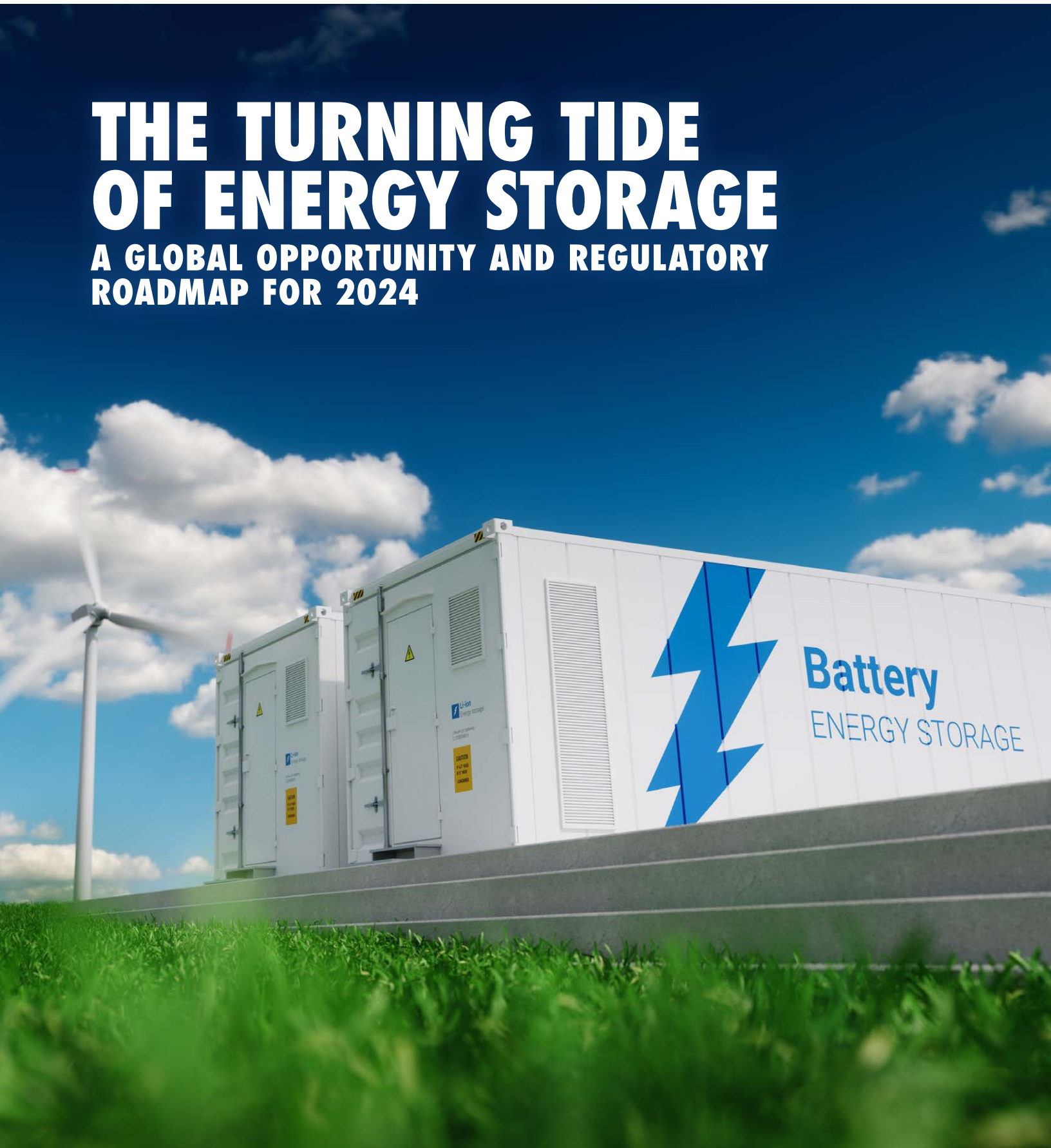


Morgan Lewis

THE TURNING TIDE OF ENERGY STORAGE

**A GLOBAL OPPORTUNITY AND REGULATORY
ROADMAP FOR 2024**



A Global Opportunity and Regulatory Roadmap for Energy Storage in 2024

This report comes to you at the turning of the tide for energy storage: after two years of rising prices and supply chain disruptions, the energy storage industry is starting to see price declines and much-anticipated supply growth, thanks in large part to tax credits available via the Inflation Reduction Act of 2022 (IRA) and a drop in the price of lithium-ion battery packs.

