Q1 2026

US Energy Storage Market Outlook

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All data reported in GWh/GW, MWh/MW, all prices reported in U.S. Dollars (USD) unless otherwise stated.

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SECTION

Executive Summary

BESS market update and outlook

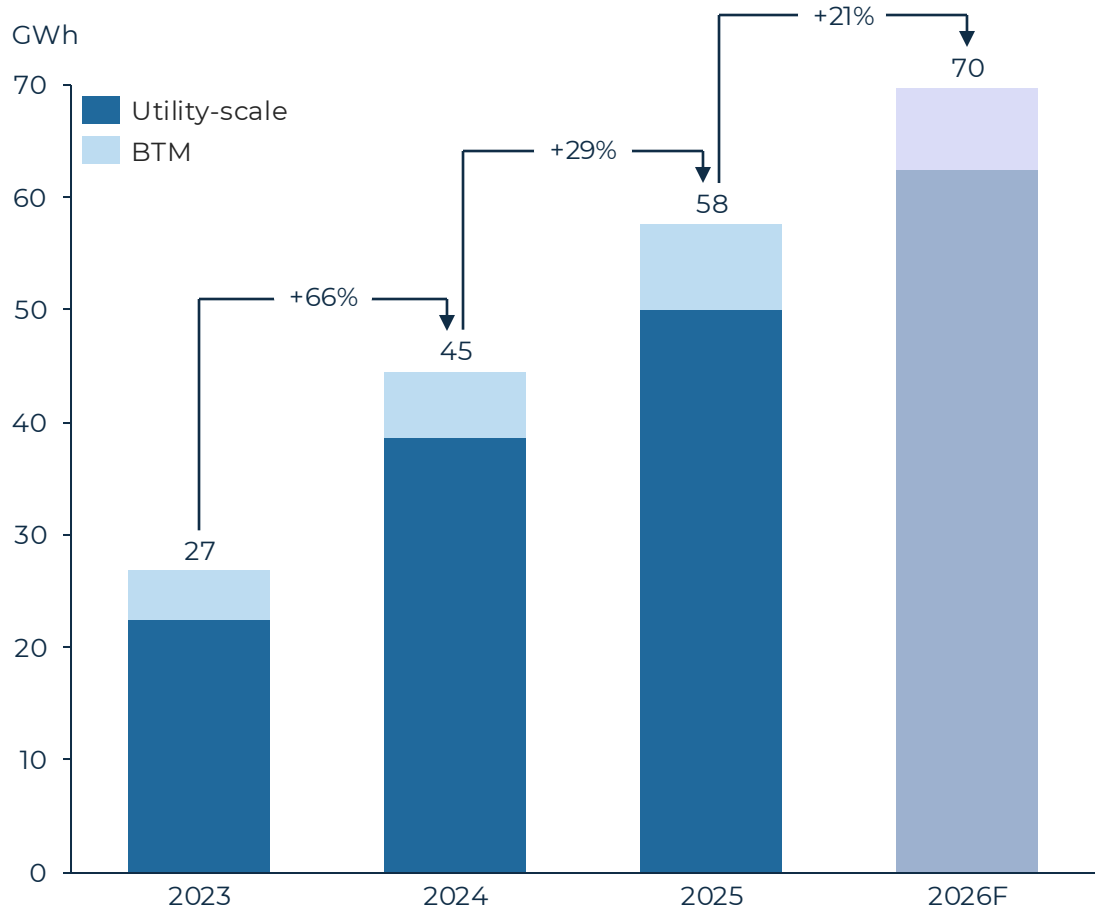
In 2025, battery energy stationary storage (BESS)installations surpassed 57 GWh/28 GW, a y-o-y increase of 29% (GWh). The utility-scale market underpinned growth with just under 50 GWh/16 GW installed, with California, Texas and Arizona accounting for 74% of installed capacity. Meanwhile, the behind-the-meter (BTM) market saw its share of demand remain consistent with 2024 at 13% of the total market, representing 8 GWh/12 GW. The BTM market saw strong growth in the residential market as the 25D tax credit comes to an end.

Throughout 2025 the U.S. BESS policy landscape has seen significant change, with the most substantial being the passage of the One Big Beautiful Bill Act (OBBBA). Several states also announced greater commitments to renewables and energy storage.

U.S. BESS deployments are set to increase to 70 GWh/35 GW in 2026, with the utility-scale market accounting for 62.4 GWh/20.2 GW and BTM markets accounting for 7.3 GWh/14.8 GW. This represents an estimated $25.2B in capital investment. By 2030, the market is set to exceed annual installations of 110 GWh/47 GW. By 2030 cumulative installed utility-scale BESS is set to reach just under 500 GWh.

In this first issue of the Energy Storage Market Outlook, topics covered include expanding BESS cell manufacturing capacity as players convert former Nickel Manganese Cobalt (NMC) EV lines to Lithium Iron Phosphate (LFP), tariff rates and the impact on battery imports, the removal of the 25D tax credit and the role of BESS at data centers.

