

5MWh ESS Battery Stack Price Forecast (Feb 2026 - Feb 2027)

Mar 2026

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01

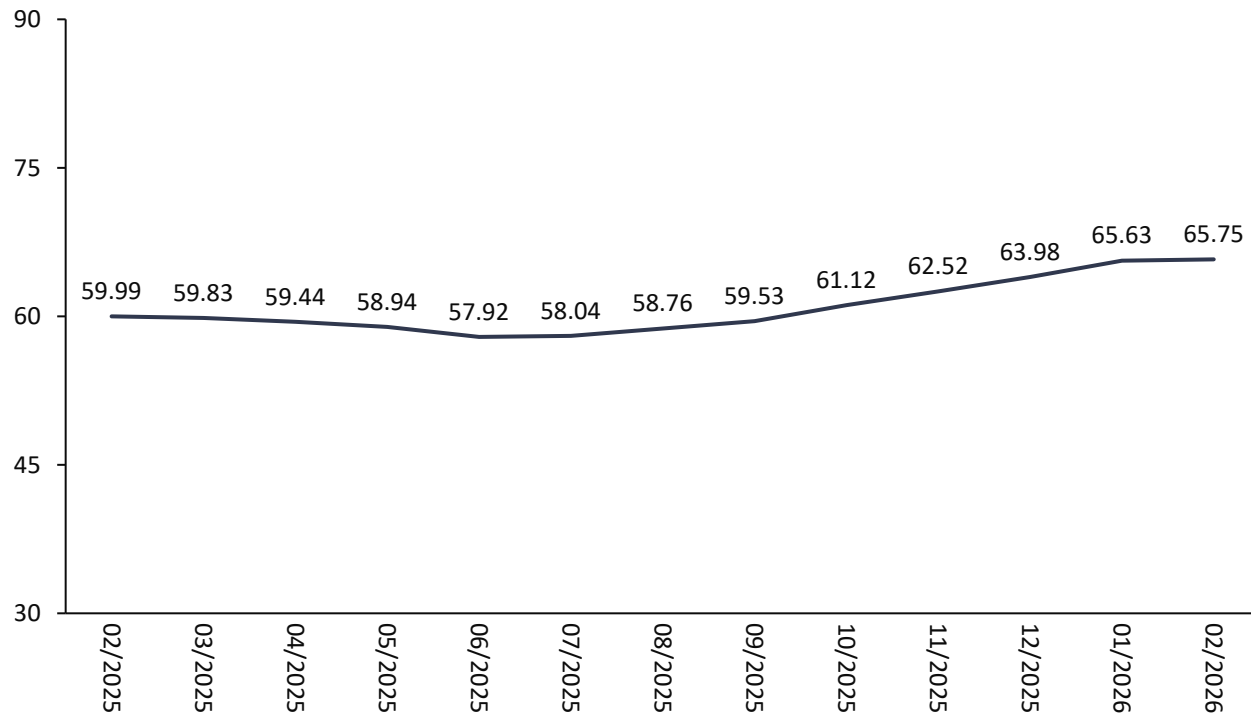
5MWh ESS Battery Stack Price Review and Forecast - Summary

5MWh ESS Battery Stack Price Review

5MWh ESS Battery Stack Price Review (Feb 2025 – Feb 2026)

China 5MWh ESS Battery Stack Price Review and Analysis

Unit: USD/kWh



Down Period

5MWh ESS Battery Stack Price Review (Feb 2026)

Price review:

5MWh ESS battery stack price **remained stable** (Jan-Feb), mainly due to the tight supply and demand landscape offsetting the downward trend in raw material costs, keeping terminal prices firmly supported.

Cost Analysis:

314Ah Cell: BOM cost of 314Ah cell decreased by **6.13%**. The total cost of the main materials for battery cells showed a general downward trend, while other ancillary materials remained steady amidst minor upstream fluctuations.

- Cathode (LiFePO₄) decreased by **2.16%**, due to a **3.53%** decrease in battery-grade lithium carbonate. The mild dip in lithium carbonate prices has directly driven down the cost of cathode materials.
- Artificial graphite **remained stable**, supported by a balanced market equilibrium.
- Electrolyte cost decreased significantly by **11.69%**, representing the largest drop among main materials, driven by reductions in solute and solvent prices.
- Separators price **remained stable**, supported by a balanced market equilibrium.
- Copper foil price **remained stable**, despite a slight 0.52% decrease in global electrolytic copper prices.
- Aluminum foil decreased by **2.52%**, mainly due to a **2.91%** drop in upstream aluminum prices.

Market Sentiment Analysis:

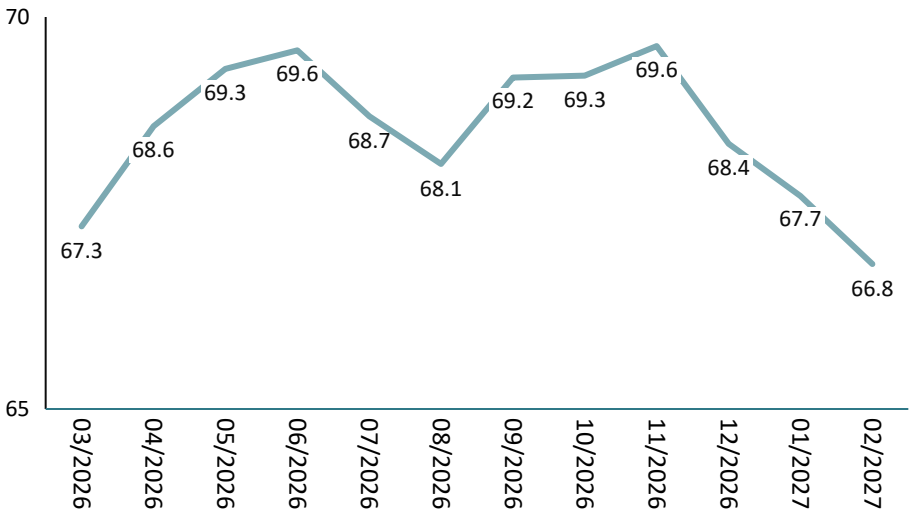
- China: As the year-end installation boom of 2025 concludes, domestic market momentum has shifted toward the centralized delivery of H2 2025 overseas orders. Superimposed with the VAT export rebate policy, enterprises highly dependent on overseas battery cell markets are seeing a strong surge in demand.
- Overseas: Demand maintains strong momentum, consistently driven by three primary catalysts: the surge in FTM energy storage fueled by Europe's electricity marketization, the revitalization of Australia's residential sector via the Cheaper Home Batteries Program, and steady US market growth propelled by data center expansion.

5MWh ESS Battery Stack Price Forecast

5MWh ESS Battery Stack Monthly Price Forecast (Mar 2026 – Feb 2027)

China 5MWh ESS Battery Stack Price Forecast
(Average Price)

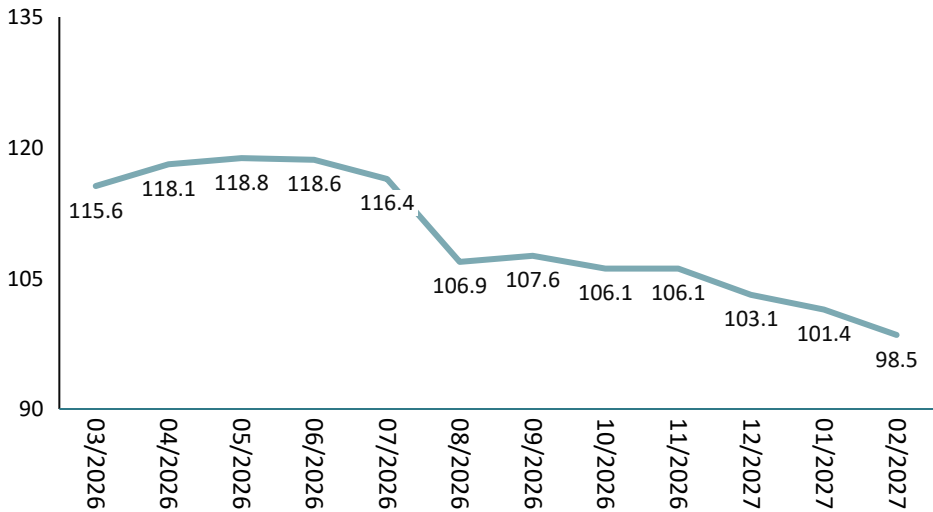
Unit: USD/kWh



Unit: USD/kWh

Ex-China 5MWh ESS Battery Stack Price Forecast
(Average Price)

