



LME Cash-Settled Futures Daily Settlement Prices – Methodology

1 Introduction

The London Metal Exchange (“LME”) is a world centre for the trading of industrial metals and provides pricing, risk and terminal market services to the global physical metals industry. LME publishes various prices, some of which fall within the definition of ‘benchmark’ pursuant to the European Benchmarks Regulation (Regulation (EU) 2016/1011) (“BMR”).

For the avoidance of doubt, the Cash-Settled Futures Daily Settlement Prices determined using this methodology are not benchmarks as defined by the BMR.

2 General Information

2.1 Date of Original Publication

02 November 2020

2.2 Date of Last Update

31/10/2023

2.3 Review of Methodology

This methodology is subject to periodic review and proposed changes shall be considered by the LME Pricing and Valuations Committee.

2.4 Key Definitions

This methodology should be read in conjunction with the rules and regulations of the LME (“Rulebook”). Any capitalised terms not specifically defined in the methodology shall have the meaning given to them in the Rulebook.

In this methodology, the following specific definitions shall apply:

“Expert Judgement” means the exercise of discretion and any determination made by the LME Trading Operations team with respect to the use of data in determining a Daily Settlement Price by using a standard of judgement, which shall consist of (1) acting in good faith and in a commercially reasonable manner; (2) to the extent practicable, reflecting the commercial objective of the price and market practice; and (3) to the extent practicable, promoting consistency in the exercise of discretion and the making of determinations. For the avoidance of doubt, the term “using a standard of judgement” shall exclude any actions taken by LME personnel in determining a Daily Settlement Price where such actions are taken pursuant to a documented process.

“Objection Window” means the five minute period following the publication of each provisional price during which certain users may object.



“Pricing Period”	means the defined period of time during which trading activity is relevant for the purpose of determining each Daily Settlement Price as set out in paragraph 4.1.
“Pricing Waterfall”	means the process described in section 4.1.3.
“Prompt Date”	means the Business Day on which the relevant Cash-Settled Future is to be cash settled, which is the last Business Day of the calendar month in which the Cash-Settled Future is due to expire;
“MVR Threshold”	means the minimum volume required to be transacted in the Pricing Period for a VWAP to be considered, as set out in paragraph 4.1.2.

3 Cash-Settled Futures Daily Settlement Prices

As at the date of the last update to this methodology, Cash-Settled Futures Daily Settlement Prices are determined in relation to a number of Prompt Dates relating to the following:

- (a) LME Lithium Hydroxide CIF (Fastmarkets MB);
- (b) LME Steel Scrap CFR Taiwan (Argus);
- (c) LME Steel Scrap CFR India (Platts);
- (d) LME Steel HRC FOB China (Argus);
- (e) LME Steel Scrap CFR Turkey (Platts);
- (f) LME Steel Rebar FOB Turkey (Platts);
- (g) LME Steel HRC N.America (Platts);
- (h) LME Steel HRC NW Europe (Argus);
- (i) LME Cobalt (Fastmarkets MB);
- (j) LME Molybdenum (Platts);
- (k) LME Aluminium Premium Duty Unpaid European (Fastmarkets MB);
- (l) LME Aluminium Premium Duty Paid European (Fastmarkets MB);
- (m) LME Alumina (Platts);
- (n) LME Aluminium UBC Scrap US (Argus); and
- (o) LME Aluminium Premium Duty Paid US Midwest (Platts),

(each a “Daily Settlement Price” or collectively, the **“Cash-Settled Futures Daily Settlement Prices”**).

The Cash-Settled Futures Daily Settlement Prices are reference prices determined by the LME. For the avoidance of doubt, Cash-Settled Futures Final Settlement Prices utilise indices provided to the LME by third party price reporting agencies (**“Final Settlement Price”**). These indices are not the proprietary prices of the LME (and are not therefore capable of being administered by the LME). This methodology does not therefore apply to the Cash-Settled Futures Final Settlement Prices.



4 Pricing Methodology

4.1 Criteria and Procedures used for price determination

This methodology is used each Business Day to calculate the Daily Settlement Price for each Prompt Date.

