



White paper

Charting the financial roadmap and economics of BESS adoption for data centers

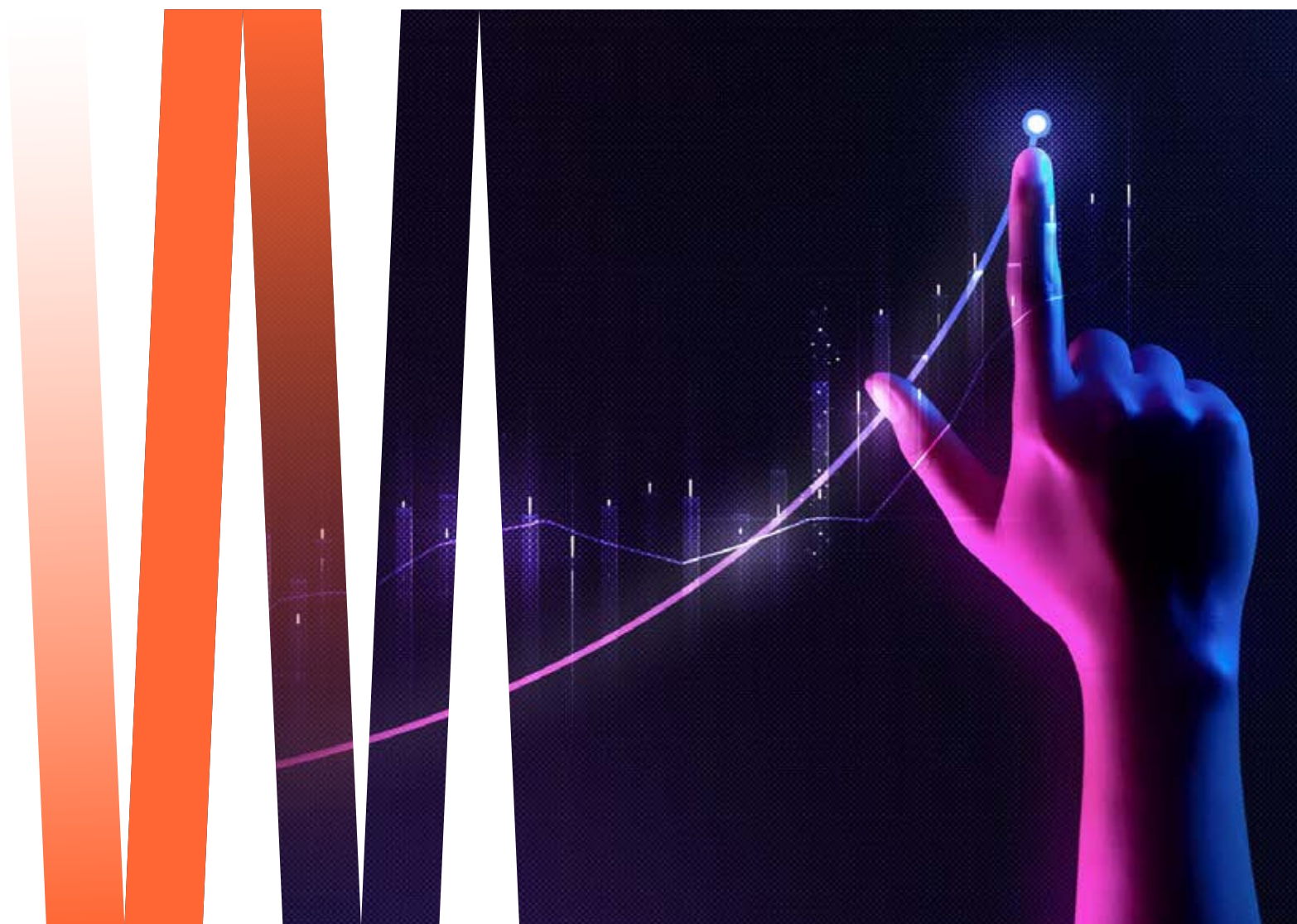




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Executive summary

As AI-driven workloads drive explosive data center growth, power demand is surging while utilities face mounting challenges: aging infrastructure, interconnection delays, and capacity constraints. At the same time, data center operators are navigating increasing pressure to speed time-to-market (TTM), improve uptime, reduce operating costs, and meet ambitious responsible business goals.

