

To: All Members and other interested parties

Ref: 19/031

Classification: General updates Trading

Date: 1 February 2019

Subject: **TRIAL OF ELECTRONIC CLOSING PRICES AND TRADE-AT-SETTLEMENT ORDER BOOKS**

Summary

1. As has been highlighted to the market previously, The London Metal Exchange (“**LME**” or the “**Exchange**”) intends to introduce a trial period, during which Closing Prices for a subset of the LME’s base metal contracts will be determined exclusively with reference to activity on LMEselect, and intends to introduce trade-at-settlement (“**TAS**”) functionality, both to be utilised during this trial, and for LME markets generally. This Notice sets out the findings from the LME’s market engagement on these proposals, and sets out the exact process that will be undertaken during the trial period.

Defined terms

2. Terms not otherwise defined herein shall have the meaning ascribed to them in the Rules and Regulations of the LME (the “**Rulebook**”).

Background

3. LME Notice 17/302, dated 7 September 2017, provided market participants with the summary of feedback received in response to the LME’s Discussion Paper on Market Structure, and published the LME’s strategic pathway (“**Strategic Pathway**”).
4. With regard to price discovery, there were a number of responses from market participants who are highly supportive of procedures used on the Ring to determine the Official Prices (discovered on the 2nd Ring close, and largely used by physical participants) and Closing Prices (used for end-of-day valuation and margining purposes). However, there were also a number of respondents who expressed a preference specifically around an electronically derived methodology for determining the Closing Prices for consistency with most other markets which they trade. The LME committed to retaining discovery of the



Official Prices in the Ring, but acknowledged that there exists an opportunity to consider an evolution of the Closing Price discovery mechanism.

5. It was therefore stated that the LME would undertake an exploratory period whereby the Closing Prices for a subset of the LME's base metal contracts would be derived from an electronic mechanism, likely supported by an electronic TAS functionality.
6. LME Notice 18/195, dated 1 August 2018, sought the feedback of all market participants to establish the precise parameters of the trial electronic process. This Notice sets out the findings from that market engagement and sets out the exact process that will be undertaken during the trial.

Feedback from Market Engagement

7. The LME received feedback from a broad range of market participants, across multiple membership categories, and client types, including physical participants, fundamental financial investors, and systematic financial traders. Paragraphs 10 to 28 set out the details of the feedback received. This has been separated between general feedback on electronic methodology for establishing Closing Prices, feedback specific to the proposed trial, and feedback specific to TAS functionality.
8. The feedback covered both the specifics of the proposed trial of electronically derived Closing Prices, and general feedback on electronic methods of establishing Closing Prices, alongside electronic trading generally.
9. The feedback varied significantly in its general support for changing the method for establishing Closing Prices. Several Category 1 (Ring Dealing) Members highlighted a number of areas of concern (detailed in paragraphs 10 and 15 below), and were generally unsupportive of moves towards utilising electronic methods of establishing Closing Prices. Other Membership categories, and in particular Clients, were generally more supportive of changes to the existing methodology, with some believing the LME is not going far enough in its proposed trial.

Electronic methodology for establishing Closing Prices

10. The general concerns from some respondents broadly fell into the following areas:
 - (a) moving to an electronic Closing Price process will allow new participants to access the closing process directly, which could impact price formation. In particular there were concerns over "algo" involvement in the process;



- (b) changing the process for establishing the Closing Price may make it harder for any Member to guarantee execution against Closing Prices for their clients, which is felt to be an important function on the LME; and
 - (c) any change to the Closing Price methodology away from the Ring is the first step towards closing the Ring as a trading venue, as any reduction in Ring volumes might impact the viability of operating a Ring trading team.
11. The LME understands the concern in these areas. The LME will continue to monitor activity on all its execution venues, and acknowledges that electronic settlements need specific monitoring, which is already performed by the LME in relation to the other contracts that are traded on its markets (such as its ferrous and precious metals contracts).
 12. The LME also notes that changes to the methodology of establishing Closing Prices may impact specific business practices aligned to guaranteeing Closing Prices for market-on-close orders, and ultimately may make it more difficult or impossible for certain Closing Prices to be guaranteed as they are currently. Members will still be free to “cross-up” market-on-close orders, and the addition of a TAS order book provides a further avenue for managing risk against the 3-month Closing Price. Given the current Ring methodology already separates the 3-month Closing Price establishment from other Closing Prices, Members will still be able to guarantee Carry Closing Price orders in the same manner as they currently do, and will be able to guarantee the Carry element of a non-3-month Outright order. Using a combination of trading in the TAS order book, and trading directly in the VWAP, some Members may choose to continue to offer guaranteed execution against Closing Prices, though determining the effectiveness of this process for LME markets is one of the aims of the trial.
 13. In general, even those respondents who were not supportive of moves towards an electronic Closing Price process understood and supported the need for the LME to trial an electronic process due the feedback received to the Discussion Paper. In general they agreed that the LME’s proposed methodology for the trial was appropriate for LME markets.

