S&P Global
Energy

Global Black Mass Value Evolution

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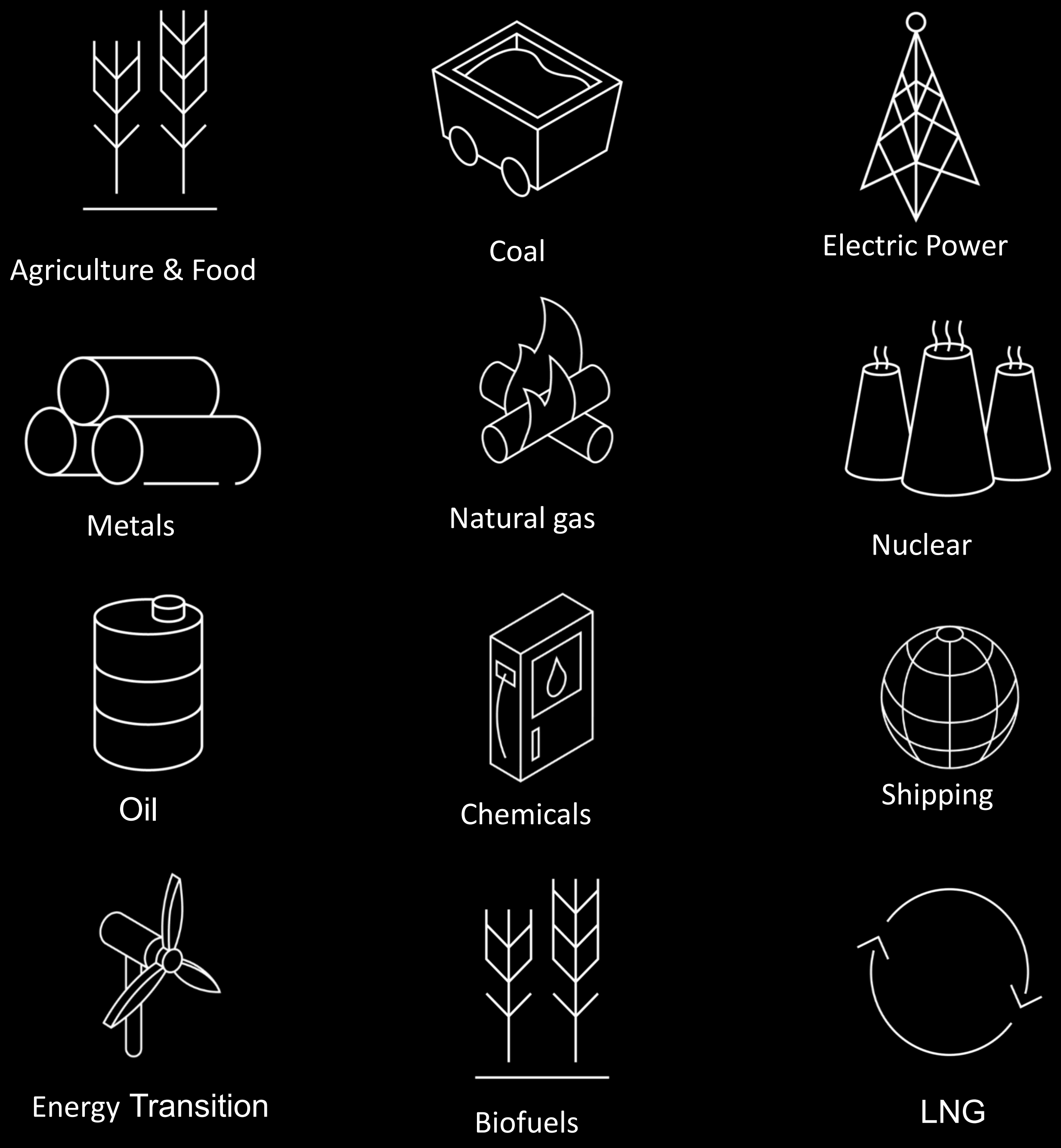


