

Sodium-ion Battery Market Size and ShareMarket Overview

Study Period | 2021 - 2031 |
Market Size (2026) | USD 0.54 Billion |
Market Size (2031) | USD 1.19 Billion |
Growth Rate (2026 - 2031) | 16.89 % |
Fastest Growing Market | Asia Pacific |
Largest Market | Asia Pacific |
Market Concentration | Medium |
Major Players*Disclaimer: Major Players sorted in no particular order

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Sodium-ion Battery Market Analysis by Mordor IntelligenceThe Sodium-ion Battery Market size is estimated at USD 0.54 billion in 2026, and is expected to reach USD 1.19 billion by 2031, at a CAGR of 16.89% during the forecast period (2026-2031).

Broad-based cost pressure on lithium, stringent European sustainability rules, and China’s industrial policy are steering cell makers toward sodium chemistries that promise cheaper raw materials, shorter supply chains, and lower embedded carbon. Rapid policy-backed grid tenders in China, coupled with Europe’s battery passport mandate, have accelerated pilot deployments by almost two years, compressing the learning curve normally associated with new chemistries. Automakers are hedging lithium exposure by earmarking low-range city cars for sodium packs, while utilities view four-hour discharge systems as a hedge against lithium carbonate price swings. Meanwhile, breakthroughs in Prussian-blue cathodes are closing the performance gap with lithium iron phosphate, particularly for two-wheelers and urban delivery fleets.

Key Report Takeaways

- * By form factor, cylindrical cells captured 48.5% of the sodium-ion battery market size in 2025, whereas pouch formats are advancing at a 22.0% CAGR to 2031.
 - * By application, stationary energy storage held 71.8% of the sodium-ion battery market share in 2025, while transportation is projected to post a 19.8% CAGR through 2031.
 - * By end-user industry, utilities commanded 55.2% of the sodium-ion battery market share in 2025, yet automotive demand is forecast to expand at a 23.3% CAGR through 2031.
 - * By geography, Asia-Pacific led with 45.6% of the sodium-ion battery market size in 2025 and is expected to grow at a 19.5% CAGR to 2031.
- Note: Market size and forecast figures in this report are generated using Mordor Intelligence’s proprietary estimation framework, updated with the latest available data and insights as of January 2026.

Global Sodium-ion Battery Market Trends and InsightsDrivers Impact Analysis*

Driver | (~) % Impact on CAGR Forecast | Geographic Relevance | Impact Timeline

China's policy-backed 100+ MWh grid tenders | +3.5% | China, ASEAN | Medium term (2-4 years) |
 European EV OEMs pivot to sodium-ion for low-range cars | +2.8% | Germany, France, Nordics | Medium term (2-4 years) |
 LFP cathode cost inflation pushes packs below USD 70/kWh | +4.2% | Global | Short term (≤ 2 years) |
 Prussian-blue cathodes enable 15-minute charge for India two-wheelers | +2.5% | India, Southeast Asia | Medium term (2-4 years) |
 Cold-climate resilience drives Nordic storage subsidies | +1.8% | Sweden, Norway, Finland | Long term (≥ 4 years) |
 CATL-utility joint-venture plants secure vertical supply | +3.0% | China, Europe, North America | Long term (≥ 4 years) |
 Source: Mordor Intelligence |
 China's Policy-Backed 100 + MWh Grid Tenders Accelerate Domestic Demand

Provincial grid operators in Guangxi and Jiangsu awarded more than 100 MWh of sodium-ion contracts during 2025 after Beijing labeled the chemistry "strategic" for energy storage.[1]CATL, "Naxtra Product Launch Press Release," catl.com A 100 MWh system installed by HiNa Battery in Nanning delivered 92% round-trip efficiency across 5,000 cycles and met a levelized cost of storage below USD 0.10 per kWh. Tenders were fast-tracked to cushion utilities from lithium carbonate volatility that spiked to USD 80,000 per tonne in 2022. Domestic soda-ash reserves at USD 300 per tonne underpin price stability, while China Development Bank offers preferential loans that shave project financing costs. By anchoring multi-gigawatt-hour demand, policymakers have shortened commercial ramp-up timelines by close to two years.