Battery energy storage systems (BESS) have emerged as a critical enabler for data centers, especially in an environment where data center size is growing and getting grid interconnections becomes increasingly more difficult. While BESS applications for data centers may not be widely understood, it is not just a backup solution. When intelligently integrated into the facility and utility grid, it facilitates interconnection and becomes a revenue-generating asset that improves return on investment (ROI) on infrastructure deployments.

This white paper provides a financial roadmap for BESS adoption in US-based data centers, with a focus on stacking value across three dimensions:

- **Revenue generation** via energy market participation (e.g., frequency regulation, energy arbitrage, and ancillary services).
- **Operational savings** through peak shaving, deferred grid upgrades, and enhanced uptime.
- **Regulatory and policy alignment**, unlocking incentives like the federal Investment Tax Credit (ITC) and utility-specific programs.

Through analysis, examples, and market data, we demonstrate how Vertiv's data center-focused BESS and microgrid solutions can deliver short payback periods, reduce total cost of ownership (TCO), and provide a resilient and environmentally responsible foundation for next-generation critical digital infrastructure.

Over the next decade, US electricity demand is expected to grow faster than it has since the 1980s, with data centers driving a significant portion of that growth.¹ AI compute clusters are introducing record-setting power demands and 24/7-load profiles that strain both utility infrastructure and traditional facility power systems.

Simultaneously, hyperscale operators and colocation providers face mounting expectations from customers, investors, and regulators to improve uptime, reduce carbon emissions, and build with speed and flexibility. These competing pressures create a fundamental challenge: how to grow critical digital infrastructure that is more powerful, more reliable, and more environmentally responsible—while keeping costs under control.

Battery energy storage systems (BESS) have become a pivotal solution in this environment. When deployed as part of a microgrid or behind-the-meter solution, BESS enables data centers to:

- Speed up the grid interconnection process.
- Debottleneck congested grids.
- Defer or avoid costly utility upgrades.
- Participate in grid programs that generate new revenue streams.
- Reduce exposure to demand charges and time-of-use rates.
- Eliminate or supplement diesel generators (gensets) for extended backup power.
- Meet corporate and community environmentally responsible goals.

For many data centers, the value of a BESS goes well beyond backup; it becomes a strategic energy asset that improves business performance across financial, operational, and environmental dimensions. And, thanks to established federal incentives and lucrative utility regulations, the economics are well understood.

This paper provides a comprehensive guide to how and why data centers should approach BESS adoption today, with a focus on financial return on investment (ROI), practical use cases, and success factors for implementation.

¹Vertiv, 2025.

Key value drivers for BESS adoption in the data center

The installation and use of BESS are gaining traction among data center operators not just as an energy backup tool and an accelerant to grid connectivity but also as a financially strategic investment. For data centers—especially larger facilities deploying AI infrastructure—BESS delivers measurable value across multiple categories that directly support business goals.

1 Operational resilience

Downtime is expensive; between 2019 to 2022, over 60% of data centers have experienced an outage.² BESS provides extended ride-through capabilities that complement or replace diesel generators (gensets), facilitating continuous uptime during utility events. Unlike gensets, batteries can respond instantly (in milliseconds), helping to maintain voltage and frequency stability during disturbances. This minimizes risk to critical IT loads and enhances overall power quality.^{3,4}

2 Financial optimization

BESS allows operators to significantly lower their energy costs through peak shaving, energy arbitrage, and demand response. In markets with volatile time-of-use rates or high demand charges, BESS can cut electricity expenses by tens or hundreds of thousands of dollars per megawatt per year. Additionally, in deregulated power markets, batteries can earn revenue by providing grid services such as frequency regulation and spinning reserves. These savings and revenue streams combine to create a compelling ROI profile, particularly when federal tax credits and state incentives are included.

3 Faster deployment and grid independence

As utility interconnection queues stretch from months to years, developers are turning to BESS and microgrids to accelerate timelines. A right-sized BESS can reduce a facility's grid impact and avoid the need for transmission or substation upgrades, enabling faster site commissioning. This is especially valuable for edge deployments and AI clusters requiring rapid scaling. In some regions, utilities are actively encouraging large flexible loads like data centers to deploy BESS to ease local grid congestion and defer infrastructure investment.