The trial process

14. The majority of respondents felt that nickel was an appropriate selection as the base metal for the trial. One participant felt that the LME should use a less liquid metal, such as aluminium alloy, to ensure that the process works for the least liquid markets. Another participant felt that the trial should be on a more liquid metal (such as primary aluminium), due to the higher volume on LMEselect. The LME believes that nickel strikes the best balance between these two viewpoints, and acknowledges that dependant on the results of the trial, differing



approaches may be needed for other metals, specifically those that are less liquid.

15. The specific concerns on the LME's proposed methodology for the trial of electronic Closing Prices included the following:

- (a) by separating 3-month Closing Price (to be established electronically) from the Carries (remaining on the Ring), there would potentially be an increase in total fees to enter certain positions, which may impact clients trying to target the Closing Price;
- (b) some respondents felt that the trial should take place for as short a period as possible (certainly less than the proposed three months), to minimise disruption to the market. Where others felt that the trial should be undertaken for a period longer than three months, to allow participants to adjust to the new process, and ensure the collected data is sufficient; and
- (c) the specific timings of Ring and VWAP sessions during the trial could be amended to help traders be able to manage their risk. Ideally Ring traders would have some gap between the close of the Ring session, and the start of the VWAP window to allow them time to determine the trades they need to do during the VWAP.

16. Respondents who were particularly supportive of the LME moving to an electronic Closing Price process, often felt that the LME were not going far enough, and had comments which included the following:

- (a) Carries should be included, as curve shape is particularly important on the LME, thus the additional transparency, and access to the Closing Price process would be particularly beneficial in Carries; and
- (b) more TAS order books should be available, in particular Carries, to help participants manage their Carry risk against the Closing Prices which is a significant part of some participants' risk.

17. The LME has considered these comments, and believes the proposed trial methodology appropriately balances the views of the various market participants in the context of the specificities of LME markets. The LME proposes to make some changes to the specific Ring and VWAP timings during the trial in response to the feedback given. These are set-out below in paragraph 32.

TAS order books

18. Responses concerning the use of trade-at-settlement, or TAS (which is common market terminology, and in LME markets the "settlement" at which the TAS will settle is the relevant Closing Price) contracts during the trial were less



dependent on the business model of the respondent, with a diverse range of opinions from each type of respondent.

19. One respondent was generally averse to TAS order books, preferring that participants attempting to target the Closing Price were encouraged to trade during the VWAP window, to maximise liquidity during this window. The LME understands this position, though due to the prevalence of guaranteed Closing Price orders in LME markets, considers it important that the TAS mechanism exists in order to allow existing business practises to transition as easily as possible to the electronic method of establishing the 3-month Closing Price, as Ring dealing Members may choose to no longer guarantee execution against the Closing Price.
20. There were relatively equally balanced opinions across stakeholders over whether TAS order books should be open during the VWAP period.
21. Some respondents believed that the TAS order books should close prior to the VWAP period, with some requesting that there was a 5-10 minute gap between the close of TAS order books, and the start of the VWAP period, to allow those orders not filled in the TAS order book to try to be filled elsewhere, or to set-up an algorithmic electronic order for the 3-month order book targeting the VWAP, before the VWAP period starts.
22. Other respondents felt that there would be value in having the TAS order books open during the VWAP period for the following reasons:
 - (a) this would allow participants to utilise the TAS functionality more widely, as during the VWAP period they will have more certainty of where the Closing Price is likely to be established;
 - (b) TAS liquidity may improve during the VWAP period, as risk offset between the TAS and the underlying market can be more immediate; and
 - (c) it is more common market practice in other commodities futures markets to have the TAS order books open during the VWAP period, and a significant proportion of TAS trades are done during this period.
23. Given the fact that any participant entering TAS orders will be able to remove their unfilled orders at any point, and thus can choose to do so to give themselves time to find other LME execution venues, or prepare an algorithmic electronic order, the LME believes it is appropriate to leave the TAS order book open until the close of the VWAP period.
24. There was also a diverse range of opinions on whether further TAS order books in addition to the 3-month should be made available.