European EV OEMs Switching Low-Range Models to Sodium-Ion to Meet EU Battery Regulation

The European Union's Battery Regulation requires carbon-footprint declarations and recycled-content thresholds from 2027, nudging OEMs toward cobalt- and nickel-free sodium recipes.[2]European Commission, "Regulation (EU) 2023/1542 on Batteries," europa.eu Stellantis and Volkswagen are piloting sodium packs for A- and B-segment cars, citing a 35% to 40% drop in embedded carbon compared with NMC811 cells. Northvolt built a 160 Wh/kg prototype with Altris and is adapting prismatic formats at Skellefteå for Volvo's next city car line. Simpler supply chains reduce digital-passport compliance costs, and OEMs view sodium chemistry as a hedge should lithium exports tighten in Chile or Australia.

LFP Cathode Cost Inflation Narrows Pack-Level Cost Gap Below USD 70/kWh

Lithium iron phosphate prices rose from USD 12/kg in early 2024 to USD 18/kg by mid-2025 amid mining limits in Sichuan, slashing LFP's cost advantage. CATL's 2025 Naxtra cell reached a bill-of-materials of USD 55 per kWh at pack level, roughly 20% below comparable LFP systems once leaner thermal management is counted. Utilities in Spain and California model parity with LFP at four-hour durations, a sweet spot for solar load-shifting. Lower voltage also permits lighter busbars, trimming pack weight and balance-of-plant costs.

Prussian-Blue Breakthrough Enables 15-Minute Charge for India Two-Wheelers

A 2024 study at Jawaharlal Nehru Centre showed Prussian-blue cathodes holding 15-minute charge cycles across 3,000 cycles. Altris commercialized a Prussian-white variant in 2025, supplying Indian assemblers serving the 12 million-unit annual electric-rickshaw market.[3]Altris AB, "Prussian-White Commercialization Announcement," altris.se Fast recharge dovetails with India's battery-swapping model, cutting spare-pack requirements by 40% per station. Government production incentives worth USD 2.4 billion list sodium-ion as eligible, accelerating joint ventures between local OEMs and Chinese cell suppliers.

Restraints Impact Analysis*

Restraint | (~) % Impact on CAGR Forecast | Geographic Relevance | Impact Timeline |

30% energy-density penalty vs. LFP in long-range EVs	-2.5%	North America, Europe premium EVs	Medium term (2-4 years)
Absence of standardized BMS protocols adds integration cost	-1.8%	Global	Short term (≤ 2 years)
Nascent recycling ecosystem complicates EU battery passport	-1.2%	Europe	Medium term (2-4 years)
Metallic-sodium deposition risk above 3.7 V	-0.8%	Global	Long term (≥ 4 years)

Source: Mordor Intelligence |
-30% Energy-Density Penalty vs. LFP in Long-Range EVs

Sodium cells reach 140–160 Wh/kg, roughly 30% short of LFP’s 180–200 Wh/kg, forcing heavier packs and limiting the chemistry to city cars, vans, and stationary roles. Tesla targets 300 Wh/kg by 2027 for its 4680 cell, highlighting the gulf that sodium must close. Heavier racks inflate cabling and fire-suppression needs by about 15% in grid storage. European automakers confine sodium packs to A-segment models that formed just 12% of 2025 EV sales. Antimony-doped anodes show promise in labs but remain cost-prohibitive, keeping density ceilings static through 2031.

Absence of Standardized BMS Protocols Raises Integration Costs

IEC 62619 still lacks sodium-ion guidelines, forcing bespoke safety tests for every pack.[4]International Electrotechnical Commission, “IEC 62619 Battery Safety Standard,” [iec.ch](https://www.iec.ch) Custom firmware adds USD 0.5–1 million in non-recurring engineering per product line, deterring Tier-2 assemblers. Sodium’s 3.1 V nominal voltage demands re-worked bus architecture in vehicles, extending platform integration by up to 18 months. Natron’s attempt to launch a cross-chemistry BMS ended with its 2025 pause, removing a key standardization advocate. Until SAE issues a J2464 variant, redundant validation will persist.

*Our forecasts treat driver/restraint impacts as directional, not additive. The impact forecasts reflect baseline growth, mix effects, and variable interactions.

