

EXECUTIVE SUMMARY

The new EU's 2030 Green House Gas (GHG) emission reduction target of -55% will have profound implications on the competitiveness of the European Aluminium industry. Such enhanced climate ambition must be accompanied by a robust enabling framework that supports our industry's transition to climate neutrality¹. Europe's transition to a low carbon economy can only be achieved with more aluminium, given the growing demand for light and circular metals, which are essential for clean technologies². But carbon leakage in our sector is today a reality: **Europe has lost 36% of its primary aluminium smelting capacity since 2008**. This production has been replaced almost exclusively by Chinese firms, which are covering all the incremental global demand for aluminium (which has more than doubled over the past twenty years³). China now accounts for almost 60% of global primary aluminium production (up from just over 10% in the year 2000)⁴.

Higher cost stemming from a more ambitious ETS cap will harm the competitiveness of European producers across the entire value chain, starting from the alumina refining and the primary segment all the way down the value chain, encompassing producers of semi-manufactured products and recyclers. For the latter, energy savings represent 95% compared to primary production, making recycling aluminium an important way to reduce emissions and the EU's dependency on raw materials.

Therefore, the upcoming package will have to take into consideration:

- **The energy-intensive nature of our processes, particularly the electricity-intensive nature of producing primary aluminium, and the cost implications of higher CO2 prices across the entire value chain stemming from the revision of the ETS and other pieces of the energy and climate framework.**
- **The enormous climate mitigation potential of aluminium recycling compared to other materials.** More recycling will lower carbon footprint even more than primary metal produced with green energy. Aluminium Recycling emits currently 13 times less CO2 than primary. More aluminium recycling can both reduce the carbon footprint of our value chain and consumption in Europe while also strengthening our strategic autonomy by making our economy less reliant on imports. In particular, Aluminium recyclers and alumina refineries will be under significant cost pressure, and uncertainty with the foreseen reduction of the ETS fallback benchmark and will have limited incentives to invest in new recycling capacity or new technologies. **The need to increase recycling as metal sourcing to satisfy the growing demand (and reduce emissions) should therefore not be disproportionately penalised by higher carbon costs, given the process's reliance on gas and fuel for the re-melting process.**
- **The specificities of our global trade flows, competitors and production processes compared to other energy-intensive industries also exposed to carbon leakage.** A Carbon Border Adjustment Measure (CBAM) covering Aluminium will not be effective to reduce global emissions in our sector, protect our value chain against carbon and investment leakage and stimulate the demand for low carbon aluminium products in Europe⁵.
- **The need for supportive policy and regulatory measures to accelerate the decarbonisation of the energy system and increase the availability of low carbon energy at globally competitive prices.**

¹ See our [Policy annex](#) to the EU Public Consultation Questionnaire on the ETS Reform, February 2021

² See [here](#) World Bank Group Report "Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition", May 2020 & [IEA Report](#) "The Role of Critical Minerals in Clean Energy Transitions", May 2021

³ [World Aluminium](#), 2020. Primary Aluminium Production

⁴ [Ibid](#), 2020.

⁵ See [here](#) our response to the EC Public Consultation questionnaire on the EU Carbon Border Adjustment Mechanism (CBAM), 27 October 2020 and [here](#) our Non paper on excise duty tax design, February 2021

- The **long-term nature of our investments and the cost of decarbonisation technologies**. Many of the possible technologies are still at a low Technological Readiness Level (TRL) and have very prohibitive costs, requiring significant financial investments that cannot be borne by individual companies alone. The time needed to develop a demonstrator (TRL7-8) and to fully deploy such technology in an industrial context (TRL 9) will depend on many factors, especially in relation to energy costs and CO2 pricing schemes.