Platts Black Mass Assessments – *DDP China*

Daily Assessments	Symbols	Quality	Incoterm	Location	Unit	Currency
LFP black mass DDP China per percent lithium Yuan/mt	LBMCA00	Typically Li 3.8%	DDP	China	MT	Yuan
Ni-Co black mass DDP China lithium payables (basis Platts daily DDP China Lithium Carbonate)	NBMCA00	Min Li 3%, Co 5%, Ni 12%; Less than 3% combined Cu, Al, Fe	DDP	China	%	N/A
Ni-Co black mass DDP China cobalt payables (basis Platts daily DDP China Cobalt Sulfate)	NBMCB00	Min Li 3%, Co 5%, Ni 12%; Less than 3% combined Cu, Al, Fe	DDP	China	%	N/A
Ni-Co black mass DDP China nickel payables (basis Platts daily DDP China Nickel Sulfate)	NBMCC00	Min Li 3%, Co 5%, Ni 12%; Less than 3% combined Cu, Al, Fe	DDP	China	%	N/A
Ni-Co black mass DDP China calculated price Yuan/mt	NBMCD00	Min Li 3%, Co 5%, Ni 12%; Less than 3% combined Cu, Al, Fe	DDP	China	MT	Yuan

Source: S&P Global Energy

Platts Black Mass Assessments – *EXW Europe and DDP US*

Weekly Assessments	Symbols	Quality	Incoterm	Location	Currency
Ni-Co Black Mass EXW Europe Lithium Payable (%)	NBMEA00	Min Li 3%, Co 5%, Ni 12%; Less than 5% combined Cu, Al, Fe	EXW	Europe	N/A
Ni-Co Black Mass EXW Europe Cobalt Payable (%)	NBMEB00	Min Li 3%, Co 5%, Ni 12%; Less than 5% combined Cu, Al, Fe	EXW	Europe	N/A
Ni-Co Black Mass EXW Europe Nickel Payable (%)	NBMEC00	Min Li 3%, Co 5%, Ni 12%; Less than 5% combined Cu, Al, Fe	EXW	Europe	N/A
Ni-Co Black Mass EXW Europe Calculated Price($/mt)	NBMED00	Min Li 3%, Co 5%, Ni 12%; Less than 5% combined Cu, Al, Fe	EXW	Europe	USD
Ni-Co Black Mass DDP US Lithium Payable (%)	NBNEC00	Min Li 3%, Co 5%, Ni 10%; Less than 5% combined Cu, Al, Fe	DDP	US	N/A
Ni-Co Black Mass DDP US Cobalt Payable (%)	NBNEB00	Min Li 3%, Co 5%, Ni 10%; Less than 5% combined Cu, Al, Fe	DDP	US	N/A
Ni-Co Black Mass DDP US Nickel Payable (%)	NBNEA00	Min Li 3%, Co 5%, Ni 10%; Less than 5% combined Cu, Al, Fe	DDP	US	N/A
Ni-Co Black Mass DDP US **Calculated Price($/mt)**	NBNED00	Min Li 3%, Co 5%, Ni 10%; Less than 5% combined Cu, Al, Fe	DDP	US	USD

