

Power all our futures

19th Asian Battery Conference
November 2021



SETTING THE GLOBAL STANDARD



Agenda

Section	Title
1.	EV metals and battery materials at the LME
2.	LME's sustainability strategy
3.	Spot trading platform



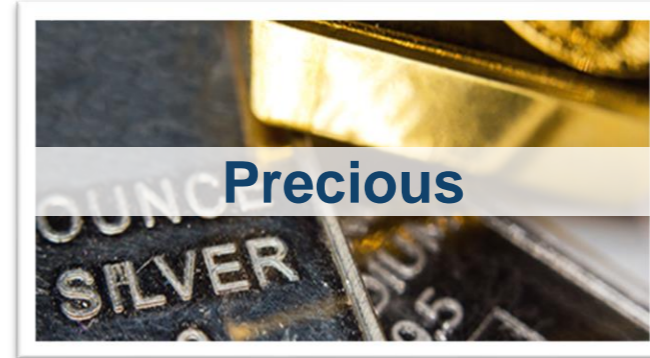
EV metals and battery materials at the LME

Who we are?

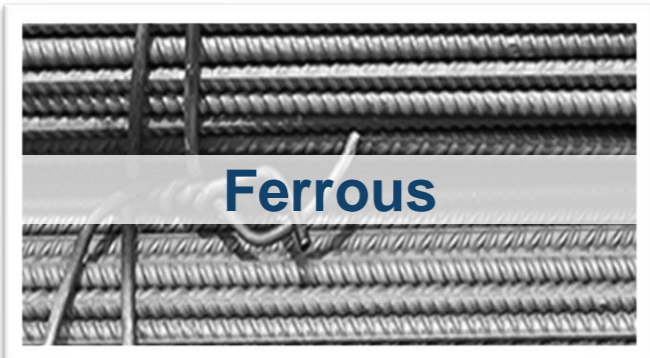
- **Setting the Global Standard since 1877**



Our core products



Collaborative initiative with leading industry players to bring loco London precious metals onto a cleared platform.



Industry able to take advantage of 15-month tradeable forward curve for both steel scrap and rebar.



Working closely with key market participants to identify and serve industry's evolving risk management requirements

