

LME Sustainability: Discussion Paper

August 2020



SETTING THE GLOBAL STANDARD



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1. INTRODUCTION

In October 2019, the London Metal Exchange (“LME”, or the “Exchange”) published its requirements for the responsible sourcing of all LME-listed brands. This action was a direct response to a growing concern from the LME, and many of its stakeholders, that its listed brands should be sourced responsibly, meeting internationally accepted standards for human rights, governance and transparency. Since then, the responsibility debate – which in 2017 focused on conflict minerals – has moved on to incorporate a much broader spectrum of sustainability issues and the LME is conscious that in respect of environmental considerations in particular, there is a clear call that companies and markets do more, and do better. The impact of COVID-19 has been to accelerate this conversation on climate change transition; the ability of so many companies to implement home-working within months – even weeks – has provided clear evidence as to the global ability to change, and change at pace when the situation demands.

This demand for climate change is, rightly, being met by concrete action. The 2015 Paris Agreement set out a framework to keep the global temperature increase to below 2°C above pre-industrial levels, and pursuing efforts to limit it to 1.5°C, and the UK is one of over 120 countries worldwide that have committed to achieve net zero carbon emissions by 2050¹.

The work to realise that target is myriad and expansive, addressing the issues through a spectrum of legislative and regulatory directives, and supported by transparency initiatives and even social pressure. In the EU, for example, the European Green Deal, underpinned by Article 191 on the Treaty of the Functioning of the European Union, incorporates a package of measures designed to help meet the Paris Agreement commitments, including the EU taxonomy and the renewed sustainable finance strategy, amongst many others. And from the transparency perspective, organisations and reporting standards such as the Task Force on Climate-Related Financial Disclosures (“TCFD”) and the Sustainability Accounting Standards Board (“SASB”) are driving work to help businesses globally to report on sustainability topics, for consumption by investors, insurers and other stakeholders.

Exchanges too have responded positively and proactively to these challenges. Positioned at the centre of global markets, exchanges can, and do, act as catalysts for the sustainable development of those markets and as such, play a key role in the sustainable transition. This includes the LME’s parent, Hong Kong Exchanges and Clearing, which in June 2020 launched STAGE – its exchange to promote the visibility, transparency and accessibility of sustainable and green products, building on existing work to be a flag bearer for strong governance and positive corporate behaviour. More broadly, the World Federation of Exchanges (“WFE”) has highlighted the role of exchanges by publishing a set of sustainability principles, identifying the primary ways in which exchanges can contribute to advancing the sustainable finance agenda².

From the LME’s perspective, its work in embedding responsible sourcing principles into its standards for “good delivery” metal has demonstrated its capacity to leverage its platform and play an outsized role in driving forward a responsibility-focused agenda. The LME believes that it is now appropriate to extend this to a broader range of sustainability considerations. In taking this stance, the LME believes that it is acting in line with the drivers underlying its responsible sourcing work; namely:

¹ Energy and Climate Intelligence Unit. (2020, 5 May). *Net zero emissions race*. Retrieved 23 June 2020, from Energy and Climate Intelligence Unit website: <https://eciu.net/analysis/briefings/net-zero/net-zero-the-scorecard>

² The World Federation of Exchanges. (2019, August). *The World Federation of Exchanges: Sustainability and Commodity Derivatives White Paper*. Retrieved 29 July 2020: https://www.world-exchanges.org/storage/app/media/research/Studies_Reports/wfe-commodity-derivatives-sustainability-final-wpaper-200819.pdf

- **Collective ethical responsibility.** The LME believes that the industry has an ethical imperative to embrace principles underlying sustainability, and that the LME has a role to play in facilitating this
- **Commercial imperative.** The fundamental role of the LME is to provide pricing and facilitate the trading of metals. It is clear to the LME that a sizeable proportion of its market and the wider community, including the investment community, are expecting market infrastructure providers such as the LME to ensure that the products they offer meet expected standards for responsibility and sustainability
- **Providing leadership for the global metals industry.** Stakeholders demand that the metals and mining industries take responsibility for ensuring sustainability – and the metals industry must collectively live up to this responsibility. The LME believes that its role in the centre of the industry and its embedded knowledge of the metals market mean that it can facilitate this process in a manner which is both meaningful and practical

Further, in developing its sustainability strategy the LME will be guided by the following core principles, all designed with the intention of underpinning and supporting the role of metals as the cornerstone of a sustainable future:

- **Maintaining a broad scope.** The LME's external work today has focused on areas around conflict minerals and human rights (LME Responsible Sourcing). However, the LME believes that an effective corporate social responsibility strategy encompasses a much wider spectrum of issues under the sustainability banner. Clearly, from an environmental perspective, there is a significant focus on carbon emissions and greenhouse gases, but areas such as the social contract, licence to operate, recycling and governance are also of vital importance and the LME understands that the definition of "sustainability" is both broad, and will vary across its stakeholder groups. The LME's intention is to provide support to as wide a range of topics as possible³, focusing on electric vehicles, the circular economy and sustainable production, but accepts that these criteria will not incorporate all market definitions of sustainability
- **Supporting voluntary disclosure of data.** The LME does not believe that the market has yet fully coalesced around a centralised set of priorities in respect of sustainability data and further, that questions are also outstanding around materiality thresholds and measurement methodologies. As a result, the LME aims to build consensus through market-led and voluntary transparency. This starts with the optional disclosure of data for consumption by key stakeholders – the LME will provide a system to facilitate this, but will not limit the type of information which can be disclosed, nor set thresholds for inclusion. The LME believes that the data generated through this approach will enable progress towards a more standardised, industry-wide set of metrics over time
- **Providing necessary tools for change.** In building its sustainability strategy, the LME will leverage a range of approaches, including new products, services and platforms, to facilitate solutions which address sustainability from multiple perspectives and provide user choice for its market

However they are produced, metals enable a sustainable transition, but it is clear that a significant proportion of the industry would like to go further. This paper sets out the LME's proposed roadmap to achieve that end, building on existing work where possible to support the metals and mining industries in the ongoing transition towards sustainability. While the LME is, in principle, minded to facilitate any such action, it would welcome feedback from the market on its proposed path forward.

³ Subsequent references to sustainability in this paper may refer to specific aspects of sustainability (e.g. responsible sourcing, carbon emissions) per this broad definition

Any such comments should be addressed to sustainability@lme.com, no later than 24 September 2020.

