LME Strategic Pathway

September 2017

SETTING THE GLOBAL STANDARD

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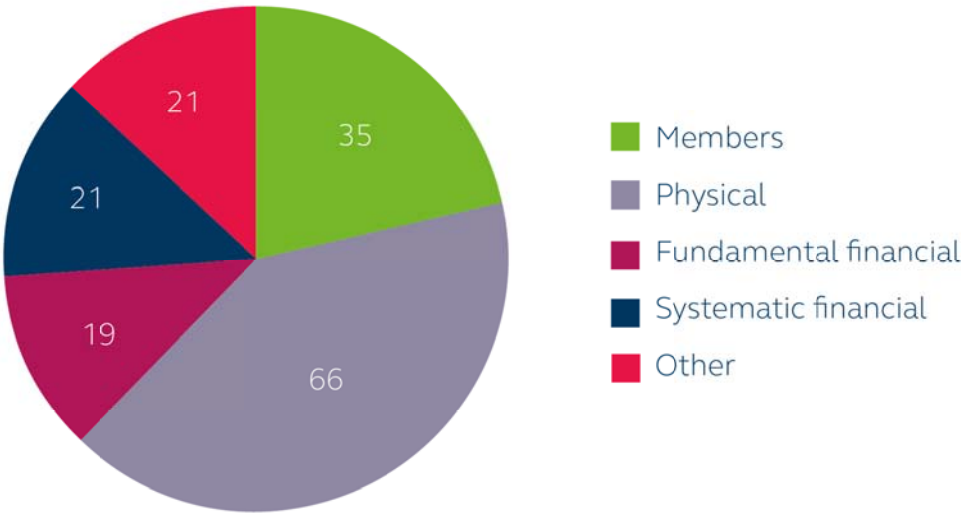
1. EXECUTIVE SUMMARY

1.1. The Discussion Paper process

The LME launched its Discussion Paper on Market Structure on 24 April 2017. In total, 162 responses to the Discussion Paper were received, and LME executives took part in meetings with all participants who so requested. The responses can be broken down into the following groupings:



At the outset, the LME wishes to express its deep gratitude to current and potential market participants for their engagement in the Discussion Paper process. The Exchange appreciates that, in many cases, considerable time and effort has been invested by respondents in formulating their responses. The LME is conscious of this commitment and has greatly benefited from the viewpoints expressed when formulating its strategic pathway for the future development of the market.

The LME would specifically like to identify the key role of its members in publicising the Discussion Paper to their clients, explaining specific features of the LME market as they relate to the Discussion Paper and encouraging those clients to submit feedback. The LME is also grateful to its journalistic community for their help in raising awareness of the Discussion Paper process, and the well-considered opinion articles published on the various topics.

Even before considering, therefore, the substance of the responses, the LME believes that the sheer breadth of market engagement demonstrates the crucial role which the Exchange plays in the global metals markets. Accordingly, the LME's strategic pathway includes certain items which the Exchange feels are crucial in driving market liquidity, and hence the long-term commercial health of both the Exchange and its market.

The LME believes that, in setting out its strategic pathway, it has appropriately balanced the needs of the market with the reasonable commercial interests of the Exchange itself, and has also appropriately navigated the priorities and concerns of the numerous constituencies within its market. The LME is also grateful for the significant involvement of its User Committee in assisting with the analysis of certain strategic topics – in particular, the decisions on carry fees detailed in Section 8.2.2.

1.2. The LME's strategic pathway

In order to appropriately capture the significant breadth of the topics in the Discussion Paper (augmented by additional subjects raised by respondents), the LME is adopting the following tiered structure:

1. **Strategic principles.** Based on responses and its own analysis, the LME has set out four strategic principles which, in its view, should guide the future development of its market. These principles have evolved from the "guiding principles" set out in the Discussion Paper, but have been developed based on market feedback and the LME's ongoing analysis

2. **Strategic directions.** For each of the key areas identified in the Discussion Paper (ecosystem, trading and booking structure, clearing structure, delivery / physical market structure, membership, and volumes / competition / fee structures / growth), the LME has laid out its strategic direction. These, consistent with the strategic principles, provide directional guidance on the pathway that the LME plans to take in each key area of its business and market structure model

3. **Intended actions.** The LME has identified a number of intended actions which, in its view, will best implement the strategic principles and strategic directions outlined above. Taken together, these intended actions represent a tangible strategic plan for the development of the LME's market, which the LME believes will maximise business opportunities for all its stakeholders, while protecting and preserving those elements of the market which are crucial to the LME's core physical market mission.

   It should be emphasised that the intended actions form a spectrum in respect of both implementation date and degree of evolution. At one end of that spectrum, some of the actions (for example, the fee discounts in Section 8.2.2) will be implemented in the short-term, and are the subject of separate notices published simultaneously with this Strategic Pathway document. By contrast, some of the intended actions (for example, the rule changes to protect market liquidity proposed in Section 8.3) will require formal consultation in accordance with the LME's regulatory obligations, and will not be implemented until such consultation has concluded. At the other end of the spectrum, some of the intended actions (such as the dealer-to-client platform outlined in Section 4.2), while being of potential interest in order to offer greatest possible flexibility of execution, will require significant work to establish the commercial case (for the LME, its members and their clients) and properly specify.

   With the exception of the action points whose implementation is being announced today, there can be no absolute assurance that any specific intended action will be implemented – rather, the LME considers it more important to build on the strong engagement of the Discussion Paper to work with its market to, where possible, deliver the intended actions. Furthermore, market views may well evolve further, and it is appropriate for the LME to take into account such evolution. However, the LME strongly believes that its intended actions (read together with the strategic principles and strategic directions) will provide useful guidance to its stakeholders as to the evolution pathway of the market, in terms of what the LME intends to do (and, equally important, what it intends not to do)

1.3. Further information

In addition to this Strategic Pathway document, the LME is today publishing two other documents based on Discussion Paper feedback:

- **Strategic Pathway summary presentation**. The summary presentation is a condensed version of this Strategic Pathway document

- **Discussion Paper feedback document**. This is a more detailed document, which attempts to summarise the feedback received from the market in response to the Discussion Paper. Accordingly, this Strategic Pathway document does not attempt to relate the strategic direction back to the underlying market feedback

1.4. Next steps

As set out above, the LME's implementation of the intended actions will be a significant journey, with both market engagement and consultation.

The LME is also committed to ongoing interaction with its market in respect of strategic topics, and would welcome further discussion on any of the items contained in this Strategic Pathway document.

1.5. Legal considerations

This Strategic Pathway document does not constitute a binding commitment for the LME to implement any of the proposals set out herein. Any statement in this document as to the LME's intent or commitment to any proposal is a statement of LME's current intent. It is possible that the LME may re-assess such intentions. The LME accepts no responsibility or liability to any person with respect to any action taken or omitted to be taken by such person in reliance on any statement made in this document. The LME may undertake subsequent consultations with its members with respect to the implementation of specific proposals, in accordance with its usual consultation processes and applicable rules.

Nothing in this document should be construed as restricting any discretion of the LME to take such action as it considers appropriate in the operation of the LME, including through its determinations on applications for access to the LME's facilities. Nor should anything in this document be construed so as to require the LME to take any action.

2. STRATEGIC PRINCIPLES

The LME has identified four key strategic principles by which it will operate and evolve its market:

2.1. Serve the physical market

As set out in the Discussion Paper, the core mission of the LME is to provide pricing, risk management and terminal market services to the global physical metals industry. This belief has been, if anything, further strengthened by the LME's recent market engagement process. Accordingly, the LME believes it appropriate to recommit to the principle that – if any change would have the effect of weakening the Exchange's proposition for the physical market – then it will not be implemented.

The LME would also extend its thanks to those physical market participants who actively made the point that, in seeking to serve the physical market, the LME should not consider itself bound into a situation where market structure evolution is impossible. A good example of this cooperative approach is in respect of pricing – while many physical market users underscored their desire to see the LME's official (i.e. lunchtime) prices discovered in the Ring (given their crucial importance to the settlement of physical contracts), very few articulated any objection to consideration of alternative pricing mechanisms for the LME's closing prices (which are of very limited relevance to the physical community, and far more important to financial participants, who have differing views on closing price methodologies). This topic is further considered in Section 4.4.

2.2. Ensure fairness

Fairness lies at the heart of any market structure. The LME has regulatory and legal responsibilities to operate in a fair and non-discriminatory manner, which it of course undertakes. But the LME believes that the value of fairness extends beyond pure regulatory obligations, and interacts more deeply with the nature of the market which the LME seeks to operate.

A key element of fairness is in respect of market access. Beyond its core regulatory responsibility of ensuring fair and non-discriminatory access (and, equally, its responsibilities to only admit appropriate participants), the LME believes that the value of its market is maximised by allowing the broadest possible range of participants to hedge and invest. While the LME is clear that all such potential participants must subscribe to its key principles – including the primacy of the physical market, as outlined above – the natural corollary is that, if a potential participant does subscribe to those principles, they should be allowed to participate in the LME market. This topic is further considered in Section 3.

A second key dimension of fairness arises from the fact that the LME sits at the convergence of the on-exchange and over-the-counter (“OTC”) markets, and the Exchange believes that its responsibility to deliver fairness extends to ensuring, as far as it is able, that participants choosing to transact in the on-exchange space are not by that reason alone unfairly disadvantaged in comparison to those transacting in the OTC space. While certain elements of the OTC vs. on-exchange balance are beyond the realm of the LME, others (and, in particular, fee structures) are within the control of the LME. This topic is further considered in Section 8.2.4.

2.3. Increase user choice

It is a natural feature of any organised market that certain rules must be agreed and adhered to by all participants, even though certain of those participants may prefer that the rules were formulated in a different way. In general, the LME does not believe that its market structure could be evolved in any meaningful way which would provide benefit to some or all users and disadvantage to none.

As further articulated in Section 3, the LME believes that its current ecosystem represents an appropriate balance of interests, and does not propose to make meaningful changes of this nature. In particular, the LME understands the strong linkages between its market structure and the business models of many of its members and clients – and, in this respect, it is not the intention of the LME to disrupt such business models via precipitous change.

However, the LME does believe there exist certain areas where a model of “user choice” could be adopted, allowing those stakeholders who favour reform to benefit from an enhanced market structure, while simultaneously allowing those stakeholders who favour the current system to remain unaffected. Clearly, it is important for the LME to assure itself that an apparent user choice model would not have unintended consequences, which could unintentionally but adversely impact the business models of those who are satisfied with the status quo – but, equally, an unsubstantiated fear of such change should not stand in the way of the LME delivering user choice, where market demand suggests this would be a positive development. The key example of user choice in the LME’s strategic pathway is in respect of daily and monthly liquidity, as further set out in Section 4.3.

2.4. Maximise trading efficiency

Once participants have gained access to the LME, it is in the mutual interests of the participant, the Exchange and the broader market that the participant be able to trade as extensively as they wish, unencumbered (as far as possible) by the frictional costs of trading. Every time that a market participant chooses not to execute an otherwise economically-rational hedging or investment trade due to the frictional costs of that trade, the market as a whole is poorer.

Such frictional costs can take many forms, dependent on the nature of the underlying participant; however, the most commonly-cited frictional costs are in respect of:

- **Fees (both LME and broker)**. The LME is mindful of the importance of ensuring that fees are proportional to the economic benefit achieved from the trade; to the extent that fees are misaligned on this metric, then the frictional costs exerted by the fees become significant. The LME’s changes in this regard are set out in Section 8.2

- **Bid-offer spread.** While the LME's market is highly liquid for its core contracts and dates (e.g. three month), certain other dates may be less liquid. The LME believes that liquidity can be added in partnership with members and end users.

- **Margin**. The need to post initial margin, and the mechanism for posting and receiving variation margin, are very significant factors in the frictional cost of trading. While risk management is a top priority for the LME, the scope for maximising trading efficiency in respect of margin is set out in Section 5

- **Operational processing costs**. Members transacting on the LME, as with any market, face an operational processing cost associated with the execution of such trades. In some circumstances, certain specific features of the LME's market (compared to other, more standardised markets) may add additional processing burden, further increasing such frictional costs. This is particularly the case in respect of the T2/T4 trade booking model, as further considered in Section 4.2.

In many cases, infrastructural enhancements may deliver enhanced trading efficiency for one stakeholder group, while having a neutral (or even negative) effect on another stakeholder group. Accordingly, trading efficiency should be considered closely with user choice – and it may be the case that a user choice model can enhance trading efficiency for some market participants, while protecting others from potentially harmful effects.

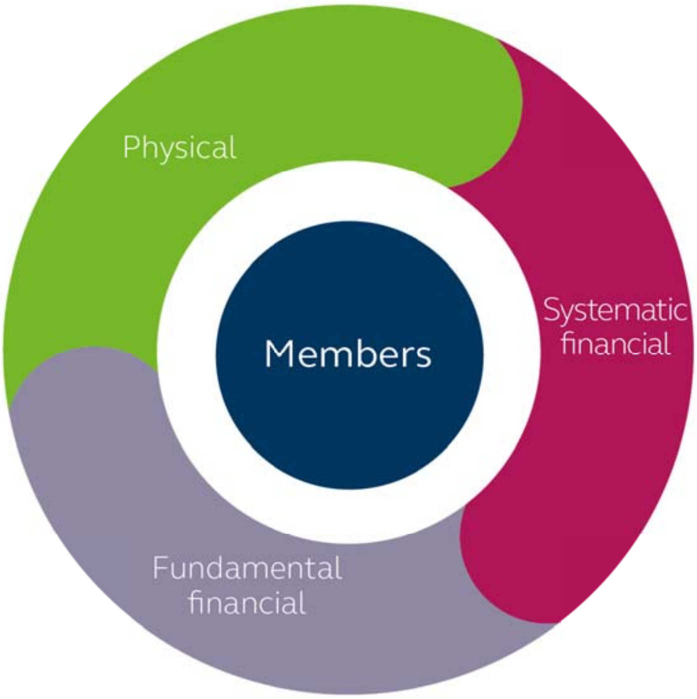
Trading efficiency is also relevant in terms of potential market evolution driven by external forces, such as regulatory developments. In this case, the LME must work with its market to ensure that trading efficiency is maintained, even in the case of regulatory change which may be viewed as adverse for the LME's current market structure. It is, therefore, incumbent upon the LME to ensure that it anticipates potential future developments and potential mitigants thereto. This is particularly relevant in respect of variation margin methodology, as more fully set out in Section 5.2.