Unit: USD/kWh



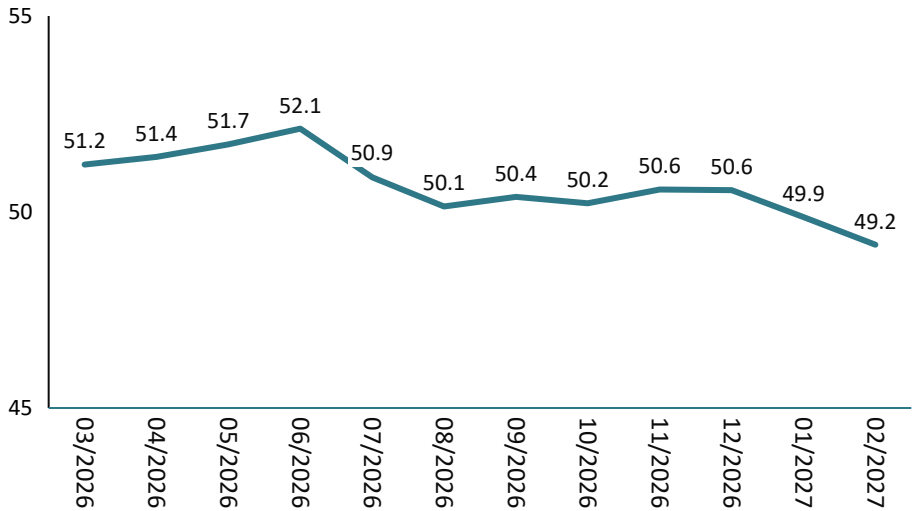
Ex-China 5MWh ESS Battery Stack Price Forecast (Unit: USD/kWh)												
Time	03/2026	04/2026	05/2026	06/2026	07/2026	08/2026	09/2026	10/2026	11/206	12/2026	01/2027	02/2027
High Price	135.0	137.9	138.5	138.2	135.5	124.6	125.2	123.4	123.2	119.7	116.7	114.4
Average Price	115.6	118.1	118.8	118.6	116.4	106.9	107.6	106.1	106.1	103.1	101.4	98.5
Low Price	109.7	112.2	113.0	113.0	111.2	101.9	102.8	101.5	101.6	99.0	96.6	94.9

***Note:** Ex-China 5MWh ESS Battery Stack Price mainly refers to DDP price at from China to the USA customers, which consider 3.4% base tariff, 25% Section 301 tariff, Reciprocal tariffs 10%, Fentanyl tariffs 10% (2026/01/01-2026/02/23) ; 38.5% tariffs (2026/02/24-2026/08)

314Ah ESS Battery Cell Monthly Price Forecast (Mar 2026 – Feb 2027)

China 314Ah ESS Battery Cell Price Forecast
(Average Price)

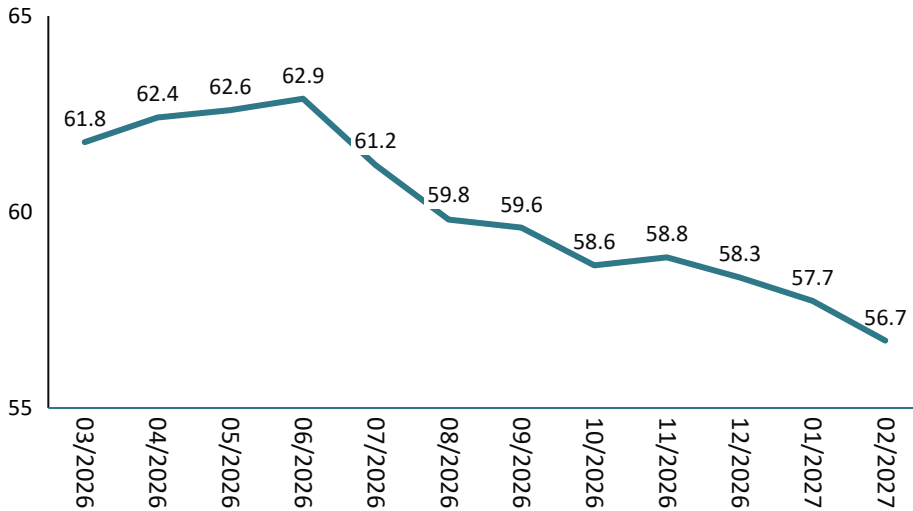
Unit: USD/kWh



Unit: USD/kWh

Ex-China 314Ah ESS Battery Cell Price Forecast
(Average Price)

Unit: USD/kWh

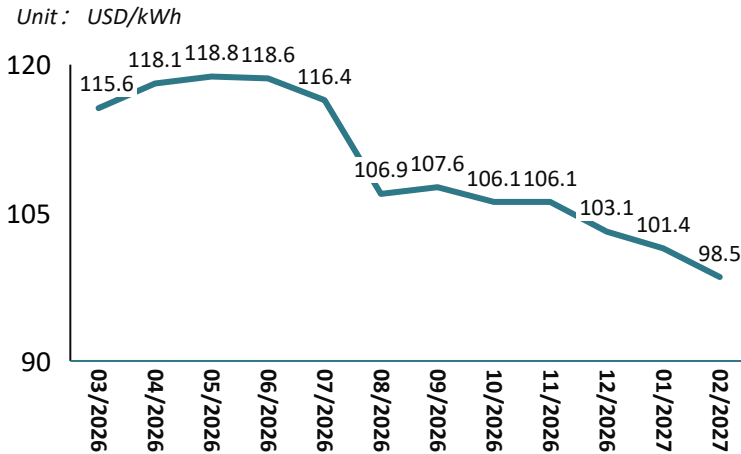


Ex-China 314Ah ESS Battery Cell Price Forecast (Unit: USD/kWh)												
Time	03/2026	04/2026	05/2026	06/2026	07/2026	08/2026	09/2026	10/2026	11/206	12/2026	01/2027	02/2027
High Price	68.86	69.59	69.82	70.17	68.31	66.79	66.60	65.57	65.85	65.32	64.03	63.77
Average Price	61.78	62.41	62.60	62.89	61.19	59.81	59.60	58.64	58.84	58.33	57.73	56.72
Low Price	59.88	60.50	60.69	60.98	59.35	58.01	57.82	56.88	57.06	56.57	55.50	55.22

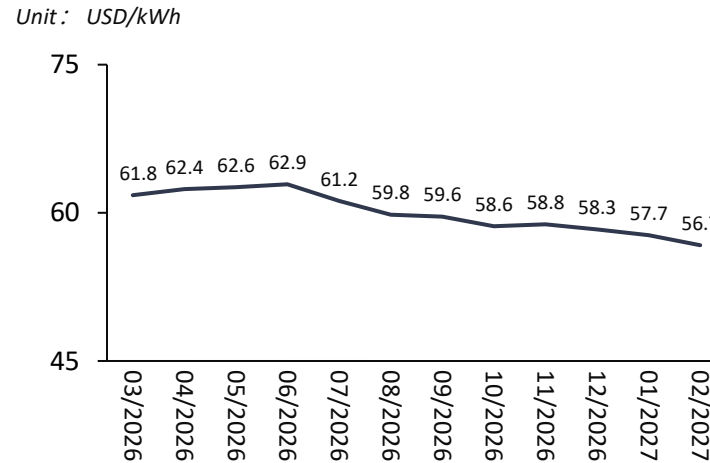
Ex-China 5MWh ESS Battery Stack Value Composition Price Forecast (Mar 2026 – Feb 2027)



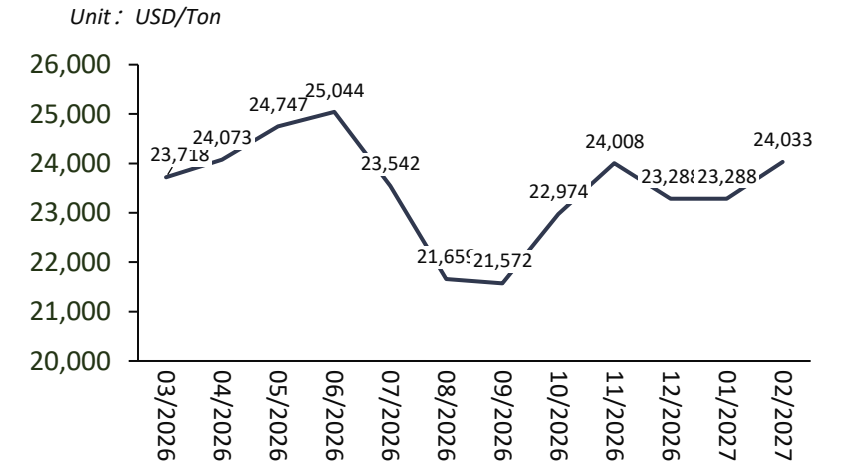
5MWh ESS Battery Stack Price
(Ex-China Monthly Rational Forecast)



314 ESS Battery Cell Price
(Ex-China Monthly Rational Forecast)



Li₂CO₃ Price
(China Monthly Rational Forecast)

