

To: All members, warehouse companies and their London agents and other interested parties

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Subject: **LME SUSTAINABILITY: CBAM CONSULTATION AND SUSTAINABILITY DISCUSSION PAPER**

Summary

1. The London Metal Exchange (“LME”) is today launching a consultation on the proposed integration of the EU Carbon Border Adjustment Mechanism (CBAM) requirements into the LME rules in order to support the aluminium market and value chain on implementing this pivotal environmental policy. In addition, the LME has issued a discussion paper, which seeks to further develop the LME’s existing sustainability agenda, seeking views on proposals to drive forward initiatives that underpin the global transition to a sustainable economy. The full paper is attached to this Notice, as well as information on how to get in touch with the LME on this topic.

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cc: Board Directors
All committees
Sustainability distribution list

List of appendices

Appendix A: LME Sustainability: CBAM Consultation and Sustainability Discussion Paper

LME Sustainability: CBAM Consultation and Sustainability Discussion Paper

May 2024



SETTING THE GLOBAL STANDARD



Table of Contents

- 1. EXECUTIVE SUMMARY 1
- 2. INTRODUCTION AND BACKGROUND 2
 - 2.1. LME and sustainability 2
 - 2.2. Carbon Border Adjustment Mechanism (“CBAM”) – background and overview 3
 - 2.3. CBAM implications for the LME – the rationale for intervention 4
 - 2.4. LME proposal and consultation 5
 - 2.5. Broader sustainability – LME discussion paper 6
- 3. FORMAT AND RESPONSE TO THE PAPER 7
 - 3.1. Responding to the paper 7
 - 3.2. Process, timings and next steps 7
- 4. CONSULTATION: LME ACTION ON CARBON BORDER ADJUSTMENT MECHANISM (“CBAM”) 8
 - 4.1. The scope of the CBAM requirements 8
 - 4.1.1. LME-listed brands 8
 - 4.1.2. Emissions data 9
 - 4.1.3. Verifying emissions 10
 - 4.2. Requirements, reporting and transparency 11
 - 4.2.1. Reporting through LMEpassport 11
 - 4.2.2. Technical reporting requirements 11
 - 4.2.3. Data transparency 13
 - 4.3. Timelines and frequency of reporting 13
 - 4.4. Non-compliance 14
 - 4.5. Alternative options 14
- 5. DISCUSSION PAPER: SUPPORTING THE METALS INDUSTRY IN THE SUSTAINABLE TRANSITION 16
 - 5.1. Sustainability-related pricing 16
 - 5.2. Carbon methodologies 18
 - 5.3. Carbon pricing and risk mitigation 19
 - 5.4. Data on LMEpassport 20
 - 5.5. Traceability 21
 - 5.6. Circular economy 22
 - 5.7. Environmental Product Declarations (“EPDs”) 23
- 6. APPENDIX I: A GUIDE TO CBAM 25
 - 6.1. The European Union Emissions Trading System (“EU ETS”) and CBAM 25
 - 6.2. Timeline for CBAM 25
 - 6.3. Who does CBAM affect? 26
 - 6.4. Requirements for CBAM 27
 - 6.4.1. Reporting obligations 27
 - 6.4.2. The omission of indirect emissions in the definitive period 28
 - 6.4.3. Scope of emissions (emissions boundaries) 29
 - 6.5. Glossary 30
- 7. APPENDIX II: LME CBAM emissions reporting form 31
- 8. APPENDIX III: LME RULEBOOK (REDLINE) 32

1. EXECUTIVE SUMMARY

Sustainability is at the forefront of the agenda for many businesses, with the significance and role that it plays increasing substantially over the last five years. The London Metal Exchange (“LME”) has taken an active role within the sustainability space, including introducing mandatory requirements for all its listed brands to meet globally accepted standards for responsible sourcing.

But the LME is conscious that the sustainability landscape is constantly evolving, and as new regulations, conversation and priorities emerge, it believes that it is now time to take stock of the LME 2020 [Sustainability Discussion Paper](#), assess progress to date, and look to future developments. To that end, the LME believes that it is now appropriate to build on existing ideas, explore new and trending areas, and understand market perspectives on the future of sustainability.

This paper comprises three sections:

- Consultation on the LME’s proposed actions to support the market in meeting the requirement of the Carbon-Border Adjustment Mechanism (“CBAM”).
- Discussion paper on sustainability considerations more broadly, including the role of sustainability data and growth thereof, the future of supply chain traceability, and the circular economy.
- Appendices – including additional guidance information on CBAM, and technical documents to support the LME’s CBAM proposal, including a reporting format and the redline of the LME’s Rulebook.

The LME’s core sustainability principles remain in line with those published in the 2020 Sustainability Discussion Paper; namely collective ethical responsibility, commercial imperative, and providing leadership for the global metals industry. All the proposals and ideas and proposals outlined in this paper are intended to deliver progress in line with those principles and support the role of metals as the cornerstone of a sustainable future. The LME welcome feedback from the market on any content detailed within this paper, any such comments should be addressed to sustainability@lme.com, no later than 14 June 2024, 17:00 (BST).

2. INTRODUCTION AND BACKGROUND

Metals are an essential enabler of a sustainable future, utilised in many of the important products and services required to reach ambitious net-zero and sustainability goals. A standard electric vehicle needs six times the mineral inputs of a conventional car and an onshore wind facility requires nine times the amount of minerals such as copper and aluminium than a gas-fired power plant¹. This has meant the global demand for metals, particularly sustainably produced metal, has substantially increased in recent times².

2.1. LME and sustainability

The London Metal Exchange (“LME” or “Exchange”) occupies a central position in the metals industry. Its brand lists determine which metals can be delivered against LME contracts and more broadly, many global physical supply contracts stipulate LME brands for delivery. Accordingly, the LME understands it has a role to play in understanding priorities for its underlying physical market and taking steps to support that market in achieving its aims. As such, in response to the rapidly changing sustainability landscape, the LME has taken an active role delivering a sustainability-focused programme of measures to support its listed brands and end consumers in the sustainability transition, including providing transparency around, and access to, sustainable metals. Building on its existing responsible sourcing requirements, the LME published its roadmap for this programme in its 2020 Sustainability Discussion Paper – with a summary table updated here to show progress against the original plan.

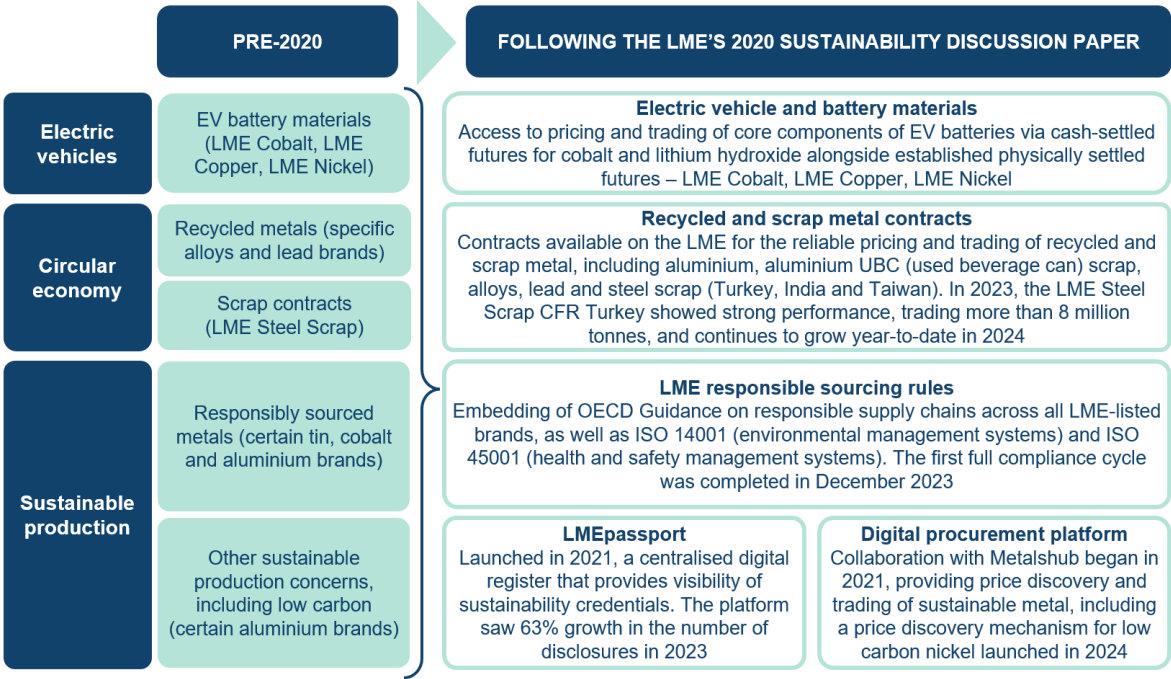


Figure 1: Progress following the LME's 2020 Sustainability Discussion Paper

The LME has now made substantial strides against all of its stated 2020 priorities, and while this remains a work in progress, highlights include:

- In October 2019, the LME launched its responsible sourcing requirements for all LME-listed brands. This action was a direct response to a growing concern from the LME’s market that its listed brands should be sourced responsibly, meeting internationally accepted standards for human rights,

¹ IEA (2021), *The Role of Critical Minerals in Clean Energy Transitions*, IEA, Paris: <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions>, License: CC BY 4.0
² Azevedo, M., Moore, A., Van Den Heuvel, C., & Van Hoey, M. (2022). *Capturing the green-premium value from sustainable materials*. McKinsey & Company. <https://www.mckinsey.com/industries/metals-and-mining/our-insights/capturing-the-green-premium-value-from-sustainable-materials>

governance and transparency. The programme has seen success, with nearly 400 LME brand producing sites now implementing due diligence in their supply chains and maintaining environmental and occupational health and safety management systems in accordance with the responsible sourcing requirements.

- Building on the launch of the first scrap steel contract, the Turkish CFR, in 2015, the LME introduced two additional steel scrap contracts in 2021, one for delivery CFR to Taiwan and another to India. In 2023, the LME Steel Scrap CFR Turkey showed strong performance, trading more than 8 million tonnes, and continues to grow year-to-date in 2024.
- In October 2021, the LME launched sustainability for LMEpassport, a centralised digital data registry designed to showcase a broad range of sustainability credentials. This platform enables producers of LME-listed brands to present their sustainability efforts and certifications at various levels, including company, smelter / refiner, and metal (product level). The adoption of this platform is growing steadily, with over half of LME-listed brands making over 622 sustainability disclosures (as of April 2024). In tandem with this work on LMEpassport, from October 2024, producers of the LME's primary aluminium brands will be required to digitally upload their Certificate of Analysis ("CoA") information to LMEpassport (before the metal leaves site of production), digitising CoAs and helping streamline standard industry operations.
- In March 2024, the LME set out its position on "green" nickel, and its proposed solution for establishing sustainability-related pricing differentials. The LME also outlined its broader efforts in driving improvement in sustainability practices across the industry and encouraged its market participants to share their views on the topic.

2.2. Carbon Border Adjustment Mechanism ("CBAM") – background and overview

The LME has not been the only actor in this space. With sustainability as a pillar of many businesses, there has been an upward trend in sustainability-related action across the world. Leading the charge in climate-related regulation, the European Union ("EU") published its ambition for Europe to be the first continent to achieve climate neutrality by 2050 in the European Green Deal. This was initiated in 2019 and put into effect in 2020 and consists of various tax and policy measures aimed at realising this ambition. In September 2020, the EU set a goal to reduce its emissions by 55% by 2030, relative to 1990 levels. To facilitate this, in July 2021 the European Commission adopted a suite of legislative measures under the "fit for 55" package³. These measures are intended to expedite greenhouse gas ("GHG") emissions reduction by 2030 and ensure the EU's policies on climate, transport, land use, energy, and taxation align with this milestone.

To help deliver against this aim, the EU has implemented the Carbon Border Adjustment Mechanism ("CBAM"), a policy aimed at addressing carbon leakage by applying a carbon-related cost to certain imported products. Appendix I provides more detail on CBAM, including its key requirements, timelines and interaction with the existing EU Emission Trading System ("ETS"). In short, CBAM is designed to ensure that imported goods from outside the EU are subject to similar carbon costs as those produced within the EU, discouraging the relocation of production to countries with less stringent environmental policies. These goods include aluminium, cement, iron and steel, fertilisers, hydrogen, and electricity.

As part of the regulation, authorised EU representatives such as importers will take on the responsibility of reporting direct embedded emissions (the emissions released directly during the production at the installation level) and indirect embedded emissions (the emissions from the production of electricity, which is consumed during the production processes of goods, irrespective of the location of the production of the consumed electricity)⁴.

³ European Commission (no date), *Fit for 55: Delivering on the proposals*, https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/delivering-european-green-deal/fit-55-delivering-proposals_en

⁴ The distinction between direct and indirect emissions included in CBAM, and the perhaps better-known scopes 1 and 2 of the GHG Protocol, is outlined in Section 4.1.2

On the basis of these emissions, the importer then obtains and submits CBAM certificates which represent the emissions embedded in CBAM-relevant products, and the associated costs for this are determined based on the weekly average ETS auction price. The primary aim is to ensure that the carbon costs for imported goods align with those for products produced within the EU ETS region. CBAM will be rolled out in a phased approach, with the first period – the transitional period – running between 1 October 2023 and 31 December 2025, during which importers are not subjected to the financial adjustment for these embedded emissions. However, non-compliance, such as failure to submit quarterly CBAM reports in a timely manner, may incur penalties. From the start of the definitive period (1 January 2026), as free allocation under the EU ETS is gradually phased out, the financial adjustment on direct embedded emissions will need to be paid – see Appendix I for further details.

Given the inclusion of aluminium within CBAM's scope, it will impact the LME's market. With that in mind, and in line with market feedback received, the LME is proposing to take steps to support the market in complying with CBAM.