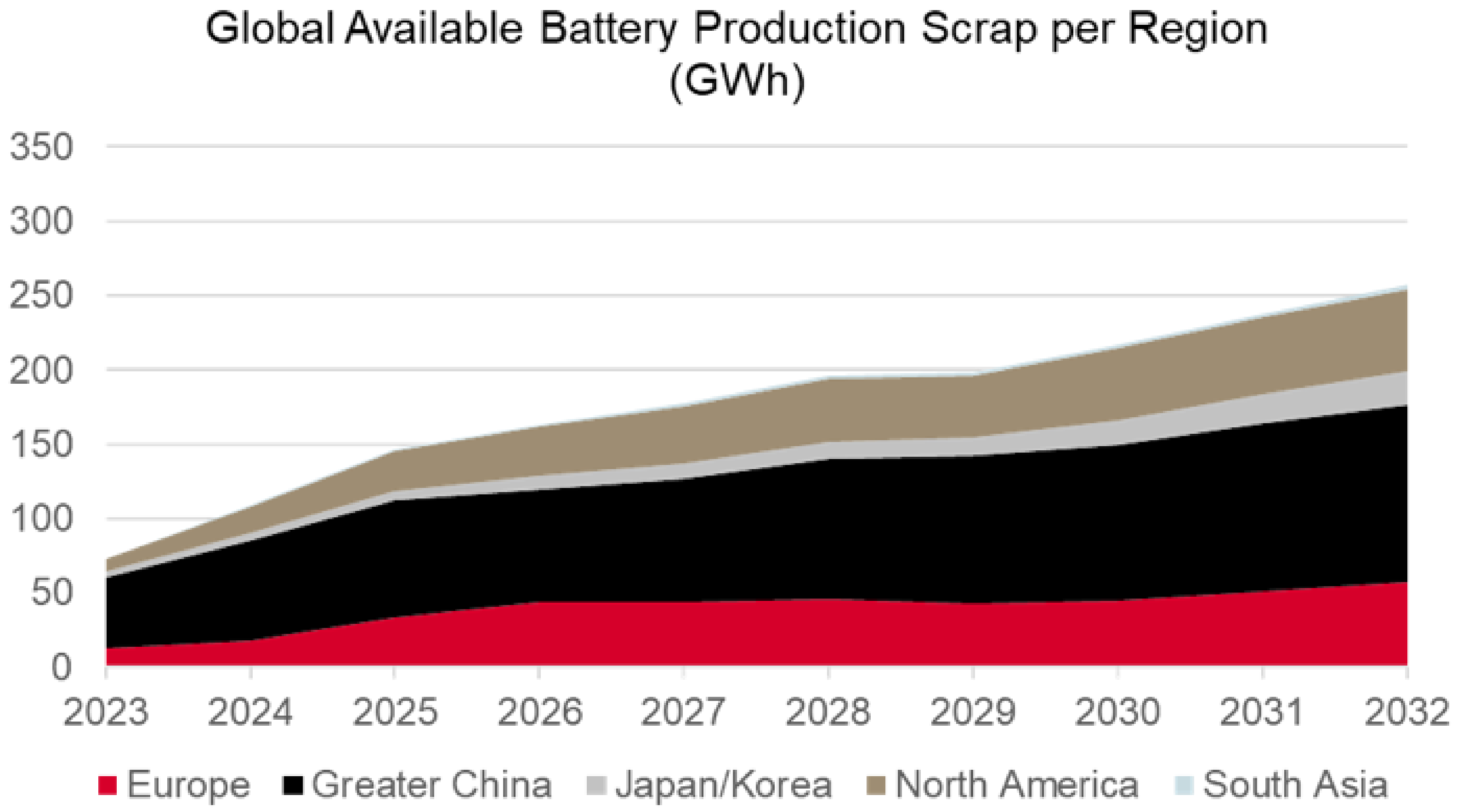
Source: S&P Global Energy

Platts Black Mass Assessments – *CIF South Korea*

Weekly Assessments	Symbols	Quality	Incoterm	Location	Currency
High-nickel Ni-Co Black Mass CIF South Korea Lithium Payable (%)	NBMMA00	Li 3.5%, Co 3%, Ni 24%; Less than 3% combined Cu, Al, Fe	CIF	South Korea	N/A
High-nickel Ni-Co Black Mass CIF South Korea Cobalt Payable (%)	NBMMC00	Li 3.5%, Co 3%, Ni 24%; Less than 3% combined Cu, Al, Fe	CIF	South Korea	N/A
High-nickel Ni-Co Black Mass CIF South Korea Nickel Payable (%)	NBMMB00	Li 3.5%, Co 3%, Ni 24%; Less than 3% combined Cu, Al, Fe	CIF	South Korea	N/A
High-nickel Ni-Co Black Mass CIF South Korea Calculated Price($/mt)	NBMMD00	Li 3.5%, Co 3%, Ni 24%; Less than 3% combined Cu, Al, Fe	CIF	South Korea	USD
Mid-nickel Ni-Co Black Mass CIF South Korea Lithium Payable (%)	NBMME00	Li 3.5%, Co 6%, Ni 15%; Less than 3% combined Cu, Al, Fe	CIF	South Korea	N/A
Mid-nickel Ni-Co Black Mass CIF South Korea Cobalt Payable (%)	NBMMG00	Li 3.5%, Co 6%, Ni 15%; Less than 3% combined Cu, Al, Fe	CIF	South Korea	N/A
