

# EV metals and battery materials at the LME



POWERING ALL OUR FUTURES

With almost 150 years at the heart of global metals markets, the London Metal Exchange (LME) is uniquely placed to provide effective risk-management solutions for the whole electric vehicle (EV) value chain, from miners through to end users. Those who produce, consume and invest in the metals and battery materials that are fundamental to the production of EVs use the LME to help them discover transparent and robust prices, and as a liquid venue for hedging and trading.

We work closely with participants across the EV and battery industries to identify and develop risk management and trading solutions tailored to the requirements of this rapidly expanding sector.

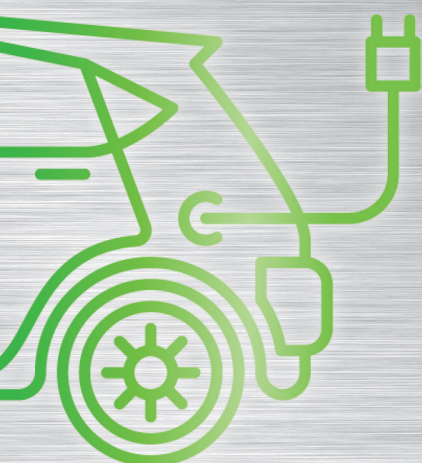
## Risk management for the low carbon economy

As the world moves away from fossil fuel-based energy generation, the rise of the green technologies needed to achieve a low-carbon future is already driving significant growth in demand for a broad range of metals. With most automotive manufacturers planning to go completely electric by 2050, the drive towards greater sustainability around the world is putting additional pressure on the supply chains for many of these metals.

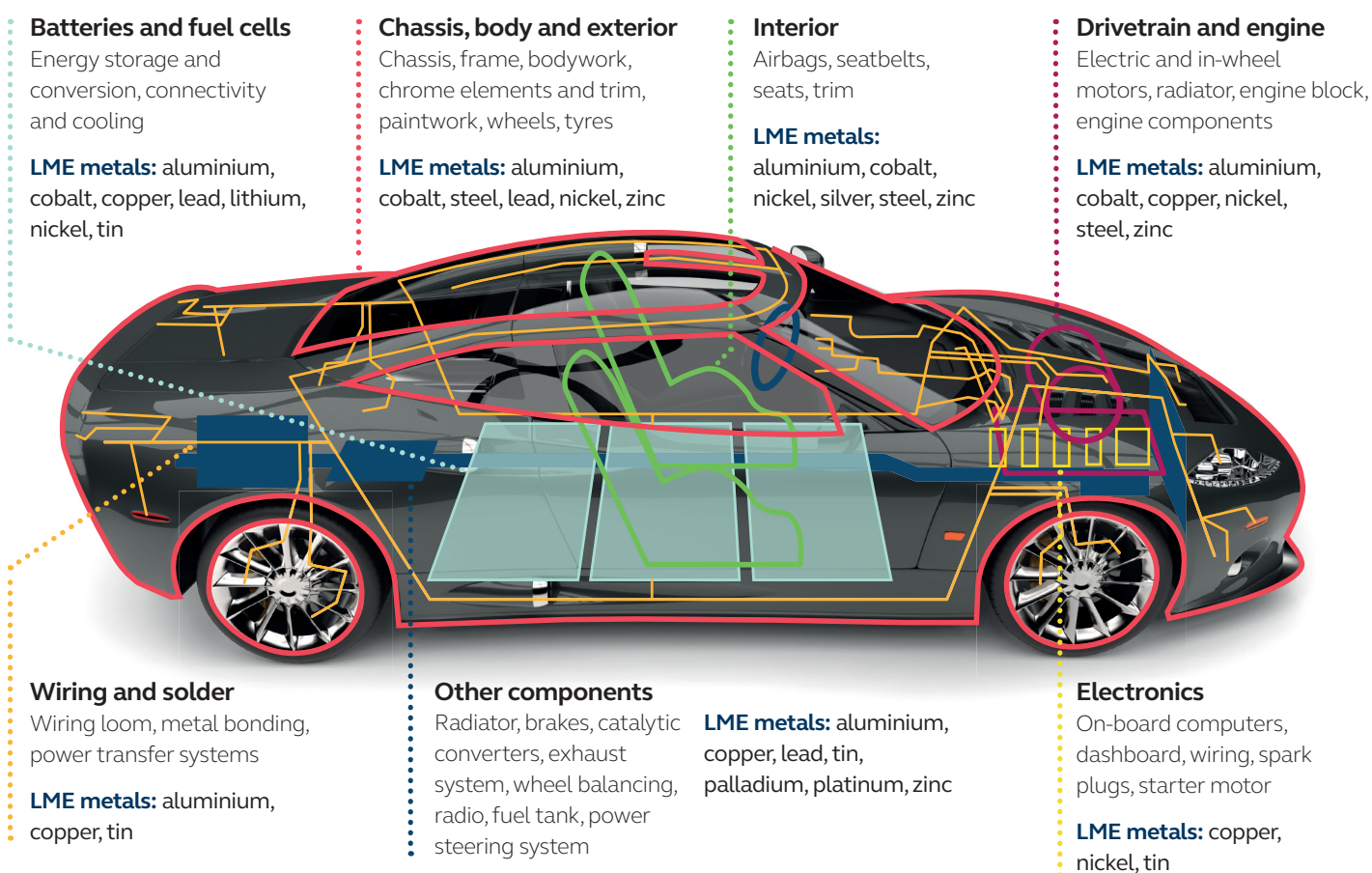
The growth of the EV sector is also intrinsically linked to the expansion of renewable energy generation and energy storage; one cannot grow without the others. Aluminium, copper, steel plate and construction steel are key inputs for renewable energy systems – solar, wind, hydro and thermal – in the generation, storage and distribution of that energy.