2.3. CBAM implications for the LME – the rationale for intervention

CBAM implementation will impact both the LME and the wider metals and mining industry in several ways. CBAM will apply to anyone importing aluminium into the EU – this could be miners and smelters of metal, but equally, physical metal owners or trading companies – and introduces new regulatory and compliance challenges. Producers of metal in particular will need to implement systems to accurately assess and report the carbon footprint associated with their products, such that these products would meet the CBAM import requirements should they be shipped into the EU (either by the producer itself, or by a third-party owner of the metal). This process could demand extensive administrative and technological enhancements, as companies take action to maintain their market presence in the EU. The complexity of these requirements might also necessitate new collaborations and partnerships within the industry to develop standardised reporting and verification methods.

With the possible impacts of the CBAM being widespread, the LME believes that it can play a positive role in addressing the challenges of CBAM implementation; namely the collation of, and access to, information for the CBAM registry (the EU Commission's reporting tool for CBAM)⁵. This aims to ensure accurate and reliable CBAM-relevant information is available to the importer, reducing friction at the border and helping ensure ongoing market stability by addressing the following issues:

- **Access.** CBAM will necessitate a strong communication across the metals value chain. Importers, who are responsible for reporting and surrendering CBAM certificates, often do not have direct access to crucial embedded emissions data, information which typically resides with metal producers. If producers do not calculate precise emission details or if effective communication channels are lacking, importers may find themselves unable to accurately report necessary information.
- **Rationalisation.** A large proportion of the information required for the CBAM is typically held by the producer, meaning a high likelihood that producers will face repeated requests for the same information, possibly in multiple formats to multiple different groups, amounting to a significant administrative burden. The LME's proposal seeks to minimise that burden by working with the producers of LME-listed brands to ensure that relevant emissions data is available, at the product (or metal level), within LMEpassport where it would be accessible to the metal owner.
- **Accuracy.** The ability of market participants, such as importers or traders, to make informed decisions is contingent on their access to accurate and relevant information. There are risks and costs associated with data gaps and under CBAM, inaccuracies can translate into financial liabilities for importers. Without access to accurate, reliable data, the market's effectiveness is compromised.

⁵ European Commission, *TAXUD Authentication portal*: <https://customs.ec.europa.eu/taxud/uumds/cas/>

Additionally, in the absence of such data, there is a risk of inefficiencies and suboptimal resource allocation, as decisions risk being based on incomplete or “default” information. Default values⁶, disseminated by the European Commission, reflect the average emissions intensities corresponding to each exporting country and commodity, with an additional margin incorporated to ensure environmental integrity by incentivising accurate data. Often this means that the default figures are much higher than the specific, individual emissions, which can have cost implications.

- **Efficiency.** The repercussions of CBAM have the potential to impact stakeholders from across the market; in particular, a disruption to global supply chains if missing CBAM-related information causes delays on the imports of aluminium at the EU border. Over time, it is also possible that aluminium without relevant CBAM information is perceived as “less valuable” than metal with this information, potentially causing inefficiencies in pricing too. From the consumer perspective, a lack of CBAM information could also discourage taking delivery of LME Aluminium warrants without the necessary information.

2.4. LME proposal and consultation

With clear implications for supply chains, pricing, and decision-making, the LME has heard from multiple stakeholders across the value chain concerned about potential negative consequences. Ensuring that there is open sharing of embedded emissions will be vital to the success of CBAM and reducing frictions importing metals into the EU, and the LME believes it is well positioned to help. As such, the LME is now proposing to require that producers of all LME-listed primary aluminium brands upload verified emissions data to LMEpassport for their direct and indirect emissions, in line with the CBAM requirements. This information will be attached to the associated Certificate of Analysis (“CoA”) for the relevant underlying warrants of aluminium. Full details are provided in Section 4. This is designed to address the concerns outlined above and the LME believes that by equipping all market participants, including traders and investors, with essential data to make informed decisions, it will support the integrity and dependability of the metals trading ecosystem.

Whilst the LME is aware that only a proportion of LME-listed aluminium is imported into Europe, and that as a result, not all LME producers will be impacted, the LME is aware that other regions are also looking to introduce similar measures. One example is the United Kingdom (“UK”), which recently committed to introducing a UK CBAM by 2027. The UK’s programme differs from that of the EU by encompassing the glass and ceramics industries and will exclude electricity from scope⁷. Aluminium is included under both schemes, but UK importers will face a larger financial adjustment due to the inclusion of indirect emissions in their costs. Further details on the design and delivery of the UK CBAM are subject to consultation by the UK Government, which opened in March 2024, closing in June 2024⁸. Given the potential expansion of such schemes, the LME believes it is appropriate to take action now to put processes and systems in place that could be scaled, if necessary, to address a broader range of regulation.

Further, the LME does not believe that its proposal will create an untenable workload for the aluminium producer community. The LME has liaised with its own LME-listed primary aluminium brands to understand the extent of work already being done within the space, and 84% of LME Primary Aluminium brands already publish sustainability reports which include their emissions calculations. The LME and its listed producers can leverage this existing work to meet the requirements of CBAM.

⁶ Taxation and Customs Union (2023), *European Commission, default values for the transitional period*: https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en

⁷ PWC (2023), *UK introduces Carbon Border Adjustment Mechanism (CBAM) in 2027: key measures to consider*, available at: <https://news.pwc.be/uk-introduces-carbon-border-adjustment-mechanism-cbam-in-2027-key-measures-to-consider/>

⁸ HM Revenue & Customs Consultation (2024), *Introduction of a UK carbon border adjustment mechanism from January 2027*. https://assets.publishing.service.gov.uk/media/65fc11fef1d3a0001132ac6f/Introduction_of_a_UK_carbon_border_adjustment_mechanism_from_January_2027.docx.pdf

2.5. Broader sustainability – LME discussion paper

In addition to developments in the regulatory arena, the LME is also aware that the broader sustainability conversation continues to develop. Within Section 5 of this paper, the LME explores several areas for advancing the role of the metals industry in the sustainable transition. The LME is cognisant that the sustainability landscape has evolved since the 2020 Sustainability Discussion Paper and as such, would like to address some of the key priorities, opportunities, and risks on which it believes the market is focussed, including:

- The practicalities of understanding the possible premium associated with sustainable metal, and how such metal could be defined.
- The role of LMEpassport, which aims to provide centralised transparency of sustainability-related data on its listed-brands, meeting market demands for core environmental, social and governance (“ESG”) information throughout the supply chain and wider market, and how the market would like the LME to take this forward.
- The role of traceability as a way to provide additional information on supply chains, amid increasing sustainability regulations and reporting standards. The LME seeks insights from the market on how traceability functions within businesses and how good practice could be expanded across supply chains.
- The development of the circular economy, including the debate about definitions, the identification of risks specific to the recycling industry, the demand for expansion in this sector and the call for enhanced standards and certifications.
- The widespread adoption of metal-specific carbon calculation methodologies, improving the consistency and comparability of emissions data, data accuracy at all levels (from company to products) and assessing the existence of any remaining gaps that need addressing.
- Utilisation of Environmental Product Declarations (“EPDs”), which have emerged due to their transparency and comprehensive environmental information spanning a product’s life cycle. As EPDs become more prevalent, the LME is seeking feedback on incorporating them into LMEpassport, and on the interaction of EPDs and Life Cycle Assessment (“LCA”) studies.

3. FORMAT AND RESPONSE TO THE PAPER

This paper has been divided into two key sections:

- **Consultation on proposed actions to support the market in addressing CBAM (the “CBAM consultation”).** This includes details on associated proposed changes to Section 6 of the LME Rulebook.
- **Discussion paper outlining additional areas of interest in sustainability (the “sustainability discussion paper”).** This includes a set of proposals across the sustainability spectrum.

The LME is seeking feedback from participants on both these sections. The LME has provided background on each topic, as well as its own views and, where appropriate, the LME’s proposed direction of travel. To facilitate this process, throughout the paper are boxes outlining discussion questions on which the LME is specially requesting market feedback. The LME welcomes feedback on all or some of the specific questions, and / or commentary outside of the outlined questions.

Consultation questions / discussion questions

*This box contains numbered questions
on which the LME is soliciting market feedback.*

3.1. Responding to the paper

The LME welcomes feedback to this CBAM consultation and sustainability discussion paper from all market participants and other interested parties, including regulatory and governmental bodies and civil society. The consultation will be open until 14 June 2024, 17:00 (BST).

Formal responses to the consultation should be submitted in writing and sent to the LME at sustainability@LME.com.

3.2. Process, timings and next steps

Responses made after the closing date of the consultation and discussion paper will be read but will not be taken into formal consideration. The LME may need to share responses received with regulatory authorities, members of its group, and its legal or other professional advisers, or as required by law. Anonymised responses (verbatim or paraphrased) may be included in the documents stating the outcome of this consultation. Apart from this, all responses received will be treated in confidence. All of the changes to the LME Rulebook detailed in this consultation may be subject to regulatory approval before they can become effective.

Following due consideration, the LME may implement:

- (i) in respect of the consultation and other topics laid out in this paper, a modified version of the this, an alternative to this, or no measure in respect of the items covered;
- (ii) any other measure(s); or
- (iii) no measures.

Following the consultation, the LME will advise the market, via one or more Notices, when changes to the LME Rulebook will take effect.

4. CONSULTATION: LME ACTION ON CARBON BORDER ADJUSTMENT MECHANISM (“CBAM”)

As outlined in Section 2, to support the implementation and operation of CBAM, the LME is proposing to require that all producers of LME-listed aluminium brands provide CBAM-compliant emissions information to be attached to the CoA and stored on LMEpassport.

The LME’s decision to implement mandatory emissions reporting hinges on reducing and solving a number of possible market inefficiencies. Although the primary benefit will be aiding importers and the flow of information across the value chain, the LME also believes that producers of LME-listed aluminium brands will also benefit from a reduced administrative burden through providing their emissions information once a year, via LMEpassport, rather than responding to every individual request.

At present, producers of LME-listed brands can disclose their emissions via LMEpassport on a voluntary basis. This may include scopes 1-3 under the GHG Protocol, covering data from the corporate entity level, the brand (smelter / refiner) level, and / or the product / batch level. The LME is by no means alone in its aims to improve and encourage transparency, with the increased regulatory focus and a number of recent industry-wide initiatives underway in relation to providing further information on the environmental impact of supply chains, products, and services⁹. The advent of CBAM takes this a step further, and with the risks and benefits outlined above, the LME believes that it is now appropriate to introduce mandatory emissions reporting to support market users efficiently report CBAM data.

This proposal aims to address the key requirements of CBAM and its interaction with the LME ecosystem as follows:

- A: The scope of the CBAM requirements
 - (i) LME-listed brands
 - (ii) Relevant emissions data (in GHG scopes)
 - (iii) Verifying emissions
- B: Requirements, reporting and transparency
 - (i) Technical reporting requirements
 - (ii) Reporting through LMEpassport
 - (iii) Data transparency
- C: Timelines and frequency of reporting

To effect these changes, the LME is proposing to amend Section 6 of the LME Rulebook. A redline of the proposed new regulation is set out in Appendix III.

4.1. The scope of the CBAM requirements

4.1.1. LME-listed brands

Consistent with CBAM requirements, the LME is proposing that all LME-listed brands of physically settled contracts relating to aluminium (including primary aluminium, aluminium alloy, North American Special Aluminium Alloy Contract (“NASAAC”)) will be required to report their emissions to the LME on a mandatory basis.

Looking more broadly, given the expansion plans proposed by the EU which indicate its intent to extend CBAM to all sectors covered by the ETS before 2030 (which would include all other metals within the LME’s physically settled suite of contracts), the LME is mindful that it is likely that CBAM requirements will apply to other LME metals in due course. As such, the LME is reserving the right

⁹ As just one example, in December 2023, the International Aluminium Institute (“IAI”) launched a new initiative committing to transparently and publicly tracking ambition and progress in greenhouse gas reduction of all its member companies. International Aluminium Institute (2023), “Aluminium industry backs new greenhouse gas initiative – International Aluminium Institute”.

(to be communicated to the market by Notice, with a minimum of 45 days' notice¹⁰) to require that other metals physically settled at the date may also be brought into scope. It should be noted that, at present, LME-listed copper does not require an associated CoA. Should the CBAM requirements be extended to copper, the LME will need to work with its copper producers and the LME Copper Committee to agree a route forward that provides a CBAM solution specific to copper.

For metal that was produced before the regulation (e.g., outside of the regulatory date period), which could include metals stored in warehouses, for which there is no prior emission-related data, this will be treated as their modern-day equivalent according to the European Commission's latest guidelines. This approach allows the use of current data for analogous or identical products as a substitute for information-deficient materials from before the introduction of the regulation. Consequently, there is no requirement for retroactive assessment of the embedded emissions in materials stored in LME warehouses worldwide. In this scenario, the importer would be required to utilise the default value disseminated by the European Commission.

4.1.2. Emissions data

From the date of implementation, producers of LME-listed brands will need to attach relevant emissions-related information to the aluminium they produce. The CBAM requirements relate to direct embedded emissions (interchangeably referred to as scope 1) and indirect embedded emissions (interchangeably referred to as scope 2) calculated at the point of production. A summary of the emission boundaries is detailed below in Figure 2, with a more detailed and technical breakdown of the emissions boundaries within Section 6.4.3. Point of production refers to the position in the value chain whereby metal becomes "LME grade"; however, for the avoidance of doubt, the LME has followed the EU CBAM requirements.

| Parameter | ISO 14064-1 | GHG protocol | EU ETS | CBAM |
|---|-------------|--------------|--|---|
| Direct emissions | | | | |
| Stationary | Category 1 | Scope 1 | Subject to system boundaries of each EU ETS installation | Direct emissions are defined as "Emissions from the production processes of goods including emissions from the production of heating and cooling consumed during the production processes, regardless of the location of the production of the heating and cooling" |
| Mobile, e.g. forklift, cars | | | Outside scope | Outside scope |
| Indirect emissions | | | | |
| Imported heating/cooling | Scope 2 | Scope 2 | Covered if produced in an EU ETS installation | Included under 'direct emissions' |
| Imported electricity | | | Covered if produced in an EU ETS installation | Indirect emissions are defined as "Emissions from the production of electricity, which is consumed during the production processes of goods, regardless of the location of the production of the consumed electricity" |
| Imported fuels | Category 3 | Scope 3 | Outside the scope | Outside the scope |
| Transport | | | Outside the scope | Outside the scope |
| Imported 'precursor' materials | Category 4 | | Covered if produced in an EU ETS installation | To the extent precursors are defined as relevant in the implementing act |
| Downstream and other, e.g., use of product, end-of-life emissions | Category 5 | | Outside the scope | Outside the scope |

Figure 2: Proposed emissions data breakdown, following EU CBAM requirements¹¹

As the emissions are fixed at this point, producers can provide this information once, at the point at which it becomes LME-grade material, without having to provide further updates to different participants along the value chain or those that may require the information for regulatory purpose.

