

# NextGenEnergyStorage

## Weekly Intelligence Report

2026-07-05 | 21 articles | 9 countries

troy-technical.jp

This Week's Keyword

## Na-ion & LDES Surge

China leads Na-ion, US/EU push LDES

21

articles

Total Articles Analyzed

9

countries

Source Countries

20,000

EVs

CATL Na-ion Target

11

GWh

Europe LDES Projects

### All 21 Articles This Week — 5-Axis Evaluation Matrix

How to read columns — Tech Novelty: degree of breakthrough Market Proximity: closeness to commercialization Market Impact: industry-wide effect Data Reliability: quantitative data & peer review US/EU Relevance: direct impact on US/European companies & supply chains

#	Article Title	Type	Tech Novelty	Market Proximity	Market Impact	Data Reliability	US/EU Relevance	Summary
#01	CATL Na-Ion EVs/TENER	New Product	●●●●○	●●●●○	●●●●●	●●●●○	●●●●○	CATL to deploy 2nd-gen Na-ion in 20k EVs by 2026, unveils TENER stationary ESS.
#02	Na-Ion Cost Parity	Market Analysis	●●●●○	●●●●○	●●●●●	●●●●○	●●●●○	BESS firms predict Na-ion batteries to reach cost parity with LFP in 2-3 years.
#03	Biwatt Na-Ion Resi Storage	New Product	●●●●○	●●●●○	●●●●○	●●●●○	●●●●○	Biwatt unveils modular Na-ion residential storage (NFPP), 4.5 kWh, 8,000 cycles.
#04	US DOE LDES Program	Policy/Funding	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	US DOE unveils \$30M LDES demonstration program to accelerate commercial deployment.
#05	Google/Energy Dome CO2	Project Deployment	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	Google & Energy Dome partner for 23MW/200MWh CO2 battery plant in Ireland by 2028.
#06	Ofgem UK LDES Projects	Policy/Funding	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	Ofgem selects 16 innovative projects to bolster UK Long-Duration Energy Storage.
#07	Energy Dome/SRP CO2	Project Deployment	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	Energy Dome & SRP to build 19MW CO2 battery storage system in Arizona.
#08	Avangrid 82MWh BESS	Project Deployment	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	Avangrid to construct 82MWh BESS project in Oregon, scheduled for 2027.
#09	Europe 11GWh BESS	Project Deployment	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	BW ESS, Greenvolt, Giga Storage launch 11GWh of large-scale BESS projects in Europe.
#10	Utah Green River Solar	Project Deployment	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	Utah's largest solar-storage facility (400MW solar, 1.6GWh battery) now online.
#11	IPX Power CA Solar	Project Development	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	IPX Power secures \$4.95B for 1.15GW solar and 4.6GWh BESS project in California.
#12	Vopak Acquires GES	Corporate Strategy	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	Vopak acquires majority of Dutch BESS developer GES, advancing 200MW/800MWh project.
#13	Eku Energy Germany BESS	Project Development	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	Eku Energy enters German market with 1.6GWh BESS acquisition, providing black start.
#14	Tucson Electric Wilmot	Project Deployment	●●●●○	●●●●○	●●●●○	●●●●○	●●●●●	Tucson Electric Power commissions Wilmot Energy Center (100MW solar, 30MW BESS).

#	Article Title	Type	Tech Novelty	Market Proximity	Market Impact	Data Reliability	US/EU Relevance	Summary
#15	Cornell Li-Ion Regen	Research Breakthrough	●●●●● ●	●○○○○ ○	●●●●● ○	●●●●● ●	●●●●● ●	Cornell develops electrochemical bath to regenerate Li-ion electrodes, 95% capacity, 56% cost reduction.
#16	UC San Diego LFP Up	Research Breakthrough	●●●●● ●	●○○○○ ○	●●●●● ○	●●●●● ●	●●●●● ●	UC San Diego develops green method to upcycle spent LFP cathodes into higher-performance LMFP.
#17	Clean Sky Solar Storage	New Product	●●○○○ ○	●●●●● ○	●●●○○ ○	●●○○○ ○	●●●○○ ○	Clean the Sky unveils integrated solar storage systems with DMEGC Solar for simplified deployment.
#18	CATL Na-Ion & Li-Air	Corporate Strategy	●●●●● ●	●○○○○ ○	●●●●● ●	●●●○○ ○	●●●●● ○	CATL mass produces Na-ion while focusing R&D; on "breathable" lithium-air for extended EV range.
#19	CATL Na-Ion EV Deploy	Product Deployment	●●●●● ○	●●●●● ○	●●●●● ●	●●●○○ ○	●●●●● ○	CATL to power 10k-20k EVs with Na-ion batteries by 2026, targeting cost/cold-weather.
#20	CATL TENER Sodium ESS	New Product	●●●●● ○	●●●●● ○	●●●●● ●	●●●○○ ○	●●●●● ○	CATL unveils TENER Sodium ESS, first commercial grid-scale Na-ion, targeting 1 GWh by 2026.
#21	Moment Energy 2nd-Life	New Facility	●●●○○ ○	●●●●● ○	●●●●● ○	●●●○○ ○	●●●●● ●	Moment Energy opens "Megafactory 1" in Vancouver, world's largest second-life EV battery plant.

●●●●●○ High ●●●○○○ Med-High ●●○○○○ Med ●○○○○○ Low | Yellow highlight = featured article

## Three Questions That Demand Your Decision This Week

### 1 Is your LFP supply chain exposed to Na-ion disruption?

CATL's aggressive Na-ion deployment in EVs and grid storage, coupled with forecasts of cost parity with LFP in 2-3 years, poses an urgent threat to existing LFP battery markets. How quickly can your procurement and R&D; teams assess this shift and adapt sourcing or product roadmaps?

### 2 How will US/EU LDES investments shape your strategy?

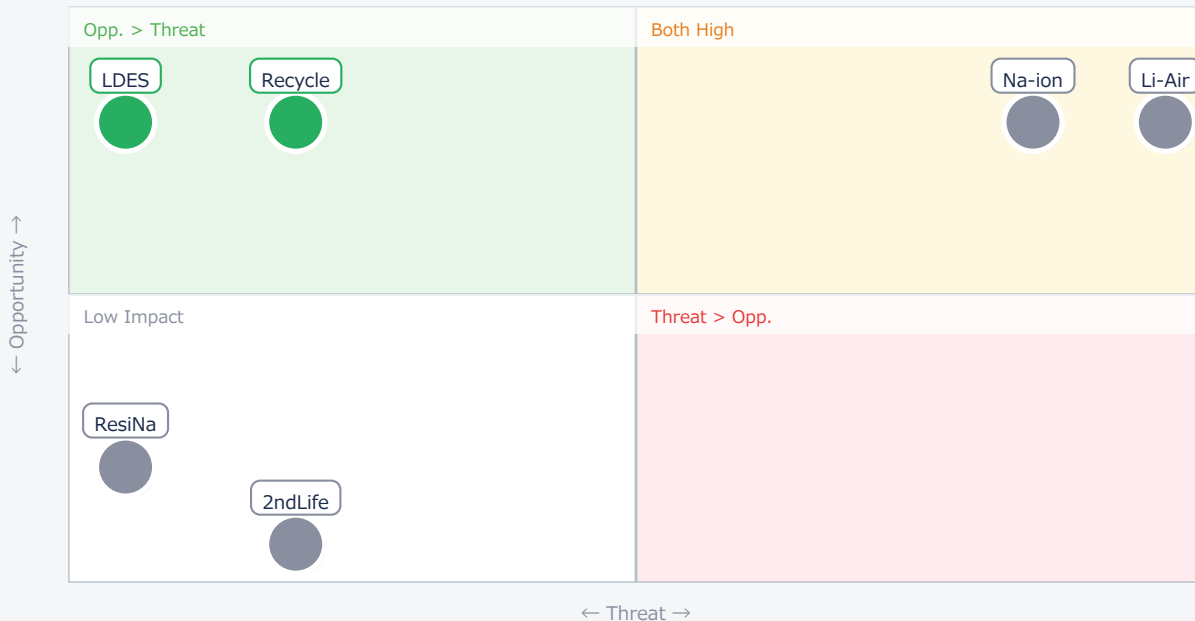
With significant US DOE funding (\$30M) and UK Ofgem schemes supporting diverse LDES technologies (CO2 batteries, flow batteries, advanced BESS), what specific LDES solutions are you investing in? Are you leveraging these incentives to secure long-term market positions, or risking being outpaced by competitors?

### 3 Are you investing in next-gen battery recycling/upcycling?

Breakthroughs from Cornell (direct electrode regeneration) and UC San Diego (LFP to LMFP upcycling) promise significant cost reductions and sustainability gains. Is your R&D; pipeline exploring these green recycling methods, or are you relying on traditional, less efficient processes that will soon be obsolete?

## Opportunities vs. Threats for US/European Companies

Opportunity vs. Threat Matrix for US/European Companies



Item	Quadrant	↑ Opportunity	↓ Threat
● Na-ion	Critical	New materials market	LFP market share
● Li-Air	Critical	Future EV tech	Current Li-ion obs.
● LDES	Opp.	Grid infra growth	High CapEx/Risk
● Recycle	Opp.	Circular economy	Lagging tech
● ResiNa	Ref.	New market niche	Chinese lead
● 2ndLife	Ref.	Resource reuse	Quality control

## Deep Dive ① — CATL's Aggressive Na-ion Commercialization

#01 | 2026/06/25 | autoevolution, Forbes, Electrek, Matelion, CleanTechnica, The EV Zone (YouTube) | Tech Novelty ●●●●○ Proximity ●●●●○ Market Impact ●●●●● Data Reliability ●●●●○ US/EU Relevance ●●●●○

CATL is set to deploy its second-generation sodium-ion batteries in up to 20,000 EVs by end of 2026 and launch its TENER Sodium stationary ESS globally by June 2027. Naxtra EV cells boast >175 Wh/kg and >90% capacity at -40°C, while TENER offers 25-30 year lifespan and 15,000+ cycles.

This dual deployment positions Na-ion as a formidable competitor to LFP in both EV and grid-scale applications, with analysts predicting cost parity in 2-3 years. CATL has secured 60 GWh supply agreements, signaling robust production and aggressive market penetration plans.