3. THE LME ECOSYSTEM

SUMMARY

- **The LME's market model of end clients divided into (i) physical users, (ii) fundamental financial investors, and (iii) systematic financial traders, all serviced by the LME's members, is broadly confirmed**
- **The LME strongly believes that the interests of each segment of the market will be strengthened by the LME's strategic pathway**
- **Market concerns as to algorithmic traders may be valid in respect of a certain subset of such participants' activity, but this should not cloud the fact that the majority of systematic financial traders operate in a responsible manner which adds liquidity and execution capacity to the LME's market. The LME believes it possible, by considering reasonably limited structural change, to discincentivise "negative" algorithmic behaviour, while continuing to attract positive systematic financial liquidity**

3.1. Impact of the LME's strategic pathway on key stakeholder groupings



- **Physical market hedgers**. Consistent with the LME's first strategic principle, the business model of the LME's physical market stakeholders sits at the heart of the strategic pathway. In particular, those elements of the LME's market structure which are crucial to the physical industry are being protected and preserved:
  - o Discovery of official (i.e. lunchtime) prices in the Ring, and support for the Ring through targeted fee discounts – many key physical market participants have been clear that they prefer this methodology for the discovery of the prices which they then embed into their physical contracts

  - Preservation of the LME daily date structure, and support for front-end liquidity through targeted fee discounts on short carries
  - Current intention for retention of the discounted contingent variation margin ("DCVM") model to allow dealers to continue to grant credit on attractive terms to physical market clients (together with help for a transition plan if DCVM is not aligned with medium-term regulatory direction or risk considerations)
  - No additional fees on the usage of LME data for physical supply contracts

- **Fundamental financial investors**. The core request from fundamental financial investors is that the LME's pricing accurately reflects the physical market, given the desire of this community to gain access to metals prices which carry strong macroeconomic relevance. Accordingly, the actions which strengthen the physical market community will benefit also the LME's fundamental financial investors.

  Notwithstanding this desire, it is acknowledged that certain features of the LME's market do make it more difficult for fundamental financial investors to participate. While some of these features are key to the physical market, the LME – consistent with its strategic principles of user choice and trading efficiency – does believe that scope exists to address these market structure barriers. In particular:

  - User choice to provide optimised execution, where possible, for fundamental financial investors, without disrupting physical market execution. This is particularly relevant in respect of monthly liquidity, where the LME believes it is possible for those using daily dates (primarily physical participants) and those using monthly dates (primarily fundamental financial investors) to mutually co-exist, and indeed strengthen, each other's liquidity pools, as set out in Section 4.3
  - Optimised trading efficiency – for example, by delivering a more efficient initial margin model (and one more in-line with peer exchanges), the LME will aim to reduce the frictional costs for fundamental financial investors to participate on the market

- **Systematic financial traders**. As explored further in Section 3.2, the LME welcomes the participation of systematic financial traders who add "helpful" liquidity to the LME's market, thus benefitting both physical market hedgers and fundamental financial investors. The LME believes that this approach will be welcomed by the many responsible and liquidity-additive systematic financial traders already operating on its market.

  In general, systematic financial traders are broadly satisfied with the LME's market structure (and, while some were supportive of a move to monthly liquidity, are generally not as impacted by the three month liquidity point as the fundamental financial investors). However, the LME can further assist responsible systematic financial traders by reducing the frictional costs of a trade; in particular, by delivering an optional T2 booking model (which will allow positions to be more easily and efficiently posted to client accounts), and – in the medium-term – by considering fee reductions which would bring the cost of trading for such systematic financial traders more into line with those in force on peer markets. However, the LME would emphasise that its first order of business would be to undertake the steps in Section 3.2 to ensure that all systematic financial traders on the LME market are operating in a manner which adds liquidity and execution potential to the market

- **Members.** As a broad observation, the success of clients should drive the success of members; accordingly, the benefits provided by the strategic pathway to each group of clients outlined above would be expected to drive execution activity, and hence increase the total addressable revenue pool, for LME members. Furthermore, the LME's targeted fee discounts will provide immediate financial benefit to the LME membership, and allow members to make better use of liquidity at the front-end of the LME curve.

In particular, the LME believes that those members (in particular, the London-based specialist metals houses) who have closely aligned their business models to that of the LME and its physical clients will be well-served by the LME's strategic pathway, given its focus on preserving the market model favoured by the physical market – and hence, by extension, those members who serve it

3.2. Considerations around algorithmic traders

The LME has noted market concerns as to the activities of algorithmic traders (as a subset of systematic financial traders) on the Exchange, and has undertaken broad-based discussions (with the algorithmic traders themselves, and the wider market) as to the impact of such participants. As a general observation, it should be noted that algorithmic traders operate a very broad set of strategies; on the other hand, market concerns as to algorithmic behaviour appear to be limited to particular strategies which, in the view of the LME, represent a reasonably small minority of the LME's overall algorithmic activity.

The behaviour which appears to generate the greatest source of market frustration is so-called "jumping-in-front[1]", whereby (say) a physical user will place a resting order of significant size on the LMEselect screen (e.g. buy 20 lots 3M copper at $6000.00). An algorithmic trader will see this order, and immediately place a much smaller order at a small increment – generally one tick – better (e.g. buy 1 lot 3M copper at $6000.50). The strategy is predicated on the expectation that the original buyer will not be able to execute the entire order at the desired price level, and will then need to buy at higher prices – in which case, the second buyer will be able to sell back the smaller lot size to the first buyer at a small profit.

It should be noted that traditional differentiations such as "price-taker vs. price-maker" are not relevant in this case, since the algorithm pursuing a jumping-in-front strategy is, technically, a price-maker (i.e. liquidity provider). However, the liquidity provided is not "helpful" liquidity in the eyes of most market participants. The key differentiation appears to be one of risk; in general, most LME market participants believe that any trader (human or algorithmic) willing to take on non-trivial risk is entitled to a "seat at the table" of the LME's market. The core complaint in respect of jumping-in-front behaviour is that such traders are not meaningfully taking on risk – rather, they are constructing a barrier which adds frictional cost to those wishing to execute meaningful volume. The LME concurs with this assessment – but would note its belief that such strategies represent a minority of systematic traders on the market, and furthermore that it would be difficult to institute an outright ban on such behaviour, given that it is (i) not contrary to any market rule, and (ii) would be extremely

[1] The LME notes that this behaviour is sometimes informally referred to in the market as "front-running". The LME believes that this term is highly misleading and should be avoided; front-running is entirely distinct, and represents a well-defined abusive behaviour whereby a broker or other participant with prior knowledge of a client order executes a proprietary trade ahead of that client order, hoping to profit from the market movement expected to arise from the client's activity. Front-running is prohibited under both LME and broader market abuse rules, and the LME's market surveillance function actively monitors for any evidence of front-running behaviour. Jumping-in-front, on the other hand, requires no advance private knowledge of other participants' activities – indeed, it is stimulated by the public appearance of an order on the book. While algorithms may be able to react more quickly to this public information than human traders, any other algorithm similarly situated would equally be able to react in this manner.

difficult to define (in the context of formulating such a rule) in such a way which did not also penalise acceptable behaviour.

By contrast, there exists a broad spectrum of systematic (including algorithmic) strategies which, in the view of the LME, are "helpful" in respect of market efficiency and liquidity. Such strategies include cross-market arbitrage (ensuring prices on the LME and peer markets remain in-line), spread arbitrage (ensuring that outright and carry prices on the LME remain in-line), market-making (adding liquidity where the orderbook would otherwise not show resting bids and offers), and intra-day trend-following, all of which provide liquidity in a moving market for physical and fundamental financial users to be able to execute hedging and investment transactions as required.

Accordingly, the LME believes that the core challenge is one of "segregation" – creating a market structure environment whereby "helpful" behaviour is easy to undertake (and potentially even incentivised), while "unhelpful" behaviour is rendered more difficult to effect by means of market structure design choices. Of particular relevance is the point as to risk-taking – if "unhelpful" behaviour is characterised by an absence of risk-taking, then a potential market structure remedy would be to force traders to take on more material risk in the context of an LME trade. This could be achieved, for example, by increasing tick sizes – in this scenario, a trader engaging in jumping-in-front behaviour would need to bid higher above the current market touch, hence absorbing greater risk in executing the strategy, and likely forcing a reconsideration of whether the jumping-in-front strategy were advisable. Clearly, further market engagement would be required to ensure that such a change would not have unintended consequences – but the LME believes that this type of microstructure-led approach is most appropriate in this situation, and intends to undertake the necessary work with the market to implement any appropriate measures.

Once such market structure changes have been effected, the LME then expects that the balance of systematic traders on its market would become even more biased towards "helpful" behaviour. At this stage (but only at this stage), it could be appropriate to consider further steps to incentivise such behaviour, including targeted fee discounts similar to those seen on other markets (see Section 8.2.6).

STRATEGIC DIRECTION

- **Investigate market structure tools to ensure all participants add liquidity and enhance execution quality**

INTENDED ACTION

- **Tick size review, with potential tick size widening to disincentivise "jumping-in-front" behaviour from unhelpful algorithmic traders**
- **Ensure the LME strategic pathway remains beneficial to all market stakeholders**

4. TRADING AND BOOKING STRUCTURE

SUMMARY

- **The LME's trading and booking structure must be understood in the context of the significant segregation between its dealer-to-dealer and dealer-to-client markets**
- **Such segregation between dealer and client liquidity pools is very logical for bespoke LME contracts such as averaging; however, for more standardised contracts, it is appropriate that the current "user choice" model is extended, allowing those clients who wish to access liquidity on the LME's central venues to do so**
- **In particular, the LME should take appropriate infrastructural steps to enhance electronic third Wednesday liquidity for those clients who wish to execute in this manner; even if successful, the LME does not believe this will threaten the LME's date structure and daily cash price discovery, to which the LME remains absolutely committed**
- **Even where contracts will not have sufficient liquidity to be executed on a liquid venue, the LME should provide clearing solutions to allow client exposure to be cleared**
- **It may also be appropriate to consider a permissioned dealer-to-client platform, to further enhance clients' electronic execution options in the LME marketplace**
- **LME official prices used for physical industry settlement should remain discovered on the LME Ring, whereas the LME should consider potential evolution of the closing price discovery process to best reflect liquidity from across the market**

4.1. Dealer-to-dealer and dealer-to-client markets

At the heart of the strategic question as to the LME's trading and booking structure is the key differentiating factor associated with the LME's market – namely, the significant segregation between the dealer-to-dealer ("D2D") and dealer-to-client ("D2C") markets. In general, the liquidity available on the LME's lit venues (the Ring and LMEselect) is "wholesale" liquidity – that is to say, liquidity on contracts which are not of direct relevance to most clients, but which are used by dealers to offset risk associated with their end client's risk management or investment requirements. This feature differentiates the LME market from most of its exchange peers, and manifests itself in many of the "bespoke" market structure elements observed in the respect of the LME:

- **T4 booking model**. The so-called "T4" model (under which dealers trade between themselves by means of LME dealer-to-dealer cleared contracts, and then separately give exposure to clients through client contracts) evolved to service precisely the market structure observed on the LME, whereby trading activity in the D2D and D2C markets is materially different, requiring "translation" by dealers to link the two together

- **The LME's date structure, and use of averaging contracts**. The LME's daily date structure, with the ability to produce a daily cash settlement price, facilitates physical supply contracts quoted as the average of a daily price over a given quotation period. This, in turn, gives rise to a need to enter into a financial hedge over the same bespoke quotation period. Unlike a monthly futures market, where most physical contracts will reference a monthly price (and hedging liquidity will hence concentrate on that price), each physical hedge will be bespoke in terms of start and end date of the quotation period. It would not, therefore, be feasible to operate a central marketplace where all potential averaging periods were traded; rather, it is appropriately the role of LME members to make prices to their clients on request for specific averaging periods, and then to lay off the resultant risk, as appropriate, by means of the inter-dealer exposures available in the dealer-to-dealer market

- **The inter-office trade structure**. The LME's inter-office trade type – which allows for the bilateral execution of trades – supports the unique nature of its market. While most peer exchanges allow some form of "block execution" away from the lit venues, this is generally subject to significant restrictions (e.g. minimum order size). However, on the LME, the use of inter-office trades is far more flexible, reflecting the fact that both client trades, and dealer trades to manage the resultant exposure, may be far more bespoke

It is also important to note that the LME's key client groups trade the market in distinct ways:

- **Physical market participants** make the greatest use of dealer intermediation, in that they most commonly require averaging-type solutions which, per the discussion above, can only meaningfully be provided through the risk prices made by dealers

- **Systematic financial traders**, by contrast, will generally make use of the "native" liquidity on the LME's core market (primarily LMEselect). In this way, they are the main client group which directly accesses that market, and hence the only group where there is full convergence between the dealer-to-dealer and dealer-to-client markets

- **Fundamental financial investors** generally operate a hybrid model – many will access the "native" liquidity on the LME's market to effect their outright investments, but then utilise the dealer-to-client market for date adjustments. Furthermore, some fundamental financial investors trade purely on dealer-to-client screens or over the telephone with dealers, hence operating purely in the dealer-to-client space