Mid-nickel Ni-Co Black Mass CIF South Korea Nickel Payable (%)	NBMMF00	Li 3.5%, Co 6%, Ni 15%; Less than 3% combined Cu, Al, Fe	CIF	South Korea	N/A
Mid-nickel Ni-Co Black Mass CIF South Korea Calculated Price($/mt)	NBMMH00	Li 3.5%, Co 6%, Ni 15%; Less than 3% combined Cu, Al, Fe	CIF	South Korea	N/A
LCO Black Mass CIF South Korea Lithium Payable (%)	LBMMI00	Li 3%, Co 25%; Less than 3% combined Cu, Al, Fe	CIF	South Korea	N/A
LCO Black Mass CIF South Korea Cobalt Payable (%)	LBMMJ00	Li 3%, Co 25%; Less than 3% combined Cu, Al, Fe	CIF	South Korea	N/A
LCO Black Mass CIF South Korea Calculated Price($/mt)	LBMMK00	Li 3%, Co 25%; Less than 3% combined Cu, Al, Fe	CIF	South Korea	USD

Source: S&P Global Energy

Production scrap to dominate raw material availability in near term



Source: S&P Global Mobility

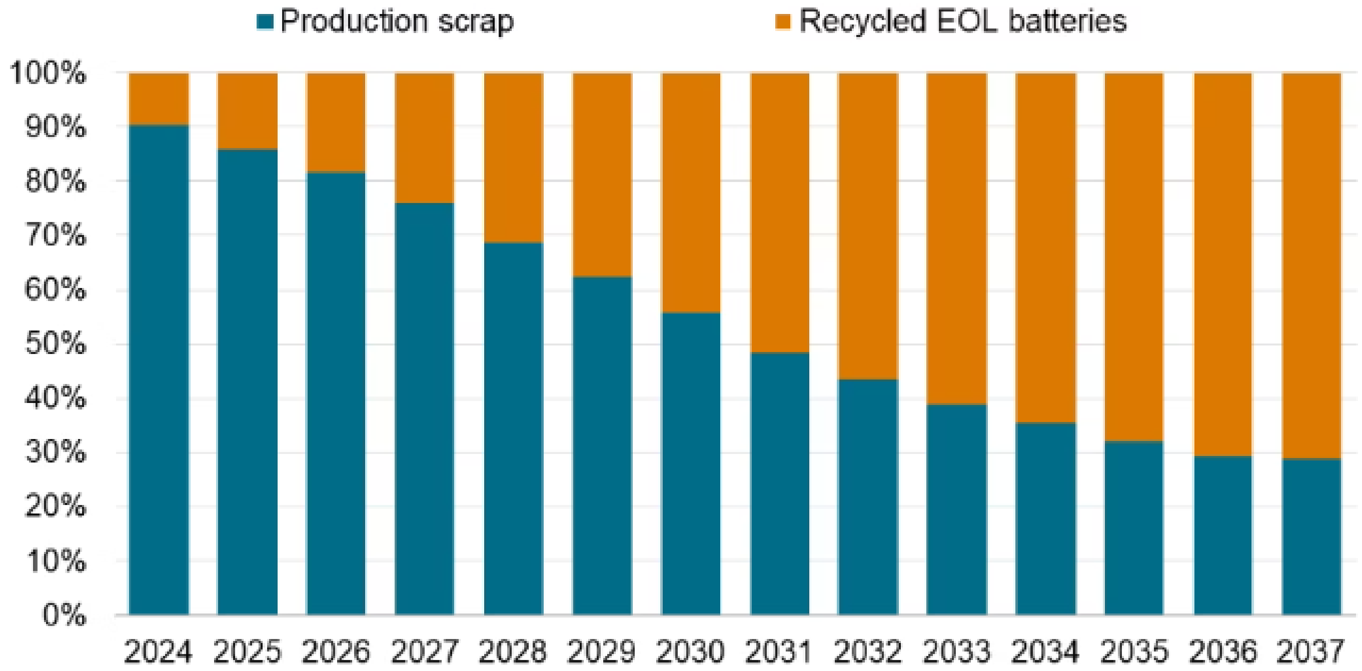
China to continue leading available production scrap, with **Europe** being the second largest region.