4.1.1 General Methodology

The Cash-Settled Futures Daily Settlement Prices are determined through the application of a volume weighted average price (“**VWAP**”) calculation, which uses as its input data the concluded transactions executed on LMEselect, or alternative arrangements where LMEselect is unavailable, during the relevant pre-defined Pricing Period, where the MVR Threshold is met.

All trades in outright for the relevant Prompt Date for the relevant Cash Settled Futures Contract that occur during the relevant Pricing Period will be considered for the purposes of the MVR Threshold and VWAP calculation, unless the Exchange excludes any trade it deems erroneous at the Exchange’s absolute discretion.

If the relevant MVR Threshold is not reached, the Cash-Settled Futures Daily Settlement Prices shall be determined using the Pricing Waterfall.

For the avoidance of doubt:-

- (a) the terms “bid” and “offer” at all times refers to best bid and best offer active in the market at the close of the Pricing Period;
- (b) only orders and transactions concluded up to and including the close of each respective Pricing Period on that day will be taken into account for the purposes of determining the Cash-Settled Futures Daily Settlement Prices.

The Pricing Periods are as follows:

Cash Settled Future	Pricing Period (London time)
LME Lithium Hydroxide CIF (Fastmarkets MB)	15:00:00.000 - 15:04:59.999
LME Steel Scrap CFR Taiwan (Argus)	15:45:00.000 - 15:49:59.999
LME Steel Scrap CFR India (Platts)	15:45:00.000 - 15:49:59.999
LME Steel HRC FOB China (Argus)	15:45:00.000 - 15:49:59.999
LME Steel Scrap CFR Turkey (Platts)	16:25:00.000 - 16:29:59.999
LME Steel Rebar FOB Turkey (Platts)	16:25:00.000 - 16:29:59.999
LME Steel HRC N. America (Platts)	16:25:00.000 - 16:29:59.999
LME Steel HRC NW Europe (Argus)	16:25:00.000 - 16:29:59.999



LME Cobalt (Fastmarkets MB)	16:50:00.000 - 16:54:59.999
LME Molybdenum (Platts)	16:50:00.000 - 16:54:59.999
LME Aluminium Premium Duty Unpaid European (Fastmarkets MB)	16:55:00.000 - 16:59:59.999
LME Aluminium Premium Duty Paid European (Fastmarkets MB)	16:55:00.000 - 16:59:59.999
LME Alumina (Platts)	17:20:00.000 - 17:24:59.999
LME Aluminium UBC Scrap US (Argus)	17:20:00.000 - 17:24:59.999
LME Aluminium Premium Duty Paid US Midwest (Platts)	17:20:00.000 - 17:24:59.999

4.1.2 Minimum Volume Thresholds

For each of the Cash-Settled Futures Daily Settlement Prices, the MVR Threshold shall be as follows per Prompt Date (including implieds where applicable).

Cash Settled Future	MVR Threshold
LME Lithium Hydroxide CIF (Fastmarkets MB)	25 lots
LME Steel Scrap CFR Taiwan (Argus)	5 lots
LME Steel Scrap CFR India (Platts)	5 lots
LME Steel HRC FOB China (Argus)	5 lots
LME Steel Scrap CFR Turkey (Platts)	5 lots
LME Steel Rebar FOB Turkey (Platts)	5 lots
LME Steel HRC N. America (Platts)	5 lots
LME Steel HRC NW Europe (Argus)	5 lots
LME Cobalt (Fastmarkets MB)	25 lots
LME Molybdenum (Platts)	25 lots
LME Aluminium Premium Duty Unpaid European (Fastmarkets MB)	25 lots
LME Aluminium Premium Duty Paid European (Fastmarkets MB)	25 lots
LME Alumina (Platts)	25 lots



LME Aluminium UBC Scrap US (Argus)	25 lots
LME Aluminium Premium Duty Paid US Midwest (Platts)	25 lots

4.1.3 Pricing Waterfall

If the relevant MVR Threshold is not reached, a Cash-Settled Futures Daily Settlement Price shall be determined using the following Pricing Waterfall:

- (a) it shall be the last traded price during the Pricing Period if the last traded price is within, or at, the bid/offer on the close of the relevant Pricing Period;
- (b) if the last traded price during the Pricing Period is outside of the bid/offer on the close of the Pricing Period, then the bid/offer closest to the last traded price will be used;
- (c) if the Cash-Settled Future is untraded during the Pricing Period, then the mid-point of the bid/offer on the close of the Pricing Period will be used. Where this is not appropriate, then the Cash-Settled Futures Daily Settlement Price will be determined by the LME in its absolute discretion using Expert Judgement. Expert Judgement would typically involve observing the last trade/valuation prior to the Pricing Period and/or refinement of the curve (please see case studies set out in paragraph 4.1.4);
- (d) if the Cash-Settled Future is untraded on LMEselect and there is no bid and/or offer available on the close of the Pricing Period, then the LME Trading Operations team may, in its absolute discretion, reference the last traded price prior to the commencement of the Pricing Period; and
- (e) if the Cash-Settled Future is untraded and there is no bid and/or offer available and there have been no concluded trades made on LMEselect in the period prior to the commencement of the Pricing Period, then the LME Trading Operations team may, at its absolute discretion, discover the price as close as possible to the previous Business Day's price, taking into account bids and/or offers at the close of the Pricing Period.

Where:

- (a) the LME does not have access to any of the input data necessary to price a Cash-Settled Futures Daily Settlement Price; or
- (b) a linear approach to the Pricing Waterfall would determine an inaccurate price (in the LME's Expert Judgement),

the LME may set the Cash-Settled Futures Daily Settlement Price at a price at its absolute discretion using Expert Judgement (which may include, for example, "rolling over" the previous Business Day's price where this is considered to be reflective of the prevailing market price).

It is typically the case that there is greater liquidity in the market of Cash-Settled Futures with a Prompt Date nearer to the date that the Daily Settlement Price is being determined than those Prompt Dates further away. As such, when determining the value of the Cash-Settled Futures Daily Settlement Price for those Prompt Dates further away and where the LME is likely in practice to need to use Expert Judgement under the Pricing Waterfall, the LME shall be entitled to consider any available spread trading information.



Where the process as set out above results in an unreflective Daily Settlement Price, the LME may in its absolute discretion choose to utilise Quoted Settlement Price (“QSP”) values, if the LME Trading Operations team deems this to be appropriate. Typically, the QSP process will be used in relation to Prompt Dates for which the VWAP MVR Threshold has not been met, and where no LMEselect data is available. In using the QSP process for determining the Daily Settlement Price on any Business Day, the LME Trading Operations team will look to average pricing information across all of the data obtained by the LME, having discounted outliers using, where applicable, Expert Judgement.

Approximately fifteen (15) minutes after the end of the relevant Pricing Period, or as soon as is practicable after this, the LME shall publish provisional prices on the LME SFTP server and through LME licensed data vendors. Category 1, 2 and 4 Members may submit objections in relation to these provisional prices during the Objection Window. Objections must be submitted in writing to closingprices@lme.com. The LME shall be under no obligation to consider objections which are made verbally, or that are received by the LME outside the Objection Window. No amendment to the provisional price shall be made during the Objection Window. Finalised prices will be published as close to 17:50 London time as practicable.

For completeness, the key publication times are as follows:

Cash Settled Future	Provisional Prices (from) (London time)	Final Prices (from) (London time)
LME Lithium Hydroxide CIF (Fastmarkets MB)	15:20	17:50
LME Steel Scrap CFR Taiwan (Argus)	16:05	17:50
LME Steel Scrap CFR India (Platts)	16:05	17:50
LME Steel HRC FOB China (Argus)	16:05	17:50
LME Steel Scrap CFR Turkey (Platts)	16:45	17:50
LME Steel Rebar FOB Turkey (Platts)	16:45	17:50
LME Steel HRC N. America (Platts)	16:45	17:50
LME Steel HRC NW Europe (Argus)	16:45	17:50
LME Cobalt (Fastmarkets MB)	17:10	17:50
LME Molybdenum (Platts)	17:10	17:50
LME Aluminium Premium Duty Unpaid European (Fastmarkets MB)	17:15	17:50
LME Aluminium Premium Duty Paid European (Fastmarkets MB)	17:15	17:50
LME Alumina (Platts)	17:40	17:50
LME Aluminium UBC Scrap US (Argus)	17:40	17:50