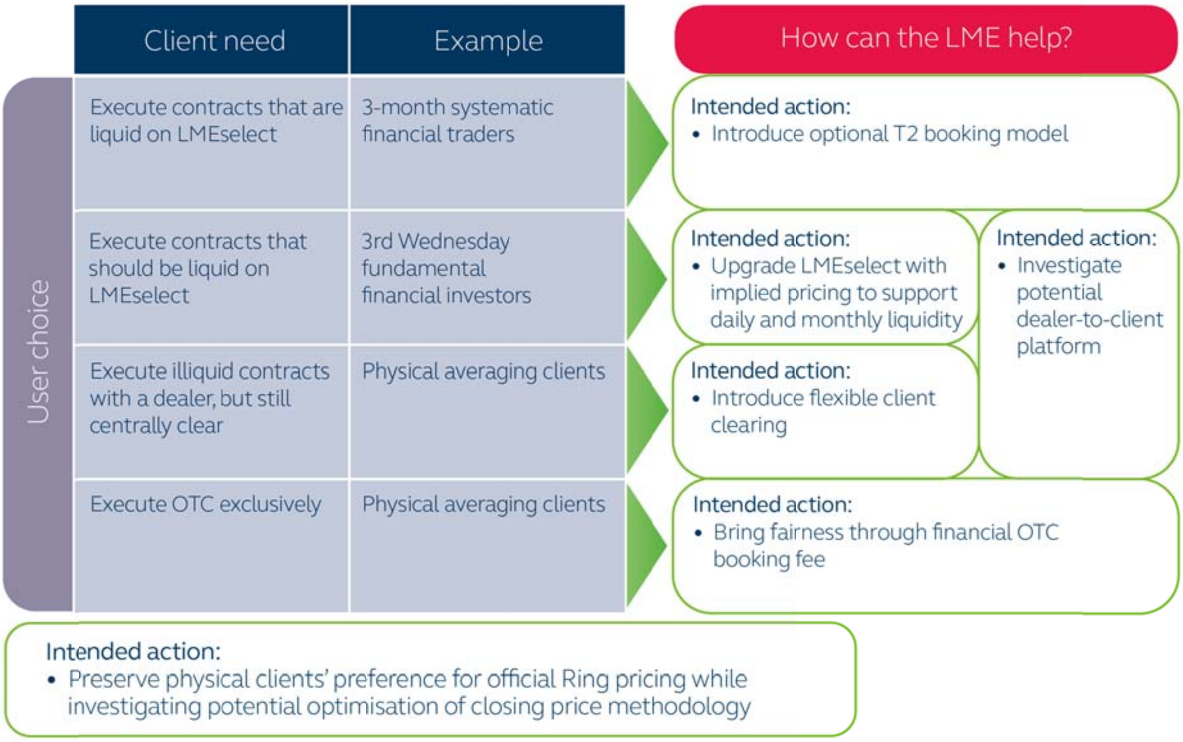
As such, the LME believes that a model of user choice has already, informally, arisen in respect of its market structure – clients (such as systematic financial traders) who wish to access "native" liquidity will do so, whereas those who need or prefer the liquidity of dealer-to-client offerings will operate in that manner. The LME believes that such a model is consistent with its strategic principles, and wishes to continue and strengthen this position.

The servicing of clients who prefer to operate in the dealer-to-client space is, by definition, dependent on the continued activity of members to make risk prices to those clients. The LME fully acknowledges the vital role of its membership in this regard, and commits to continue to support this model (for example, by price reductions on short-dated carries, which members will often use to manage the risk associated with the average prices they make to their clients). For those clients who prefer to access to the LME's core market liquidity directly, the role of the LME's membership is also crucial, as those clients require brokerage services to effect the market access which they require.

However, the LME also believes that it can deliver market structure enhancements, consistent with the user choice model. This is further explored below.

4.2. Market evolution strategy

Under the user choice model, the LME views client requirements as being divided into four main categories. In this regard, the LME does not look to force any client into a particular classification – only the client (supported by their member or members) should determine the appropriate execution strategy. However, the LME does believe that it should maximise liquidity and execution efficiency for each group of clients:



- **Clients wishing to execute contracts which are currently liquid on the lit dealer-to-dealer market** (for example, a systematic financial trader executing trades on the liquid LMEselect three month date). For these participants, already making use of a user choice model, the LME believes it appropriate to assist in expediting the operational workflow associated with such trading, hence driving also the LME's strategic goal of maximising trading efficiency.

  The most significant improvement which could be made in this respect is the introduction of an optional T2 booking model. Under this approach, clients accessing "native" liquidity on LMEselect would be able, through their member, to have the resultant positions posted directly to their client clearing account, without the need for the position to be booked into the member's house account under the current T4 model. In this way, clients executing directly on the basis of LMEselect prices would have access to a more efficient T2 model, while those clients requiring the current T4 model would be able to retain it. The LME would intend that the T2 model were priced such that the "all-in" costs of client execution were balanced under the T4 and T2 structures, but would obviously include this in the consideration of its medium-term fee strategy, as further set out in Section 8.2.6

- **Clients who wish to execute contracts which should have sufficient liquidity on the lit dealer-to-dealer market, but which do not currently exhibit such liquidity**. The most significant example of this type of contract is a third Wednesday contract, which is a commonly-traded instrument in the LME ecosystem, but generally is not available to trade in depth on LMEselect.

  During the Discussion Paper process, LME has received significant positive feedback from clients (in particular, certain fundamental financial investors) who have stated that they would appreciate better access to displayed liquidity of this nature. The Exchange fully accepts that, even if such liquidity were made available, there is no guarantee that it would actually be traded on the screen; furthermore, it is noted that previous attempts to stimulate liquidity of these contracts on the LME's central venues has not met with success. However, consistent with the strategic principle of user choice, the LME believes it appropriate to attempt to deliver this. The relevant mechanism is further considered in Section 4.3.

The LME further accepts that a potential inhibitor of the uptake of (in particular) third Wednesday liquidity on the LMEselect orderbook is a concern from members that, by posting liquidity in a public forum, they may lose the strong linkage which exists between their firms and their clients. In this context, during the discussion process, there has been a degree of interest expressed in the concept of a permissioned electronic dealer-to-client platform, whereby dealers could make available prices available (for example, on third Wednesday contracts) to clients whom they select, and clients can agree to receive prices from the dealers whom they select. This is, therefore, a natural outgrowth of the single-dealer platforms currently provided by some members – but with the advantages that (i) clients can view aggregated quotes from their panel of members on a single screen, and (ii) those members who do not wish to underwrite the technology investment required for a single-dealer platform can instead leverage a central facility. The LME therefore intends to work further with its market to investigate the potential for such a solution. Additionally, a number of third parties have approached the LME to propose the provision of a system of this nature on a partnership basis, with the LME licensing the use of its settlement prices and providing clearing services – the LME will fully investigate the potential for such partnership

- **Clients who wish to execute contracts bilaterally with members, but to receive a cleared LME client contract**. This may be in respect of contracts which are not likely to be liquid on the LME's central venues (for example, bespoke averaging), or contracts which could be liquid on the LME's central venues (for example, third Wednesday contracts), but where the client prefers to execute directly with a dealer. The T4 model already provides the flexibility to undertake such activity; a member can make a risk price to clients and, as set out above, this represents a core strength of the LME system.

  The primary limitation in this regard is the fact that certain economic constructs cannot currently be represented by a cleared LME contract. This is particularly the case for averaging contracts, and the LME has received considerable feedback from its market in respect of the desirability of a more flexible client clearing solution. The LME has already taken steps to service this requirement, with the introduction of "second business day" prompt dates (allowing client positions to be cleared on dates not previously available within the LME's date structure), with positive take-up from the market. August 2017 (the first month following launch) saw 5,421 lots traded, of which 84% were client contracts undertaken predominantly (96%) by physical market users. That this represents a larger proportion than on the LME more broadly is indicative of the value of these contracts for the physical market.

  The LME therefore intends to continue to build out its range of flexible clearing contracts, and is already working with the market to identify the key functionality required. Key axes of flexibility are date (allowing clearing of positions on dates not currently supported by the LME's prompt date calendar), tonnage (allowing the clearing of flexible lot sizes), native support for averaging, and also related metals products (as further discussed in Section 8.4.4).

  At present, all cleared client contracts are exchange-registered – that is to say, they are booked into the Exchange's trade matching system (LMEsmart), and then passed to LME

Clear for clearing. As such, although these contracts are agreed bilaterally between dealer and client, they take on the nature of exchange-registered contracts once entered into the LME's systems. The LME is also investigating whether it would be desirable to offer a true "OTC clearing" solution, whereby trades between dealer and client can be submitted directly into LME Clear as "cleared swaps"; while broadly economically equivalent to the current model of client contract registration, this may have particular benefits for certain members and clients, and will be explored further.

Additionally, although this discussion relates to contracts which would not be expected to be liquid on a central venue, the LME may be able to assist in the provision of technology which can make the execution of such contracts more efficient. In particular, the potential permissioned dealer-to-client platform referenced above could additionally offer request for quote ("RFQ") functionality, whereby a client desiring (for example) a specific averaging contract could submit this request as an electronic RFQ, which would then be sent to all of the dealers with whom that client chose to have a business relationship. The dealers would then, if they wished, quote a price for the business, with the client then able to choose the most competitive price. This effectively replicates the workflow currently undertaken through the inter-office market, with consequent efficiencies for both dealers and their clients

- **Clients who wish to execute contracts bilaterally with members, and to then book the resultant position on an OTC basis.** The LME believes that the flexibility of its linked OTC market is a key feature for clients – and, although the LME believes that clients would ultimately benefit from central execution and client clearing, it is ultimately the right of any client to decide to deal on an OTC basis, if they so wish, and if compliant with applicable regulation.

  The LME does believe that, in the case of financial institutions dealing OTC on the basis of LME prices or physical settlement infrastructure, it is appropriate that a financial OTC booking fee be paid in certain situations, as further set out in Section 8.2.4. However, this fee will not be applied to physical market participants, who are free to continue executing on an OTC basis (without charge from the LME) if they so desire

4.3. LME date structure

The LME firmly states its commitment to the daily date structure, given the importance of a daily cash price for the global physical market, and the LME's aim to preserve of all those infrastructural elements which are of importance to physical participants. Furthermore, the LME believes that trading on such structure will be materially enhanced by the fee discounts set out in Section 8.2.2.

The debate over the LME's date structure has historically been characterised as a conflict between maintenance of the existing date structure, and the promotion of further liquidity on third Wednesday dates. Based on its market engagement and own analysis, the LME does not believe this to be the case. While the LME accepts the concern, held by some market participants, that greater liquidity on monthly dates could potentially reduce the "residual" three month open interest coming into the front end of the curve and hence stimulating cash and TOM-NEXT trading, the Exchange views this risk as limited, for the following reasons:

- The precedent of LMEprecious. The LMEprecious date structure was designed, together with the LME's partners, to blend daily and monthly liquidity. While the contracts have only been established for a short period of time, and accepting the differences between the base and precious metals markets, the fact remains that the LMEprecious structure has seen strong activity on the both cash and monthly trading – this indicates to the LME that such a blend of liquidity is, indeed, possible

- The fundamental demand for cash date trading. The LME's market engagement process has further emphasised the importance of the cash price to the LME market, on which basis the LME has made its strong commitments to the physical market in respect of that price. It is not, in the view of the LME, logical to then argue that the cash date will be undermined simply by the availability of monthly liquidity. If the cash date is (as the LME believes) fundamental to the operation of the market, there will exist fundamental demand for cash trading

- The expected stimulus effect of the LME's fee changes to short-dated carries, as set out in Section 8.2.2

Accordingly, the LME supports the creation of a true user choice model in respect of daily and monthly liquidity on the LMEselect platform. In the view of the LME, this will benefit those clients, per the classification above, who wish to execute contracts which should have sufficient liquidity on the dealer-to-dealer market, but which do not currently exhibit such liquidity (in particular, the third Wednesday prompt dates across the LME's base metals suite).

In order to effect this user choice model, the LME intends to invest in a technological solution for LMEselect, namely "implied pricing". Under this approach, already applied for the LMEprecious contracts and illustrated in the table below[2], the matching engine will "add together" outright and carry orders, in order to imply different outright prices. In particular, the matching engine will take outright bids and offers on the liquid three month date, add these to carries quoted between the three month and relevant third Wednesday dates, and "imply" outright bids and offers on those monthly dates. To the extent that a trader then executes a trade against such an implied quote, both the three month and the carry will trade, providing all parties with execution of their desired economic exposure.

[2] NB the table is for example only. The specific details of how implied pricing will interact with tick sizes, and rounding, will be determined in participation with members.

The LME believes that this approach offers the best approach to provide potential traders of LMEselect third Wednesday contracts with the depth of monthly liquidity which they would wish to see. The key prerequisite will be the quoting of meaningful electronic carry liquidity between the three month and third Wednesday dates; while such carries are currently quoted on LMEselect, it may be desirable to further enhance such carry liquidity, possibly via appropriate incentive programmes. To the extent that such incentive programmes were implemented, the LME would view its members as being the most appropriate providers of carry liquidity (and beneficiaries under the relevant incentive programme), and would aim to enrol members as providers of LMEselect carry liquidity in the first instance.

Under a user choice model between daily and monthly liquidity, the LME does not believe it appropriate to provide financial incentivisation for participants to trade in a particular manner; in particular, the LME does not propose to renew its Electronic Third Wednesday Trader Programme, under which significant discounts were available for those trading monthly dates. Rather, it is appropriate for each market participant to select its preferred execution approach, without undue influence as a result of differential fee levels.

4.4. LME execution venues and price discovery

In considering the LME's trading venues, a key differentiation is the use of the LME Ring as the core pricing venue for base meals. Different segments of the markets have differing views on this feature; in general, the physical market is highly supportive of Ring settlements, while the fundamental financial investment community would, in general, prefer an electronically-derived closing price – most likely in the form of a volume-weighted average price ("VWAP") – for consistency with most other markets which they trade.