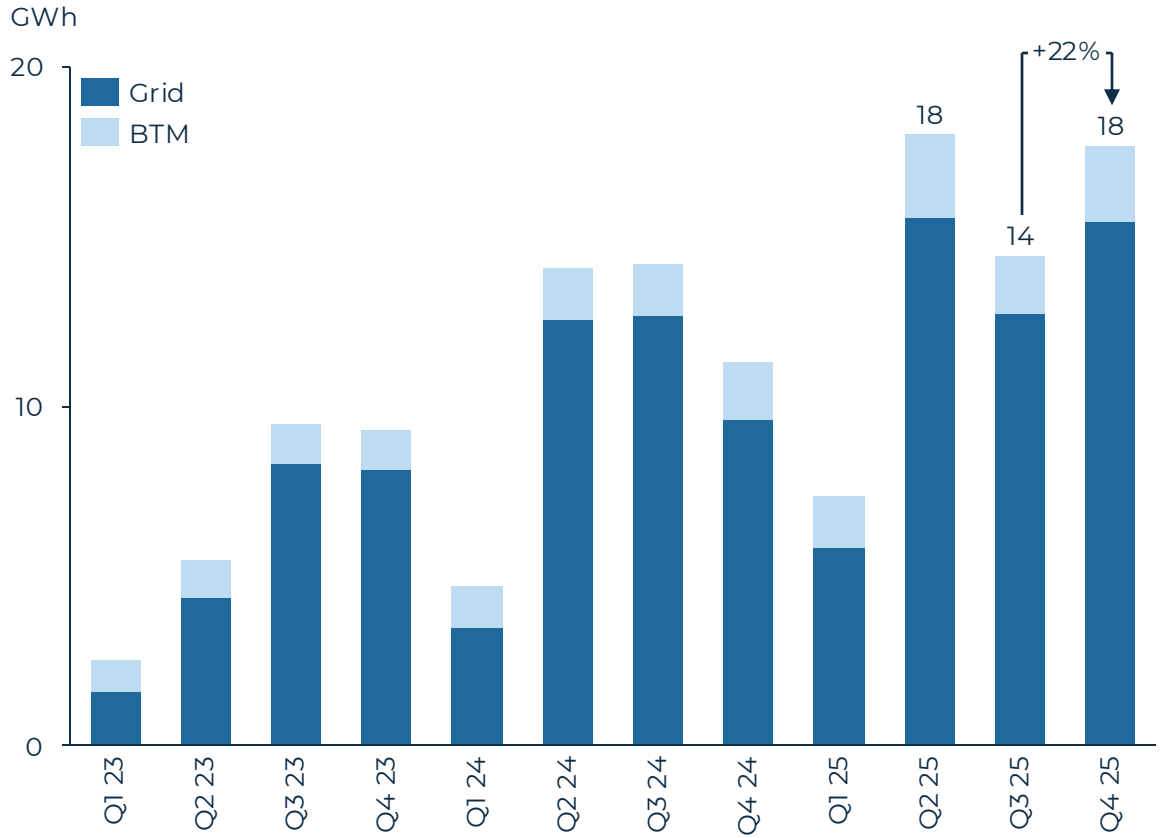
U.S. BESS annual installed capacity outlook by market segment



Quarterly market snapshot – Utility-scale & behind the meter

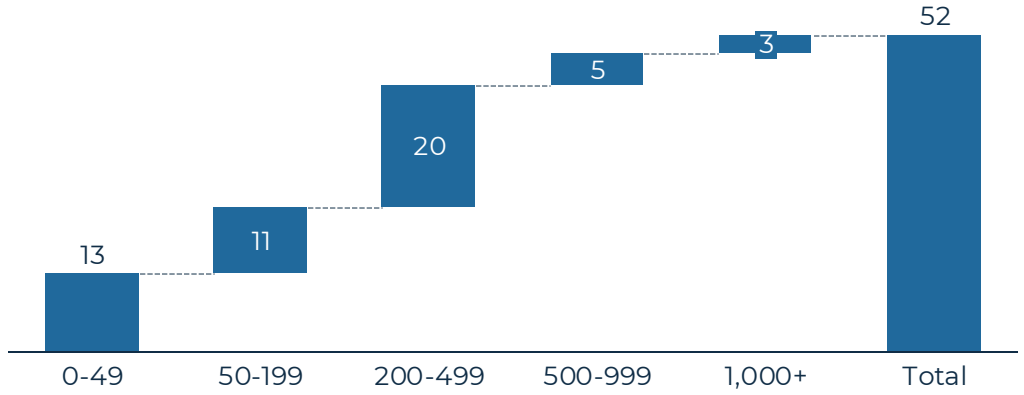
Q4 2025 saw BESS deployments of 17.6 GWh, bringing the year end to 57.8 GWh, up 30% on 2024. The utility-scale market accounted for over 86% of deployments, as developers continue to see growing markets in capacity, energy arbitrage, and long-term contracts. As data centers and other BTM applications grow in the coming years, we expect this segment's share of the market to grow to 20% by 2030.

