at the EU level is likely to continue to be in line with its energy security and energy transition goals.



UNITED KINGDOM

The UK in December 2024 published the Clean Power 2030 Action Plan, outlining the government's strategy for achieving its clean energy goals by 2030. The plan sets ambitious clean energy targets and targets increases in energy storage capacity, with 23-27 GW of battery capacity and 4-6 GW of long-duration energy storage.

Its release followed an October 2024 announcement by the UK government of a new Long Duration Electricity Storage (LDES) investment support scheme that will help build energy storage infrastructure and is expected to boost the investors' confidence and opportunities. Between January and March 2024, stakeholders were consulted on a proposed approach of using a "cap and floor" regime to enable investment in LDES assets. Following that, the government decided that "cap and floor" scheme (guaranteeing minimum income for developers in return for a limit on revenues) should be introduced as the optimal policy approach for the framework to best facilitate rapid and efficient LDES investment.

The LDES investment scheme will be divided into one application route for mature technologies and a separate route for new innovation and Great Britain energy regulator Ofgem will regulate the scheme.

Read more about the EU and UK's energy storage policies and strategies >



CONCLUSION

While potential trade and permitting policy headwinds could present temporary challenges, the overall trajectory for energy storage remains positive. Regulators and market participants alike recognize the critical role of energy storage in achieving climate and grid modernization goals.

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RECENT ACCOLADES

RANKED

Energy Transition and **Energy: Electricity (Finance)** Nationwide, *Chambers USA*

Cnambers USA (2023–2024)

TIER 1 Energy: Renewable/ Alternative Power

The Legal 500 (2022–2024)

RANKED Projects: Renewables & Alternative Energy

Nationwide, Chambers USA (2024)

RANKED Projects: Power Nationwide

Nationwide, Chambers USA (2024)

400+ LAWYERS RECOGNIZED

Chambers & Partners (2024)

A-LIST LAW FIRM

The American Lawyer (2024)

RANKED Energy: Electricity

(Regulatory & Litigation and Transactions);

Energy: Oil & Gas

(Regulatory & Litigation); Nationwide, Chambers USA (2019-2024)

RANKED Projects: Power & Renewables: Transactional

Nationwide, Chambers USA (2024)

TIER 1 Energy Law

US News/ Best Lawyers – Best Law Firms (2016–2024)

CLIENT SERVICE 30

BTI Client Service A-Team (2002–2024)

RANKED PROJECTS

Renewables & Alternative Energy Nationwide, *Chambers USA* (2024)

Recommended

Energy Litigation: Oil & Gas

Energy Regulation: Oil & Gas

Energy Litigation: Electric Power

Energy Regulation: Electric Power

Energy Transactions: Electric Power

Energy Transactions: Oil & Gas

The Legal 500 US (2024)

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