Consistent with the LME's strategic principle to prioritise the needs of the physical market, the LME commits to retain discovery of the official (i.e. lunchtime) settlement prices in the Ring. These are the prices which are relevant to the physical market, given that they are embedded into physical supply contracts.

However, the physical market has also been forthright in making the point that the LME's closing prices are, in general, not relevant to the physical industry, and there is very limited physical market interest as to how these are discovered. At the same time, fundamental financial investors are far more concerned with the closing prices than the official prices. Accordingly, the LME believes that there exists an opportunity to consider evolution of the closing price discovery mechanism, in a manner which would not be expected to impact the physical industry.

Accordingly, the LME proposes – during the course of 2018 – to undertake an exploratory period, whereby the closing prices for a subset of the LME's base metals contracts would be derived from an electronic VWAP mechanism, likely supported by an electronic trade-at-settlement ("TAS") functionality. The precise parameters of the trial electronic process would be established by prior consultation with the market. At the end of the exploratory period, the views of the market would be sought to establish the correct long-term methodology for discovering the LME's closing prices.

The LME fully recognises the potential negative consequences to its Ring dealers of any longer-term move to electronic discovery of closing prices. However, it should be emphasised that such a move is by no means a foregone conclusion on a permanent basis – the LME would strongly expect the Ring community, during the exploratory period outlined above, to articulate and demonstrate the benefits of Ring pricing. To the extent that the LME (guided by its market as a whole) determines that Ring-derived closed prices remain superior to those which could be obtained by a VWAP-style methodology, it would be the LME's intention to retain Ring-based closing prices. Furthermore, even if certain closing prices did move to LMEselect, the LME believes that its commitment to maintaining official prices in the Ring, together with the significant discounts being provided for Ring execution (see Section 8.2.2), will ensure the ongoing viability of Ring dealers' business models.

STRATEGIC DIRECTION

- **Deliver convergence between the on-exchange and OTC (dealer-to-client) spaces by providing a range of client execution and clearing opportunities**

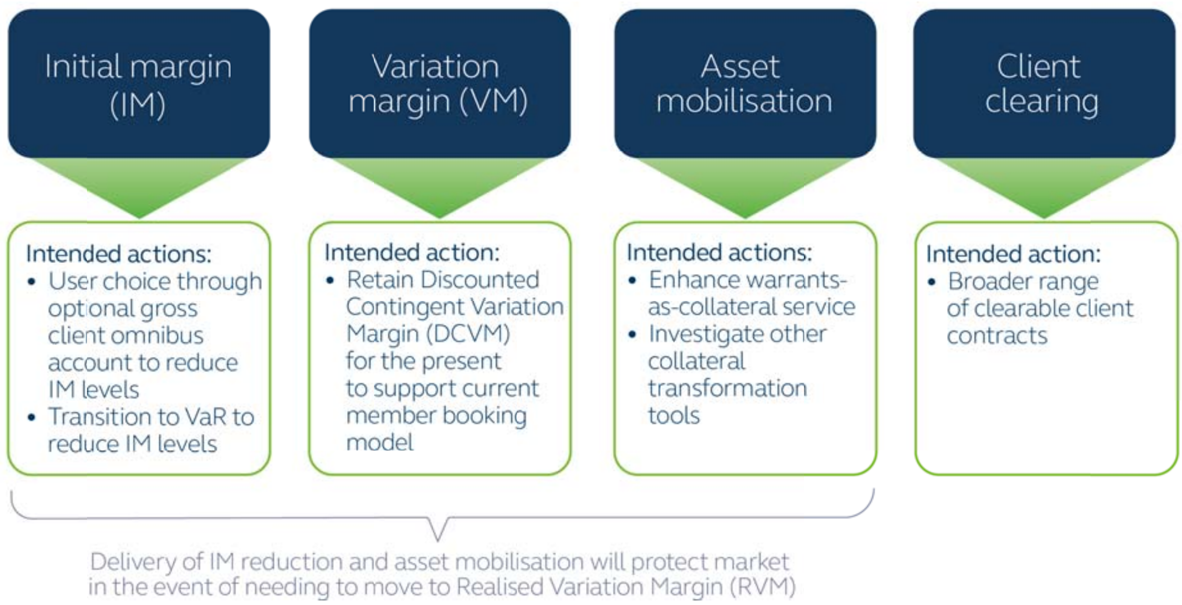
INTENDED ACTIONS

- **Deliver an optional T2 booking structure**
- **Provide a user choice electronic monthly execution model by deploying LMEselect implied pricing, and stimulating quoting of carries as appropriate**
- **Investigate the provision of a permissioned dealer-to-client platform, allowing dealers to provide pricing to their clients (e.g. for third Wednesday business), and clients to request quotes for bespoke trades**
- **Enhance the LME's flexible client clearing solutions to permit a broader range of contracts to be brought into clearing**
- **Investigate the possibility of alternative methodologies for deriving closing prices, while committing to maintain Ring pricing of official prices**

5. CLEARING STRUCTURE

SUMMARY

- **Reduction in initial margin levels (while respecting risk requirements) would significantly reduce the frictional cost of trading on the LME market, and in particular on a comparative basis vs. peer venues. Despite historical headwinds in achieving such an outcome, there are a number of routes which the LME intends to continue to pursue**
- **In respect of variation margin, for the present, the LME intends to preserve Discounted Contingent Variation Margin ("DCVM"), given its centrality to the credit model of the metals market**
- **However, the LME also believes it prudent to work with its market to prepare for potential future challenges – potentially through either regulatory or risk changes – to the DCVM model, and, in particular, to identify alternative routes for margin finance and asset mobilisation**
- **In this context, the LME should enhance its warrants-as-collateral service, and investigate other potential offerings**
- **The LME should also investigate the potential for enhanced, and more flexible, client clearing solutions**



5.1. Initial margin ("IM") methodology

Initial margin levels represent a key driver of trading activity; in particular, high initial margin parameters for LME contracts may act as a frictional barrier to trades which would otherwise take place. Accordingly, IM methodology represents an important strategic challenge for the LME market.

As a general observation, the IM methodology is significantly influenced by the prevailing regulatory environment, and the LME enjoys limited control over this. However, there are a number of key parameters which the LME can seek to influence, and these are therefore worthy of consideration.

5.1.1. Margin period of risk ("MPOR")

European CCPs (including LME Clear) are required to use a two-day MPOR, whereas US CCPs can instead apply a one-day MPOR. This means that LME IM levels will always appear uncompetitive in comparison to US peers.

However, it is important to note that there exists a material trade-off – although US CCPs can offer one-day margining, they must also hold IM on a gross basis. That is to say, even if client positions of a clearing member of a US CCP offset, each individual client must provide the full IM associated with their position, to be held by the clearing house. In Europe, by contrast, IM is collected from clearing members on a net basis – that is to say, if a European member runs a book of offsetting client positions, the total IM required to be posted will be significantly reduced.

This factor is particularly relevant for the LME market given the importance of credit, granted by certain members to their clients, in facilitating trading activity. In certain cases, members are able to offer enhanced levels of credit because of the effect of offsetting positions of reducing, at a member portfolio level, the total initial margin payable to the clearing house. In the absence of this netting model, it is not apparent that certain clients would be able to access the same levels of credit, given that those clients (or members on their behalf) may be unable to raise sufficient liquid assets, or borrow sufficient funds, to cover the margin requirements. However, it should also be noted that the credit model is more important for certain segments of the LME client base than for others – physical users are generally most reliant on such a model, whereas systematic financial traders (and some fundamental financial investors) are less reliant on this provision.

This, therefore, suggests that a user choice model may be possible – particularly given that, from 2018, it will be possible for European CCPs to offer client clearing accounts margined on a one-day gross basis, alongside the current two-day net basis. These so-called gross OSA (or "GROSA") accounts could be offered by members to clients who did not wish to avail themselves of credit facilities – driven by netting at the clearing member level – from their member, but rather to benefit from lower IM rates (and rates more comparable to US exchanges) under a one-day margin model. At the same time, members whose clients have come to rely on the netting model facilitated by the current margin arrangements could continue to do so.

The LME acknowledges the potential for unintended consequences, in respect of the fact that – if certain clients choose to move to a GROSA model – the member's residual client book may not net as effectively, with the result that the degree of IM finance which can be provided will be lower. However, the LME expects that this will be resolved commercially – that is to say, members will price the offering of netted accounts (including the price of credit) and gross accounts in such a manner as to deliver the optimal operating model and service to their clients. Furthermore, no member will be forced to offer GROSA accounts, unless required by regulation[3].

Accordingly, the LME believes it appropriate to deliver a one-day margin gross OSA solution, which members may deploy to their clients if they so wish, on a user choice basis.

[3] It is a requirement under MiFID II that LME Clear offers GROSA accounts; however, the offering of one-day margin is not a regulatory requirement.

5.1.2. Other factors affecting IM

LME margins are also impacted by other factors, separate to margin period of risk. The second driver of material difference between US and European markets is the requirement for European CCPs to include an anti-procyclicality ("APC") buffer in their IM figures. No comparable requirement exists for US CCPs, with the result that European IM levels are even higher than at US peers.

Accordingly, it is appropriate for the LME to consider alternative routes to deliver more efficient margin levels that more appropriately reflect the underlying risk level. Having undertaken detailed studies, the LME believes that the most effective route will be to move from the current CME SPAN methodology[4] for the calculation of IM, to a value-at-risk ("VaR") model. While such a move may not reduce the stated initial margin on any contract (and may cause these figures to increase in certain situations), it will deliver a significant portfolio-level effect, particularly in respect of carry trades. While such offsets will be helpful within client books, they would be expected to be even more significant at a member level, and will further reinforce the member netting approach, outlined above, by which certain members are able to provide credit to their clients. Furthermore, from a pure risk management perspective, the LME believes that VaR better captures the actual risk of a given portfolio, and is more aligned with the internal systems of most members.

The LME recognises that the introduction of a VaR model will be a significant operational exercise for its market, and will hence work closely with members and other stakeholders to ensure that any introduction is carried out with sufficient preparedness.

5.2. Variation margin ("VM") methodology

LME Clear's variation margin methodology is Discounted Contingent Variation Margin ("DCVM"). As set out in more depth in the Discussion Paper, under this methodology, profits associated with positions are not returned to the client until the settlement date of the original contract; however, losses do need to be funded (on a time-discounted basis). Importantly, positions "in profit" (i.e. unrealised gains) can be used to offset other positions "in loss" within the same account.

As with the netting of IM, this feature is of central importance for the credit models offered by certain members to their clients (especially physical users). When offering VM lines, many members rely on the fact that there will be offset of unrealised profits and losses across their client book – and, in the client omnibus account, this allows the unrealised profits of one client to finance the losses of another. Again as with IM, the credit thus granted is more important to certain user segments (especially physical hedgers) than others (especially systematic financial traders, and to some extent fundamental financial investors). Such a facility is particularly important for physical hedgers because the concept of the LME position being "in loss" is not relevant to them, given the hedge will be offsetting a physical market supply contract which will be "in profit" to an equal and offsetting degree. However, because the physical hedger will not realise cash from the supply contract being "in profit" until the settlement date, it is difficult for that hedger to then mobilise sufficient liquid resource to cover the margin call on the hedge.

[4] "SPAN" is a registered trademark of the Chicago Mercantile Exchange Inc., used herein under licence. Chicago Mercantile Exchange Inc. assumes no liability in connection with the use of SPAN by any person or entity.

Those participants (primarily financial in nature) who do not make significant use of VM credit facilities would, in general, prefer the LME to move to a realised variation margin (“RVM”) model, under which profits would be paid back on a daily basis, as this would (i) lead to reductions in regulatory capital charges for LME business, (ii) simplify processing, and (iii) be consistent with the vast majority of the LME’s peer venues. However, and consistent with the LME’s strategic principle as to the primacy of the physical market, the LME does not believe that it would be appropriate to transition to an RVM model at the present time, given the expected negative effect on the physical market, and on the members who serve them. It is therefore the current intention of the LME to retain its current DCVM model.

However, the LME also notes that, because the DCVM model represents a significant outlier in the context of global exchange and clearing house practice, it cannot be guaranteed that the model would not come under future regulatory or risk scrutiny. Accordingly, and in accordance with the LME’s strategic principle of reducing potential future structural barriers to trading, the Exchange does believe it appropriate to work with its market to identify potential mitigants, were a future change from DCVM to RVM required as a result of exogenous pressures or a changing risk assessment. While the LME fully understands the concerns from certain members as to their ability to continue providing finance to certain clients were the LME to transition immediately to an RVM model, the Exchange also believes that it is incumbent upon those members to undertake the necessary contingency planning to ensure that, if such a change arose in the future, that they would be in a stronger position to withstand the transition.

In particular, the LME would note that physical hedging clients, although they may not have significant spare liquid resources, generally have access to physical collateral – which, with the aid of the correct transformation tools, could be pledged against margin requirements. Physical market solutions of this nature are further considered below.

5.3. Warrants-as-collateral and other asset mobilisation solutions

The LME’s warrants-as-collateral offering provides an immediate potential solution to the potential cashflow challenges outlined above; members and clients with access to LME warrants can pledge these against margin requirements at LME Clear. The service is already used by several members, and the LME has been engaging closely with the market to discuss routes to enhance take-up. As a result of this process, the LME intends to make further enhancements to the warrants-as-collateral service – most importantly, changing the fee model such that facilitation fees are charged only on the value of warrants actually used against margin requirements (rather than the total value of warrants pledged to LME Clear). In addition, the LME is working with members to develop legal solutions which will increase the flexibility and ability to use the warrants-as-collateral offering, including enabling use of warrants held by clients or affiliates and for additional jurisdictions.

The LME is also conscious that not all participants will have access to LME warrants for financing – and that, over time, a broader asset mobilisation solution may be required. The LME believes that it has the tools – in particular, the LMEshield system (as further discussed at Section 6.4) – to allow financing against non-warranted material, and will continue to work with the market to enable such solutions.