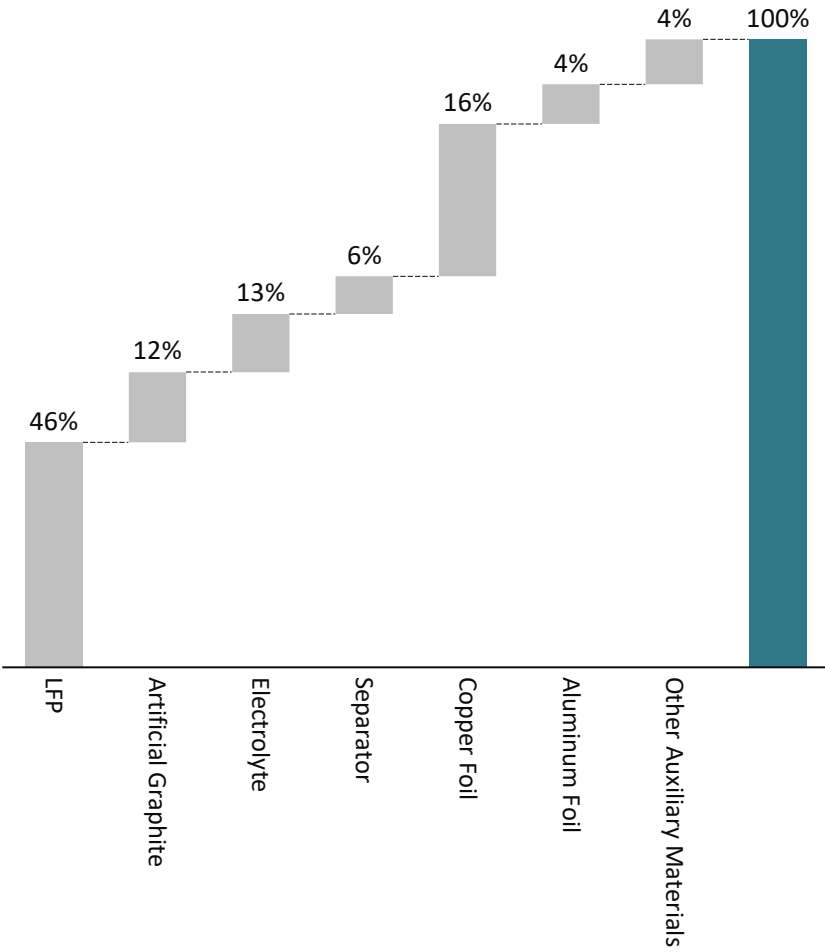


Price Changes in Value Chain



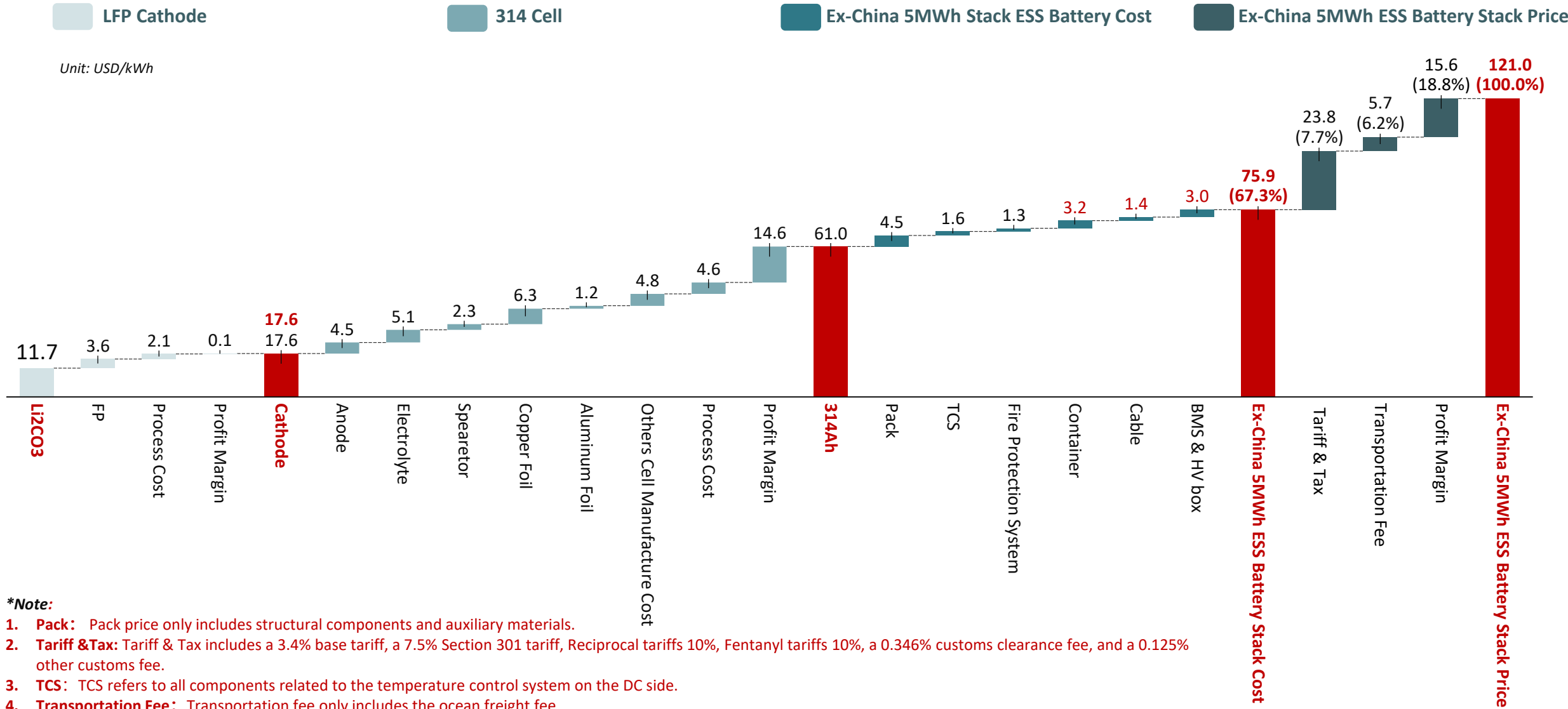
Raw Material Cost of 314Ah Prismatic LFP ESS Battery Cell in Feb 2026

Raw Material Cost Structure of 314Ah Prismatic LFP ESS Battery Cell in Feb 2026							
	Specification	Unit consumption	Unit	Unitprice	Unit	Cost (yuan/Wh)	Raw material cost share (%)
LFP	ESS-grade ≥2.50g/cm ³	2200	mt/Gwh	54,026	yuan/mt	0.120	46%
Artificial graphite	High-end, ESS-grade	1200	mt/Gwh	24,850	yuan/mt	0.030	12%
Electrolyte	Used for LFP battery	1100	mt/Gwh	30,493	yuan/mt	0.034	13%
Separator	Wet-process coated 7μm+2μm	1300	10,000 m ² /Gwh	1.16	yuan/m ²	0.015	6%
Lithium battery copper foil	6μm	350	mt/Gwh	120,569	yuan/mt	0.043	16%
Lithium battery aluminum foil	12μm	255	mt/Gwh	36,385	yuan/mt	0.009	4%
Other auxiliary materials	NMP, SP, CMC, etc.	/		/		0.010	4%
Total raw material cost						0.262	