4 Environmental and responsible business goals

Corporate and regulatory expectations around carbon emissions are intensifying. BESS helps data centers reduce generator run-time, integrate more on-site renewable energy, and improve their emissions profile. With batteries enabling time-shifting of alternative energy sources, data centers can match generation to their actual usage patterns—supporting 24/7 carbon-free energy targets. This contributes to Scope 1 and Scope 2 emissions reductions and aligns with customer expectations and investor scrutiny.

5 Policy and incentive leverage

Federal and state programs have the potential to improve the financial landscape for BESS. States like California, New York, and Massachusetts offer additional rebates and performance-based incentives that further improve payback periods.⁵ These programs can accelerate adoption and tip the scales on investment decisions.

² Davis, J., et. al., 2022. Uptime Institute.

³ Omdia, 2024.

⁴ Vertiv, 2024.

⁵ Straughan, D., 2025.

Revenue generation and grid asset monetization

For data centers, BESS offers more than operational support. It enables direct participation in energy markets, transforming energy infrastructure from a cost center into a revenue-generating asset.^{6,7} With the right configuration, a battery system can serve the grid in real-time, earning payments for services like frequency regulation, reserves, and energy arbitrage. These opportunities are particularly strong in deregulated US markets such as PJM, ERCOT, CAISO, ISO-NE, and MISO.⁸

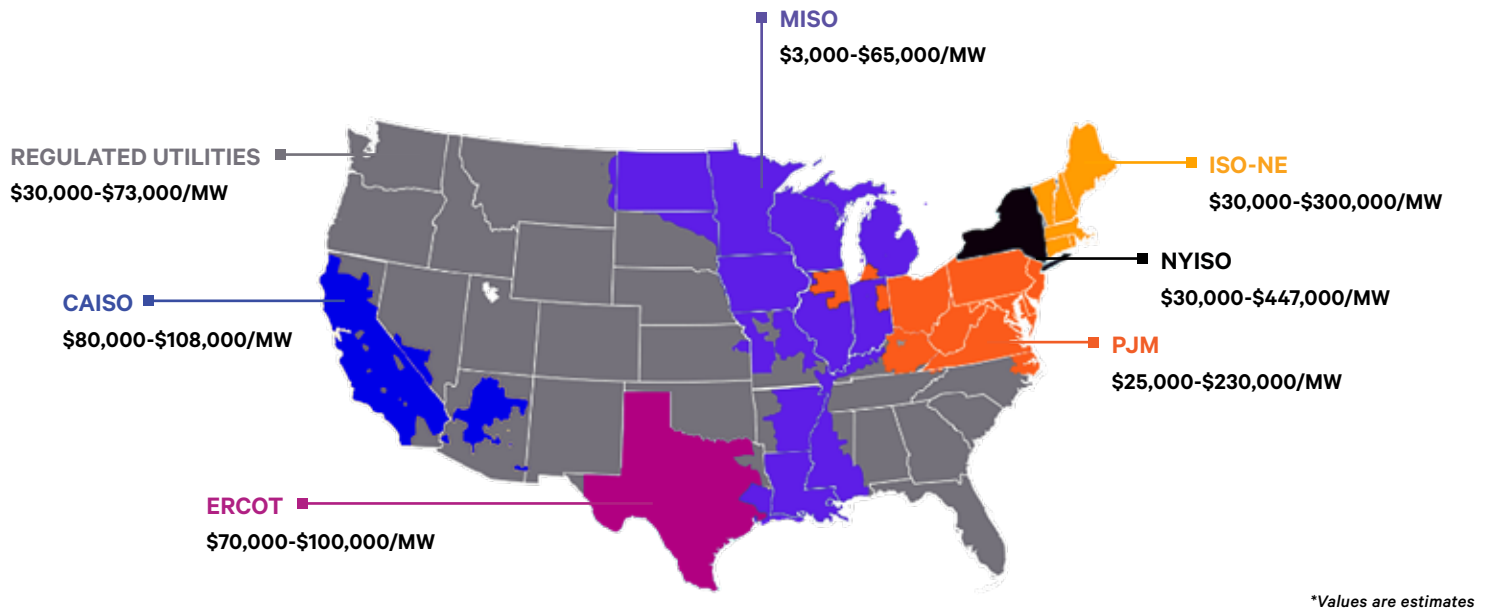


Figure 1. Demand response value estimates for 2025 in the US markets. Source: CPower.⁹