5.4. Client clearing solutions

As further set out in Section 4.2, the Exchange believes there exists scope for a much broader set of LME positions to be made available for client clearing, which the LME will seek to deliver.

5.5. Pre-trade risk management

In respect of pre-trade risk management controls – through which the LME could assist members to control their exposure to their clients or non-clearing members ("NCMs") – this remains an area where LME will continue to discuss with members to assess whether there are additional services that would be of use to the market.

STRATEGIC DIRECTION

- **Enhance efficiency of clearing by optimising margin methodology and providing best-in-class tools for the efficient mobilisation of assets**

INTENDED ACTIONS

- **Optimise initial margin levels via (i) offering user choice one day gross account, and (ii) transitioning to VaR margin**
- **Retain DCVM over RVM for variation margin given importance to the physical market for the present, but work with market to prepare for transition if imposed for regulatory, risk or other reasons**
- **Enhance warrants-as-collateral, and investigate other collateral transformation tools, to assist in cashflow management and margin finance challenges**

6. DELIVERY AND PHYSICAL MARKET STRUCTURE

SUMMARY

- **The LME's warehouse rules have addressed the issue of structural queues, with no such queues currently observed in the LME warehousing network**
- **They have also resulted in a more complex warehousing environment, in which stocks have left LME-licensed warehouses; however, the LME does not believe that the rule-set can be simplified without relaxing the protections available to users of the market**
- **The LME and its warehousing community must therefore work together to find other approaches to increasing attractiveness of on-warrant storage – in particular, in respect of headline rents**
- **The introduction of position limits will be closely monitored by the LME to ensure protection for all market participants**
- **The LME's warehousing network (through both LMEsword and LMEshield) also provides significant opportunities, especially in respect of collateral management and transformation solutions**

6.1. Warehouse rules

As at 31 August 2017, there are no structural queues anywhere in the LME warehousing network – the first time this has occurred since the start of the LME's warehouse reform programme. Given the significant political, regulatory and market focus on the topic of warehouse queues (and the consequent effects of depressed LME prices and resultant higher premiums, causing challenges for both price discovery and hedging), the LME believes that the action it took in respect of warehouse queues – and, in particular, the introduction of both the Linked Load-In / Load-Out ("LILO") and Queue-Based Rent Capping ("QBRC") rules – has protected the reputation and effectiveness of the LME market.

The LME fully recognises market concerns (from the warehousing community, and more broadly) as to the impact of the rules on levels of physical metal held in warehouse. The LME agrees that the presence of both LILO and QBRC materially reduces the cash incentive which a warehouse operator can pay to attract metal into LME storage – and, in the absence of such incentives, less metal would be expected to reside in the LME system. Indeed, this has been the experience of the market; stocks of metal in queued warehouses (which were likely attracted into the warehouse by the large incentives which queued warehouses were able to pay) have fallen significantly, and the outflowing metal has broadly not been re-absorbed into the LME system, given the inability of any other operator to pay a suitable incentive in the post-queues environment. At the same time, stocks of metal in non-queued warehouses (which were likely the subject of a significantly lower level of incentive) have remained broadly stable. But, at an aggregate level, the concern of the market is that total LME stocks are dropping at a time when off-warrant stocks are growing, suggesting a reversal in the relative attractiveness of the two storage options. Despite it being a logical and predicable consequence of the necessary warehouse reform programme, the LME notes (and concurs with) this concern.

The LME also notes market demand for "simplification" of the warehouse rules, and has engaged with a broad range of stakeholders to understand the precise nature of this request. The LME fully recognises that both LILO and QBRC are complex rules, especially given the addition of the QBRC "anti-abuse" provision which has, in the view of the LME, been extremely important in protecting warehouse operators from predatory cancellation by metal owners. However, in the view of the LME, the request is not actually one of "simplification" – that is to say, the LME has heard no specific suggestions as to how the current rules can be drafted in a more simple manner, without changing their impact. Rather, the request appears to be one of "relaxation" – removing rules to create a less regulated behavioural environment.

Following its market engagement exercise, the LME has concluded that relaxation of the warehousing rules is not a deliverable short-to-medium-term outcome. It is clear that – having been through the experience of warehouse queues – key actors in the market (including metals consumers and regulatory stakeholders) have no appetite for a relaxation of controls. The current state represents the outcome of significant market engagement and the LME believes it delivers an appropriate balance for all stakeholders; any change in this approach would necessarily be viewed as shifting that balance in favour of a particular interest group, which the LME does not feel would be an appropriate outcome.

Accordingly, the market will need to accept the ongoing applicability of the LILO and QBRC rules, and other approaches to enhance the attractiveness of LME storage and bring more metal onto warrant will need to be considered.

6.2. Enhancing attractiveness of LME storage

It is in the mutual interest of the LME, warehouse operators and the broader market to see the widespread use of warranted storage. As previously articulated, the Exchange believes there are broadly two "use cases" for LME storage (beyond an immediate need to create warrants for settlement of exchange contracts):

- **Payment of incentives**. It is undoubtedly the case that a significant proportion of metal is attracted onto LME warrant due to the payment of incentives by the warehouse operator, funded by expected future rent and free-on-truck ("FOT") charges; under this model, the metal owner placing the metal onto warrant generally sells those warrants on the LME, rather than retaining the metal. Given the effect of LILO and QBRC, it must be expected that the incentives which can be offered by warehouse operators will remain low, and this route will not account for a significant inflow of metal over the coming period

- **Provision of high-quality and cost-effective storage**. Separate to the desire to receive an incentive, it should be possible to offer LME-warranted warehousing services as a high-quality solution for general metal storage, including in circumstances where the metal owner intends to withdraw the metal himself (and hence payment of an incentive would not be relevant, as it would need to be funded by that metal owner's own fees, i.e. would be economically neutral). Under this model, it would not be necessary to offer an incentive to attract metal into storage; rather, the benefits of LME storage would be sufficient to drive take-up of warehousing services.

The challenge in this regard is that the primary concern of a metal owner in this situation is cost of storage – and such storage is meaningfully cheaper in the off-warrant market. Furthermore, the benefits of LME storage (in particular, certainty of title and ability to deliver warrants into clearing on-demand) have been broadly synthesised by warehouse operators, who offer their own electronic record-keeping solutions, and will also guarantee to warrant material on very short notice if LME delivery is required.

While a certain price differential between warranted and private storage may be justified by the higher standard attaching to LME storage (such as the LME's requirement for indoor storage), there seems (in the view of the LME) no justification for the very significantly higher headline rent levels associated with LME storage.

As has been more fully articulated in the LME's reports on the warehousing topic, it is not broadly the case that warehouse operators retain the full headline rent; rather, this rent is generally only achievable when warrants have been delivered on the LME and are taken by a buyer who then funds the full rent – but in this case, the warehouse operator will generally need to use a significant proportion of the full rent thus received to fund incentive payments to the original depositor of the metal. Accordingly, warehouse operators do not generally (in the view of the LME) benefit from high levels of headline rent – rather, they leave themselves vulnerable to demands for incentives and "rent shares" from metal owners. On a net basis, the warehouse operator may only make the same rent which would have been charged for off-warrant storage, after the costs of incentives are taken into account.

Partially to address this issue, the LME has introduced a charge-capping mechanism. However, based on market consultation, it was decided that the operation of that mechanism should be limited to the prevention of further increases in the rates of rent and FOT, rather than a meaningful reduction in their levels. As the LME has previously articulated, it is not the intention of the Exchange to unilaterally impose further reform on its warehousing network – in the absence of further issues emerging, the LME believes that any future changes must be effected with the support of all stakeholders, and in particular the warehouse operators to whom such rules would directly apply.

Accordingly, the LME believes that the warehouse community must work together to identify whether it would be desirable to consider, on a voluntary basis, significant reductions of the charge caps relevant to headline warehouse rents. This would, in the view of the LME, materially enhance the attractiveness of LME-warranted storage. The LME stands ready to work with warehouse operators to consider such steps.

For its part, the LME anticipates that the fee reductions it is announcing in respect of short-dated carries may stimulate the return of metal onto warrant. The previous increase in fees (especially TOM-NEXT fees) appears to have prompted some metal financers to change their model – rather than leaving metal on-warrant and rolling the financial on a daily or similar basis (with the daily option to release warrants into delivery based on curve structure, hence the associated desire to keep metal on-warrant), the metal is instead left off-warrant, and financed with longer-term carry trades

- **Good Delivery Locations ("GDLs").** A further means for enhancing the attractiveness of LME storage is through ensuring that the geographical footprint for the global physical network is appropriately calibrated to mirror natural trade flows and meet market need. The LME's market engagement on this topic does not immediately suggest that any significant gaps exist in the current network which require remediation; however, the LME will remain open-minded in respect of potential new locations, and would be willing to work with such locations – or indeed, any existing location proposing amendments – to ensure that this network continues to evolve to meet changing market dynamics and demand

6.3. Lending Rules and position limits

MiFID II will see the implementation of position limits across a wide range of asset classes, including base metals. The LME's Lending Rules, and general position management arrangements, will continue to apply, and the Exchange will closely monitor the effects of the MiFID II position limit regime, and take any further steps as required to ensure appropriate protection of position holders.

6.4. Physical custody, financing and collateral management

The LME continues to be convinced of the need for effective commodity custody and collateral management solutions, as manifested by (i) continued challenges for the commodities sector in respect of warehouse fraud, (ii) a need for collateral transformation to fund, among other things, cash margin against commodity futures positions (as further set out in Section 5.3), and (iii) ongoing appetite for physical metals financing transactions.

In LMEsword and LMEshield, the LME believes it offers two highly attractive services to the market in this space. In particular, the LME's long track record in respect of the operation of a global physical warehousing network represents a key differentiating asset for its offerings in this space. As such, the LME intends to expand its physical market services in the following directions:

- **Attracting more financing business onto LMEsword**. As set above, the LME believes that high headline rents are impacting the attractiveness of LMEsword storage for financing business; to the extent this can be addressed, the LME believes that more financial and long-term metal storage business can be facilitated on the LMEsword platform

- **Promoting uptake of LMEshield**. LMEshield provides a solution for the safekeeping of physical commodity assets which are not eligible for LMEsword storage. While the system has seen strong industry engagement and some limited usage, the LME understands that the current fee structure is considered by many market participants an inhibitor to take-up; accordingly, the LME is announcing today the reduction of fees to a level which, based on market conversations, the LME believes will appropriately incentivise usage. The LME will continue to work with the market to promote usage of the LMEshield system

- **Secure payments and delivery-vs-payment ("DvP") solutions**. A key element of the commodities custody and finance market is the ability for participants to transfer underlying physical commodity assets safely and effectively. The LME strongly believes that the absence of a standardised solution for such activities impedes the development of the space.

Accordingly, the LME is progressing with its secure payment system (LMEpay), and will then investigate the delivery of a true delivery-vs-payment solution for the market

- **Linkage with HKEX in respect of Mainland China.** The mainland China market is clearly crucial in respect of commodities financing, and the LME will work closely with its parent to ensure that the HKEX Group offers an holistic set of services

- **Future development of a commodities repo platform**. With the benefit of the above infrastructure, the LME believes it is well-positioned to offer a comprehensive commodity repo solution, which could be instrumental in solving the challenges of margin financing and asset mobilisation set out in Section 5.3. The LME will, therefore, work with the market to give appropriate consideration to such an offering

STRATEGIC DIRECTION

- **Maintain ongoing review to optimise the physical market structure and ensure it represents best practice**

INTENDED ACTIONS

- **Work with warehouse operators to enhance attractiveness of LME storage in the post-queues environment, acknowledging that market protections need to be preserved in the form of LILO and QBRC**
- **Continue to monitor the effectiveness of the Lending Rules and forthcoming position limits**
- **Restructure LMEshield fees, and investigate the building of physical market services such as payment solutions and commodities repo**

7. MEMBERSHIP

SUMMARY

- **Members sit at the core of the LME's ecosystem, and the LME believes that its membership structure serves its market well**
- **The LME is committed to the role of B shares in its membership structure, and the LME wishes to increase liquidity for the benefit of both prospective members and current B share holders**
- **The role of Introducing Brokers is becoming increasingly significant, especially as the LME moves into the ferrous space and looks to grow its options offering**

7.1. Value of membership and B shares

The LME is committed to preserving and enhancing the value of LME membership, and the B shares which LME members are generally required to hold. As set out in the context of the LME's strategic principles, the LME strongly believes that its initiatives to enhance trading activity on its market will materially augment the commercial opportunities available to its members, hence enhancing the value of their membership.

7.2. B shares

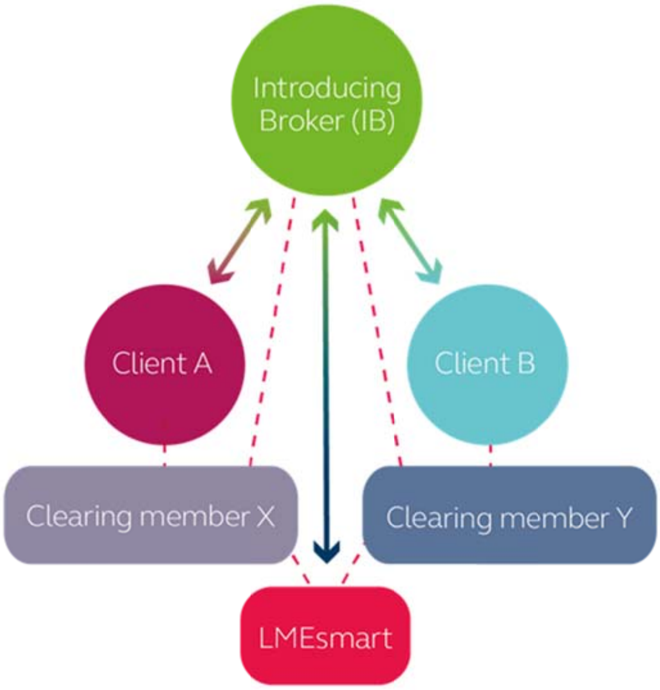
The LME restates its commitment to maintaining the ownership of B shares as a pre-condition for base metals membership (excluding category 5 – i.e. trade membership, which does not confer trading rights).