The average cell production scrap rate would decrease from **8%** in **2021** to **4%** in **2032**.

Focus shifts from circular economy to critical mineral supply security.

EOL batteries recycling as a major raw material source

Production scrap from Li-ion battery manufacturing, 2024–37



As of December 2025
Source: S&P Global Mobility.

Black mass spot trade liquidity is still relatively low but is likely to increase as EOL supply grows and EU regulations boost recycling rates.

Global EOL lithium-ion battery availability is expected to rise from **45.5 GWh** in **2025** to around **330 GWh** by **2030**, and roughly **1,430 GWh** by **2037**.

S&P Global Mobility outlook: **51%** of EOL batteries will be recycled in **2035**, compared with **30%** in **2024.**

China sets minimum requirements for black mass import

Product	Ni-Co	Fe	P	Li	Water-soluble Fluorine
Ni-Co black mass	≥25%	/	≤0.8%	≥3.5%	≤0.4%
LFP black mass	≤1%	≥18%	≥10%	≥2%	≤0.1%

- The above has been implemented from Aug. 1, 2025 with customs HS code for the recycled black mass classified as 3824999996. As of **1 January 2026**, China has cut the import tariff on black mass to **3% (from 6.5%).**
- Black mass meeting specified requirements will not be classified as solid waste and can be freely imported
- Black mass cannot be mixed with other types of recycled raw materials
- Black mass cannot be declared under the same customs declaration form as other recycled raw materials
- The requirements for various indicators in the black mass import and export specifications must comply with the requirements for Class II black mass in GBT 45203-2024 Lithium-ion Battery Recycled Black Mass.

Source: PRC Ministry of Ecology and Environment

What's to be expected given China's easing of black mass import restrictions?

China's high black mass import specifications limits supply

- The 0.4% water-soluble fluoride remains a challenge amid an overall industry backdrop where fluoride levels are typically observed between 1-1.5%
- Combined 25% Ni-Co content leans closer to high-nickel black mass, which is not common