Policymakers in the United States and United Kingdom continue to put forth measures meant to supercharge the sector toward a promising future. Even with near-term headwinds, cumulative global energy storage installations are projected to be well in excess of 1 terawatt hour (TWh) by 2030.

In this report, Morgan Lewis lawyers outline some important developments in recent years and trends that will help shape the 2024 energy storage market.

ENERGY STORAGE

MARKET OVERVIEW

The US utility-scale storage sector saw tremendous growth over 2022 and 2023. The volume of energy storage installations in the United States in 2022 totaled 11,976 megawatt hours (MWh)—a figure surpassed in the first three quarters of 2023 when installations hit 13,518 MWh by cumulative volume. In the third quarter of 2023, and despite significant delays in the market, the US storage market added a record-setting 2,354 MW and 7,322 MWh.

The enactment of the IRA, which contained significant new incentives for storage including availability of the investment tax credit and new manufacturing credits, helped stimulate growth of the energy storage market, as did a decrease in price of lithium-ion battery packs, which fell 14% from their high in 2022 to a record low of \$139/kilowatt hour (kWh) in 2023. Lithium-ion battery pricing is expected to continue to decline through 2030 to \$80/kWh. Growth in the utility-scale storage sector is also expected to continue, with the US storage market estimated to install roughly 63 GW between 2023 and 2027.

At the same time, sustained pressure in the supply chain for storage components has not yet fully abated—particularly transformers, substation equipment, and other electrical engineering equipment—which has led in some cases to equipment stockpiling, higher prices, and ultimately an increase in delays for battery projects. Large-scale battery projects now take around 12 to 18 months to complete: an increase of approximately six months.

Other near-term market pressures include increased demand for batteries and competition for batteries and raw materials with the electric vehicle market. Yet even with these headwinds, the pace of installations is expected to increase and the long-term energy storage market is once again poised for growth.

[Read more about the energy storage market >](#)



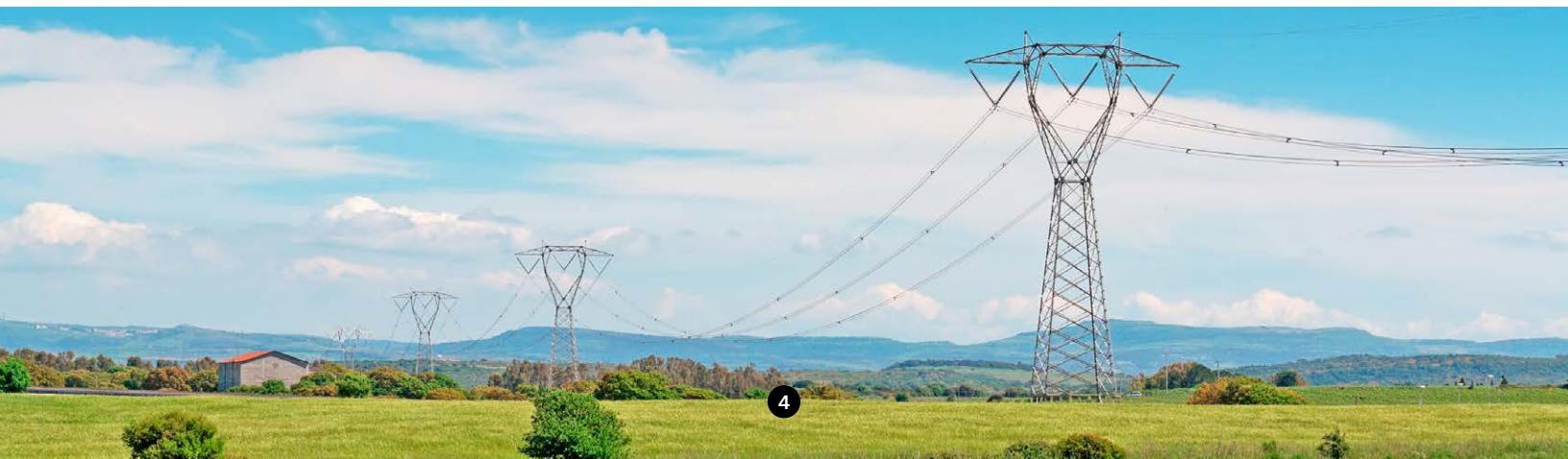
INFLATION REDUCTION ACT TAX GUIDANCE

The energy storage industry 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 (ITC) under Section 48 of the Internal Revenue Code (Code) for standalone energy storage facilities as well as a new "advanced manufacturing" production tax credit (PTC) under Section 45X of the Code applicable to the US-based production of a variety of clean tech equipment and critical minerals, including energy storage equipment and underlying materials and minerals.