### ► Strategic Analyst's Perspective

Strategic Analyst's Perspective: CATL's numbers appear realistic given their track record and aggressive R&D.; The primary technical barrier is scaling production efficiently while maintaining performance consistency. [Opportunity] for US/EU materials & component suppliers to develop Na-ion specific materials (e.g., cathodes, electrolytes) and for OEMs to diversify battery sourcing. [Threat] to US/EU LFP battery manufacturers and EV makers relying solely on Li-ion, as Na-ion offers lower cost and better cold-weather performance. Next Actions: [Procurement] Immediately assess Na-ion supplier capabilities and pricing. [R&D;] Benchmark CATL's Na-ion performance against internal roadmaps. [Strategy] Develop contingency plans for LFP market share erosion by Q4 2026.

## Deep Dive ② — Cornell's Li-ion Electrode Regeneration

#15 | 2026/06/25 | New Atlas, electrive.com | Tech Novelty ●●●●● Proximity ●○○○○ Market Impact ●●●●○ Data Reliability ●●●●● US/EU Relevance ●●●●●

Cornell University scientists have developed 'Direct Electrode-to-Electrode Regeneration (DEER),' an electrochemical bath that restores used Li-ion battery electrodes to 95% of original capacity. This method avoids physical destruction and energy-intensive recovery processes.

The DEER process reports a 56% reduction in recycling costs, significant cuts in water consumption, and air pollutant emissions. This breakthrough dramatically enhances the economic and environmental sustainability of battery recycling, paving the way for a circular economy.

### ► Strategic Analyst's Perspective

Strategic Analyst's Perspective: The reported capacity recovery and cost reduction figures are highly promising, backed by academic rigor. Technical barriers remain in scaling the DEER process from lab to industrial scale, ensuring broad applicability across diverse Li-ion chemistries, and managing residual impurities. [Opportunity] for US/EU technology licensors and IP holders to lead in sustainable battery recycling, creating new revenue streams and reducing reliance on virgin materials. [Threat] to traditional pyrometallurgical/hydrometallurgical recyclers if they fail to innovate. Next Actions: [R&D;] Initiate internal research or partnerships to validate DEER technology. [Legal/IP] Monitor IP landscape for direct regeneration methods. [Strategy] Begin planning for future battery recycling infrastructure incorporating advanced techniques by Q1 2027.

## Deep Dive ③ — CATL's Dual Battery Strategy: Na-ion & Li-Air

#18 | 2026/07/03 | CleanTechnica | Tech Novelty ●●●●● Proximity ●○○○○ Market Impact ●●●●● Data Reliability ●●●○○ US/EU Relevance ●●●●●

CATL is accelerating mass production of sodium-ion batteries for immediate market needs while simultaneously investing heavily in "breathable" lithium-air batteries as a future breakthrough technology. Li-air offers ultra-high theoretical energy density (12,000 Wh/kg).

CATL's Chief Scientist emphasizes Li-air's potential for lighter EVs and vastly extended driving ranges, positioning it as the ultimate successor to Li-ion. This dual strategy aims to solidify CATL's leadership in both immediate market solutions and long-term technological innovation.

### ► Strategic Analyst's Perspective

Strategic Analyst's Perspective: CATL's Li-air claims are theoretical, and commercialization is 10+ years away due to significant technical hurdles (cycle life, safety, charging efficiency). However, their commitment signals a clear long-term vision. [Opportunity] for US/EU academic and corporate R&D; to accelerate fundamental research in Li-air and other post-Li-ion chemistries to avoid future dependence. [Threat] that CATL could establish early IP dominance in next-next-gen battery tech, making it harder for US/EU OEMs to compete in future EV generations. Next Actions: [R&D;] Increase investment in basic research for Li-air and other advanced battery chemistries. [Strategy] Develop a 10-year technology roadmap for battery innovation, including scouting for disruptive technologies. [Executive] Consider forming multi-company consortia to pool resources for high-risk, high-reward battery research by Q3 2026.

## Other Notable Articles

BESS Firms Forecast Sodium-Ion Batteries to Achieve Cost Parity with LFP in 2-3 Years (Energy-Storage.News)  
Tech Novelty ●●●○○ Proximity ●●●○○ Market Impact ●●●●●

Na-ion cost parity with LFP is a critical market shift; US/EU firms must prepare for competitive pricing pressure.

U.S. Department of Energy Unveils New Policies and \$30 Million Demonstration Program to Accelerate Long-Duration Energy Storage (LDES) Commercial Deployment (Department of Energy)  
Tech Novelty ●●●○○ Proximity ●●○○○ Market Impact ●●●●●

US DOE funding for LDES offers significant opportunities for US companies in grid resilience and renewable integration.

Google and Energy Dome Partner to Build 23MW/200MWh CO2 Battery Storage Plant in Ireland (ESG Today, pv magazine Global, gasworld)  
Tech Novelty ●●●○○ Proximity ●●●○○ Market Impact ●●●●●

Google's investment in CO2 batteries for LDES in Ireland validates novel non-Li-ion grid storage solutions.

UC San Diego Develops Novel Green Method to Upcycle Spent LFP Cathodes into Higher-Performance LMFP Material (UC San Diego Today)  
Tech Novelty ●●●●● Proximity ●○○○○ Market Impact ●●●●●

Upcycling LFP to LMFP offers a green, cost-effective path to higher-performance battery materials, boosting circular economy.

Moment Energy Unveils "Megafactory 1" in Vancouver, World's Largest Second-Life EV Battery Plant, Scaling to 1 GWh Annually by 2030 (Electrek)  
Tech Novelty ●●●○○ Proximity ●●●●○ Market Impact ●●●●●

Rapid deployment of second-life EV battery repurposing facilities highlights circular economy potential and new market for BESS.

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## Recommended Actions This Week

Action recommendations based on article evaluation matrix and opportunity/threat analysis.

### ■ Immediate (this week)

- [Procurement] Evaluate Na-ion battery supply chain risks and opportunities, especially from Chinese suppliers like CATL.
- [R&D;] Assess internal capabilities and competitive landscape for Na-ion and LDES technologies.
- [Strategy] Begin scenario planning for LFP battery market disruption by Na-ion.

### ■ Short-term (1 month)

- [R&D;] Initiate feasibility studies for direct electrode regeneration (DEER) and LFP upcycling technologies.
- [Business Dev] Explore partnerships for LDES projects in US/EU, leveraging government incentives.
- [Procurement] Diversify battery sourcing strategies to include non-lithium options for stationary storage.

### ■ Medium-long term (quarter+)

- [Strategy] Develop long-term IP strategy for advanced battery recycling and next-gen chemistries like Li-air.
- [Executive] Advocate for policy support for circular economy initiatives in battery manufacturing and recycling.
- [R&D;] Invest in fundamental research for ultra-high energy density batteries (e.g., Li-air) to counter Asian leadership.

# **NextGenEnergyStorage — Selected Articles**

Date: 2026-07-05

Articles: 21

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#20 CATL Unveils TENER Sodium Energy Storage System, First Commercial Grid-Scale Solution, Targeting 1 GWh Deployment by End of 2026

#21 Moment Energy Unveils "Megafactory 1" in Vancouver, World's Largest Second-Life EV Battery Plant, Scaling to 1 GWh Annually by 2030

# #01 CATL to Deploy Second-Gen Na-Ion Batteries in 20,000 EVs by 2026, Unveils TENER Stationary Storage System

Published June 25, 2026    autoevolution, Forbes, Electrek, Matelion, CleanTechnica, The EV Zone (YouTube)    China



## OVERVIEW

CATL plans to power up to 20,000 electric vehicles with its second-generation sodium-ion batteries by the end of 2026, while also launching its TENER Sodium stationary energy storage system. The Naxtra EV cells boast an energy density exceeding 175 Wh/kg and maintain over 90% capacity at -40°C. The TENER system offers a 25-30 year lifespan and over 15,000 cycles, with initial shipments targeting China by September and global markets by June 2027, positioning Na-ion technology as a formidable competitor to LFP batteries in both EV and grid-scale applications.

### Key Findings

CATL, the world's largest battery manufacturer, is set to equip up to 20,000 electric vehicles (EVs) with its second-generation sodium-ion (Na-ion) batteries by the end of 2026, marking a significant step towards commercial mainstream adoption. Concurrently, the company has officially unveiled its 'TENER Sodium' stationary energy storage system (ESS), branding it as the 'world's first verified sodium-ion energy storage solution in real application.' This dual deployment strategy aims to accelerate the shift towards non-lithium energy storage solutions.

### Technical / Clinical Details

The Naxtra-branded Na-ion batteries for EVs achieve an energy density of over 175 Wh/kg, approaching the performance metrics of some lithium-ion chemistries. A key advantage is their exceptional low-temperature performance, demonstrated by maintaining over 90% capacity at extreme temperatures of -40°C. This characteristic is crucial for EV adoption in colder climates and for grid stability in various environmental conditions. The TENER Sodium stationary ESS boasts an impressive operational lifespan of 25-30 years and a cycle life exceeding 15,000 cycles. It is designed to function reliably across a wide temperature range, from -20°C to 45°C, making it suitable for demanding environments such as the Middle East and Australia. CATL has already secured strategic partnerships with Chinese energy storage providers like HyperStrong and Haisi for a cumulative supply of 60 GWh of Na-ion batteries, indicating robust production capabilities and aggressive market penetration plans.

## Background & Context

Na-ion batteries are gaining traction as a sustainable alternative to lithium-ion batteries due to their ability to mitigate reliance on expensive and geopolitically sensitive raw materials like lithium, cobalt, and nickel. Analysts from Bernstein Research predict that Na-ion batteries will reach cost parity with lithium iron phosphate (LFP) batteries within two to three years, posing a 'real threat' to the LFP market. CATL emphasizes the enhanced safety, improved low-temperature performance, and abundant raw material availability as core benefits of its Naxtra cells. The TENER system is slated for gigawatt-scale shipments in China by September and its global market debut by June 2027, positioning it as a key enabler for renewable energy integration and grid stabilization worldwide.

## Strategic Significance & Outlook

CATL's aggressive commercialization of Na-ion batteries for both EVs and stationary storage systems is poised to significantly reshape the competitive landscape of the next-generation energy storage market. The projected cost parity with LFP batteries could drive down EV prices and accelerate the global adoption of renewable energy. Furthermore, CATL is also exploring future technologies such as 'breathable' lithium-air batteries, which theoretically could offer ultra-high energy densities of 12,000 Wh/kg. Na-ion batteries are expected to play a critical transitional role until more advanced technologies like lithium-air become commercially viable and scalable.

