European Aluminium
ANYTHING BUT BASIC

REFORMING THE EU ETS FOR A COMPETITIVE & DECARBONISED EUROPEAN ALUMINIUM VALUE CHAIN POST 2030

POSITION PAPER

Brussels, May 2026

Executive Summary & policy recommendations

We ask that the ETS cap trajectory is aligned with realistic technology readiness and decarbonisation commercial potential for the aluminium industry: the ETS must continue towards 2050. This entails reducing the LRF and reforming the MSR. The ETS must be accompanied by strong carbon leakage protection through the prolongation of Free Allowances, ensuring CBAM has no loopholes, and the continuation of the ETS indirect Carbon Cost compensation system beyond 2030. A large share of ETS auction revenue must be earmarked for derisking R&D and making industrial decarbonization technologies commercially viable for ETS sectors.

The post-2030 revision of the EU Emissions Trading System (ETS) will be decisive for the future of Europe's aluminium industry and the EU's broader industrial competitiveness agenda. Aluminium is a strategic material for electrification, renewable energy deployment, lightweight mobility, defence, aerospace, packaging, and circular economy applications. Yet the European aluminium value chain is increasingly under pressure from structurally[1] high electricity costs, carbon leakage, global overcapacity, and growing import dependence.

European aluminium producers are already among the lowest-carbon producers globally, with primary aluminium emissions around 60% below the global average. However, the sector operates under conditions that fundamentally limit the effectiveness of unilateral carbon pricing: aluminium is globally traded, priced on the London Metal Exchange (LME), and produced through highly electricity-intensive or energy-intensive recycling/refining processes with limited commercially viable breakthrough technologies available in the short and medium term. Electrification technologies or alternative renewable energy sources (e.g. hydrogen) are not yet available on the required industrial scale and still require the associated infrastructure. A unilateral European or ineffective global CO2 pricing system leads to a disadvantage in international competition.

Without targeted reforms, the ETS risks accelerating deindustrialisation, curtailing investments, undermining the circular economy and replacing low-carbon European production with more carbon-intensive imports. The ETS must therefore evolve into a framework that simultaneously supports decarbonisation, industrial resilience, and strategic autonomy, while preserving instruments that have proven effective in preventing carbon leakage.

For the European aluminium industry, the EU ETS impacts both direct and indirect carbon costs (ETS cost pass-through in the power price). Such costs are not faced by our competitors on the global market. To address competitiveness concerns

[1] These include rapidly increasing grid costs and system-related charges as we move towards a more decarbonised and flexible energy system

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for our sector, it is essential that EU ETS reform reflects this through a broad policy mix that tackles both these aspects, as proposed in this paper.

1. Recognising Aluminium as a Strategic Net-Zero Industry

Aluminium is indispensable for Europe's green and digital transitions. It enables renewable energy systems, electricity grids, electric vehicles, lightweight transport, and recycling-based circular value chains. At the same time, the sector faces structural exposure to international competition and rising energy costs. The ETS framework must better recognise the strategic role of aluminium for Europe's industrial resilience, electrification, and strategic autonomy; the climate mitigation potential of recycling aluminium; and the sector's inability to absorb or pass through carbon costs.

Policy Recommendations (see section 1 here)

- ❑ Adapt the ETS design to reflect the technological and economic abatement potential of aluminium production as a critical and strategic material, as well as the sector's exposure to global competition and the realities of abatement technologies available (see section 3 here for more detail).
- ❑ Prioritise aluminium projects within ETS funding instruments and industrial decarbonisation schemes.
- ❑ Complement carbon pricing with targeted support instruments, including state aid and Carbon Contracts for Difference schemes (CCfDs) tailored to the aluminium value chain.

2. Strengthening Carbon Leakage Protection and preserving existing mechanisms beyond 2030

Carbon leakage has already increased emissions in the aluminium sector through curtailments of sustainable European production, declining investment, and increased reliance on imports from regions with higher carbon intensity, where all new investments are happening.

The main competitiveness challenge for aluminium stems from indirect ETS costs embedded in electricity prices, which are amplified by structurally high European power, grid and system costs. Aluminium smelters consume very large amounts of electricity and cannot pass additional costs on to customers because prices are determined globally through the London Metal Exchange (LME). Alumina refining, recycling and aluminium transformation facilities also face increasing competitiveness pressures due to rising energy (natural gas and electricity) prices and processing costs, while operating in highly competitive international markets where cost increases cannot be passed on.

To address carbon leakage associated with the phase out of free allocation, the EU has introduced the Carbon Border Adjustment Mechanism (CBAM). However, for the aluminium sector, it does not address our competitive challenges adequately and, as designed today, will lead to carbon leakage rather than prevent it. It remains an untested mechanism. It should not replace existing carbon leakage protections.

While extending free allocation can help address competitiveness concerns, it should be seen as only one element within a broader policy mix that tackles both direct and indirect carbon costs.

In fact, even if free allocation for direct costs is prolonged for electro-intensive industries, high carbon prices would still continue to drive up indirect carbon costs. Therefore, further adjustments to the ETS (outlined in the next section) - including the extension of ICC beyond 2030 – are necessary to prevent excessively high carbon prices and costs.

Policy Recommendations (see section here)

- ❑ Keep indirect emissions out of CBAM for aluminium.
- ❑ Preserve indirect cost compensation beyond 2030 and maintain free allocation for aluminium until CBAM is fully effective and all loopholes are addressed.
- ❑ Extend CBAM to downstream aluminium products and close loopholes linked to scrap and circumvention risks.
- ❑ Freeze free allocation fallback benchmarks for alumina and aluminium recycling installations until 2030.
- ❑ Introduce dedicated ETS benchmarks or sector specific fallback benchmarks for alumina refining and aluminium recycling post-2030.
- ❑ Remove the current cap limiting the use of ETS revenues for indirect cost compensation.
- ❑ Develop a CBAM export solution covering both ETS costs and CBAM-related increases in raw material costs.

3. Reforming the ETS Cap Trajectory, the Market Stability Reserve and Article 29a

The current ETS cap trajectory does not reflect the technological realities of hard-to-abate sectors such as aluminium. Under the current Linear Reduction Factor (LRF), the introduction of new ETS allowances would reach zero in 2039, despite the lack of commercially deployable breakthrough technologies across large parts of the aluminium value chain. The Market Stability Reserve (MSR) also risks increasing price volatility and market scarcity, undermining investment predictability for energy-intensive industries.

Policy Recommendations (see section 3 here)

- ❑ Adjust the ETS cap trajectory, including a lower LRF, to align with a realistic technology readiness and commercially possible decarbonisation trajectory so allowances decline toward zero by 2050 rather than 2040.
- ❑ Remove the mandatory 57% auctioning share to reduce activation of the Cross-Sectoral Correction Factor (CSCF).
- ❑ Reduce the MSR intake rate and increase the release threshold to better reflect future scarcity conditions.
- ❑ Permanently remove the invalidation mechanism and allow allowances held in reserve to be reintroduced when market conditions require. Also, allow the reintroduction of allowances that were previously invalidated, if needed, to preserve market liquidity.