Considering these challenges, we invite the European Commission, the Council, and the European Parliament to embed in the upcoming packaging the following elements:

- **Enhanced carbon leakage protection for electricity-intensive and circular industries exposed to international competition:** The ETS and MSR should be amended to protect aluminium from increased costs stemming from the EU's strengthened target. The increase of the LRF should take place as early as possible and rebasing should be avoided to prevent an abrupt rise of the CO2 price. The amount of free allocation for phase IV should be set to ensure complete protection of best performing installations and the total avoidance of the Cross Sectoral Correction Factor (CSCF) by the end of 2030. To this end, we propose protecting the allowances put aside in the MSR by the invalidation clause and setting up a mechanism to re-introduce them in the market, avoid the CSCF, top up the New Entrants Reserve (NER) and stimulate industrial growth.
- **Aluminium should be not included in the upcoming proposal for a Carbon Border Adjustment Mechanism (CBAM):** A CBAM covering Aluminium will not be effective to reduce global emissions in our sector and protect our value chain against carbon and investment leakage. Our wish is, therefore, to remain under the current carbon leakage framework, at least until 2030. A CBAM should not replace nor undermine existing carbon leakage measures such as ETS indirect cost compensation and free allowances. ETS indirect costs compensation schemes should remain in place and not be diluted.
- **Rewarding negative emissions and circularity:** New emission abatement measures may include, for instance, the possibility to allow off site removal of emissions to be used to balance industries' remaining emissions under the ETS. While the Commission has announced an initiative in this direction as part of the Circular Economy Action Plan, this is a missing element to be considered as early as possible in the ETS reform. Aluminium recyclers should receive complete carbon leakage protection with free allowances. More circularity means increased processing of "dirty" and "mixed" scrap, which negatively impacts the energy efficiency of the process and costs due to expected higher carbon prices.
- **Revision of the Renewable Energy Directive (RED) and decarbonisation package:** We support an increased target for renewable energy production for both the EU and the Member States. However, all support mechanisms for renewable electricity should be linked to the physical flow of power and properties of the electrical power system. Guarantees of origin (GOO) have no link to physical power flows and provide no real incentive to change the fundamental properties of fossil-based power systems. To create green industrial growth, industries subject to carbon leakage must instead be shielded from increased costs caused by the transformation to a low carbon energy system. Mechanisms to facilitate the uptake of power-purchase agreements (PPAs) and reduce the costs of consuming renewable energy for industrial consumers (see green pool proposal below) should be embedded in the rules.
- **The establishment of a massive pool of renewable electricity (the 'Green Pool') would enable electro-intensive consumers to access the required volumes of decarbonised electricity at globally competitive prices.** Electro-intensive consumers participate in the Green Pool by adding new RES capacity to the electricity system (e.g. by signing a PPA with a RES producer for new installations)⁶. The electricity produced by these RES units is 'pooled' together by an aggregator established for this purpose. The aggregator undertakes all

⁶ Please find [here](#) the detailed green pool proposal by ENERVIS, March 2021,

shaping responsibilities and supplies the consumer with a supply of electricity that matches its consumption profile.

Finally, the upcoming package must be underpinned by a growth-enabling state aid policy framework supporting the transition of our industry, incentivising new capacity while preserving and improving those provisions, which have been an effective tool to protect our industry against carbon leakage and the increased costs Aluminium producers face only in Europe. **The ongoing Review of the EU State Aid Guidelines for Environmental protection and Energy post-2020 (EEAG) must accompany and be coherent with the package, addressing both the cost and investment challenges stemming from the European Green Deal.**

In the following sections, we outline our suggestions in detail. More information, including our responses to previous related EU Public Consultations, is referenced in the footnotes.