25. Broadly, Category 1 Members were not supportive of any additional TAS order books being available, on the basis that this could reduce liquidity from the Ring and thus impact the establishment of those Closing Prices still being determined on the Ring. Some Clients had an alternative perspective, believing that further TAS order books (in particular for 3rd Wednesday contracts at the front of the curve), could provide further useful liquidity for those participants looking to trade at Closing Prices. However it was also highlighted that more transparency of the Closing Price process (assumed to be achieved by an electronic settlement methodology) is likely more important for these participants.
26. As such, the LME believes it is appropriate to only make available the 3-month TAS order book during the trial period.
27. The LME received some further commentary on specific aspects of TAS order books, particularly around the tick-size and the rounding of the relevant reference price (Closing Price). This feedback suggested that having the rounding at least as granular as the tick-size was important to maximise liquidity, as large rounding effects impacts a TAS market-maker's ability to hedge their TAS trades with accurate hedging during the VWAP period.
28. Further commentary suggested that maintaining the current \$5 tick-size and rounding on nickel would mean that the tick on the TAS order book would be considerably higher than other commodity future TAS order books. As such the LME believes it is appropriate to implement a \$1/mt tick-size in the 3-month nickel TAS order book, and thus also to round the 3-month nickel Closing Price to the nearest \$1/mt.

Trial of electronic Closing Prices

29. Given the balance of feedback received in response to the Market Engagement, the LME believes it is appropriate to implement the proposed trial of electronic Closing Prices, with some minor amendments. The details of the trial are laid out below.
30. During a three month period (the "**Trial Period**"), beginning on 18 March 2019 and ending 18 June 2019 (inclusive) the LME will use a combination of LMEselect, and Ring Trades and Orders to determine the Closing Prices for nickel.
31. During the Trial Period, the 3-month nickel Closing Price will be determined by a volume weighted average price ("**VWAP**") waterfall methodology, as follows:
 - (a) the volume weighted average price of trades during the two-minute Pricing Period of activity on LMEselect, commencing at 17:00 hours ("**Pricing Period**"), rounded to the nearest \$1/mt;



- (b) if no trades have occurred during the Pricing Period, then the mid-point of the bid/offer on the close of the Pricing Period, rounded to the nearest \$1/mt will be used. Where this is not appropriate, then the Closing Price will be determined by the LME in its absolute discretion using expert judgement;
 - (c) if no trades have occurred during the Pricing Period and no bid/offer exists at the end of the Pricing Period, then the last traded price may be used, but there is no obligation to determine the Closing Price at that level;
 - (d) if no trades have occurred during that day and no bid/offer exists, then the Closing Price will be determined by the LME with reference to market activity in related Prompt Dates and/or market activity during the pricing period on the previous Business Day; and
 - (e) where no such pricing information exists, then the Closing Price will be determined by the LME in its absolute discretion using expert judgement.
32. During the Trial Period, the determination of the Closing Price for Carries (and thus for Prompt Dates other than the 3-month) will continue to be based on Ring trading. The Ring procedure for the nickel kerb during the trial period will remain as it is currently (16:55 to 16:59 for Carries) to give Ring traders time between the end of Ring trading, and the start of the VWAP period. For the avoidance of doubt, Ring traders will still be permitted to trade 3-month Outrights during the kerb period, but these trades will not contribute to the determination of the Closing Price.
33. During the Trial Period, the Quotations Committee will continue to be responsible for determining and publishing the Closing Price for nickel 3-month contracts, and will retain discretion to exclude certain data where this is necessary to avoid an unrepresentative Closing Price being reached (for example, in the case of disorderly market conditions, were these to arise).
34. The LME acknowledges that the change in trading practices required by some Members and Clients during the Trial Period could lead to some disruption to these practices (such as guaranteeing Closing Prices), particularly as the market gets comfortable with new practices. The LME understands that this will require effort from market participants, but considers it important in order to be able to properly assess the impact of electronically established Closing Prices on LME markets, both from an LME and market participant perspective. Irrespective of this, the LME retains the right to cancel the trial at any point, and immediately return to Ring pricing, should it determine that any negative impact to the market warrants doing so. Even in this scenario, the trial will have been an important and valuable undertaking, to ascertain the impact on LME markets.