4. Financing Aluminium Decarbonisation

Decarbonising the European aluminium value chain will require at least €33 billion in investment by 2050, including industrial electrification, recycling expansion, hydrogen infrastructure, CCS/CCU, and breakthrough smelting technologies. For hard-to-abate sectors, CCUS technologies are important decarbonisation pathways for addressing residual emissions. The ETS and CCUS regulatory frameworks should be adapted to ensure that captured carbon in hard-to-abate sectors is appropriately accounted for and not treated as emitted.

Current ETS funding mechanisms remain insufficiently adapted to the sector's long investment cycles and high dependence on electricity.

Policy Recommendations (see section 4 here)

- ❑ Obligation for Member States to redirect a larger share of ETS revenues toward industrial decarbonisation projects and indirect cost compensation schemes
- ❑ Create dedicated funding windows for strategic sectors such as aluminium.
- ❑ Ensure equal support for mature electrification technologies and breakthrough innovations.
- ❑ Provide long-term CAPEX and OPEX support frameworks of at least 15 years.
- ❑ Support long-term renewable Power Purchase Agreements (PPAs) and industrial self-generation capacity, including the cost of matching intermittent renewable generation with the baseload power needs of highly electrified industries
- ❑ Simplify access to ETS funding and improve transparency regarding Member States' use of ETS revenues.
- ❑ Adjust Innovation Fund and Heat Auction rules to better accommodate aluminium recycling and downstream facilities.
- ❑ Develop long-term Carbon Contracts for Difference (CCfDs) financed by EU funds and tailored to energy-intensive and hard-to-abate sectors such as aluminium, in order to de-risk industrial decarbonisation investments and provide sufficient long-term visibility for breakthrough technologies and carbon capture projects.
- ❑ Adapt the ETS and CCU regulatory frameworks for hard-to-abate sectors to ensure that capture carbon is not treated as emitted.

5. Introducing Flexibility Mechanisms for Hard-to-Abate Emissions

Certain residual emissions in the aluminium value chain will remain unavoidable in the medium term. Additional flexibility mechanisms are therefore needed to preserve competitiveness while supporting decarbonisation. The integration of high-integrity international credits and certified permanent carbon removals could provide cost-effective pathways for addressing residual industrial emissions.

Policy Recommendations (see section 5 here):

- ❑ Integrate EU-certified permanent carbon removals into ETS compliance by 2028.
- ❑ Allow limited use of high-integrity international credits under Article 6.4 of the Paris Agreement for direct ETS compliance
- ❑ Develop robust certification systems for international and EU-based removals.
- ❑ Ensure technology-neutral treatment of certified permanent carbon removals.
- ❑ Enable chain-of-custody accounting models for carbon capture and utilisation (CCU).

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Contents

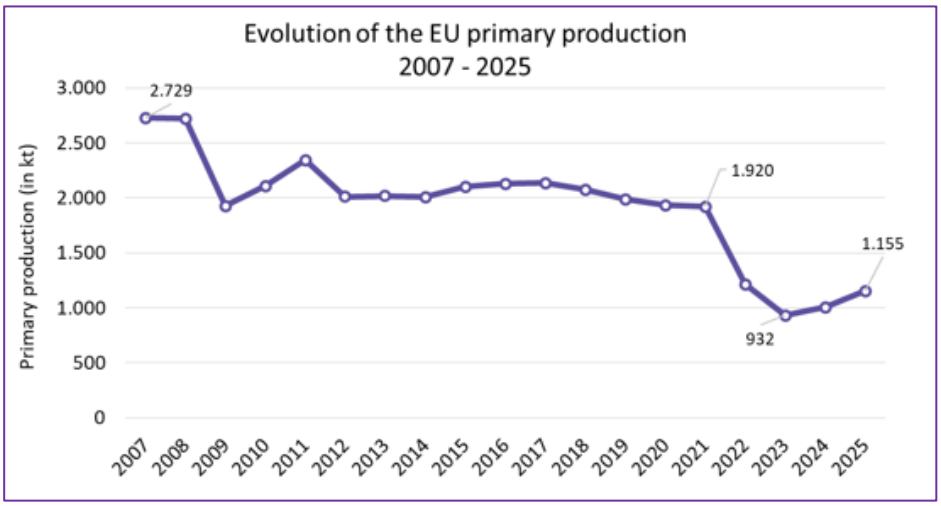
Introduction

The upcoming revision of the EU Emissions Trading System (ETS) and its Market Stability Reserve (MSR) will be decisive in determining whether Europe can deliver on its climate ambitions while preserving its industrial base. At a time when the European Union is placing competitiveness, resilience, and strategic autonomy at the centre of its policy agenda, the ETS must evolve to support—not undermine—these objectives.

European Aluminium supports the EU's objective of climate neutrality and recognises the ETS as a central instrument to deliver emissions reductions. However, while the ETS has proven effective in coal-to-gas switching in the power sector, its current design does not adequately reflect the realities of globally exposed, energy-intensive industries such as aluminium. The deeper decarbonization of the power sector via renewables has also been driven mainly by subsidies (over 1 trillion Euros in total), abundant access to private investment and lack of exposure to global competition.

For the aluminium industry, the ETS has instead only regrettably generated costs without triggering corresponding emissions reductions at scale, because key abatement technologies and enabling infrastructure are not yet commercially available. This has weakened industrial competitiveness and accelerated carbon leakage. The consequences are already visible. Europe has lost a significant share of its primary aluminium production capacity over the past decades, while global production has expanded in regions with higher carbon intensity.

Without targeted adjustments, the post-2030 ETS risks reinforcing this trend, undermining both climate objectives and Europe's strategic autonomy. The challenge is to transform the ETS into an instrument that makes investments in decarbonisation economically sustainable for heavy industry, in the same way it has made a business case for investments in the power sector.



The current share of the ETS emissions between the power sector (57%) and the Energy Intensive Industries (EIIs) (43%) was defined ahead of the 2013-2020 phase, based on the historical share observed in the 2005-2007 phase adjusted only for new entrants in 2008-2012, and also needs to be updated. Industry share should therefore be increased to adequately reflect the different rates at which both sectors are decarbonizing.

The aluminium sector is both a strategic enabler of decarbonisation and a highly exposed global commodity. It operates under conditions that fundamentally limit the effectiveness of a unilateral carbon price applied only in Europe: it is fully exposed to international competition, relies heavily on electricity, and lacks commercially viable breakthrough technologies in the short to medium term.

The ETS must therefore evolve. It must remain ambitious, but also become more flexible, coherent, and aligned with industrial realities. This includes ensuring effective carbon leakage protection, addressing indirect carbon costs, ensuring the ETS continues towards 2050, reforming the MSR, and strengthening funding mechanisms such as the Industrial Decarbonisation Bank to enable real investments.

1. The Aluminium value chain: an enabler for Europe's Energy Transition & strategic autonomy

Aluminium plays a central role in enabling the European Union's climate and industrial objectives. It is indispensable for electrification, renewable energy systems, transport decarbonisation, and circular economy solutions.

At the same time, the sector is highly electricity-intensive (e.g. for the already electrified primary production process), globally traded, and operates on tight margins with no ability to pass through costs. European producers are among the least carbon-intensive globally, but further reductions are constrained by the lack of commercially available breakthrough technologies at an industrial scale and insufficient access to affordable low-carbon energy. This creates a fundamental tension: the sector is essential for the transition, yet increasingly exposed to policy-induced cost pressures.