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Source: <https://www.autoevolution.com/news/sodium-ion-batteries-enter-the-mainstream-with-catl-na-ion-cells-powering-up-to-20000-evs-in-2026-272039.html>

# #02 BESS Firms Forecast Sodium-Ion Batteries to Achieve Cost Parity with LFP in 2-3 Years

Published June 25, 2026 Energy-Storage.News USA



## OVERVIEW

Battery Energy Storage System (BESS) companies predict that sodium-ion batteries will reach cost parity with lithium iron phosphate (LFP) batteries within the next two to three years. CATL and HyperStrong finalized a major 60GWh sodium-ion battery supply agreement in April. Additionally, U.S. sodium-ion startup Alsym Energy has signed a 9GWh strategic relationship agreement with Eryx for global mining applications, signaling accelerated market expansion.

### Key Findings

Multiple companies within the Battery Energy Storage System (BESS) industry are projecting that sodium-ion (Na-ion) batteries will achieve lifecycle cost (LCOS) parity with the currently dominant lithium iron phosphate (LFP) batteries within a short timeframe of two to three years. This forecast indicates the rapid emergence of Na-ion batteries as a more economical and sustainable option for the large-scale energy storage market.

### Technical / Clinical Details

The anticipated cost reduction for Na-ion batteries stems from the abundance and lower cost of their raw materials. Unlike lithium-ion batteries, they do not require expensive and scarce metals such as lithium, nickel, and cobalt, thereby reducing supply chain risks and manufacturing costs. Ongoing technological advancements are improving their energy density and cycle life, narrowing the performance gap with LFP batteries. CATL, a leading Chinese battery manufacturer, has already secured a significant 60GWh Na-ion battery supply agreement with HyperStrong in April, providing clear evidence of the technology's readiness for large-scale commercialization. Furthermore, U.S. Na-ion startup Alsym Energy has entered into a 9GWh strategic relationship agreement with Erity, a mining and energy consulting firm, for global mining applications. This signifies that Na-ion batteries are finding new use cases, such as off-grid power and mobile power sources in the mining sector.

### Background & Context

The energy storage market is experiencing explosive growth, driven by the increasing integration of renewable energy sources and the escalating need for grid stabilization. However, fluctuating raw material prices and supply constraints for lithium-ion batteries present significant challenges to the industry. Na-ion batteries have rapidly advanced in research and development and are now entering the commercialization phase, offering a promising solution to these issues. Their cost-effectiveness and safety profile make them particularly attractive for stationary energy storage systems. While LFP batteries have led the market as a cost-efficient lithium-ion option, Na-ion batteries reaching LCOS parity with LFP will signify a shift in market share, the formation of new supply chains, and an acceleration of the global energy transition.

## Strategic Significance & Outlook

The achievement of cost parity between Na-ion and LFP batteries is expected to trigger a significant paradigm shift in the stationary energy storage market. This will enable utilities, renewable energy developers, and industries to deploy more affordable and sustainable storage solutions. The expansion of companies like Alsym Energy into niche sectors such as mining highlights the diverse applications and scalability potential of Na-ion batteries, with broader adoption across various industrial sectors anticipated. The continuous development of this technology is crucial for enhancing energy storage accessibility and is an indispensable component for achieving global decarbonization targets.

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Source: <https://www.energy-storage.news/sodium-ion-will-reach-lcos-parity-with-lfp-in-two-to-three-years-bess-firm-says/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #03 Biwatt Unveils Modular Sodium Iron Pyrophosphate Residential Storage System: PowerNest R5 Series

Published July 01, 2026 pv magazine Global China



## OVERVIEW

Chinese energy storage system manufacturer Biwatt has launched its 'PowerNest R5 Series,' a 58V modular sodium-ion residential storage system for home applications. Utilizing sodium iron pyrophosphate (NFPP) chemistry, each module offers 4.5 kWh capacity and achieves over 8,000 cycles. Its wire-free, stackable architecture simplifies installation and reduces wiring-related error risks, potentially accelerating Na-ion battery adoption in the residential market.

## IN DEPTH

### Key Findings

Biwatt, a Chinese energy storage system manufacturer, has introduced the 'PowerNest R5 Series,' an innovative modular sodium-ion residential storage system designed for household applications. This new product utilizes sodium iron pyrophosphate (NFPP) chemistry, offering high safety and long-term reliability.

### Technical / Clinical Details

The PowerNest R5 Series features a 58V voltage design, with each module providing 4.5 kWh of energy capacity. The system achieves an impressive cycle life of over 8,000 cycles, ensuring stable power supply over an extended period. NFPP chemistry offers advantages such as lower raw material costs and higher thermal stability compared to lithium-ion batteries. A notable feature is its wire-free, stackable architecture, which significantly simplifies the installation process and effectively mitigates the risk of wiring-related human errors common in traditional battery systems. This modularity allows homeowners to flexibly expand the system capacity according to their evolving power demands.

### Background & Context

The residential energy storage market is rapidly expanding, driven by the proliferation of solar PV installations, rising electricity costs, and increased interest in backup power solutions during outages. While lithium-ion batteries have been dominant, challenges related to raw material supply constraints, costs, and safety concerns have made sodium-ion batteries an attractive alternative. Biwatt's PowerNest R5 Series addresses these market needs by aiming to lower the barriers to Na-ion battery adoption. The modular design tailored for residential use and ease of installation are highly appealing factors for general consumers.

## Strategic Significance & Outlook

The introduction of Biwatt's PowerNest R5 Series is likely to significantly boost the penetration of sodium-ion batteries in the residential energy storage market. Its ease of installation and cost-effectiveness could encourage more homeowners to integrate battery storage with their self-consumption solar PV systems. This product will contribute to maximizing renewable energy self-consumption rates and reducing reliance on the power grid, thereby fostering sustainable home energy solutions. Furthermore, the adoption of NFPP technology promotes diversification in battery chemistry and technological innovation, which is expected to influence the future development of the energy storage market.

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Source: <https://www.pv-magazine.com/2026/07/01/biwatt-launches-modular-sodium-ion-residential-storage-system/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #04 U.S. Department of Energy Unveils New Policies and \$30 Million Demonstration Program to Accelerate Long-Duration Energy Storage (LDES) Commercial Deployment

Published June 30, 2026   Department of Energy   USA



## OVERVIEW

The U.S. Department of Energy (DOE) has announced a comprehensive strategy and \$30 million demonstration program to accelerate the commercial deployment of Long-Duration Energy Storage (LDES) systems, enhancing grid flexibility and resilience. Selected projects include CMBlu Energy's organic flow batteries, mobile particle thermal energy storage, and clean hydrogen-battery hybrid systems. This initiative aims to overcome technical and institutional barriers for LDES systems capable of discharging for over 10, and even 24, hours, supporting renewable energy integration.

## IN DEPTH

### Key Findings

The U.S. Department of Energy (DOE) has unveiled a new strategy and roadmap to accelerate the widespread commercial deployment of Long-Duration Energy Storage (LDES) systems, aiming to make the electricity grid more flexible and resilient. As part of this initiative, the DOE has awarded a total of \$30 million in federal funding to LDES demonstration programs, pushing for the validation of both early-stage (10+ hours discharge) and mature (24+ hours discharge) LDES technologies.

### Technical / Clinical Details

The projects selected through the DOE's LDES Demonstrations Lab Call encompass a diverse range of technologies. These include the testing and evaluation of organic flow battery modules with CMBlu Energy, Inc., the demonstration of mobile particle thermal energy storage technology using sand as the medium, and the implementation of clean hydrogen-battery hybrid systems. These projects aim to validate various LDES technologies based on different chemical and physical principles, assessing their performance, cost-effectiveness, and scalability. LDES systems are designed to complement the intermittency of renewable energy sources like solar and wind, providing stable power during peak demand periods and significantly improving grid reliability and efficiency. Innovative applications of established storage technologies, such as pumped hydro storage (PSH), are also being continuously promoted.

### Background & Context

As the adoption of renewable energy accelerates, ensuring grid stability and reliability has become an urgent challenge. Specifically, the capacity for long-duration power storage, lasting from several hours to several days, is indispensable for renewable energy to become a primary power source. The DOE defines LDES as 'storage systems capable of delivering electricity for 10 hours or longer' and has made overcoming their technical and institutional barriers a national priority. This strategy and roadmap embody the DOE's goal of providing resilient, flexible, affordable, and secure energy systems and supplies to everyone, everywhere. Existing initiatives, such as the DOE/DOD LDES Joint Program and LDES Pilot Programs, continue under this broader strategy.

## Strategic Significance & Outlook

The DOE's substantial investment and policy support for LDES are poised to accelerate the commercialization of next-generation energy storage technologies, which are crucial for achieving U.S. clean energy goals. The diverse array of selected demonstration projects will explore the potential of various LDES solutions, fostering the development of technologies best suited for specific regions and applications. This will lower barriers to renewable energy integration, enhance grid stability, and, in the long term, further reduce reliance on fossil fuels. The advancement of LDES technologies represents a critical step towards realizing a more sustainable and resilient energy future.

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Source: <https://www.energy.gov/oe/energy-storage-strategy-and-roadmap>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #05 Google and Energy Dome Partner to Build 23MW/200MWh CO2 Battery Storage Plant in Ireland

Published July 01, 2026 ESG Today, pv magazine Global, gasworld アイルランド

## TEWS NEWS

### Google and Energy Dome consree construction to 23MW/200MWh CO<sub>2</sub> botrage plant in Ireland July 1, 2026



## OVERVIEW

Google and Energy Dome have finalized a commercial agreement to construct a 23 MW / 200 MWh CO<sub>2</sub> battery energy storage plant in Ireland, targeting a 2028 commissioning on a former thermal power plant site. This landmark project marks the first global commercial deployment of Energy Dome's CO<sub>2</sub> battery technology, which utilizes a closed-loop system to store CO<sub>2</sub> as a liquid using surplus grid power and then expands it through a turbine to generate electricity for 8 to 24 hours, supporting Google's 24/7 clean energy goals.

## IN DEPTH

### Background

As renewable energy sources increasingly integrate into global grids, the demand for long-duration energy storage (LDES) solutions to mitigate their inherent intermittency is rapidly escalating. For major power consumers like data centers, guaranteeing a consistent and clean power supply is paramount. Ireland, despite its proactive stance on renewable energy adoption, grapples with grid stabilization challenges, positioning LDES projects as critical components of its national energy infrastructure. Google, in line with its ambitious goals for reducing corporate carbon footprints and achieving sustainable operations, is strategically investing in innovative storage technologies to meet these demands.

### Key Findings

Google and Italian energy storage innovator Energy Dome have finalized a commercial agreement to develop a significant 23 MW / 200 MWh CO<sub>2</sub> battery energy storage plant in Ireland. This pioneering project is designed to advance Google's ambitious target of achieving 24/7 clean energy access across its operations and marks the inaugural commercial deployment of Energy Dome's CO<sub>2</sub> battery technology worldwide.