Over the last year and a half, the US Internal Revenue Service (IRS) and Department of the Treasury (Treasury) have released proposed guidance on IRA provisions tied to deployment, manufacturing, and monetization that will be closely watched by the energy storage industry.

- **ITC PROPOSED REGULATIONS (REG-132569-17):** The guidance retains the Code's broad approach to defining new ITC-eligible energy storage property but also includes a nonexclusive list of qualifying technologies. The guidance confirms that a separate PTC-generating project may be co-located with a separate ITC-eligible project. Principally, this means that a PTC-electing eligible energy production facility (such as a solar facility now eligible to elect to use the PTC after the IRA) may be paired with an energy storage facility.
- **ADVANCED MANUFACTURING PTC PROPOSED REGULATIONS (REG-107423-23):** The Code Section 45X advanced manufacturing credit provides a PTC for the US-based production of, among other things, qualifying battery components (including electrode active materials, battery cells, and battery modules) and a variety of critical minerals (including lithium, cobalt, and nickel).
- **CREDIT TRANSFERABILITY AND DIRECT PAYMENT PROPOSED AND TEMPORARY REGULATIONS (REG-101610-23, REG-101607-23, T.D. 9975):** The IRS and Treasury provided extensive guidance on credit transferability and direct payment in June 2023. For purposes of credit transfers, the guidance clarifies that ITC recapture risk is borne by the credit buyer but expressly permits credit-transferring counterparties to cause the economic risk of recapture to be borne by the credit seller (e.g., through a contractual indemnity), which has been and is expected to continue being the predominant market practice for credit sales where recapture is possible. For purposes of credit direct payment, the guidance provides that partnerships and S corporations can never be "applicable entities" generally eligible to claim a credit direct payment.

[Read more about the impact of IRS guidance on the energy storage industry >](#)



PROJECT FINANCING

An increase in demand for energy storage project financing has coincided with the energy storage market's rapid growth. Lenders will analyze both the amount and probability of receiving cash flows generated by energy storage just as they would for any other project-financed asset class. However, there are certain additional considerations in structuring a project finance transaction for an energy storage project.

- **TECHNOLOGY RISKS:** While lithium-ion batteries remain the most widespread technology used in energy storage systems, these systems also use hydrogen, compressed air, and other battery technologies. The storage industry is also exploring new technologies capable of providing longer-duration storage to meet different market needs. Because project finance lenders see these newer technologies as having increased risk due to a lack of historical data, expect lenders to pay close attention to technology risks over the course of due diligence of an energy storage project.
- **CONSTRUCTION RISKS:** It is common practice to see multiple equipment supply, construction, and installation contracts rather than one turnkey engineering, procurement, and construction (EPC) contract for energy storage projects. Be aware that lenders tend to prefer fixed-price turnkey EPC contracts so that there is a single contractor, which shifts some of the construction risk from the project company to the EPC contractor.
- **OPERATING RISKS:** Lenders generally will conduct diligence to understand an energy storage project's operating limitations and operation and maintenance (O&M) costs. As part of that process, lenders will look for an O&M agreement with an experienced operator that will ensure that their project will be managed within its operating limitations.

[Read more about energy storage project financing >](#)



US REGULATORY FOCUS

US regulators and policymakers at the state and federal level have in recent years taken steps to encourage growth of energy storage and set rules around its participation in the energy market, particularly as intermittent renewable energy resources become a larger part of the energy mix. Significant developments that will propel further action on renewable energy resources and energy storage include the [2021 Infrastructure Investment and Jobs Act](#), and a number of state-level policies to provide incentives for the use of energy storage.