Together with extensive public financial support, the ETS has delivered results in the power sector, but these conditions do not apply to aluminium. Carbon pricing does not drive emissions reductions in the same way due to lack of abatement options and global competition. Instead, it functions primarily as a cost driver, thereby reducing competitiveness.

Broader Policy implications for ETS design post 2030:

- ❑ **The EU's climate policies, including the ETS design post 2030, must become a tool to encourage sustainable low carbon and circular aluminium production in Europe**
- ❑ **The Aluminium value chain requires tailored approaches for the design of carbon leakage protection measures and cap trajectory, given the limited abatement possibilities, price taker status on global markets and significant cost pressures from global competitors**
- ❑ **ETS Funding mechanisms must prioritise the decarbonisation and strengthening of the European Aluminium value chain, with ad hoc calls for the sector at the European and national level**
- ❑ **Complement carbon pricing with sector-specific measures and funding schemes (State Aid or European CfD schemes) to support the decarbonisaiton and competitiveness of the aluminium industry.**

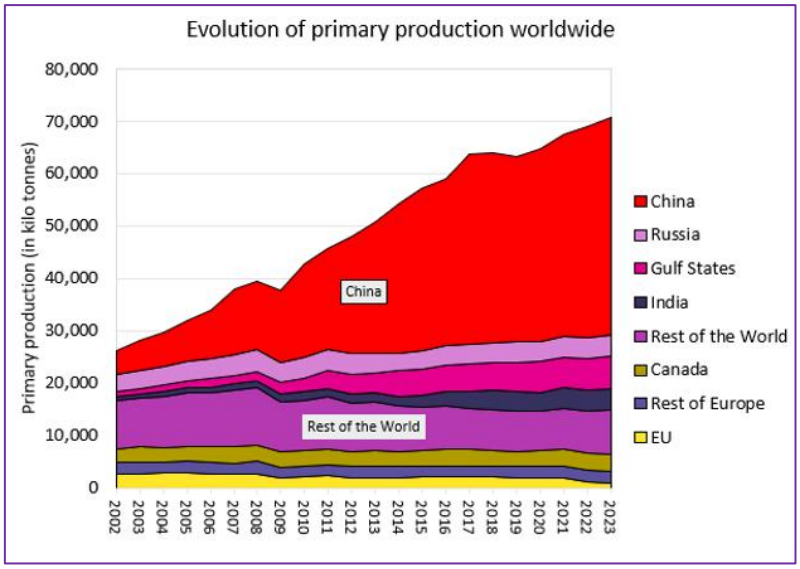
2. Carbon Leakage Protection measures

Carbon leakage in the European aluminium sector is no longer a theoretical risk. It is already materialising through declining EU production (the EU has lost two thirds of its primary production capacity since 2008), reduced investment, and growing dependence on imports.

New investments needed to meet the growing global demand for aluminium are happening exclusively in other regions of the world, with a carbon footprint that is 2 or sometimes even 3 times higher than the footprint of the European plants that are shutting down. Without effective safeguards, Europe risks accelerating the deindustrialisation of one of its most strategic value chain.

For primary aluminium production in Europe, which is already largely decarbonised, the central competitiveness challenge stems from indirect carbon costs embedded in electricity prices. Electricity suppliers can pass ETS-related costs on to consumers, while aluminium producers are price takers. They have no equivalent possibility to pass these costs on to the market, because the price is set globally on the London Metals Exchange (LME).

The entry into force of the definitive phase of the CBAM in January 2026 does not resolve this challenge and, in its current form, risks exacerbating it.



2.1 Why CBAM does not solve the carbon leakage issue and free allocation must continue for aluminium

CBAM remains an immature and untested mechanism which, as currently designed, still contains significant loopholes and uncertainty regarding its consequences. Meanwhile, its effectiveness as a carbon leakage measure remains uncertain[2].

If CBAM is not fixed, free allowances must remain until the CBAM mechanism is proven effective and fully capable of preventing carbon leakage, following the Draghi Report's recommendations[3]

The Key CBAM Fixes needed are:

- ❑ **Indirect emissions must be kept out of CBAM for aluminium.**
- ❑ **Close the scrap loophole by an equal treatment of pre- and post-consumer scrap as precursor under CBAM & implement a single default value because of the mismatch between scrap prices in Europe due to the effect of CBAM on raw material inputs in Europe and outside Europe, where scrap can be used at a lower cost, thereby undermining European aluminium companies' competitiveness.**
- ❑ **Extend CBAM to more downstream goods and at the 4-digit level for each CN code included.**
- ❑ **Delete the possibility to use secondary route default value in CBAM declarations.**
- ❑ **Lower the mass-based threshold exemption to 5 tonnes as aluminium is a high value to weight material**
- ❑ **The emergency break (Article 27a) proposed in the Commission's proposal published in December 2025[4], should be maintained and refined to avoid any detrimental consequences on the value chain of a strategic and critical raw material for Europe.**

[2] Please see European Aluminium's position on CBAM Downstream scope extension and anti-circumvention measures here.
[3] Draghi, M. 2024. The Future of European Competitiveness Part B: In-depth analysis and recommendations LINK
[4] COM(2025) 989 final 2025/0419 (COD), CBAM scope extension to downstream goods and anti-circumvention measures LINK

2.2 Introduce dedicated product benchmarks or sector-specific fallback benchmarks for Alumina & Secondary aluminium (recycling/cast houses/semi-fabrication)

In the upcoming revision of the ETS Directive, the EU Commission should be empowered to design two separate ETS Product Benchmarks for Alumina refining and aluminium recycling (e.g. aluminium refining/remelting/cast house/downstream)[5]. These processes of the value chain today both fall under the non-sector-specific ETS heat & fuel consumption benchmarks, which in some cases are used by aluminium installations producing primary, secondary and downstream goods, also covered by the CBAM. Any future benchmark approach must adequately reflect the wide range of process routes, products and input materials used across the sector.

These two new ETS Product benchmarks, or sector-specific fallback benchmarks, are urgently needed. Otherwise, the EU's objective of increasing the resilience of the Union's supply chains for critical and strategic raw materials and accelerating the shift towards a more circular and low-carbon industry will be undermined.

This is because the current technologies are at their limits: while the two aluminium product benchmarks (Primary Aluminium and anode) are obtained comparing peer performance (and therefore ensuring that these benchmarks reflect the best performance for these processes), the generic non-sector specific fallback benchmarks do not compare similar plants and the methodology instead compares and groups a wide variety of ETS installations and sectors. This leads to benchmarks that are artificially low, since they are set by installations in certain sectors that can run on biomass or use electrified processes.

Instead, Alumina production, aluminium recycling, aluminium cast houses, and aluminium semi-fabrication work at high temperatures (above 400°C and up to 1050°C) and do not have sufficient alternatives (e.g. hydrogen or available low carbon electricity), the needed infrastructure and the commercially available decarbonisation technologies to shift to reduce their cost exposure.

For alumina: A 50% reduction in the fallback benchmarks would bring carbon costs to an unsustainable level of ~11% of the global alumina price, up from the current ~6%. This would inevitably push the European plants over the edge and out of the market[6].

For aluminium recycling, the 50% reduction of the fallback benchmarks would bring up carbon costs to an unaffordable 10% of the EBITDA[7], which international competitors are not expected to pay. This at a time when the segment is under stress due to high energy prices and scrap leakage, jeopardising further investments in recycling capacity and putting at risk the European circularity potential benefits.

