The information and statistics set out in this section and other sections of this Document were extracted from the Frost & Sullivan Report, which was commissioned by us, and from various official government publications and other publicly available publications. We engaged Frost & Sullivan to prepare the Frost & Sullivan Report, an independent industry report, in connection with the [REDACTED]. Unless otherwise indicated, the data and statistics presented in this section and elsewhere in this Document have been derived from various official government publications and other publications, and from the industry report prepared by Frost & Sullivan. The information derived from official government sources has not been independently verified by us, the Joint Sponsors, the [REDACTED], [REDACTED], [REDACTED] and [REDACTED], any of the [REDACTED], or any of our or their respective directors, advisers or any other parties involved in the [REDACTED], and no representation is given as to its accuracy.

Against the backdrop of increasing geopolitical uncertainty and the growing importance of energy security and sustainability, the traditional energy system dominated by fossil fuels is gradually transitioning toward a new energy system. Renewable energy sources, particularly wind and solar, are being deployed at scale, indicating that clean energy is increasingly capable of serving as a primary power source. The decarbonization of power generation and the electrification of energy consumption have entered an irreversible phase of acceleration.

Amid this transition, the rapid growth in energy storage demand and the continued expansion of the electric vehicle market are elevating the lithium battery industry from a supporting component of the new energy system to a critical element of energy infrastructure. The ability of battery systems to operate efficiently, reliably and safely has a direct impact on the progress of the global energy transition, positioning the battery industry as an increasingly strategic resource within national energy systems.

OVERVIEW OF THE GLOBAL LITHIUM-ION BATTERY INDUSTRY

Definition and Classification of Lithium-ion Batteries

Lithium-ion batteries are electrochemical energy storage devices that facilitate the interconversion of electrical and chemical energy through the migration of lithium ions between the cathode and anode. Characterised by high energy density, superior charge-discharge efficiency, and robust engineering adaptability, lithium-ion batteries have emerged as the leading energy solution for a wide range of energy storage systems, electric vehicles and emerging sectors.

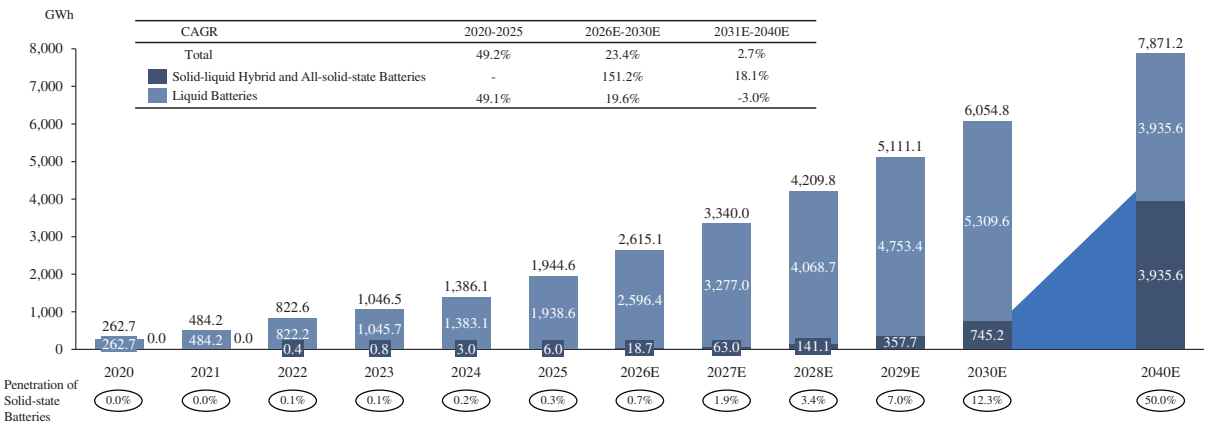
Based on the type of electrolyte that enables ion transfer between the cathode and anode, lithium-ion batteries are generally categorised into liquid batteries, solid-liquid hybrid batteries and all-solid-state batteries. Liquid batteries use a liquid electrolyte as their primary ion conductive medium. Solid-state batteries refer to lithium-ion batteries in which the proportion of liquid electrolyte is reduced to no more than 10.0% of the total cell mass, while the mass share of solid electrolyte in the total electrolyte content reaches at least 10.0%. Solid-liquid hybrid batteries use solid electrolytes to partially replace liquid electrolytes in order to enhance safety, stability and performance. All-solid-state batteries adopt solid electrolytes to fully replace liquid electrolytes as the ion conduction medium, offering potential advantages in terms of thermal stability and energy density.