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ETS/MSR Review

The proposed options

According to the Commission, the update of the ETS stationary cap, either via increasing the Linear Reduction Factor (LRF) or rebasing would happen as early as 2025⁷. Our view⁸ is that **the increase of the LRF should take place as early as possible while rebasing should be avoided. The LRF should therefore remain the only instrument to set the cap. This ensures predictable and proportionate free allocation to industry, while also avoiding an abrupt shortage (and resulting price spikes) that a rebasing would cause. The new cap should be set in a way to avoid the introduction of a cross sectoral correction factor (CSCF) in phase IV of the EU ETS.**

With regards the MSR, cancelling its allowances is sub-optimal and should be allowed only for credits generated outside the EU territory. Its functioning however should be amended: to prevent a CSCF in Phase IV, we would propose that part of the ready-to-be invalidated volume is set-aside and released later if necessary. We elaborate on this idea in more detail further below.

On the possibility of applying emission trading to road transport and buildings, these sectors have different CO₂ abatement costs, elasticities and risks of carbon leakage as well as limited or non-exposure to international competition compared to energy-intensive industries. Their inclusion in the ETS system will drive carbon prices up substantially⁹.

Therefore, if emission trading is extended to other sectors, it is important that these remain separate systems, with no interaction in the start-up years. A potential linking could be considered over time but a timeframe for this potential integration should not be already integrated into the ETS Directive, given the uncertainties and risks outlined above.

Carbon leakage: need to maintain effective measures

Changes to the overall ETS cap level will affect the intensity of carbon leakage protection (i.e. the maximum amount of free allowances distributable) and the CO₂ abatement potentials of EU ETS sectors. Such revision must avoid a sudden and too fast reduction of the existing carbon leakage protection tools, especially the amount of free allocation to eligible aluminium producing installations. Energy-intensive industries have an inferior abatement potential (22%) compared to the power sector (70%).

Aluminium producers and recyclers exposure to increased CO₂ costs must be aligned with their ability to compete in European and global markets. Our industry is facing significant R&D expenses as the technologies and a fully decarbonised energy system (i.e. switch to green fuels or electricity furnaces) are not yet ready and may also not be suitable due to technological limitations. A sufficient level of free allocations must therefore be maintained, and any type of reduction avoided, along with the provision of complementary policies supporting investment' efforts in clean technologies development and deployment.

⁷ See [figure 17 p. 99](#) "Stylised examples of how to update the ETS Stationary cap" EC Impact Assessment on 2030 Targets Plan Communication

⁸ See our [Policy annex](#) to the EU Public Consultation Questionnaire on the ETS Reform, February 2021

⁹ The inclusion of transport and buildings into the existing ETS would exacerbate carbon costs and carbon leakage risks for sectors exposed to international competition. Many of the vehicle efficiency technologies that will be needed to reach the industry targets have abatement costs well above €250 per tonne CO₂. Further, there are no monitoring and verification standards available for these sectors, so it is hard to know at this stage what the exact abatement cost will be. For more information, see [here](#) ACEA paper "Paving the way to carbon neutral transport" January 2020

In particular, the amount of free allocation should be set in a way to ensure full protection of best performing installations, including then the total avoidance of the CSCF. This could be done by increasing the 3% allowances buffer introduced by ETS Directive 2018/410, Article 10a, paragraph 5a to further ensure that the CSCF is not applied before 2030. The share of allowances to be auctioned over Phase 4 should then be reduced by a higher percentage than the 3 % of the total quantity of allowances, foreseen by the 2018 ETS Directive.

ETS Benchmark-based allocation & indirect costs compensation

According to the ETS Free Allocation Rules (FAR)¹⁰ and the recently revised implementing legislation¹¹, there are two **ETS product benchmarks** set for the aluminium sector for the first ETS IV subphase (2021- 2025): one for **electrolysis** (1,464 tCO₂/t Al) and one for the **anode production** (0.312 tCO₂/tAnode). All the remaining segments of the aluminium value chain are covered by the heat and fuel consumption fall-back benchmarks¹². Such framework well caters to the specificities of the Aluminium value chain and different production processes.

The expected reduction for ETS Phase IV of the two above product benchmarks closer to the minimum of the range, well reflect the narrow margin of further technological improvement of our primary production processes, which has already significantly reduced its footprint in the last decades.