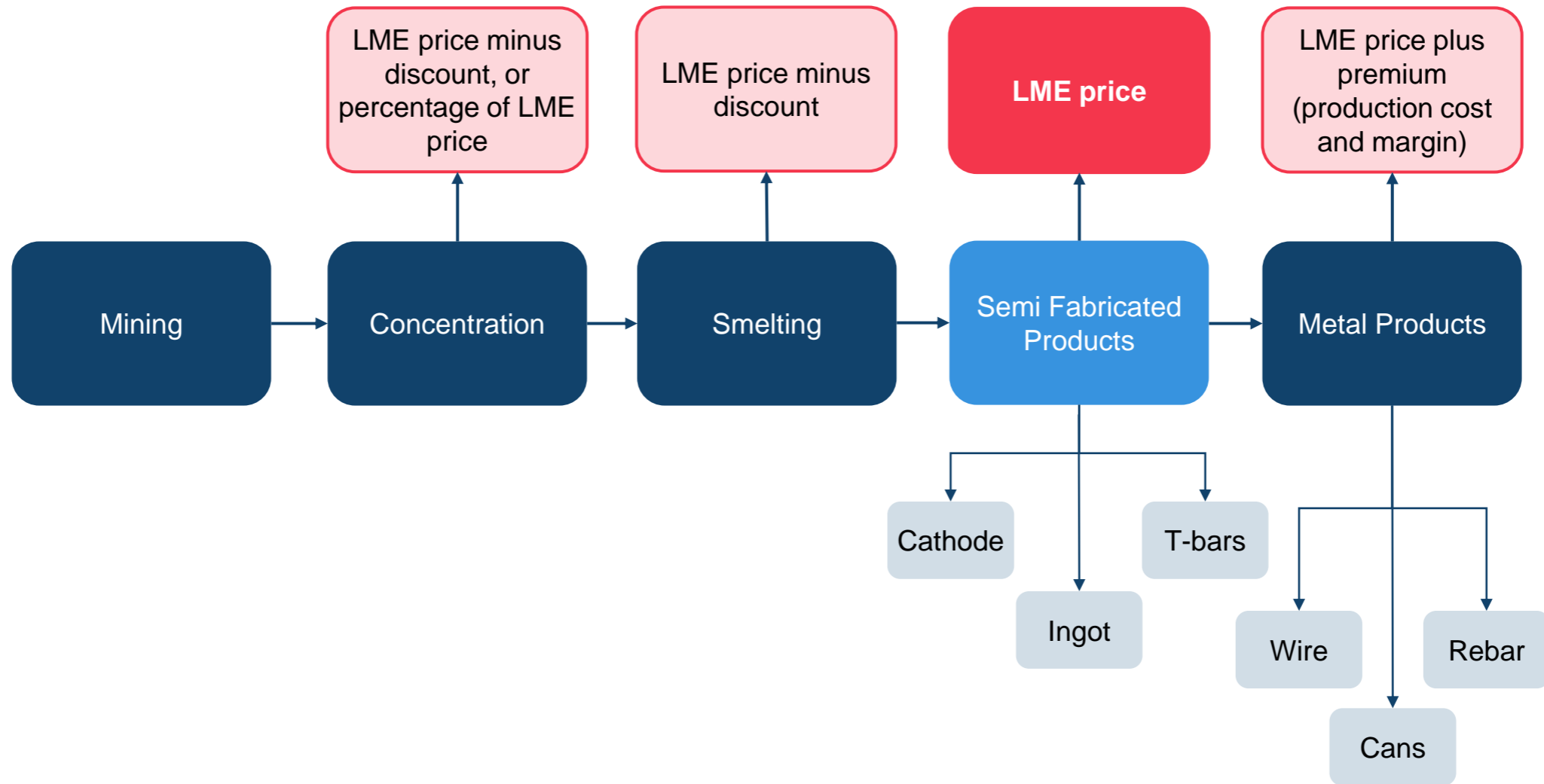


LME is uniquely positioned to serve the EV industry

Lithium hydroxide will build upon the existing suite of metal contracts



Metal markets revolve around LME prices



The LME offers two Cobalt contracts

Contract name	LME Cobalt (physically settled)	LME Cobalt (cash settled)
Contract code	CO	CB
Contract type	Futures	
Delivery type	Physically settled	Cash settled
Lot size	1 metric tonne	
Contract period	Daily to 3 months, weekly 3-6 months, monthly 7-15 months	Monthly out to 15 months
Price quotation	USD / metric tonne	
Underlying index	N/A	Fastmarkets MB Cobalt Standard grade free market \$/tonne in warehouse
Clearable currencies	USD, JPY, GBP, EUR	USD
Termination of trading	Up until the close of the first Ring the day before the prompt date	Last business day of the contract month
Daily settlement / margining procedure	The last cash offer price quoted during the second Ring session	LME Trading Operations will calculate daily settlement values based on its published procedure
Final settlement procedure	As above	Final settlement, following termination of the trading for a contract month, will be based on the PRA reported price
Trading venues	Ring, LMEselect, inter-office telephone	LMEselect and inter-office telephone
Trading hours	Ring: 11:40 – 17:00 London Time	
	LMEselect: 01:00 – 19:00 London Time	
	Inter-office telephone: 24 hours a day	
Margining	Discounted contingent variation margin	Realised variation margins applied



LME brands for physically settled Cobalt contract

Country/Region	Brand	Producer	Deliverable Shape
Australia	MINARA COBALT BRIQUETTES	Minara Resources Pty Ltd	Briquettes
Canada	VALE ELECTROLYTIC COBALT ROUNDS	Vale Canada Limited	Rounds
China	CASH	Yantai Cash Industrial Co., Ltd.	Cathodes (Cut)
China	GOLDEN CAMEL 9995	Jinchuan Group Co., Ltd.	Cathodes (Cut)
China	HUAYOU	Quzhou Huayou Cobalt New Material Co., Ltd	Cathodes (Cut)
China	KLK 9995	GEM (Jiangsu) Cobalt Industry Co Ltd	Cathodes (Cut)
Finland	FC COARSE COBALT POWDER S1 d200/1000	Freeport Cobalt Oy	Coarse grain powder
Finland	UMICORE COBALT POWDER S1	Umicore Finland Oy	Coarse grain powder
Japan	SMM CO 99.8%	Sumitomo Metal Mining Co., Ltd.	Cathodes (Cut)
Madagascar	AMBATOVY COBALT BRIQUETTES	Dynatec Madagascar S.A. a "société anonyme"	Briquettes
Morocco	CMBA	CTT - Compagnie de Tifnout Tiranimine	Cathodes (Broken)
Russia	NORNICKEL	JSC "Kola GMK"	Cathodes (Cut)
Zambia	CMA	Chambishi Metals Plc	Cathodes (Broken)
Zambia	CMP	Chambishi Metals Plc	Cathodes (Broken)