Global Lithium-ion Battery Market Size

The global shipments of lithium-ion battery market grew from 262.7 GWh in 2020 to 1,944.6 GWh in 2025, representing a CAGR of 49.2%. It is forecast to continue growing at a CAGR of 23.4% during the period from 2026 to 2030, reaching 6,054.8 GWh by 2030.

Since statistics for solid-liquid hybrid and all-solid-state batteries began in 2022, global shipments of these batteries have grown from approximately 0.4 GWh to 6.0 GWh by 2025. Their penetration rate within total lithium-ion battery shipments increased from 0.1% to 0.3%, corresponding to a CAGR of approximately 143.3% between 2022 and 2025, marking their entry into the initial adoption and pilot application stage. Subsequently, shipments of solid-liquid hybrid and all-solid-state batteries are anticipated to accelerate rapidly, reaching 745.2 GWh by 2030, with market penetration rising to around 12.3% as commercialisation progresses and volume production scales up. Over the medium to long term, shipments of solid-liquid hybrid and all-solid-state batteries are further projected to reach 3,935.6 GWh by 2040, corresponding to an estimated penetration rate of 50.0%.

Global Lithium-ion Battery Shipments, by Electrolyte Type, 2020–2030E, 2040E



Source: China Battery Industry Association, Frost & Sullivan

Note: Totals may not sum due to rounding; CAGR is based on unrounded data.

Development Trends in the Lithium-ion Battery Industry

Diversified Applications Drive Battery Performance Upgrades. Against the backdrop of the continued expansion of electrification, driving range has become an essential factor constraining the application scope of new energy vehicles (NEVs) and various emerging mobile applicants. Global sales of new energy passenger vehicles increased from approximately 2.9 million units in 2020 to approximately 20.8 million units in 2025, representing a CAGR of approximately 48.3% between 2020 and 2025. Sales are expected to continue expanding at a CAGR of approximately 15.3% from 2026 to 2030, reaching approximately 42.3 million units by 2030. From Frost & Sullivan, the market size of the global robotics market increased from US$45.5 billion in 2020 to US$91.0 billion in 2025, reflecting a CAGR of 14.8%. It is projected to reach US$197.4 billion by 2030, reflecting a CAGR of 16.1% from 2026. Different application scenarios impose increasingly stringent and diversified requirements on battery performance, among which energy density, safety and system reliability have become key considerations.

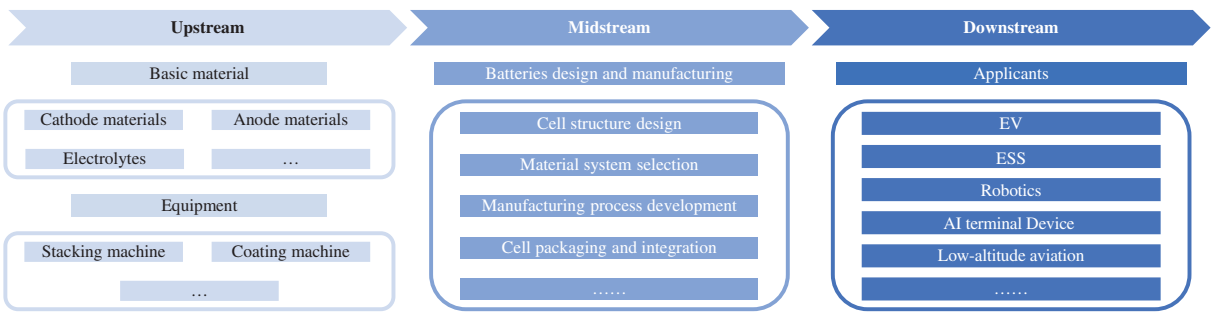
Battery System Evolution Drives Material Changes. Existing liquid lithium-ion battery technology, after years of development, has reached a relatively mature stage in terms of material formulation and battery structural design, and its potential for further improvement in energy density is limited, making it difficult to balance safety and cycle life. By adopting solid electrolytes, solid-state batteries provide greater flexibility in the selection of electrode materials and battery structural design, thereby enhancing their energy storage capacity per unit weight or volume. From a technological development perspective, solid-state batteries offer a new solution to extending driving range, reducing system weight, and addressing the demands of highly mobile application scenarios.