As a result, the current exposure to the fallback benchmarks simply increases costs for producers running these processes in Europe, without stimulating any further decarbonisation.

Therefore, the upcoming ETS Review should:

[5] To recall, during the last revision of the ETS Directive (concluded in May 2023), both Parliament and Council provided a mandate to the EU Commission to review the existing ETS Benchmarks, considering circularity and new amendments to the ETS Directive about the benchmarking methodology. For example, Alumina is also now specifically referenced in Annex I among the activities covered by the Directive together with Primary Aluminium. This means that the case of a separate benchmark for Alumina and aluminium recycling was already valid.

[6] European Aluminium surveyed the 5 alumina plants still operating in the EU (February 2026)

[7] Based on data collected by European Aluminium from plants currently under the scope of the EU ETS and affected by the reduction of the benchmarks

- **In the Short term (2026-2030) freeze the fallback benchmarks to 2021-2025 levels until 2030 just for alumina refining and aluminium recycling/transformation installations[8], to avoid doing needless damage to a strategic and vulnerable sector (and the application of the CSCF)[9].**
- **In the Mid-long term (post-2030) create dedicated product benchmarks or sector-specific fallback benchmarks for alumina and recycling/cast houses/semi-fabrication, that accurately reflect the abatement potential in these segments of the value chain[10].**

2.3 Extending & strengthening ETS indirect cost compensation beyond 2030

European aluminium producers face a double burden - paying carbon costs both directly (for process emissions) and indirectly (via power prices) - while global competitors face neither. This applies even if using 100% renewable power due to the unique combination of ETS and marginal pricing system on power in Europe. European producers face CO2 costs passed on by the power sector via the electricity price, which can amount to 617.4 EUR per tonne of aluminium, which corresponds to a substantial 27.6% of the global price for aluminium set at the LME (2600 $/t = 2222 EUR/t).[11] Moreover, the global aluminium price is cyclical, and the burden is even more severe in downturns e.g., when the aluminium price is lower (e.g. 2200 $/t = 1890 EUR/t), indirect ETS costs alone represent a massive 32.7% of the sale price. In fact, the energy bill makes up a substantial portion of total costs - sometimes as high as 30–40%.[12]

Unlike other ETS covered commodities, aluminium prices are set globally at the London Metals Exchange. Therefore, aluminium producers are price takers that cannot pass these costs on to consumers. These costs make aluminium smelting in Europe economically unviable. If they are not offset, these cost will trigger further plant closures and progressively offshoring the production of a base metal for the clean, digital, and defence transitions and strategic autonomy as well as risking 1 million direct and indirect jobs.

The ETS State aid Guidelines allow Member States to partially compensate electricity-intensive consumers for these costs. This indirect cost compensation is a vital relief mechanism, especially given the expected rise in indirect carbon costs, due to the projected rise in carbon prices until the mid-2030s.[13][14]

To date, almost all countries[15] hosting a primary aluminium smelter have granted or are planning to grant compensation to aluminium producers. This reflects an economic reality: under current European electricity market conditions and global aluminium pricing, primary aluminium smelters cannot remain internationally competitive without effective indirect cost compensation.

[8] DG CLIMA data [see slides presented at EU Member States during the Climate Change Committee (CCC) Meeting on 30/4/2026] indicates that a targeted approach for aluminium plants would only affect 76 installations (3%) out of the total of 2566 fuel sub installations benchmark and less than 24 plants under the heat benchmark. For Alumina, there are currently only 5 alumina plants in Europe (1 is not operating since June 2022).

[9] If existing benchmarks will not be frozen to 2021-2025 levels, the free allocation should be adjusted retroactively based on the new benchmarks once the new rules and methodology is in place

[10] See design options in the Annex to European Aluminium Consultation to the FAR Review (pp. 8-16), December 2023 (here)

[11] The average CO2 emission factor from the ETS Guidelines (representing the pass-through of ETS indirect costs) was 0.63 tCO2/MWh for the period 2021-2025. Assuming an ETS price of 70 EUR/t and assuming that an aluminium smelter needs to consume ~14 MWh electricity to produce one tonne of aluminium, indirect costs amount to 617.4 EUR per tonne of aluminium. This translates into a massive 27.8% of the global price for aluminium set at the LME (2600 $/t = 2222 EUR/t).

[12] DG ENER and Trinomics, Study on energy prices and costs - evaluating impacts on households and industry's costs – 2024 edition, September 2024

[13] Joint Research Center, The Merit Order and Price-Setting Dynamics in European Electricity Markets, 2023.

[14] Mario Draghi, the Future of European Competitiveness Part B: In-depth analysis and recommendations, 2024

[15] The only exemption is the Primary Aluminium smelter in Sweden

Furthermore, the ETS framework should not penalise industrial decarbonisation projects that require additional electrification. The upcoming revision of the Guidelines should ensure that indirect cost compensation frameworks remain compatible with industrial decarbonisation pathways based on electrification. Decarbonisation projects may require significant additional electricity consumption linked to low-carbon industrial processes, including carbon capture and electrification technologies. Current compensation methodologies based on fixed electricity consumption benchmarks may not adequately reflect these additional legitimate electricity needs, potentially creating disincentives for industrial decarbonisation investments.

Therefore, indirect cost compensation is a climate policy and carbon leakage protection tool, as it supports the competitiveness of a primary aluminium production base that emits 60% less than the global average.[16] Compensation prevents importing aluminium from fossil-fuel-based plants across high-emitting countries like China and India or substituting our product with more emitting and less recyclable materials like plastics and glass. As such, it contributes to the objectives of the ETS and CBAM of reducing the risk of carbon leakage and, ultimately, reducing global CO2 emissions.

To avoid carbon leakage, the upcoming review of the Directive should:

- ❑ **Extend indirect cost compensation beyond 2030 until the European electricity grid is fully decarbonized[17] and electricity prices in Europe reach a level playing field with global competitors. The mechanism should also appropriately account for additional electricity consumption resulting from major industrial decarbonisation projects that rely on electrification and low-carbon technologies.**
- ❑ **Maintain the level of compensation received by the already eligible sectors despite the recent addition of new sectors, given that these are the most vulnerable to indirect carbon costs in the lower prices scenarios of the 2020 Impact Assessment. Should there be new additions, this should not lead to a reduction in compensation for aluminium plants that are already eligible, which are by definition more exposed to ETS indirect carbon costs.**
- ❑ **Mandate national indirect cost compensation budgets to increase proportionally with the expanded list of eligible sectors to avoid carbon leakage;**
- ❑ **Keep aluminium listed among sectors at the highest risk of carbon leakage;[18]**
- ❑ **Maintain the supercap - limiting indirect cost compensation to 1.5% of an undertaking's gross value added - and encourage its consistent application across Member States;**
- ❑ **Remove the 25% cap on ETS revenues for indirect cost compensation. Instead, require Member States to allocate a minimum of 25% to this end (if they decide to grant compensation).**

2.4 Design an effective long-term solution for CBAM to address export leakage

CBAM implementation will have a high inflationary effect, because of the phase-out of free allocation, leading to an increased price of input materials. This will make European aluminium producers less competitive on the international

[16] European Aluminium, *Environmental Profile Report 2024*, 2024
[17] This will be the case when fossil technologies will no longer be setting the electriicy price
[18] According to the European Commission's 2020 Impact Assessment, aluminium production - with a carbon leakage indicator (CLI) set at 1.062 - is correctly listed among the top sectors at the highest risk of carbon leakage, due to its electro-intensity and trade intensity.

market, particularly manufacturers of semi-finished aluminium products, who bear higher aluminium costs across the value chain due to the combined effects of CBAM [19]and the phase-out of ETS free allowances.