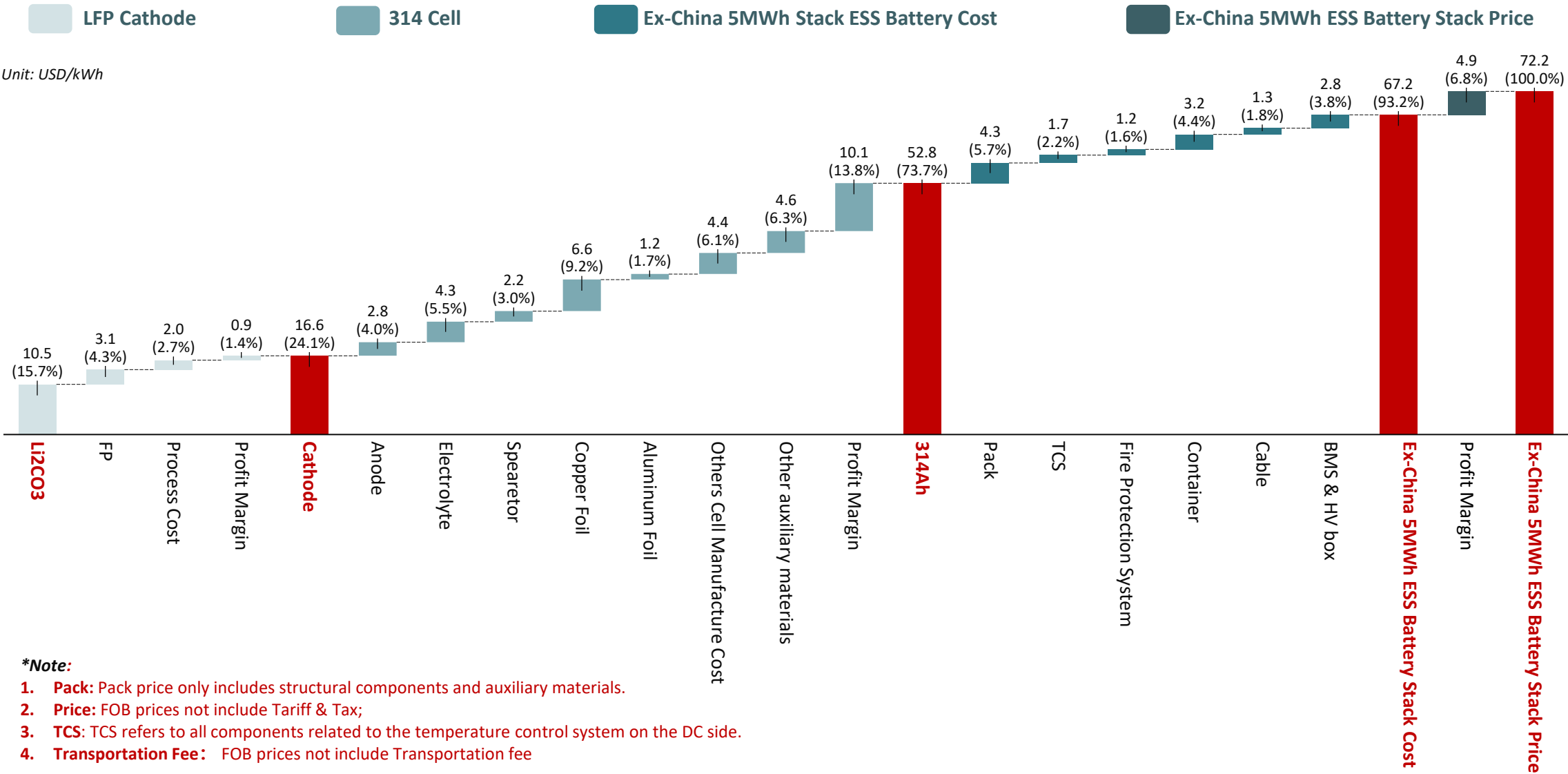


*Note: Due to significant cost variations among manufacturers, SMM processed the data assuming a fixed structural component cost of 0.02 yuan/Wh and a fixed MFG cost of 0.04 yuan/Wh, with a yield rate of 95%.

Ex-China 5MWh ESS Battery Stack Price Structure Review (Feb 2026-US)

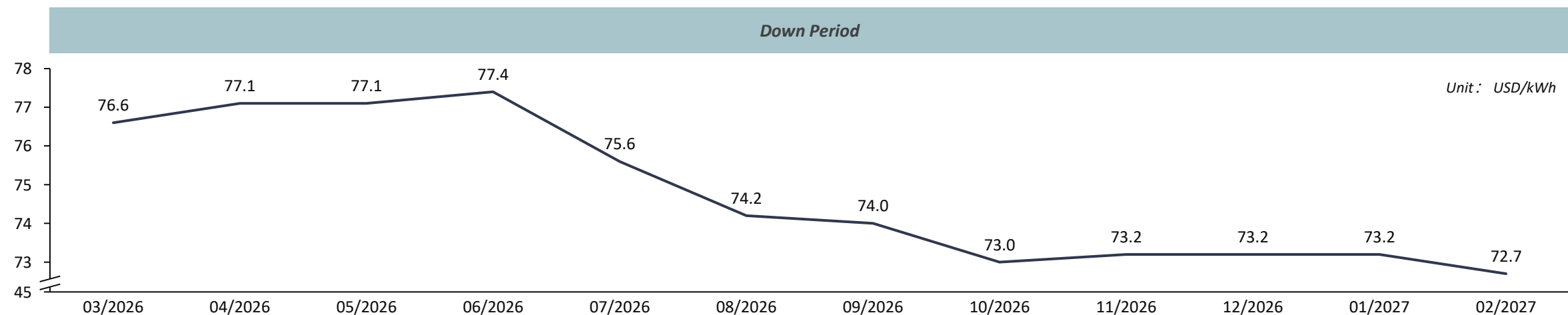


Ex-China 5MWh ESS Battery Stack Price Structure Review (Feb 2026-India)



Ex-China 5MWh ESS Battery Stack Cost Forecast (Mar 2026 – Feb 2027)

Ex-China 5MWh ESS Battery Stack Cost Forecast



Cost Forecast Analysis: 5MWh Stack cost reduced by **5.06%** (from 03/26 to 02/27) as the battery cell price **fall by 8.19%** and processing costs have some fluctuations

Raw Materials Cost Forecast Analysis (03/26-02/27)

- Core raw material (Li_2CO_3) price are expected to increase by **1.13%** due to tight supply demand relationship
- Top players start to increase the price due to the increasing raw material cost, whereas high-voltage boxes, and fire protection systems are expected to decline by **4.42%**, **3.41%** due to factors such as bulk purchasing and price control from ESS integrators
- Other materials : The cost of cables and containers is affected by fluctuations in copper and steel prices, and the cost may face an increase of **3.9%** and decrease of **3.4%**

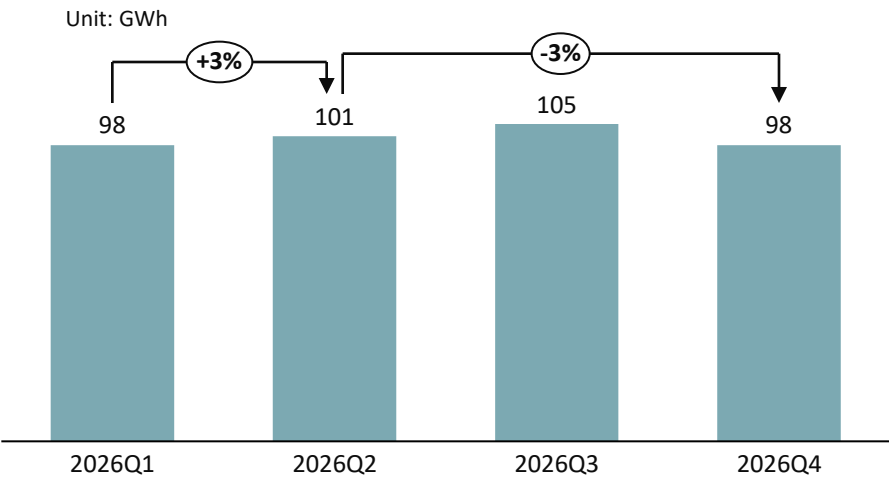


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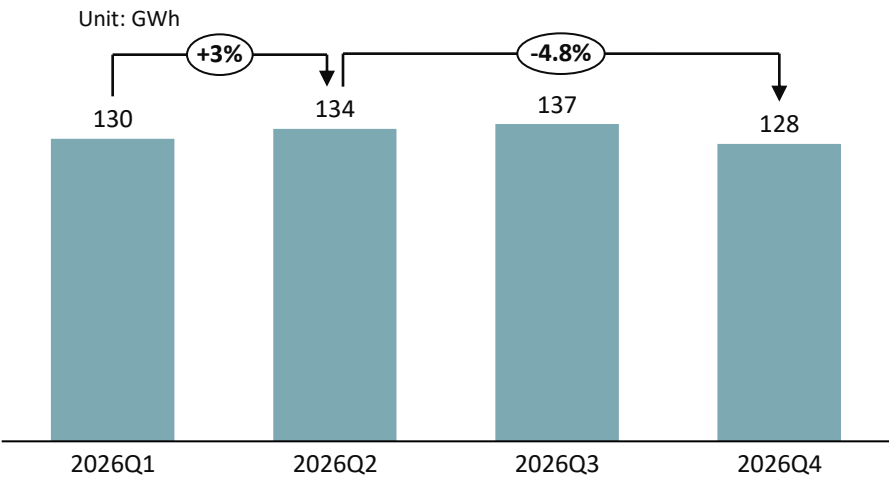
5MWh ESS Battery Stack Price Forecast - Supply Side

China 314Ah Cell & 5MWh Battery Stack Output Forecast (Quarterly, 2026Q1 – 2026Q4)

China ESS Battery 5MWh Stack Output Forecast
(Quarterly, 2025Q4 – 2026Q3)



China ESS Battery 314Ah Cell Output Forecast
(Quarterly, 2025Q4 – 2026Q3)



Comments

The ESS market exhibited a clear pattern of a stronger-than-usual off-season, driven by both domestic and overseas forces . Domestic market certainty stemmed from year-end centralized procurement orders. Large projects typically tendered in November-Janember transmit equipment delivery and construction demands directly to the following year's Q1, locking in production schedules in advance. The overseas market was influenced by policy expectations, with the latest policy indicating that the VAT export rebate rate for battery products would be reduced from 9% to 6% starting April 1, 2026, and is expected to be eliminated in 2027. This move is expected to stimulate a wave of rushing to export in the short term, thereby boosting the density of export orders and the saturation of production schedules in Q1.