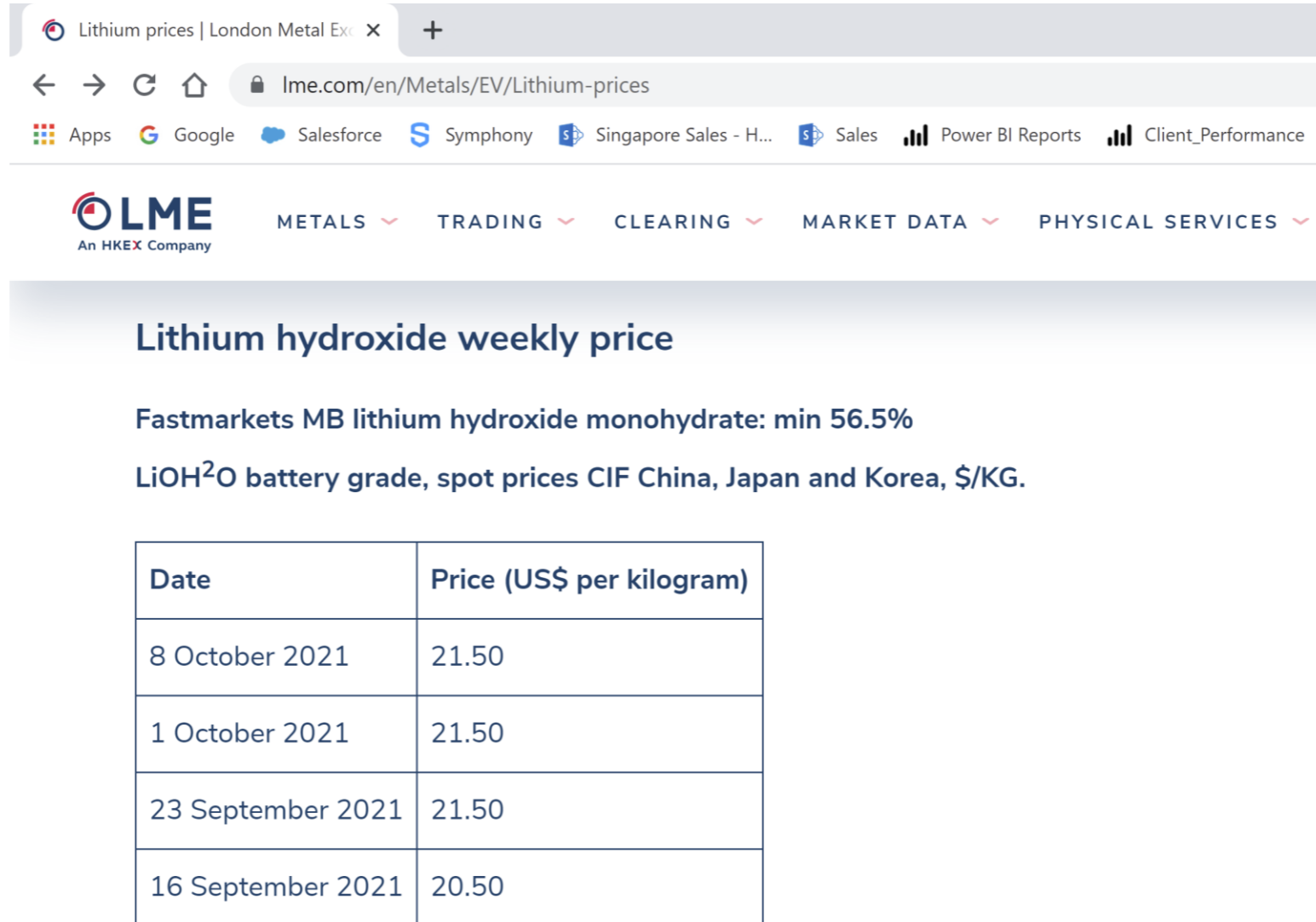


LME Lithium Hydroxide (Fastmarkets MB) contract specifications

Contract name	LME Lithium Hydroxide (Fastmarkets MB)
Contract code	LH
Contract type	Futures
Delivery type	Cash settled
Lot size	1 metric tonne
Contract period	15 months
Price quotation	USD / metric tonne
Underlying index	Battery-grade lithium hydroxide monohydrate, 56.5% LiOH.H ₂ O min, battery grade, spot price, cif China, Japan and Korea
Clearable currencies	USD
Termination of trading	Last business day of the contract month
Daily settlement / margining procedure	LME Trading Operations will calculate daily settlement values based on its published procedure
Final settlement procedure	Final settlement, following termination of the trading for a contract month, will be based on the PRA reported price
Trading venues	LMEselect, inter-office telephone
Trading hours	LMEselect: 01:00 – 19:00 London Time
	Inter-office telephone: 24 hours a day
Margining	Realised variation margin



Lithium hydroxide weekly price