However, as explained in our response¹³ to the public consultation on the draft ETS benchmarks for Phase IV:

- We are concerned by the strong impacts that the drastic reduction of the fall-back benchmarks will have on crucial segments of the European aluminium value-chain, i.e. the alumina refining, which supplies raw materials to the primary industry; the recycling sector, delivering a big contribution to the circular economy; the heat treatment of aluminium products, dramatically increasing the GHG performance of a wide range of applications in transport, buildings etc.
- The recycling sector especially will be severely impacted by the drastic reduction of the fall-back benchmarks. Improved CO₂ reduction assessments should be made only taking into account installations using natural gas, leaving out of the calculation those using other energy sources, such as biomass. This is because biomass is not currently available in an uniform manner across the energy system. Its availability depends on several factors including national/regional population densities and the relative sizes of agriculture, forestry, marine and waste-based sectors. Such reduction was a political decision by the Commission which negatively affects all the Aluminium downstream sector and disincentives new investment in Recycling facilities.
- Aluminium recyclers should receive full carbon leakage protection with free allowances, up to the benchmark level. More circularity means increased processing of "dirty" and "mixed" scrap which negatively impacts on the energy efficiency of the process and costs due to expected higher carbon prices. To address this, investments in equipment (e.g. de-coaters, shredders, sidewall furnaces etc.) are needed in order to deal with more mixed/dirty scrap. But for circularity, it is essential to continue and even increase recycling capabilities for mixed scrap, or aluminium scrap mixed with other materials. The existing ETS benchmark was set based on historic data and does not take into account these additional processes for dealing with more mixed/dirty scrap than we used to do in the past.
- The benchmark values for free allocation, to be updated ahead of the second sub-phase of ETS phase IV, should be designed in a realistic and transparent way. They should reflect technological challenges, feasibility costs and existing and tested business models. The transition costs for existing plants are considerable.

¹⁰ See [here](#) Annex I to Delegated Regulation (EU) 2019/331

¹¹ See [here](#) Commission Implementing Regulation (EU) 2021/447 determining revised benchmark values for free allocation of emission allowances for the period from 2021 to 2025 pursuant to Article 10a(2) of Directive 2003/87/EC of the European Parliament and of the Council

¹² 47,3. tCO₂ /TJ and 42.6 tCO₂/TJ for heat and fuel respectively

¹³ See [here](#) our response on the ETS Benchmark values for free allocation for the period 2021-2025

Therefore, any new breakthrough technology implementation, as small technology pilots, should not impact the benchmark level for all existing plants within few years.

- Therefore, we would like to stress the importance of involving industrial sectors, via their European associations, since the beginning of the benchmark review process. This can ensure consistency in the approach, common interpretation and quality check of the data reported by industrial facilities to their respective national authorities, within the boundaries of confidentiality. **The Commission's proposal in the questionnaire to increase transparency of the process via mandatory publication of underlying data by industry is welcome. This however should go hand in hand with a thorough review of the data quality with industry experts, as was the case for the anode production benchmarks for our sector¹⁴.**

An MSR fit for industrial growth

The new 2030 target will put the current system of free allocation under considerable pressure, increasing exponentially the risk to trigger the cross sectorial correction factor (CSCF). Therefore, the revision must ensure improved carbon leakage protection through total avoidance of the CSCF in Phase 4.

Despite the Commission stated in its 2030 Climate Target Plan Impact Assessment¹⁵ that the CSCF risk is small even with an at least 55% target, several studies¹⁶ conclude that a 55% target could trigger a significant CSCF of -35% compared to the current 2030 target. It is crucial that the new ETS target does not lead to a situation where installations performing at benchmark level face any carbon cost. It is vital that the higher ambition does not result in unbearable EUA price for industries.