At the same time, zinc is playing an increasingly important role as a battery material for energy storage at charging stations and for smart energy grids. The deployment of large, stationary lead-acid batteries is also being explored to provide stability and resilience for the same purposes.

As the global requirement for the materials that are essential for the sustainable transition grows exponentially, this inevitably has an impact on availability and, subsequently, price. The demand for metals from this sector as well as risk management solutions for financing sectoral growth continues to increase. The LME's long-established role in facilitating access to physical material, together with providing hedging solutions and price discovery uniquely positions us to support this global economic transition.



The LME offers contracts covering a wide range of metals that are fundamental elements of the automotive industry and the transition to a low carbon economy. Almost every industrial metal and battery material available to trade on the LME is used in EVs in some way – for hybrids, plug-in hybrids and fully electric vehicles – and most are experiencing rising demand as global auto manufacturing shifts towards the production of these vehicles.



Some components found in HEVs and PHEVs and not full EVs



Aluminium is widely used by automotive companies for “light-weighting” – that is, reducing the weight

of the body and chassis, which offsets the weight of the battery and increases performance and range. The LME’s primary aluminium contract, launched in 1978, is the most liquid in the world and is the global reference price for this commodity.



Cobalt is important in several battery technologies, increasing the stability, energy

density and longevity of batteries, which is crucial for electric vehicles. About 50% of the cobalt produced globally is used for rechargeable batteries. Cobalt’s price has been volatile and is susceptible to supply constraints, ethical concerns and moves by some auto manufacturers to seek ways of reducing dependence on cobalt in their batteries. The LME offers both physical and cash-settled cobalt contracts.



Copper is essential for wiring and electronics in EVs; significantly more copper is required to

construct an EV than a conventional internal combustion engine vehicle, with up to a mile of copper wiring needed. It is also essential for renewable energy systems – solar, wind, hydro and thermal – in the generation, storage and distribution of that energy. Together with LME Tin, LME Copper contract is the oldest on the Exchange. It is a physically settled contract and is one of most actively traded contracts on the LME.



Steel has long been integral to the global car industry and will continue to play a vital role in

the EV revolution and the transition to more renewable energy sources. The development of lighter forms of steel mean that it is increasingly competing with aluminium for use in EV construction in the chassis and the safety frame, due to its strength and durability. The LME has a long-standing and close relationship with the ferrous industry, offering a broad range of steel cash-settled futures.



The cash-settled LME Lithium contract joined our suite of futures after extensive market

engagement working with the producers, processors and consumers of this vital battery material. Lithium's high energy density makes it a lightweight option for EV batteries and it is high demand from this sector. Global demand is likely to significantly outstrip supply in the coming years.