The LME reserves its right to take any such action in response to feedback received on this discussion paper as it considers appropriate, including to implement all, some or none of the proposals (as set out in this paper or otherwise). The LME does not need to consult on the matters set out in this paper (with the exception of the specific requirement to use LMEpassport for electronic Certificates of Analysis, as set out in Section 3.3.1, and discussed in more detail in the discussion paper on LMEpassport released on 13 August 2020). To the extent that feedback received following this paper leads the LME to consider possible changes to the LME rules, the LME will inform the market of this in due course and, if appropriate, consult on such proposed changes in the usual way.

Responses received will be treated in confidence, except that (a) the LME may need to share responses received with regulatory authorities, members of its group including LME Clear, its legal or other professional advisers, or as required by law; and (b) anonymised responses may (i) be included in any notice following on from this discussion paper (although the LME shall be under no obligation to produce such a notice), and (ii) be shared with any LME Committee or other relevant advisory committees, as part of its process for defining next steps. This is unless, in the case of (i) and (ii), respondents specifically identify any aspect of their response which they believe requires confidentiality, such that it should not be published in a notice and/or shared with any LME Committee or other relevant advisory committees.

2. METALS AND SUSTAINABILITY

2.1. Metals as the cornerstone of sustainability

The metals and mining industries have provided the raw materials for the world built today – from the aluminium in cars to the batteries in smartphones. Population growth and the decarbonisation of economies will both significantly increase the demand for metals, and the ability to meet this demand through sustainable means and technologies (including batteries, wind turbines and solar power) will be essential to enable a green future.

These clean energy technologies – essential to the sustainability transition – require metal for their composition, significantly more so than the infrastructure for traditional fossil-fuel-based energy supplies. The World Bank estimates that under a 2°C scenario⁴, production of cobalt will have to increase by 450% to meet energy storage demand (compared to 2018)⁵, and to meet between 2-4°C climate objectives, by 2050, the demand for relevant metals will increase 300% for wind turbines, 200% for solar panels, and 1,000% for batteries⁶. Copper alone is used in more than eight clean energy generation and storage technologies⁷. As encapsulated by the Institute for European Studies (“IES”): “non-ferrous metals are the building blocks of all the currently known low-carbon solutions for a decarbonised economy”⁸.

This will have a significant impact on demand for a sector that accounts for between 2-11% of global energy consumption⁹ (albeit noting that the scale of the associated emissions is still a fraction of that of fossil fuels); the positive potential of these minerals can be further enhanced if the metals industry can address the emissions-related challenges of their production.

Contributing to a sustainable future, then, is only one half of the picture and how metals are sourced and produced will be as important if metals are to make a truly meaningful difference. Mining is already critical in supporting economic growth and social process in countries that have the raw materials, and as demand increases, so will the expectations on ethical and sustainable standards. The United Nations Sustainable Development Goals (“SDGs”) encapsulate these expectations and include targets and indicators that are directly relevant for the metals sector, including seeking “sustainable management and efficient use of natural resources” (target 12.2) and taking “urgent action to combat climate change and its impacts” (SDG13)¹⁰.

Metals do not represent a homogeneous group, but collectively they can meaningfully contribute to a more responsible economy and infrastructure by delivering sustainability across their production methods, and in their contribution to clean technologies, as shown in Figure 1. This makes them one of the cornerstones of a sustainable world.

⁴ International Energy Agency (2017). *Energy Technology Perspectives*. <https://www.iea.org/topics/energy-technology-perspectives>

⁵ World Bank (2020). *Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition*. Retrieved 27 June 2020: <http://pubdocs.worldbank.org/en/961711588875536384/Minerals-for-Climate-Action-The-Mineral-Intensity-of-the-Clean-Energy-Transition.pdf>

⁶ The World Bank (2017, June). *The growing role of metals and minerals for a low carbon future*. Retrieved 26 June 2020: <http://documents1.worldbank.org/curated/en/207371500386458722/pdf/117581-WP-P159838-PUBLIC-ClimateSmartMiningJuly.pdf>

⁷ World Bank (2020). *Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition*. Retrieved 27 June 2020: <http://pubdocs.worldbank.org/en/961711588875536384/Minerals-for-Climate-Action-The-Mineral-Intensity-of-the-Clean-Energy-Transition.pdf>

⁸ Institute for European Studies (2019, October). *Metals for a Climate-Neutral Europe: A 2050 blueprint*. Retrieved 20 June 2020: <https://www.ies.be/node/5271>

⁹ World Bank (2020). *Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition*. Retrieved 27 June 2020: <http://pubdocs.worldbank.org/en/961711588875536384/Minerals-for-Climate-Action-The-Mineral-Intensity-of-the-Clean-Energy-Transition.pdf>

¹⁰ United Nations. *Sustainable Development Goals*. Retrieved 26 June 2020: <https://sustainabledevelopment.un.org/sdg12>