Segment AnalysisBy Form Factor: Pouch Gains Ground in Automotive

Cylindrical formats held 48.5% of the sodium-ion battery market size in 2025, benefiting from repurposed lithium winding lines. Pouch cells are set for a 22.0% CAGR, propelled by automakers chasing volumetric efficiency under vehicle floors. Prismatic modules, roughly 30%, dominate megawatt-scale projects where standardized 280 Ah blocks simplify racking. CATL’s Naxtra range offers both 18650 cylinders for home storage and pouches for scooters, proving chemistry flexibility.

Stacked pouch cells let designers exploit irregular chassis spaces in A-segment cars, a decisive edge where every cubic centimeter counts. Prismatic dominance in China’s grid market owes to hot-swappable modules that slash field servicing downtime. Cylindrical cost leadership is fading as automated stacking lines mature; by 2031, market preference may converge on pouch and prismatic as automotive volume overtakes stationary installations.

Image © Mordor Intelligence. Reuse requires attribution under CC BY 4.0. By Application: Stationary Storage Anchors Revenue, Transportation Surges

Stationary energy storage accounted for 71.8% of the sodium-ion battery market share in 2025, anchored by Chinese grid tenders and Spanish solar-plus-storage co

tracts. Transportation, though smaller at 18%, is projected to grow 19.8% annually, narrowing the gap by 2031. CATL's TENER Stack, a 9 MWh container launched in 2025, validated utility economics with 92% round-trip efficiency across a 15-year warranty. Two-wheeler electrification in India, backed by USD 2.4 billion in incentives, will bring sodium packs into 12 million vehicles per year by 2030. Consumer electronics remain niche because 350 Wh/L volumetric density trails lithium-ion's 450 Wh/L, thickening handset chassis. Industrial backup power claims 7% of revenue, leveraging Natron cells certified for 50,000 cycles before the company's 2025 pause. Marine auxiliaries in Norway and South Korea form a 3% niche, trading weight for inherent fire safety in port equipment.

Transportation's climb will recalibrate the sodium-ion battery market size distribution by 2031 as battery-swapping ecosystems monetize 15-minute recharge capability. Utilities are already stretching power-purchase agreements to 15 years to smooth higher capital outlays. Residential demand, concentrated in Scandinavia, is rising due to fire-safety and cold-weather performance but lacks broad installer networks. Over time, the segment mix will tilt toward transportation and home storage, trimming utilities' share below 45%, yet retaining a cost-sensitive base that stabilizes manufacturing plant utilization.

By End-User Industry: Automotive Outpaces Utility Growth

Utility buyers commanded 55.2% of the sodium-ion battery market share in 2025, fueled by multi-gigawatt-hour Chinese and Spanish procurement. Automotive users, 22% in 2025, will grow at 23.3% CAGR on the back of two-wheeler fleets in India and European city cars. Residential users held a 12% share, largely in cold Nordic regions, subsidizing fire-safe chemistries. Commercial and industrial backup applications made up 11%, favoring cycle life over energy density.

Automotive demand will draw parity with utilities around 2031 as Prussian-blue cathodes mature, while residential uptake depends on turnkey products from established inverter brands. Utilities are stretching contract terms, improving project IRRs, and absorbing the 15% upfront premium over LFP. Commercial buyers prize 50,000-cycle cells for peak shaving, a segment that may revive if Natron or successors restart high-cycle factories. The end-user mosaic will remain dynamic, but automotive and residential slices will expand fastest.

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Geography Analysis

Asia-Pacific controlled 45.6% of the sodium-ion battery market share in 2025 and is forecast to rise at a 19.5% CAGR to 2031. China's gigawatt-hour factories and India's two-wheeler boom underpin demand. HiNa's 100 MWh project in Nanning showcased grid-scale viability, and CATL sealed multi-year offtake deals with Jiangsu and Shandong grids that together host 18% of China's renewables. India's USD 2.4 billion incentive scheme accelerates partnerships between domestic OEMs and Faradion's Jamnagar plant, scheduled for 2026 start-up. Japan and South Korea explore sodium for marine auxiliaries, while Thailand and Indonesia emerge as assembly hubs for regional scooter markets.

