Market evolution: Lithium ion batteries (CN 8507) — 2015–2025

Introduction

The product group CN 8507 covers the full range of electric accumulators, from conventional lead-acid starter batteries to advanced lithium-ion cells, as well as separators and other parts. Over the decade from 2015 to 2025, the EU's external trade in these batteries has been utterly reshaped by the electric-vehicle and energy-storage revolutions. The data reveal an extraordinary surge in imports—especially of lithium-ion batteries from China—a robust but insufficient expansion of exports, and a deep structural deterioration of the trade balance. At the same time, domestic production has pivoted sharply toward higher-value technologies, while import supply has become dangerously concentrated. This report describes and interprets the main dynamics using the provided trade figures.

The Lithium-Ion Trade Super-Cycle Transforms EU Battery Flows

Import values soared nearly seven-fold, driven almost entirely by a twenty-fold jump in Chinese lithium-ion cells

General trade overview shows that EU imports of CN 8507 rose from €4.1 billion in 2015 to €31.8 billion in 2025, an increase of 682.8 %. The product breakdown confirms that lithium-ion accumulators (8507 60) were responsible for almost all of this expansion: their import value jumped from €2.2 billion to €28.5 billion over the period. In terms of tonnage, lithium-ion imports grew from 54.8 thousand tonnes to 1 618 thousand tonnes.

Import segment	2015 (€ billion)	2025 (€ billion)	Change
Lithium-ion (8507 60)	2.2	28.5	+1,196%
Lead-acid (8507 20)	0.7	1.0	+34%
Starter batteries (8507 10)	0.5	0.7	+51%
Parts (8507 90)	0.2	1.1	+573%
Other accumulators	0.5	0.5	+5%
Total CN 8507	**4.1**	**31.8**	**+683%**

Source: Product breakdown

EU exports more than tripled, but could not prevent the trade deficit from ballooning to over €23 billion

Exports rose from €2.5 billion to €8.3 billion (+227.2 %), reaching a peak of €11.0 billion in 2023 before retreating. Lithium-ion cells dominated export growth too, climbing from €0.34 billion to €5.0 billion. Lead-acid and starter batteries contributed steady but modest increases. Nevertheless, the trade balance swung from a deficit of €1.5 billion in 2015 to €23.6 billion in 2025, a clear illustration that the EU remains a huge net importer of batteries. Trade overview

Trade flow	2015	2025	Change
Exports	€2.5 bn	€8.3 bn	+227.2 %
Imports	€4.1 bn	€31.8 bn	+682.8 %
Balance	–€1.5 bn	–€23.6 bn	–
Exports (volume)	619.9 k tonnes	876.3 k tonnes	+41.4 %
Imports (volume)	587.7 k tonnes	2 319.6 k tonnes	+294.7 %

Average trade unit values climbed sharply, reflecting the shift from low-value lead-acid to high-value lithium-ion technology

The average export price per tonne rose from €4 069 to €9 417 (+131.4 %), while the import price advanced from €6 914 to €13 712 (+98.3 %). The product breakdown shows that lithium-ion cells, which carry a much higher unit value, have displaced traditional lead-acid batteries as the main traded item, lifting the overall price level of both imports and exports.

Geopolitical Shifts and Supplier Concentration

China’s dominance reshaped import dependency, pushing the Herfindahl–Hirschman Index above 7 200

Top partners data show that China’s share of EU imports catapulted from €1.3 billion (31 % of total) to €27.0 billion (85 %). No other supplier comes close: Korea (€0.8 billion), Vietnam (€0.5 billion) and the United Kingdom (€0.3 billion) all registered much smaller gains. Reflecting this, the import concentration HHI jumped from 1 655 to 7 217 (+336 %). In volume terms, imports from China displayed a coefficient of variation of 0.88—far higher than any other major partner—highlighting the volatility inherent in such a concentrated supply chain. Volatility

Import partner	2015 (€ billion)	2025 (€ billion)	Change
China	1.3	27.0	+2 025 %
Korea, Republic of	0.7	0.8	+19 %
Viet Nam	0.1	0.5	+457 %
United Kingdom	0.3	0.3	+18 %
United States	0.5	0.8	+45 %
Türkiye	0.04	0.14	+242 %
North Macedonia	0.03	0.11	+329 %