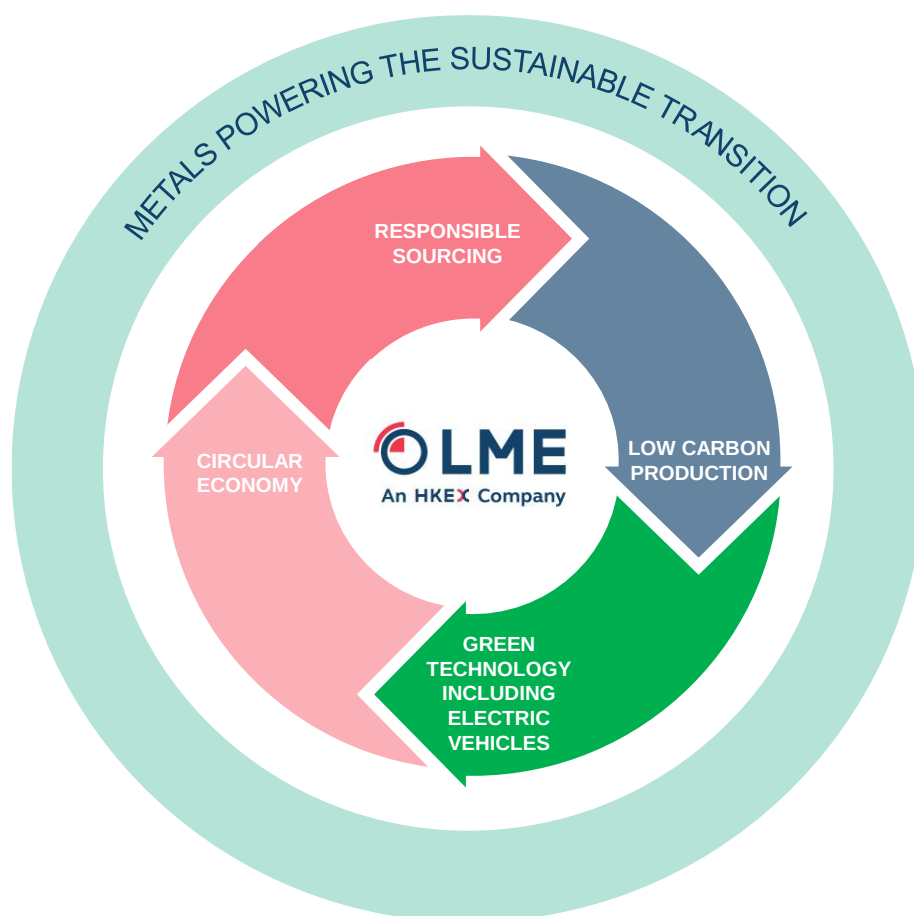


Figure 1: Metals powering the sustainable transition

2.2. Sustainability in LME-listed metals

The cross-section of metals which underpin the LME's physically settled contracts are illustrative of the role of metals in a sustainable transition, and most are named in the 2017 World Bank report as likely to see a rise in demand driven by efforts to achieve sustainability goals¹¹. For example, aluminium is vital for lightweighting; cobalt, copper and nickel are essential to the growth of the electric vehicle industry (itself a key component of a more sustainable future)¹², and copper for solar and wind. Tin has done significant work in respect of responsible sourcing on conflict minerals issues and similarly, lead for recycling, as well as being key for energy storage and hydro solutions. Finally, zinc plays a crucial role in protecting steel from corrosion – its durability negating the need for regular replacement – and is critical for wind and geo-thermal clean energy solutions.

All of these metals are highly recyclable. Work on the recycling of metals became mainstream during the 1970s, and Europe now recycles over 90% of metals from buildings and transport, and 60% of metals from packaging¹³. These can be traded through the LME for specific brands of aluminium alloys and lead, as well as a specific scrap contract for steel; collectively, metals constitute a significant part of the circular economy.

¹¹ The World Bank (2017, June). *The growing role of metals and minerals for a low carbon future*. Retrieved 26 June 2020: <http://documents1.worldbank.org/curated/en/207371500386458722/pdf/117581-WP-P159838-PUBLIC-ClimateSmartMiningJuly.pdf>

¹² While the LME notes the ongoing evolution of battery chemistry, it anticipates that metals will continue to play a key role in batteries for all industries, including electric vehicles and other green technologies

¹³ Eurometaux. *Key Industry Data*. Retrieved 27 June 2020: <https://eurometaux.eu/about-our-industry/key-industry-data/>

The metals industry has also taken significant steps to define and meet standards against a range of these issues. This includes the Aluminium Stewardship Initiative (“ASI”) for aluminium, the Responsible Minerals Initiative (“RMI”) under the auspices of the Responsible Business Alliance (“RBA”), the International Tin Association’s (“ITA”) work for tin, and more recently, the Copper Mark, developed by the International Copper Association (“ICA”). All of these initiatives look at a widely framed sustainability agenda – including environmental sustainability criteria covering a number of areas – and brands certified under most of these standards are already available on the LME.

On a cross-metal basis, the Global Battery Alliance (“GBA”) is looking at a range of issues pertaining to the battery industry, including provenance and emissions. All this work sits alongside the efforts of multinational organisations such as the Organisation for Economic Co-operation and Development (“OECD”), and the China Chamber of Commerce of Metals, Minerals and Chemicals Importers and Exporters (“CCCME”) to sponsor the development of globally recognised standards for metal.

The same is also true in respect of human rights. Metals – or their mineral ores – are global in their natural distribution. The mining and processing of metal ore can underpin the economic health of resource-rich and resource-dependent countries, and truly sustainable growth has to incorporate a way for those countries to extract fair economics for their natural resources.

Much work has been done to ensure that the extraction of that ore respects internationally accepted standards for human rights, transparency, and non-corruption. The LME has built on the OECD’s Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (“OECD Guidance”) as the basis for a set of responsible sourcing rules. These rules now apply to all LME-listed metals (metals eligible to be used in settlement of contracts traded on the Exchange), which means that any buyer of metal taking delivery of such metals (be that through trading on the Exchange, or through buying directly) will know that they have been responsibly sourced. That work is ongoing; however, the LME already offers access to brands that meet these kinds of standards, such as tin brands certified under the auspices of the ITA which has worked to ensure that systems and processes are in place to facilitate meeting responsible sourcing standards for minerals from specific geographies, in line with the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the “Dodd-Frank Act”) and the OECD Guidance.

Metals’ versatility means that they continue to be adapted as industry develops; the evolution of battery materials has been essential to the development of the electric vehicle industry as it seeks to offer a lower-carbon alternative to internal combustion engines. The LME offers access to such materials with contracts in nickel, copper and cobalt.

Aluminium has been the focus of recent interest in low carbon metal given the levels of electricity required for the electrolysis process for primary metal, but every metal has its own areas of concern pertinent to its sourcing and production. The industry, including the LME, needs to identify and be transparent about those issues and work collectively to build on existing progress and take further steps to address them.

The LME believes that metals’ ability to effect change across the two dimensions of sustainable production and in enabling a sustainable future makes them unique in their contribution to the sustainable transition. The LME already offers transparency around, pricing of, and access to a number of metals that already contribute to sustainable production, the circular economy and electric vehicles, as shown in Figure 2, but it should be noted that these categories are not mutually exclusive. Copper, as an example, will be responsibly sourced under the LME’s responsible sourcing requirements, is a core component for electric vehicles and is also highly recyclable.

3. LME ACTION ON SUSTAINABILITY

3.1. LME vision

As Section 2 demonstrates, collectively metals offer viable and meaningful solutions to many of the challenges facing the world as it steps up its transition to a sustainable future. But, as demand increases, so will the expectations on ethical and sustainable standards. Mining companies need to ensure strong labour and traceability practices, and metal producers may need to find ways to meet downstream demand for reduced emissions.

To create this future, the metals and mining industries need to push for change together, at scale. The industry needs to show that extractive industries can play a role in the circular economy and that the carbon intensive production process can be mitigated in-line with the Paris Agreement. To do this, the industry must start to view metal as a critical resource for the future that has to be produced ethically and sustainably.