Adjusting the Market Stability Reserve (MSR), while remaining within the ETS cap, can be a way to avoid the CSCF. This would support emission reduction target and reduce carbon leakage risk. The accumulated surplus because of the economic downturn due to the COVID crisis and the financial crisis must be protected from the invalidation clause. These EUAs are highly needed surplus to cope with economic recovery and industrial growth.

We therefore recommend introducing more flexibility to the invalidation clause, to improve the MSR functioning as a better stability instrument. We therefore propose that:

- The MSR should differentiate between surplus accumulated due to economic downturn resulting in lower EUA demand, versus, for instance, accumulated EUA surplus due to international credits used for compliance reasons.
- Part of the ready-to be invalidated volume is set-aside and released later if necessary, to avoid the risk of CSCF during Phase 4. The set-aside volume should also be released in case needed to top up the New Entrants Reserve (NER), in order to stimulate and not punish industrial growth.
- The split between the two MSR surpluses should be calculated on an annual basis. Hence, we suggest that the good surplus should be released back to the market in case needed to 1) avoid the CSCF and 2) to potentially adding volume to the NER.

It is important to note that re-injecting part of the set-aside allowances in the market would not interfere with the overall ETS cap as these are already existing allowances under the cap. Furthermore, it would contribute to

¹⁴ We would like to thank DG CLIMA for their open and transparent exchanges, while respecting the confidentiality boundaries throughout the process, in assessing the data provided by ETS installations for the definition of the anode production benchmarks for Aluminium. We identified several inconsistencies and mistakes by national authorities in collecting and reporting the data to the European Commission.

¹⁵ See [p 112 EC Impact Assessment on 2030 Targets Plan Communication](#)

¹⁶ See [ECRST 2020 State of the EU ETS Report, April 2020](#)

reducing global emissions by avoiding carbon intensive imports and ensure better carbon leakage protection via improved supply-demand balance.

Such flexibility will ensure the ETS principle of free allocation based on updated benchmark levels is maintained as well as the cap reduction in accordance with the LRF. Furthermore, it will give flexibility and ensure the MSR functions as a better stability instrument also in case of economic growth.

Negative emissions and carbon removals

The upcoming ETS revision should also consider ways to encourage investments in negative emissions. As of today, the only commercially available technology to produce primary aluminum is based on using carbon and results in significant CO₂ emissions. We all hope for a carbon-free aluminum production, but until then we have to try to find a solution. Much research has gone into how to capture and permanently store, dispose of or utilise CO₂ emissions. Many of the solutions are promising but, unfortunately, none has been proven to work for primary aluminum production. The main barrier is that the economic incentive to invest in further research and development is weak due to the fact that the ETS doesn't allow for installations to offset their calculated emissions by utilising a CO₂ capture and disposing methods. As long as this financial incentive is lacking, there will be limited research, innovation and investment in promising projects, that could make a significant difference to the amount of CO₂ that the aluminum industry emits. Since that solutions vary greatly in method and technology, the ETS needs to be technology agnostic so that industry can have the flexibility to find out what technology works best for each situation.

Therefore, the EU Commission should work on developing new regulatory instruments for financing and rewarding negative emissions. New emission abatement measures may include, for instance, the possibility to allow off site removal of emissions to be used to balance industries' remaining emissions under the ETS. While the Commission has announced an initiative in this direction as part of the Circular Economy Action Plan, this is a missing element to be considered as early as possible in the ETS reform.