FERC

In the United States, energy storage participation in wholesale energy markets is guided by a pair of landmark reforms from the Federal Energy Regulatory Commission (FERC). Issued in 2018, Order No. 841 requires grid operators to implement storage-specific reforms in wholesale capacity, energy, and ancillary service markets, while Order No. 2222 of 2020 requires 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 shore up reliability rules for inverter-based resources, which it considers to include all generation resources that connect to the electric power system using devices that change direct current (DC) power produced by a resource to alternative current (AC) power, including battery storage resources. FERC has already approved proposals by Southwest Power Pool, Inc. and ISO New England Inc. to use storage resources as transmission assets.

[Read more about storage participation in the wholesale markets >](#)

STATE

Amid the ongoing transition from fossil-fueled baseload energy resources to renewable energy sources, energy storage resources are becoming an increasingly important part of the energy mix. Twenty-three states, plus the District of Columbia and Puerto Rico, currently 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.

Around 15 states have adopted some form of energy storage policy, including procurement targets, regulatory adaption, demonstration programs, financial incentives, and/or consumer protections. Several states have also required that utility resource plans include energy storage. Even so, incorporating storage into integrated resource plans can be a challenge as storage is different from conventional electricity generators and demand-side resources.

[Read more about state energy storage policies >](#)



EUROPEAN REGULATORY FOCUS

The European Union and United Kingdom have similarly enacted energy storage policies and regulations, with both issuing landmark legislation in 2023.

EUROPEAN UNION

The EU in particular views energy storage as crucial in its aim to become climate neutral. Within the trading bloc, regulation of energy storage is generally spread across several regulatory acts, many of which require implementation at the EU member state level.

In general, energy storage regulation in the EU focuses on public support, strategy, and other policy aspects; permitting; effectiveness of energy markets and capacity mechanisms, including establishment of the European entity of distribution system operators (EU DSO); grid aspects; and tariffs requiring the EU member state not to discriminate against energy storage projects in their tariffs' regulations.

Regulation also extends to batteries. In 2023, the EU adopted the EU Batteries Regulation, noted as the first piece of European legislation taking a full life-cycle approach in which sourcing, manufacturing, use, and recycling are addressed and enshrined in a single law. The regulation introduces sustainability, recycling, and safety requirements applicable to design, production, and waste management of batteries produced or sold in the EU. Under the new Batteries Regulation, the EU member states are expressly required to lay down effective, proportionate, and dissuasive penalties for infringements by 2025.

The EU Commission additionally published a series of recommendations on energy storage, with concrete actions that EU countries can take to ensure its greater energy storage deployment. Further development of energy storage regulation at the EU level is likely to be in line with its energy security and energy transition goals. One might continue to expect that such further developments will be in a spirit of solidarity demonstrated by the EU in respect of its gas storage amid the energy crisis, which would imply a greater alignment among member states.

[Read more about the EU and UK's energy storage policies and strategies >](#)



UNITED KINGDOM

Described as the “biggest piece of energy legislation in the UK’s history,” the Energy Act 2023 became law after receiving Royal Assent on October 26, 2023. Until the much-awaited Energy Act 2023 was issued, the UK legislative arsenal did not include a specific framework for energy storage. However, the Energy Act 2023 did update the Electricity Act 1989, the main piece of legislation governing electricity in Great Britain. The updated Electricity Act 1989 now includes a definition of energy storage as “energy that was converted from electricity and is stored for the purpose of its future reconversion into electricity.”

Because Ofgem, the Great Britain energy regulator, had clarified in 2020 that electricity storage is deemed to be electricity generation for the purposes of the Electricity Act 1989, any energy storage operator will require a generation license unless an exemption applies. Ofgem’s non-exhaustive list of technologies that fall within the scope of the regulatory definition of storage include electrochemical batteries (e.g., flow batteries), gravity energy storage (e.g., pumped hydro), air-based storage systems, kinetic energy systems (e.g., flywheels), thermal storage, chemical storage, and electromagnetic storage.

One month after the Energy Act 2023 became law, the UK Department for Business and Trade published a UK battery strategy setting out the government’s vision for the country to achieve a globally competitive battery supply chain that supports economic prosperity and the net zero transition. The strategy outlines 15 ambitious measures to support the sector, including targeted support for zero emission vehicles, batteries, and their supply chains. The effort will involve more than £2 billion of new capital and research and development funding through 2030.