Southeast Asia likely to emerge as a processing hub

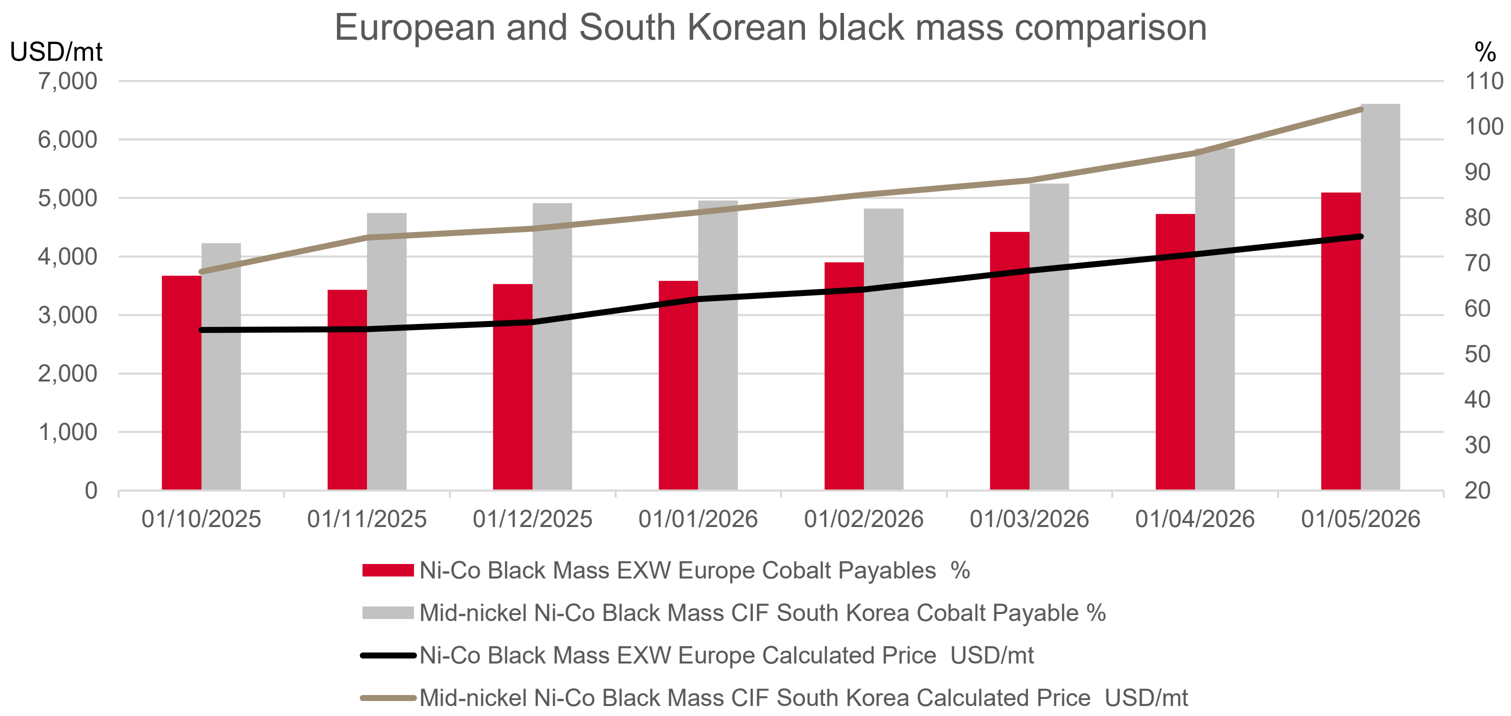
- Southeast Asian countries, such as Malaysia and Indonesia to emerge as a processing hub for black mass, where black mass can be further processed to meet Chinese import specifications

Potentially higher regional premiums, according to market sources

- Competitive bids and a better appetite for black mass in the Chinese market would increase overall regional premiums for high-quality black mass

Source: S&P Global Energy

European Ni and Co payables tightly follow South Korean payables



Ni-Co payables increased to above **80%** for **Europe** and over **100%** for **S Korea** (mid-nickel BM) amid strong underlying metal prices.

European payables remain tightly correlated with Asian market as European domestic demand remains nascent.

Lithium payables still assessed at **0%** amid market participants unwilling to pay for a separate payable, although Li content impacts Ni-Co payables.