The screenshot shows the LME website page for Lithium hydroxide prices. The page title is "Lithium hydroxide weekly price". Below the title, it states "Fastmarkets MB lithium hydroxide monohydrate: min 56.5% LiOH²O battery grade, spot prices CIF China, Japan and Korea, \$/KG." A table below provides the weekly price data.

Date	Price (US\$ per kilogram)
8 October 2021	21.50
1 October 2021	21.50
23 September 2021	21.50
16 September 2021	20.50



LME Lithium Committee

Est. 2019

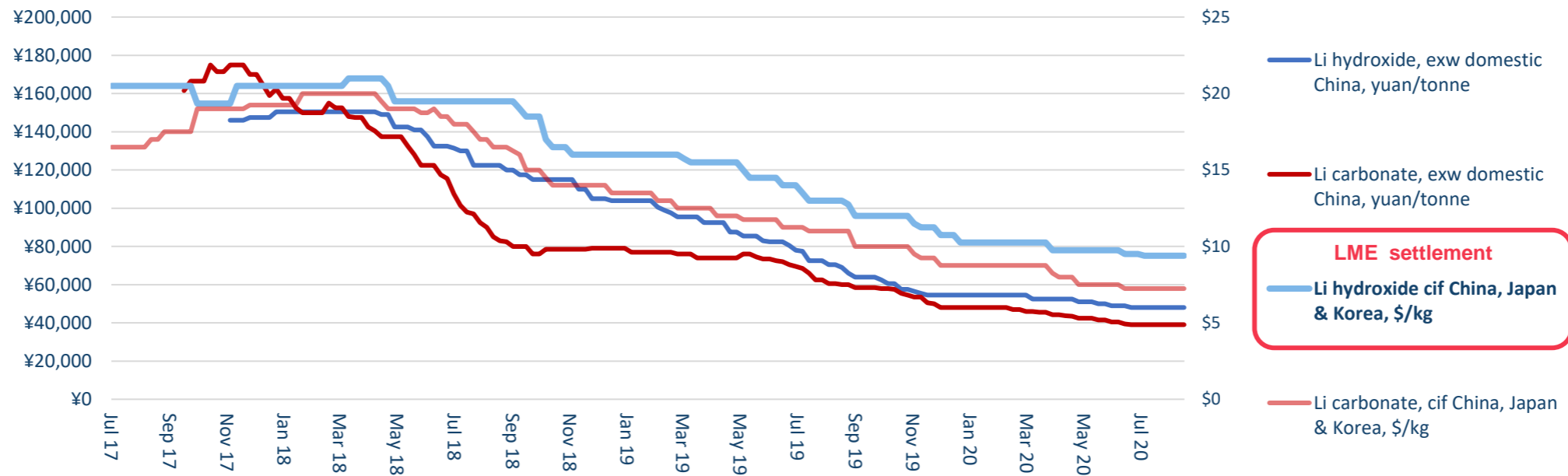
NAME	COMPANY
Ron Mitchell	Tianqi Lithium Corporation
Estibaliz Aurre	BASF SE
Ken Brinsden	Pilbara Minerals Limited
Alison Dai	Chengdu Chemphys Chemical Industry Co. Ltd
Maximilien Deudon	Transamine Trading S.A.
Alex Gutierrez	Albemarle Corporation
Sarah Maryssael	Tesla, Inc.
Ernie Ortiz	Lithium Royalty Corporation
Ben Plester	Jaguar Land Rover Limited
Takeshi Saigo	Toyota Tsusho Corporation
Hanna Schweitz	Northvolt AB
Kristoffer Stenberg	Goldman Sachs International