Output & Production Schedule of Mainstream Enterprises (Quarterly, 2026Q1 - 2026Q2)

Output & Production Schedule of Mainstream Enterprises

Company Name	Production Schedule for 5MWh Battery Stack		Production Schedule Forecast Comments
	2026.Q1 (Unit: GWh)	2026.Q2 (Unit: GWh)	
Company A	6.9	7.8	Expected 13.52% increase With a full order and the ramp-up of overseas production capacity, it can effectively cushion against seasonal softness in specific markets.
Company B	2.3	2.9	Expected 15.31% increase In Q1 2026, European projects delivered as normal, with a smaller increase. The export tax rebate reduction from 9% to 6% effective April 2026 will increase export costs and squeeze margins for the U.S. market, potentially prompting price negotiations with customers
Company C	8.4	10.19	Expected 21.29% increase Its focus on the European market, which is less affected by the off-season, provides stability. It is also actively exploring emerging, high-value segments like AI data centers.
Company D	5.76	6.89	Expected 19.6% increase Benefits significantly from the exceptionally large volume of domestic project tenders in Q4 2025, providing a solid order backlog for Q2 2026 delivery.
Company E	8.35	10.62	Expected 27.1% increase Its high growth is driven by the accelerated progress of large-scale independent energy storage investments in Northwest China, aiming to secure grid connection before the critical mid-year deadline

Output & Production Schedule of Mainstream Enterprises

(Monthly, Mar 2026 – May 2026)

Output & Production Schedule of Mainstream Enterprises

Company Name	Output Schedule for Battery Cell (314Ah)			Feb Average Operating Rate	Output Schedule Forecast Comments
	(Unit: GWh)				
	March	April	May		
Company A	6.1	6.2	6.3	80%	The large battery cell production line was in the process of capacity ramp-up, and large battery cell capacity was expected to be released in April. Client demand for 314 battery cells remained stable, and as of May, the remaining capacity was limited.
Company B	5	5	4.9	100% Company B has 1.3GWh of outsourced capacity	In March and April, 314 capacity was fully utilized, and outsourced capacity was being further expanded.
Company C	2.1	2	1.9	85%	Line 314 was retrofitted for large battery cells, and newly commissioned 392 battery cells were expected to come online in April.
Company D	4.7	4.7	4.5	89%	Production Line Switched to Commercial Vehicles
Company E	2	2.1	2	80% Increasing production capacity	Production line 314 is undergoing an upgrade and reconfiguration, and the upgraded large-format battery cell production line is expected to be commissioned after April.

Accelerated Iteration of Large Battery Cell Technology Presents a Triple Pattern; Large-Scale Application Still Awaits a Full Validation Cycle (Hot Topic)

2025 Summary of Large Battery Cell Products from ESS Enterprises (Partial)					
Enterprise	Battery Cell (Ah)	Manufacturing Process	Energy Density (Wh/L)	Cycle Life	System
CATL	587	Winding	434	10,000 cycles+	TENER Tianheng Energy Storage System, TENER Stack 9MWh System
	530	Winding	410	10,000 cycles+	EnerX Containerized Energy Storage System
	565	Winding	420	10,000 cycles+	TENER Stack 9MWh Energy Storage System
Hithium	587	Winding	415	11,000 cycles+	∞Power 6.25MWh 2h Energy Storage System
	1175	Stacking	400+	11,000 cycles+	∞Power 6.25MWh Energy Storage System
BYD	2710	Stacking	233	Undisclosed	"Haohan" 14.5MWh Energy Storage System
EVE	628	Stacking	420	8,000 cycles+	Mr.Giant 5MWh DC System
Gotion High-tech	688	Stacking	435+	10,000 cycles+	CESS-4.0 Energy Storage System
	588	Winding	425	10,000 cycles+	Undisclosed
CALB	588	Undisclosed	450	15,000 cycles+	Undisclosed
	684	Undisclosed	450	15,000 cycles+	Undisclosed
REPT Batterio	588	Undisclosed	420	10,000 cycles+	Powtrix® 6.25MWh Energy Storage System
Sunwoda	684	Stacking	440+	Undisclosed	CESS-4.0 Energy Storage System
Great Power Energy	588	Winding	420	10,000 cycles+	Great Power Mega 5 20 ft 5 MWh Liquid Cooling System
CORNEX New Energy	588	Winding	419	12,000 cycles+	588-CTP2.0 Energy Storage PACK, "Versatile King Kong" System

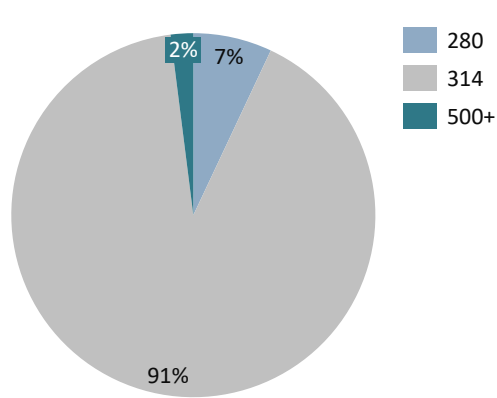
SMM Analysis:

- **Product Stratification: Large Battery Cells Have Formed a Triple Pattern of 500Ah+, 600Ah+, and Extra-Large Capacity**
 - The current iteration of large battery cells shows clear stratification: **600Ah+ products** generally adopt stacking process, **the 500Ah+ camp** tends to choose the mature winding process more often, and the market has also seen **explorations of "extra-large" capacities such as 1175Ah and 2710Ah**, whose common core lies in directly reducing costs by simplifying the system structure. Most large-format battery cell newcomers have set their **mass-production period for Q2 2026** , so system-level deliveries (expected Q3 2026) will face tests of capacity ramp-up, technical optimization, and downstream certification.
- **Iteration comparison: large-format cells achieve generational gains in raw materials and performance, yet challenges and risks coexist.**
 - Raw-material upgrade: large-format cells generally adopt LFP cathode with higher compaction density (≥2.55 g/cm³) and high-capacity needle-coke anode, whereas the previous 314 Ah generation mainly used high-compaction LFP (~2.50 g/cm³), creating a generational gap in material compaction density.
 - Performance and cost advantages: thanks to material and process advances, large-format cells **push volumetric energy density above 420 Wh/L**, roughly **6% higher** than 314 Ah cells (~395 Wh/L) . At the system level, larger battery cells significantly **reduce costs and footprint** by minimizing the number of components. For example, a 100 MWh project using 6.25 MWh systems needs only 16 ESS units versus 20 units for 5 MWh systems, trimming unit count by 20% and simplifying structure and land use.
 - Challenges and risks: higher energy concentration raises thermal-runaway risk and control difficulty ; longer pole pieces demand extreme manufacturing consistency . System weight and volume rise sharply, tightening transport and installation requirements and limiting suitability in flexible scenarios such as mobile ESS . Moreover, claimed ultra-long cycle life and low-temperature performance still await long-term market validation.
- **Market outlook: in the near term, 314 Ah cells will remain mainstream thanks to a mature supply chain and shorter validation cycle**
 - Even though next-gen large-format cells have been launched intensively, they have not yet materially impacted the supply-demand relationship for 314 Ah products. This situation primarily stems from practical considerations on both the supply and demand sides: **On the supply side**, producers had just completed the production line transition to 314Ah in early 2025, and their mature capacity and return on investment cycle for production lines determine that they will remain the primary suppliers in the short term. **On the owner side**, the actual application history of large battery cells is still relatively short, and their long-term safety and reliability require further project validation, leading owners to adopt a cautious stance in large-scale tenders. Therefore, **it is expected that the domestic market will continue to be dominated by 314Ah battery cells over the next one to two years**, while large battery cells will need to undergo a complete validation cycle before they are expected to gradually replace the current mainstream products starting from 2027.