Quarterly deployments by market segment, GWh



Q4 utility-scale capacity additions by paired resource by GWh

Q4 number of utility-scale projects installed by capacity



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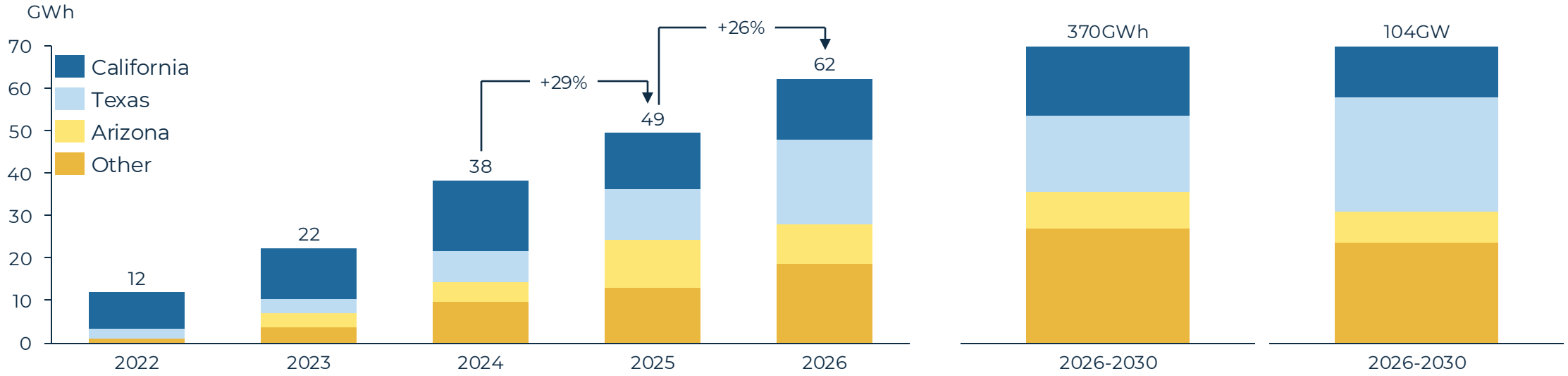
Utility-scale BESS increases 29% y-o-y

The utility-scale market saw installations increase 29% y-o-y, with particularly strong growth in Texas and Arizona, increasing 67% and 129% y-o-y respectively. Notably, deployments in California saw its first year of decline, down 21% compared to 2024. Outside of the top three markets, Nevada, New Mexico, Idaho, Oklahoma and Wisconsin all deployed over 1GWh of BESS in 2025, on the back of increased solar deployments. Average project battery duration fell slightly in 2025 to 3.08 hours compared to 3.15 in 2024, a result of California's reduced market share, where typical battery duration sits at four hours, compared to two-hour duration in Texas.

In 2026, the current pipeline of projects planned to come online sits at over 90 GWh; however, only 62 GWh of this is likely to come online due to delays and cancellations. Texas is set to overtake California in 2026 as the largest market by GWh deployed, a feat it achieved in 2025 by GW deployed.

Despite recently issued guidance from the Treasury Department, continued uncertainty around the FEOC restrictions contained within the One Big Beautiful Bill Act, and a reduced outlook for solar has seen a medium-term reduction to the US market outlook compared to Q4 2025.

Utility-scale BESS by state, new additions



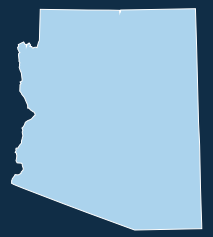
U.S. BESS market top five

California

59.8 GWh

Texas

26.3 GWh

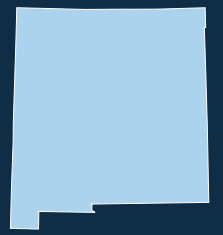


Arizona

19.3 GWh

Nevada

6.3 GWh

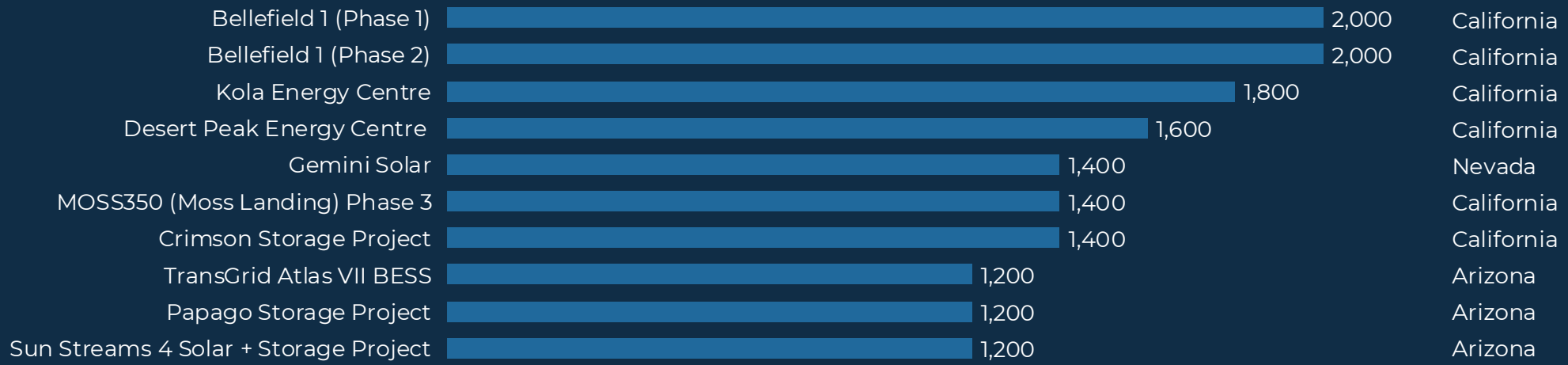


New Mexico

3.8 GWh

Cumulative installed capacity

Top 10 Operational BESS, MWh



Source: Benchmark BESS Database – projects ranked by individual phase size, not combined