TAS functionality

35. The LME will launch a 3-month nickel TAS (against the Closing Price) order book on 18 February 2019, giving market participants time to familiarise themselves with TAS functionality in advance of the Trial Period starting. Prior to 18 March 2019 these TAS trades will settle against a Ring-determined price, and between 18 March 2019 and 18 June 2019 will settle against an electronically derived price, before again reverting to a Ring-determined price.
36. The TAS order book will close at the same time as the Closing Price is established. As such, when the 3-month nickel Closing Price is established in the Ring (prior to, and after the Trial), the TAS order book will close at 17:00, and when the 3-month nickel Closing Price is established by a VWAP of LMEselect trades (during the Trial), the TAS order book will close at 17:02.
37. To align the fees for the TAS order book with the Ring and Basis fees (as TAS functionality seeks to assist participants in trading against Closing Prices) the trading and clearing fees for TAS trades will be set at the same level as Ring and Basis trades (\$0.50 per lot per side). The tick-size on TAS orders will be set to align with the rounding of the VWAP Closing Price, at \$1. Full details of TAS functionality can be found on the LME website.
38. The LME will publish marketing documentation ahead of the TAS order book launch on 18 February 2019 to assist market participants in understanding how they can use TAS functionality, and in particular how this can be used during the Trial Period to assist with targeting Closing Prices.
39. Once the TAS order book is launched the LME will assess its use (before, during, and after the trial). The LME envisages that the 3-month nickel TAS order book will remain in place at least until the LME publishes the feedback from the trial. In this feedback the LME will determine whether the 3-month nickel TAS order book should remain in place permanently.
40. The LME views TAS functionality as important for the trial, to help participants to manage their Closing Price risk, but separately TAS functionality may also prove useful for participants managing Closing Price risk against Ring-determined prices. As such, electronic settlements, and the existence of TAS functionality, are not intrinsically linked. The LME may choose to retain one but not the other, both, neither, or some other appropriate modification.

Feedback on the Trial

41. The LME encourages all market participants to share both their positive and negative feedback on the trial with the LME, both during and after the Trial Period.



42. Feedback should be sent to market.engagement@lme.com. The LME will determine the outcome of the trial based on feedback received by 2 July 2019.

Assessment of the Trial

43. After the close of the trial on 18 June 2019, the LME will review and assess the full impact of the trial based on its observations as well as on feedback received from market participants. As part of this assessment the LME will, amongst other things, take into account the following:

- (a) how many times the VWAP is used to discover the 3-month nickel Closing Price;
- (b) the number and size of transactions during the VWAP period;
- (c) the number of market participants involved in the determination of the 3-month nickel Closing Price during the VWAP period;
- (d) usage of the TAS functionality including the number of orders submitted;
- (e) the number and size of matched TAS transactions;
- (f) the number and size of orders remaining unmatched at the close of each TAS session;
- (g) price volatility during the Pricing Period;
- (h) the state of the Select order book (including the TAS order book) before, during and after the Pricing Period; and
- (i) general feedback from market participants (submitted before 2 July 2019).

Next Steps

44. At the end of the Trial Period, the discovery of the 3-month nickel Closing Price will revert to the Ring with effect from Wednesday 19 June 2019.

45. Following this, the LME will review the outcome of the trial, taking into consideration the aspects identified in paragraph 43 above.

46. For the avoidance of doubt, while the LME reviews and assesses the impact of the trial, the 3-month TAS order book for nickel will remain open.

47. The LME will seek to provide feedback to market participants in relation to the electronic pricing trial and in relation to the availability of TAS order book functionality by no later than three months after the close of the trial.



48. Following the review of all data and feedback from the trial, if it is decided that electronic price determination for the 3-month nickel Closing Price is preferable to existing Ring-determined pricing, the LME will;
- (a) move to the electronic process for the 3-month nickel Closing Price determination permanently and;
 - (b) consider moving the Closing Price process for the 3-month Prompt Dates for other metals to an electronic process. These other metals will need to be considered individually based on a range of factors including liquidity levels, although at this stage, the LME does not believe further trials would be necessary, but will review the potential need for further engagement as part of the feedback process following the nickel 3-month trial.
49. Should the Closing Price discovery for any 3-month contract move to an electronic process more permanently, the LME will then carefully consider the potential next steps, such as trialling an electronic Closing Price process for Carries and other Prompt Dates. The LME believes this would require significant further input from market participants due to the complex nature of the LME base metals' date structure, and the fact that a large portion of Carry trades are done through both the Ring and inter-office venues. In this instance, the LME would fully engage with market participants how best to approach a trial period for determining Carries and all other non 3-month Prompt Dates.

Matthew Chamberlain
Chief Executive Officer

cc: Board directors
User Committee
All metal committees
Ring Dealers Committee
Traded Options Committee
Warehousing Committee
Physical Market Committee