Hedge carbonate and hydroxide basis LME Lithium contract

Strong price correlations enable the LME Lithium Hydroxide CIF (Fastmarkets MB)¹ contract to serve as a hedging tool for the global industry

Lithium CIF and domestic China prices²



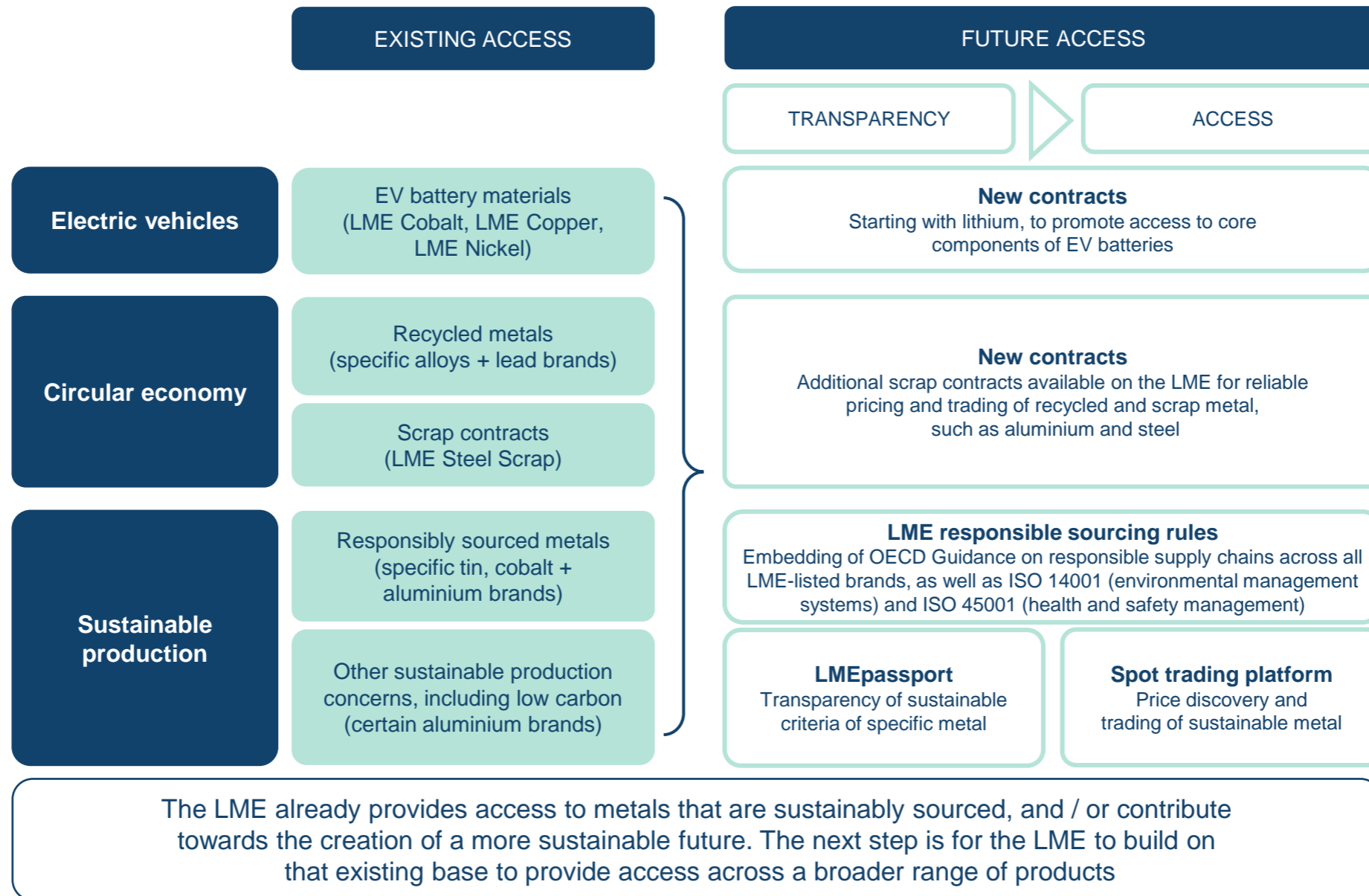
- Correlation of weekly prices between CIF hydroxide and CIF carbonate: $R^2 = 97.71\%$
- Correlation of weekly prices between exw hydroxide and exw carbonate: $R^2 = 93.74\%$
- Correlation of weekly prices between CIF hydroxide and exw hydroxide : $R^2 = 98.66\%$
- Correlation of weekly prices between exw carbonate and exw carbonate: $R^2 = 93.60\%$