Europe captured around 28% share in 2025, led by Nordic cold-climate adoption and residential-storage subsidies. Sweden's SEK 80 million grant to Altris and Norway's NOK 5,000 per kWh rebate highlight policy pull. Germany and France are piloting sodium for solar firming ahead of 2027 carbon footprint rules. Northvolt works on prismatic cells for Volvo's city cars, adding domestic capacity. Southern markets like Spain and Italy depend on imports, limiting early penetration.

North America held a roughly 18% share in 2025, concentrated in utility storage and data-center backup. Peak Energy's 2 GWh Colorado plant aims for 2027 output

with Southern Company and Duke Energy offtake. Natron's North Carolina gigafactory plan stalled after its 2025 shutdown, leaving supply gaps. Eligibility for Inflation Reduction Act credits remains pending Department of Energy guidance. Canada pilots mini-grids in Alberta's oil sands, and Mexico assesses rural electrification schemes. South America and the Middle East & Africa combined for under 9%, with Brazil and South Africa testing mini-grids where lithium logistics prove costly.

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Regulatory Landscape

Regulatory requirements for sodium-ion batteries are tightening around traceability, labeling, and transport safety as deployments move from pilots to commercial shipments. In the European Union, Regulation (EU) 2023/1542 introduces phased obligations such as battery labeling and, from 2027, carbon-footprint declarations and recycled-content thresholds, which is steering OEM and ESS buyers toward chemistries with more straightforward compliance pathways. A corrigendum, Regulation (EU) 2026/90285, was published on April 10, 2026, updating marking requirements and reinforcing the need for compliant labeling and documentation for batteries placed on the EU market.

On transport and standards, February 2026 brought a US DOT PHMSA Notice of Proposed Rulemaking to harmonize hazardous materials regulations with international standards, shaping how sodium-ion cells and packs are classified and shipped. IATA updated its battery guidance in January 2026, supporting more consistent air-transport handling across carriers, while China advanced domestic standardization with GB/T 46735.3-2025 becoming effective on May 1, 2026 (performance requirements and tests for sodium-based batteries). These changes reduce cross-border friction for qualified products but increase near-term compliance workload for manufacturers, who must align test evidence, markings, and shipping documentation across regions.

Competitive Landscape

Moderate concentration characterizes the sodium-ion battery market: CATL, BYD, and HiNa Battery controlled an estimated 55–60% of global capacity in 2025. Incumbent lithium players repurpose existing lines, slashing capex per GWh and squeezing standalone startups. CATL's USD 500 million supplier-financing program secures sodium-carbonate and hard-carbon inputs, imitating its lithium strategy.

Faradion, purchased by Reliance in 2024, is building a Jamnagar gigafactory that integrates electrode coatings with petrochemical feedstocks, targeting a 10–12% bill-of-materials cut. Peak Energy de-risked its Colorado plant by locking 500 MWh of utility offtakes before groundbreaking. Altris and Polarium target white-space in cold-climate home storage, leveraging Prussian-white cathodes that tolerate -30°C without heaters.

Technology differentiation centers on cathode innovation: Prussian-blue offers fast charge and long life, yet scaling synthesis remains a hurdle. Altris patented a low-temperature route that trims powder costs 30%, potentially unlocking mass scooter markets. Competitive pressure is set to climb after 2028 if LG Energy Solution and Samsung SDI execute sodium hedging strategies. Smaller firms may consolidate, license IP, or exit under margin compression.

Sodium-ion Battery Industry Leaders* Faradion Limited

* HiNa Battery Technology Co. Ltd.

* Contemporary Amperex Technology Co. Limited

* Altris AB

* Natron Energy Inc.

* *Disclaimer: Major Players sorted in no particular order

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Market Opportunities and Future Outlook

A near-term opportunity is concentrated in utility-scale energy storage, where buyers are already contracting multi-year volumes, creating a clearer demand signal for manufacturing scale-up and supply-chain investment. CATL and HyperStrong signed a three-year agreement in April 2026 covering 60 GWh of sodium-ion batteries for energy storage projects, showing bankable procurement that can support dedicated lines, upstream hard-carbon sourcing, and standardized containerized solutions. In the United States, Peak Energy selected Sacramento, California for a USD 71 million, 4 GWh factory for grid-scale sodium-ion storage (announced July 2026), pointing to localized supply for utilities and data-center backup applications where safety and cycle life matter.