Advances in material systems enhance system stability and safety. Solid-liquid hybrid and all-solid-state batteries are built upon distinct material and structural foundations that inherently enhance safety performance. Upon the substitution of liquid electrolytes with solid electrolytes, the proportion of flammable and volatile components within the battery is significantly reduced, thereby lowering the risks of leakage and combustion from a materials standpoint. Moreover, the internal reaction environment within solid-state battery systems remains relatively stable, and even under high-temperature or abnormal operating conditions, it is less likely to trigger large-scale side reactions or gas formation. From a system-level perspective, solid-state lithium-ion batteries, through changes in their material systems, place greater reliance on the intrinsic stability of the materials themselves to ensure safety. This offers enhanced safety potential and greater scope for engineering optimisation in EV, energy storage and other application scenarios where stringent safety requirements apply.

OVERVIEW OF THE GLOBAL SOLID-LIQUID HYBRID AND ALL-SOLID-STATE BATTERY INDUSTRY

Value Chain of Solid-liquid Hybrid and All-solid-state Batteries

Battery manufacturers constitute the core of R&D and manufacturing for solid-liquid hybrid and all-solid-state batteries, encompassing cell structural design, material system selection, manufacturing process development and packaging integration. The value chain of solid-liquid hybrid and all-solid-state batteries is showed as below:



Source: China Battery Industry Association, Frost & Sullivan

Challenges and Opportunities in the Solid-liquid Hybrid and All-solid-state Battery Industry

Key materials. The ongoing enhancement of solid electrolyte materials is widely regarded as a critical prerequisite for improving the feasibility and performance of solid-liquid hybrid and all-solid-state batteries. R&D activities primarily focus on key issues such as solid-solid interfacial contact, ionic transport efficiency and the compatibility of solid electrolytes with cathode and anode materials. On the one hand, solid electrolytes with greater mechanical flexibility help improve interfacial contact among solid components within the battery, reduce interfacial voids and enhance overall reaction efficiency. Meanwhile, as the electrolyte system transitions from liquid to solid, the cathode and anode material systems are correspondingly being adjusted and optimized at a structural level. The industry is actively advancing high-capacity material pathways, including lithium metal and silicon-based anodes, as well as high-nickel layered and lithium-rich manganese-based cathodes, with a view to unlocking the energy density potential of solid-state batteries.

Key processes. Solid-liquid hybrid and all-solid-state batteries differ significantly from conventional liquid batteries in terms of manufacturing processes, which imposes stringent requirements on battery manufacturers to develop and adopt new process technologies. As solid-liquid hybrid and all-solid-state batteries have progressed from technical validation to engineering implementation and mass

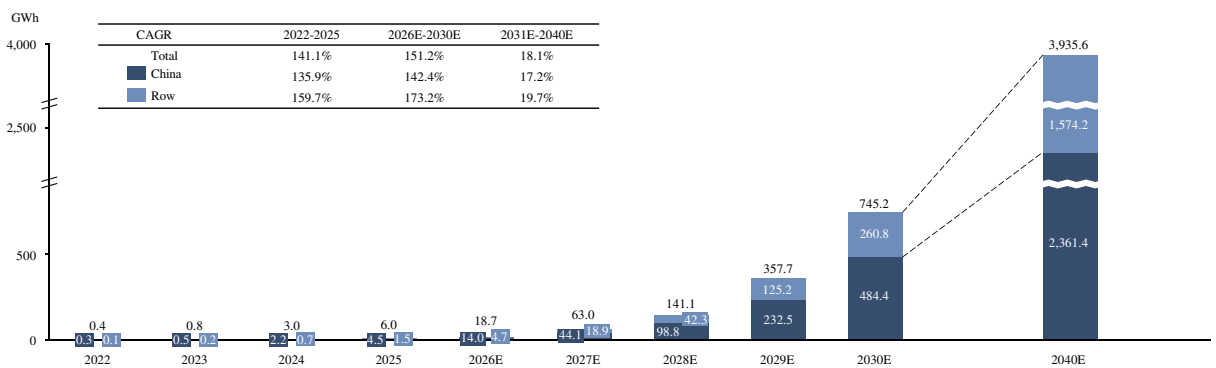
production readiness, process optimisation has been centred on enhancing manufacturing stability, structural consistency and production scalability. Some manufacturers are exploring transfer-based processes, where electrode or solid electrolyte layers are first fabricated on carrier substrates and subsequently transferred onto the battery structure. Such approaches can improve solid-solid interface contact and structural density, helping to mitigate interface resistance and manufacturing consistency challenges, and thus providing an important pathway for the scalable production of solid-liquid hybrid and all-solid-state batteries.