As such, CBAM-induced cost increases systematically affect all aluminium transactions on the European market, including scrap, regardless of whether the metal is imported or domestically sourced. Accordingly, downstream producers and those relying on CBAM precursor goods remain heavily exposed to rising metal input costs due to CBAM. For products intended for export, these additional costs cannot be passed on either.

A solution to counter exports leakage that is limited to free allocation for EU ETS installations and only to the exported share of their own goods would not be fit for the European aluminium value chain, because a large part of export exposure occurs in downstream, transformation and recycling installations that are in most cases not themselves covered by the EU ETS but are affected by CBAM-induced increases in aluminium input costs.

The long-term solution for aluminium exports should therefore:

- ❑ **Provide cost relief to all installations that produce and export CBAM goods, regardless of whether they are currently subject to the EU ETS[20].**
- ❑ **Compensate for both the ETS and raw material costs increase related to CBAM implementation[21].**

3. Adjust the Market Stability Reserve (MSR), Linear Reduction Factor (LRF) and Article 29a to ensure price stability and achievable decarbonisation

3.1 Adjust the LRF trajectory to 2050 & remove the mandatory 57% auctioning share to reduce the risk of application of the CSCF

The EU ETS emissions cap drops annually through the Linear Reduction Factor (LRF). Following the target set in the last revision of the ETS of reducing emissions by 62% by 2030, at the current reduction pace, the cap is scheduled to mathematically reach zero in 2039.

However, given the current enabling conditions needed to switch to low-carbon technologies and the lack of the necessary innovative breakthrough technologies to decarbonise processes which are technically at their limit, the current emissions reduction trajectory means several installations would have to cease operations. The European Commission's own modelling shows that there will still be emissions in ETS1 sectors beyond 2040, and the ETS cap must reflect this.

This means acknowledging in the LRF trajectory that industrial emissions will not have reached zero by this point and taking into account the innovation curve, technological readiness and enabling conditions such as the development of the CCUS value chain, affordable energy, hydrogen infrastructure and deployment of low carbon fuels. The introduction in EU's compliance framework of EU removals, and high-quality international credits will also be key.

[19] The price of primary aluminium is set on the London Metal Exchange (LME) and reflects global supply and demand. In import-dependent regions such as Europe, an additional duty-paid premium is added to cover logistics, duties, and border costs for, bringing metal into the regional market. This global benchmark pricing system with regional premiums is unique to aluminium and is influenced by a wide range of factors. CBAM will increase this premium and make downstream aluminium producers bear the costs for both ETS and CBAM. This would eventually lead to such a high price increase that downstream producers will not be able to remain competitive and will eventually relocate

[20] If the envisaged solution is limited to ETS installations, it twill not address export leakage in the sector. This is because most aluminium-exporting installations, particularly in transformation and recycling, do not fall under the EU ETS, and they will be affected by the higher metal premium in Europe.

[21] See European Aluminium position paper on Temporary Decarbonisation Fund, February 2026

The carbon footprint of Europe's primary production process is much lower than the global average, with only 6.6 kg of CO2 emissions compared to the global average of 14.8 kg CO2 per kg of aluminium produced (based on 2023 data).

Today, the aluminium value chain emits around 24 million tonnes of CO_2 annually in Europe. To become Paris-aligned, the sector would need to reduce emissions by around 93 percent, reaching approximately 1.8 million tonnes by 2050. Achieving this transformation will require at least 33 billion euros in investment between now and 2050. Yet for large parts of the value chain, commercially viable technologies do not yet exist at scale.

The Cross-Sectoral Correction Factor (CSCF) is a mechanism built into the ETS free allocation system to ensure the total free allowances granted to industry do not exceed the 'cap on free allocation', i.e. the limit set by Article 10(1), sub-paragraph 1: 'From 2021 onwards, and without prejudice to a possible reduction pursuant to Article 10a(5a), the share of allowances to be auctioned shall be 57 %.'

Considering the above, the ETS mandates that 57% of allowances are auctioned, thus leaving 43% for free allocation. From a climate protection perspective, reducing the mandatory auctioning share would not weaken the ETS cap, as the total number of allowances would remain unchanged. However, it would materially improve the functioning of free allocation as a carbon leakage protection instrument and reduce the risk that the CSCF cuts protection for globally exposed installations. But for the effectiveness of carbon leakage protection, it makes a huge difference. This is because when the sum of all free allocation exceeds this cap, the CSCF is activated to correct the imbalance by reducing the number of free allowances in all installations in a uniform manner (with a few exceptions[22]).

With the steady reduction in the total number of certificates, the CSCF is likely to be triggered more often anyway, which undermines free allocation as a carbon leakage measure. A sufficient supply of allowances, and particularly free allowances, is therefore required to avoid the CSCF.

Therefore, to prevent decarbonisation in the EU from taking place through deindustrialisation and an inevitable increase in global GHG emissions because of the curtailment of sustainable aluminium production:

- ❑ **The LRF must be reviewed and adjusted so that the supply of EUA would reach zero in 2050 rather than 2040.**
- ❑ **Ensure a more frequent assessment (and, where needed, adjustment) of the cap so that it is more aligned with the latest expectations on technological readiness for ETS sectors like aluminium that are recognised as strategic under the Critical Raw Materials Act (CRMA).**
- ❑ **The adjustment should ensure that both the LRF and the budget of available EUAs evolve gradually, avoiding a scenario in which a high LRF is applied in the initial period and followed by a low LRF once the EUA budget has already become constrained, thereby leading to prohibitively high EUA prices.**
- ❑ **The cap trajectory (and potential mid-term adjustments) should also take into account efficient and fair burden-sharing between sectors[23] (power, buildings, industry, transport, maritime etc.).**
- ❑ **Delete Article 10(1), sub-paragraph 1, thus removing the mandate for 57 % of allowances to be auctioned and effectively reducing the application of a CSCF to a minimum.**

3.2 Redesign the MSR design for sustainable industrial growth and market scarcity

[22] See ETS Directive, Article 10a(5).

[23] The electrification of the transport sector will allocate emissions from the sectors covered by the Effort Sharing Regulation and EU ETS2 to EU ETS1, putting more pressure on ETS1 sectors.

The MSR was designed for surplus conditions but must now adapt to scarcity. The current framework will remain in place until 2030, when the ETS cap is predicted to be almost half of its current level. This design will increase volatility and undermine predictability. [24].

The MSR also has a deep structural flaw: it does not differentiate between different types of oversupplies. The MSR is blind to the exact reasons that lead to more allowances in the market, vis-à-vis verified emissions and actual abatement that has taken place. Indeed, one of the characteristics of the ETS is to reward the 'best-in-class'; however, when companies set up abatement technologies that lead them to decarbonise their processes and thus still receive allowances to incentivise emission reductions, these 'extra' allowances are bundled together with all others in the calculation of the TNAC. The consequence is that several of these allowances are rerouted to the MSR and often invalidated. The MSR does not sufficiently distinguish between surplus allowances resulting from genuine industrial abatement and surplus allowances resulting from economic downturns, demand destruction or deindustrialisation[25].