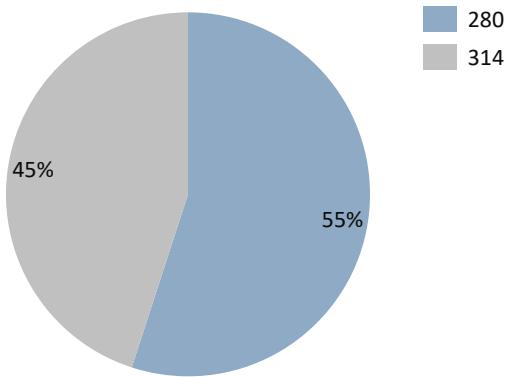
Tariff Changes Again (Hot Topic)

Comparison of US Tariff Rates Before and After Adjustment (2026)						
Time Period	Basic Tariff	Section 301 Tariff	Fentanyl Tariff	Reciprocal Tariff	Article 122 New Tariff	Total Tariff
Before Adjustment (2026/01/01-2026/02/23)	3.40%	25%	10%	10%	Not applicable	48.40%
After Adjustment (Starting from 2026/02/24)	3.40%	25%	Cancelled	Cancelled	10%	38.40%

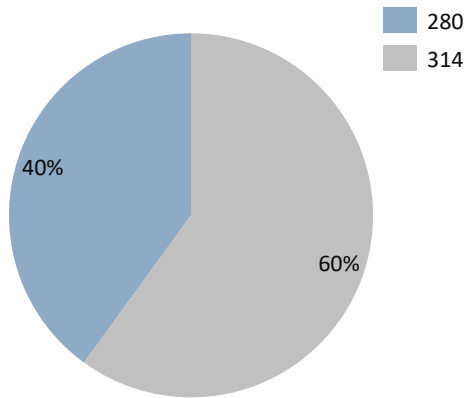
Proportion of Demand for Energy Storage Batteries by Specifications in Major Countries (%)



China

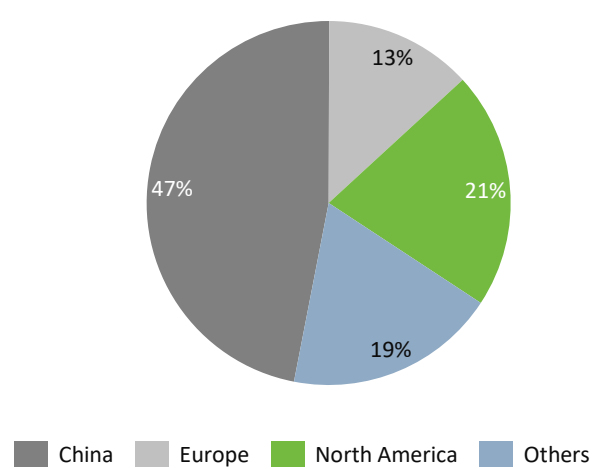


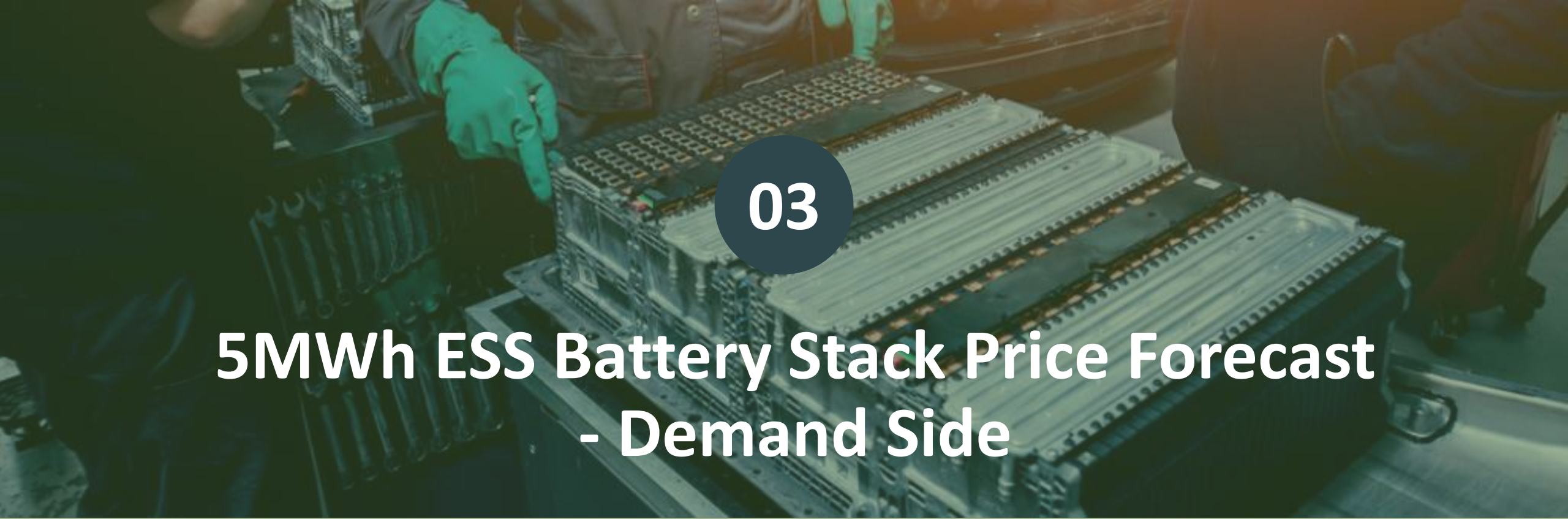
Europe



US

ESS Battery Shipments by Regions(%)





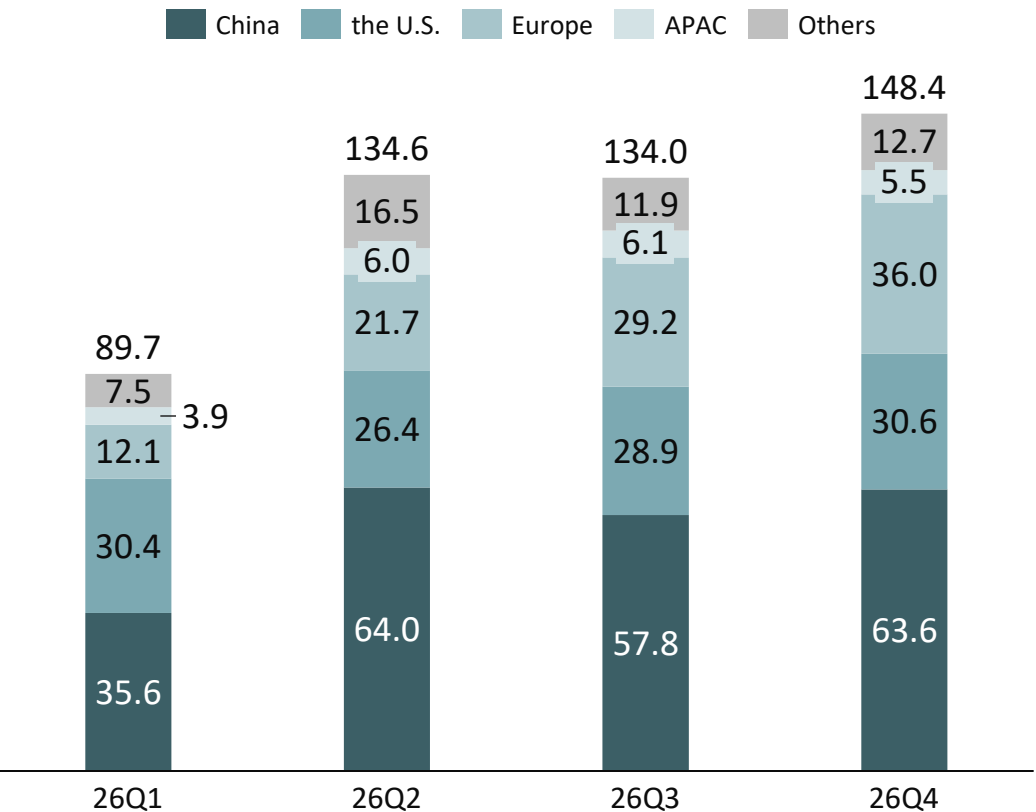
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5MWh ESS Battery Stack Price Forecast - Demand Side

Global ESS Battery Stack Demand Forecast (Quarterly, 2026Q1 – 2026Q4)

Global Energy Storage System Demand Forecast (Quarterly, 2026Q1 – 2026Q4)

Unit: GWh



ESS growth in China moderates in the short term, US sustains growth via AI, while Europe shifts structurally to FTM

China: Short-term Slowdown, Solid Long-term Foundation



Affected by expectations of subsidy phase-outs and restrictions on grid connection approvals, short-term investment enthusiasm has cooled, leading to a slowdown in installation growth. However, the long-term growth logic remains solid: rigid demand for storage under the 2030 "Carbon Peak" goal, the requirement for long-duration storage in "Sandy, Gobi, and Desert" large-scale bases, and the expansion of profit models via the electricity spot market will continue to support market development.

USA: Policy Clarity Eliminates Uncertainty; AI Driving Sustained Growth



Although new FEOC regulations have impacted ROI, the extension of the ITC tax credit through 2033 provides critical investment certainty. With the stabilization of tariff impacts, the urgent need for grid modernization and the massive peak-shaving demand triggered by the explosion of AI data centers will underpin a steady market growth rate of approximately 20%.