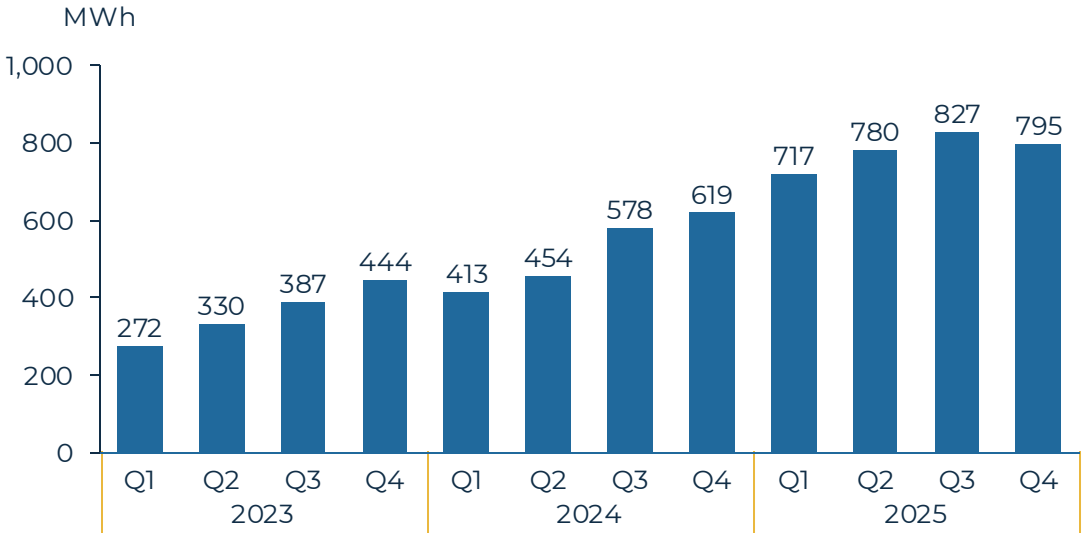
Residential BESS increases 51%

Residential BESS deployments in 2025 reached 3.1 GWh across the U.S., representing a 51% increase on 2024. California maintains its long-standing lead for the residential market, accounting for over 70% of the country's installations. The state's strength has been driven by favorable policies such as the Self Generation Incentive Program (SGIP), tax credits and the NEM3.0 policy.

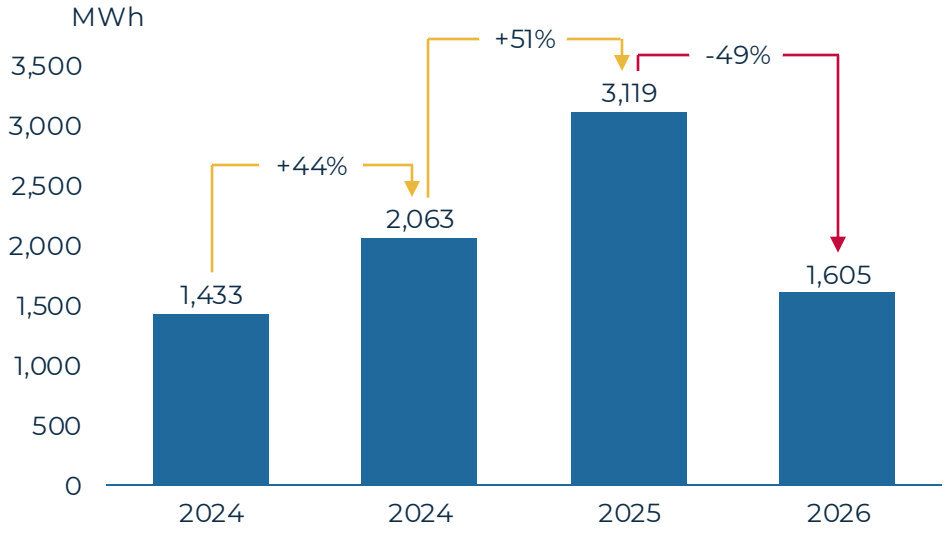
In 2025, the U.S. residential storage market was characterized by the ending of the Section 25D tax credit and subsequent rush to purchase and install systems before the year's end. This led to a pulling forward of installations usually seen in Q4 into Q2 and Q3, and 2026 installations into Q4.

Though deployments are forecasted to decrease in 2026 and remain dampened out to 2030 following the surge in installations, underlying electricity market dynamics will help support the industry in the long term. The growing presence of Virtual Power Plants (VPPs) in states such as Massachusetts, California, Texas, Arizona and Colorado will continue to incentivize at-home grid response. Additionally, fears over electricity blackouts linger, and future concerns over energy price increases from data centers are likely to remain in the long run.

Quarterly residential BESS deployments, U.S.