1. Pending regulatory approval



LME's sustainability strategy

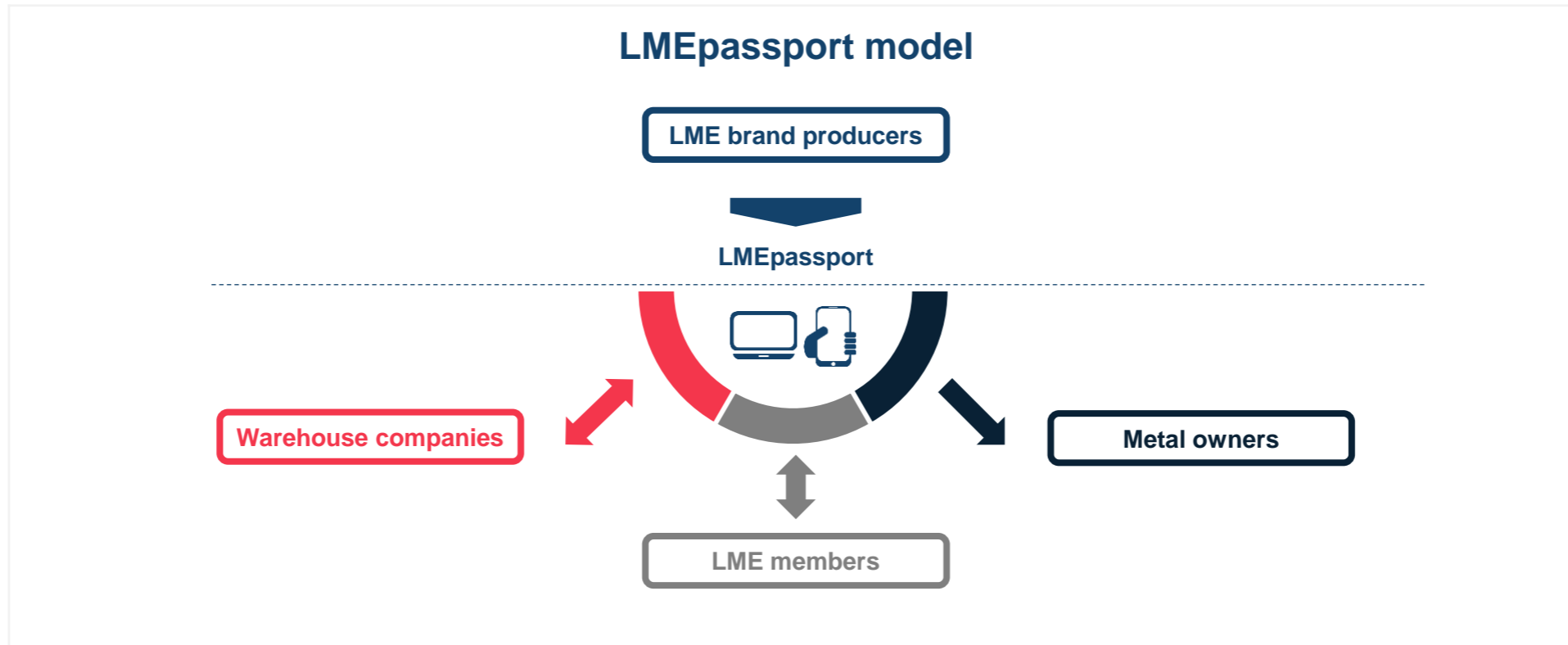
LME: transparency, pricing and access to sustainable metal



LMEpassport

LMEpassport is a digital provenance register providing a single, consolidated source of metal credentials data.