¹⁰ A minimum notice period of 45 days is required; however, it is probable that in practice this duration will extend significantly, with advanced legislative notification highly likely.

¹¹ Taxation and Customs Union (2023), European Commission, *Guidance document on CBAM implementation for installation operators outside the EU*, available at: https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en

The inclusion of scopes 1 and 2 only is consistent with CBAM requirements – however, the LME notes the increasing demand for scope 3 reporting too and acknowledges that without scope 3, the full span of metal production related emissions cannot be known. As market expectations, and emissions calculations, become more sophisticated, it is to be expected that the exclusion of scope 3 will become less acceptable over time.

For the moment, however, there is still a lack of market consensus around best practice methods for emissions calculations and reporting and scope 3 in particular continues to be considered a complex and inconsistent area within emissions calculations. It is worth noting that a number of industry standards and associations have been working to ensure that strong methodologies exist and are adopted to allow for accurate, consistent and trusted data analysis. Additionally, many market users are successfully calculating and reporting emissions down to the product level, including scope 3.

Until additional progress is made, however, the LME will make scope 3 reporting available on a voluntary basis only; the LME will, however, continue to track progress carefully, including potential increased CBAM requirements, and will look to implement scope 3 requirements at a later date. The Exchange reserves the right (to be communicated to the market by Notice, with a minimum of [45 days' notice¹²]) to include scope 3 emissions in mandatory reporting in the future.

The other point to note in respect of emissions calculations is the facility within CBAM to attribute default values to metal in the absence of other attributable emissions. During the transitional period, there will be only global default values (for each Combined Nomenclature (“CN”) code under the CBAM scope)¹³, which have been calculated by weighted production volumes. During the definitive period (from 1 January 2026 onwards), default values by country or even by region will be made available.

These default figures are likely to be higher than actual emissions, in order to favour importers utilising the calculation of embedded emissions provided by a producer. For the transitional period, “unwrought aluminium” has a default value of 2.36 (tonne CO₂e/tonne goods) for direct emissions and 8.14 (tonne CO₂e/tonne goods) for indirect emissions¹⁴.

4.1.3. Verifying emissions

The EU CBAM regulation requires emissions information to be verified from the start of the definitive period (1 January 2026); however, the specific rules associated with this are yet to be finalised. For the moment, and in anticipation of the EU’s requirement, the LME proposes to require producers to ensure that the emissions data is audited by a third-party auditor. This verification information should be included within the LME CBAM emissions reporting form (Appendix II). This method is consistent with other sustainability-related information currently voluntarily uploaded to LMEpassport, where a proof point is already required. Given this – and the LME’s understanding that the majority of aluminium producers already verify their emissions calculations through third party auditors – the LME proposes to require this ahead of the EU regulation. The LME would not be liable for any inaccuracies or other errors which may occur during the auditing process, and as noted above, the LME is not responsible for the accuracy of such data although it is expected that the auditing of such data will reduce the potential for any errors.

¹² A minimum notice period of 45 days is required; however, it is probable that in practice this duration will extend significantly, with the LME cognisant of the work that goes in to calculating scope 3 emissions.

¹³ The definition of a CN code is outlined in Section 6.5

¹⁴ European Commission Taxation and Customs Union, (2023) *Carbon Border Adjustment Mechanism: “default values transitional period”*, Available at: https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en

4.2. Requirements, reporting and transparency

4.2.1. Reporting through LMEpassport

The LME is proposing to use LMEpassport as the data repository for all CBAM information, utilising a system with which many LME-listed producers and the wider LME ecosystem are already familiar. LMEpassport is already acting as a digital, centralised platform for producers of LME-listed metals to disclose their sustainability credentials (including information pursuant to the LME’s responsible sourcing programme), as well as a digital storage of electronic CoAs for metal physically delivered into and out of LME-listed warehouses. Over half of LME-listed brands are voluntarily disclosing a range of sustainability credentials, and there are 2.78 million CoA records on the platform.

The proposal is that each LME-listed brand will be required to complete and then upload the LME’s CBAM emissions reporting form (provided in Appendix II) to LMEpassport on an annual basis. This can be completed either by logging in and uploading the form on an annual basis, or by connecting to the LMEpassport Application Programming Interface (“API”) to transfer the same information. LMEpassport will then associate the uploaded information with any CoA that is linked to that particular brand. Using this method, producers will not have to change their current CoA process, but future metal owners will be able to receive and view relevant CBAM information upon purchasing metal or receiving a warrant. Additionally, LMEpassport will be developed so that if a producer opts-in to showcase the emissions information via their public producer profile on LMEpassport, this can be completed automatically. Further information regarding the transparency options is provided in Section 4.2.3.

The LME has designed this process to be as efficient as possible for all parties involved. For LME-listed metal, producers will only need to enter information on an annual basis, with the CBAM information being disseminated to the relevant CoA. They can then direct any subsequent CBAM requests for that specific metal to LMEpassport. In turn, metal owners, whether this be a trader, warrant holder, or importer, will have access to the CBAM information required for CBAM regulatory requirements in an easily digestible format. This freer flow of accurate information across the supply chain will mitigate against any inefficiencies in importing LME-listed aluminium brands into jurisdictions with CBAM requirements.

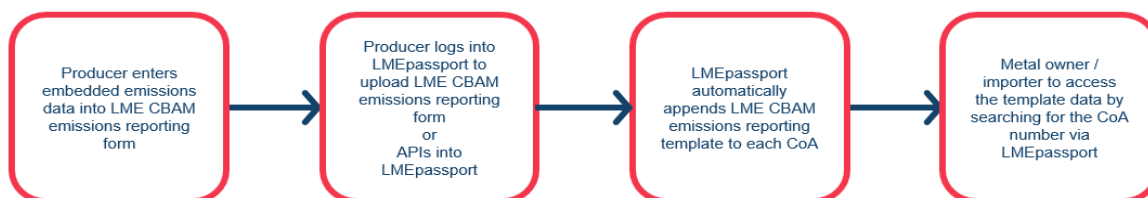


Figure 3: Flow of emissions data from submission to utilisation

4.2.2. Technical reporting requirements

The mandatory emissions information required by the LME will encompass all the fields needed for importers (reporting declarants) to report within the EU CBAM Registry. All information will be appended to the CoA so that it can be easily transferred or passed along at the point of sale. The LME will not be responsible for the accuracy of such data, nor will it be liable in the event that the data is incorrect and subsequently reported to the CBAM Registry.

The LME has created its own form (the “LME CBAM emissions reporting form”) to provide clarity to its producers on the precise information required, and to facilitate reporting. The full CBAM reporting form is attached under Appendix II. This has been built based on the EU’s “CBAM communication template for installations”¹⁵, and having a clear, simple and standardised form will minimise the

¹⁵ European Commission Taxation and Customs Union (2024), *Carbon Border Adjustment Mechanism: “CBAM communication template for installations”*, Available at: https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en

administrative burden on producers to answer questions or provide additional information and allow importers to utilise the information with ease. However, the LME version will only include the information required from the producer – the LME expects that importers will need to source additional CBAM-required information themselves given there are likely to be a number of fields that a producer would not have suitable knowledge to populate.

Given the extensive demand for ESG information, and the time required to respond, the variations in format and focus areas across suppliers and governments, the LME is committed to reducing duplication in reporting should other countries or regions introduce similar, or slightly different CBAM-related regulations. The LME is reserving the right to update the CBAM reporting form with additions pertinent to each country or region if they arise, allowing LME producers to complete one spreadsheet only and still meet global regulatory requests.

A list of the specific fields the LME proposes to require is detailed below, with an additional section within the form sharing further guidance on populating the fields, alongside definitions of the terminology. The form and all information should be filled out in English; however, producers can repeat pages in other languages if required. If suitable demand exists, the LME will consider publishing the form in other languages to aid understanding and clarity.

LME CBAM reporting form mandatory fields:

- Producer name
- Smelter / Refiner / Asset name
- Address
- Unique installation identifier / link to CoA
- United Nations Code for Trade and Transport Location (UN/LOCODE) of the location
- Product names(s), CN code, and breakdown of the aggregated good category
 - Tonnes scrap used for producing 1t of the product
 - % of scrap that is pre-consumer scrap
 - If the total content of elements other than aluminium exceeds 1%, the total percentage of such elements.
- Address / geographical coordinates of the site's main emission source
- Reporting period
- Methodology utilised
- Direct embedded emissions (or default value)
- Indirect embedded emissions
- The emission factor used and rationale (if different to IEA / EU provided figure)
- Information on carbon price (obtained from other installations or precursors) – if applicable
- Verifier of the report
 - Company name
 - Company address
 - Company contact
 - Name of accreditation body
- Level of assurance

There are also a number of voluntary fields that producers can include within their response. These include:

- Permission to upload emissions data to “live sustainability disclosures” on LMEpassport
- Further information around how emissions have been calculated
- Scope 3 emissions

4.2.3. Data transparency

Emissions data collected through the mandatory emissions reporting requirement will only be available to users who have access to the CoA. All metal owners will have access to CoAs pertaining to the metal they own through LMEpassport where they can search for this information. In the case of the CBAM regulation, the affected importers (reporting declarants) will be able to look up their CoA number via LMEpassport to view the required emissions information needed to submit to the CBAM Registry.

In addition to the emissions information being available on the CoA, LME producers will be able to opt-in to share this information via the live sustainability disclosures¹⁶ aspect of LMEpassport. This information will then be available for all LMEpassport users to view. To avoid duplication of effort, the LME will develop technology on LMEpassport to allow for the emissions related information included within the CoA to be automatically translated across to the live sustainability disclosures webpage if permission is provided by the producer. Although the LME encourages producers to share this sustainability information publicly, this decision will remain with the producer.

Moving forward, the LME will look to summarise the emissions data collected into summary-style statistics that will be shared on the public, live sustainability disclosures page on LMEpassport. The LME would consider doing this no earlier than the start of the definitive period (1 January 2026). This approach recognises concerns from producers around the sensitivity of this information, and the fact that the EU CBAM requirements do not currently mandate public reporting of these emissions, but equally supports the broader industry drive for transparency. It is possible that further transparency can be provided over time, subject to demand.

4.3. Timelines and frequency of reporting

There are two core time periods associated with the CBAM regulation: the transitional period (1 October 2023 to 31 December 2025) and the definitive period (1 January 2026 to 31 December 2033). For 2024, the EU has taken a more flexible approach to reporting, providing companies with more options to report. However, as of 1 January 2025, the EU has stipulated it will only be accepting the EU methodology. Reports must be submitted by importers within one month following the conclusion of each quarter, with a two-month period following this where the entrant can edit the submitted report after the quarter's end. For the first two reporting periods (31 January and 30 April 2024), additional leniency has been granted whereby data can be subsequently corrected until 31 July 2024.

The LME has taken these timings into account, and is proposing the following:

- **First mandatory entry into LMEpassport for direct embedded emissions (scope 1) and indirect embedded emissions (scope 2):** 2024 emissions information by 15 March 2025
- **Frequency:** updated annually

¹⁶ LMEpassport (no date), *Live sustainability disclosures*, available at: <https://www.lmepassport.com/#/public/live-sustainability-disclosures>

| 2025 Q1 | | | 2025 Q2 | |
|--|---|---|---|--|
| 31 January 2025 – EU deadline Importers required to report on CBAM Registry for quantity imported from 2024 Q4. Importers are able to use 2023 data where 2024 data is not yet available. | 15 March 2025 – LME deadline CBAM emissions reporting form for embedded emissions for calendar year 2024 due. | 31 March 2025 – EU deadline Deadline for importers to correct submitted reports for 2024 Q4 in CBAM Registry. | 30 April 2025 – EU deadline Importers required to report on CBAM Registry for quantity imported from 2025 Q1. Importers are required to use 2024 data. | 30 June 2025 – EU deadline Deadline for importers to correct submitted reports for 2025 Q1 in CBAM Registry. |

Figure 4: Timeline of action for emissions reporting

4.4. Non-compliance

The LME is proposing to make the CBAM reporting requirements mandatory for LME-listed aluminium brands (including alloys brands). Should brands fail to upload the relevant data to LMEpassport therefore, the LME may decide to suspend or delist these brands. The effect would be that no further material of the specific brand could be warranted (or re-warranted) in the LME network. The decision whether to suspend or delist would be informed primarily by the LME’s assessment as to whether it would be possible for the brand in question to return to a state of compliance, in which case the suspension could be lifted. If this seems unlikely, then a full delisting may be more appropriate. The mechanism by which the LME would affect a suspension or delisting would, necessarily, depend on the circumstances.

In general, the LME aims to give advance notice of a delisting in order to allow the market a period of time (generally three months) to place residual off-warrant stock into the warehouse. However, in the event that this might create a disorderly market – for example, the inflow of significant quantities of lower-quality material into warehouse during the notice period – the LME does have the right to suspend or delist without notice.

While the LME accepts that a greater degree of certainty in respect of timelines for these processes would provide greater clarity to the market, the LME does believe that in order to act in a fair manner and to mitigate the risks of creating a disorderly market, it does need to reserve the right to make decisions on a case-by-case basis.

4.5. Alternative options

It is worth highlighting that the LME considered a range of routes to address CBAM, and equally, taking no action. Given the potential impact of CBAM on the LME, as laid out above, alongside possible further indirect consequences as yet unknown, the LME considers that it is appropriate to introduce measures to support market participants who wish to import LME-listed aluminium by providing an efficient way to obtain CBAM information which is required for importation into the EU, and likely other jurisdictions in the future, without unduly burdening LME aluminium producers. Further, a number of market participants have requested that the LME support the market in meeting the requirements of CBAM.