Residential BESS installations, 2023-2026F



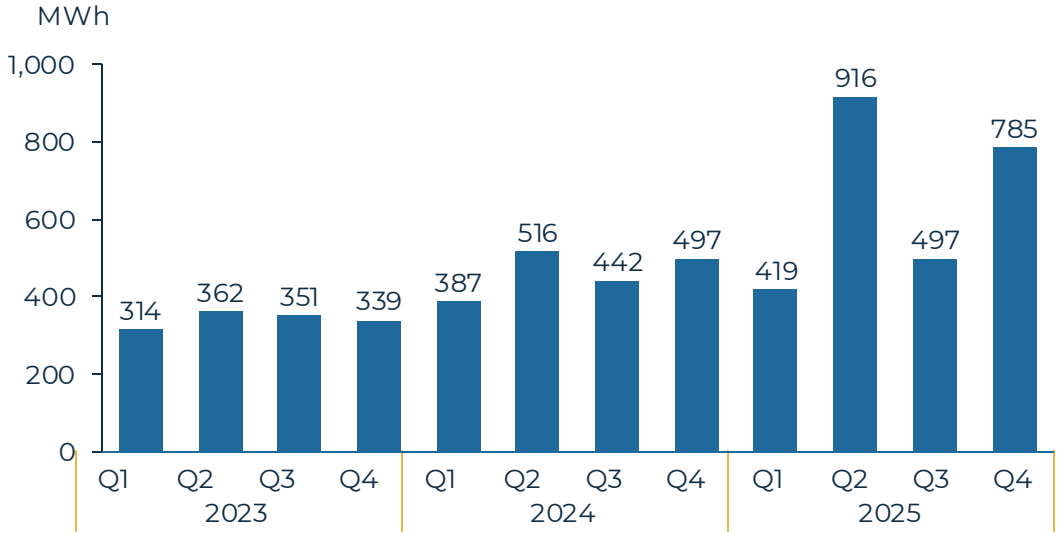
C&I to be driven by data centers

BTM C&I deployments in the U.S. in 2025 hit 2.61 GWh in 2025, a 42% y-o-y increase on 2024. The growth was strongly driven by two large Tesla Megapack installations at xAI's Colossus facility, proving a working example of a large-scale data center using BESS to bridge a grid connection. Though the data center market provides a large opportunity for BESS players, early signs indicate a growing preference from data center developers to opt for on-site gas generation, using BESS primarily for power quality and ramping.

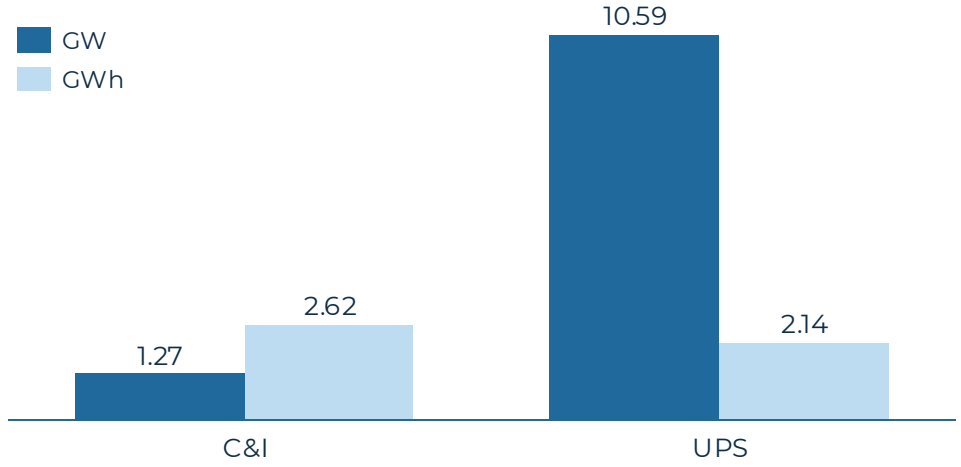
As the rise of AI and subsequent data center rollout continues, data center players are increasingly opening up to storage to provide not just connection buffers, but also for backup and load management uses. Much of the industry is still in the educational phase of understanding the nuances of how BESS can help and what sizing would suit each individual project. Given the tightening of grid capacity and short supply of gas turbines, developers will be forced to consider other forms of on-site generation that can help facilitate projects coming online. By 2030, Benchmark estimates data centers will account for 83% of BTM C&I installations in the US.

The Uninterruptable Power Supply (UPS) market is dominated by data centers and telecom and only makes up a small proportion of battery demand in GWh, despite accounting 89% of BTM power in GW. This is because UPS systems are primarily designed to provide instantaneous bridge power (sub-15 minutes) until longer duration solutions – traditionally diesel generators - kick in.

Quarterly C&I BESS deployments, U.S.



BTM BESS installations – C&I and UPS applications, 2023-2026F



BESS technology trends

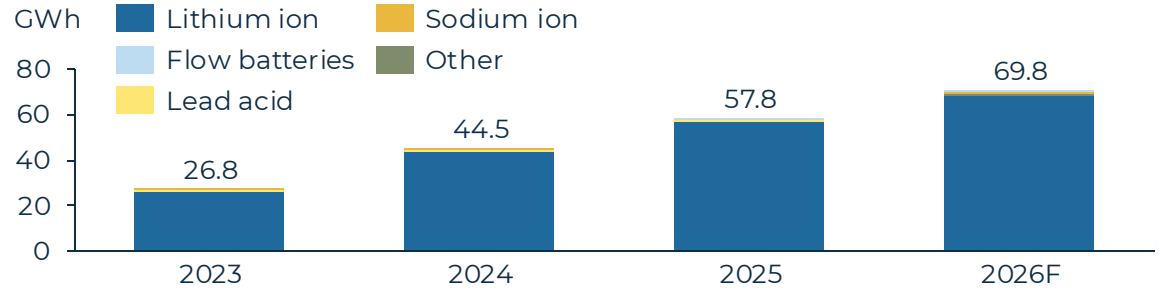
As the BESS market continues to expand lithium-ion's dominance is highly likely to persist. In 2025, lithium ion accounted for 98% of deployments in the U.S. Out to 2030, we expect this figure to decrease towards 90%, as alternative technologies, such as sodium-ion, zinc-base, metal air and flow batteries gain momentum.