Considering the upcoming EUAs supply-scarcity trend and the structural problems with the MSR, this mechanism should therefore be amended. The revision should include proper consideration of, as set out in Article 3 of MSR Decision[26], '*relevant effects [of the reserve] on competitiveness, in particular in the industrial sector*'. The mechanism should be adapted to respond to future market dynamics (lower liquidity, higher and more volatile prices, etc.) and evolve into a more flexible stability instrument. More specifically:

- **Revisit the current withdrawal rate of 24% of the TNAC:** The MSR withdrawal rate is set at 24% of the TNAC when the TNAC is above 1 096 million. While this rate has been introduced based on the market dynamics thus far (as noted above, to address oversupply), the progressive tightening of the cap and the increasing number of allowances placed in the MSR mean that the withdrawal rate is becoming disproportionately stringent. It should therefore be reassessed and reduced to a level consistent with post-2030 scarcity conditions, with 12% serving as a possible reference point. This is particularly relevant in light of the Commission's proposal that no further allowances will be invalidated, as this changes the role and impact of continued high MSR intake rates.

- **Increase the MSR's lower release threshold from 400 to 700 million TNAC:** Under the current framework, when the TNAC falls below 400 million, the MSR releases 100 million allowances for auction, thereby increasing supply in the EUAs market. However, this mechanism has so far never been triggered, suggesting that the existing threshold might not be well aligned with prevailing market dynamics. In the post-2030 context, the MSR's lower release threshold should be adjusted (e.g., raised to 700 million TNAC) to reflect future conditions of scarcity, whereby it will important not only to ensure a greater volume of allowances in circulation, but also to establish a credible mechanism for their release when needed.

- **Remove the invalidation clause:** Greater flexibility of the MSR could be achieved by (1) preventing the invalidation of EUAs that are placed in the reserve and (2) enabling the re-use of such volume that would otherwise be invalidated, whenever market conditions require so (see point d below). With regards to the

[24] Source: Pahle, M., Quemin, S., Osorio, S., Günther, C. and Pietzcker, R., 2025. The emerging endgame: The EU ETS on the road towards climate neutrality. Resource and Energy Economics, 81, p.101476.

[25] Marcu, A., Maratou, A., López Hernández, J. F. Nouallet, P., Caruana, N. (2025), Future of Emissions Trading in the EU: Role in EU Climate Policy". December 12, slide 28: 'A good surplus of EUAs is one that is generated from abatement efforts (endogenous developments) which clearly need to be rewarded. Eliminating such surplus through mechanisms such as MSR cancellation is unjustifiable and goes against the very principle of the EU ETS. A bad surplus of EUAs is one that stems from economic cycles and deindustrialization (exogenous developments). (…) The "good surplus" resulting from mitigation is fundamental to the EU ETS concept. If there are no incentives to reduce then the whole philosophy of incentives to reduce as it is cheaper and easier for some to reduce more and sell to those for whom it is more expensive and cumbersome, falls apart.'

[26] See Article 3 of Decision (EU) 2015/1814 (here) amending Directive 2003/87/EC.

invalidation clause, we overall welcome the Commission's proposal of 1 April to remove the invalidation mechanism in Article 5 of Decision (EU) 2015/1814[27]. However, several caveats apply

i) **In the short-term:** This measure has been presented as increasing the firepower of the MSR and supporting market stability in the short to medium-term (ahead of 2030). We do not consider this objective to be achieved. The removal of the invalidation clause does not increase the volume of EUAs actively available for trading; rather, it merely retains allowances in the reserve without making them accessible to the market. As a result, it has no meaningful impact on current market conditions and delays any effects into the 2030s – far too late to address current challenges. In this context, alternative or complementary measures in the short-term must be deployed to prevent any detrimental impacts on industry. For example, a reduction of the current withdrawal rate ahead of the next scheduled MSR adjustment this autumn would represent a more effective short-term intervention capable of influencing market conditions immediately.

ii) **In the medium and long-term:** The removal of the invalidation clause for the period up to 2030 is a necessary correction that should be carried forward into the post-2030 framework as a structural feature of the MSR design. However, only preventing further invalidation of EUAs has an insufficient impact unless other elements of the MSR are also adapted. This includes mechanisms to allow systematic and timely release of EUAs currently held in the reserve back into the market– when market conditions require (see point d below).

- **Enable the timely release of allowances held in the MSR back into the market, including allowances that would otherwise have been scheduled for invalidation**: To respond effectively to future scarcity, the mechanism must operate in both directions, allowing EUAs to be released when market conditions indicate excessive scarcity, liquidity constraints or disproportionate impacts on industrial competitiveness[28]. Such additional supply could help with: 1) Preventing excessive price increases (e.g., as foreseen in ETS2); 2) Avoiding triggering the Cross-Sectoral Correction Factor (CSCF) by using the allowances to cover for much needed free allocation; 3) Providing allowances to the New Entrants Reserve in case of new activity and growth; and 4) Addressing the risk that the ETS cap declines faster than the actual emissions, therefore recognising that, in such a situation, it will not be politically viable for national governments to forcibly shut down ETS installations due to the unavailability of allowances.

3.3 Lower the trigger threshold of the price containment mechanism under Article 29a

Article 29a of the ETS Directive sets out the conditions for releasing allowances from the MSR in the event of excessive price fluctuations. Yet, the rules to trigger this provision are close to impossible to meet – as a result, this price containment mechanism has never been triggered since its inception.

According to Article 29a, the price containment mechanism is triggered if the 'average allowance price for the six preceding calendar months is more than 2,4 times the average allowance price for the preceding two-year reference period'.

[27] COM(2026) 153 final (here).
[28] These are allowances that have legally been issued under the ETS cap, and releasing them back into the market is an easier way of ensuring the necessary supply compared to other alternatives (e.g. integrating removals and/or international credits into the market)

As an example, assuming EUR 80/tonne as the average price level for the 2-year reference period, EUA prices would need to reach EUR 192/tonne and remain at that level for six consecutive months for this provision to be triggered.

This clearly illustrates the inflexible nature of this instrument and highlights the need for it to be amended, in order to set up a mechanism capable of coping with excessive price fluctuations[29][30].

In particular, the trigger threshold (2.4 times) is too high, and the assessment periods (6 months and 2 years) are excessively long for the mechanism to respond in a timely market to market stress.