The LME has also considered the route of facilitating the voluntary reporting of emissions via LMEpassport, with default values for those who do not participate. This represents a softer approach than the mandatory route, further reducing the burden on producers and allowing the LME to “fill the gaps” left by those not choosing to participate by using EU standard values, while still providing the information needed by importers for compliance reporting to the European Commission. However, this scenario could lead to market inefficiencies, and a blocking of important data from various members of the value chain. With the requirement remaining voluntary, it may not sufficiently encourage producers to disclose this

information, forcing importers to take default values that are not representative of their supply chain. Default numbers will include a markup to ensure environmental integrity by incentivising accurate data and as such, it will likely be more favourable for importers to use the calculation of embedded emissions provided by a producer, than to use the default values.

Following consideration, the LME has felt that neither of these options represents the best course of action given that they either do nothing to support the market in addressing the CBAM requirements or provide an incomplete or less accurate data set. Given CBAM timelines stipulated by the European Commission, and the need for market efficiency and orderliness, the LME believes that mandatory emissions reporting represents the best course of action.

Section A – consultation questions

A1) Do you agree with the LME's proposed route to mandate emissions reporting for all LME-listed aluminium, including alloys?

A2) Do you agree with the transparency proposal; namely, that only those with permissions to view the CoA information will be able to view full emissions information unless the producer has chosen to disclose the information publicly, with the possibility of the LME publishing aggregated, summary statistics?

A3) Do you think there is any other information that should be included within the mandatory fields of the CBAM reporting form?

A4) Do you feel that the form accurately reflects the information required by the EU? Or are there more specific fields that should be added?

A5) Do you believe that the best way to share this information is via CoAs on LMEpassport? Or would there be preference to upload the form / showcase this information in another way?

A6) Is there any other additional ESG information that would be useful to see on a CoA, such as responsible sourcing compliance certifications?

A7) Do you agree with the proposed timelines associated with the reporting requirements?

A8) Are there other factors that you think are important for the LME to consider in relation to CBAM?

A9) Do you think that the LME should mandate emissions reporting for the other LME physically settled contracts? If so, do you think this should be implemented at the same time for all physically settled contracts or rolled out in line with CBAM regulations in the future (currently predicted by 2030)?

A10) Do you think the LME should facilitate the reporting of emissions for the other LME physically settled contracts on a voluntary basis?

5. DISCUSSION PAPER: SUPPORTING THE METALS INDUSTRY IN THE SUSTAINABLE TRANSITION

As outlined in Section 4, while the LME is minded to introduce mandatory reporting requirements for CBAM, and is hence consulting on its proposal, there are a number of other sustainability-related topics on which the LME is keen to hear further market feedback, without yet being in a position to propose clear next steps. As such, the subsequent sections of this paper form a discussion paper, wherein the LME will seek to explore various sustainability topics, and on which the Exchange would welcome insights and feedback from market stakeholders. While the LME is open to feedback on a broad scale, there are also specific questions to guide responses more effectively.

Acknowledging the evolution of the sustainability landscape since the release of the LME's 2020 Sustainability Discussion Paper, it is the LME's intent to identify and discuss a broad range of subject which it currently believes to be of focus for LME stakeholders and highlight the challenges and prospects of these. This includes understanding the possible premium associated with sustainable metal, the role of LMEpassport, traceability within the LME ecosystem, circular economy principles, the adoption of metal-specific carbon methodologies, and the utilisation of EPDs. The LME believes that all of these topics could play a crucial role as the industry continues to navigate the global sustainable transition, as well as its own transformation, and looks forward to engaging the market further on these issues.

5.1. Sustainability-related pricing

One of the LME's core functions is providing accurate real-world pricing of metal, underpinned by the physically deliverable nature of the LME's core contracts. As a result, determining the criteria for the physical metal which underlies those contracts is an ongoing responsibility, key to which is the recognition that what the market needs from that metal will evolve over time. The LME works closely with its stakeholders to monitor developments and take action where appropriate; as an example, following feedback in 2023, the LME added jumbos as a deliverable shape for the zinc contract. Similarly, from 2017-2019, the LME undertook extensive market engagement to ascertain the extent to which the Exchange needed to address the increasing demand that the physical metal underlying its contracts was responsibly sourced, and then to deliver that change.

This was the first time that the LME introduced requirements for metal that did not explicitly pertain to the physical specification of the metal itself, but rather to an ethical quality. The LME undertook this work in response to market demand, and perhaps unsurprisingly, this has led to increased conversation around the extent to which other ethical criteria should be included.

In recognition of this, the LME issued the 2020 Sustainability Discussion Paper, outlining the differing market perspectives on sustainability-related topics, as well as the options for taking action, and the potential consequences of such action. With aluminium in focus, this included proposals such as adding a low carbon "tag" to relevant LME brands within the aluminium contract, amending the existing aluminium contract to be a low carbon contract, and launching a second primary aluminium contract for specifically low carbon material.

The response was overwhelmingly that the industry was not ready and not in favour of implementing any of the aforementioned options. A number of issues were raised, including the lack of metal which could be classed as "low carbon", but perhaps more significantly, more philosophical questions about whether this discussion should be limited to carbon, what other sustainability criteria should be included, how they could be accurately measured, and what the acceptable parameters were – in short, how the market could define and measure "green".

Without an answer to these questions, pricing "green" metal was infeasible. Instead, the LME focused on some of the more technical questions that would need to be addressed before the market could move

forward – namely, metal-specific carbon emissions measurement methodologies that could deliver accurate and comparable emissions numbers (see Section 5.2), while continuing to monitor any building consensus on the bigger picture.

More recently, the LME has seen this topic re-emerge in respect of the nickel market, where the debate around the “right” premium for more sustainable nickel has been in focus. In response, on 5 March 2024, the LME released Notice 24/116, setting out the debate, and the difficulties of defining “green”, as outlined above, but also acknowledging the frustration of producers that have invested significant time and resource in delivering more sustainable metal.

The LME also outlined its solution for establishing carbon-related pricing differentials through its partnership with digital procurement and trading platform Metalshub. Any class 1 nickel on the Metalshub platform can be listed with specific ESG credentials, including its carbon footprint, which allows buyers to filter against carbon thresholds of their choosing, ensuring they source material that complies with their sustainability objectives. More details can be found in Notice 24/116, with feedback found in Notice 24/165. Crucially, while the LME did not attempt to solve the issue of what constitutes green metal, instead focusing on carbon as one specific metric, it did set a threshold for “low-carbon nickel” (albeit noting that this may require further refinement in the future). With this, over time, Metalshub can begin to develop a low carbon nickel class 1 premium index.

The LME is conscious that this method could easily be applied to other metals, and crucially, does not rely (in the way that a normal exchange-traded product would) on there being a sufficient volume of underlying metal to sustain a contract. Once in place, a pricing solution that could discover a low carbon premium could support producers in the technological and sustainability advances already underway and help them to meet increasing pressure from governmental bodies, customers and other stakeholders to reduce emissions in order to meet ambitious net-zero targets and goals. Over time, it is possible that the LME can build on carbon thresholds to include a broader range of sustainability criteria.

In this respect, CBAM represents an opportunity for the industry. The extensive data required to meet CBAM requirements can help create a nexus of information to understand where the industry is now, what might be fair low carbon aluminium (“LCAL”) parameters and – in time – if there could be sufficient liquidity to support a contract. To support this process, the LME is considering collaborating with Metalshub to list an “LME globally deliverable low carbon aluminium (CBAM)” product on the spot platform and provide transparency around volumes of trades and prices of metal which fall below a specific carbon footprint, similar to the existing low carbon nickel solution outlined above.

Key to this will be the threshold of “low carbon aluminium”. Work already underway indicates that work on a clearer definition of LCAL is in progress. One example is the First Movers Coalition, which in 2022 stated that by 2030, LCAL would be that produced using less than 3 tonnes of CO₂e per tonne of aluminium, including all emissions from cradle to gate (mine to cast house, excluding scrap input)¹⁷. The International Aluminium Institute developed a 1.5°C pathway for the aluminium sector, which indicates that average mine to metal emissions intensity needs to be below 13.5 t CO₂e/t Al by 2025 and 11.5 t CO₂e/t Al by 2030¹⁸.

There are also alternative routes, grounded in the EU-ETS benchmark value calculation method¹⁹. Specifically, the EU-ETS identifies the average GHG emissions intensity of the top 10% most efficient smelters (or “installation operators” per CBAM legislation) for direct emissions. This 10% figure then creates a baseline which could be constituted as being LCAL. The LME could take this approach as it is,

¹⁷ World Economic Forum initiatives, First Movers Coalition (2022), Aluminium commitment, https://www3.weforum.org/docs/WEF_First_Movers_Coalition_Aluminium_Commitment_2022.pdf

¹⁸ International Aluminium Institute (2021), *1.5 Degrees Scenario: a model to drive emissions reduction*, available at: <https://international-aluminium.org/wp-content/uploads/2021/10/1.5-Degree-Scenario-FINAL.pdf>

¹⁹ European Commission (no date), *Allocation to industrial installations*, available at: https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/free-allocation/allocation-industrial-installations_en.

but also has the option of making adjustments with the aim of tailoring this for the aluminium market; for example, it could incorporate direct embedded emissions (scope 1) and indirect embedded emissions (scope 2) and recalculate the top 10% on this basis. For the LME's purposes the top 10% would be calculated using only metal on the LME's approved brands list (i.e. deliverable into the LME's global network of warehouses), which for primary aluminium (as of April 2024) comprises producers from 33 countries, 80% of which are outside of the EU.

Using this route, LME primary aluminium producers could report against the CBAM requirements outlined in the consultation above, and the LME would use this information to calculate the top 10% based on the methodology above. This data would then be fed into Metalshub for trading under the "LME globally deliverable CBAM" banner. In the interests of transparency, the LME could publish the methodology and key summary statistics associated with this data.

Alternatively, using this calculation method or a defined threshold, Metalshub could make trading available on CBAM-compliant primary aluminium, and then report, on a monthly basis, data on the number of transactions and market value of primary aluminium, including the subset of such trades made on metal with a carbon footprint lower than the published threshold, in line with the method in use for nickel already.

The LME anticipates that this proposal could deliver a number of market benefits:

- Price discovery calculated by real trades based on accurate emissions data. This would provide a robust alternative to existing methods.
- If a premium emerges, this could reward producers which are delivering low carbon metal and provide an incentive to further decarbonise.
- A clear, strongly calculated premium could translate to increased investment in the sustainable transition.

The LME is interested in market views on the relative merits of the possible routes for determining a low carbon threshold for aluminium, and – if the LME nominated a threshold itself – the most appropriate threshold.

Section B – discussion questions

B1) Do you agree with the LME's analysis of the considerations around low carbon and "green metal"?

B2) What do you believe is the most appropriate method for determining a low carbon threshold for aluminium (and / or other metals)?

B3) What do you believe is the most appropriate threshold for defining low carbon aluminium?

B4) What do you think about the LME's proposal regarding "LME globally deliverable CBAM" product, including the proposed methodology? Are there other considerations that should be taken into account?

B5) Do you believe this price discovery method and possible trading should be extended beyond primary aluminium?

B6) Given that scope 3 emissions are currently proposed as a voluntary field in the LME's CBAM form, do you think that they should be included or excluded within the price discovery mechanism?

5.2. Carbon methodologies

As highlighted above, one of the core challenges facing the metals industry is the consistent and accurate measurement of emissions. The industry has made significant progress in standardising these methodologies and a number of metals associations and standards have created clear guidance for calculating emissions for specific metals. Many of these have been included on LMEpassport and include

the Cobalt Institute's Product Carbon Footprint ("PCF") guidance, the International Aluminium Institute's 2021 Good Practice Guidance for Calculation of Primary Aluminium and Precursor Product Carbon Footprints, the International Zinc Association's GHG emissions guidance, and the Nickel Institute's GHG emissions guidance.

In the LME's view, this standardisation is crucial, delivering the possibility of accurate measurements down to the product level, enabling stakeholders to directly compare the carbon footprint of similar products, ensuring uniformity, and facilitating an "apples to apples" comparison. Such transparency empowers buyers to make informed decisions regarding the carbon content of the metals they purchase.

The LME is also conscious that further progress is needed; in particular, measurement of scope 3 emissions remains a particularly complex space, where the demand to map extensive supplier lists and obtain accurate carbon emissions represents a significant body of work which the industry is only now beginning to address. Whilst the progress in the space has rapidly improved, and increased guidance²⁰ is available, the LME is aware that a number of barriers are still preventing producers from being able to calculate scope 3 emissions on a more granular product or batch level. The LME believes the industry should be proud of progress made thus far and is keen to support further developments, including identifying any potential gaps with existing methodologies, how the industry can make further progress on scope 3, and what other challenges remain. All of this work is vital in order to continue building the accuracy, consistency, and trust needed in this area.

Section C – discussion questions

- C1)** Do you use a carbon accounting methodology not currently included on LMEpassport? If so, which one(s)?
- C2)** Do you think the methodologies available on LMEpassport currently represent the most appropriate carbon accounting methodology for each metal?
- C3)** Do you feel there are any gaps or issues in implementing the existing carbon methodologies?
- C4)** Do you currently measure scope 3 emissions? Is this completed at the corporate / entity level, or are you able to measure at the production or batch level?
- C5)** What other challenges have you identified in this space?

5.3. Carbon pricing and risk mitigation

It is possible that the introduction of the EU CBAM represents the first time that some members of the LME ecosystem will be exposed to carbon pricing risk. In response to this shift, the LME is considering the impact this will have on the market, and the hedging options potentially needed for importers to lock in the cost of their CBAM certificates.

The inclusion of aluminium within the EU ETS framework, coupled with the phasing out of free allowances, and CBAM, will make CO₂ emissions more costly for producers and manufacturers of aluminium. This move encourages them to consider emission costs in their business decisions. In the long term, facing high transition costs, producers will be incentivised to invest in greener technologies and seek the most efficient methods to reduce emissions.