There is power in coalition and the LME believes that it is in a strong position to bring the industry together to ensure that miners and producers meet global expectations on ethics and environmental sustainability. The Exchange has taken a significant step in introducing responsible sourcing requirements, but knows that is just the first such step, and that more can be done to help facilitate the sustainable transition.

Accordingly, the LME is committed to working with the metals and mining industry, its members and other core stakeholders to support the demand for access to responsibly sourced products and those supporting the circular and low carbon economies, and to ensuring that this work is industry-led, is practically achievable, and makes a meaningful difference.

3.2. LME action: general

In Section 2, the LME outlined the ways in which the Exchange already provides access to metals that contribute towards the sustainability agenda. The next step is for the LME to build on that existing base to provide access across a broader range of products and services, as summarised in Figure 2.

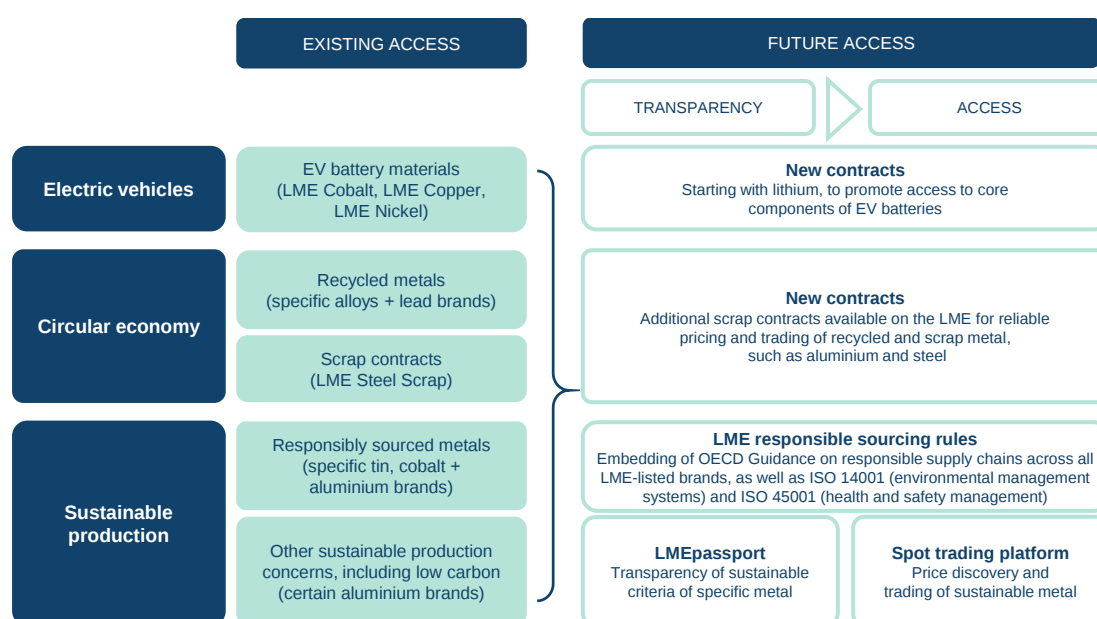


Figure 2: Access to sustainable metals on the LME

In terms of future access, the next steps for supporting the circular economy and the electric vehicle transition currently follow well-established lines of business development for an exchange; namely, the specification and launch of new contracts for on-exchange trading. The LME is committed to increasing the range of contracts it offers that support the development of a more sustainable world, starting as follows:

- **Lithium:** Once launched, the lithium contract will provide price risk management tools to the battery and electric vehicle industry. The contract is intended to bridge the need for price risk management for battery and car manufacturers, and the interest of market participants for exposure to a fast growing and sustainable industry. Transferring risk via derivatives will help physical market participants manage their supply chain, facilitating planning, financing and long-term growth
- **Aluminium scrap:** The suitability of aluminium for recycling is well known, notably in the beverage can market where used cans form a significant proportion of input for the production of new cans. A US-focused used beverage can (“UBC”) aluminium scrap contract is intended to address the sizeable North American can manufacturing industry and may have further relevance for price risk management for other recycled aluminium formats. By supporting this industry in managing its price risk, the LME will also support the development of the recycled value chain, enabling it to reach ambitious goals whilst maintaining robust planning and fair pricing
- **Steel scrap:** Since the launch of steel scrap in 2015, the LME has been working with the steel industry to support the circular economy in the ferrous market. The LME now plans to add Taiwan and India scrap contracts to provide a set of tools to manage price risk for global flows of steel scrap products, positioning the LME at the centre of the global steel scrap trade

From the sustainable production side, the LME drafted its responsible sourcing rules over the course of two years in conjunction with producers, consumers, non-governmental organisations (“NGOs”), multinational organisations, trade associations and standards bodies. Now codified in rules, producers of LME-listed metals have begun work to implement these requirements and the LME will start to see reporting in 2022. In the meantime, it is working with the producers of its listed brands to ensure the rules and the tracks to compliance are fully understood.

It is not always appropriate, however, to amend the brand listing requirements, and not all products lend themselves to an exchange-traded contract. Usually, this applies to nascent products that have not yet established the demand necessary to create sufficient liquidity to generate trading. Until that liquidity emerges, the risk for a trader is buying into a contract out of which they then cannot trade. As a result, the LME has been considering how it can offer its current system of providing transparency and access via alternative routes.

3.3. LME action: environmental sustainability

Over the course of the last year, the conversation regarding environmental sustainability, in particular greenhouse gases, has – in the LME’s view – increased exponentially in volume, focused in particular on the production of low carbon aluminium.

In September 2019, at the United Nations (“UN”) Climate Action Summit, the Leadership Group for Industry Transition was launched to address seven industrial areas identified as “hard-to-abate” from the perspective of decarbonisation and energy intensity. Aluminium was one of those seven industries, based primarily on the high levels of electricity consumed by the Hall-Héroult electrolysis process to convert alumina to aluminium (for the LME’s purposes, P1020).

The World Economic Forum's Mission Possible Platform¹⁴ for aluminium is just one example of a coordinated effort to respond to and act on these concerns, building on existing initiatives and developing new collaborations to speed and scale up the efforts towards reducing the carbon footprint in these industries. Other initiatives include Harbor Aluminum's spot price premium for aluminium produced with 4.5kg (or less) of CO₂ per kg of aluminium¹⁵.