### Technical Details

Energy Dome's CO<sub>2</sub> battery technology offers a distinctive approach to long-duration energy storage. The system harnesses surplus electricity from the grid, particularly from renewable sources, to compress CO<sub>2</sub> gas, storing it efficiently in liquid form. When energy demand arises, the stored liquid CO<sub>2</sub> is vaporized and expanded through a turbine to generate electricity. This entirely closed-loop process ensures energy storage and release without direct CO<sub>2</sub> emissions, minimizing environmental impact. Critically, the system provides an extended discharge duration of 8 to 24 hours, surpassing the typical capabilities of conventional lithium-ion battery systems. Moreover, it circumvents the need for rare metals such as lithium and cobalt, enhancing raw material supply stability and improving cost competitiveness.

## Strategic Significance and Outlook

Slated for commissioning in 2028, the Irish project will repurpose the site of a former thermal power plant, contributing to valuable infrastructure reuse and regional economic revitalization. The collaboration between Google and Energy Dome is set to validate the commercial viability of CO2 battery technology, marking a pivotal step towards its accelerated global deployment. The anticipated success of this venture is expected to catalyze adoption among other data center operators and utilities for LDES solutions, especially innovative ones like CO2 batteries. Ultimately, this initiative is poised to intensify competition within the long-duration energy storage market, further advancing renewable energy penetration and the comprehensive decarbonization of power grids worldwide.

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Source: <https://www.pv-magazine.com/2026/07/01/energy-dome-to-build-23-mw-200-mwh-carbon-battery-in-ireland/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #06 Ofgem Selects 16 Innovative Projects to Bolster UK Long-Duration Energy Storage

Published June 26, 2026 Ofgem UK



Ofgem has selected 16 innovative projects to enhance long-duration electricity storage (LDES UK)

## OVERVIEW

Ofgem, the UK's energy regulator, has provisionally selected 16 projects under its LDES Cap & Floor Scheme to support the development of Long-Duration Energy Storage (LDES). The chosen projects encompass four key technologies: Pumped Hydro Storage (PSH), Compressed Air Energy Storage (CAES), lithium-ion batteries, and Vanadium Redox Flow Batteries (VRFB). These initiatives aim to enhance UK energy security and accelerate renewable energy integration.

### Key Findings

Ofgem, the energy market regulator in the United Kingdom, has announced the provisional selection of 16 projects to receive support through its LDES Cap & Floor Scheme, aimed at significantly bolstering the nation's Long-Duration Energy Storage (LDES) capabilities. This decision marks a crucial step towards strengthening the UK's energy security and accelerating the deployment of renewable energy.

### Technical / Clinical Details

Following a rigorous eligibility assessment process, the 16 selected projects cover a diverse portfolio of LDES technologies. Specifically, they include four primary categories:

- **Pumped Hydro Storage (PSH):** A large-scale, mature LDES technology that pumps water to an elevated reservoir for storage and releases it to generate electricity when needed.
- **Compressed Air Energy Storage (CAES):** Stores energy by compressing air into underground caverns or tanks, releasing it to drive turbines for power generation during demand.
- **Lithium-ion batteries:** While primarily known for short to medium-duration storage, specific configurations are being explored for longer durations.
- **Vanadium Redox Flow Batteries (VRFB):** A type of flow battery that stores energy through chemical reactions in liquid electrolytes, ideal for long-duration storage due to its ability to independently scale power and energy capacity.

Each of these technologies offers distinct characteristics and advantages, providing flexible solutions to address the UK's diverse topography and electricity demand patterns. The projects aim to provide power supply capabilities ranging from several hours to multiple days, effectively complementing the intermittency of renewable energy sources.

## Background & Context

The UK is accelerating the adoption of renewable energy to meet its net-zero emissions target by 2050, a goal for which grid stabilization is indispensable. LDES is a key technology for managing the variability of solar and wind power generation and maintaining the balance between supply and demand. Ofgem's LDES Cap & Floor Scheme is designed to provide incentives that mitigate investment risks for LDES projects, thereby fostering their development. By ensuring long-term revenue security for projects, this scheme aims to attract private investment and accelerate the market introduction of innovative technologies.

## Strategic Significance & Outlook

The 16 selected LDES projects will play a critically important role in the UK's energy transition. Successful implementation of these projects is expected to further advance renewable energy penetration, enhance grid stability, and significantly reduce reliance on fossil fuels in the future. Moreover, the simultaneous development of diverse LDES technologies positions the UK to establish technological leadership in the energy storage sector and contribute to global decarbonization efforts. This initiative signals to investors and technology developers that the UK LDES market offers substantial growth opportunities.

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Source: <https://www.ofgem.gov.uk/press-release/ofgem-boosts-long-duration-storage-secure-more-homegrown-energy-customers>

# #07 Energy Dome and Salt River Project to Construct 19MW CO<sub>2</sub> Battery Storage System in Arizona

Published June 26, 2026 everything PE USA



## OVERVIEW

Energy Dome and Salt River Project (SRP) announced a contract to install a 19 MW, 10-hour carbon dioxide-based (CO<sub>2</sub>) battery system at SRP's Coronado Generating Station (CGS) site in St. Johns, Arizona. Developed under a 20-year tolling agreement, Energy Dome will own and operate the facility, with SRP off-taking its output, contributing to regional grid stabilization and renewable energy integration.

## IN DEPTH

### Key Findings

Energy Dome, an Italian energy storage company, and Salt River Project (SRP), a major U.S. utility, have announced a contract for the deployment of a 19 MW output, 10-hour duration carbon dioxide-based (CO<sub>2</sub>) battery system. The project will be located at SRP's Coronado Generating Station (CGS) site in St. Johns, Arizona, marking a significant commercial introduction of CO<sub>2</sub> battery technology into the U.S. power market.

### Technical / Clinical Details

Energy Dome's CO<sub>2</sub> battery system employs a proprietary technology that compresses and stores CO<sub>2</sub> gas using excess electricity from the grid. When power is needed, the stored CO<sub>2</sub> is expanded to drive a turbine and generate electricity. This system operates in a closed loop, meaning no CO<sub>2</sub> is released into the atmosphere. With a 10-hour discharge capacity, this system effectively addresses medium-duration energy storage needs—such as shifting surplus solar power from day to night or covering multi-hour peak demand periods—unlike conventional lithium-ion batteries that are optimized for shorter durations. The project will be developed under a 20-year tolling agreement, where Energy Dome will own and operate the facility, and SRP will purchase its output.

### Background & Context

In regions like Arizona, which benefit from abundant sunlight, the rapid expansion of solar power generation presents challenges for grid stability due to its intermittency. Utilities like SRP are actively seeking innovative storage solutions to maximize renewable energy integration while maintaining power supply reliability. Long-duration energy storage (LDES) technologies, such as CO<sub>2</sub> batteries, are gaining attention as more sustainable and economical alternatives by reducing dependence on scarce metals like lithium and cobalt. This project's utilization of an existing power plant site allows for infrastructure sharing and rapid deployment, contributing to decarbonization goals.

## Strategic Significance & Outlook

The success of this CO2 battery project in Arizona is expected to significantly encourage other regions and utilities across the U.S. to adopt similar LDES technologies. Energy Dome's technology, with its competitive advantages in safety, environmental compatibility, and cost-efficiency, is poised to play a crucial role in accelerating renewable energy adoption and enhancing grid resilience. The long-term agreement with SRP boosts market confidence in this novel technology and paves the way for further large-scale deployments. In the long run, CO2 battery technology holds the potential to become a central player in the global energy transition.

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Source: <https://www.everythingpe.com/news/details/10614-energy-dome-and-salt-river-project-partner-on-19-mw-co-battery-project>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #08 Avangrid to Construct 82MWh BESS Project in Oregon, Scheduled for 2027 Commissioning

Published June 30, 2026 Energy-Storage.News USA



## OVERVIEW

Avangrid announced plans to build the 41MW/82MWh 'Shutler Energy Storage project,' a battery energy storage system (BESS) facility in Gilliam County, Oregon. Scheduled for operation in 2027, this project will support the grid reliability of the company's 3GW generation capacity in the Pacific Northwest. The BESS deployment aims to manage renewable energy variability and stabilize regional power supply.

## IN DEPTH

### Key Findings

Avangrid has announced its plans to construct the 'Shutler Energy Storage project,' a battery energy storage system (BESS) facility with a 41MW power capacity and 82MWh of energy storage in Gilliam County, Oregon. This significant project is aimed at enhancing the grid reliability of the company's extensive 3GW renewable energy generation portfolio across the Pacific Northwest.

### Technical / Clinical Details

The Shutler Energy Storage project is designed to utilize state-of-the-art battery technology to complement intermittent power generation from renewable sources like wind and solar. This 82MWh BESS will store excess electricity generated during periods of high production and release it when demand is high or renewable output is low, thereby contributing to grid stabilization. Specifically, with a 2-hour discharge capability, the system will provide services such as grid congestion relief, frequency regulation, and peak load shaving, ensuring a more reliable power supply. The project is scheduled to commence operations in 2027 and, upon integration into the regional power infrastructure, will contribute to building a cleaner and more resilient energy system.

### Background & Context

The Pacific Northwest region of the United States boasts abundant hydroelectric resources and active deployment of renewable energies, including wind and solar. Leading energy companies like Avangrid are investing in large-scale BESS projects to efficiently integrate these variable renewable energy sources into the grid and ensure stable supply. BESS is recognized as an indispensable tool for overcoming the intermittency challenges of renewables and improving grid flexibility and resilience. This project is also expected to contribute to Oregon's clean energy goals and regional economic development.

## Strategic Significance & Outlook

The commissioning of the Shutler Energy Storage project will strengthen Avangrid's renewable energy portfolio in the Pacific Northwest and enable the optimization of its extensive generation capacity. This BESS will not only enhance the reliability of the regional energy supply but also promote further expansion of renewable energy and reduce reliance on fossil fuels. Such large-scale BESS deployments foster competition in the power market, ultimately leading to stable and lower-cost electricity for consumers. Avangrid's investment demonstrates its commitment to accelerating the clean energy transition, with similar projects expected to proliferate across the U.S. in the coming years.