In the short term, however, it will be crucial for EU-based aluminium producers to manage the risks associated with carbon pricing effectively, employing suitable hedging strategies to mitigate these risks. Furthermore, the roll-out of the CBAM is poised to influence pricing dynamics for global aluminium producers exporting to the EU, with the cost of CBAM certificates needing to be factored into the total costs. Consequently, global producers will be exposed to CBAM-related EU carbon pricing as well.

²⁰ For example, in September 2023, the International Council on Mining and Metals ("ICMM") published guidance to improve the mining and metals industry's disclosure of scope 3 emissions <https://www.icmm.com/en-gb/guidance/environmental-stewardship/2023/scope-3-emissions-accounting-and-reporting>

With the introduction of the CBAM, EU aluminium importers will now be obliged to obtain CBAM certificates. Consequently, EU aluminium importers will also be subject to CO2 price volatility, especially as the availability of free allowances diminishes.

CBAM certificates, while not tradeable, are priced in line with the internal EU carbon market (ETS certificates), based on the average auction price each week. This pricing mechanism aims to mirror the EU ETS prices closely, ensuring CBAM's effectiveness as a measure against carbon leakage and its compliance with World Trade Organization (“WTO”) standards.

The LME is considering the impact this will have on its market, and whether there is a need for it to step in with a hedging opportunity. Currently, there is no accurate financial instrument which will allow an efficient hedge of CBAM certificates. Hedging using EU ETS prices alone will not provide an accurate price since the CBAM certificates mirror the average weekly price.

Section D – discussion questions

D1) Would the introduction of a hedging opportunity in relation to CBAM certificates be useful or of interest to the market?

D2) Are you currently considering the impacts of carbon price risk on your business?

5.4. Data on LMEpassport

One of the core principles of the LME’s roadmap for sustainability, as outlined in the 2020 Sustainability Discussion Paper, was that greater voluntary disclosures of data could support the market as it evolved its priorities in respect of sustainability, including measurement methodologies and materiality thresholds. LMEpassport was launched with a view to facilitating this process, making a broad range of sustainability data easily available to market participants from mining through to consumption and recycling.

Since the launch of LMEpassport, the LME has seen strong uptake from producers, with the number of sustainability credentials disclosed increasing 63% from 2022 to 2023, and over half of LME-listed brands showcasing their sustainability achievements on the platform. Over time, LMEpassport has evolved and to continue to meet increased market demands and improve accessibility of data. In 2023, the LME added producer profiles, allowing a summarised view of LME-listed producer activity and highlighting their ESG credentials in a centralised, easily digestible page. It has also included a “side-by-side” tab to allow for easier comparison of sustainability data, and targets – so that producers can be transparent about their aims and track progress over time. The LME also continues to increase the number of credentials available to be disclosed against, such as new ratings and standards. The LME would like to continue supporting the broader market, ensuring that information shared on LMEpassport remains relevant, useful and trustworthy.

To deliver this, the LME is considering expanding how data can be added to the platform. At present, in order for sustainability information to be shared on LMEpassport, the onus is on the producer to voluntarily provide and upload this information. Prior to upload on LMEpassport, often much of this sustainability information is already publicly available; however, one of the key premises of LMEpassport was to create efficiency, allowing the platform to function as a “one-stop-shop” for the value chain and other interested stakeholders to see all relevant information in a clear, consistent, digestible format without having to locate or read through numerous sustainability reports or other sources. Additionally, the benefit to the producers is that it becomes a centralised resource to which they can direct suppliers or interested parties, thus removing the need to populate multiple sustainability questionnaires, surveys and information requests.

Given this, and the amount of publicly available information, the LME is considering adding an additional route for data uploads – an opt-out system. In short, this would allow the LME to upload any publicly available sustainability data onto LMEpassport, on behalf of the producer. One example of this would be the publication of responsible sourcing Step 5 reports as a separate disclosure in order to make them more accessible to the market. Should a producer prefer not to showcase this information, it will have the ability to login and delete the credentials from public view. The LME is interested in hearing market views on this, and in particular, whether the LME should have to inform a producer each time it uploads data on its behalf.

A number of the LME's responsible sourcing requirement outcomes are already shared via LMEpassport. Producers that have chosen to go down Track B (Audited Red Flag Assessment) or D (secondary materials track) have their relevant disclosures shared on LMEpassport as part of the transparency aspect of the requirements. The LME is proposing to extend this to include the other tracks (the audit report for Track A brands (Recognised Alignment-Assessed Standard), and the red flag assessment for Track C brands (Published Red Flag Assessment), albeit post 2025 as per the responsible sourcing requirements. This would provide greater transparency and clearly identify which track a producer is using to comply. In addition, the ISO 14001 and 45001 certificates submitted by the producer would be made public on the platform.

The LME is also considering the feasibility of utilising LMEpassport as a submission point for brand producers to submit their relevant compliance documents for responsible sourcing, removing duplication of efforts in sending them in an email and then having to upload any of this information to LMEpassport thereafter.

Section E – discussion questions

E1) Do you agree with the proposed opt-out model for granting LME permission to upload sustainability information to LMEpassport if the information is already publicly available elsewhere? Should the LME limit the scope of what could be uploaded in this manner?

E2) As a producer, would you want to receive notification if your sustainability information had been uploaded to LMEpassport?

E3) The LME's sustainability taxonomy on LMEpassport details a broad range of ESG metrics, certifications, and standards. As a user (current or future) of LMEpassport, are there additional data areas you would like to see included on LMEpassport?

E4) Do you agree with the LME's responsible sourcing requirements outcomes being shared via LMEpassport?

5.5. Traceability

The LME's sustainability work to date has encompassed aspects of traceability; in particular, with the LME's requirement that all brands implement the OECD Guidance, which necessitates the identification of risks across the supply chain. However, the LME has begun to see interest not only in assurance of practices, but in full disclosure of traceability information from mine to end product. As a result, the LME is interested to hear more from the market as to its views regarding the role of traceability, and the potential opportunities, advantages, and risks.

The growth of interest in traceability includes greater regulatory focus. Several laws, acts and initiatives incorporate traceability, including the US Inflation Reduction Act and the EU's battery passport, which requires manufacturers to provide verifiable evidence that certain percentages of material sourcing and manufacturing take place within certain countries. Additionally, several market users are adopting and piloting various traceability solutions; however, there is still a lack of consensus around best practice and the most suitable technology. With significant variance in metals procurement and manufacturing processes, it is difficult to develop a one-size-fits-all solution. The LME believes that greater consistency

across traceability, as well as associated transparency, could provide important market benefits, such as easier identification of risks, cross-industry collaboration and carbon reduction strategies. The LME is supportive of efforts by regulators and corporates to align efforts to reduce technology adoption hurdles and is itself investigating the possibility of taking further action in this space, from small steps – such as signposting sources of information in LMEpassport – to more significant measures, such as direct involvement in the collation and dissemination traceability data.

Section F – discussion questions

- F1)** Are you utilising / taking part / running any traceability programmes at your company? Or being asked by your value chain for information?
- F2)** Do you think there is value in providing a traceability solution? Where is the value coming from?
- F3)** Would you welcome greater support from the LME on traceability? If so, what is your view on how the LME can add value in this space?
- F4)** The LME is interested in understanding the range of traceability offerings within the industry. If you are a traceability technology provider, please comment on the below areas:
 - What technology do you use?
 - Please describe your data collection process/methodology.
 - Does your platform consider GHG emissions?
 - How do you verify the underlying data?
 - How does your platform support sustainability progress? And what are the benefits to the wider supply chain?
 - How does your offering aid collaboration with other stakeholders in the value chain?

5.6. Circular economy

Many metals boast the ability to be recycled repeatedly, ensuring that products reaching their end-of-life phase can be revitalised and reincorporated into the production cycle for new metal creation. This practice means the value chain is already substantially circular, but recycling rate data also shows significant potential for further enhancements. By recycling metals, the production loop gradually closes, minimising landfill waste and helping meet the escalating production demand driven by the green transition.

The metal recycling sector stands as a pivotal force in advancing both the circular economy and climate policy objectives. It plays a crucial role in conserving primary resources, reducing energy consumption, and lowering CO2 emissions. Despite its significant contributions, global policy frameworks have yet to fully reward the environmental benefits of metal recycling which could further boost its circularity.

The LME is aware of the increased emphasis that a number of businesses are putting on circular economy, ensuring that better processes, standards and measurements are being implemented into standard operational practice. Coupled with the fact that scrap-based contracts have seen strong growth in volumes traded (the LME Steel Scrap CFR Turkey contract traded more than 8 million tonnes in 2023 and continues to grow year-to-date in 2024), the LME would like to understand current market practices within the space.

In addition to the LME's contracts, in 2023, the LME participated in the Roundtable on the Responsible Recycling of Metals ("RRRM") which assessed current metal recycling practices and standards. A resounding conclusion of the roundtable was that there are significant human health and environmental impacts associated with recycled metals, as well as significant opportunities to contribute to economic development and livelihoods through recycling. However, creating policies to manage both the negative and positive impacts of recycling are challenging due to the disparate nature of recycled material, inconsistencies in terminology globally, and lack of data.

Some of the possible outcomes and starting points shared within this roundtable included:

- (1) To have policy makers work to align definitions globally including for example: origin, recycled content, waste, and embodied carbon.
- (2) To define and treat metallic bearing products and waste streams as valuable materials for recycling and improve incentives to recover them in a responsible manner.
- (3) Buyers of secondary metals should begin due diligence on their supply chains by separating purchased secondary material into four categories: pre-consumer closed loop, pre-consumer open loop, post-consumer identifiable sources, and post-consumer mixed grades.

Subsequently, the LME is seeking to understand what role it may provide in supporting policy makers, metals producers, and the market in the shift to a more circular economy, while recognising the continued demand for both primary and recycled materials.

Section G – discussion questions

G1) Does your company utilise the ISO 59000 standard series for circular economy?

G2) Does your company use any standards based on circular economy principles? If so, why do you use this standard in particular?

G3) Does your company measure recycled content of materials produced and is this figure audited?

G4) Would you like to see more standards or certifications based on the circular economy principles?

G5) Do you think the LME should introduce more scrap contracts? If so, please specify and explain your rationale.

5.7. Environmental Product Declarations (“EPDs”)

EPDs are documents that evaluate the environmental impact of a product based on its entire life cycle. They are internationally recognised for their transparency and can provide essential environmental information. Although typically used for downstream products, an EPD is based on information from a Life Cycle Assessment (“LCA”), detailing each stage of a product’s life cycle, from raw material extraction to manufacturing, use, and disposal. It includes both environmental data (such as water usage, hazardous waste or use of renewable energy) and descriptions of the manufacturing process and the product itself.

There are a variety of EPD formats available, with some reflecting average industry data and others more specific to a manufacturer. Although historically EPDs were more commonplace within the construction industry, many market users have expressed interest in the LME allowing producers to list EPDs for their metals on LMEpassport.

EPDs, however, are not without their challenges, and carry several of the issues outlined above, including ensuring accuracy, consistency of scope and measurement, standardisation across industries, and practicality of delivery for producers. Used well, they can provide invaluable information, simplified and streamlined across a value chain – less usefully, they run the risk of overwhelming producers with unreasonable demands for detail, becoming unwieldy with data for which no verification is available.

The LME believes that EPDs could provide a useful tool to the market in centralising a wealth of standardised and accurate information. As such, the LME is interested to know the extent to which its market is already using EPDs, or to which it thinks they could add value, and how the LME could provide support in further developments.

EPDs, however, are not the only type of lifecycle assessments (“LCAs”) being carried out and the LME would like to consider other standardised methods of evaluating the environmental impact of a product over its lifetime.

Section H – discussion questions

H1) Are EPDs commonplace within your business (either as the requestor or receiver)?

H2) Should the LME play a role in helping to standardise the format of EPDs or play a role in encouraging producers to complete these?

H3) Do you believe that public LMEpassport sustainability pages act as a convenient place for EPDs to be utilised?

6. APPENDIX I: A GUIDE TO CBAM

Please note that this section of the paper contains a summary of the LME’s interpretation of CBAM and the EU ETS. The aim of this section is to assist market participants and interested parties with their response to the LME consultation; however, it should not be relied upon by such parties to comply with their obligations under the EU ETS or any other regulations, systems or laws.

A glossary of terms is included at Section 6.5.

6.1. The European Union Emissions Trading System (“EU ETS”) and CBAM

The EU ETS was initiated in 2005 and sets an annually decreasing cap on greenhouse gas emissions for companies in specified sectors, including aluminium. This diminishing cap aims to lower carbon emissions and promote cleaner industrial practices. Companies covered by the EU ETS either receive a certain number of free emission allowances, or must buy them to comply with this cap. Any allowances not used can be sold or carried over to the following year, encouraging efficient emissions management. The gradual reduction of the cap is designed to steadily decrease overall emissions.

Complementing the EU ETS, CBAM imposes a charge on the carbon content of certain imported goods, designed to match the cost borne by similar EU-produced goods under the EU ETS, adjusting for any carbon pricing present in the country of origin of the import. The key function of CBAM is to ensure that imported goods face the same carbon costs as those produced in the EU, maintaining competitive balance, and preventing a shift of production to regions with less stringent emission regulations.

6.2. Timeline for CBAM

In line with the EU’s climate strategy, the introduction of CBAM for importers will be in stages, mirroring the phasing out of ETS free allowances for EU producers. This strategy aims to consistently lower carbon emissions by applying similar carbon pricing to both imports and EU-made products, reinforcing the EU’s commitment to environmental and climate objectives.