In respect of new products (and other contracts where the LME has committed to build liquidity), the LME additionally believes that LME members who hold B shares should enjoy the primary economic benefits that those new products may bring. However, it is also clear that, when entering a new market, overall liquidity (and hence the interests of all participants) may benefit from the ability of new members to introduce business to the market. Accordingly, in the current view of the LME, it may be appropriate (only in respect of these new and growth products) to offer membership classes specific to that new product, with a commensurately reduced B shareholding requirement. Furthermore, in the case of non-clearing members broking only new products, it may further be appropriate to waive the B share requirement, on the basis that any trade broked by that non-clearing member will then require to be cleared through an LME member holding B shares, and hence adding to the overall value of the B shareholders' addressable fee pool.

The LME believes that this principle was applied appropriately in the case of the recent launch of specific LMEprecious categories, whereby (with the benefit of strong input from its membership base), the LME introduced B share requirements (appropriately scaled) for LMEprecious-specific general clearing members and individual clearing members, and waived the B share requirement for LMEprecious-specific non-clearing members. As expected, a number of LMEprecious-specific non-clearing members did indeed join the market, and the LME believes this has acted in the interests of the market as a whole.

Also in the interest of maximising B shareholder value, and based on market feedback, the LME does believe it appropriate to introduce functionality to increase the liquidity in, and hence demand for, B shares. Accordingly, the LME will now investigate the provision (through an appropriately authorised third party) of both a matched bid-offer facility for buyers and sellers of B shares to better find each other, and a B share "leasing" scheme[5] (also with a platform such that lessors and lessees can better find each other)[6]. The LME strongly believes that such infrastructure will materially enhance the B share market, and the ease of both candidate members sourcing the requisite B shares, and holders of excess B shares to recognise economic value for them.

7.3. Introducing Brokers ("IBs")



The LME continues to believe that there exists a pressing need for a specific category of membership recognising the role of introducing brokers[7]. Such participants, who generally arrange a trade between two counterparties (who may themselves be LME members), are crucial for the development and maintenance of liquidity in new and established products, and the LME believes that the liquidity on its market – especially in relation to new products – is impaired as a result of

[5] Note the LME uses the term "leasing" in its broadest sense. Strictly speaking, it is not possible to "lease" a share. Legally, a "leasing" arrangement would have to be either (a) a sale and repurchase ("repo") arrangement, or (b) an arrangement whereby an existing shareholder with a surplus of B shares allows an applicant member to count those surplus shares towards the B shareholding requirement for the purposes of its membership application.

[6] It is likely that the matched bid-offer facility will be easier to implement in the short-term (give that "leasing" will require further thought as to rules covering, for example, the requirement of lessees to make alternative leasing provision at the end of any lease period). As such, it may be appropriate to separate the delivery of the two components.

[7] The LME acknowledges that different markets use different terminology in respect of this type of participant. Often, the term "introducing broker" identifies a tied agent of a member, who sources and introduces business to that member – and indeed, this was the original usage of the term in the context of the LME. "Inter-dealer" brokers were originally riskless brokers who arranged trades between dealers, although this term appears to have evolved to cover the arrangement of trades between any market participants, be they dealers or clients. The LME now utilises the term "IB" to cover all potential use cases of the structure which it proposes to implement, which can include both of the examples cited here.

there being no specific provision for IBs. While some IBs do operate on the LME under “tying” arrangements, this is generally viewed as a cumbersome approach, which materially limits the uptake amongst the key IB participants in the broader commodities market, who are significant actors on peer markets.

Accordingly, the LME proposes to consult on rule changes, and implement technical changes, which will provide a formal membership construct for IBs. Once they have taken this status, the IBs will be able to access the LME’s systems (and, in particular, the LMEsmart matching system) to input trades which they have broked between LME clients (provided that those clients, and importantly their clearing members, have agreed that the IB may act in this capacity for the specific client). These trades will then be sent to the clients’ clearing members for attestation. In this manner, all trades broked by IBs will directly flow to LME clearing members.

Consistent with the principles set out above, the LME believes that IBs executing the core base metals suite should be subject to a B share requirement commensurate with the requirements for members. However, also consistent with the logic above, the LME would propose to waive this requirement for IBs active only in new and growth products (including LMEprecious, the LME’s ferrous contracts, and the LME options suite), on the basis that these IBs will be providing a service to the entire market in respect of the addition of liquidity to these contracts, and core LME members will benefit directly from the volumes thus brought to the market.

Furthermore, the LME believes that the introducing broker structure should first be trialled in respect only of new and growth products, which will allow the potential impact on the LME’s more mature contracts to be fully assessed before the model is made available to all products.

7.4. Other membership enhancements

The Discussion Paper identified certain other membership enhancements, including enhanced execution rights for Category 3 members, and a specific affiliate account type. These have not met with sufficient market enthusiasm to make their pursuit an immediate strategic priority for the LME.

STRATEGIC DIRECTION

- **Protect the value of LME membership and B shares, but lower barriers to entry by providing fair access for all**

INTENDED ACTIONS

- **Deliver matched bargain facility and “leasing” solution for B shares**
- **Create specific Introducing Broker membership category**

8. VOLUMES, COMPETITION, FEE STRUCTURES AND GROWTH

SUMMARY

- **The LME believes that volumes on its market can be stimulated by the removal of key frictional barriers to trading**
- **The Exchange's immediate priority is to deliver meaningful discounts to the fees for short- and medium- dated carries**
- **Going forwards, the LME will introduce a financial OTC booking fee, and consider other medium-term changes to its fee schedule**
- **The LME will also make rule changes to formalise appropriate behaviour in terms of bringing volumes to the central marketplace**
- **A strong growth pipeline will be delivered via the LME's new product strategy**

8.1. Volume trends and drivers

The LME recognises that volumes are, to a large extent, a consequence of prevailing market conditions, and the LME cannot compel the execution of trades which are not economically rational in light of market conditions. However, the LME also notes that certain trades which are economically rational do not arrive on the LME market, which is negative for the ecosystem as a whole (in terms of available liquidity and price discovery), as well as for the LME commercially. Accordingly, the LME believes it appropriate to address these groups of potential trades:

- Volumes which would have traded on the LME, but do not because the frictional cost of the trade is prohibitive. This is the core driver of the LME's strategic principle of maximising trading efficiency (see Section 2.4). The most immediate lever available to the LME in respect of such volumes is that of fees, which is further addressed at Section 8.2 below

- Volumes which trade on peer exchanges, but which could have traded on the LME. The LME recognises that certain classes of business will likely always transact on competitor exchanges (for example, hedging business against physical contracts marked to competitors' prices). However, there is also a class of business (particularly fundamental financial business) which broadly has a choice of venue, and will execute on the venue with (i) the most suitable market structure, and (ii) in the event of more than one market offering a suitable structure, the lowest frictional cost. Accordingly, the LME's user choice model (as further articulated in Section 2.3) is designed to allow the LME to address a broader set of potential end users, who are today compelled to trade on other markets

- Volumes which transact on the OTC, rather than the on-exchange, market. The LME acknowledges that there are many valid reasons for OTC execution – but, to the extent that business is incentivised into the OTC market due to LME decisions on market structure of fees, this is not the effect which the LME would wish to promote, and should be appropriately mitigated

By taking action to address the above concerns, the LME believes that it will optimally position its market to capture the greatest possible amount of volume, while acknowledging that the absolute level of addressable volume at any point in the market cycle is likely beyond the LME's control.

8.2. Fees

8.2.1. Fee structure principles

The LME wishes to prioritise a fee schedule which is fair in three key dimensions:

- Fees which strike a fair economic balance between the LME and its users. Since the sale by its members, the LME is a commercial entity, and will seek to act in a manner which produces an acceptable return for its shareholder. But, on the other hand, the LME recognises that users will only choose its services if fees are fair for those users as well

- A fair fee balance between LME members. In general, two members carrying out the same economic transaction should face the same fee burden, regardless of their specific circumstances. In this regard, the LME is particularly concerned that its current fee schedule provides a significant fee benefit to those members who deal with clients on an over-the-counter basis, rather than by issuing an LME client contract. While the LME recognises the right of dealers to service their clients on an OTC basis, the LME's current fee schedule means that (for a single trade) a member issuing LME client contracts would pay 270c, while a member dealing with their client on an OTC basis would pay 90c. This is not, in the opinion of the LME, fair – both members are using the same core pricing and risk management services provided by the LME, and the extra service of the cleared client contract does not alone explain the three-fold differential in price. Furthermore, compared to peers, 90c for an outright trade is an extremely low fee. Accordingly, the LME believes that action should be taken to address this disparity.

- Fees which are fair in comparison to the service provided. In general, the LME believes that its fees on outright trades are fair, compared to the value of underlying risk being managed. However, the LME does accept that its current fees on shorter-dates carries are too high, and proposes to take action to address this.

8.2.2. Carry discounts

The LME will make the following discounts to specific-dated carries:

- **Short-dated carries as currently defined (where all legs are between the TOM date, i.e. next LME prompt date, and 15 calendar days forward from the TOM date inclusive)** – these carries have already been subject to discounts (trades executed on all LME venues were reduced to 50c in August 2016), which had a very limited impact on volume. However, the LME believes this was partly because – even at the reduced 50c level – the fees associated with executing such a carry (and, in particular, a TOM-NEXT carry) could still be very significant in comparison to (and, in some cases, greater than) the amount of risk transferred.

  Accordingly, the LME believes it appropriate to further discount these carries. These will be reduced to 15c for Ring trades[8], 25c for LMEselect trades, 35c for Ring basis and inter-office

[8] All fees are quoted per leg, per lot, per side. "Pre-commercialisation" levels are as of 2011. Fee levels represent the sum of all relevant current and historical elements (e.g. trading fee, clearing fee, contract levy, matching fee, Exchange user fee), which have been combined. Where historical fees have been converted from sterling to dollars for purposes of comparison, a historical exchange rate of 1.6x has been used, given the prevailing rates during the period when fees were sterling-denominated.

trades, and 25c for client contracts. These fee reductions will take short-dated carry fees for member contracts to a level lower than those seen in 2011 (i.e. before clearing fees were increased, and before LME commercialisation)

- **Introduce "medium-dated" carries (where all legs are within 35 calendar days forward from the closest prompt date)** – in addition to short-dated carries as currently defined, the LME believes it is also appropriate to provide discounts on a broader set of medium-dated carries. The failure of the 2016 fee discounts to stimulate volumes was, in the view of the LME, partly due to the fact that the current definition of short-dated carries is overly restrictive. By discounting all carries where the legs are within 35 days of each other, the LME believes that it will stimulate activity particularly in the month-to-month roll market. The 35 day period covers every spread between adjacent third Wednesday dates, and represents a very significant portion of the carry market.

  These carries will therefore be reduced to 25c for Ring trades, 45c for LMEselect and Ring basis trades, 70c for inter-office trades, and 45c for client contracts

1 Short-dated carries (where both legs are within first 15 days of the TOM date)

	Pre-commercialisation	Current	New (from 1 Oct)
Member	Ring: 21¢ Basis: 40¢ LMEselect: 40¢ Inter-office: 40¢	Ring: 50¢ Basis: 50¢ LMEselect: 50¢ Inter-office: 50¢	Ring: 15¢ Basis: 35¢ LMEselect: 25¢ Inter-office: 35¢
Client	Client contract: 6/21¢*	Client contract: 50¢	Client contract: 25¢

2 Medium-dated carries (where both legs are within 35 days of each other)

	Pre-commercialisation	Current	New (from 1 Nov)
Member	Ring: 21¢ Basis: 40¢ LMEselect: 40¢ Inter-office: 40¢	Ring: 50¢ Basis: 50¢ LMEselect: 90¢ Inter-office: 90¢	Ring: 25¢ Basis: 45¢ LMEselect: 45¢ Inter-office: 70¢
Client	Client contract: 6/21¢*	Client contract: 90¢	Client contract: 45¢

*6¢ for non-seg, 21¢ for seg

Designed to:
- Encourage short-dated carry activity and stimulate all trading
- Drive use of date structure and use of monthly rolls

Discussed with:
- LME User Committee, who helped with calibration (especially between trading venues)

The LME is directing the fee discounts primarily towards its "lit" venues (the Ring and LMEselect) because it believes that the market as a whole will be served by the provision of liquidity on such central venues. In particular, the LME's strategic aspiration to drive better displayed liquidity for clients of the market (as further set out in Section 4.2) should be enhanced by this approach.

In particular, the LME is looking to provide a significant discount to its Ring dealers. This is evidenced by the fact that the proposed discounts apply not just to Ring trades, but also "Ring basis" trades (including trades between Category 1 and Category 2 members on the basis of Ring prices). In this way, the end-to-end cost of execution for Category 1 members (be they trading on their own account, for their direct clients, or for other members) will be meaningfully reduced. This, taken together with the LME's commitment to keep the physical market official prices in the Ring per Section 4.4, should act as a clear signal as to the LME's ongoing commitment to the

Ring, and its desire to ensure that Ring dealers can profitably execute business and recoup their ongoing investment in maintaining the necessary infrastructure to undertake Ring trading.

In addition, the LME has materially reduced the cost of client contracts relating to short-dated carries, to make client trading of such contracts more accessible. This is consistent with the LME's desire to ensure fairness between the cost of executing on-exchange and OTC.