A second opportunity is compliance-driven adoption in Europe and adjacent markets as battery labeling and passport requirements become operational, alongside carbon-footprint reporting approaches 2027 deadlines under Regulation (EU) 2023/1542. Partnerships that localize cathode materials and reduce embedded carbon create practical entry points for European stationary and automotive programs; for example, Altris and Draslovka announced a partnership (January 2026) to scale a European sodium-ion supply chain, including cathode active material, which aligns with EU strategic-autonomy themes while addressing auditability and sourcing transparency. Across these applications, standardized BMS and safety validation remain a gating item because IEC 62619 does not yet include sodium-ion-specific guidance, keeping integration costs high for smaller pack integrators and leaving space for platforms that can simplify qualification and certification workflows.

Recent Industry Developments* July 2026: Alsym Energy signed a 9 GWh sodium-ion battery energy storage system deal with Perth-based consulting firm ERITY to support remote operations in Australia and other markets. The agreement expands the commercial footprint for sodium-ion BESS outside China-led deployments and ties sodium supply to off-grid and industrial use cases where safety and logistics matter.

* April 2026: CATL and Beijing HyperStrong Technology signed a three-year strategic cooperation agreement covering 60 GWh of sodium-ion battery supply for energy storage projects. The scale and multi-year structure strengthens bankability for project developers and accelerates standardization around containerized ESS architectures using sodium-ion cells.

* April 2024: Natron Energy announced it achieved first-ever commercial-scale production of sodium-ion batteries in the United States. This milestone validated domestic manufacturing feasibility for Prussian-blue sodium-ion cells and supported interest in sodium-ion for high-cycle applications such as data centers and grid services.

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Research Methodology Framework and Report ScopeMarket Definition and Coverage

This market is defined as the revenue generated from rechargeable, room-temperature sodium-ion batteries supplied for end uses such as stationary energy storage, transportation electrification, industrial backup, and selected consumer devices, captured across major producing and consuming regions.

Scope exclusions: High-temperature molten-salt sodium-sulfur systems and lab-scale chemistries that are not yet commercially shipped are excluded from this sizing.

Segmentation Overview

- * By Form Factor* Cylindrical
- * Prismatic

- * Pouch
- * By Application* Stationary Energy Storage
- * Transportation
- * Consumer Electronics
- * Industrial Backup Power
- * Marine and Others
- * By End-User Industry* Utility
- * Residential
- * Commercial and Industrial
- * Automotive
- * By Geography* North America* United States
- * Canada
- * Mexico
- * Europe* United Kingdom
- * Germany
- * France
- * Spain
- * Nordic Countries
- * Russia
- * Rest of Europe
- * Asia-Pacific* China
- * India
- * Japan
- * South Korea
- * ASEAN Countries
- * Rest of Asia-Pacific
- * South America* Brazil
- * Argentina
- * Colombia
- * Rest of South America
- * Middle East and Africa* United Arab Emirates
- * Saudi Arabia
- * South Africa
- * Rest of Middle East and Africa

Data Sources, Market Sizing, and Validation

Desk Research

Desk work starts with building a clean fact base on batteries, energy storage, and vehicle electrification, so our assumptions for sodium-ion do not float without support. We refer to public sources such as the International Energy Agency for storage and EV trends, the US Energy Information Administration for power sector context, the US Geological Survey for upstream sodium related materials context, and official trade statistics portals for import and export directionally.

To keep the model grounded in what can actually ship, we also review company annual reports, investor presentations, press releases, and peer-reviewed journal articles that discuss sodium-ion performance tradeoffs and manufacturing readiness. A few paid subscriptions are used in limited ways, mainly to speed up company financial screening, patent lookups, and shipment level trade checks where available. These sources are illustrative only, and many other public references were used during data collection, validation, and clarification.

Primary Interviews and Surveys

Primary conversations are used to pressure-test what the desk work suggests, especially around real deployment timing, pricing, and which applications are moving from pilots to repeat orders. We speak with cell and pack participants, integrators, material ecosystem stakeholders, and downstream buyers across APAC, EMEA, and the Americas, so gaps in public reporting can be filled with realistic adoption and ASP paths.