Key equipment. Given that solid-liquid hybrid and all-solid-state batteries differ significantly from liquid batteries in terms of material form, structural design and manufacturing processes, current equipment systems remain in a stage of continuous iteration. Key areas of industry focus include continuous-forming equipment for solid electrolytes, integrated line equipment capable of operation with upstream and downstream processes, and equipment adapted for solvent-free processes, such as powder mixing, kneading, automated transport and direct electrode-forming equipment. By combining close collaboration with equipment manufacturers and its own in-house engineering and process development capabilities, the manufacturers should ensure that they are able to tailor manufacturing equipment to the unique process characteristics of solid-liquid hybrid and all-solid-state batteries, thereby enhancing production efficiency, consistency and overall system performance.

Global Solid-liquid Hybrid and All-solid-state Batteries Market Size

Global shipments of solid-liquid hybrid batteries and all-solid-state batteries increased from 0.4 GWh in 2022 to 6.0 GWh in 2025, with shipments in the China market rising from 0.3 GWh to 4.5 GWh, maintaining a high proportion. With overseas markets gradually ramping up, global shipments of solid-liquid hybrid batteries and all-solid-state batteries are projected to reach 745.2 GWh by 2030, with a CAGR of 151.2% from 2026 to 2030.

Global Solid-liquid Hybrid and All-solid-state Batteries Shipments, by Region, 2022-2030E, 2040E



Source: World Bank, National Bureau of Statistics of China, Frost & Sullivan

Note: Totals may not sum due to rounding; CAGR is based on unrounded data.

Development Trends in the Solid-liquid Hybrid and All-solid-state Battery Industry

Accelerated mass production pathway. In terms of industrial advancement, solid-liquid hybrid and all-solid-state battery technologies are advancing from laboratory R&D to engineering validation and preparation for industrialisation. In recent years, key participants across the value chain have successively deployed pilot and demonstration production lines to verify the feasibility of material systems, manufacturing processes and equipment compatibility. Building on the continuous operation of

pilot lines and gradual stabilisation of process parameters, the pathway towards mass production of solid-liquid hybrid and all-solid-state batteries has become increasingly clear. The feasibility of mass production continues to improve, with industry development transitioning from an R&D-driven to an engineering- and manufacturing-driven model.

Systematic supply chain development driving cost optimisation. In terms of cost evolution, cost reductions for solid-state batteries do not rely on a single material or process breakthrough, but rather depend on the coordinated optimisation of material systems and the enhanced scale of supporting capabilities. As solid electrolytes, cathode and anode materials and related auxiliary materials gradually form relatively stable technical systems and achieve scaled production on the supply side, there is room for a systemic reduction in unit material costs. Meanwhile, the maturation of manufacturing processes and the scale-up of production lines will facilitate improved production efficiency and dilute fixed investment costs, thereby driving the continuous optimisation of the overall solid-liquid hybrid and all-solid-state battery cost structure and creating conditions for subsequent scaled application.

Competitive Landscape of Global Solid-liquid Hybrid and All-solid-state Battery Suppliers

Specialised technology firms possessing core technical expertise and engineering capabilities have taken the lead in strategic deployment and implementation. Against this backdrop, leveraging our long-term technical expertise and capabilities in advancing industrialisation within the solid-liquid hybrid and all-solid-state battery field, we have established a leading market position at this stage. In terms of shipments in 2025, our market share in the global solid-liquid hybrid battery and all-solid-state battery market is approximately 33.6%, and approximately 44.8% in the China market, ranking first in the industry.

Global Solid-liquid Hybrid and All-solid-state Battery Suppliers Ranking in 2025, by Shipments

Rank	Company	Shipments (GWh)	Market Share
1	**The Company**	**2.0**	**33.6%**
2	Company A	1.4	23.5%
3	Company B	0.3	5.0%
4	Company C	0.3	4.2%
5	Company D	0.2	3.4%
	Others	1.8	30.3%
	Total	**6.0**	**100.0%**

Source: Annual Reports, Frost & Sullivan

Note:

Totals may not sum due to rounding; Market share is based on unrounded data.