CONCLUSION

Energy storage is on track to continue playing an important role in helping countries around the world achieve ambitious clean energy goals. As renewables such as wind and solar continue to become a bigger part of the energy mix, energy storage can be expected to follow a similar trajectory, particularly with assistance from the regulators and policymakers putting in place measures to encourage adoption of the technology.



LEARN MORE ABOUT OUR PRACTICE

ENERGY STORAGE

With more than 100 energy and project finance lawyers, Morgan Lewis is a leading provider of legal services in the energy industry. We have advised on the development, financing, acquisition, and construction of numerous electric energy storage projects, including flow and lithium-ion batteries, pumped-hydro storage, and behind-the-meter, and in-front-of-the-meter energy storage, as well as standalone energy storage and energy storage coupled with solar, wind, or gas-fired generation.

Our practice includes some of the most knowledgeable lawyers in the industry who understand energy storage on technical, commercial, and business levels. We know how expanding markets for energy storage are creating new opportunities in the United States and globally. Our global team of lawyers assists clients with all aspects of energy storage development, construction, and financing, as well as the acquisition and disposition of storage companies and assets.

SELECT MATTERS HANDLED BY OUR LAWYERS

- A leading North American renewable energy company in the successful debt and tax equity financing of a 198 megawatt (MW) solar plus 100 MW storage project to be located in Falls County, Texas
- The developer, owner, and operator of wind, solar, and energy storage projects in the United States in connection with the acquisition of a 300 MW battery storage project under development in Virginia
- A US utility in entering build-own-transfer agreements for two battery energy storage projects (119 MW and 100 MW); the projects' developer will sell them to the utility once they achieve mechanical completion, with a portion of the purchase price being paid upon final completion, and the utility will receive federal investment tax credits associated with the battery energy storage projects
- A global energy company in connection with a tax equity financing of a four-hour battery storage system, with an approximate capacity of 80 MWac, located in Arizona
- A utility in the development of its form of procurement agreement for solar-plus-storage projects and negotiation of such form in connection with new projects
- A leading energy storage company in the development of two utility-scale energy storage projects in San Diego related to the California Public Utilities Commission's (PUC's) resolution for an emergency energy storage solicitation
- A 1,300 MW pumped-storage project in regulatory proceedings before the California PUC and FERC relating to procurement, market rules, and interconnection-related issues
- Multiple developers in their bids into requests for offers for energy storage projects from each of the three major California investor-owned utilities
- A leading developer of standalone energy storage resources in connection with the \$250 million financing of a portfolio of energy storage assets
- The purchaser of a 10 MW battery storage project in the PJM market, including negotiating an EPC agreement and supplier warranties
- A developer in the construction of energy storage and efficiency systems in US Department of Defense housing
- A leading energy storage developer in connection with the development of an energy storage project across from a Midwestern utility

RECENT ACCOLADES

RANKED
Energy Transition
and Energy:
Electricity (Finance)
Nationwide,
Chambers USA (2023)

20 PARTNERS RANKED
Energy
Chambers USA (2023)

TIER 1, ENERGY LAW AND PROJECT FINANCE LAW:
Best Lawyers-
Best Law Firms,
The Legal 500 US (2022-2024)

A-LIST LAW FIRM
The American Lawyer (2023)

RANKED
Energy: Electricity
(Regulatory & Litigation
and Transactions);
Energy: Oil & Gas
(Regulatory & Litigation);
Nationwide,
Chambers USA (2019-2023)

RANKED
Projects: Renewables
& Alternative Energy,
Projects: Power,
Projects: Power
& Renewables:
Transactional
Nationwide,
Chambers USA (2023)

TIER 1, ENERGY LAW
US News/ Best Lawyers - Best Law Firms (2016-2023)

Recommended

Energy Litigation:
Oil & Gas

Energy Regulation:
Oil & Gas

Energy Litigation:
Electric Power

Energy Regulation:
Electric Power

Energy: Renewable/
Alternative Power

Energy Transactions:
Electric Power

Energy Transactions:
Oil & Gas

The Legal 500 US (2023)

400+ LAWYERS RECOGNIZED
Chambers & Partners (2023)

CLIENT SERVICE 30
BTI Client Service A-Team (2002-2023)

Morgan Lewis

At Morgan Lewis, we're always ready to respond to the needs of our clients and craft powerful solutions for them.

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