Within lithium ion, LFP's dominance is set to strengthen as developers continue to move away from nickel-based chemistries, which currently account for ~7% share of lithium-ion cathodes. Overcapacity in planned U.S. EV battery production following the removal of the EV tax credit, combined with the introduction of Material Assistance Cost Ratio (MACR) on prohibited foreign entities under new restrictions on the 48E investment tax credit, has created a clear pivot opportunity for domestic cell manufacturers, with EV-focused lines increasingly repurposed for stationary storage. Since January, the U.S. LFP capacity pipeline forecast to 2030 has expanded by 86%, driven largely by conversions of former or planned NMC EV manufacturing capacity.

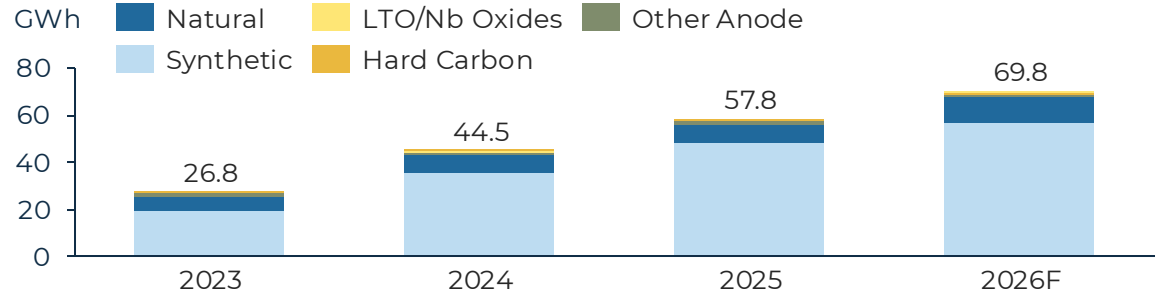
In 2025, duties started being collected pursuant to the Antidumping and Countervailing Duties investigation into imports of Chinese active anode material (AAM). As of February 2026, a tariff rate of 205.3% is being applied to final Chinese AAM. Pursuant to a scope determination from the Department of Commerce in February, this tariff is not applied to AAM within derivative products.

System integrators continue to focus on improvements in cell capacity and system energy density. This quarter saw a multitude of announcements from big players of new systems designed to optimize energy and cost on a per/kWh basis.