On this basis, it is perhaps not a surprise that aluminium has been so much at the forefront of discussions around the reduction of greenhouse gas emissions. However, in making this statement, the LME would stress that it is not its intention to "call out" aluminium or the aluminium industry. Aluminium is far from unique among metals for grappling with issues inherent to the production process. It would undoubtedly be possible for all metals to identify areas of concern in their own manufacturing process that could be subject to further development; indeed, this would also be true for most areas of production, manufacturing and industry more broadly.

Equally, by focusing on low carbon in the first instance, the LME does not intend to undermine the extensive range of additional issues that need to be addressed, from governance and corruption, to biodiversity, indigenous rights and water management. The Aluminium Stewardship Initiative ("ASI") – a global standard-setting and certification organisation that promotes measurable and continuing improvements in key environmental, social and governance factors along the aluminium value chain – addresses many of these, recognising that sustainability incorporates a broad spectrum of issues. As such, while the LME is starting with low carbon aluminium, it is the expectation that once the model is established, this will represent the first step in a much broader piece of work to support all metals in undertaking their own transition across a spectrum of issues.

It is also worth noting that aluminium's production process does not detract from the very real advantages that the metal offers a sustainable economy. It is lightweight – Ford's all-aluminium-body F-150 truck was 700 pounds lighter than the previous model, improving fuel efficiency and lowering the overall costs of operation. Aluminium is also 100% recyclable, and recycling saves more than 90% of the energy costs required in primary production. Recycled aluminium retains its properties indefinitely and more than 70% of the aluminium produced since the inception of the industry has been recycled and is in use today¹⁶.

Further, the LME is not insensitive to some of the concerns about the unintended consequences of the LME's proposed course of action, including apprehension about the readiness of the aluminium market to withstand the possible "split" that could occur as a result of an increased focus on the value (ethical or financial) of low carbon aluminium. As such, the LME remains very conscious of the need to progress any market change with appropriate due care.

A number of other considerations also need to be taken into account. Firstly, while the LME has used the term "low carbon aluminium" throughout this paper, in practice, there does not yet exist any real market consensus on the exact definition – i.e. the point at which aluminium counts as low carbon aluminium.

¹⁴ The World Economic Forum's Mission Possible Platform, in collaboration with the Energy Transition Commission, was launched in 2019 to support public and private sector partners working on the industry transition of these seven harder to abate sectors, including aluminium, towards net-zero greenhouse gas emissions by 2050: <https://www.weforum.org/mission-possible>

¹⁵ Harbor Aluminum. Harbor Announces First Green Primary Aluminum Spot Premium Assessment. Retrieved 20 June 2020: <https://www.harboraluminum.com/en/us-midwest-p1020-green-aluminum-spot-premium>

¹⁶ The Aluminium Association. *Aluminium Recycling*. Retrieved 3 June 2020: <https://www.aluminum.org/sustainability/aluminum-recycling>

In addition, there are also discrepancies in terminology – even within the widely established scope 1-3 emissions of the Greenhouse Gas (“GHG”) Protocol Corporate Accounting and Reporting Standard¹⁷, the exact methodologies for measuring (or reporting) emissions are not always consistent¹⁸, an issue which the International Aluminium Institute (“IAI”) has identified and addressed through its technical guidance document¹⁹.

While the LME has previously taken a role in defining the scope of such areas (e.g. in the metal specifications for listed brands, pricing points for exchange-traded contracts, and responsible sourcing), in this instance, the LME does not consider that it would be appropriate for it to establish a common position. It does believe, however, that consensus around these issues is likely to emerge over time, and if appropriate, the LME is prepared to amend this proposal to focus more narrowly on the emerging consensus at that point.

In the interim, the LME has considered in depth a number of possible routes to deliver greater choice, access and functionality in this area. Of these, the ones discussed most frequently include:

- **Add a low carbon “tag” to relevant brands on the LME brands list for LME Aluminium** – this would allow buyers taking delivery of aluminium through clearing to know if they had received low carbon metal. However, this would risk the creation of a “two-tier” pricing system within the LME primary aluminium contract due the LME operating on a “seller’s option” basis.

“Seller’s option” means that the right to choose which warrant a seller of metal delivers to the Exchange to fulfil their delivery obligation belongs to the seller, rather than the buyer. If acting on an economically rational basis, the seller would be expected to deliver the least valuable warrant they own. The buyer does not get a choice about the metal they receive and as a result, in general, this will ensure that the LME price will always relate to the least desirable warrant in the network.

Although anecdotal evidence to date suggests that a premium may not yet exist for low carbon metal, should this emerge, and the LME continues to price to the least valuable available warrant (in this instance, likely to be metal which cannot be evidenced as being low carbon), a pricing discrepancy could develop which could represent a very real market disruption

- **Amend the LME Aluminium contract to be a low carbon contract** – this would mean only low carbon brands would be eligible to be used in settlement of LME Aluminium and any buyer of metal through the LME system would know that they would be receiving low carbon metal. This would negate the risk of a two-tier pricing system; however, the LME Aluminium contract as it stands represents the global market in its entirety, a market that requires a price and a contract that represent the underlying metal. A low carbon contract would exclude a significant proportion of this market from being traded on the Exchange, without itself representing a sufficient proportion of aluminium production to support a standalone contract.

Further, such a change would require the LME to amend its brand listing requirements, also a route which the LME has decided not to pursue, as discussed below

¹⁷ GHG Protocol (2015). *The Greenhouse Gas Protocol. A Corporate Accounting and Reporting Standard – Revised Edition*. Retrieved 1 June 2020: <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>

¹⁸ Carbon Trust (2020, February). *The case for low carbon primary aluminium labelling*. Retrieved 1 June 2020: <https://www.carbontrust.com/resources/the-case-for-low-carbon-primary-aluminium-labelling>

¹⁹ International Aluminium Institute (2018, February 15). *Aluminium Carbon Footprint Technical Support Document*. Retrieved 3 June 2020: http://www.world-aluminium.org/media/aler_public/2018/02/15/carbon_footprint_technical_support_document_v1_published.pdf

- **Amend the LME's brand listing requirements to include further sustainability concerns** – in undertaking the introduction of responsible sourcing, the LME mapped out its responsibilities in respect of the creation and operation of its brands lists – those metals which can be used in the settlement of an LME contract. This includes the process for ensuring that this brands list evolves over time in collaboration with the physical industry which it is designed to serve. At the core, the priority is to ensure that the LME's metal specifications reflect that of metal used in the physical market and through this process, that LME prices also reflect that of “real world” metal, i.e. the price paid by consumers for physical tonnage.