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Source: <https://www.energy-storage.news/avangrid-to-build-82mwh-oregon-bess-project/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #09 Europe Goes Big: BW ESS, Greenvolt, and Giga Storage Launch 11GWh of Large-Scale BESS Projects

Published July 01, 2026 Energy-Storage.News Germany、ポーランド、ベルギー



## OVERVIEW

Three leading Independent Power Producers (IPPs)—BW ESS, Greenvolt, and Giga Storage—are aggressively deploying large-scale Battery Energy Storage System (BESS) projects across Europe, collectively totaling an impressive 11 GWh. These strategic initiatives, including a 5.7 GWh system in Germany, a 2.4 GWh project in Poland, and a 2.8 GWh facility in Belgium, are set to revolutionize grid stability and accelerate Europe's renewable energy integration.

## IN DEPTH

### Background

Europe is at the forefront of a monumental energy transition, driven by ambitious climate change targets and an imperative to enhance energy independence. While the rapid expansion of renewable energy sources like solar and wind power is critical to this shift, their inherent variability presents significant operational challenges for maintaining grid stability. Large-scale Battery Energy Storage Systems (BESS) are emerging as indispensable infrastructure to mitigate these challenges, maximizing renewable energy integration and ensuring a reliable power supply. Capacity markets play a pivotal role in this ecosystem, providing long-term revenue opportunities for flexible resources like BESS, thereby stimulating crucial investment.

### Key Developments

In a significant push for grid modernization and renewable energy integration, three prominent Independent Power Producers (IPPs)—BW ESS, Greenvolt, and Giga Storage—are spearheading the development of large-scale Battery Energy Storage System (BESS) projects across Europe. These initiatives collectively amount to an impressive 11 GWh of energy storage capacity, marking a critical advancement in the region's energy infrastructure.

### Project Deep Dive

- **BW ESS (Germany):** The company has broken ground on a monumental BESS facility in Germany, boasting a power capacity of 1 GW and an energy storage capacity of 5.7 GWh. This system is strategically designed to absorb Germany's fluctuating renewable energy supply, thereby significantly enhancing grid stability and reliability within the European power network.
- **Greenvolt (Poland):** Greenvolt is collaborating with China's BYD, a global leader in battery technology, to develop a substantial 2.4 GWh BESS project in Poland. This partnership leverages BYD's advanced battery solutions to deliver a cost-efficient and highly reliable energy storage system, critical for integrating renewables into the Polish grid.

- **Giga Storage (Belgium):** Giga Storage has formalized its intent with Tesla, signing a Letter of Intent (LOI) to advance the 'Green Turtle' project in Belgium. This 2.8 GWh BESS facility is slated to deploy Tesla's cutting-edge Megapack systems, promising substantial energy storage capacity and advanced grid services.

These projects are underpinned by robust capacity market contracts, which are instrumental in securing long-term revenues and establishing an attractive business model for investors. Each BESS facility is engineered to provide a diverse array of essential grid services, including crucial grid stabilization, precise frequency regulation, and effective peak load shaving.

### **Strategic Significance & Outlook**

The progression of these formidable large-scale BESS projects heralds a new, transformative phase in Europe's energy transition. Upon operationalization, these facilities will not only accelerate the integration of renewable energy but also fundamentally enhance grid resilience and further diminish reliance on fossil fuels. Furthermore, strategic partnerships with major international technology providers such as BYD and Tesla are set to foster significant technological innovation and diversify the supply chain, bolstering Europe's competitive edge in the rapidly evolving energy storage market. The anticipated success of these pioneering projects is expected to catalyze further BESS investments across the continent, acting as a crucial driving force towards realizing a sustainable and resilient energy future for Europe.

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Source: <https://www.energy-storage.news/europe-goes-big-bess-projects-totalling-11gwh-launched-by-ipp-bw-ess-greenvolt-and-giga-storage/>

# #10 Utah's Largest Solar-Storage Facility, Green River Energy Center, Now Online with 400MW Solar and 1,600MWh Battery

Published July 02, 2026 Salt Lake Tribune, pv magazine Global USA



## OVERVIEW

The 'Green River Energy Center,' Utah's largest integrated solar and battery storage facility, has commenced operations in Emery County. This \$1.1 billion project features approximately one million solar panels, providing 400 MW of solar capacity, coupled with a 1,600 MWh Battery Energy Storage System (BESS). It is capable of supplying power to about 10% of Utah households annually, significantly contributing to stable renewable energy supply.

## IN DEPTH

### Key Findings

The 'Green River Energy Center,' Utah's largest integrated solar photovoltaic (PV) and battery storage facility, has officially commenced operations in Emery County. This \$1.1 billion project, developed over nearly a decade, is poised to significantly bolster the region's clean energy supply.

### Technical / Clinical Details

The Green River Energy Center is a hybrid facility combining cutting-edge renewable energy technologies. It features approximately one million solar panels, boasting a maximum solar generation capacity of 400 MW. This is coupled with a massive 1,600 MWh Battery Energy Storage System (BESS), designed to mitigate the intermittency inherent in solar power. Excess electricity generated during daylight hours is stored in the batteries and then discharged during the night or periods of high electricity demand when solar output is unavailable. This dramatically enhances the stability of the power supply and allows the facility to provide enough clean energy to power approximately 10% of Utah's homes annually.

### Background & Context

Utah is experiencing growing electricity demand fueled by rapid population growth and economic development. Simultaneously, the state is committed to transitioning to clean energy and reducing greenhouse gas emissions, making the integration of large-scale renewable energy and storage systems an urgent priority. While standalone solar PV facilities have limitations in providing power after sunset, integrated facilities like the Green River Energy Center offer an ideal solution to this challenge. This project represents a significant milestone for the state in demonstrating renewable energy leadership and modernizing and strengthening its power grid.

## Strategic Significance & Outlook

The operation of the Green River Energy Center holds critical importance in shaping Utah's clean energy future. This facility will enhance the reliability of renewable energy, reduce the risk of fluctuating electricity prices, and further decrease reliance on fossil fuels. Furthermore, the success of such large-scale integrated projects serves as an incentive for other states and regions to invest in similar renewable energy and storage systems. For utilities and developers, the Green River Energy Center will serve as a powerful model demonstrating the feasibility of economically and environmentally sustainable energy solutions.

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Source: <https://www.power-eng.com/renewables/utah-has-a-new-largest-solar-storage-facility-with-400-mw-1600-mwh-project-online/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #11 IPX Power Secures \$4.95 Billion Financing for 1.15GW Solar and 4.6GWh BESS Project in California

Published July 01, 2026 REGlobal USA



## OVERVIEW

IPX Power has secured \$4.95 billion in financing for the construction and operation of its 'Darden Solar and Storage Project' in Fresno County, California. This massive undertaking combines 1.15 GWac of solar PV capacity with 4.6 GWh of battery energy storage (BESS), aiming for commercial operation in 2028. This significant financing highlights strong investor appetite for renewable energy and large-scale storage infrastructure in the U.S.

## IN DEPTH

### Key Findings

IPX Power has successfully secured a substantial \$4.95 billion financing package for the construction and long-term operation of its 'Darden Solar and Storage Project' currently underway in Fresno County, California. This achievement underscores the robust and sustained commitment of private investment towards large-scale renewable energy and energy storage projects in the United States.

### Technical / Clinical Details

The Darden project is a hybrid clean energy facility combining 1.15 GWac (Gigawatts alternating current) of solar photovoltaic generation capacity with an adjacent 4.6 GWh (Gigawatt-hours) battery energy storage system (BESS). Such large-scale integrated systems are crucial for overcoming the power supply challenges posed by the variability of solar generation. Excess solar power generated during the day will be stored in the BESS and then dispatched to the grid during periods of high demand in the evenings or at night, or when solar generation is low. The system is designed to provide a wide range of services, including grid stabilization, frequency regulation, and peak load management, contributing significantly to California's stringent renewable energy targets. The project is targeting commercial operation by 2028.

### Background & Context

California has set some of the most ambitious clean energy targets in the U.S., aiming to achieve 100% renewable energy by 2045. To meet this goal, not only is massive renewable energy generation required, but also energy storage systems are indispensable for managing its intermittency. Faced with challenges such as grid congestion, wildfire-related outage risks, and increasing electricity demand, large-scale and integrated solutions like the Darden project are critically important for enhancing the state's energy security and reliability. The scale of the \$4.95 billion financing indicates significant interest and confidence from Environmental, Social, and Governance (ESG) investors and financial institutions in such large-scale clean energy infrastructure projects.

## Strategic Significance & Outlook

The successful financing and forthcoming operation of the Darden project will have a profound impact not only on California but also on the future of renewable energy and energy storage across the United States. This project will serve as a financing model for complex, large-scale renewable energy projects, setting a benchmark for other developers. Once operational, it will contribute to improved air quality and reduced greenhouse gas emissions by supplying clean electricity to millions of homes in the region. The integration with BESS will enable solar power to function as a more stable and reliable baseload power source, accelerating the transition towards a future where renewable energy plays a dominant role in power supply.

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Source: <https://reglobal.org/ipx-power-secures-financing-for-1-15-gw-solar-and-bess-project-in-california/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #12 Vopak Acquires Majority Control of Dutch BESS Developer GES, Advancing 200MW/800MWh Project

Published July 02, 2026 Energy Storage News Netherlands



## OVERVIEW

Global storage and infrastructure company Vopak has signed an agreement to acquire majority control of GES, a Dutch battery energy storage system (BESS) developer. The deal is conditional on the final investment decision for a 200MW/800MWh BESS project planned for Oosterhout, southern Netherlands. This 4-hour facility aims for commercial operation in early 2028, reinforcing Vopak's commitment to the energy transition.

## IN DEPTH

### Key Findings

Vopak, a global tank storage and infrastructure company, has entered into an agreement to acquire a majority stake in GES, a Dutch battery energy storage system (BESS) developer. This strategic acquisition is conditional upon the Final Investment Decision (FID) for a significant 200MW/800MWh BESS project planned for construction in Oosterhout, in the southern Netherlands.

### Technical / Clinical Details

The BESS project under development by GES in Oosterhout is a 4-hour duration facility with an output of 200MW and an energy storage capacity of 800MWh. It is designed to play a crucial role in grid stabilization, the integration of renewable energy, and the enhancement of peak power supply capabilities. Through its investment in GES, Vopak will not be directly involved in battery technology itself but will contribute its expertise in the development and operation of large-scale energy storage infrastructure. The project is aiming for commercial operation in the first half of 2028, and once operational, it is expected to bring increased flexibility and reliability to the regional power grid.

### Background & Context

Europe, and the Netherlands in particular, has ambitious energy transition targets, accelerating the deployment of renewable energy and reducing reliance on fossil fuels. This shift has led to a surging demand for large-scale energy storage solutions to manage the variability of wind and solar power generation. Vopak, traditionally involved in the storage of oil and gas products, is making a clear strategic shift towards clean energy infrastructure, with this acquisition being a key step in expanding its business into the BESS sector. Investing in BESS developers like GES is an important move for Vopak to establish itself as a key player in the energy transition.