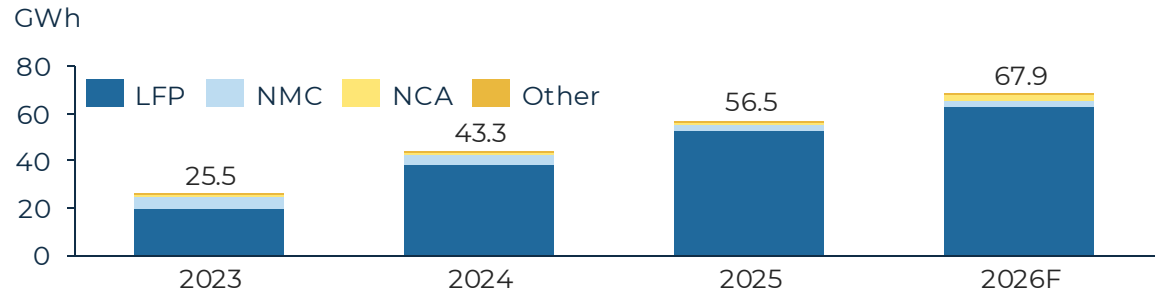
BESS outlook by battery type



Annual installed capacity BESS by anode



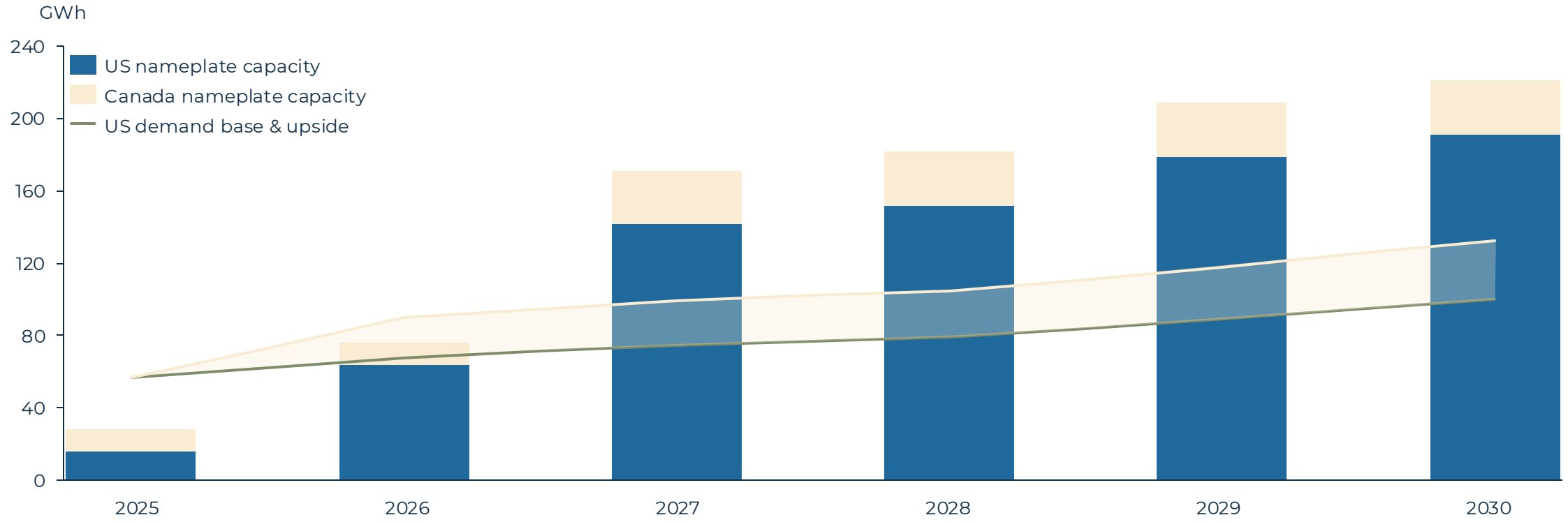
Li-ion BESS outlook by cathode type



U.S. BESS cell supply grows significantly

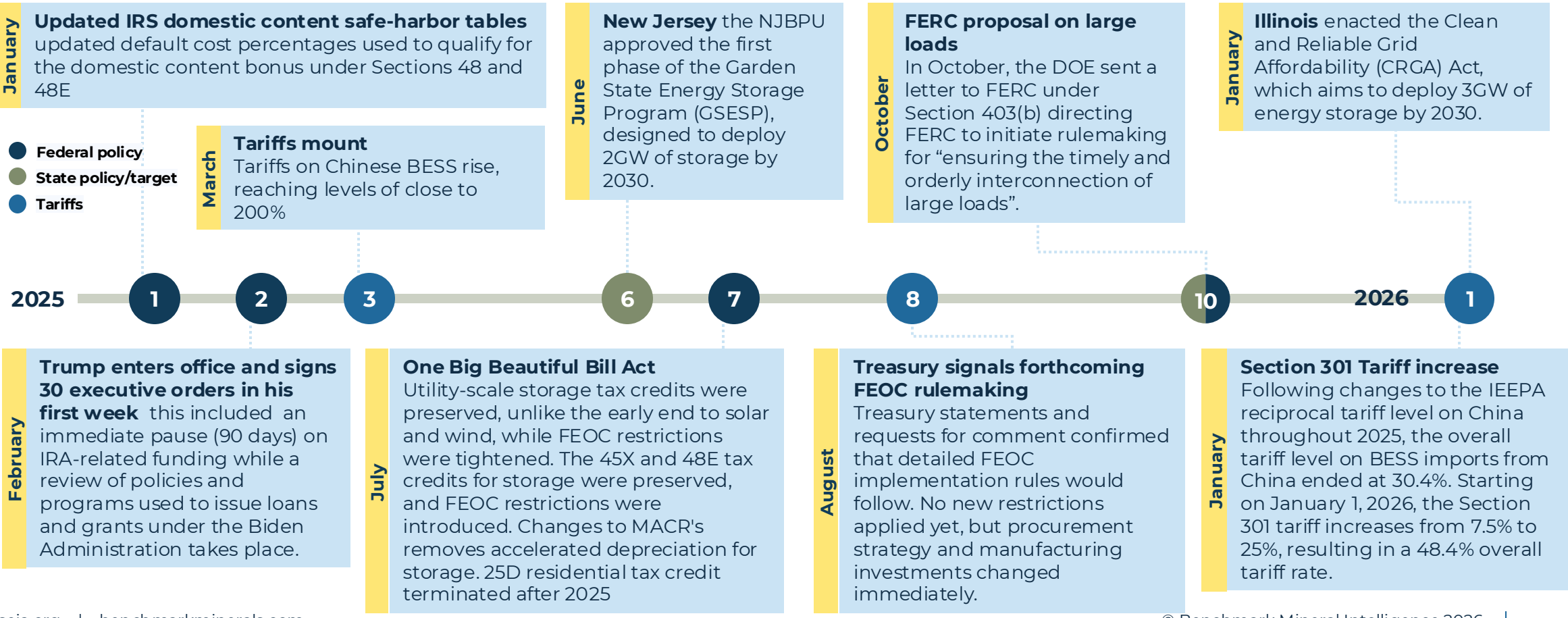
Throughout 2025 the BESS supply picture and the methods being considered by developers to meet PFE compliance has improved the outlook for the U.S. market in manufacturing, we now consider the market to be well positioned to meet the demand of the coming years. However, input price increases caused by tariffs and potential 45X ineligibility present a risk downside to the market. Below considers just the supply of LFP cells in the U.S. (and Canada), therefore not considering other non-Chinese-owned potential supply such as from Southeast Asia.