- LMEpassport will digitise certificates of analysis (COA) creating records at the cast level
- Act as a repository for sustainability certifications and disclosures
- And distribute this information to those who need it, when they need it



LMEpassport will be rolled out in a phased approach

Obligations relating to metal contracts will begin from 01 October 2021.

- Obligations relating to LMEpassport will be effected through revisions to the LME Rulebook and the LME Warehouse Agreement
- Further details relating to these changes can be found in 21 044 Decision Notice For Consultation on LMEpassport and Other Miscellaneous Amendments



LME-defined sustainability taxonomy



First report – 12 October 2021

- Anglo American
- Antofagasta Minerals
- Boliden
- CBA
- Freeport-McMoRan
- Rusal
- Teck
- Thaisarco
- Huayou Cobalt

<https://www.lme.com/en/Company/Responsibility/Sustainability/Sustainability-disclosures-on-LMEpassport>



Spot trading platform

LME partnership with Metalshub

A digital spot platform and marketplace for base metals trading



- LME has partnered with Metalshub, a leading digital metals procurement platform
- This collaboration responds to the growing demand for the digital trading of physical metals and for sustainably produced metal
- Benefits to the metals value chain include transparency, efficiency and easily evidenced compliance with procurement requirements



- The initiative will complement the LME's existing product offering, and will expand the physical product suite on Metalshub to encompass LME core base metals
- Over the coming months, the LME will undertake focused market engagement with its industrial user groups globally
- A suitable product pipeline will be outlined, with new products such as low carbon aluminium expected to be made available in early 2022



- The spot trading initiative is central to the LME's sustainability agenda, which aims to provide greater transparency and market access to sustainably produced metals, with Metalshub now able to offer a procurement platform for such products
- LME and Metalshub aim to support the metals industry in its efforts to decarbonise the economy, and ensure responsible sourcing across supply chains



Platform overview

Metalshub is a web-based metals marketplace

The screenshot displays the Metalshub platform interface. At the top, there is a navigation bar with the following elements: the 'Special Metal' logo, a 'My Hub' dropdown menu (circled in red and labeled 1), a 'Marketplace' button (circled in red and labeled 2), a 'Data' dropdown menu (circled in red and labeled 3), a 'CRM' button (circled in red and labeled 4), and a 'Special Metal Group' dropdown menu (circled in red and labeled 5). Below the navigation bar, the main content area is titled 'My Products'. It features a grid of product cards. Each card includes a product name, a description, a material ID, a chemical composition table, an image of the product, and two buttons: 'Edit' and 'Create Listing'. The products shown are: CaSi (Calcium Silicon), Concentrated MoOx Powder (Molybdenum Oxide Powder), Cu Granules - Standard (Copper granules 1A), FeB (Ferroboron), FeCr Low Carbon (Low Carbon Ferrochrome), FeMo 65 (Ferromolybdenum), FeNb (Feroniobium), and FeNi (Ferronickel). A large yellow plus sign and the text 'Click here to create a new product' are also visible in the top-left corner of the product grid.

- 1 My Hub**
Create and manage all product specs, listings (RFQs), negotiations & contracts and business analytics
- 2 Marketplace**
Find listings (RFQs) of market participants to quote
- 3 Data**
Access price indices based on real transactions and other market information
- 4 CRM**
Counterparty Relationship Management System to manage buyer, suppliers and related information
- 5 Company Profile**
Manage your own company information and profile and switch between companies and languages (9 languages)

Source: Metals Hub GmbH



LME Education

- Courses – in person or virtual
 - 10% discount on all courses (LME10)
- Bespoke courses
- Webinars – in conjunction with Euromoney Learning
- HedgeTutor – online education platform

<https://www.lme.com/en/Education>



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