Export markets rebalanced: Russia collapsed while Mexico, the United States, and Turkey became high-growth destinations

EU export destinations were also reconfigured. Shipments to Russia, worth €151 million in 2015, collapsed to €0.5 million (–99.7 %) by 2025, whereas exports to Mexico skyrocketed from €23 million to €492 million (+2 058 %), to the United States from €241 million to €1 740 million (+623 %), and to Türkiye from €100 million to €746 million (+645 %). The United Kingdom remained the top single destination, growing from €463 million to €1 176 million (+154 %). Exports to China also expanded, reaching €609 million (+185 %). Top partners

Export partner	2015 (€ million)	2025 (€ million)	Change
United Kingdom	463	1 176	+154 %
United States	241	1 740	+623 %
Russian Federation	151	0.5	–99.7 %
Türkiye	100	746	+645 %
China	214	609	+185 %
Switzerland	131	454	+247 %
Mexico	23	492	+2 058 %

Stability and shocks: import volumes from China were the most volatile, and price shocks hit Ukraine, Vietnam, and Canada

Despite the rapid expansion, the market experienced significant price shocks. The shock detection highlights that EU export prices to Ukraine jumped by 128.9 % in 2022 (abnormality 128.4), import prices from Vietnam surged by 130.0 % (abnormality 39.7) in the same year, and export prices to Canada shot up by 95.7 % in 2023 (abnormality 19.6). Meanwhile, the export concentration HHI rose modestly from 656 to 923, confirming that export markets remained far more diversified than imports.

Domestic Production, Specialisation, and Strategic Vulnerability

EU production value surged by about 30 % between 2015 and 2018, even as output volumes remained flat

EU production data (available through 2018) show that the value of domestically produced accumulators rose from €5.8 billion to €7.5 billion, an increase of 29.9 %, while the number of units produced hovered around 220 million. The resulting unit price climbed from €26.4 to €33.9, confirming a rapid shift from low-priced lead-acid units to high-value lithium-ion manufacturing inside the EU.

Production indicator	2015	2018	Change
Quantity (units)	219 million	222 million	+1.4 %
Value (€ billion)	5.8	7.5	+29.9 %
Unit price (€/unit)	26.4	33.9	+28.4 %

Hungary, Czechia, and Poland have emerged as the EU's most specialised lithium-ion battery exporters

The specialisation map for 2025 reveals that Hungary (RSCA 0.72, RCA 6.11), Czechia (RSCA 0.41, RCA 2.38) and Poland (RSCA 0.38, RCA 2.23) are by far the most specialised EU countries in this product group. They account for a disproportionate share of EU extra-exports relative to their total export baskets, reflecting massive lithium-ion battery gigafactories located in these member states.

Member State	RSCA	RCA	Product share in national exports (%)
Hungary	0.72	6.11	16.4
Czechia	0.41	2.38	11.4
Poland	0.38	2.23	14.8
Slovenia	0.34	2.03	2.0
Greece	0.22	1.56	1.1

Source: Specialisation

Net import reliance rose to 31.4 % by 2018, underlining growing strategic vulnerability

The net import reliance indicator climbed from 21.0 % in 2015 to 31.4 % in 2018, meaning that nearly one-third of the EU's apparent consumption of batteries was met by imports from outside the bloc. The trade intensity ratio also rose (from 60.5 % to 71.6 %), and the export propensity increased from 33.3 % to 45.6 % over the same period, indicating that

the battery sector is both more internationally integrated and more dependent on external supply than it was at the start of the decade.

Conclusion

The 2015–2025 period has seen the EU's external battery trade transformed by the mass adoption of lithium-ion technology. Extra-EU imports have exploded, overwhelmingly sourced from China, while EU exporting strength has grown rapidly but not rapidly enough to prevent a yawning trade deficit exceeding €23 billion. Supplier concentration is at a historic high, bringing with it heightened volatility and strategic vulnerability. Domestically, battery manufacturing has moved decisively up the value chain—production value surged despite flat unit output—and a clear hub of lithium-ion specialisation has arisen in Central and Eastern Europe. These dynamics underline a pressing policy challenge: expanding and diversifying domestic and allied battery supply chains to reduce the EU's exposure to a single dominant supplier.