Nickel is popular for EVs for its balance of high energy density and storage capacity,

which increases vehicle range and performance. The LME Nickel contract was launched in 1979. The fifth-most common element on earth, nickel is most often used to make stainless steel, or is alloyed with other metals due to its anti-corrosive and high-temperature resistance properties. It is also a key input in the production of nickel cadmium (NiCd) batteries, nickel metal hydride (NiMH) batteries and is prevalent in most lithium-ion battery chemistries.



Lead has a role to play for both the EVs and energy storage sectors. Inexpensive, reliable,

high-powered and easy to recycle and replace, lead-acid batteries are still used in EVs to power various systems such as lights and windows. Lead is expected play a new and increasing role in the storage of energy generated by renewable power sources. Launched in 1920, the LME Lead contract has been the natural place for the lead industry to manage their price risk for the last century. LME Lead joined other LME non-ferrous peers in the Bloomberg Commodity Index (BCOM) in 2023.



LME Tin has been available to trade on the LME since 1877. As the EV revolution and move

towards more sustainable energy sources gathers pace, tin has a new and crucial role to play in this new lower-carbon world. It is an essential input for EVs and their batteries, as well as for renewable energy generation, energy storage and the electronics needed to control and distribute that energy.



Zinc has been traded on the LME for over 100 years. Zinc batteries are generally more suited

to "stationary" uses, particularly as a more affordable option, for example, in energy storage and delivery systems. More stable and fire resistant than other battery materials, zinc's availability and high recyclability make it an increasingly attractive option. Current research is focusing on zinc's potential as a battery material for storing energy for charging stations. LME Zinc is a popular choice for cross-market hedging or arbitrage activities across the LME and the Shanghai Futures Exchange (SHFE).

## How to trade LME contracts

Whether you are an industrial hedger, physical market trader, asset manager or proprietary trader, market participants who want to trade LME contracts can do so through Category 1, 2 and 4 Members and their associated Independent Software Vendors (ISVs).

LME members trade on the Exchange in one of three ways: on the open outcry trading floor, the Ring; via our electronic trading platform LMEselect; or via the 24-hour telephone market.

There's a full list of LME members available on our website at [lme.com/trading/access-the-market](https://lme.com/trading/access-the-market).

Please contact the LME Sales team by email at [EVmetals@lme.com](mailto:EVmetals@lme.com) for further details and guidance on how to access the market.

## Contract details for the LME's lithium and cobalt cash-settled futures

### LME Lithium Hydroxide CIF (Fastmarkets MB)

Contract specification

| Contract code      | LH  |                         |
|--------------------|---|-------------------------|
| Contract type      | Cash-settled future   |                         |
| Lot size           | 1 metric tonne  |                         |
| Prompt dates       | Monthly prompts out to 15 months  |                         |
| Price quotation    | USD per metric tonne  |                         |
| Clearable currency | USD   |                         |
| Final settlement   | Final settlement, following termination of the trading for a contract month, will be based on the reported arithmetic monthly average of Fastmarkets' Lithium hydroxide monohydrate 56.5% LiOH.H <sub>2</sub> O min, battery grade, spot price cif China, Japan & Korea, \$/kg price, which is available from Fastmarkets from 16.30 London time on the last trading day. |                         |
| Trading venues     | LMEselect   | 01.00-19.00 London time |
|                    | Inter-office telephone  | 24 hours a day          |

The LME's cash-settled cobalt contract settles against Fastmarkets' Lithium hydroxide monohydrate 56.5% LiOH.H<sub>2</sub>O min, battery grade, spot price cif China, Japan & Korea, \$/kg (MB-LI-0033) assessment.