1. Energy arbitrage

BESS allows data centers to capitalize on time-of-use electricity pricing. During low-cost hours (typically overnight or midday when renewables are abundant), the battery charges from the grid or onsite renewables. During peak cost hours (late afternoon or evening), the battery discharges to support the facility, avoiding purchases at high rates. In markets like California or New York, where peak rates can be two to five times higher than off-peak rates, this can generate substantial monthly savings.

Example: A 10 MW BESS shifting four hours of load daily during peak periods can save over \$1 million annually on energy arbitrage alone, depending on the utility rate structure.

⁶ Vertiv, 2024.

⁷ Omdia, 2024.

⁸ PJM Interconnection, Electric Reliability Council of Texas (ERCOT), California Independent System Operator (CAISO), ISO New England (ISO-NE), and Midcontinent Independent System Operator (MISO) are some of the major independent system operators (ISOs) or regional transmission organizations (RTOs) managing the reliability, uptime, and operations of electricity grids in the US. Graphics and information on value estimates were sourced with permission from CPower.

⁹ Graphics and information on value estimates were sourced with permission from CPower.

2. Frequency regulation (Dynamic regulation or RegD / Fast response)

In ISO markets, batteries are uniquely suited to frequency regulation due to their fast response capabilities. Regulation services require resources that can inject or absorb power within seconds to maintain grid frequency at 60 Hz.^{10 11} BESS can participate in these markets either directly or through third-party aggregators, earning capacity and performance payments.

In PJM, fast-responding batteries can earn between \$70,000–\$150,000 per MW per year through frequency regulation.¹²

3. Spinning and non-spinning reserves

These ancillary services require resources that can come online quickly to replace lost generation. Spinning reserves are typically online and synchronized with the grid, while non-spinning reserves can be brought online within minutes. Batteries can fulfill both, offering revenue for being available and responding on command.

In ERCOT, reserve pricing spikes during grid stress events, giving batteries the opportunity to earn outsized returns for short-duration deployments.

4. Voltage support and reactive power compensation

Advanced inverters paired with BESS can provide voltage support and reactive power management at the distribution level. This supports local grid stability and may be monetized in select regions where utilities or independent system operators (ISOs) compensate for these services. While not yet widespread, this is a growing opportunity, particularly for zones with deferred grid investments, near-constrained substations, or in renewable-heavy grids.¹³



5. Black start capabilities

Some ISOs are exploring or already compensating resources that can support black start operations—bringing part of the grid back online after a major outage. BESS is ideal for this use due to its instantaneous power delivery and ability to operate without fuel logistics. While less common as a revenue stream today, this may grow in importance as utilities seek non-diesel black start options.

These revenue streams can be layered depending on the site's operational constraints and market participation capabilities. For many data centers, participation in these markets can generate enough income to fully offset the BESS investment within a few years.

As market rules continue to evolve (via FERC Orders 841 and 2222), data centers will have even more opportunities to monetize their flexible load and energy assets. Whether acting as a standalone participant or through an aggregator, a properly configured BESS is no longer just insurance, it's a profit engine.

¹⁰ Vertiv, 2024.

¹¹ Omdia, 2024.

¹² Rates vary by year and market conditions; PJM regulation markets have historically compensated fast-responding BESS systems at \$70,000–\$150,000/MW per year.

¹³ Vertiv, 2024.



Utility services: Faster interconnection, deployment, and carbon emissions reduction

One of the most pressing challenges facing data center developers is utility interconnection. Across the U.S., grid constraints, long queue times, and infrastructure limitations are delaying projects by months or even years. In this environment, battery energy storage systems (BESS) are not just a backup solution, but they are a strategic tool for accelerating deployment, reducing interconnection risk, and minimizing grid impact.