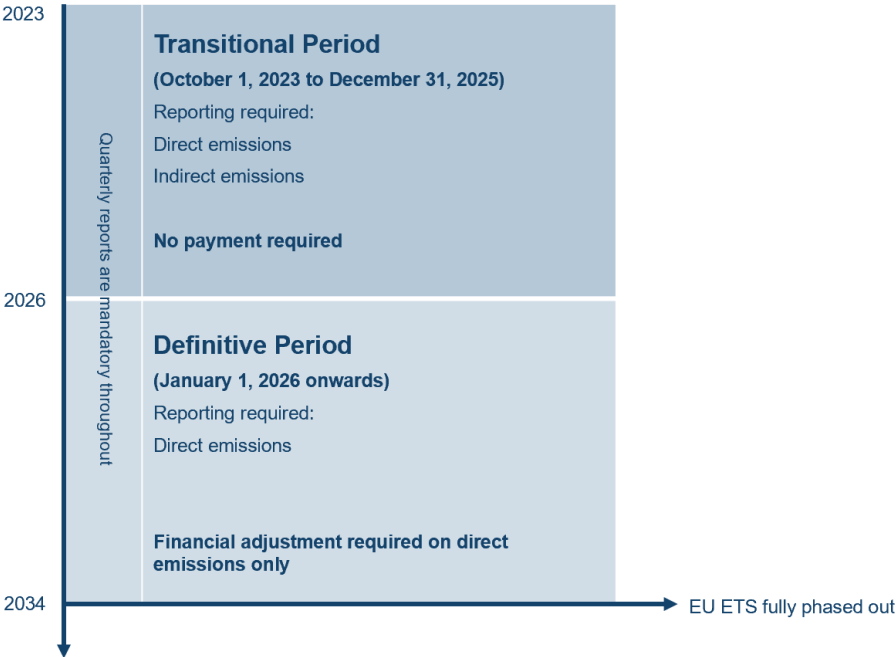


Figure 5: EU CBAM timelines, separating transitional and definitive periods.

Transitional Period (1 October 2023 to 31 December 2025):

This phase serves as a “learning period” where CBAM importers are obligated to report direct and indirect embedded emissions data. Importantly, during this phase, importers are not subject to the financial

adjustment for these embedded emissions. However, non-compliance, such as failure to submit quarterly CBAM reports in a timely manner, may incur penalties.

Definitive Period (1 January 2026 to 31 December 2033):

From 2026, as the free allocation under the EU ETS is gradually phased out, the financial adjustment on direct embedded emissions (scope 1) will need to be paid. This relationship is outlined in Figure 6.

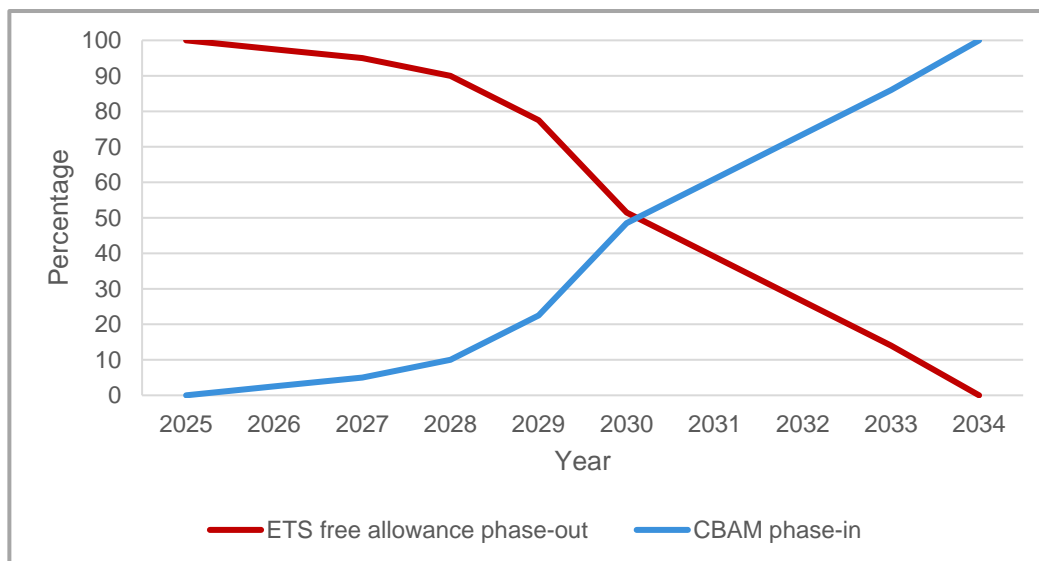


Figure 6: EU ETS phase-out and CBAM phase-in

This figure illustrates the correlation between the gradual elimination of the EU ETS and the phased introduction of CBAM. As the ETS free allowances are phased out, there is an inverse increase in the financial adjustments due to the introduction of CBAM.

6.3. Who does CBAM affect?

EU importers

The “reporting declarant”, typically the importer (although importers have the option to delegate a reporting declarant to oversee the CBAM process on their behalf), is responsible for reporting the embedded emissions associated with imported goods. These embedded emissions are reported to the European Commission via the “CBAM report” through the CBAM Registry on a quarterly basis. It is worth noting that only importers will have access to this registry. Reports must be submitted by importers within one month following the conclusion of each quarter, with a two-month period following this where the entrant can edit the submitted report after the quarter’s end. For the first two reporting periods (31 January and 30 April), additional leniency has been granted whereby data can be subsequently corrected until 31 July 2024.

An EU importer could be anyone importing aluminium products under the relevant CN codes (the EU’s eight-digit common customs tariff coding system), examples include fabricators, commodity traders taking physical delivery, and Original Equipment Manufacturers (“OEMs”).

Non-EU installation operators

Aluminium producers (also referred to as “installation operators” within the EU regulation) responsible for producing CBAM goods assume a pivotal role in the CBAM process. These operators have direct access to emissions data generated during the aluminium production process, and as such, can play a key role in monitoring and reporting of embedded emissions associated with goods exported to the EU.

Without this information, importers will have to use default values to move these goods into the EU, which comes with a financial markup to ensure that metal with accurate data is incentivised. Additionally, communication on the carbon price paid in the country of origin, if any, is essential.

What can EU importers do if they do not receive the information they need from a producer?

Non-EU producers should provide the information on embedded emissions for goods subject to CBAM to the EU-registered importers of their goods. In cases where this information is not available at the time when the goods are being imported, EU importers will be able to use default values to determine the number of certificates they need to purchase. Default values have only been published by the EU Commission for the transition period and not for the definitive period yet. However, both will be designed to incur a financial markup, as above, to ensure environmental integrity by incentivising accurate data and as such, it will be more favourable for importers to use the calculation of embedded emissions provided by a producer, than to use the default values.

Aluminium market

Non-EU operators include those within the primary and secondary aluminium production process. For aluminium alloys, the importer needs to report the content of alloys, if the content of alloying elements exceeds 1%. Note that where the product contains more than 5% alloying elements, the embedded emissions of the product should be calculated as if the mass of alloying elements were unwrought aluminium from primary smelting.

Third-party verifiers

In the definitive period (from 1 January 2026), third-party auditors become crucial contributors to the CBAM process as reporting declarants must submit verified CBAM reports (in contrast to the transitional period where verifications are not mandatory). Installation operators may decide to have their embedded emissions verified in the transition period as a means to improve their data quality, and to prepare for the requirements of the definitive period.

6.4. Requirements for CBAM

6.4.1. Reporting obligations

Installation operators are responsible for reporting to importers, who subsequently relay this information to the relevant national authorities, ultimately culminating in reporting to the European Commission.

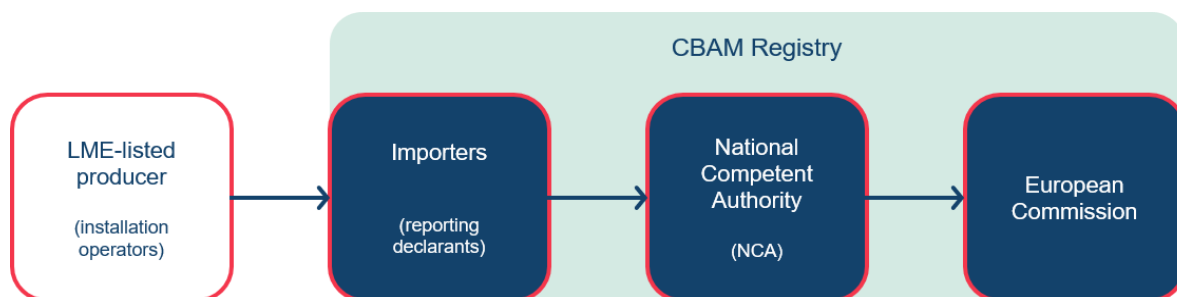


Figure 7: information flow to meet EU CBAM reporting obligations

During the transitional period (1 October 2023 – 31 December 2025), importers are mandated to provide quarterly reports, comprising:

1. The total quantity of each type of goods, quantified in metric tonnes, specifying the installation's country of origin.
2. The total direct embedded emissions, denoted in metric tonnes of CO₂e emissions per tonne of each type of good.

3. Total indirect embedded emissions, encompassing electricity consumption and the applicable emissions factor.
4. Disclosure of the carbon price, if applicable, paid in the country of origin.

When it comes to communicating embedded emissions, operators have the flexibility to either calculate (or receive from suppliers) their actual emissions data (primary data) or employ default values (if they are unable to collect the necessary data or do not want to calculate their actual emissions).

Primary data

The installation operators can use one of the following two methods:

- The “calculation-based” approach relies on estimating emissions based on fuel and material quantities, along with corresponding emission factors. These will be based on data from the International Energy Agency (“IEA”) provided by the European Commission in the CBAM Transitional Registry.
- The “measurement-based” approach necessitates measuring greenhouse gas concentrations and flue gas flow for each emission source.

Finally, for a short period of time during the transitional period (until 31 July 2024), installation operators have the freedom to adopt alternative methods, subject to approval for emissions monitoring in their respective jurisdictions, as long as they yield similar emissions coverage and accuracy.

Default values

Default values, disseminated by the EU Commission, reflect the average emissions intensities corresponding to each exporting country and commodity, with an additional margin incorporated to ensure environmental integrity by incentivising accurate data. The magnitude of this margin will be informed by data collected during the transitional period.

Importers must be cognisant that default values may exceed actual emissions, resulting in higher costs. Thus, a rigorous approach to supply chain emission accounting holds the potential for substantial cost savings.

6.4.2. The omission of indirect emissions in the definitive period

From the start of the definitive period, importers will only have to pay carbon tax on direct emissions within the aluminium sector. The EU has omitted indirect emissions from the initial CBAM carbon pricing regulations to align with the current configuration of the EU ETS. Presently, the EU ETS offers financial mechanisms to offset the higher electricity costs companies face due to carbon pricing passed on to them. The EU cannot impose a carbon price on electricity consumed in foreign production while these mechanisms are in place, as WTO rules prevent countries from advantaging imports relative to domestic products.

The European Commission has committed to including indirect emissions “as soon as possible” and plans to deliver a report on their inclusion and the associated methods by the end of the transitional period in 2025. During this period, the Commission is tasked with reporting to the European Parliament and the Council on potential expansions of the CBAM scope to indirect emissions and other products vulnerable to carbon leakage. The report will also explore extending the scope to include transport's embedded emissions (scope 3) and other goods and services down the value chain that might be at risk of carbon leakage in the future.

It is also important to highlight that the UK CBAM proposal includes a financial adjustment for indirect emissions, with other regions possibly adopting similar measures.

6.4.3. Scope of emissions (emissions boundaries)

Primary aluminium smelting

Primary aluminium is produced by the electrolysis of alumina. During electrolysis, oxygen reacts with the carbon anode to form carbon dioxide and carbon monoxide emissions. Different types of primary aluminium cell systems are used, including the “pre-baked” and “Söderberg” electrolytic cells. Aluminium in its molten state accumulates at the cathode, settling at the cell's base, where it is periodically siphoned into crucibles and transported to the casting facility. Here, it is kept in furnaces for additional processing before being cast into ingots, bars, sows, or similar.

Crucially, there are no relevant CBAM precursors (specific input materials in the manufacturing process which themselves have embedded emissions that must also be monitored and reported) for this production process.

The EU Commission states the system boundaries for direct emissions monitoring for primary smelting production route as encompassing:

- CO₂ emissions from the consumption of electrodes or electrode pastes.
- CO₂ emissions from any fuels used (e.g. for drying and pre-heating of raw materials, heating of electrolysis cells, heating required for casting).
- CO₂ emissions from any flue gas treatment, from soda ash or limestone if relevant.
- Perfluorocarbon emissions caused by anode effects.

For indirect emissions measurements, electricity consumed by the production process should also be monitored.

Secondary aluminium smelting

Secondary aluminium is produced mainly from post-consumer aluminium scrap collected for recycling (although unwrought aluminium may also be separately added). The scrap undergoes sorting by type and requires pre-treatment actions like de-coating or de-oiling before being melted down in furnaces suited to the material type (often rotary or reverberatory, though induction furnaces are also an option). The process includes alloying, melt treatment (via salt addition or chlorination), and ends with casting into various forms. The melting process typically employs fuels like natural gas, LPG, or fuel oil.

The EU Commission states the system boundaries for direct emissions monitoring for secondary smelting production route as encompassing:

- CO₂ emissions from any fuels used for drying and pre-heating of raw materials, used in melting furnaces, in pre-treatment of scrap such as de-coating and de-oiling, and combustion of the related residues, and fuels required for casting of ingots, billets or slabs.
- CO₂ emissions from any fuels used in associated activities such as treatment of skimmings and slag recovery.
- CO₂ emissions from any flue gas treatment, from soda ash or limestone if relevant.

For indirect emissions measurements, electricity consumed by the production process should also be monitored. A relevant CBAM precursor here is unwrought aluminium from other sources, although unlike the primary aluminium process, there are no PFC emissions from the secondary aluminium process.

Aluminium scrap is the main material input to the secondary melting production route. Scrap (whether pre-consumer or post-consumer) is treated as a raw material and so has zero embedded emissions. It is worth noting that where the product of this process contains more than 5% alloying elements, the embedded emissions of the product shall be calculated as if the mass of alloying elements were unwrought aluminium from primary smelting.

Distinguishing CBAM from Carbon Footprint of Products (“CFP”) requirements

A Carbon Footprint of Products (“CFP”) entails an exhaustive assessment of emissions across a product's entire life cycle, encompassing emissions arising from upstream and downstream processes. This comprehensive evaluation spans activities from production and mining to transportation, use, and end-of-life disposal.