Company A was established in 2016 and is a privately held company headquartered in Beijing, China. Its main products include solid-liquid hybrid and all-solid-state lithium batteries, battery cells, and solid electrolyte materials.

Company B was established in 2011 and is a company listed on both the Shenzhen Stock Exchange and the Hong Kong Stock Exchange, with its headquarters located in Fujian, China. Its main products include EV batteries, battery systems, and ESS batteries.

Company C was established in 2000 and is listed on both the Shenzhen Stock Exchange and the Hong Kong Stock Exchange. The company is headquartered in Jiangxi, China. Its main products include lithium compounds, EV batteries, and ESS batteries.

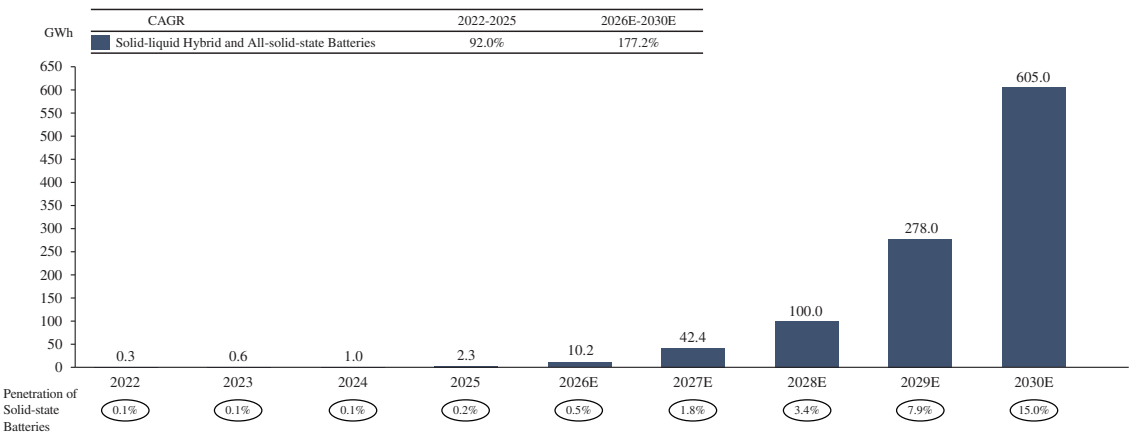
Company D was established in 2018 and is a privately held company headquartered in Chongqing, China. Its main products include solid-liquid hybrid batteries, battery cells, and solid electrolyte materials.

OVERVIEW OF THE GLOBAL SOLID-LIQUID HYBRID AND ALL-SOLID-STATE EV BATTERY MARKET

Global Solid-liquid Hybrid and All-solid-state EV Batteries Market Size

The global shipments of solid-liquid hybrid and all-solid-state EV batteries expanded from 0.3 GWh in 2022 to 2.3 GWh in 2025, representing a CAGR of approximately 92.0% between 2022 and 2025. It is forecast to accelerate rapidly between 2026 and 2030 at a CAGR of approximately 177.2%, reaching approximately 605.0 GWh by 2030. By 2030, the penetration rate of solid-liquid hybrid and all-solid-state batteries within the overall EV battery market is projected to reach approximately 15.0%. The application of solid-liquid hybrid and all-solid-state batteries is evolving from the initial verification stage towards scale-up introduction in the EV battery sector.

Global Solid-liquid Hybrid and All-solid-state EV Batteries Shipments, 2022-2030E



Source: OICA, CAAM, Frost & Sullivan

Note: Totals may not sum due to rounding; CAGR is based on unrounded data.

Development Trends in the Solid-liquid Hybrid and All-solid-state EV Battery Industry

Battery performance evolution accelerates vehicle electrification. With the continuous advancement of solid-liquid hybrid and all-solid-state battery technology, the performance boundaries of EV batteries in terms of energy density and safety have been further expanded. This helps alleviate the range limitations of EVs compared with internal combustion engine (ICE) vehicles and broadens the application scenarios for electrified vehicle models. Building on this foundation, EVs, with highly electronic powertrains at their core, possess superior technical architectures for intelligence and connectivity, making them better suited as platforms for intelligent driving and vehicle-to-everything (V2X) technologies. The synergistic advancement of enhanced battery performance and vehicle intelligence is accelerating the replacement of traditional ICE vehicles across a wider range of market segments.