1 Resource adequacy and flexible load support

BESS can be used to reduce a facility's net load during system peaks or during local grid stress events. By providing dispatchable, behind-the-meter (BTM) capacity, batteries improve a site's alignment with resource adequacy requirements, which helps utilities provide enough power to meet peak demand.

Example: Duke University's 2025 study found that flexible data center loads could enable 76–126 GW of new demand nationwide without immediate capacity expansion, if those loads include curtailment or dispatchable resources like BESS.¹⁴

2 Transmission and distribution deferral

When a large data center connects to an already constrained substation or feeder, it can trigger the need for expensive and time-consuming upgrades. By deploying a BESS, operators can reduce their instantaneous peak demand or shape their load to avoid stressing the grid during critical hours.

Example: In PJM and MISO territories, the potential value of transmission and distribution (T&D) deferral via battery-backed flexible interconnection has been shown to exceed \$500,000 per MW in avoided capital and time.^{15 16 17}

3 Congestion relief and local reliability support

BESS can help mitigate local congestion and support voltage and frequency stability at the edge of the grid. This makes batteries attractive in load pockets where rapid growth (like Northern Virginia or Phoenix) is pushing infrastructure to its limits. Some utilities are exploring partnerships or co-funded projects with data centers that integrate BESS to relieve substation stress and improve grid reliability.

Example: Vertiv™ EnergyCore Grid BESS can operate in both grid-connected and island modes, enabling facilities to respond to utility signals or operate independently when required.

4 Carbon emissions reduction and diesel displacement

BESS enables data centers to reduce their use of diesel gensets, which are increasingly scrutinized for emissions and noise. This is especially true in urban and suburban environments. Replacing or supplementing gensets with batteries can reduce Scope 1 emissions and improves community relations. Further, batteries allow data centers to shift their energy consumption to periods of low grid carbon intensity or to store on-site renewable energy (like solar) for later use. This supports carbon-free energy goals and aligns with emissions-reduction policies and incentive structures in states like California and New York.

Example: Google piloted a 2.75 MW battery system at its St. Ghislain data center in Belgium to replace diesel gensets, support grid services, and advance their 24/7 carbon-free energy goals.¹⁸

Example: Replacing even a portion of generator runtime with BESS can eliminate hundreds of hours of diesel emissions annually, while also simplifying air permitting requirements.

In today's grid environment, batteries offer a clear utility-facing value proposition: they reduce peak impact, improve flexibility, and accelerate deployment. For data center operators, this means shorter timelines, fewer regulatory hurdles, and a smoother path to scale.

¹⁴ Norris, T. H., 2025. Nicholas Institute for Energy, Environment & Sustainability.

¹⁵ Estimated values calculated by Vertiv experts based on aggregated utility deferral costs and interconnection timeline savings from industry case studies and white papers of ACORE and NREL.

¹⁶ Goggin, M., & Zimmerman, Z., 2023. American Council on Renewable Energy.

¹⁷ Bowen, T., 2019. National Renewable Energy Laboratory.

¹⁸ Miller, R., 2020. Data Center Frontier.

Customer services: Community participation and operational benefits

While grid-facing services often take center stage in BESS economics, behind-the-meter benefits can be delivered directly to the data center itself and be just as valuable. These self-services improve operational performance, reduce energy costs, and enhance environmental responsibility without requiring complex market participation. They also strengthen the data center's relationship with the surrounding community and utility.



1 Time-of-use (TOU) bill management

Many utilities charge significantly more for electricity during on-peak hours, often in the late afternoon and early evening. BESS enables data centers to shift their grid consumption to off-peak hours by discharging during expensive periods and recharging when rates are low (peak shaving, load-leveling, and TOU arbitrage).¹⁹

Example: In TOU territories like California, this can lead to savings of \$50–\$150 per kW-month or more in avoided peak energy costs, especially when coupled with renewable generation.^{20 21}

2 Increased on-site photovoltaic (PV) utilization

Data centers with solar generation often face a mismatch between when energy is generated (midday) and when peak demand occurs (late afternoon or evening). BESS solves this challenge by storing surplus solar energy and discharging it when needed, maximizing self-consumption and reducing reliance on grid power.

Example: Even in markets without net metering, storing and time-shifting solar energy with BESS can reduce annual electricity spend and carbon intensity.