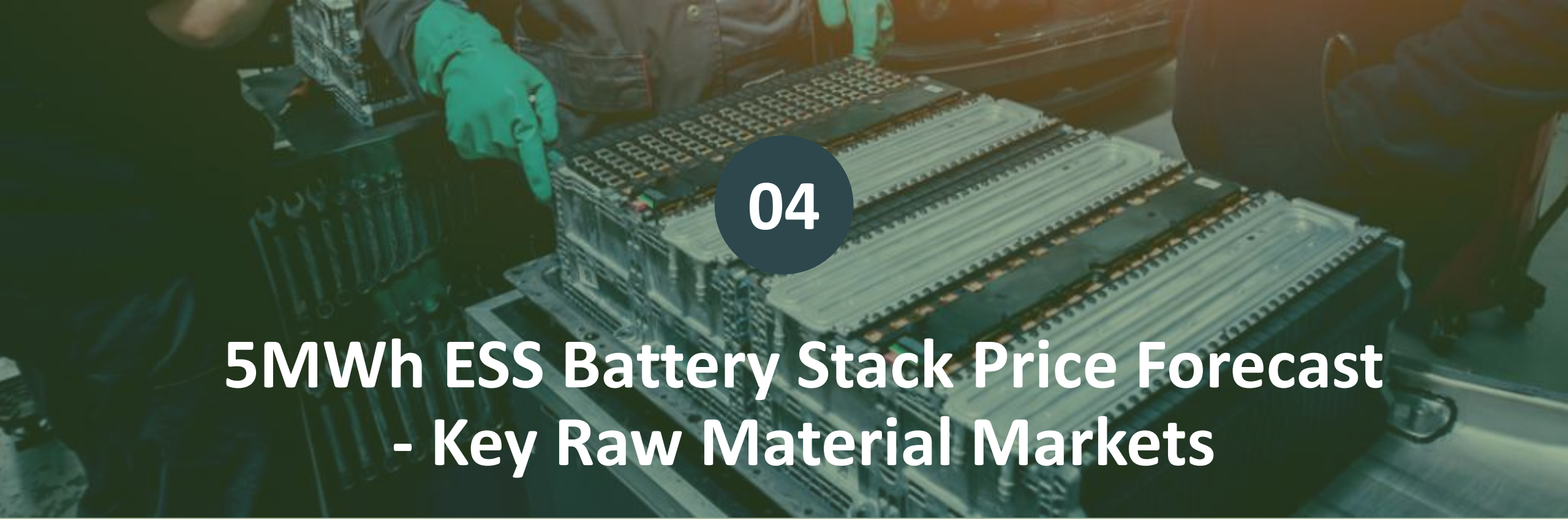
Europe: Front-of-the-Meter (FTM) Takes the Lead; C&I Storage Emerging as a Hotspot



The market is undergoing a structural shift, with Front-of-the-Meter (FTM) storage replacing residential storage as the primary growth driver, supported by government funding and policies. Meanwhile, dynamic electricity pricing mechanisms have created arbitrage opportunities, making Commercial & Industrial (C&I) storage a high-growth highlight; in contrast, residential storage growth has slowed significantly, returning to rational growth driven by economic viability.

Appendix – Overseas Energy Storage Project List

Overseas Energy Storage Project List							
No.	Time	Project Name	Area	Product Type	Tenderer	Bid Winner	Construction Scale (MWh)
1	2026.02	Cornex Strategic Energy Storage Cooperation Agreement	Dammam, Saudi Arabia	BESS	Al Rajhi Electrical, Shanghai GREENGRID	Cornex New Energy	5,500
2	2026.02	HiTHIUM Strategic Cooperation Framework Agreement	Ukraine	BESS	KNESS Group	HiTHIUM	2000
3	2026.03	1GWh Battery Energy Storage System (BESS) Portfolio in Romania	Europe	BESS	ENEVO Group	Sungrow	10,00
4	2026.03	LONGi Europe Energy Storage Strategic Partnership	Europe	BESS	BM Energy	LONGi	600
5	2026.03	REPT BATTERO European Strategic Supply Partnership	Europe	BESS	/	REPT	8300

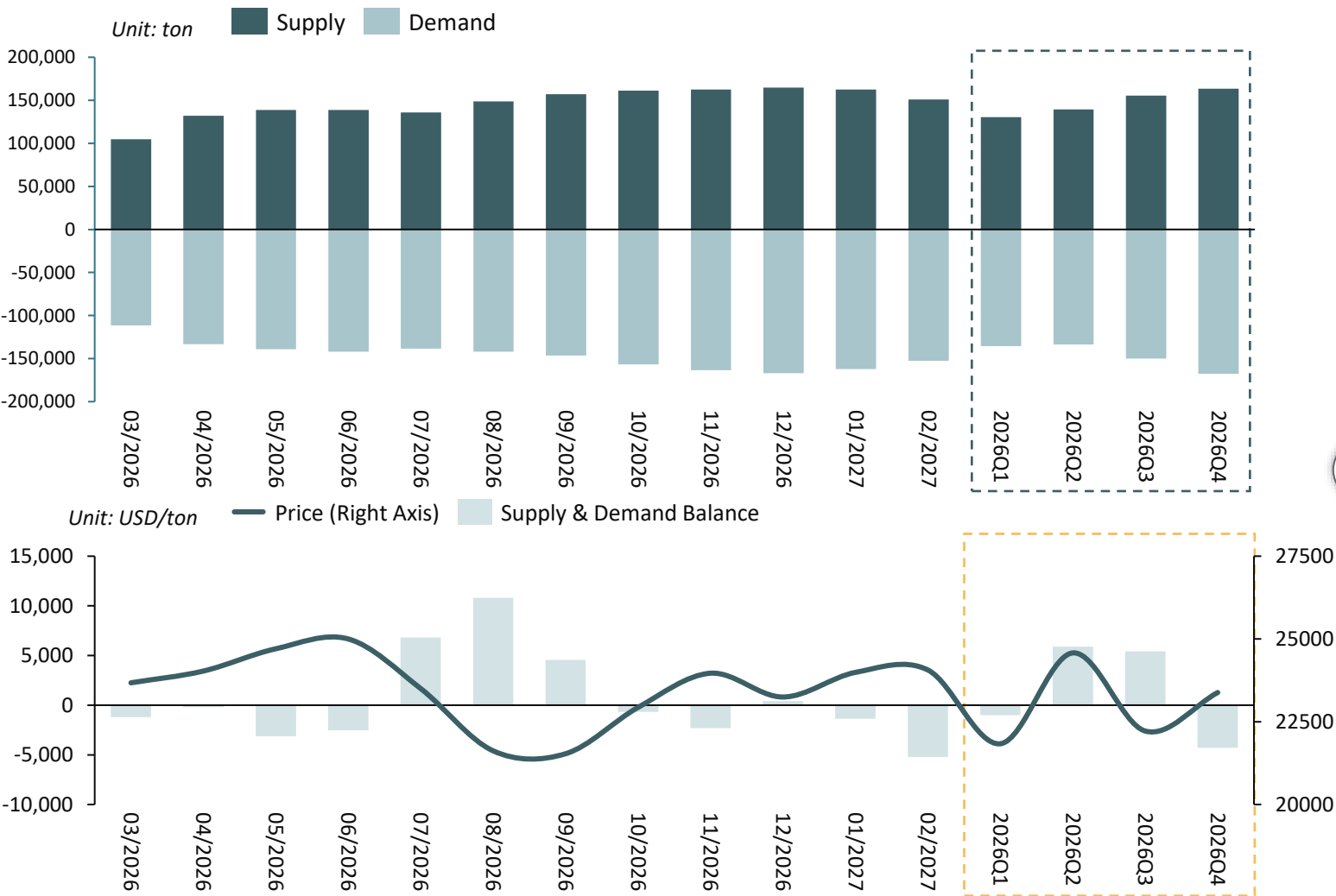


04

5MWh ESS Battery Stack Price Forecast - Key Raw Material Markets

Li₂CO₃ Market Tracker (Rational Forecast, Feb 2026 – Jan 2027)

Li₂CO₃ Supply & Demand Balance and Price Forecast
(Monthly, Mar 2026 – Feb 2027)



Price Forecast Analysis

S-D Balance Analysis

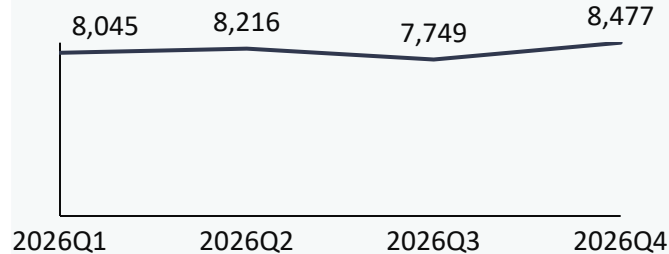
- **Short-term Production: Significant Drop in Feb, Strong Rebound Expected in Mar.**
- China's domestic lithium carbonate production in Feb 2026 fell to 83,000 mt, dropping 15% MoM (driven by concentrated maintenance at upstream lithium salt plants and fewer working days). Entering March, production is expected to rebound significantly by about 28% MoM, supported by restarting facilities, steady ramp-ups of new capacities, and improved operating rates among non-integrated producers driven by demand.
- **Policy Impact: Zimbabwe's Export Ban Creates Major Supply Uncertainty.**
- The Zimbabwean government issued a directive on Feb 25, 2026, immediately suspending all exports of raw lithium ore and spodumene, including halting in-transit shipments. While Chinese enterprises are actively negotiating and policy adjustments are possible, SMM proposes three scenarios for its potential impact on China's supply-demand balance:
- Scenario 1: Short-term resumption yields a tight balance with a slight 4,000 mt accumulation.
- Scenario 2: Allowing only processed exports tightens supply, driving a 10,000 mt destocking.
- Scenario 3: A total export ban drastically cuts supply, forcing a severe 20,000 mt destocking.