In contrast, CBAM is tailored to address emissions that would apply to aluminium as if it were produced within the framework of the EU ETS. Consequently, the boundaries for emissions within the EU ETS and CBAM are narrower than those governing CFP. Notably, CBAM excludes downstream emissions (e.g. those from product usage and end-of-life disposal), as well as emissions arising from material transportation.

6.5. Glossary

Installation: A stationary technical unit where a production process is carried out.

CN code: The Combined Nomenclature (“CN”) is the EU's eight-digit coding system, comprising the Harmonised System (“HS”) codes with further EU subdivisions. It serves the EU's common customs tariff and provides statistics for trade within the EU, and between the EU and the rest of the world. All LME physically deliverable aluminium contracts come under the CN code "CN 7601 – Unwrought Aluminium".

Indirect embedded emissions: The emissions from the production of electricity, which is consumed during the production processes of goods, irrespective of the location of the production of the consumed electricity.

Direct embedded emissions: Direct emissions refer to the greenhouse gas emissions released directly during the production at the installation level. The focus is on carbon dioxide (“CO₂”) and perfluorocarbons (“PFCs”), the most significant greenhouse gases in aluminium manufacturing.

Default values: The default value is the intensity of emissions as stipulated by the EU Commission. It expresses the quantity of CO₂ emissions per measurement unit of product. Per legislation, the definition is a value, which is calculated or drawn from secondary data, which represents the embedded emissions in goods.

Aggregated goods category: This refers to goods that are grouped based on their similar characteristics. These categories are created to simplify the administration and implementation of CBAM. Instead of assessing and monitoring goods individually by their CN codes, goods within the same aggregated goods category are treated and evaluated collectively. All LME-deliverable aluminium contracts come under the aggregated goods category "unwrought aluminium".

Precursor goods: Specific input materials in the manufacturing process which themselves have embedded emissions which must also be monitored and reported. The embedded emissions in precursor goods (both direct and indirect emissions, as above) must be included if relevant in the calculation of total embedded emissions for the final good. The embedded emissions of the relevant precursor goods are added to attributed emissions of the final good.

CBAM registry: To ensure an efficient implementation of reporting obligations, the EU Commission has developed an electronic database which will collect the relevant CBAM information. Importers may access to the CBAM Registry through this link: <https://customs.ec.europa.eu/taxud/uums/cas>.

7. APPENDIX II: LME CBAM emissions reporting form



Appendix II - LME
CBAM emissions
reporting form

8. APPENDIX III: LME RULEBOOK (REDLINE)

PART 6

SPECIAL CONTRACT RULES FOR HIGH GRADE PRIMARY ALUMINIUM

1. QUALITY

The aluminium delivered under this contract must:

- (a) be:
 - (i) Primary aluminium with impurities no greater than in the registered designation P1020A in the North American and International Registration Record entitled "International Designations and Chemical Composition Limits for Unalloyed Aluminium" (revised January 2018), or
 - (ii) Primary aluminium that conforms to the registered designation Al99.70 in the GB/T 1196-2018 Standard entitled "Unalloyed aluminium ingots for remelting", or
 - (iii) For warrants created up to and including 31 December 2009 primary aluminium of minimum 99.70% purity with maximum permissible iron content 0.20% and maximum permissible silicon content 0.10%.
- (b) be in the shape of ingots each weighing not less than 9 kilos and not more than 26 kilos and T-bars or sows weighing not more than 788 kilos.
- (c) be of brands listed in the LME approved list.

2. SIZE OF LOT

25 Tonnes (2% either more or less).

3. WARRANTIES

3.1 Warrants shall be for 25 tonnes (2% either more or less).

3.2 The aluminium in each Warrant shall consist of one brand which is listed as being good delivery, and of one shape and dimension, subject, in the case of ingots, to the necessity of including different shapes and dimensions at the bottom of each bundle for the purpose of stability and must be in bundles not exceeding 2.0 tonnes securely strapped for safe handling and transport without bundle distortion and breakage.

3.3 Each Warrant shall state:

- (a) the name of the brand;
- (b) the country / region of origin;
- (c) the shape;

- (d) the date(s) and reference number(s) of the certificate(s) of analysis lodged with the Warehouse;
- (e) the weight;
- (f) the number of bundles of ingots or the number of T-bars or sows making up each lot.

3.4 Each Warrant must bear the following clause;

WARNING: the buyer is advised that this metal may contain crevices and hidden recesses holding entrapped moisture. The metal should be handled and processed with this possibility in mind. Entrapped moisture may cause an explosion if the metal is introduced into a melting furnace without proper drying.

4. **Certificates of analysis**

Requirement for eCOA to place metal on Warrant

4.1 Each delivery of a Lot of aluminium to a Warehouse for placing on Warrant must be accompanied by an eCOA in order for the Warehouse to be able to place such metal on Warrant.

4.2 Where the aluminium comprising the relevant Lot was produced on or after a date to be specified by the Exchange by way of Notice, in order for such Lot to be warrantable, the Lot of aluminium must be accompanied by an Enhanced eCOA and a completed LME Carbon Adjustment Mechanism (“CBAM”) emissions reporting form, as specified by the Exchange by way of Notice. The Exchange may update the CBAM emissions reporting form from time to time by way of Notice.

4.3 With effect from the date specified by way of Notice pursuant to Special Contract Rule 4.2 above, where a Warehouse is unable to identify the production date of a Lot of aluminium and the relevant Lot is not accompanied by an eCOA, the Warehouse is permitted to produce a Basic eCOA pursuant to the terms of any agreements between the Exchange and the relevant Warehouse. In such circumstances, the Warehouse may place such Lot on Warrant following the creation of such Basic eCOA.

Voluntary creation of an eCOA (metal produced before the date specified by way of Notice pursuant to Special Contract Rule 4.2 above)

4.4 For metal produced before the date specified by way of Notice pursuant to Special Contract Rule 4.2 above and where an Enhanced eCOA has not been created in respect of the underlying metal by its producer, a Basic eCOA may be produced by one of the following:

- (a) Members, pursuant to Special Contract Rule 4.7 below;
- (b) Warehouses, pursuant to the terms of any agreements between the Exchange and the relevant Warehouse (including but not limited to the Warehouse Agreement);
- (c) the producer of the underlying metal; or
- (d) any other categories of persons or entities as the Exchange may specify from time to time.

For these purposes, each of the above shall be able to upload Paper COAs into the eCOA System for the purposes of producing the Basic eCOA.

Requirements for Production of an eCOA

- 4.5 In order to be a valid eCOA, any eCOA that is produced in respect of aluminium must demonstrate compliance with one of the relevant standard and grades listed in Special Contract Rule 1(a)(i) or (ii) by illustrating the detected level of impurity for each element. Warrants created up to and including 31 December 2009, may additionally demonstrate compliance with the standard and grade listed in Special Contract Rule 1(a)(iii). In all cases, it must be possible to cross-reference the production cast reference on the metal to identical numbers on the eCOA.
- 4.6 An Enhanced eCOA for a Lot of aluminium may only be created by the producer of the metal. Any eCOA created by a producer of metal which is produced on or after the date specified by way of Notice pursuant to Special Contract Rule 4.2 above must be an Enhanced eCOA.
- 4.7 Where a Member (or any other person) elects to produce a Basic eCOA, it must:
- (a) upload the complete and correct Paper COA relating to the underlying metal;
 - (b) enter the correct information into the eCOA System as requested by the eCOA System for the purposes of creating the Basic eCOA and as specified by the Exchange from time to time; and
 - (c) use all reasonable skill, care and attention when using the eCOA System.

5. ADDITIONAL REQUIREMENTS FOR ALUMINIUM WARRANTS

- 5.1 The listed brand name and/or brand identifiable logo must be indelibly marked on each ingot within a bundle or on each T-bar or sow.
- 5.2 In the case of ingots, the production cast reference must be indelibly marked on each ingot within the bundle or on the surface of the bundle or on a durable bundle label. In the case of T-bars and sows, the production cast reference must be marked on each T-bar or sow either indelibly or by a durable bundle label.
- 5.3 If a Warrant relates to metal, in respect of which an eCOA has not been produced, the Warehouse is obliged to submit to the identified holder of any Warrant the Certificate(s) of Analysis or copies thereof, on request.
- 5.4 All documentation for placing aluminium on Warrant must include the English language.
- 5.5 Straps replaced by a Warehouse must be of corrosion resistant material and in compliance with LME strapping standards.

6. MAJOR CURRENCY

US dollars

7. TESTING OF WARRANTED METAL

If the Exchange believes that the conditions at (a) and (b) below are satisfied, the Exchange may instruct an LSA to undertake such tests as are necessary to form a reasonable opinion on whether or not metal on Warrant conforms with these rules. Where the Exchange reasonably believes that the situation requires it, those tests may be conducted without the prior consent of the Warrant holder. The tests will be at the LME's cost.

The conditions referred to above are: -

- (a) There are reasonable grounds to suspect that metal on Warrant does not comply with these rules.
- (b) There is a risk of disruption to the LME's market.

SPECIAL CONTRACT RULES FOR ALUMINIUM ALLOY

1. QUALITY

The aluminium alloy delivered under this contract must be:

- (a) Aluminium alloy conforming to one of the specifications listed below:
- (i) A380.1 produced in conformity with The Aluminum Association Inc. specification (2015);
 - (ii) 226 produced in conformity with LME 226 as described below:

| Elements | Composition, % (m/m) |
|-------------------------------|----------------------|
| Cu | 2.0 – 3.5 |
| Si | 8.0 – 11.0 |
| Mg | 0.1 – 0.5 |
| Zn | 1.2 max |
| Fe | 1.0 max |
| Mn | 0.1 – 0.4 |
| Ni | 0.3 max |
| Sn | 0.1 max |
| Ti | 0.15 max |
| Pb | 0.2 max |
| Others | 0.05 max each |
| Al | Remainder |
| The sum of 'others' 0.15% max | |

- (iii) AD12.1 produced in conformity with JIS H2118-2006, Class 12: (Note: this specification to be read in conjunction with the provision that there be an allowance as follows: Others, total 0.50% max, Al remainder).

- (b) In the shape of ingot, small sows (four way entry sows), large sows (low profile sows) and T-bars.

- (c) Of brands listed in the LME-approved list of aluminium alloy brands.

2. SIZE OF LOT

20 tonnes (2% either more or less).

3. WARRANTIES

- 3.1 Warrants shall be for 20 tonnes each (2% either more or less).

- 3.2 The aluminium alloy in each Warrant shall consist of one brand which is listed as being good delivery and of one shape and dimension.
- 3.3 Each lot shall contain aluminium alloy derived from no more than five production batches, and, in the case of ingots, each bundle shall contain aluminium alloy from only one production batch.
- 3.4 Each Warrant shall state:
- (a) the name of the brand;
 - (b) the country / region of origin;
 - (c) the shape;
 - (d) the date(s) and reference number(s) of the certificate(s) of analysis lodged with the Warehouse;
 - (e) the weight;
 - (f) the number of bundles of ingots, small sows, large sows or T-bars making up each lot;
 - (g) each Warrant must bear the following clause;

WARNING: the buyer is advised that this metal may contain crevices and hidden recesses holding entrapped moisture. The metal should be handled and processed with this possibility in mind. Entrapped moisture may cause an explosion if the metal is introduced into a melting furnace without proper drying.

4. **CERTIFICATES OF ANALYSIS**

Requirement for eCOA to place metal on Warrant

- 4.1 Each delivery of a Lot of aluminium alloy to a Warehouse for placing on Warrant must be accompanied by an eCOA in order for the Warehouse to be able to place such metal on Warrant.
- 4.2 Where the aluminium alloy comprising the relevant Lot was produced on or after a date to be specified by the Exchange by way of Notice, in order for such Lot to be warrantable, the Lot of aluminium alloy must be accompanied by an Enhanced eCOA and a completed LME Carbon Adjustment Mechanism (“CBAM”) emissions reporting form, as specified by the Exchange by way of Notice. The Exchange may update the CBAM emissions reporting form from time to time by way of Notice.
- 4.3 With effect from the date specified by way of Notice pursuant to Special Contract Rule 4.2 above, where a Warehouse is unable to identify the production date of a Lot of aluminium alloy and the relevant Lot is not accompanied by an eCOA, the Warehouse is permitted to produce a Basic eCOA pursuant to the terms of any agreements between the Exchange and the relevant Warehouse. In such circumstances, the Warehouse may place such Lot on Warrant following the creation of such Basic eCOA.

Voluntary creation of an eCOA (metal produced before the date specified by way of Notice pursuant to Special Contract Rule 4.2 above):

- 4.4 For metal produced before the date specified by way of Notice pursuant to Special Contract Rule 4.2 above and where an Enhanced eCOA has not been created in respect of the underlying metal by its producer, a Basic eCOA may be produced by one of the following:
- (a) Members, pursuant to Special Contract Rule 4.7 below;
 - (b) Warehouses, pursuant to the terms of any agreements between the Exchange and the relevant Warehouse (including but not limited to the Warehouse Agreement);
 - (c) the producer of the underlying metal; or
 - (d) any other categories of persons or entities as the Exchange may specify from time to time.

For these purposes, each of the above shall be able to upload Paper COAs into the eCOA System for the purposes of producing the Basic eCOA.

Requirements for Production of an eCOA:

- 4.5 In order to be a valid eCOA, any eCOA that is produced in respect of aluminium alloy must demonstrate compliance with one of the relevant standards and grades listed in Special Contract Rule 1(a) (1), (2) or (3) by illustrating the detected level of impurity for each element. In all cases, it must be possible to cross-reference the production cast reference on the metal to identical numbers on the eCOA.
- 4.6 An Enhanced eCOA for a Lot of aluminium alloy may only be created by the producer of the metal. Any eCOA created by a producer of metal which is produced on or after the date specified by way of Notice pursuant to Special Contract Rule 4.2 above must be an Enhanced eCOA.
- 4.7 Where a Member (or any other person) elects to produce a Basic eCOA, it must:
- (a) upload the complete and correct Paper COA relating to the underlying metal;
 - (b) enter the correct information into the eCOA System as requested by the eCOA System for the purposes of creating the Basic eCOA and as specified by the Exchange from time to time; and
 - (c) use all reasonable skill, care and attention when using the eCOA System.