US LFP BESS cell capacity and demand



Key policy updates in 2025

Throughout 2025 the U.S. BESS policy landscape has seen significant change, with the most substantial being the passage of the One Big Beautiful Bill Act, which altered the Biden era Inflation Reduction Act. Several states also announced greater commitments to renewables and energy storage. Thirteen states now have explicit energy storage targets, while Duke Energy's commitment effectively adds the Carolinas to the list, even though it remains a utility-driven rather than a legislated target.



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Key terms & glossary

Energy:
BESS - Battery Energy Stationary Storage
RES - Renewable Energy Source
VRE - Variable Renewable Energy
DSR - Demand Side Response
DSM - Demand Side Management
LCOE – The Levelized Cost of Energy/Electricity
BTM – Behind the meter

Battery:
LTO - Lithium–Titanate
LFP - Lithium Iron Phosphate
LMNO – Lithium Manganese Nickel Oxide
LMO - Lithium Manganese Oxide
NMC/NCM - Lithium Nickel Manganese Cobalt Oxide
NCA - Lithium Nickel Cobalt Aluminum Oxide
LCO - Lithium Cobalt Oxide
VRFB - Vanadium Redox Flow Battery
Na-ion – Sodium ion

Other Storage types:
CAESS - Compressed Air Energy Storage System
FESS - Flywheel Energy Storage System
PHSS - Pumped Hydro Storage System
TESS - Thermal Energy Storage System

General:
RHS – Right hand side
LHS – Left hand side
YTD – Year-to-date
y-o-y – Year-over-Year

Terminology:
Rated Power Capacity [GW/MW] - how much power can flow in/out a battery at a given time

Energy Storage Capacity [GWh/MWh] - how much energy can be stored

Storage Duration [hour] - amount of time storage can discharge at its power capacity before depleting its energy capacity

Round-trip efficiency [%] - the quantity of electricity which can be recovered as a percentage of the electricity used to charge and discharge the device.

Notes on battery chemistry classifications:
The chemistry classifications used in this report are designed to provide representative coverage of the total market, while still being broad enough to facilitate a useful comparative analysis between categories.

It should be noted that within categories there is significant variation in the actual chemistry and material mix. In addition, different chemistry cathodes are often blended in order to achieve certain performance or cost parameters for a given projects.

The classifications used in this report are below, along with subcategories included in each broader grouping. These groupings are open to review as new chemistries become more dominant.

Cathode:
LFP, LMO, NCA, NMC111, NMC523, NMC622 (includes NMC613, NMC712), NMC811 (includes NMCA), Other (includes Lithium Sulphur, Metal Air and other early stage technologies)

See here for our disclaimer and sources

Key terms & glossary

Energy storage: The capture of energy produced at one time for use at a later time. Storage involves the conversion of energy from a form that is difficult to store to a form that is more convenient or economical to store for a longer period of time. Storage technologies can be the following:

Electro chemical	**Batteries**	Rechargeable batteries range in size from button cells to MW grid-scale, and store energy in an electrochemical cell. Battery chemistries include lithium-ion, lead acid, sodium based and nickel based. Flow batteries operate by passing a solution over a membrane where ions exchange to charge or discharge the cell.
Mechanical	**Hydropower**	The oldest form of energy storage, it currently accounts for over 90% of the global energy storage capacity. Stores energy by using off-peak electricity to pump water from a lower reservoir to an upper reservoir, and recovers energy at peak times by turbine generation when the water flows back to the lower reservoir.
	Flywheel	Stores energy in the form of rotational kinetic by accelerating a rotor/flywheel to a very high speed, added energy increases the speed, extracted energy decreases the speed.
	Compressed Air	Stores energy in an underground structure or an above-ground system, by running an electric motor to compress air at times of low demand and then releasing it through a turbine to generate energy at times of high-energy demand.
Thermal	**Sensible heat**	The temporary storage of energy in the form of heat, utilizing the sensible heat of a material, materials can be stored in contained aquifers, geological features like bedrock or old mines with the heat or cold from the material used months to years later.
	Latent heat	Latent heat storage works by the transfer of heat to or from a material to change its phase, e.g. a steam accumulator utilizing the phase change of water from liquid to gas.
Chemical	**Hydrogen**	Stored hydrogen is a form of energy, it can be used to produce electricity via a hydrogen fuel cell through the process of electrolysis. Hydrogen can either be produced in situ or produced elsewhere and delivered.
Other	**Other**	There are many other technologies in use, being explored and developed, including capacitors. chemical storage, superconducting magnets, solid mass-gravitational storage, cryogenic thermal and biological storage

Key terms & glossary

Utility-scale and BTM ESS

- Energy Stationary Storage (ESS) applications can be split into two broad categories, with the BTM market further classified into two broad markets:
- Utility-Scale, storage connected to distribution or transmission networks, or in connection with electricity generation.
- Front-of-the-meter distribution connected (Middle Market), systems 1-20 MW (2-4 MWhs) connected to the distribution grid used for peak shaving, renewable integration, avoided distribution grid upgrades, and grid support.
- Behind the meter (BTM), storage interconnected behind the utility meter of commercial, industrial or residential customers, primarily aiming at electricity bill savings, and energy resiliency.