3 Demand charge reduction

Utilities often assess fees based on a customer's maximum demand during a billing cycle, regardless of energy consumed. BESS can "shave" these peaks by discharging during high-load periods, thus lowering the billing demand.

Example: A 5 MW BESS used strategically to reduce peak demand can yield \$500,000 or more in annual demand charge savings, depending on the rate structure.

¹⁹ Nelson, B., 2025. Data Center Knowledge.

²⁰ California Public Utilities Commission, n.d.

²¹ Savings estimates based on typical TOU demand charges in California utilities (e.g., PG&E's E-19 or E-20 rates) and industry modeling.

4 Backup power and resilience

BESS provides a source of backup power that activates quickly in the event of a utility outage. Unlike diesel gensets, which have a startup delay and require regular maintenance and permitting, BESS delivers silent, emissions-free power within milliseconds.

Example: Vertiv™ BESS solutions begin supporting loads within milliseconds, which is much faster than a diesel generator, while not having any of the emissions.

5 Community and regulatory benefits

By reducing generator run time and emissions, BESS can help improve local air quality and decrease noise impacts, which is particularly important in urban and suburban data center hubs. This enhances relationships with regulators and neighbors and can streamline permitting processes for new or expanded facilities.^{22 23}

Example: In air quality non-attainment zones like parts of California, BESS is often favored over diesel gensets in permitting and environmental compliance processes, and may help sites qualify for incentives such as SGIP that reward emissions reduction.²⁴

Some communities and states are beginning to consider microgrid and BESS investments in resilience planning, which could open the door to future public-private partnerships or grant opportunities.

Together, these customer-facing benefits create strong financial and operational value for the data center, while also improving stakeholder relationships. In many cases, they represent the lowest-friction entry point for realizing value from a battery system even before enrolling in external markets or services.



²² Omdia, 2024.

²³ Vertiv, 2024.

²⁴ California Public Utilities Commission, n.d.

Value stacking: Maximizing ROI across use cases

Battery energy storage systems (BESS) deliver their greatest financial impact when deployed across multiple use cases simultaneously, a strategy known as value stacking. By layering grid services, utility programs, and customer-facing benefits, data centers can extract maximum return on investment while maintaining uptime and flexibility.

Understanding stackable value streams

Each BESS use case provides a distinct benefit, but many are non-conflicting and can be delivered in parallel. With proper controls, batteries can switch functions dynamically based on priorities, market signals, or grid conditions. For example, a battery can be:

- Charging during off-peak hours (TOU optimization)
- Discharging in response to a frequency regulation signal (grid services)
- Maintaining reserve capacity for backup (resiliency)
- Reducing demand peaks during billing intervals (demand charge management)

Example: Vertiv™ EnergyCore Grid BESS uses intelligent energy management systems (EMS) and inverter coordination to dynamically prioritize services, maintaining uptime while still capturing revenue.

Sample value stack for a 10 MW/4-hour BESS

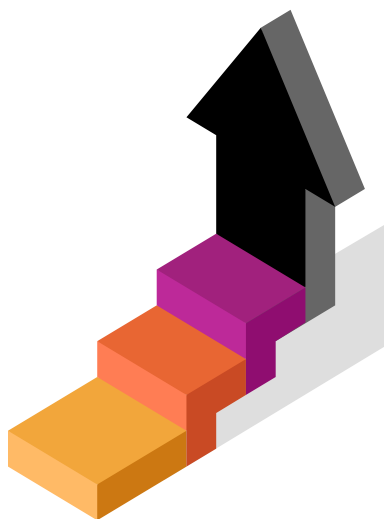
This example represents just a subset of possible streams. Additional options, such as resource adequacy capacity payments, black start services, or renewable energy integration can further enhance the financial return.

Service	Estimated annual value*
Frequency regulation	\$1.2M – \$1.5M
TOU arbitrage + demand charges	\$0.6M – \$1.0M
Utility program participation	\$0.2M – \$0.5M
Backup power (avoided outage costs)	Variable (event-driven)

Table 1. This stack illustrates the potential annual value from common monetizable services.*Stacking strategy should be tailored to site-specific goals, market rules, and available programs. Source: CPower. ²⁵

²⁵ Demand response values are highly regional. Based on 2025 projections, market opportunities vary from ~\$30,000/MW (MISO, NYISO) up to \$300,000/MW (ISO-NE, CAISO, ERCOT).