5. ADDITIONAL REQUIREMENTS FOR ALUMINIUM ALLOY WARRANTS

- 5.1 The listed brand name must be indelibly marked on each ingot, sow and T-bar.
- 5.2 The production cast reference and alloy grade reference must be indelibly marked on each ingot within the bundle or on the top surface of the bundle or on a durable bundle label and on each sow and T-bar.
- 5.3 If a Warrant relates to metal, in respect of which an eCOA has not been produced, the Warehouse is obliged to submit to the identified holder of any Warrant the Certificate(s) of Analysis or copies thereof, on request.
- 5.4 All ingots and sows shall be produced by a single pouring process. "Multi-pour" or "capping" the surface with additional metal after the ingot or sow is formed is not permitted.
- 5.5 All ingots, T-bars and sows delivered under the contract shall be flat in order to permit safe stacking and handling using forklifts.

- 5.6 Metal surfaces shall be smooth and free of open shrinkage, porosity, layers and seams.
- 5.7 The metal must be free of the visible presence of foreign substances.
- 5.8 The edges and surfaces of metal shall be free of sharp edges, spurs and flashings that might present safety hazards in handling.
- 5.9 All documentation for placing aluminium alloy on Warrant must include the English language.
- 5.10 Straps replaced by a Warehouse must be of corrosion resistant material and in compliance with LME strapping standards.

6. **SHAPES, WEIGHTS AND DIMENSIONS**

(a) Ingots

Ingots shall weigh not less than 4 kilos and not more than 25 kilos. Each ingot in each bundle and lot shall be of the same weight and dimensions but not exceed 800mm in length; the only exception to be the cast feet for the purpose of bundle stability.

Bundles shall weigh not less than 500 kilos and not more than 1000 kilos of equal weight and dimension in each lot suitable for stacking. One makeweight bundle in any one lot is permissible. Bundles must be securely strapped for safe handling and transport without bundle distortion and breakage.

(b) Small sows (four-way entry sows)

Small sows shall weigh not less than 408 kilos and not more than 590 kilos. Each small sow in each lot shall be of the same weight and dimensions.

Dimensions shall be within the permitted range detailed as follows:

Top Length and width shall be the same, between 837mm - 990mm.

Bottom Length and width shall be the same, between 406mm - 559mm.

Height Between 304mm – 432mm.

Shape The tapering of all four sides should include an indentation to allow for the safe and easy handling by forklift trucks.

(c) Large sows (low profile sows)

Large sows shall weigh not less than 300 kilos and not more than 726 kilos. Each large sow in each lot shall be of the same weight and dimensions.

Dimensions shall be within the permitted range detailed as follows:

Top Length shall be between 1015mm – 1320mm.

Width shall be between 812mm – 1142mm.

Bottom Length shall be between 900mm – 1320mm.

Width shall be between 406mm – 520mm.

Height Between 200mm – 305mm.

Shape The tapering of the long sides should include an indentation to allow for the safe and easy handling by forklift trucks.

(d) T-bars

T-bars shall weigh not less than 408 kilos and not more than 726 kilos. Each T-bar in each lot shall be of the same weight and dimensions.

Top Length shall be between 837mm – 1320mm.

Width shall be between 760mm – 1015mm.

Bottom Length shall be between 837mm – 1320mm.

Width shall be between 406mm – 634mm.

Height Overall between 254mm – 432mm.

To shoulder minimum 76mm.

Shape The indentation of the shoulder on the long sides should be a minimum of 101mm (4 inches) on each side and allow for the safe and easy handling by forklift trucks.

7. **MAJOR CURRENCY**

US dollars

8. **TESTING OF WARRANTED METAL**

If the Exchange believes that the conditions at (a) and (b) below are satisfied, the Exchange may instruct an LSA to undertake such tests as are necessary to form a reasonable opinion on whether or not metal on Warrant conforms with these rules. Where the Exchange reasonably believes that the situation requires it, those tests may be conducted without the prior consent of the Warrant holder. The tests will be at the LME's cost.

The conditions referred to above are:

(a) There are reasonable grounds to suspect that metal on Warrant does not comply with these rules.

(b) There is a risk of disruption to the LME's market.

SPECIAL CONTRACT RULES FOR NORTH AMERICAN SPECIAL ALUMINIUM ALLOY

1. QUALITY

The aluminium alloy delivered under this contract must be:

- (a) Aluminium alloy conforming to the "LME NA380.1" specification (an LME modification of The Aluminum Association Inc. A380.1 specification (1989)), produced in conformity with the following specification:

| Element | Minimum | Maximum |
|-------------------------|---------|---------|
| Copper | 3.00 | 3.50 |
| Silicon | 8.50 | 9.50 |
| Iron | 0.80 | 1.00 |
| Magnesium | - | 0.10 |
| Zinc | - | 3.00 |
| Manganese | - | 0.45 |
| Nickel | - | 0.50 |
| Tin | - | 0.10 |
| Lead | - | 0.10 |
| Titanium | - | 0.10 |
| Chrome (chromium) | - | 0.10 |
| Others – each | - | 0.10 |
| Others – total | - | 0.50 |
| Sludge = Fe + 2Mn + 3Cr | | 1.80 |

Production must be filtered.

- (b) In the shape of ingots, small sows (four way entry sows), large sows (low profile sows) and T-bars.
- (c) Of brands listed in the LME-approved.

2. SIZE OF LOT

20 tonnes (2% either more or less).

3. WARRANTS

3.1 Warrants must be for 20 tonnes (2% either more or less).

3.2 The aluminium alloy in each Warrant must consist of one brand which is listed as being good delivery and of one shape and dimension.

- 3.3 Each lot must contain aluminium alloy derived from no more than five production batches, and, in the case of ingots, each bundle must contain aluminium alloy from only one production batch.
- 3.4 Each Warrant must state:
- (a) the name of the brand;
 - (b) the country / region of origin;
 - (c) the shape;
 - (d) the date(s) and reference number(s) of the certificate(s) of analysis lodged with the Warehouse;
 - (e) the weight;
 - (f) the number of bundles of ingots, small sows, large sows or T-bars making up each lot.

3.5 Each Warrant must bear the following clause;

WARNING: The buyer is advised that this metal may contain crevices and hidden recesses holding entrapped moisture. The metal should be handled and processed with this possibility in mind. Entrapped moisture may cause an explosion if the metal is introduced into a melting-furnace without proper drying.

4. CERTIFICATES OF ANALYSIS

Requirement for eCOA to place metal on Warrant

- 4.1 Each delivery of a Lot of aluminium alloy to a Warehouse for placing on Warrant must be accompanied by an eCOA in order for the Warehouse to be able to place such metal on Warrant.
- 4.2 Where the aluminium alloy comprising the relevant Lot was produced on or after a date to be specified by the Exchange by way of Notice, in order for such Lot to be warrantable, the Lot of aluminium alloy must be accompanied by an Enhanced eCOA and a completed LME Carbon Adjustment Mechanism (“CBAM”) emissions reporting form, as specified by the Exchange by way of Notice. The Exchange may update the CBAM emissions reporting form from time to time by way of Notice.
- 4.3 With effect from the date specified by way of Notice pursuant to Special Contract Rule 4.2 above, where a Warehouse is unable to identify the production date of a Lot of aluminium alloy and the relevant Lot is not accompanied by an eCOA, the Warehouse is permitted to produce a Basic eCOA pursuant to the terms of any agreements between the Exchange and the relevant Warehouse. In such circumstances, the Warehouse may place such Lot on Warrant following the creation of such Basic eCOA.

Voluntary creation of an eCOA (metal produced before the date specified by way of Notice pursuant to Special Contract Rule 4.2 above):

- 4.4 For metal produced before the date specified by way of Notice pursuant to Special Contract Rule 4.2 above and where an Enhanced eCOA has not been created in respect of the underlying metal by its producer, a Basic eCOA may be produced by one of the following:
- (a) Members, pursuant to Special Contract Rule 4.7 below;

- (b) Warehouses, pursuant to the terms of any agreements between the Exchange and the relevant Warehouse (including but not limited to the Warehouse Agreement);
- (c) the producer of the underlying metal; or
- (d) any other categories of persons or entities as the Exchange may specify from time to time.
- (e) For these purposes, each of the above shall be able to upload Paper COAs into the eCOA System for the purposes of producing the Basic eCOA.

Requirements for Production of an eCOA:

- 4.5 In order to be a valid eCOA, any eCOA that is produced in respect of aluminium alloy must demonstrate compliance with the specification listed in Special Contract Rule 1(a) by illustrating the detected level of impurity for each element. In all cases, it must be possible to cross-reference the production cast reference on the metal to identical numbers on the eCOA.
- 4.6 An Enhanced eCOA for a Lot of aluminium alloy may only be created by the producer of the metal. Any eCOA created by a producer of metal which is produced on or after the date specified by way of Notice pursuant to Special Contract Rule 4.2 above must be an Enhanced eCOA.
- 4.7 Where a Member (or any other person) elects to produce a Basic eCOA, it must:
 - (a) upload the complete and correct Paper COA relating to the underlying metal;
 - (b) enter the correct information into the eCOA System as requested by the eCOA System for the purposes of creating the Basic eCOA and as specified by the Exchange from time to time; and
 - (c) use all reasonable skill, care and attention when using the eCOA System.

5. ADDITIONAL REQUIREMENTS FOR NASAAC WARRANTS

- 5.1 The LME listed brand name must be indelibly marked on each ingot, sow and T-bar.
- 5.2 For ingots, the production cast reference and alloy grade reference must be indelibly marked on each ingot within a bundle or on the top surface of a bundle or on a durable label attached to the bundle. For sows and T-bars the production cast reference and alloy grade reference must be indelibly marked either directly on the surface or on a durable label attached to the metal.
- 5.3 If a Warrant relates to metal in respect of which an eCOA has not been produced, the Warehouse is obliged to submit to the identified holder of any Warrant the Certificate(s) of Analysis or copies thereof, on request.
- 5.4 All ingots and sows must be produced by a single pouring process. "Multi-pour" or "capping" the surface with additional metal after the ingot or sow is formed is not permitted.
- 5.5 All ingots, sows and T-bars delivered under this contract must be flat in order to permit safe stacking and handling using forklifts.
- 5.6 Metal surfaces must be smooth and free of open shrinkage, porosity, layers and seams.
- 5.7 The metal must be free of the visible presence of foreign substances.

- 5.8 The edges and surfaces of metal must be free of sharp edges, spurs and flashings that might present safety hazards in handling.
- 5.9 All documentation for placing aluminium alloy on Warrant must include the English language.
- 5.10 Straps replaced by a Warehouse must be of corrosion resistant material and in compliance with LME strap standards.

6. **SHAPES, WEIGHTS AND DIMENSIONS**

(a) Ingots

Ingots must weigh not less than 4 kilos (9lbs) and not more than 17.3 kilos (38lbs). Each ingot in each bundle and lot must be of the same weight and dimensions but not exceed 800mm (35 inches) in length; the only exception to be the cast feet for the purpose of bundle stability.

Bundles must weigh not less than 500 kilos (1100lbs) and not more than 1000 kilos (2200lbs) of equal weight and dimension in each lot suitable for stacking. One makeweight bundle in any one lot will be permissible. Bundles must be securely strapped for safe handling and transport without bundle distortion and breakage.

(b) Small sows (four-way entry sows)

Small sows must weigh not less than 408 kilos (900lbs) and not more than 590 kilos (1300lbs). Each small sow in each lot must be of the same weight and dimensions.

Dimensions shall be within the permitted range detailed as follows:

| | |
|--------|--|
| Top | Length and width must be the same, between 837mm – 990mm (33 – 39 inches). |
| Bottom | Length and width must be the same, between 406mm – 559mm (16 – 22 inches). |
| Height | Between 304mm – 432mm (12 – 17 inches). |
| Shape | The tapering of all four sides must include an indentation to allow for the safe and easy handling by forklift trucks. |

(c) Large sows (low profile sows)

Large sows must weigh not less than 500 kilos (1100lbs) and not more than 726 kilos (1600lbs). Each large sow in each lot must be of the same weight and dimensions.

Dimensions shall be within the permitted range detailed as follows:

| | |
|--------|--|
| Top | Length must be between 1015mm – 1320mm (40 – 52 inches). Width must be between 812mm – 1142mm (32 – 45 inches). |
| Bottom | Length must be between 1015mm – 1320mm (40 – 52 inches). Width must be between 406mm – 533mm (16 – 21 inches). |
| Height | Between 216mm – 305mm (8.5 – 12 inches). |

Shape The tapering of the long sides should include an indentation to allow for the safe and easy handling by forklift trucks.

(d) T-bars

T-bars shall weight not less than 408 kilos (900lbs) and not more than 726 kilos (1600lbs). Each T-bar in each lot shall be one of the same weight and dimensions.

Dimensions shall be within the permitted range detailed as follows:

Top Length must be between 837mm – 1320mm (33 – 52 inches).

Width must be between 760mm – 1015mm (30 – 40 inches).

Bottom Length must be between 837mm – 1320mm (33 - 52 inches).

Width must be between 406mm – 634mm (16 – 25 inches).

Height Overall between 254mm – 432mm (10 – 17 inches).

To shoulder minimum 76mm (3 inches).

7. **MAJOR CURRENCY**

US dollars

8. **TESTING OF WARRANTED METAL**

If the Exchange believes that the conditions at (a) and (b) below are satisfied, the Exchange may instruct an LSA to undertake such tests as are necessary to form a reasonable opinion on whether or not metal on Warrant conforms with these rules. Where the Exchange reasonably believes that the situation requires it, those tests may be conducted without the prior consent of the Warrant holder. The tests will be at the LME's cost.

The conditions referred to above are:

(a) There are reasonable grounds to suspect that metal on Warrant does not comply with these rules.

(b) There is a risk of disruption to the LME's market.