Distribution of primary research fieldwork respondents

Company type | Respondent position | Region |

Top tier: 28% | CXOs: 16% | APAC: 49% |

Mid tier: 55% | Functional/Unit leaders: 26% | EMEA: 31% |

Smaller Players: 17% | Managers: 58% | Americas: 20% |

Market-Sizing & Forecasting

Sizing is built using a top-down approach where demand pools are reconstructed from application adoption signals and then translated into revenue using practical price and configuration assumptions. For sodium-ion, the model leans on variables such as stationary storage additions and project pipelines, EV and two-wheeler production direction, manufacturing capacity announcements filtered by realistic ramp curves, average energy density and pack sizing ranges by use case, and observed ASP movements as volumes scale.

Those totals are then checked with selective bottom-up approximations, such as sampling supplier shipments, rolling up a limited set of disclosed volumes, and running channel checks on quoted pricing, so the final number is not driven by a single assumption. When player disclosures are incomplete, gaps are handled by applying conservative utilization ranges and by aligning implied shipments with known commissioning timelines. Forecasting is run through scenario analysis supported by a simple multivariate regression overlay, where key drivers like storage installations, electrified vehicle output, and capacity ramps are stressed and then aligned to what experts consider feasible.

Data Validation & Update Cycle

Validation is done through a repeatable set of checks where outputs are compared against independent signals like capacity commissioning status, project award flow in storage, and price movements seen in recent bids and announcements. If a variance looks too wide, we revisit the driver that caused it and then re-contact sources to confirm whether the shift is real or a timing mismatch.

Before sign-off, the model and key assumptions go through multi-step analyst reviews so calculation errors and inconsistent definitions are caught early. The report is refreshed annually, and interim updates are made when material events occur, such as major capacity starts, delays, or meaningful policy changes. Right before delivery, a final pass is completed so clients receive the latest updated view rather than an older snapshot.

Mordor Intelligence's Sodium Ion Battery Market Size Versus Other Published Estimates

Published market sizes for sodium-ion batteries can look far apart because different studies do not count the same thing, even when the titles look similar. Differences typically come from what is included in the battery definition, whether figures are tied to shipped revenue or to announced capacity, and how fast pricing is assumed to fall as volumes rise.

In this study, the main spread is usually explained by whether high-temperature sodium-sulfur systems are mixed into the same bucket, whether early pilot lines are treated like full production, and whether pack value is counted in a consistent

ent way across stationary storage and transportation. Currency timing and the year used as the anchor can also shift the headline number, especially when spot pricing is moving and new capacity is being commissioned.

Benchmark comparison

Source | Market Size | Gaps in Research Methodology |
Mordor Intelligence | USD 0.54 B (2026) | |
Industry Publisher A | USD 1.83 B (2025) | Often presented as a broader sodium-based battery opportunity that can include adjacent chemistries and aggressive near-term scale-up assumptions, which can pull forward revenue that is still in pilot-to-early commercial phases. |
Industry Publisher B | USD 0.27 B (2024) | May emphasize early market shipments with narrower capture of applications and limited treatment of pack-level value in stationary projects, which can understate revenue as deployments start scaling. |
The table shows that the biggest gaps come from scope and timing choices rather than simple math mistakes, especially around whether pilots and adjacent sodium chemistries are counted as fully commercial volumes. By keeping the definition tied to room-temperature rechargeable sodium-ion shipments and by rechecking ASP and ramp assumptions with field feedback, the 2026 value stays traceable to real adoption signals, a modeling choice applied by Mordor Intelligence.

Key Questions Answered in the ReportHow large is the sodium-ion battery market in 2026? It reached USD 545.64 million and is projected to expand at a 16.89% CAGR through 2031.

Which segment uses the most sodium-ion batteries today? Stationary energy storage commanded 71.8% revenue in 2025 thanks to Chinese and Spanish grid projects.

What limits sodium-ion adoption in long-range electric cars? A 30% lower energy density versus lithium iron phosphate makes packs heavier, restricting the chemistry to sub-300 km duty cycles.

Why are Nordic countries early adopters of sodium-ion home storage? Cells retain over 80% capacity at -20 °C and reduce fire risk in wooden homes, qualifying for generous subsidies.

Which companies dominate global sodium-ion capacity? CATL, BYD, and HiNa Battery together controlled about 55-60% of worldwide capacity in 2025.

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Sodium-ion Battery Market Report Snapshots* Sodium-ion Battery Companies