### Pricing methodology from Fastmarkets MB

|                 |  |
|-----------------|--|
| Price           | Lithium hydroxide monohydrate 56.5% LiOH.H <sub>2</sub> O min, battery grade, spot price cif China, Japan & Korea, \$/kg (MB-LI-0033)  |
| Quality         | Powder, accepted by buyer for use in battery applications and with the chemical composition LiOH.H <sub>2</sub> O 56.5% min; CO <sub>2</sub> <0.35%; Ca 0.020% max; SO <sub>4</sub> 0.015% max; Cl- 0.005% max |
| Quantity        | Minimum 5 tonnes   |
| Location        | cif main Chinese Japanese & South Korean ports (other ports normalized)  |
| Timing          | 60 days  |
| Unit            | USD/kg   |
| Publication     | Weekly, Thursday 16.00 London time   |
| Fastmarkets URL | <a href="https://www.fastmarkets.com/methodology/metals/lithium">https://www.fastmarkets.com/methodology/metals/lithium</a>  |

## LME Cobalt (Fastmarkets MB)

### Contract specification

| Contract code      | CB   |                         |
|--------------------|--|-------------------------|
| Contract type      | Cash-settled future  |                         |
| Lot size           | 1 metric tonne   |                         |
| Prompt dates       | Monthly prompts out to 15 months   |                         |
| Price quotation    | USD per metric tonne   |                         |
| Clearable currency | USD  |                         |
| Final settlement   | Final settlement, following termination of the trading for a contract month, will be based on the reported arithmetic monthly average of the Fastmarkets MB Cobalt standard grade, in-whs Rotterdam, \$/lb assessment which is available from 15:00 London time on the last trading day. Please note: the settlement price will be taken from the low end of the standard grade range. |                         |
| Trading venues     | LMeselect  | 01.00-19.00 London time |
|                    | Inter-office telephone   | 24 hours a day          |

The LME's cash-settled cobalt contract settles against Fastmarkets MB Cobalt standard grade, in-whs Rotterdam, \$/lb assessment.

### Pricing methodology from Fastmarkets MB

|                 |  |
|-----------------|--|
| Price           | Fastmarkets MB Cobalt standard grade, in-whs Rotterdam, \$/lb  |
| Quality         | Min 99.8% cobalt metal; standard specifications of the following brands in original packaging: Nikkelverk cut cathodes, Vale Port Colborne rounds, Vale Long Harbour alloy grade rounds (99.9% cobalt), SMM cut cathodes, Jinchuan cut cathodes, Jiangsu (KLK) broken cathodes |
| Quantity        | Minimum 5 tonnes   |
| Location        | In-warehouse Rotterdam, duty-unpaid, customs uncleared   |
| Timing          | 60 days  |
| Unit            | USD/kg   |
| Publication     | Daily, Monday-Friday 15.00 London time   |
| Fastmarkets URL | <a href="https://www.fastmarkets.com/methodology/metals/cobalt">https://www.fastmarkets.com/methodology/metals/cobalt</a>  |

For full detailed contract specifications, please visit the relevant metal page on LME.com.

## Trading codes from data vendors

If you have a Bloomberg subscription, you can find the LME's lithium and cobalt contracts via the codes below.

| Contract name   | Bloomberg code |
|---|----------------|
| <b>LME Lithium (Fastmarkets MB) cash-settled contract</b> | LMYA Comdty    |
| <b>LME Cobalt (Fastmarkets MB) cash-settled contract</b>  | BYWA Comdty    |
| <b>LME Cobalt physically settled contract</b>             | LMCODY Comdty  |

If you have a Refinitiv subscription, you can find the three contracts on the system via the codes below.

| Contract name   | Refinitiv codes |             |
|---|-----------------|-------------|
| <b>LME Lithium (Fastmarkets MB) cash-settled contract</b> | RING/IO         | 0#CSLHF:    |
|   | LMeselect       | 0#CSLHF:=LX |
|   | Composite       | 0#CCSLHF:   |
| <b>LME Cobalt (Fastmarkets MB) cash-settled contract</b>  | RING/IO         | N/A         |
|   | LMeselect       | 0#LCB:=LX   |
|   | Composite       | 0#CLCB:     |
| <b>LME Cobalt physically settled contract</b>             | RING/IO         | 0#CBD:      |
|   | LMeselect       | 0#CBD:LX    |
|   | Composite       | 0#CCBD:     |

## Contact us

If you'd like to get in touch with the LME Team about any aspects of our offering for EV metals and battery materials, please email [EVmetals@lme.com](mailto:EVmetals@lme.com) or to find out more visit [lme.com/metals/EV](https://lme.com/metals/EV).

## Notes

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