Changes to these specifications, then, are not made lightly; the extent of the LME's market engagement on responsible sourcing is indicative of the care with which the Exchange maintains its brands list. To make such a change, the LME would have to be sure that this was truly reflective of market demand.

Further, the LME is conscious that writing policy is only the first step in amending the brands list, and that the forward implications for the producers of its 488 listed brands²⁰ is a material investment of time and resource in order to ensure that the metal continues to meet the LME's requirements. As such, the LME does not consider that – absent a significant market event or overwhelming market demand – it would be appropriate or practical for it to “move the goalposts” mid-implementation of the existing responsible sourcing rules

- **Launch a second primary aluminium contract for low carbon metal alone** – this would mean that the LME's primary aluminium contract could continue in its current form, albeit “competing” for liquidity against the new, low carbon only contract. As with amending the existing contract, production levels of low carbon aluminium are not sufficiently high to generate the liquidity necessary for such a contract

The final consideration for the LME in respect of all these options is the extent to which it believes that the market is asking for, or is ready for, the LME to introduce what would represent a significant change to the current method of global aluminium pricing and trading. All the solutions outlined above would require rule amendments that would have the effect of imposing these changes across the entire market. Although the LME has the power to effect such change (subject to consultation), in general, the LME tries to work on a more collaborative basis, making such changes as a result of sufficient market demand which – in this instance – the LME does not believe yet exists.

As such the LME is instead proposing an alternative route, utilising the following two steps:

- **Voluntary transparency.** Developing the capability for relevant information about the metal to be known (from mine to end product as necessary), and to enable the sharing of that information. Although the LME has received calls for it to enforce this as mandatory, the Exchange does not believe that this comes from a sufficient majority for it to impose such a requirement at this point
- **Access.** Transparency is powerful on a standalone basis, but becomes more so if the market has the ability to make decisions and take action based on that information. As such, the LME aims to facilitate this through the provision of the infrastructure needed for the market to access sustainably sourced metal for price discovery and trading

²⁰ 205 of which are aluminium, aluminium alloy and NASAAC brands, as of July 2020

3.3.1. LMEpassport

LMEpassport was originally conceived as a low-cost utility solution for a long-standing industry problem; namely, the administratively intense use of paper certificates of analysis (“CoAs”) – the documents that must accompany shipments of LME metals into and out of warehouse. Of all the items in the 2019 warehouse reform discussion paper, the electronification of CoAs had the greatest pan-industry support.

The LME subsequently began working on a proposal, designed to be low impact on current business models by enhancing rather than replacing existing practice, to deliver accessible and safeguarded electronic CoA information for every lot of metal delivered into and following withdrawal from the LME ecosystem, thereby reducing the operational burden of using the LME, as outlined in Figure 3.

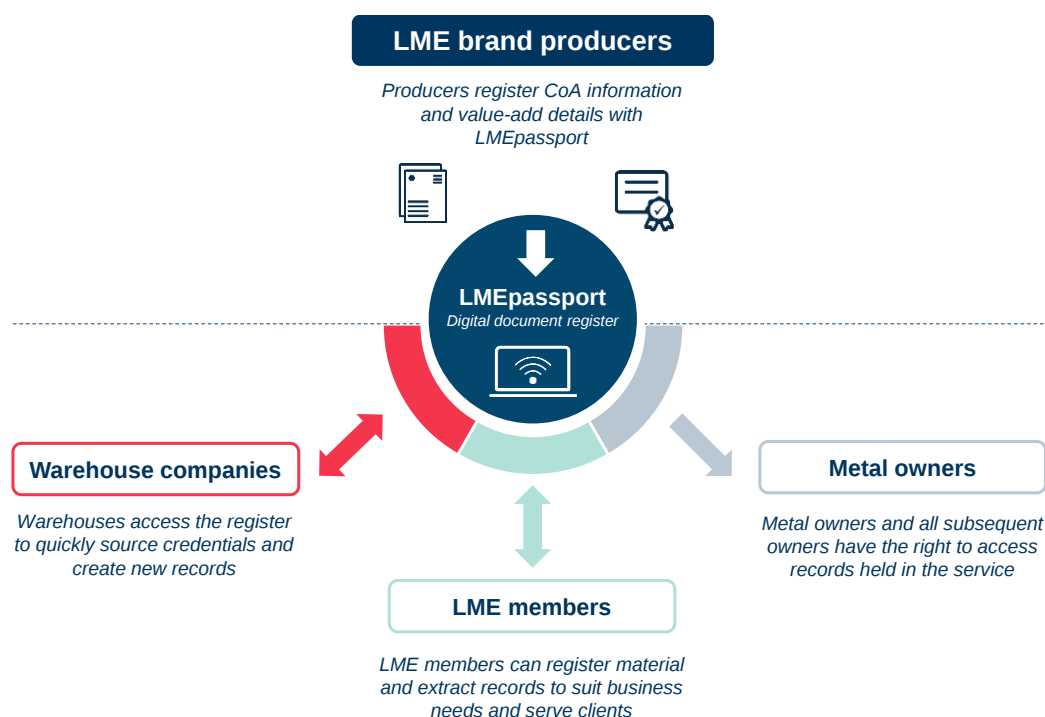


Figure 3: LMEpassport

More recently, as the demand for greater provision of infrastructure around low carbon aluminium and other particular specifications of metal has grown, it has become evident that this system could also be used as a repository for physical metals data beyond that encapsulated by a CoA. Further, that the preference for additional information in electronic form is not limited to metal eligible for trading on the LME. Such data provided on a voluntary basis by producers and metal owners would not only drive greater transparency in the market place, but would also enable the LME to facilitate the matching of supply and demand.

The LME view is, therefore, that the use case of LMEpassport can stretch beyond the core mission of electronifying CoAs, and will enable the system to support additional information for both LME- and non-LME-listed brands. Interested producers or metal owners could input, for example, the environmental criteria of their brands, certification by an industry scheme, recycled content, use of carbon offsets, or water or tailings management schemes. For information pertaining to low carbon aluminium, this would represent the first step towards a LME-sponsored market-wide labelling programme, and would facilitate its trading on a spot basis.