Price Forecast of Battery Cell Key Raw Materials (Quarterly, 2026Q1 – 2026Q4)

Price Changes Forecast of Battery Cell Key Raw Materials (Quarterly, 2026Q1 – 2026Q4)

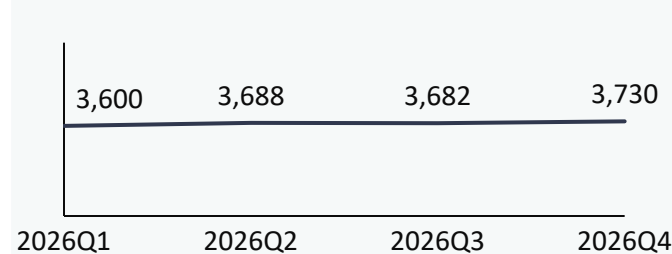
LFP Cathode Price

Unit: USD/ton



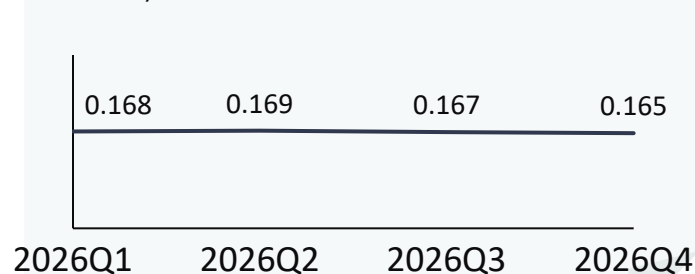
Anode Price

Unit: USD/ton



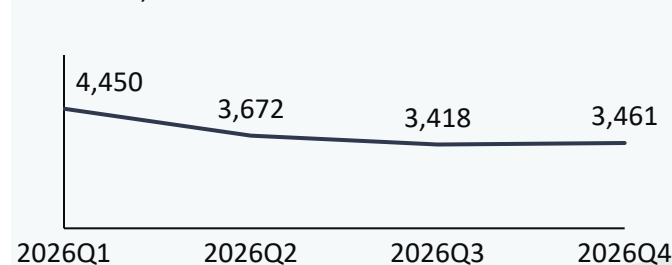
Separator Price

Unit: USD/m²



Electrolyte Price

Unit: USD/ton



LFP Cathode: Fluctuating Upward

- Prices are rising alongside lithium carbonate costs. The market shows stark differentiation: low-end products face overcapacity, while high-compaction materials benefit from technical barriers and limited supply, granting them stronger bargaining power for processing fees.

Anode : Slight Increase

- Driven by geopolitical conflicts and elevated raw material costs (petroleum/needle coke), prices face seasonal volatility. Expect upward trends during peak demand periods (Apr-May, Aug-Oct) supported by tight supply and strong cost factors.

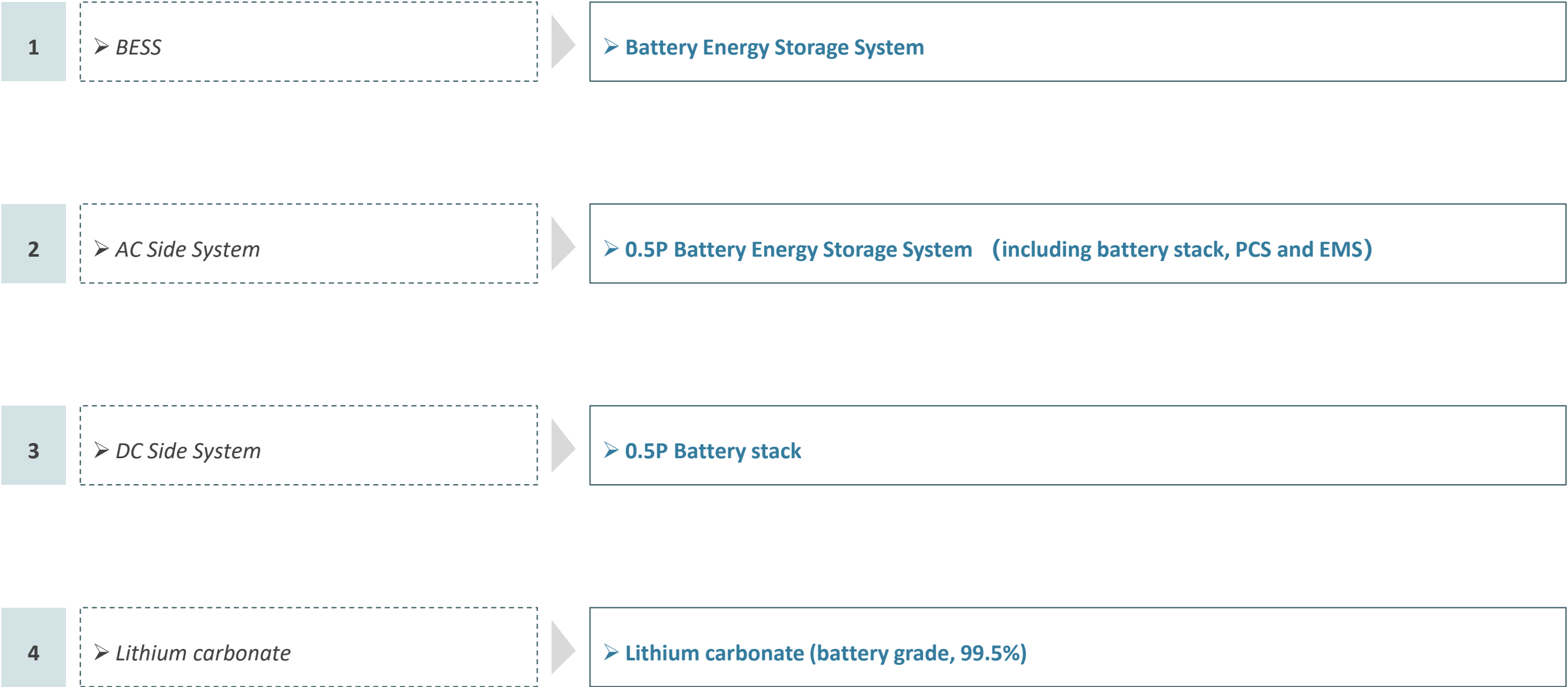
Separator: Stable

- The market remains stable with minimal price adjustments. While 5μm separators face tight supply, long-term contracts restrict price hikes. Conversely, mainstream 7μm and 9μm products lack strong demand, keeping the broader market relatively loose.

Electrolyte: Downward Trend

- Prices are declining, closely tracking the falling costs of core raw materials like LiPF₆. Weak downstream demand and ample market inventory maintain a loose supply-demand balance, driving a phased downward trajectory through most of the year.

Appendix – 5MWh Battery Stack Raw Material Specification (1/2)



Appendix – 5MWh Battery Stack Raw Material Specification (2/2)

1	➤ CAM	➤ Lithium iron phosphate for mid-range energy storage Stacks
2	➤ Anode	➤ Synthetic graphite 350mah/g
3	➤ Separator	➤ 12μm wetting separator
4	➤ Electrolyte	➤ Electrolyte for lithium iron phosphate battery
5	➤ Copper Foil	➤ 6μm copper foil
6	➤ Aluminum Foil	➤ 12μm aluminum foil
7	➤ BMS	➤ 96 BMUs, 6 BCUs, and 1 BAU
8	➤ Temperature Control System	➤ Liquid cooling
9	➤ Fire Protection System	➤ Perfluorohexanone and spray systems



Thanks!



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