At the heart of the LME's proposed discounts to short-dated carries is the belief (which the LME shares with much of its market) that the effect of the 2015 fee increases was to alter trading behaviour in respect of the front end of the curve. Prior to the increases, there was a greater willingness among members and active trading clients to hold positions on "non-standard" days, and manage the resultant exposure as those dates came prompt via the use of short-dated carries. For example, an LME member selling an "average of month" contract to a client may choose to offset the outright risk by buying the total tonnage on a given LME forward prompt date, but leaving un-hedged the spreads between each date of the quotation period and the forward bought date. This "dirty card" would then be managed as the averaging days came prompt, by rolling the daily positions forward or backward to coincide with the outright hedge. However, such behaviour is predicated on (i) a low frictional cost of execution of the rolls, especially in respect of fees, and (ii) the guarantee of a liquid roll market. The impact of the LME's 2015 fee changes appears to have been to impact directly (i), and indirectly (ii), such that a lower proportion of members are willing to accept the cost and risk associated with such a strategy. Accordingly, the LME market has more commonly come to witness cards being "cleaned" at the point of initial execution, with a consequently reduced use of (and liquidity in) front-end spreads and cash trading. Indeed, the LME believes that this effect – rather than any potential move to enhance monthly liquidity on its market – represents the greatest threat to its date structure, as further set out in Section 4.3.

It clearly cannot be guaranteed that, having migrated its behaviour in this manner, the market can be restored to its former state. However, the LME believes that – if such a reversal is possible – the reduced fees now being implemented remove any fee barrier to this being achieved. Or, stated differently – if this fee change cannot achieve the desired behavioural change, then it is unlikely that any other action open to the LME would have any further effect. In this event, the LME (and the broader market) may need to acknowledge that trading behaviour has evolved, and then proceed on that basis.

The LME is proposing to offer these fee discounts for an initial period of one year. While the Exchange trusts absolutely the feedback received from members and clients that the proposed discounts will stimulate trading behaviour, the LME also feels it appropriate to ask the market to adapt its trading behaviour (if such adaption is indeed possible, pursuant to the discussion above) in a timely manner, such that the positive liquidity impact on the market can be manifested as quickly as possible, for the benefit of all market stakeholders. To the extent that the fee discounts create a material increase in trading activity, it is the current intention of the LME to retain such discounts beyond the initial one year period.

The LME is conscious that any changes to fees – even a fee reduction – will create an administrative burden on the market, and in particular on members who will need to account for such fees in their books and records. Accordingly, the LME is proposing that the fee reductions will take effect on 1 October 2017 in respect of short-dated carries as currently defined, and on 1 November 2017 for medium-dated carries. This will allow time for members who wish to make changes to their systems to do so; equally, it will allow time for the LME to update its daily member fee report, so members who cannot (or do not wish to) update their own systems in time will be able to make use of reports from the LME to understand and reconcile the impact of the reduced fees.

The proposed discounts to specific carries, and the mechanics of their implementation, have been discussed with the LME's User Committee[9]. The LME believes this has been an exceptionally helpful and collaborative dialogue; in particular, the LME has acted on the User Committee's advice to extend the fee discount from the LME's original proposal of just Ring and LMEselect trades, to include also basis and inter-office trades, given the importance of such trades to the business models of Ring dealers. The LME views this as a highly positive outcome of its commitment to comprehensive market engagement.

8.2.3. Other current fees

The LME believes that its fee schedule, including the above fee discounts, will be fair in respect of the fees levied in relation to the risk management or investment value achieved from that trade. In particular (and as confirmed by discussions with many market participants), the LME believes that its "all-in" cost of a client outright trade (270c, being 90c for the member trade and 180c for the client contract) is reasonable, given the LME's industrial lot sizes, and the consequent large notional value traded.

The LME is conscious of two other specific fee level concerns from the market:

- **Affiliate fees.** Certain members maintain a corporate structure whereby their executing LME member then passes on positions to other companies within their group (generally so those other companies can then trade with clients). In some groups, the intra-group position management is carried out on an OTC basis (with no consequent payment to the LME); however, in other groups, the exposure is transferred by means of LME client contracts (for which a fee is levied by the LME). Certain members in the latter category have requested that a fee discount be granted for such affiliate business.

  While the LME believes that the immediate priority is to address carry fees (as it has done by means of its fee discounts), the LME does recognise the potential merit in this request. As a first step, the affiliate/client exemption from the forthcoming financial OTC booking fee (per Section 8.2.4) would, in the view of the LME, meaningfully rebalance the competitive situation, thus further promoting the LME's strategic aim of fairness. Additionally, the LME will continue to keep this topic under review

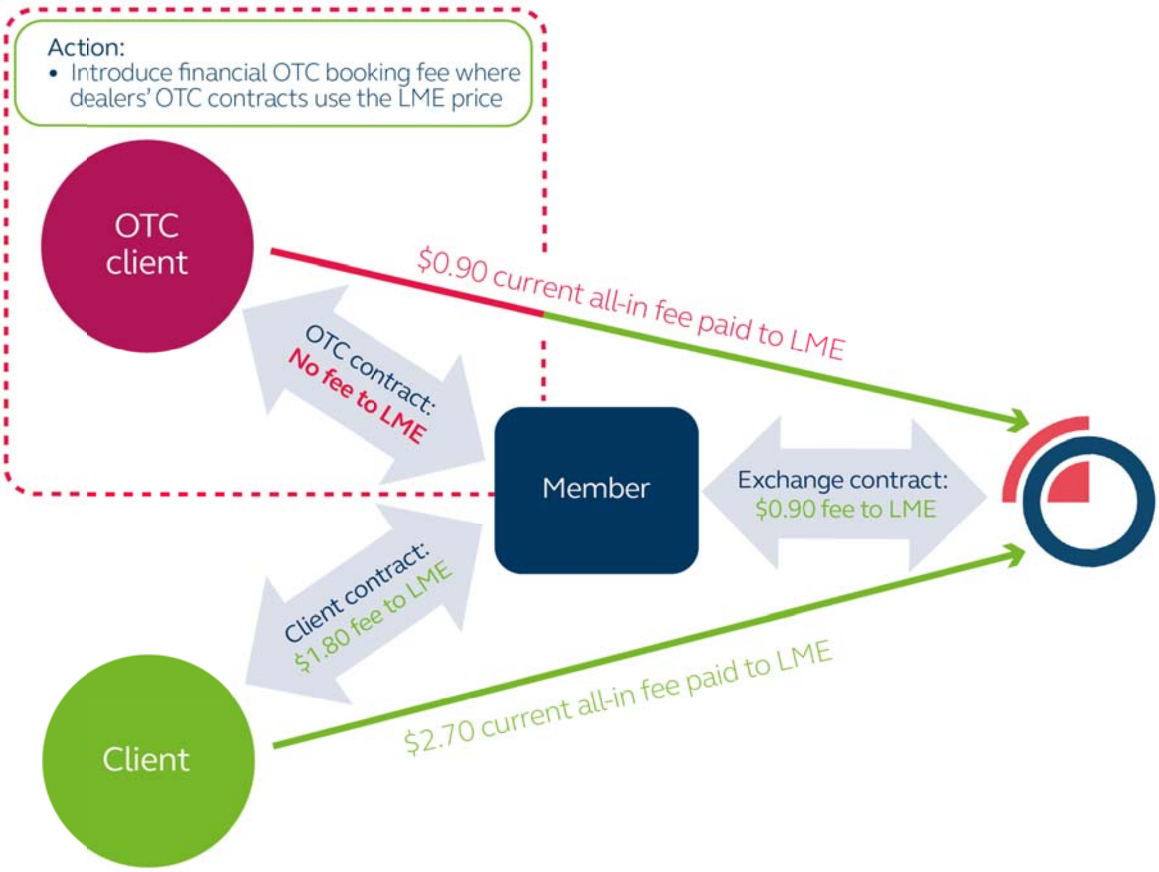
- **Proprietary trader fees.** Many of the LME's peer markets offer discounted execution for proprietary traders (which are most often systematic traders in the context of the LME's ecosystem analysis), and the question has been raised as to whether the LME should take a similar approach. As set out in Section 3.2, the LME believes it more appropriate to first address the concerns in respect of "unhelpful" systematic trading – once this has been done, then it may indeed be appropriate to further incentivise the participation of "helpful" systematic traders by means of structural fee reductions.

[9] In the context of these discussions, User Committee members were reminded of their obligations in respect of confidentiality, and in particular, that information provided during such discussions could not be used for commercial advantage in the context of their commercial activities.

However, the LME does believe it appropriate to maintain its New Market Participant ("NMP") and Liquidity Provider[10] ("LP") programmes. The LME believes these have proven helpful in attracting new liquidity to the market, much of which has been in the form of "helpful" liquidity provision – and, to the extent that the potential reforms of Section 3.2 are appropriately considered, then the effect of the NMP and LP programmes for the market will be even more positive. Furthermore, it may be appropriate to consider a revision to the thresholds of the LP programme, to ensure that it appropriately matches current trading activity on the LME market.

Furthermore, a reduction in the proprietary trader client fee may reduce the incentive for such traders to take LME clearing membership in order to access lower fees – while the LME welcomes any suitably-qualified candidate for clearing membership, it is generally the case on peer markets that systematic traders access lower fees by some form of non-clearing membership, rather than having to become full clearing members. Accordingly, it may be most appropriate for the LME to consider implementing such discount by means of a reduced fee for category 4 proprietary traders (category 4 being the LME's non-clearing member classification).

8.2.4. Financial OTC booking fee



As set out above, the LME does not believe the disparity in fees between those members servicing clients by means of an LME client contract, and those servicing clients by means of an OTC relationship, is fair – either in respect of the differential fees between members, or in respect

10 The LME accepts that the Liquidity Provider programme is poorly-named - it is, in effect, a volume discount programme aimed at systematic traders.

of the significantly reduced fees paid to the LME by members in the latter category. Furthermore, as also set out above, the LME believes that its "all-in" client fees (i.e. the cost of a member trade together with the associated client contract) are fair, and the LME therefore proposes (subject, where appropriate, to consultation in the usual way in accordance with its Rules and regulatory obligations) to introduce a financial OTC booking fee to rebalance the situation.

This fee would be aimed only at dealers – that is to say, financial participants doing business with their clients (or other financials). The LME is specifically not looking to impose any fees on physical market clients referencing the LME price in their supply contracts.

The general principle of the financial OTC booking fee would be that it should be paid in respect of a client being dealt with on an OTC basis, in every case where an LME client contract would have been issued in respect of a client being dealt with on a client contract basis. So, for example, a member making OTC prices to clients over the telephone, or through a single-dealer electronic platform, and entering into OTC trades with that client, would need to pay the OTC booking fee, on a per-lot basis, considering the number of client contracts which would have required to be issued[11] if the client had been executed on an LME client contract basis[12]. In addition to OTC contracts which refer to LME prices (for any combination of cash-settlement, valuation or margining), the fee would also be applicable to any contract which effected physical settlement via LME infrastructure (e.g. the ex-cleared transfer of LME warrants) or LME intellectual property (e.g. prescribing physical settlement via LME-approved brands).

It is expected that dealers may look to pass on this fee to their clients, and therefore it cannot be said that the fee will have absolutely no impact for physical users. However, the LME understands that dealers already incorporate execution costs into the spreads offered to their clients – and, even if the OTC booking fee were fully incorporated in this manner, the effect on spreads should not be material. For example, if the OTC booking fee were (indicatively) set at 100c per LME client contract equivalent, this should increase the cost of a copper hedge, for example, by no more than 4c per tonne, which (in the view of the LME) would in no way impair hedge effectiveness.

For the avoidance of doubt, the LME recognises that many members undertake house trades without an associated client contract for entirely valid reasons – for example, proprietary trading, or the short-term management of house positions against client positions (which is particularly important in respect of averaging business). It is absolutely not the intention of the LME to levy an OTC booking fee in respect of such activity, and the LME's proposed model does not do so.

The LME fully acknowledges that a vast range of business models are transacted in the OTC market, and that it will be necessary to ensure that the detailed rules of the OTC booking fee are consistent with the structure of the market – both to ensure compliance with the rules, and equally to ensure that the rules do not operate in an unfairly punitive manner in respect of certain trades.

[11] At present, only an LME Category 1, 2 or 4 member can issue a client contract. However, a non-member financial institution will still be required to pay the OTC booking fee – otherwise, there would be an economic disadvantage associated with LME membership.

[12] As further set out in Section 4.2, it is accepted that not every desired client economic exposure can be represented by an LME client contract – however, the general principle remains, namely that the financial participant is benefitting from using the LME's pricing in respect of its client relationship, and it is fair that a fee be paid as a result. As the LME's flexible clearing offering is further expanded, it is anticipated that a broader range of client exposures will be able to be represented by means of a client contract.

The LME has already engaged with the User Committee, who have been helpful in indicating certain exemptions which it may be appropriate to offer, including:

- **Intra-group member/affiliate exemption** – it would not be the intention of the LME to charge for OTC trades between affiliates, where one of the affiliates is an LME member. However, to the extent that the affiliate then enters into client business on an OTC basis, the OTC booking fee would then be payable

- **Affiliate/client exemption.** Where an affiliate does receive client contracts from an LME member in its group, and then enters into OTC trades with clients, then – in the view of the LME – it would be fair for that affiliate to not pay the OTC booking fee in respect of the client contracts it has received from its member. In this way, the competitive disadvantage to a group executing client contracts between affiliates (rather than doing so on an OTC basis) would be significantly mitigated

- **Cash-settlement exemption** – if an OTC contract specifies a cash settlement, it would not be necessary to pay an OTC booking fee in respect of that settlement (provided such settlements were consistent with the original terms of the contract), even though this would have required the issuance of an LME client contract if the client were dealt with on a client contract basis. Alternatively, if the OTC contract specifies a physical delivery, no additional settlement fee would need to be paid, beyond those charged today, to make use of the LME’s physical-settlement facilities. This exemption recognises the significance of OTC “look-alike” business, and the fact that imposing both an “entry” and “exit” fee may make this business more difficult for dealers to effect. Accordingly, in these cases, the OTC booking fee would be payable only when the contract was first entered into

- **Spot physical exemption** – this recognises the fact that certain financial institutions may also operate merchanting businesses, and it is not the intention of the LME to capture such business under the OTC booking fee

- **Alternative licence exemption** – financial institutions may engage in contracts linked to LME prices which are already covered under other licensing arrangements; in particular, the issuance of structured products under derived data licenses, and licenses under which other exchanges list contracts based on LME prices. In these cases, the OTC booking fee would not apply – i.e. there would not be a situation of “double charging”

The OTC booking fee would be subject to a general reporting obligation by users of LME prices or settlement infrastructure (binding on members through the LME Rules, and on non-members through the LME data licensing agreement) – that is to say, financial institutions would be required to report all usage of LME prices, but can state where they believe that relevant exemptions or discounts apply. The LME would then work with those financial institutions, on the basis of their disclosure, to calculate the correct fee. The LME would also work closely with compliance departments in the financial institutions to ensure that correct disclosures are being made.