The system will be available for all market users, but the LME will prescribe that only its members, listed warehouse companies or producers of its listed brands will be able to undertake uploading of data. This represents a set of participants with whom the LME has strong and trusted relationships, as well as an existing contractual nexus. As such, the LME believes that this also represents a group of participants that can be trusted to upload only data that they know to be accurate. Of course, the nature of the contractual relationship also means that should this not be the case, the LME has a route through which to address any such concerns (being the LME Rulebook for members and listed brands, and the LME Warehouse Agreement for listed warehouse operators).

That said, the LME is conscious that for many people who do not share the same relationship with this group of people, further certainty as to the accuracy of the information provided would be of value. As such, the LME believes that the data it is proposing to include can – and should – be subject to a further level of reassurance. This is outlined in Section 3.3.2.

The Exchange has now discussed this proposal with the market and is at an advanced stage of specification. Further work is now underway to finalise operational details as well as the proposed fee model, and a discussion paper on this topic was released on 13 August 2020 under Notice 20/194.

3.3.2. Spot trading platform

As outlined above in Section 3.3, a spot trading platform offers the LME – and its market – a more flexible and versatile route to bring products to the market that does not require the systems work and resources required to list products to be traded on the Exchange. As a result, the LME is able to meet market needs more quickly and effectively. Further, while any change to LME exchange-traded contracts would apply equally to all users of the market (irrespective of their views on such a change), a spot trading platform can be offered on a voluntary basis.

As such, the LME is proposing to launch a spot trading platform to provide an online market place for physical metal that does not have to meet standardised specifications or criteria. This solution would deliver access (through pricing and trading functionality) on a voluntary basis to market users who would like to have access to low carbon aluminium²¹, as outlined in Figure 4.

²¹ This paper focuses on the potential of such a platform from a sustainability perspective. It is worth noting, however, that there exist a number of additional use-cases, including, for example, LME/Qianhai Mercantile Exchange (“QME” – HKEX’s commodity trading platform in Shenzhen, Mainland China) receipt swapsto provide a conduit for Western traders to access Chinese metals markets (subject to necessary regulatory permissions), or information on a broader set of provenance and environmental criteria. The LME would be very willing to consider this; any market participant wishing to discuss the possibilities here in more detail should email productdevelopment@lme.com

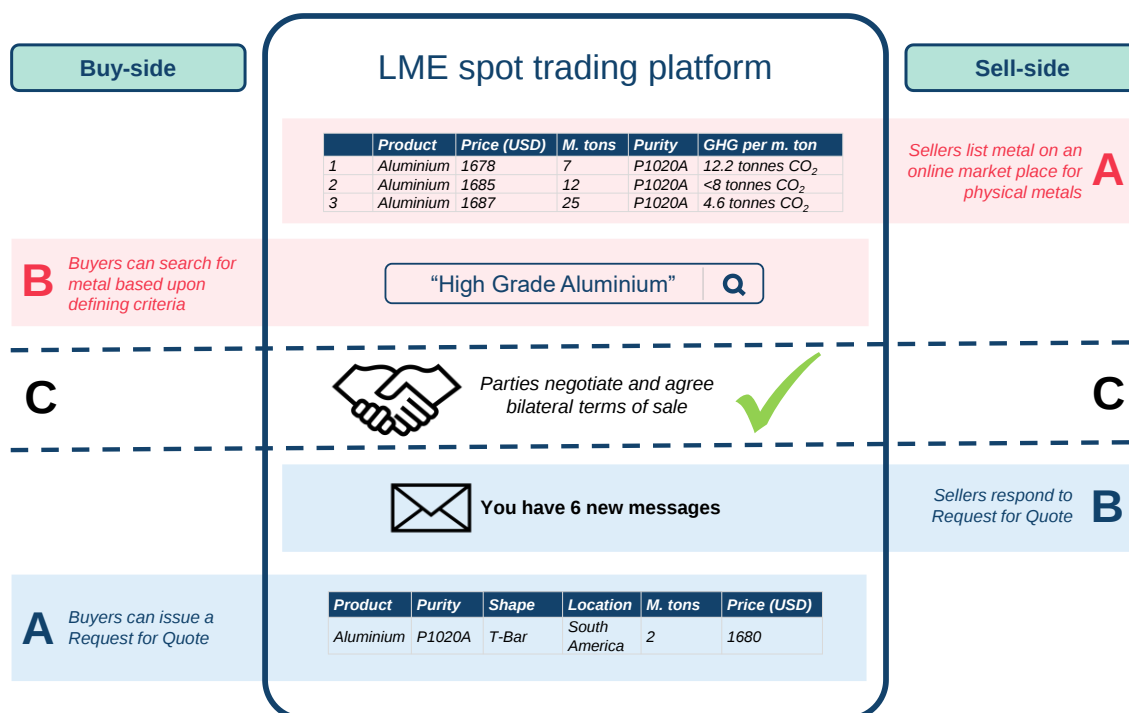


Figure 4: Spot trading platform process flow

For the initial proposition, the LME is not intending to set threshold criteria for inclusion; instead, any interested metal owners will be able to list their metal on the platform, providing – at a minimum – at least one of the following pieces of information:

- **Aluminium Stewardship Initiative (“ASI”) Certification.** ASI Certification covers a much broader range of issues relating to aluminium production than just emissions, including human rights, biodiversity management and material stewardship in the ASI Performance Standard from mining through to downstream, and Chain of Custody Certification for claims to apply to physical metals. For aluminium smelting, the ASI Performance Standard currently includes the requirement to demonstrate appropriate controls for GHG emissions, and for Scope 1 and 2 GHG emissions to be less than 8 tonnes of CO₂e by at least 2030 (or earlier depending on the smelter production start date). The aluminium listed on the spot trading platform would need to have been produced from a smelter within the Certification Scope (or unit of certification) for that Performance Standard certification and also be Chain of Custody Certified. The ASI Performance Standard is presently undergoing revision, with an updated version of the Standard due for release in early 2022, following a 12 month public consultation period during 2021.
- **GHG protocol – scope 1, 2 or 3 emissions.** Alongside the data, a free text field will also be provided for metal owners to supply information pertaining to the measurement methodology should they wish
- **International Aluminium Institute (“IAI”) Levels 1, 2 or 3 emissions.** Per the above
- **Use of carbon offsets.** The LME is conscious that the production of low carbon aluminium is a significantly easier task for those producers with access to hydro or other alternative forms of power. It is also aware that many producers without such access make significant efforts to balance their carbon use through other means, such as carbon offsets (through renewable energy certificates or offset investments) or through payment of carbon taxes. Given the primary aim of the spot trading platform is to provide flexibility, the LME is keen to ensure that access for potential sellers includes those pursuing such alternative methods