LME Aluminium Premium Duty Paid US Midwest (Platts)	17:40	17:50
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4.1.4 Case Studies

By way of non-exhaustive examples of the interpretation of the Pricing Waterfall, the following scenarios are intended to assist with understanding the process of determining the Cash-Settled Futures Daily Settlement Prices in circumstances where the MVR Threshold has not been met:

4.1.4.1 Scenario One

- A Cash-Settled Futures Contract is being offered for trading on LMEselect with a particular Prompt Date.
- During the Pricing Period, the Cash-Settled Futures Contract is being bid at US\$294, offered at US\$298 and the last traded Contract during the Pricing Period is concluded at US\$297.
- In accordance with the Pricing Waterfall, the relevant price for the Prompt Date for the purposes of calculating the Daily Settlement Price would be US\$297 (i.e. limb (a) of the Pricing Waterfall).

4.1.4.2 Scenario Two

- A Cash-Settled Futures Contract is being offered for trading on LMEselect with a particular Prompt Date.
- During the Pricing Period, the Cash-Settled Futures Contract is being bid at US\$294, offered at US\$298 and the last traded Contract during the Pricing Period is concluded at US\$299.
- In accordance with the Pricing Waterfall, the relevant price for the Prompt Date for the purposes of calculating the Daily Settlement Price will be US\$298 (i.e. limb (b) of the Pricing Waterfall).

4.1.4.3 Scenario Three

- A Cash-Settled Futures Contract is being offered for trading on LMEselect with a particular Prompt Date.
- During the Pricing Period, the Cash-Settled Futures Contract is being bid at US\$294, offered at US\$298 but no Contract is concluded during the Pricing Period.
- In accordance with the Pricing Waterfall, the relevant price for the Prompt Date for the purposes of calculating the Daily Settlement Price will be US\$296 (i.e. limb (c) of the Pricing Waterfall).

4.1.4.4 Scenario Four

- A Cash-Settled Futures Contract with a particular Prompt Date closes at US\$299 at the close of the Pricing Period.
- On the following day, the same Cash-Settled Futures Contract with the same Prompt Date is offered for trading but remains unquoted during that day's Pricing Period.
- In accordance with the Pricing Waterfall, the relevant price for the Prompt Date for the purposes of calculating the Daily Settlement Price will be US\$299.



4.1.4.5 Scenario Five

- A Cash-Settled Futures Contract is being offered for trading on LMEselect with particular Prompt Dates.
- During the Pricing Period, the Cash-Settled Futures Contract May Prompt Date is being bid at US\$291, offered at US\$299 but no Contract is concluded during the Pricing Period.
- The Cash-Settled Futures Contract April Prompt Date has traded during the Pricing Period and the relevant price calculated through limb (a) of the Pricing Waterfall is \$290.
- The Cash-Settled Futures Contract June Prompt Date has traded during the Pricing Period and the relevant price calculated through limb (a) of the Pricing Waterfall is \$294.
- In accordance with the Pricing Waterfall, the relevant price for the May Prompt Date for the purposes of calculating the Daily Settlement Price would be US\$295 (i.e. limb (c) of the Pricing Waterfall), however Expert Judgement is applied to refine the curve to \$292 (which is still within the bid/offer spread).

4.2 Priority of Input Data

Where the MVR Threshold is met, the input data used to determine the Cash-Settled Futures Daily Settlement Price is limited to concluded transactions on outright. All such transactions are given equal weighting. No relative weightings are applied, for example, to bids over offers, or to front month data over transactions concerning Prompt Dates that are further out on the pricing curve.