Carbon Border Adjustment Measure (CBAM)

When it comes to **the potential introduction of a Carbon Border Adjustment Measure (CBAM), we believe a CBAM covering Aluminium will not be effective to reduce global emissions in our sector, protect our value chain against carbon and investment leakage and stimulate the demand of low carbon aluminium products in Europe**¹⁷. This is mainly due to:

- The differences and complexities of our production processes, volume, value chain and global trade patterns compared to other ETS sectors under consideration.
- The electricity-intensive nature of Aluminium primary smelting and the higher impact of indirect CO₂ costs on our production process compared to other metals. Indirect costs are decoupled from indirect physical emissions (due to the power market dynamics in Europe), making it impossible to design a system capable to take into account the higher costs we face.
- The fact that China does not export primary aluminium to Europe, making a CBAM on primary ingots or billets ineffective from both a climate and trade perspective. It is Chinese production of semi-manufactured products that is carbon intensive and subsidised, which depresses global prices and harms our producers' competitiveness. Furthermore, considering subsidised Chinese over-capacity and availability of hydro-powered smelting, a CBAM will be circumvented by shifting trade flows of low carbon production to Europe

¹⁷ See [here](#) our response to the EU Public Consultation Questionnaire (October 2020) and our [non-paper](#) on the excise duty design (February 2021)

while preserving existing coal-based power products for other regions in the world where no CBAM is in place or for own consumption.

- The complexity of our value chain and challenges to measure the CO₂ content in aluminium products or aluminium components in products. If a CBAM does not cover the entire value chain (i.e. upstream and downstream, from the primary product down to the final product containing the commodity), the downstream segment might have an incentive to relocate outside Europe.
- Considering Chinese over-capacity and availability of hydro-powered smelting, a CBAM could easily be circumvented by shifting trade flows (so-called source shifting) of low carbon-based production to Europe while preserving existing coal-based power production and products from other regions in the world where no CBAM is in place. This will lead to no reduction of global emissions, which must be the main objective of the CBAM in order to pass the WTO compatibility test.
- The non-compliance of a CBAM on indirect emissions with the principle of non-discrimination and most favourable treatment under WTO law. This derives from the mismatch between the import costs and the EU ETS cost that European producers pay, depending on the regional CO₂ pass-through factors across the electricity market¹⁸.

From several exchanges with EU policy makers, we understand that if the Commission were to include Aluminium, this would be done by initially including the primary segment and cover only direct emissions. The remaining parts of the value chain and scope would be potentially added at a later stage. While such approach might be appropriate for some sectors in the short term, it will lead to the end of our industry and unfairly penalise us vis-à-vis our competitors in Europe and beyond. This is because:

- A CBAM only on the primary segment and direct emissions will have no climate impact: direct emissions in our manufacturing process do not vary significantly from one region or process to the other, given the limited margins of improvement and availability of today's technologies to reduce the direct emissions in the electrolysis process. The range is between 1,48 tCO₂/tAl (10% most efficient installations under the EU ETS system) to around 2tCO₂/tAl. It is the amount of indirect emissions (e.g. CO₂ emissions generated from the consumed electricity) that must be taken into consideration in order to differentiate a high carbon primary ingot from a low carbon one. These indirect emissions vary from close to zero in presence of electricity from low carbon sources (renewables or nuclear) to 15 tCO₂/t Al when in presence of coal-based electricity (both from the grid and captive plants). Therefore, a CBAM only on direct emission will have no climate impact and only lead to increased costs down the value chain.
- The EU 27 imports around half of its primary ingot requirements. Norway and Iceland are the largest exporters of primary aluminium to the EU¹⁹. Other major exporters to European countries are Russia, the United Arab Emirates and Mozambique. Domestic production is fulfilled through primary production and recycled production. However, the global amount of recycled aluminium available to cover the present and future demand is limited to approximately 40% due to continuous market growth linked to long life spans of major use cycles (e.g. automotive / buildings) ranging between 20 and 50 years. Therefore, a CBAM only on primary and directs will just lead to higher costs for EU downstream producers and not address the massive influx of Chinese carbon intensive semi-manufacture products, for which the production is coal based and subsidised, thus depressing global prices. Under an ideal design, it should cover the entire value chain, upstream and downstream, from the primary product down to the final product containing the commodity. Otherwise, there are concrete risks of unfairly increasing costs across the entire supply chain and thus eventually undermining rather than protecting our industry's competitiveness globally.