- **Recycled content.** Smelting recycled aluminium is 92% more energy efficient than producing new metal²², and many producers use scrap or secondary re-melt in order to lower their emissions
- **Other information.** If further categories of interest emerge, the LME would be very willing to consider their inclusion. As an example, it has been suggested that the LME incorporates a category for metal which meets the performance thresholds of the EU Taxonomy

As outlined above, the LME understands that many of its market participants would prefer to see the evidence supporting any claims made under the categories outlined above, and would propose the following measures to that end:

- **Aluminium Stewardship Initiative (“ASI”) performance standard.** Obviously for those metal owners complying with external standards such as the ASI, the audit and certification process is incorporated within the process and as such, proof of ASI Certification would be sufficient – verification of Certificate currency can also be established through the ASI website
- **GHG protocol Scope 1-3 emissions.** Alongside the emissions statistics and methodology, a further free text field will be provided for the producer or metal owner to provide detail on any audit or assurance undertaken, be this independent third party review, certification achieved (e.g. ISO) or alternative means. It will also be possible to attach documentary evidence
- **International Aluminium Institute (“IAI”) Levels 1-3 emissions.** Per the above
- **Recycled content.** A free text field will be provided for the producer or metal owner to provide detail on any audit or assurance undertaken pertaining to recycled content. It will also be possible to attach documentary evidence
- **Use of carbon offsets.** A certification attesting to the use of carbon offsets or taxes paid

These verification routes should make it possible for all metal owners to use the platform should they wish – and equally, for metal buyers to purchase metal with confidence as to the accuracy of the information provided. Over time, it may be possible for carbon emissions to be included on a CoA as a matter of course, and as a result, only the CoA would need to be attached.

As with LMEpassport, the platform will be available for both LME-listed brands (on and off-warrant) and non-LME-grade metal. For warranted listed brands, the information will be “attached” to the relevant underlying metal through LME warrants, augmented by the data which will become available in LMEpassport. In this model, the metal price, transfer terms and logistics are agreed bilaterally between the buyer and seller; in the future, the LME could also consider the possibility of providing pricing.

In setting out this position, the LME is conscious that other industries²³ have been more prescriptive in their requirements and that there is a compelling line of argument to say that it is only through the establishment of a clear set of criteria that a market can really have confidence in the underlying product. In turn, this confidence can then help build demand which itself creates and maintains momentum for change.

²² The Aluminium Association. *Aluminium Recycling*. Retrieved 3 June 2020: <https://www.aluminum.org/sustainability/aluminum-recycling>

²³ As an example, International Capital Market Association (2018, June). *The Green Bond Principles*. Retrieved 9 August 2020: <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf>

The LME agrees with this; however, it is also conscious that it is still mapping the parameters of the challenge that it – as a centralised market infrastructure provider – is trying to help its market overcome. The provision of the spot trading platform will, over time, help clarify this position and from there, the LME – in conjunction with its market – can agree and pursue the appropriate next steps. Ultimately, the LME is committed to support its market in powering the sustainable transition, so that the metals industry can meet its potential as the cornerstone of a sustainable future.

3.4. LME action: next steps

As set out in its core principles, the LME's framing of sustainability runs across a much broader spectrum of issues than low carbon aluminium. Its solutions across electric vehicles, the circular economy and responsible sourcing are designed to address a number of those issues and in doing so, make a meaningful contribution to the sustainability efforts of the metals and mining industry. The LME understands that some of these issues will be universal to all metals, and some will be specific to a particular mining location or production process. The LME's infrastructure – new contracts, transparency and access – is designed to be as inclusive as possible, such that this can be the first step for the LME to support all metals in addressing the pertinent issues for their value chain as appropriate, and as prioritised by the market.

4. TIMELINE

The LME's sustainability strategy will progress in line with the timeline outlined in Figure 5.

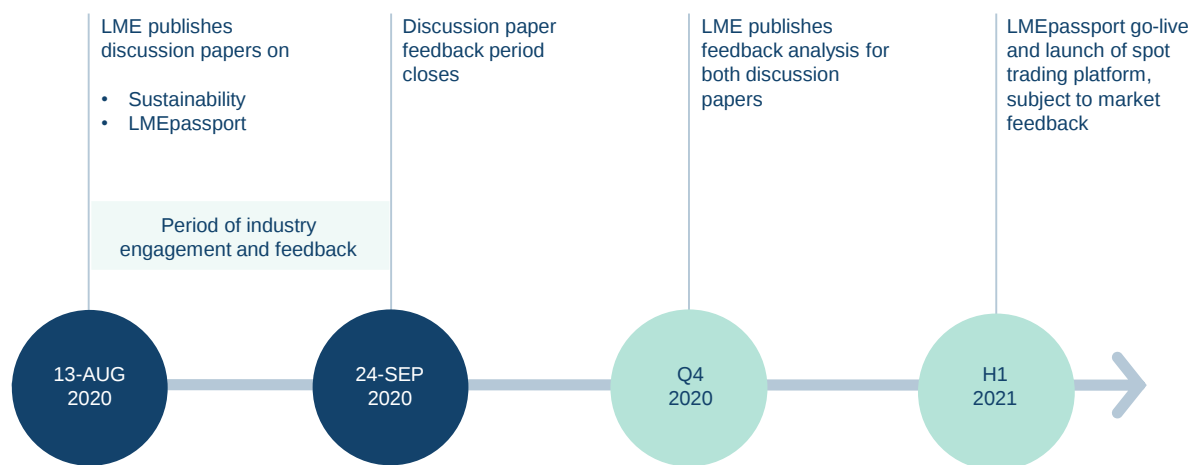


Figure 5: Delivery timeline

5. FEEDBACK TO THIS DISCUSSION PAPER

The LME has already received a considerable amount of interest on the subject of sustainability, and low carbon aluminium in particular. This paper is designed to help facilitate further discussions, and ensure that the LME can understand and incorporate as broad a range of perspectives as possible.

To that end, the LME would welcome feedback from all stakeholders in its market and the wider metals industry as to its sustainability strategy. The LME is proposing a period of market feedback between the publication of this paper and 24 September 2020. The LME requests that any interested parties make contact with the LME at sustainability@lme.com before this date with their feedback on this discussion paper and the LME's proposed next steps. The LME will communicate any proposed changes to its approach and timeline to the market following this feedback period.

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