## Strategic Significance & Outlook

Vopak's acquisition of a majority stake in GES is expected to further boost the growth of the BESS market in the Netherlands and across Europe. The success of the Oosterhout project will encourage investment in large-scale storage infrastructure and enable broader integration of renewable energy. The combination of Vopak's deep expertise in infrastructure management and GES's BESS development capabilities is anticipated to create strong synergies for future projects. This move underscores that energy storage is increasingly being recognized not just as a technology, but as a major infrastructure asset offering stable returns and long-term growth opportunities.

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Source: <https://renewablesnow.com/news/vopak-takes-majority-control-of-dutch-bess-developer-ges-1297433/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #13 Eku Energy Enters German Market with 1.6GWh BESS Acquisition, Providing Black Start Capability for Grid Restoration

Published July 02, 2026   Batteries International   Germany



## OVERVIEW

UK-headquartered Eku Energy has entered the German market by acquiring the 1.6GWh 'Dion BESS' battery energy storage system project under development in Lower Saxony. The Dion BESS will provide black start capability via a direct grid connection, enhancing regional energy security by assisting grid recovery during power outages. This project is slated for commissioning by the end of 2029, making a significant contribution to Germany's energy transition.

### Key Findings

Ekü Energy, a UK-headquartered energy storage development company, has made a strategic entry into the German market by acquiring the 'Dion BESS' project, a 1.6GWh battery energy storage system (BESS) under development in Lower Saxony. The standout feature of this project is its ability to provide 'black start' capability through a direct grid connection, which will significantly aid in the rapid restoration of the power grid during widespread outages.

### Technical / Clinical Details

The Dion BESS is a large-scale storage facility with an energy storage capacity of 1.6GWh, integrating state-of-the-art battery technology with advanced control systems. Black start capability refers to the ability to independently initiate power generation and re-establish a power grid from a complete shutdown (blackout) without external power supply. By connecting directly to the transmission grid, the Dion BESS will be able to provide this critical service. This capability will significantly enhance the resilience and reliability of the power grid, especially as renewable energy integration progresses. Furthermore, the system will offer other ancillary services such as grid stabilization, frequency regulation, and peak shaving, strengthening regional energy security.

### Background & Context

Germany is aggressively pursuing its energy transition (Energiewende), with one of the highest penetrations of wind and solar power globally. However, as the proportion of these intermittent energy sources increases, maintaining grid stability and ensuring rapid recovery capabilities during unexpected power outages have become urgent challenges. BESS with black start capability offers a cost-effective and environmentally friendly solution to this issue by enabling grid restart without relying on conventional fossil fuel power plants. Ekü Energy's entry into the German market underscores its commitment to Europe's energy transition and the international growth of the BESS market.

## Strategic Significance & Outlook

Once operational by the end of 2029, the Dion BESS project is expected to bring substantial benefits to the power grid's stability and resilience in Lower Saxony and across Germany. The black start function is indispensable for improving grid resilience against threats such as extreme weather events and cyberattacks. The success of this project will serve as a powerful model for other regions and countries to adopt similar advanced BESS solutions. Eku Energy's investment clearly demonstrates that energy storage is evolving from a mere efficiency tool to a critical foundation for national energy security, and demand for such high-functionality BESS is expected to grow further.

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Source: <https://www.batteriesinternational.com/news/eku-enters-german-market-with-1-6gwh-bess-project/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #14 Tucson Electric Power Commissions Wilmot Energy Center with 100MW Solar and 30MW BESS

Published June 28, 2026 Tucson Electric Power USA



## OVERVIEW

Tucson Electric Power (TEP) announced the commissioning of the Wilmot Energy Center, integrating a 100 MW solar array and a 30 MW Battery Energy Storage System (BESS), each the largest of their kind on TEP's grid. The center charges batteries from solar power and supplies stored energy during peak demand, enhancing grid reliability and helping meet the annual electricity needs of approximately 100,000 households.

## IN DEPTH

### Key Findings

Tucson Electric Power (TEP) has announced the commissioning of its innovative 'Wilmot Energy Center' in Arizona. This facility combines a 100 MW solar photovoltaic array with a 30 MW Battery Energy Storage System (BESS), making each component the largest of its kind on TEP's grid, and strengthening the clean and reliable power supply to the community.

### Technical / Clinical Details

At the heart of the Wilmot Energy Center is an expansive solar array, capable of generating up to 100 MW of clean electricity. This solar generation facility works in close conjunction with the 30 MW BESS. Excess power generated during peak solar hours in the day is efficiently stored in this high-capacity battery. Subsequently, the stored electricity is discharged to the grid during evenings and nights when solar generation is unavailable, or during periods of peak electricity demand. This ensures power supply stability and contributes to meeting the electricity needs of approximately 100,000 households annually. The BESS also provides ancillary services such as grid frequency regulation and voltage stabilization, thereby enhancing the overall resilience of the power grid.

### Background & Context

Arizona, leveraging its abundant solar resources, is actively promoting the adoption of solar power. However, the intermittency of solar generation poses a challenge to stable grid operation. As a regional utility, Tucson Electric Power faces the dual challenge of maximizing renewable energy integration while providing stable power to its customers. Integrated hybrid facilities like the Wilmot Energy Center offer an optimal solution to this challenge. This enables a reduction in reliance on fossil fuels and contributes to achieving the state's clean energy goals.

## Strategic Significance & Outlook

The commissioning of the Wilmot Energy Center marks a significant milestone in Tucson Electric Power's transition towards clean energy. This facility will enhance the reliability of renewable energy, mitigate the risk of fluctuating electricity prices, and contribute to improving regional air quality. TEP's customers will benefit from a more affordable and sustainable electricity supply. This success story is expected to incentivize other utilities to adopt similar integrated renewable energy and storage systems, accelerating the development of clean energy infrastructure not only in Arizona but across the United States.

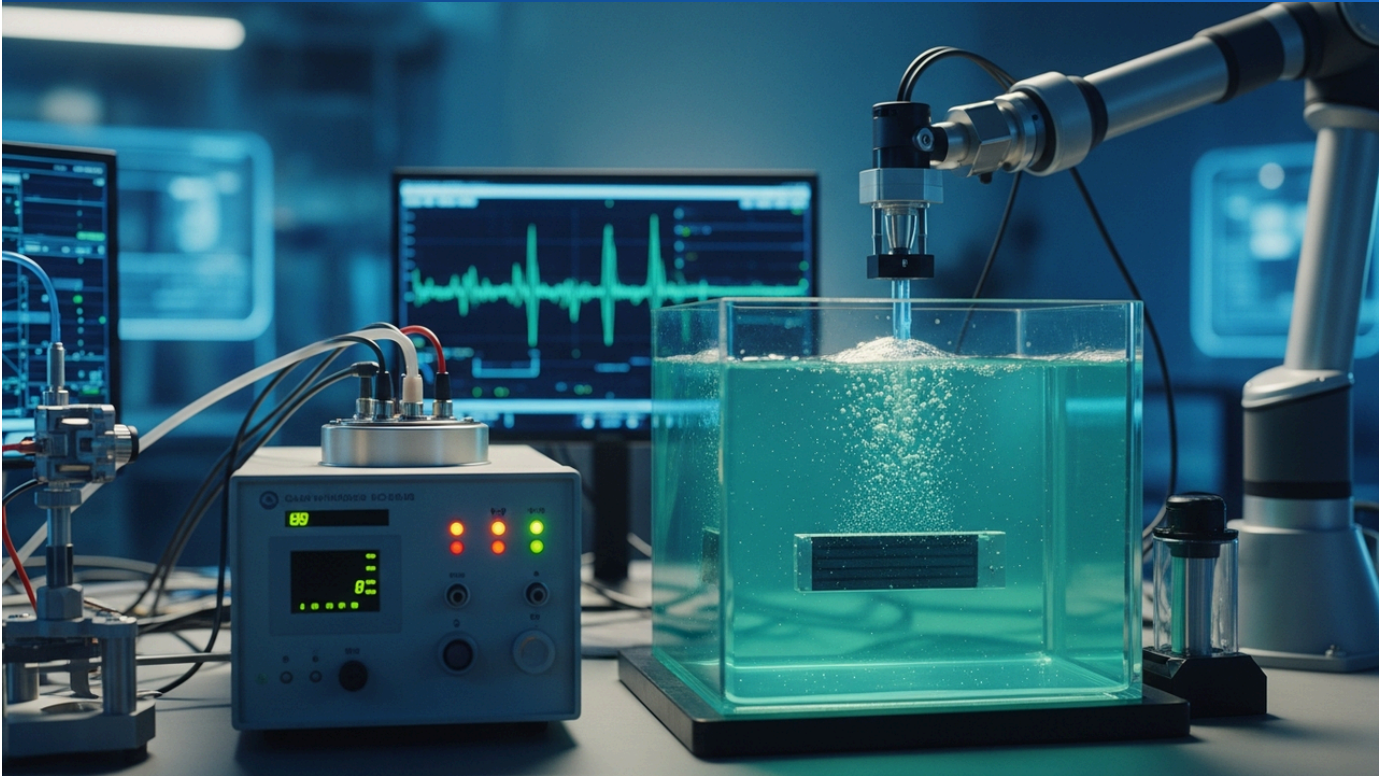
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Source: <https://www.tep.com/wec/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #15 Cornell University Develops Electrochemical Bath to Directly Regenerate Li-Ion Battery Electrodes, Achieving 95% Capacity Recovery and 56% Cost Reduction

Published June 25, 2026   New Atlas, [electrive.com](https://www.electrive.com)   USA



## OVERVIEW

Scientists at Cornell University have developed an innovative 'Direct Electrode-to-Electrode Regeneration (DEER)' electrochemical bath that restores used lithium-ion battery electrodes to up to 95% of their original capacity. This method avoids traditional physical destruction and energy-intensive recovery processes, reporting a 56% reduction in recycling costs, significant cuts in water consumption, and air pollutant emissions. This dramatically enhances the economic and environmental sustainability of battery recycling.

### Key Findings

A team of scientists at Cornell University has developed a groundbreaking electrochemical bath, termed 'Direct Electrode-to-Electrode Regeneration (DEER),' that restores used lithium-ion battery electrodes to nearly their original performance. This novel method is capable of recovering up to 95% of a degraded battery's initial capacity and is reported to reduce processing costs by 56% compared to conventional battery recycling techniques.