¹⁸ See European [Commission Impact Assessment](#) on Guidelines on certain State aid measures in the context of the system for greenhouse gas emission allowance trading post 2021, September 2020, p. 63

¹⁹ For a detailed market overview, see our [Digital Activity Report 2020-2021](#)

- Finally, there is no method today to distinguish the among of primary and recycled aluminium in an imported primary ingot.

Based on such considerations, the current carbon leakage framework would provide the only effective protection system, at least until 2030. **A CBAM should not replace nor undermine neither the ETS indirect cost compensation and nor the free allowances. ETS indirect costs compensation schemes should remain in place at least until 2030 and not be diluted.**

The new ETS Guidelines adopted last year²⁰ is the optimal way to ensure aluminium producers remain competitive despite electricity prices including a CO2 cost element that no producers outside the EU have. The guidelines contain prudent, coherent, and well-targeted measures to mitigate carbon leakage in our sector. Allowing for 75% stable aid across the entirety of ETS Phase IV and the possibility of a more targeted approach for those sectors like Aluminium that are the most exposed to carbon and investment leakage is very much necessary²¹. It is also crucial to mention that due to the marginal pricing system²² applied in European power markets, **the decarbonisation of the electricity system will not lead to a proportionate reduction in the indirect costs faced by consumers.** Indirect costs are not directly correlated with indirect emissions, **and indirect costs will continue to play an important role in setting European electricity prices for as long as any carbon-emitting power plants continue to operate. This makes it even more important to ensure a robust scheme for indirect cost compensation.**

RED III & decarbonisation package

Revision of the Renewable Energy Directive (RED) & Guarantees of Origin (GOOs)

We support an increased target for renewable energy production for both the EU and the Member States. All targets, incentives and support mechanisms for renewable electricity should be linked to the physical flow of power and properties of the electrical power system. However, to create green industrial growth, industries subject to carbon leakage must be shielded from increased costs caused by the transformation to a low carbon energy system.

A Guarantee of Origin (GoO) is a virtual tool for declaration of electricity production that is not linked to the actual physical electricity consumption. While GoOs can be a way for consumers to provide existing power producers with an additional income, purchase of GoO does not raise renewable energy consumption, and provide only marginal incentives for new renewable electricity production. Other tools such as CfDs, PPAs and investment support are far superior instruments to increase renewable energy production and should be the focal point of the EU's strategy.

GoOs are traded across the EU without taking any distributional capacity limits into account. Despite their detachment from physical reality, they can be used, voluntarily, to report indirect CO2-emissions (scope 2) under the GHG protocol, alongside PPAs and location-based power mix. A GoO does not reduce indirect CO2 emissions from the electrical power used by the buyer of GoO. As an instrument, GoOs thus provide no real incentive for systemic change, and allow for "green-washing" of power consumption based on fossil fuels. Therefore, the RED II should recognise GoOs' lack of climate credibility and promote real connections between renewable electricity production and consumption as a means of verification. The GHG protocol continues to allow GoO as a reporting tool alongside residual power mix and PPAs. The issue of double counting of renewable energy under the GHG protocol should be addressed, but this should not be the role of RED.

²⁰ See [here](#) the Commissions new Guidelines on certain State aid measures in the context of the system for greenhouse gas emission allowance trading post-2021

²¹ See [here](#) our position paper on the draft ETS Guidelines, March 2020

²² For more on marginal pricing see [EC Impact assessment SWD](#) on EU Electricity Markets reform (30.11.2016) and [EC Impact assessment Report](#) on 2012 State Aid Guidelines on indirect costs 22.05.2012

For the same reasons, any proposed legal instrument on Green Labels for industrial products must be based on robust, long term LCAs that account for real direct and indirect emissions only. If producers can rely on tradeable certificates like GoO, it would undermine the whole system and allow producers to pass off CO₂-intensive products as different shades of green.