EV demand drives battery performance iteration. In the commercial vehicle sector, high usage intensity and long operating distances place stringent requirements on the range, safety and reliability of powertrains, factors which have historically constrained the electrification process. As advances in solid-state battery technology continue to improve energy density and system stability, the suitability of

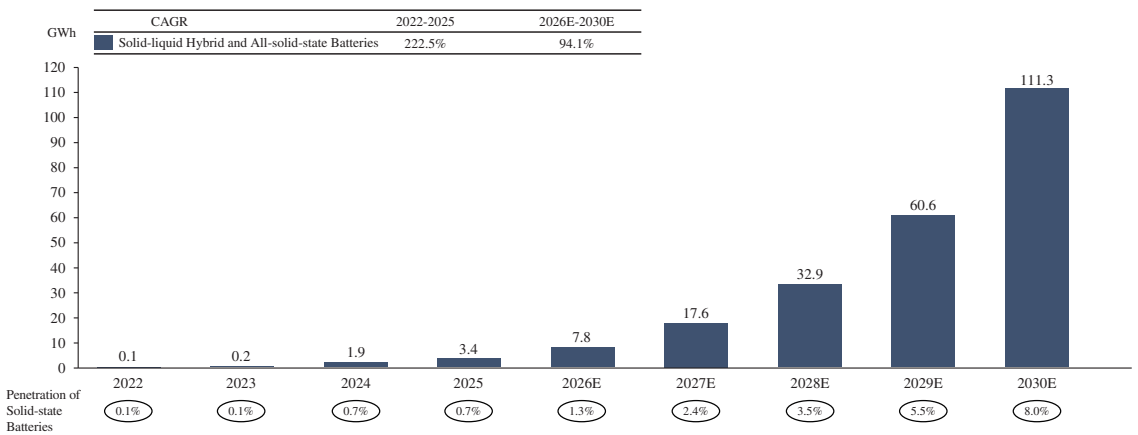
electric commercial vehicles in terms of driving range, payload efficiency and operational safety is increasing, enabling coverage of more medium-to-long-haul and high-load application scenarios. Furthermore, the expansion of battery performance boundaries contributes to enhanced lifecycle cost-efficiency for electric commercial vehicles, offering critical technological support for further increases in the sector's electrification penetration rate.

GLOBAL MARKET OVERVIEW OF SOLID-LIQUID HYBRID AND ALL-SOLID-STATE BATTERIES FOR ESS

Global ESS Market Size for Solid-liquid Hybrid and All-solid-state Batteries

The global shipments of solid-liquid hybrid and all-solid-state batteries for ESS increased from 0.1 GWh in 2022 to 3.4 GWh in 2025, representing a CAGR of approximately 222.5% during this period. Among energy storage applications, residential energy storage places particularly high demands on safety, energy density and environmental adaptability. Demand growth in this area has facilitated the early adoption of solid-liquid hybrid battery and all-solid-state battery technologies in the energy storage sector. From 2026 to 2030, the market is forecast to expand continuously at a CAGR of approximately 94.1%, reaching approximately 111.3 GWh by 2030. By 2030, the penetration rate of solid-liquid hybrid and all-solid-state batteries within the overall ESS battery market is projected to reach approximately 8.0%.

Global Shipments of Solid-liquid Hybrid and All-solid-state Batteries Used in ESS, 2022-2030E



Source: China Battery Industry Association, Frost & Sullivan

Note: Totals may not sum due to rounding; CAGR is based on unrounded data.

Development Trends of Solid-liquid Hybrid and All-solid-state Batteries in ESS Applications

The development of new-type ESS is propelling the evolution of high-performance electrochemical energy storage technologies. Solid-liquid hybrid batteries and all-solid-state batteries are increasingly positioned as key technological options under the development of new-type energy storage systems, which are driven by the rising penetration of renewable energy and higher requirements for flexibility, efficiency and long-term stability. In this context, by adopting solid-state electrolyte systems, these batteries offer the potential to reduce internal resistance, improve energy efficiency and enable more flexible system design. In addition, their calendar life is generally expected to exceed that of conventional liquid batteries, making them well-suited for long-duration and high-reliability energy storage applications.