Best practices for effective stacking



- 1. Right-size the system:** Design BESS capacity (power + energy) to meet both economic and resilience goals. Too small capacities limit stacking potential, while too large capacities might dilute returns.
- 2. Use advanced EMS and controls:** Smart software is essential for managing competing priorities, maintaining compliance, and adapting to dynamic market or facility conditions.
- 3. Define operational boundaries:** Reserve capacity for critical backup needs while allocating the rest to revenue-generating services. This verifies that uptime isn't compromised.
- 4. Coordinate with utilities or aggregators:** Engage early to identify programs, tariffs, and rules that impact monetization. Consider aggregator partnerships for ISO market access.
- 5. Layer incentives and policies:** Combine federal tax credits (ITC), state programs (e.g., California's Self-Generation Incentive Program or SGIP),²⁶ and depreciation benefits for a holistic financial view.

Value stacking transforms BESS from a single-purpose investment into a multi-function revenue engine, while still supporting critical resiliency and responsible business objectives. When executed thoughtfully, it's the key to justifying and accelerating BESS adoption in data centers.

Roadmap: Technical considerations and timelines

Successfully deploying a BESS in a data center requires more than selecting a battery. It involves careful planning across design, compliance, integration, and lifecycle management. This section outlines key technical considerations and timelines to guide a smooth and financially effective deployment.

Selecting the right BESS solution

- **Power vs. energy:** Define whether the primary goal is short bursts of power (e.g., frequency regulation, UPS support) or long-duration energy (e.g., arbitrage, backup). AI clusters with high rack density requirements may require both.
- **Chemistry:** Most modern data center BESS systems use lithium iron phosphate (LFP) for safety, thermal stability, and long cycle life.
- **Form factor:** As an example, Vertiv™ EnergyCore Grid BESS is a modular, containerized solution designed for scalable deployment and fast commissioning.

Planning and compliance

- **Interconnection:** Engage the utility early to assess feeder capacity, interconnection timelines, and peak reduction strategies.
- **Permitting:** Work with Authorities Having Jurisdiction (AHJs) to verify compliance with standards like NFPA 855, UL 9540, and other relevant state codes. Many jurisdictions now have established permitting pathways for lithium-ion battery (LIB) systems.
- **Fire and safety systems:** Integrated fire suppression and thermal runaway detection are mandatory. When followed, these measures facilitate sufficient spacing, ventilation, and access for first responders.

²⁶ California Public Utilities Commission, n.d.

Installation and deployment

- **Site preparation:** Assess available real estate, weight-bearing capacity, and proximity to switchgear and transformers.
- **Commissioning:** Allow three to six months for permitting, procurement, and commissioning depending on project size and location.
- **Modularity:** Choose a system that supports phased scaling (e.g., starting with 2-hour duration and expanding to four hours as needed).

Operation, maintenance, and optimization

- **Control integration:** Tie into the facility's EMS and SCADA for full visibility and automated dispatching across value streams.
- **Maintenance strategy:** Design for minimal onsite maintenance through remote monitoring, self-diagnostics, and hot-swappable components.
- **Cybersecurity:** Verify that the BESS controller and software platforms meet cybersecurity standards and policies, and segment networks, administrative accesses, and layered defenses appropriately from OT systems.

Timelines and dependencies

Phase	Typical duration
Feasibility + financial modeling	One to two months
Engineering + permitting	Three to six months
Procurement + installation	Four to six months
Commissioning + market enrollment	One to two months

Table 2. End-to-end deployment can range from six to 12 months, depending on project complexity, location, and permitting environment.

With the right technical foundation and stakeholder alignment, data centers can integrate BESS with confidence to facilitate reliable operation, fast monetization, and long-term scalability.



ROI and financial modeling

Battery energy storage systems (BESS) can deliver strong financial returns when planned strategically. However, modeling those returns requires a holistic view factoring in upfront costs, incentive structures, operational savings, and revenue potential over the system's lifecycle.