Therefore, we propose to:

- ❑ **Amend Article 29a so that the price containment mechanism is triggered at lower price increases.**

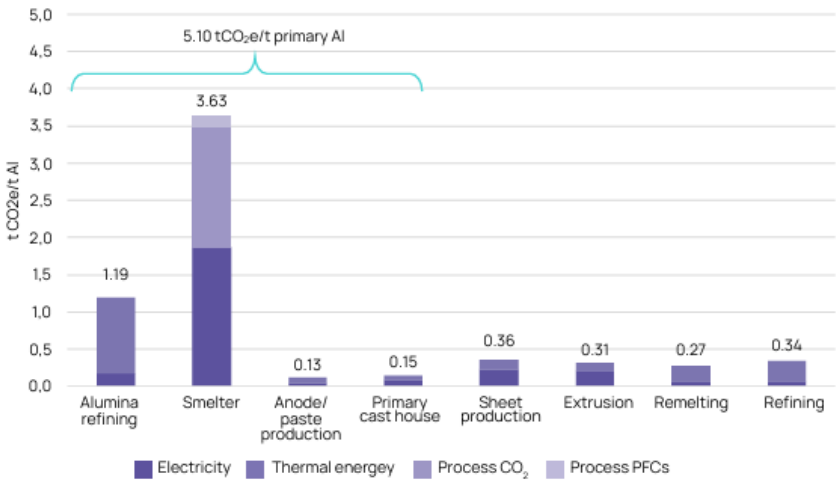
4. ETS Funding that decarbonises the sector while boosting its competitiveness

4.1 Targeted R&D funding, CAPEX/OPEX support and decarbonised affordable energy

Today, the aluminium value chain emits around 24 million tonnes of CO_2 annually in Europe.

To become Paris-aligned, the sector would need to reduce emissions by around 93 percent, reaching approximately 1.8 million tonnes by 2050. Achieving this transformation will require at least 33 billion euros in investment between now and 2050, excluding additional costs for R&D, grid infrastructure, renewable energy generation, energy system integration and supporting services.

Figure 12. European GHG emissions per tonne of aluminium ingot and type of emissions, for selected value chain segments



Source: Ramboll based on data from European Aluminium.

The European industry's decarbonisation pathway (November 2023) shows that two conditions will be key: 1) substantial decades-long CAPEX and OPEX support for the scale up of mature technologies and research and development (R&D) for breakthrough

[29] For example, for the calendar year 2021, allowance prices escalated from EUR 33 to EUR 80, and even these conditions were not severe enough to trigger the price containment mechanism.

[30] One example would be that of the Washington Cap-and-Invest Program and California and Quebec's Price Containment Reserve (APCR) mechanism, which have set up floor and ceiling prices, in parallel with a more realistic Price Containment Reserve (APCR), using a two-tier system to trigger the release of more allowances to the market in order to cope stabilize price volatility.

technologies; 2) and improving access to affordable, low-carbon energy (and especially low carbon electricity via competitive grid and system charges, timely grid infrastructure and long-term power cost visibility)[313233] .

Currently, this level of financing is not available across a sector that is facing production curtailments. European aluminium recyclers, smelters, and refineries were already curtailing production due to electricity prices two to four times higher than in the US and China, overcapacities generated in third countries, a lack of robust trade protection, and higher regulatory charges on energy bills and carbon costs than competitors.[34] Such pressures have further increased due to the war in the Middle East, which has disrupted supply chains and driven electricity and gas prices to unsustainable levels.

This further complicates the already complex business case for industrial decarbonisation, which depends on multiple levers and involves additional costs, which producers in other countries do not face.

For highly electro-intensive sectors such as primary aluminium, certain process-related residual emissions will remain difficult to abate in the medium and long term despite major electrification and efficiency efforts. The ETS framework should therefore support pragmatic pathways for industrial decarbonisation, including carbon capture, utilisation and storage solutions. The ETS and CCU regulatory frameworks should be adapted to ensure that captured carbon is appropriately accounted for and not treated as emitted.

Consequently, the limited abatement options available are not financially viable without substantial support, particularly due to high initial investment costs. A high carbon price further poses significant operational cost risks before decarbonisation technologies can be implemented.

Therefore, the following improvements are needed:

- ❑ **All ETS revenues should be redirected to industrial decarbonisation technologies, and improved long-term access to the Innovation Fund and other funding mechanisms is essential.**
- ❑ **A specific carve-out for strategic industries exposed to international competition should be implemented, with ad hoc calls for the aluminium industry so that different decarbonisation technologies can compete within the industrial sector (e.g. Hydrogen, electrification, CCS/CCU etc).**
- ❑ **Develop long-term Carbon Contracts for Difference (CCfDs) financed by EU funds and tailored to energy-intensive and hard-to-abate sectors such as aluminium, in order to de-risk industrial decarbonisation investments and provide sufficient long-term visibility for breakthrough technologies and carbon capture projects.**
- ❑ **Indirect Cost Compensation must be maintained to enable decarbonisation (please see the section 'Preserving ETS indirect cost compensation').**
- ❑ **The Industrial Decarbonisation Bank and Investment Booster[35] should not be financed through frontloading ETS allowances**

[31] Crucially, this excludes costs for R&D, infrastructure and supporting services

[32] European Aluminium, Decarbonisation Pathways Report, November 2023

[33] Similarly, the Draghi report estimates €500 billion will be required annually over the next fifteen years for the four largest EU industrial sectors, including aluminium

[34] Since 2008, half of the EU smelting capacity has already shut down, and 50% of primary production has been curtailed since 2022.

[35] As part of the booster, the European Commission will further allocate 30 billion EUR financed by 400 million ETS allowances. The proposal will come in July, and allocation will happen on a first-come, first-served basis, with a focus on low-income Member States, which will have 'guaranteed access to this financial support'. It will be replaced by the IDB once established.

- ❑ **Access to ETS Revenues should be simplified and there should be more transparency on how revenues are used by EU Member States.**
- ❑ **Equal treatment of mature and breakthrough electrification technologies in line with the technological neutrality principle in the Clean Industrial Deal.[36]The funding challenge is not just limited to first-of-a-kind investments, but also to scaling these technologies.**
- ❑ Adapt the ETS and CCU regulatory frameworks to ensure that capture carbon which is permanently stored or reused is not treated as emitted**.**

4.2 An Industrial Decarbonization Bank & heat auction mechanism fit for the aluminium value chain

Current ETS Innovation Fund and Clean Industrial Deal state aid schemes are misaligned with aluminium decarbonisation efforts, as three- to five-year support windows are not aligned with the sector's long-term investment needs, that require stable power cost visibility over 10+-year payback horizons, leading firms to try to protect current margins rather than making loss-making investments in decarbonisation technologies. Large-scale industrial decarbonisation projects in electro-intensive sectors also face significant bankability challenges linked to high upfront CAPEX, long investment cycles, infrastructure dependency and uncertainty regarding future carbon and energy costs. This is particularly important for industrial carbon capture projects, whose deployment depends not only on capture technologies themselves, but also on the availability of CO2 transport and storage infrastructure and long-term regulatory visibility.

Therefore:

- ❑ **ETS funding schemes should finance long-term CAPEX and OPEX for at minimum 15 years to offset the additional costs of decarbonising carbon-intensive production, including fuel switching and electrification. ETS funding schemes should finance long-term CAPEX and OPEX support over investment horizons compatible with industrial asset lifecycles as well as CCfDs**
- ❑ **Sector-agnostic flexibility (in electricity consumption) requirements for accessing funds should not be included. Most industrial processes require a baseload supply of electricity; it is for the power sector to provide an electricity mix that meets these requirements.**
- ❑ **The industrial decarbonization bank and investment booster should include targeted support schemes to address the main barrier to long-term power purchase agreements (PPAs): the cost of matching intermittent renewable generation with the baseload power needs of highly electrified industries[37] such as aluminium. Support should also cover own power generation as relying solely on grid decarbonization will be insufficient.**
- ❑ **The Industrial Decarbonisation Bank should support projects facing high technological, operational and infrastructure-related risks, including carbon capture projects in energy-intensive industries. Funding instruments should combine CAPEX support, predictable long-term OPEX support and carbon price visibility mechanisms to ensure bankability of large-scale industrial decarbonisation projects.**

[36] Recent Innovation Fund calls provide financial support to new, experimental, and immature projects which take time and capital to materialise, while offering little support to mature technologies (e.g. hydrogen projects prioritised over electric boilers under the Innovation und and the CISAF, which differentiates the aid intensity per technology). To date, the Commission has highlighted that the Industrial Decarbonisation Bank will offer support for proven technologies instead of first-of-a-kind technologies.