Rising demand for safety and environmental adaptability is driving the transition toward solid-state batteries. As ESS expand towards large-scale and multi-scenario applications, their operational environments and working conditions are becoming increasingly complex, posing higher requirements for the safety and environmental adaptability of battery systems. Energy storage stations typically need to maintain stable performance under high and low temperatures, extended operating periods and frequent charge-discharge cycles, creating constraints on battery material systems and structural design. Supported by superior performance under extreme operating conditions, solid-liquid hybrid and all-solid-state batteries demonstrate stronger application adaptability and are expected to expand into a broader range of high-value application segments.

GLOBAL MARKET OVERVIEW OF SOLID-LIQUID HYBRID AND ALL-SOLID-STATE BATTERIES IN EMERGING INDUSTRIES

Global Market Size of Solid-liquid Hybrid and All-solid-state Batteries in Emerging Sectors

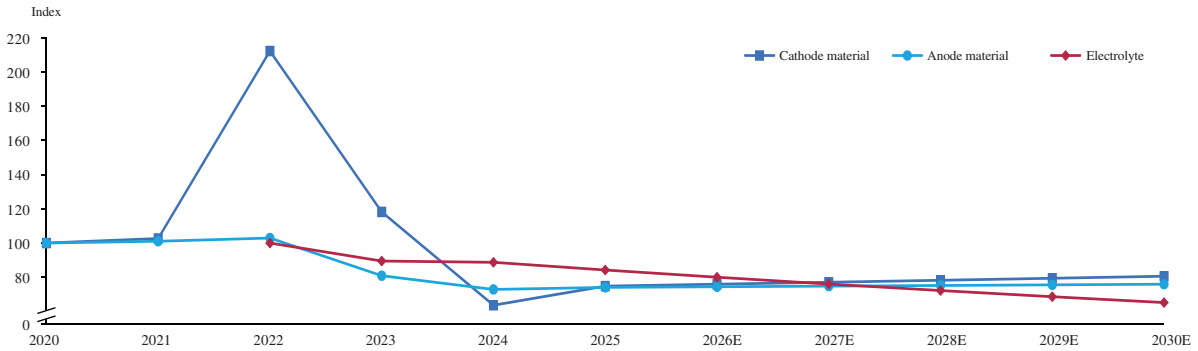
Emerging industries include applications such as embodied intelligence, AI terminal devices, low-altitude aviation, and electric vessels. The market for solid-liquid hybrid and all-solid-state batteries for emerging industries primarily refers to application areas that rely on independent power sources and exhibit high rates of energy consumption. Operations in these sectors typically take place independently of fixed power grids and entail sustained energy use within strict volume and weight constraints, thereby imposing higher requirements on the energy density and weight reduction capabilities of the power supply system.

The global shipments of solid-liquid hybrid and all-solid-state batteries for emerging industries was about 0.3 GWh in 2025, and which is projected to increase rapidly at a CAGR of approximately 160.4% between 2026 and 2030, reaching approximately 28.9 GWh by 2030. This expansion is primarily driven by sustained demand from, such as embodied AI applications and AI terminal devices, rising demand for lightweight, high-energy-density independent power sources. In these emerging applications, the sustained high-load operation of computing, sensing and communication modules imposes elevated requirements on both the energy density and weight efficiency of power systems.

KEY MATERIAL ANALYSIS OF SOLID-LIQUID HYBRID AND ALL-SOLID-STATE BATTERIES

The cost structure of solid-liquid hybrid and all-solid-state batteries, is primarily composed of cathode materials, anode materials and electrolyte systems, together with current collectors and manufacturing costs. In terms of price trends, key battery materials have experienced cyclical fluctuations before gradually stabilizing in recent years. Around 2022, battery material prices generally rose significantly due to supply-demand imbalances in upstream resources, with cathode materials particularly affected by fluctuations in lithium and nickel prices. As resource supply expanded and industry capacity increased, prices gradually returned to relatively stable levels since 2023. In comparison, anode material prices have shown relatively limited fluctuations and remain broadly stable as manufacturing scale and process efficiency improve. The cost evolution of electrolytes is more strongly driven by technological progress. As the commercialization of solid-state batteries advances, solid electrolytes have gradually entered pilot-scale and early mass production stages. Improvements in production processes, equipment efficiency and material portfolios are helping to reduce unit costs. With further scale expansion and supply chain maturation, electrolyte costs are expected to decline further, contributing to the overall cost optimization of solid-liquid hybrid and all-solid-state batteries.