### Technical / Clinical Details

The DEER process focuses on directly regenerating the chemical state and structure of electrode surfaces without dissolving the degraded electrode materials. The research team utilizes an electrochemical bath to remove inactive substances accumulated on the electrode surface and promote the reconstruction of its crystalline structure. This 'activation' process significantly restores the battery's charge and discharge capacity by enabling efficient lithium-ion movement within the electrode material. Unlike traditional battery recycling, which often involves physically crushing used batteries followed by high-temperature or strong acid chemical treatments to extract valuable metals, the DEER method bypasses these energy-intensive and environmentally burdensome steps. This results in not only a 56% reduction in processing costs but also substantial environmental benefits, including reduced water consumption and air pollutant emissions.

### Background & Context

With the explosive growth in demand for lithium-ion batteries driven by the proliferation of electric vehicles (EVs) and portable electronic devices, the treatment of used batteries and the recovery of valuable raw materials have become global challenges. Existing recycling processes often face issues of high cost, high energy consumption, and significant environmental impact. Consequently, there has been an urgent need for the development of more efficient and sustainable battery recycling technologies. Direct electrode regeneration techniques like DEER hold the potential to bring about a paradigm shift in this field, representing a crucial step towards achieving a circular economy.

## Strategic Significance & Outlook

The DEER technology developed by Cornell University has the potential to revolutionize the battery recycling industry. Its high capacity recovery rate and cost reduction benefits significantly enhance the economic value of recycled battery materials, helping to reduce reliance on virgin raw material extraction for new battery manufacturing. If this technology is scaled up commercially, it could further lower the lifecycle costs of EV batteries and accelerate the adoption of sustainable mobility and energy storage solutions. Future research and development, along with industrial partnerships, are expected to focus on bringing this technology to practical application.

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Source: <https://newatlas.com/energy/electrode-restoring-bath-lithium-batteries/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #16 UC San Diego Develops Novel Green Method to Upcycle Spent LFP Cathodes into Higher-Performance LMFP Material

Published July 01, 2026 UC San Diego Today USA



## OVERVIEW

Engineers at UC San Diego have developed an eco-friendly method to upcycle spent lithium iron phosphate (LFP) battery cathodes into higher-performance lithium manganese iron phosphate (LMFP), capable of storing more energy. This approach offers a new paradigm for battery recycling by directly transforming existing battery materials into higher-value products, rather than disassembling and reconstructing from raw materials. This technology is expected to reduce recycling costs and accelerate the adoption of LFP batteries.

### Key Findings

Engineers at the University of California San Diego (UC San Diego) have developed an innovative and environmentally friendly method to 'upcycle' spent lithium iron phosphate (LFP) battery cathode material into higher-performance lithium manganese iron phosphate (LMFP) material, which can store more energy. This approach holds significant potential to dramatically reduce both the cost and environmental impact of battery recycling.

### Technical / Clinical Details

Unlike traditional battery recycling, which often involves completely dismantling spent batteries into raw materials for reconstruction, this new upcycling process focuses on directly transforming the chemical composition and structure of existing LFP cathode materials. Specifically, it involves introducing manganese into the LFP cathode and optimizing its crystalline structure to convert it into LMFP. LMFP retains the advantages of LFP, such as safety and long cycle life, while the incorporation of manganese enhances its energy density. This method minimizes energy-intensive steps like high-temperature or strong acid treatments, leading to substantial reductions in processing costs and environmental impact (energy consumption, water usage, and emissions). Initial experiments have confirmed that the upcycled LMFP material exhibits performance and stability comparable to newly manufactured LMFP.

### Background & Context

The proliferation of lithium-ion batteries is driving the growth of the electric vehicle (EV) market, but the increasing volume of spent batteries and the supply constraints of expensive raw materials like cobalt and nickel pose challenges. LFP batteries, which do not use cobalt or nickel and offer superior safety and long cycle life, are rapidly gaining adoption in EVs and stationary energy storage systems. However, LFP's energy density is often lower than some other high-performance lithium-ion chemistries, necessitating further improvements. UC San Diego's research plays a crucial role in supporting the widespread adoption of LFP while building a sustainable battery supply chain by creating higher-value LMFP materials from existing LFP.

## Strategic Significance & Outlook

This LFP cathode upcycling technology developed by UC San Diego introduces a new value proposition to the battery recycling industry. It is expected to reduce the lifecycle cost of batteries, leading to the increased market penetration of LFP-based EVs and energy storage systems. The improved performance of LMFP will contribute to extended EV range and the development of more compact battery packs. This eco-friendly approach deeply integrates circular economy principles into the battery manufacturing and recycling process, enabling both resource efficiency and environmental protection. Further large-scale demonstration and collaboration with industry will be essential for the commercialization of this technology.

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Source: <https://today.ucsd.edu/story/spent-ev-batteries-get-second-life-as-higher-performance-battery-material>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #17 Clean the Sky Unveils Integrated Solar Storage Systems Portfolio with DMEGC Solar, Featuring High-Efficiency Modules

Published July 01, 2026   Clean the Sky   Unknown



## OVERVIEW

Clean the Sky, leveraging DMEGC Solar's latest portfolio, has announced 'Integrated Solar Storage Systems' that combine high-efficiency solar PV modules with battery storage on a unified platform. Designed for residential, commercial, utility-scale, and agrivoltaic projects, this offering allows customers to deploy complete energy systems instead of sourcing individual components. This approach simplifies renewable energy adoption, anticipating faster market penetration.

## IN DEPTH

### Key Findings

Clean the Sky has announced a new paradigm for renewable energy deployment with its 'Integrated Solar Storage Systems.' Delivered through DMEGC Solar's latest portfolio, this innovative approach combines high-efficiency solar photovoltaic (PV) modules with battery storage on a single, integrated platform, enabling customers to deploy complete energy systems without the hassle of sourcing individual components separately.

### Technical / Clinical Details

DMEGC Solar's Integrated Solar Storage Systems function by seamlessly linking high-performance PV modules with advanced Battery Energy Storage Systems (BESS). The PV modules convert sunlight into electricity with maximum efficiency, and the BESS stores any surplus power generated. This stored energy is then discharged during periods when solar generation is unavailable or when electricity demand is high, ensuring stable and reliable power supply. The system is designed to cater to diverse applications, ranging from residential rooftops to large-scale utility projects and even agrivoltaic (solar farming) installations. An integrated management system optimizes energy flow, leading to improved self-consumption rates, reduced electricity costs, and decreased reliance on the grid. This approach offers the advantage of obtaining a comprehensive solution from a single provider, eliminating concerns about component compatibility or installation complexity.

### Background & Context

While renewable energy adoption is accelerating globally, the intermittency of solar power and the complexity of installation remain challenges. Specifically, selecting and integrating separate solar PV systems and battery storage systems often requires technical expertise, time, and significant cost. Integrated solutions offered by companies like DMEGC Solar remove these barriers, making it easier for more consumers and businesses to transition to clean energy systems. This trend is crucial for accelerating the energy transition and promoting the widespread adoption of distributed energy systems.

## Strategic Significance & Outlook

Integrated Solar Storage Systems are poised to become a leading trend further driving the growth of the renewable energy market. DMEGC Solar's new portfolio addresses market needs by providing simpler and more efficient clean energy solutions across a wide range of sectors, including residential, commercial, utility, and agricultural. This approach not only reduces installation costs and time but also contributes to enhanced system performance and reliability. As a result, more people will be able to benefit from sustainable energy, marking a crucial step towards achieving global decarbonization goals.

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Source: <https://www.cleantesky.com/innovation/integrated-solar-storage-systems>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #18 CATL Mass Produces Sodium-Ion Batteries While Focusing R&D on 'Breathable' Lithium-Air Batteries for Extended EV Range

Published July 03, 2026 CleanTechnica China



## OVERVIEW

CATL, the world's largest battery manufacturer, is accelerating mass production and market deployment of sodium-ion batteries, while simultaneously focusing on "breathable" lithium-air batteries as a future breakthrough technology. CATL's Chief Scientist Wu Kai emphasized that lithium-air technology, with its extremely high theoretical energy density, will contribute significantly to lighter electric vehicles (EVs) and vastly extended driving ranges. This dual strategy aims to solidify CATL's leadership in both immediate market needs and long-term technological innovation.

## IN DEPTH

### Key Findings

CATL, the world's largest battery manufacturer, is not only ramping up mass production and market deployment of sodium-ion batteries but also actively dedicating significant research and development efforts towards "breathable" lithium-air batteries (Li-air battery) as a next-generation, transformative technology. Wu Kai, CATL's Chief Scientist, stated at the 2026 "Powering The Nation" forum that the company's "long-term focus is on lithium-air battery technology," underscoring its potential to revolutionize future electric vehicle (EV) performance.

### Technical Details

Lithium-air batteries are considered a highly promising next-generation battery technology due to their theoretically superior energy density compared to current lithium-ion batteries. This technology utilizes oxygen from the air as a cathode reactant and lithium metal as the anode, enabling lightweight and high-capacity energy storage. Dubbed "breathable batteries" for their use of ambient oxygen, they hold the potential for dramatic reductions in EV weight, significantly extended driving ranges, and broad applications in portable electronics and aerospace. CATL's research in this field is reportedly concentrated on advancements in material science, electrolyte development, interface stability, and improving cycle life.

### Background & Context

The rapidly expanding electric vehicle market continuously demands longer driving ranges and faster charging times. While lithium-ion battery technology continues to evolve, it is approaching its physical limits in terms of energy density. Sodium-ion batteries address immediate market needs by offering an abundant, cost-effective alternative to lithium. In contrast, lithium-air batteries, with their immense energy density potential, are positioned as the ultimate successor to lithium-ion technology. CATL's strategic approach involves leveraging sodium-ion batteries for short-term market expansion while securing long-term technological leadership through lithium-air battery development.

## Strategic Significance & Outlook

CATL's long-term focus on lithium-air battery R&D demonstrates its commitment to constantly pushing the boundaries of battery technology and anticipating future market demands. While significant technical hurdles (e.g., cycle life extension, safety, charging efficiency) remain for the commercialization of lithium-air batteries, investments from industry leaders like CATL are crucial for accelerating breakthroughs. Successful development of lithium-air batteries could revolutionize the EV industry, dramatically enhance energy storage capabilities for power grids and portable devices, and pave a substantial path towards a sustainable energy future.