Estimated capital expenditure (CapEx)

Capital expenditure (CapEx) is typically the largest component of a BESS investment, followed by maintenance, permitting, and integration costs. However, with modular systems and improved battery technology, upfront costs have decreased significantly in recent years. Federal and state incentives can reduce CapEx substantially.

Components (10 MW / 4-hour BESS)	Typical range (USD)
Battery + inverters + enclosure	\$12M–\$16M
Installation and site work	\$1.5M–\$3M
Controls, EMS, and integration	\$0.5M–\$1.5M
Permitting, interconnection, commissioning	\$0.5M–\$1M
Total estimated cost	\$14M–\$21M

Table 3. Estimated capital expenditure for 10 MW/four-hour BESS.²⁷

Incentives and policy levers²⁸

- **Investment Tax Credit (ITC):** This federal incentive covers up to 30% of BESS system costs, including microgrid controllers (if used).
- **Bonus adders:** Up to 10%–20% extra for domestic content, energy communities, or low-income zones.
- **Modified Accelerated Cost Recovery System (MACRS) depreciation:** Accelerated 5-year depreciation for commercial energy storage.
- **State Programs:** Rebates like California's SGIP can add another \$100–\$300/kWh in incentives.

Example: With a 30% ITC and available state/local rebates, a \$15M BESS project could see its net cost reduced to under \$10M—depending on system size, location, and program eligibility.

²⁷ CapEx estimates are typically modeled over a 15-year system lifecycle, accounting for CapEx, degradation, and ongoing operations and maintenance (O&M).

²⁸ Simon, L., 2023. Uptime Institute.

Revenue vs. cost modeling

Using stacked value streams (see Section “Value stacking”), a 10 MW/four-hour BESS can conservatively generate:

Value stream	Estimated annual revenue/Savings
Frequency regulation	\$1.2M–\$1.5M
TOU arbitrage + demand charges	\$0.6M–\$1.0M
Utility program participation	\$0.2M–\$0.5M
Outage cost avoidance	Variable (event-driven)
Total annual benefit	\$2.0M–\$3.0M

Table 4. Estimated annual savings from value stacking.

Payback period and internal rate of return (IRR)

- **Simple payback (post-incentive):** Three to five years, depending on market conditions.
- **IRR (10-year horizon):** 12%–18% (unlevered, post-incentives).
- **Net present value (NPV):** \$5M–\$10M over 10 years, assuming conservative market participation.

Trade-offs to consider

- **Operational complexity:** More revenue streams require more sophisticated control.
- **Battery degradation:** Some high-cycling applications (e.g., frequency reg) may shorten battery lifespan.
- **Market volatility:** Revenue from grid services may fluctuate with regulatory or market changes.

The best practice is to size the system for both resilience and revenue, balancing uptime priorities with economic return. BESS projects that leverage incentives, stack multiple value streams, and integrate intelligently into facility operations consistently outperform simple backup-only investments. With the right model, data centers can turn a traditionally passive asset into a high-performance financial contributor.

Industry successes and looking forward

Battery energy storage systems (BESS) are no longer experimental in data centers. They are delivering measurable value across hyperscale, colocation, and edge environments. Vertiv’s portfolio, including the Vetriv™ DynaFlex BESS, is specifically engineered to meet the rigorous uptime, scalability, and integration needs of mission-critical facilities.

The energy landscape for data centers is shifting rapidly. BESS, especially when integrated as part of a microgrid strategy, offers a solution that is both technically and financially compelling. It reduces costs, accelerates timelines, enhances uptime, and unlocks new revenue streams. When supported by federal incentives and utility programs, the investment case becomes even more sound.



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Appendix:

This white paper was initially generated with the assistance of AI technology, but reviewed, referenced, and edited by professionals in Vertiv using OpenAI. (2025). ChatGPT (Mar 14 2023 version) [Large language model]. <https://chat.openai.com/chat>. The platform was used for the following topics and purpose prompts:

- Battery energy storage systems financial optimization
- Utility interconnection challenges for data centers
- Revenue generation with BESS in data centers
- Value stacking in battery energy storage systems
- Examples of successful battery storage deployments in data centers
- Initial drafting and formatting of illustrative examples, neutral third-party sources, and real-world cases
- Initial comparative modeling structures for a BESS system



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