Solid-liquid Hybrid and All-solid-state Batteries Cost Price Index Trend, 2020-2030E (2020=100)



Source:, WIND, Frost & Sullivan

BARRIERS TO ENTRY

Technology and R&D Barriers. solid-liquid hybrid and all-solid-state battery technology involves complex challenges such as changes in electrolyte form, multi-material system integration and interface engineering. It differs fundamentally from traditional liquid lithium-ion batteries in terms of material systems, reaction mechanisms, manufacturing processes and equipment requirements, making existing technologies and production systems difficult to directly adapt to solid-state battery development. Relevant R&D requires prolonged accumulation of material performance capabilities as well as systematic optimisation at the battery system level, encompassing cathode, anode, electrolyte and structural design. For new entrants without extensive technological expertise or systematic R&D capacity, achieving breakthroughs in key performance and reliability metrics will be extremely challenging. Leading players have established comprehensive patent positions in key areas such as material formulations, interface control methods and process pathways, creating significant barriers to entry.

Mass Production Barriers. Solid-liquid hybrid batteries and all-solid-state batteries impose stricter requirements on consistency and stability in process steps such as formation, compaction and interface processing, while being more sensitive to process windows and yield management during mass production. Existing liquid battery production lines are difficult to directly convert into solid-liquid hybrid and all-solid-state battery production lines through technical upgrades. Only companies that continuously invest in process stability, equipment compatibility and scale-up capabilities can progressively overcome the barriers to mass production.

Certification Barriers. In the EV, ESS and emerging industries sectors, products undergo stringent and long-cycle system-level verification and certification processes. Battery replacement often necessitates redesigning the mechanical structure, power management system and safety strategies of the end application, resulting in high switching costs for clients and extended development and iteration cycles.

Supply Chain Barriers. solid-liquid hybrid and all-solid-state batteries impose differentiated requirements on solid electrolytes, cathode and anode materials and related production processes. Upstream materials and equipment remain in a stage of continuous refinement regarding performance consistency, batch stability and collaborative development capabilities. The diversity of material portfolios and process routes characteristic of solid-liquid hybrid and all-solid-state batteries necessitates strong system integration capabilities for supply chain construction.

Capital and Policy Barriers. The R&D and industrialization of solid-liquid hybrid and all-solid-state batteries are characterised by long investment cycles and substantial capital intensity, requiring sustained funding for long-term research, production line construction and strategic capacity deployment. Enterprises possessing strong capital strength and the ability to navigate policy trends are better positioned to support the transition of solid-liquid hybrid and all-solid-state battery technologies from R&D validation to scaled application, thereby establishing significant capital and policy-driven barriers to entry.

SOURCE OF INFORMATION

In connection with the [REDACTED], we have commissioned Frost & Sullivan, an independent market research consultant, to conduct an analysis of the solid-state battery market and to prepare the Frost & Sullivan Report. Frost & Sullivan is an independent global consulting firm founded in New York in 1961, providing services including industry research, market strategy consulting and corporate training. We have paid Frost & Sullivan a fee of RMB600,000, inclusive of taxes, for the market research services provided, which we believe reflects prevailing market rates.

In compiling and preparing the Frost & Sullivan Report, Frost & Sullivan performed: (i) primary research which involved conducting interviews with certain industry participants, competitors, downstream customers and recognised third-party industry associations and (ii) secondary research which involved reviewing company reports, databases of relevant official authorities and Frost & Sullivan's proprietary database established over the past decades. The market forecasts set out in the Frost & Sullivan Report are based on the following key assumptions for the forecast period: (i) the social, economic and political conditions of the global markets discussed will remain stable throughout the forecast period; (ii) government policies relating to the global and Chinese solid-liquid hybrid and all-solid-state battery markets will remain consistent during the forecast period; and (iii) the development of the solid-liquid hybrid battery and all-solid-state battery markets will be driven by the factors described in the Frost & Sullivan Report.

Unless otherwise stated, all data and forecasts presented in this section are derived from the Frost & Sullivan Report. The commissioned report was prepared independently by Frost & Sullivan and was not influenced by the Company or any other interested parties. The Directors confirm that, to the best of their knowledge and after making reasonable enquiries, there has been no material adverse change in market data since the date of the Frost & Sullivan Report that might qualify, contradict or impact the data contained in this section.