[37] See Recommendation 1b from the Antwerp Dialogue on Industrial Electrifica on & Compe veness, December 2024. This refers in particular to the shaping and firming costs that in many markets represent the key obstancle for entering into long term contracts. This will allow electrified processes such as aluminium smelting to reduce their indirect emissions

- **The upcoming second call under the Heat Auction of the Innovation Fund needs to be adjusted to make sure aluminium companies can bid in the system by:**
  - **Not mandate decommissioning and allow for the introduction of electrified equipment *alongside* existing fossil systems, as it ensures backup capacity for safety and continuity.**
  - **Lower the eligibility threshold from 3MW to ~1 MW to unlock smaller scale, low-complexity projects**
  - **Select projects based on Euro per MWh instead of Euro per CO2 (compared to heat benchmark), as the lack of specific benchmarks for alumina and aluminium recycling complicates isolating related CO2 within an ETS reporting unit.**[38][39][40]
  - **Do not include flexibility requirements and do not limit support for baseload electrified processes**[41] **(i.e. the vast majority of industrial electricity consumption).**

5. Flexibility Mechanisms & international credits

Emission reduction pathways vary across sectors and no single solution, be it electrification or hydrogen, can transversally address all challenges. Indeed, to reach net zero by 2050, the EU will need to design flexible compliance instruments under the ETS to address residual emissions from particularly certain sectors[42].

It is worth noting that the EU ETS is the only ETS in the world with no compliance flexibility, not even Carbon Dioxide Removals, while at the same time being by far the most ambitious ETS globally. ETS flexibility mechanisms must, therefore, be developed quickly to faster enable more cost-effective emission reductions[43], while also enhancing credit needed and ensuring market liquidity. Such mechanisms would include, among others, the use of international carbon credits under Article 6.4 of the Paris Agreement as well as EU-certified permanent carbon removals.

To support international decarbonisation efforts, address unfair international competition and better enable the EU to achieve its climate objectives while preserving industrial capacity in Europe, the ETS framework should allow the use of high-integrity international carbon credits under the Paris Agreement Article 6.4 mechanism.

These credits can be designed to ensure robust environmental integrity, climate additionality and other co-environmental benefits, ensuring a strict MRV Regulation is followed. Their use should be allowed, but with carefully designed sector-specific limits, for example, linked to unavoidable residual emissions, with a risk-adjusted factor regarding abatement curve possibilities[44]. They should not reduce incentives for industrial decarbonisation investments, electrification, innovation and deployment of low-carbon technologies within the EU

This would safeguard the integrity of the system while providing necessary flexibility for hard-to-abate sectors like aluminium that do not have abatement solutions immediately available in the mid-term.

[38] Carbon Pulse, EU's Future Decarbonisation Bank to Allocate Fixed Premium Based on CO2 Abatement, 9 December 2025.
[39] Carbon Pulse, Details Emerge of EU's New €100 bln Industrial Decarbonisation Bank, 18 June 2025.
[40] Carbon Pulse, EU to Maintain Carbon Pricing Signals, Scale Up Decarbonisation Funding, and Accelerate CO2 Infrastructure, 25 March 2026.
[41] For example, certain high-temperature continuous processes (e.g. rolling mills with integrated recycling/remelting facilities) cannot significantly reduce operating hours without affecting competitiveness and production continuity, while other processes (e.g. aluminium extrusion) may offer greater flexibility potential and require further sector-specific assessment.
[42] The EU's Communication 'Towards an ambitious Industrial Carbon Management for the EU' (here) acknowledges as much, stating that industrial carbon management technologies must be part of the solution towards net-zero, to help continue reducing and managing carbon emissions in industrial processes, particularly where mitigation options are limited.
[43] See ETS Directive, Article 1: This Directive establishes a system for greenhouse gas emission allowance trading within the Union (hereinafter referred to as the EU ETS) in order to promote reductions of greenhouse gas emissions in a cost-effective and economically efficient manner.'
[44] Bloombert, Dubious Chinese Carbon Credits Expose European Market's Flaws, 24 May 2026

To date, the EU has only considered the use of Article 6.4 credits by Member States towards EU-wide climate targets. Extending their use to ETS-covered industries for ETS compliance purposes would provide a cost-effective decarbonisation pathway, strengthen industrial competitiveness, reduce the risk of carbon leakage, and, at the same time, ensure that global emissions decrease.

With regards to EU-based removals, achieving the EU's 2040 and 2050 climate targets will require both deep emissions reductions and the deployment of CCS and carbon removals. According to the European Commission, around 250 Mt of CO_2 will need to be captured and stored annually by 2040, while an additional 400 Mt of carbon removals will be necessary by 2050, including permanent technological removals such as BECCS and DACCS. The technology development and implementation up to now shows a pathway where EU is far behind the most positive pathway for technology implementation today.

For hard-to-abate sectors such as aluminium, these solutions will be essential to address unavoidable residual emissions.

The EU should therefore integrate EU-certified permanent carbon removals into the EU ETS, based on robust MRV rules and strict safeguards ensuring that removals complement, rather than replace, direct emissions reductions. All permanent removals certified under the EU framework should be eligible within the ETS, independently of the technology used or the cost of the removal solution.

Therefore, the upcoming ETS Review should:

- ❑ **Integrate EU-certified permanent removals into ETS compliance by 2028. All permanent removals certified under the EU framework should be eligible within the ETS, independently of the technology used or the cost of the removal solution.**
- ❑ **Integrate international carbon credits under the Paris Agreement Article 6.4 mechanism for ETS compliance purposes.**
- ❑ **Develop robust certification frameworks for international and EU-based CDRs.**
- ❑ **International CDRs should be allowed only if certified with the same robust methodology and certification in Europe.**
- ❑ **Allow limited phased use of CRCF-certified removals to enhance flexibility and liquidity.**
- ❑ **Enable downstream accounting and chain-of-custody models for CCU to promote circular carbon.**

For further information/sources:

- European Aluminium Innovation Agenda, January 2026
- European Aluminium position paper on ETS Review post 2030, July 2025
- Letter to European Commission on the need for an ETS Product Benchmark for alumina, June 2025
- Letter on the need for an ETS Benchmark for aluminium recycling, June 2025
- European Aluminium Decarbonisation Pathways Report , November 2023
- Position paper on Free Allocation Review & Technical Memo on how to design two product benchmarks for alumina and aluminium recycling, December 2023
- International Aluminium institute (IAI) Sector Greenhouse Gas Pathways to 2050, September 2021
- Mission Possible Partnership Report "Aluminium Decarbonisation at a cost that makes sense", 2022
- European Aluminium Vision 2050 Strategy, October 2020

For more information on European Aluminium's work on Climate and Energy, please visit the "Climate and Energy Section" of our Website.

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