The LME will continue to engage with the market, including, where appropriate, through consultation in accordance with its Rules and regulatory requirements, to shape an OTC booking fee which is fair for all participants, and will announce further details in due course. If the LME is still minded to introduce the OTC booking fee following such market engagement, it is anticipated that this fee would take effect from 1 January 2018.

8.2.5. “Green” trades

The LME notes a peculiarity of its charging model – namely that, if two electronic traders (who could be either house or order-routed client traders) associated with the same member execute against each other on LMEselect, the LME does not process the consequent trade (so-called “green trades”) through its matching and clearing systems – rather, the member is notified that two clients have transacted, and no fee is charged.

In preparation for the requirements of MiFID II, the LME will be making changes to its booking flow, such that these “green trades” are processed through its matching and clearing systems Accordingly, the LME proposes to start charging for such trades as of 1 January 2018. Furthermore, the LME recognises the need to put in place appropriate “anti-abuse” rules to prevent members automatically crossing trades in their own system before they reach LMEselect, as further discussed in Section 8.3.

8.2.6. Areas of potential medium-term fee focus

Both the LME and the User Committee have identified the fact that the Exchange’s fee structure is complex, as a result of having grown up over several iterations. In addition to the operational burden of this complexity, there also exists a significant risk of unintended consequences, given the interaction of various elements of the fee schedule.

The LME believes that – through its own analysis, and its market engagement, including with the User Committee – its proposed near-term fee changes will achieve the aims towards which they are targeted, without risk of material unintended consequences. However, and notwithstanding this, it may be appropriate to consider a medium-term simplification of the LME’s fee structure. Such simplification would also benefit from the observations as to the effectiveness of the LME’s fee discounts in stimulating volumes, and may also incorporate certain of the market requests in Section 8.2.3 above. The LME therefore proposes to undertake further engagement with its market to progress this potential workstream.

8.3. Competition and protection of the LME market

As set out in Section 4.1, the LME enjoys a very strong relationship with its closely-linked OTC market. This is a strength of the LME and its market – but, it is also valid for the LME to consider the potential negative effects of the OTC market for the on-exchange market. In particular, the LME does not believe it appropriate to facilitate a situation whereby some market participants achieve a commercial advantage by shielding a large proportion of trading activity from the LME market – such behaviour not only reduces the effectiveness of price formation, but additionally requires those who do not engage in such activity to disproportionately subsidise the market infrastructure (via the payment of LME fees) in comparison to those who do not execute on the LME market.

Accordingly, the LME proposes to codify certain behavioural standards in respect of execution on its market, and the LME intends to consult on rule changes to address the following:

- While it is absolutely valid for transactions to be executed bilaterally through the inter-office market, trades executed on a “gross” basis should not be cleared on the LME in a “net” manner. For trades registered on the Exchange, it is appropriate that LME market participants should observe the full transaction flow arising from those trades in a timely manner, and it is appropriate that the LME should be compensated for the fees on the gross value of the trade. The LME understands that this represents normal market practice, and so does not anticipate that it would give rise to a material change in behaviour, but considers it appropriate to ensure that appropriate behaviour is enforced

- For members providing order-routing services onto LMEselect, it is appropriate that all orders hit the public LMEselect screen, and members do not provide an "internal crossing" mechanism, whereby two individual traders (house or client) are "crossed up" before their orders are transmitted to the LMEselect platform. If traders are offered liquidity on the basis of the LMEselect orderbook, it is appropriate that their trades indeed be effected on the LMEselect system

- Transactions executed on third-party platforms should not be booked onto the LME (for example, as inter-office trades) unless an agreement exists between the LME and that platform for the provision of booking and clearing services, and an announcement has been made to the market that such an agreement is in force

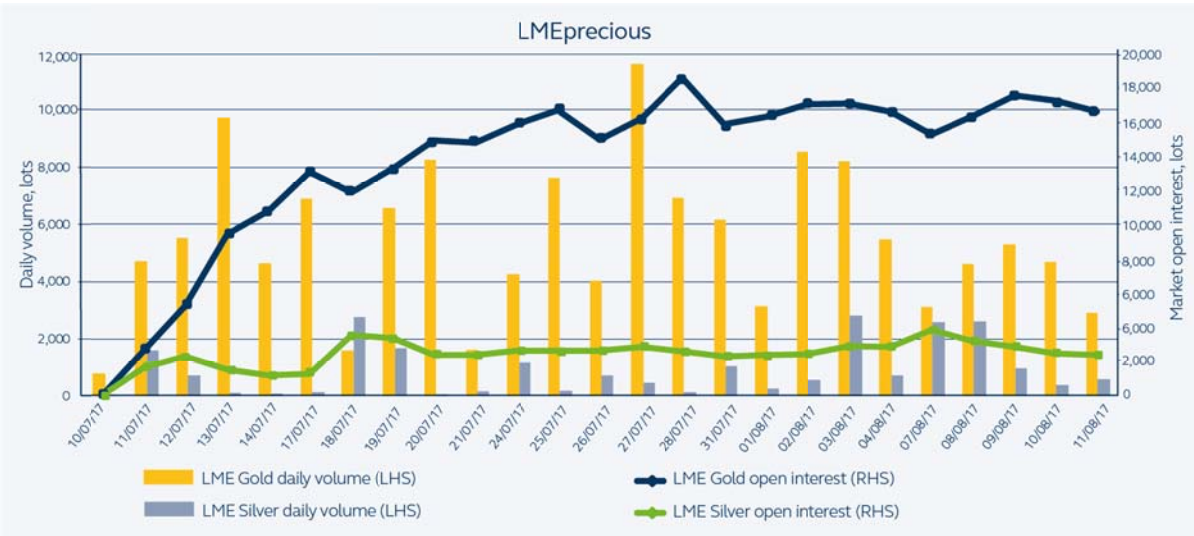
The LME acknowledges that there exists a broad set of market behaviours which may be impacted by the above rules; while the Exchange considers its proposed rules to be fair, it is committed to working with the market (including during the consultation process required to effect such rule changes) to address any potential areas of concern.

8.4. New products

The LME believes that its new product strategy provides an important growth driver, for both the Exchange as a commercial business, and for its members and clients. In recent years, the LME has successfully launched contracts in the ferrous and precious metals markets, and importantly has developed its systems such that it can now achieve product launches at lower cost.

8.4.1. LMEprecious

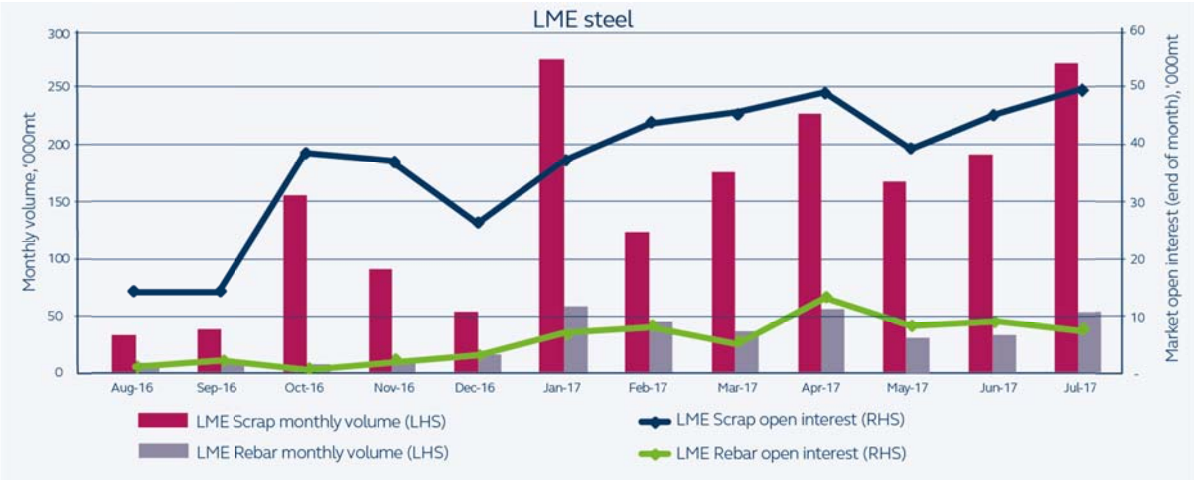
The LME is very pleased with the launch of the LMEprecious gold and silver futures contracts, and is grateful to the LMEprecious partners, and the broader market, for their support.



The LME now intends to further develop the suite by adding gold and silver options, and also platinum and palladium futures contracts.

8.4.2. Ferrous

Similarly, the LME believes that its cash-settled ferrous contracts have achieved positive traction, and commits to further development of this product suite.



Specifically, the LME will now launch regional hot-rolled coil ("HRC") contracts, and work with the current ferrous market makers to deliver displayed electronic liquidity and forward pricing curves in respect of these products.

8.4.3. Electric vehicle battery metals

The LME strongly believes that the current automotive sector trend towards electric vehicles positions the LME well to serve the growing market need for battery metals. In the view of the LME, this development may well be the most significant for the automotive industry since the initial development of the internal combustion engine, and the LME and its market are ideally positioned to react to this significant trend.

Certain key battery metals (e.g. nickel) are already well-established on the LME market. However, two metals of particular interest are cobalt and lithium. In respect of cobalt, the LME notes the current debate in the market between the desirability of prices derived from the LME's physically-settled cobalt contract, and cobalt prices compiled by price reference agencies – while the views of the two groups are unlikely to be reconciled in the near-term, it is appropriate for the LME to provide all market participants with the ability to trade and clear both reference prices. Accordingly, the LME will consider the launch of a cash-settled cobalt contract, settled to an appropriate index price, to complement its existing physically-settled offering.

In respect of lithium, the LME believes it is appropriate to consider the launch of a contract cash-settled to an index price; although the market remains nascent in terms of pricing benchmarks, the LME believes it important to be fully involved in the debate as the market grows and matures.

8.4.4. Broader range of clearable contracts

Consistent with its strategic aim to allow a broader range of flexible clearing solutions in its existing metals products (per Section 4.2), the LME also considers it appropriate to introduce a greater range of contracts, which can be used for both member-to-member, and member-to-client exposures.

Crucially, in respect of these products, the LME would not expect (and would not sponsor a formal market-making programme for) immediate on-screen pricing. Rather, the growth profile of these products would be driven by LME members choosing to bring dealer-to-dealer and dealer-to-client positions into clearing, via execution as an LME inter-office trade (or, as further explored in Section 4.2, via a "true" OTC clearing functionality).

For these products, it is important to stress that the LME would not expect to see growth at the same rate as its actively market-made new products (LMEprecious and ferrous). However, over time, it would be expected that members and clients would look to bring positions into clearing; to the extent that demand then manifested itself, it would be possible to foresee the eventual creation of a liquid on-screen market for such products.

In this regard, the LME will need to change its philosophical approach to product launches. In the past, limitations of the LME's system and commercial bandwidth have required the Exchange to undertake highly-targeted product launches of a small number of contracts, with consequent sharp market focus on the perceived success or failure of any one individual product. For the types of products proposed here, however, the LME will need to adopt the approach of many of its exchange peers – namely, the launch of a larger number of products, with the expectation that only a relatively small subset will eventually be successful, and that such success will take some length of time.

Accordingly, the LME proposes to launch a set of products on this basis in 2018, consistent with the requests which the LME has received from its market in terms of product set. At a broad level, and subject to further market engagement, these are:

- **Cash-settled regional aluminium premiums** – while the LME will maintain its current set of physically-settled aluminium premium products, it does not expect these to trade in the current lower-premium environment resulting from warehouse reform, in which there is limited appetite to move away from the current index-price benchmarks. Accordingly, it may be appropriate to offer LME users access to cash-settled regional premiums in addition
- **Cash-settled alumina** – to complement the LME's primary aluminium pricing, and allow for greater risk management along the metals value chain
- **Cash-settled molybdenum** – to replace the current poorly-used physically-settled molybdenum contract, which suffers from significant difficulties in respect of physical delivery

STRATEGIC DIRECTION

- **Maximise trading volumes by delivering a fair fee schedule and new products and services**

INTENDED ACTIONS

- **Deliver materially reduced short- and medium-dated carry fees**
- **Commit to a medium-term review of the LME's broader fee structure**
- **Implement a financial OTC booking fee to create a fair balance between members dealing with clients on an OTC basis, and those dealing with clients on an LME client contract basis**
- **Charge for "green trades" to deliver fairness across members undertaking order-**

routed electronic client business

- **Implement rules formalising the use of the LME market for OTC bring-on and similar activity, creating a level playing field between all members, and ensuring that liquidity and volume are visible to the entire market as far as possible**
- **Deliver the LME's new product pipeline, across precious, ferrous, electric vehicle battery metals, and a broader range of clearable contracts**

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THE LONDON METAL EXCHANGE
10 Finsbury Square, London EC2A 1AJ | Tel +44 (0)20 7113 8888

LME
An HKEX Company