Similarly, where the MVR Threshold is not met, no relative weightings are applied to the input data that is used. Specifically, transactions (where available) shall be given equal weighting to the bids, offers and other input data components applicable to that particular segment of the Pricing Waterfall.

4.3 Unit of Publication and Rounding

The Cash-Settled Futures Daily Settlement Prices are published in USD per metric tonne, short ton or pound (lb). The price quotation differs between the Cash-Settled Futures available for trading on the LME. For example, the price quotation of certain Cash-Settled Futures is USD per metric tonnes whilst others are in USD per pound (lb) or short ton. The price quotation for each Cash-Settled Future is set out in the relevant contract specification in Part 6 of the LME Rulebook.

In the physical commodity trading market, a standard market approach to pricing has arisen in relation to each particular commodity. For example, it is standard to price Aluminium on the basis of US dollars per metric tonne, whereas for Molybdenum, it is standard to price on the basis of US dollars per lb. The LME aims at all times to ensure that its products most accurately reflect market realities and so has determined that the Cash-Settled Futures Daily Settlement Prices should be quoted using the referencing unit that the market most commonly uses.

The values determined for each of the Cash-Settled Futures Daily Settlement Prices, where it is quoted on LMEselect do not require rounding, rather they will represent one tick, being a “minimum price movement” for the purposes of the Cash-Settled Futures Contract Specifications. The minimum price movements are set out in the relevant contract specifications on the LME Website.



Notwithstanding the above, Cash-Settled Futures Daily Settlement Prices that are determined through the use of a VWAP calculation or by application of other elements of the Pricing Waterfall will be rounded to the nearest \$0.01.

4.4 Expert Judgement

The Cash-Settled Futures Daily Settlement Price Methodology and supporting policies and procedures that underpin the determination of the Cash-Settled Futures Daily Settlement Prices, are structured with the intent of minimising, as far as feasible whilst ensuring that Daily Settlement Price determinations are reflective, the need for Expert Judgement.

As part of the LME's governance arrangements, the Pricing and Valuations Committee periodically receives data and trend analysis on the frequency, nature of, and extent to which, Expert Judgement is used in relation to Daily Settlement Price determinations.

4.5 Assessors

The LME Trading Operations team is responsible for Daily Settlement Price determinations. Trading Operations personnel are subject to extensive competence and training requirements. Amongst other things, these requirements are designed to ensure the consistency of determinations, in particular where there is insufficient input data to determine the Daily Settlement Price using a VWAP, and where it is necessary as a result to use Expert Judgement as part of the pricing waterfall.

4.6 Exclusion of Transaction Data

The LME monitors activity undertaken on its markets using a range of tools, aimed at identifying potentially erroneous input data. Such input data could include, for example (on a non-exhaustive basis) transaction prices or bids and offers that are outside the LME's established price bands for LMEselect; bids, offers and trades that represent significant and unexplained price moves; as well as potentially manipulative behaviours that may be intended to influence a Daily Settlement Price determination. Where such behaviours or circumstances are identified, the LME may exclude that data from the input data set that is used to determine the relevant Daily Settlement Price. Any decision to exclude transaction data would be made in accordance with the procedures and controls set out in paragraph 4.5 above.

4.7 Business Continuity Procedures

In the event that trading is disrupted on LMEselect during the relevant VWAP window for a Cash-Settled Future, the Cash-Settled Future Daily Settlement Price shall continue to be determined using the current waterfall pricing methodology, except that a different Pricing Period shall be used to determine the Cash-Settled Future Daily Settlement Price and the timing of the publication of these prices will be determined by the LME Trading Operations team at a revised time communicated by the LME.

If the LME is unable to establish the Cash-Settled Future Daily Settlement Price basis LMEselect activity, the LME may set the Closing Prices at its absolute discretion, referencing the available waterfall methodology and Expert Judgement by reference to all appropriate available data sources. These data sources shall include, without limitation, previously established LME prices (where these are deemed to remain reflective of current market conditions), available spread



trading information, data originating from other LME trading venues, and alternative data sources that reference prevailing market prices.



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