Source: S&P Global Energy

Chinese domestic LFP black mass prices mirror the lithium carbonate movement

Source: S&P Global Energy

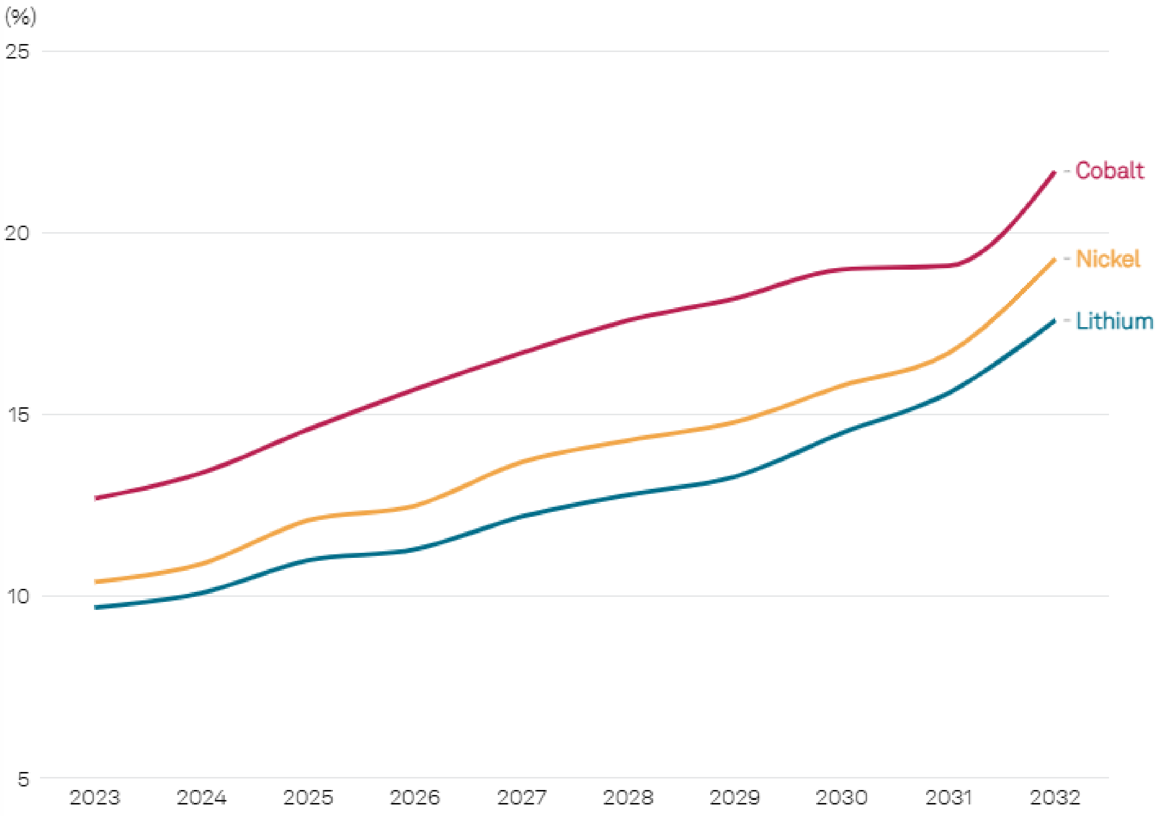
Chinese LFP black mass prices have tracked domestic lithium carbonate prices.

LFP black mass prices surging since early 2026, and reaching a **two-year high at Yuan 8,800/mt per percent lithium** in May then dropped off. Typical lithium contained in China-delivered LFP is 3.8%.

Chinese domestic recyclers prefer NMC-containing black mass over LFP black mass given generally higher value for NMC recycling compared to Li carbonate extraction in LFP black mass.

What's next?

Potential share of raw materials sourced from automotive battery recycling



Source: S&P Global Mobility

Recycling rates will keep increasing with Europe leading the way, driven by strict regulation (**Nov 2026** restriction on exports to **non-OECD** countries) and a preference for high-nickel NMC chemistries.

Between 2024-2037, Europe's EOL battery-derived **cobalt**, **nickel**, and **lithium** availability CAGR: **32.5%, 48.3%, and 41.8%,** respectively.

Globally, recycled automotive batteries can supply **18% of lithium**, **19% of nickel** and **22% of cobalt** by 2032.

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Thank you

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