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Source: <https://cleantechnica.com/2026/07/03/catl-is-mass-producing-sodium-ion-batteries-and-chasing-breathable-lithium-air/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #19 CATL to Power 10,000-20,000 EVs with Sodium-ion Batteries by 2026, Targeting Cost Reduction and Enhanced Cold-Weather Performance

Published June 29, 2026 Bloomberg Television via CnEVPost China



## OVERVIEW

CATL, the world's largest EV battery manufacturer, announced plans to integrate sodium-ion battery packs into 10,000 to 20,000 electric vehicles by 2026. This technology offers robust performance in cold temperatures, operating effectively between  $-20^{\circ}\text{C}$  and  $-30^{\circ}\text{C}$ , significantly improving winter range and reducing overall EV costs. Following substantial R&D since 2016, CATL aims for a mid-2026 market launch for sodium-ion passenger cars developed in partnership with Changan Automobile, marking a pivotal step toward more affordable and resilient EVs.

### Key Findings

CATL, the world's leading electric vehicle (EV) battery manufacturer, has declared its intention to equip 10,000 to 20,000 EVs with sodium-ion battery packs by 2026. This aggressive deployment signals a major stride towards mainstreaming sodium-ion technology, promising both significant cost reductions and superior performance in challenging cold weather conditions for mass-market electric vehicles.

### Technical Details and Market Impact

- **Large-Scale EV Integration:** The commitment to integrate sodium-ion batteries into tens of thousands of EVs by 2026 underscores CATL's confidence in the technology's readiness for commercialization. This is not merely a pilot program but a substantial market entry, indicating a readiness for volume production and application in real-world driving scenarios.
- **Exceptional Cold-Weather Performance:** A critical advantage of sodium-ion batteries is their operational efficacy in low temperatures. CATL's proprietary technology is capable of functioning efficiently between  $-20^{\circ}\text{C}$  and  $-30^{\circ}\text{C}$ . This addresses a significant pain point for EV owners in colder climates, where lithium-ion batteries typically suffer from considerable range degradation, making EVs more practical and appealing year-round.
- **Driving Down EV Costs:** Sodium is an abundant and globally distributed element, leading to inherently lower material and extraction costs compared to lithium. The integration of sodium-ion batteries is poised to drastically reduce the overall cost of EV battery packs, thereby making electric vehicles more accessible and affordable for a broader consumer base, especially in price-sensitive markets.
- **Strategic Development Roadmap:** CATL has been a frontrunner in sodium-ion battery research since 2016. Building on this foundation, the company collaborated with Changan Automobile to unveil a sodium-ion powered passenger car in February 2025, with a commercial launch slated for mid-2026. The current announcement aligns perfectly with this ambitious roadmap, demonstrating consistent progress from R&D to market readiness.

## Background and Industry Context

The burgeoning EV market faces headwinds from volatile lithium prices and geopolitical dependencies concerning critical raw materials. Sodium-ion batteries offer a compelling alternative by utilizing readily available resources, thus enhancing supply chain stability and sustainability. CATL's move, as an industry titan, validates the technological maturity and market viability of sodium-ion solutions, potentially reshaping the global battery supply landscape and accelerating the transition to electric mobility.

## Strategic Significance and Outlook

This large-scale adoption by CATL is expected to accelerate the diversification of battery chemistries in the EV sector. Consumers will benefit from more cost-effective EV options with enhanced performance, particularly in cold environments. For investors and automotive manufacturers, sodium-ion batteries represent a critical differentiator and a strategic imperative for gaining competitive advantage in the evolving EV landscape. This initiative is likely to spur widespread adoption of more affordable EVs, particularly in Asian markets, and serve as a catalyst for greater EV penetration globally.

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Source: <https://www.thecooldown.com/green-tech/largest-ev-battery-manufacturer-sodium-ion-2026/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #20 CATL Unveils TENER Sodium Energy Storage System, First Commercial Grid-Scale Solution, Targeting 1 GWh Deployment by End of 2026

Published July 02, 2026 WFIN (Local News) China



## OVERVIEW

Chinese battery giant CATL has launched the TENER Sodium Energy Storage System, the world's first commercial sodium-ion battery solution specifically designed for grid-scale stationary storage. CATL aims to achieve a cumulative shipment of 1 gigawatt-hour (GWh) of this system by the end of 2026. Shipments are slated to begin in China in September 2026, followed by global availability in June 2027, signaling a major acceleration in sodium-ion battery commercialization for large-scale energy storage.

### Key Findings

CATL, the Chinese battery manufacturing behemoth, has unveiled the TENER Sodium Energy Storage System, positioning it as the world's first commercial sodium-ion battery solution specifically engineered for grid-scale stationary energy storage. The company has set an aggressive target to deploy 1 gigawatt-hour (GWh) of this system by the end of 2026, marking a significant leap for sodium-ion technology into the mainstream energy storage market.

### Technical and Market Details

- **Pioneering Commercial Grid System:** The TENER Sodium Energy Storage System is optimized for utility-scale applications, focusing on grid stabilization and the seamless integration of renewable energy sources. This launch unequivocally signals the transition of sodium-ion battery technology from promising R&D to large-scale commercial viability, challenging the dominance of traditional lithium-ion solutions.
- **Ambitious Deployment Targets:** CATL's commitment to delivering 1 GWh of TENER systems by the close of 2026 demonstrates a profound confidence in the technology's readiness and competitive edge. This scale of deployment suggests that sodium-ion batteries are poised to offer comparable, if not superior, performance and cost-effectiveness relative to existing energy storage solutions.
- **Strategic Global Rollout:** The TENER system will first be launched in China in September 2026, with a broader global rollout planned for June 2027. This phased global strategy underscores CATL's intent to establish sodium-ion batteries as a foundational pillar for energy storage solutions worldwide, catering to diverse regional energy needs.
- **Inherent Advantages of Sodium-ion:** The TENER system capitalizes on the intrinsic benefits of sodium-ion chemistry, including the vast abundance of sodium resources, an inherently safer electrochemical profile, and potentially lower manufacturing costs compared to lithium-ion alternatives. These advantages offer utilities and energy developers a more sustainable and economically attractive energy storage option.

## Background and Industry Context

As the global push for renewable energy intensifies, the demand for large-scale energy storage solutions to mitigate intermittency and stabilize power grids has surged. While lithium-ion batteries currently dominate, concerns regarding resource scarcity, cost volatility, and safety continue to drive innovation. Sodium-ion technology has emerged as a leading contender, promising a more sustainable and cost-effective alternative to lithium. CATL's introduction of the TENER system represents a critical inflection point in this technological evolution.

## Strategic Significance and Outlook

The commercialization of the TENER Sodium Energy Storage System by CATL is set to inject new competitive dynamics into the large-scale energy storage market. It offers grid operators a broader portfolio of technological choices, potentially leading to reduced energy storage costs and enhanced system efficiency. For investors, this creates new opportunities within the sodium-ion battery sector and its associated supply chains. The global deployment of TENER is expected to be instrumental in accelerating renewable energy integration and fostering the development of more resilient and diversified electrical grids worldwide.

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Source: <https://wfin.com/fox-technology-news/new-sodium-ion-battery-could-reshape-grid-storage/>

Collected: July 03, 2026 | Automated Research System (Gemini API)

# #21 Moment Energy Unveils "Megafactory 1" in Vancouver, World's Largest Second-Life EV Battery Plant, Scaling to 1 GWh Annually by 2030

Published July 02, 2026 Electrek Canada



## OVERVIEW

Moment Energy has rapidly opened "Megafactory 1" in Vancouver, Canada, establishing one of the world's largest facilities for repurposing retired EV batteries into commercial-scale battery energy storage systems (BESS). Operational in just six weeks, the factory aims to provide reliable power solutions for critical infrastructure like data centers, hospitals, factories, and microgrids. The company targets an annual production capacity of 1 gigawatt-hour (GWh) by 2030, significantly contributing to sustainable energy transitions and the circular economy.

### Key Findings

Moment Energy, a Canadian innovator, has launched "Megafactory 1" in Vancouver, Canada, in an astonishing six-week timeframe, establishing what is now one of the world's largest facilities dedicated to repurposing second-life electric vehicle (EV) batteries. This new plant is a beacon of circular economy principles, transforming retired EV power packs into commercial-grade Battery Energy Storage Systems (BESS) for critical infrastructure.

### Technical and Market Details

- **Unprecedented Speed of Deployment:** The rapid six-week timeline from inception to operation for "Megafactory 1" highlights Moment Energy's agile execution capabilities and a strong commitment to capitalizing on the burgeoning second-life battery market. This swift development sets a new benchmark for industrial-scale facility deployment in the clean energy sector.
- **Repurposing EV Batteries:** The core function of the factory involves collecting used EV batteries that no longer meet automotive performance standards. These batteries undergo rigorous testing, refurbishment, and reconfiguration to be redeployed as stationary energy storage units. This process significantly extends the lifespan of battery components, conserves precious raw materials, and drastically reduces waste.
- **Targeted Applications:** The BESS units produced at "Megafactory 1" are primarily designed for mission-critical applications where reliable and continuous power is essential. Key sectors include data centers, hospitals, manufacturing facilities, and autonomous microgrids. For these industries, second-life BESS offers a cost-effective and environmentally conscious solution to enhance energy resilience and reduce operational expenses.
- **Ambitious Production Goals:** Moment Energy aims to scale the annual production capacity of "Megafactory 1" to 1 gigawatt-hour (GWh) by 2030. This ambitious target underscores the company's vision to become a major player in the global energy storage market, addressing the escalating demand for sustainable and flexible power solutions.

## Background and Industry Context

The global surge in EV sales has created a pressing need for sustainable solutions for end-of-life batteries. While no longer suitable for EVs, these batteries often retain substantial capacity for stationary applications. The repurposing of second-life batteries plays a crucial role in mitigating the environmental impact of battery manufacturing, reducing the need for new raw material extraction (such as lithium and cobalt), and fostering a more robust circular economy. This approach is fundamental to achieving net-zero emission targets and enhancing resource efficiency within the energy sector.

## Strategic Significance and Outlook

The inauguration of Moment Energy's "Megafactory 1" is a powerful signal to the global energy and automotive industries about the increasing maturity and scalability of the second-life battery market. This initiative is expected to inspire similar ventures, accelerating innovation in battery lifecycle management and maximizing the value of EV battery assets. For investors, it opens up new opportunities in the circular economy and sustainable technology sectors. For critical infrastructure operators, it provides access to greener and more cost-effective energy storage. Ultimately, such repurposing technologies are vital for building a more sustainable and resilient global energy system, demonstrating that waste can indeed be a valuable resource.

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Source: <https://electrek.co/2026/07/02/worlds-largest-second-life-ev-battery-factory-opens-in-just-six-weeks/>