Cooperation between Member States is fundamental to making the electricity market function as rationally and effective as possible. Power flows should be further optimised, and grids should be improved and strengthened where bottlenecks are too high. Increased costs from development of transmission and distribution networks must not be levied on price sensitive industrial consumers that are subject to a risk of carbon leakage.

Lastly, innovation is needed to expand the potential use of renewable energy and electricity (both directly and indirectly via hydrogen) in larger quantities of industrial processes. It will increase competitiveness and reduce energy costs for investments in less mature technologies, such as green hydrogen, which would have a true competitive advantage in a low carbon economy.

Measures to increase the availability of affordable low carbon energy: the "Green Pool"

Industry needs access to low carbon energy at globally competitive prices. Key enablers include the creation of temporary risk sharing tools under EU and national state aid rules, better energy infrastructure, priority access to hydrogen and low carbon fuels where direct electrification is not possible and protection against all regulatory costs linked to climate. Enabling industrial consumers to consume low-carbon energy at competitive prices would greatly reduce the problem of carbon leakage and would therefore also reduce (if not eliminate) the need for carbon leakage measures. Despite the falling costs of renewable electricity generation²³, industrial consumers in the EU are struggling to consume renewable electricity. This is due to a number of remaining barriers and hidden costs, many of which were identified in reports that were recently published by the European Commission²⁴ and the IES/VUB²⁵.

These barriers and costs are jeopardising industrial consumers' attempts to decarbonise their processes and will continue to do so until they are adequately addressed. One example are shaping/firming costs (sometimes also referred to as firming costs) and shaping costs, i.e. the costs incurred when re-shaping variable production so as to match the consumption profile of industrial consumer. The European Commission²⁶ itself has also identified these costs as the most relevant obstacle preventing industrial consumers from signing Renewable Energy Power Purchase Agreements (RES PPAs).

Given that industry accounts for a large chunk (around 37%) of the EU's total electricity consumption, solving the issue of industrial RES sourcing is a pre-requisite to decarbonising the EU's electricity grid and -by extension- reaching climate neutrality in a globally cost-competitive way. The ongoing revision of the EU State Aid Guidelines on Energy and Environment (EEAG) and of the regulatory framework for the renewable energy framework should embed the above policy objectives (see next section further below).

One solution to be considered entails **the establishment of a massive pool of renewable electricity (the 'Green Pool'), which would enable electro-intensive consumers to access the required volumes of decarbonised electricity at globally competitive prices.** Electro-intensive consumers participate in the Green Pool by adding new RES capacity to

²³ According to the latest figures published by the International Renewable Energy Agency (IRENA), the majority of newly commissioned RES capacities already produce electricity at a cost that is comfortably lower than the cheapest fossil fuel alternative.

²⁴ European Commission, 2019. Competitiveness of corporate sourcing of renewable energy.

²⁵ Institute for European Studies (IES), 2019. Metals for a Climate Neutral Europe: A 2050 Blueprint.

²⁶ High-Level Group on Energy-Intensive Industries, 2019. Masterplan for a Competitive Transformation of EU Energy-Intensive Industries; Enabling a Climate-Neutral, Circular Economy by 2050.

the electricity system (e.g. by signing a PPA with a RES producer for new installations)²⁷. The electricity produced by these RES units is 'pooled' together by an aggregator established for this purpose. The aggregator undertakes all shaping responsibilities and supplies the consumer with a supply of electricity that matches its consumption profile. The firming and/or shaping costs²⁸ are borne exclusively by the aggregator, and the aggregator is compensated for a portion of such costs via public funding. To ensure that the aggregator and off-taker are not overcompensated, both parties should pay a small percentage of the shaping costs. The aid must also be consistent with State Aid rules, be limited to correcting market failures and avoid any sort of full compensation in order to be aligned with EU and national state aid rules. Aid should also be proportionate to the shaping costs associated to the different regional electricity markets across Europe.

The benefits of aggregation ensure that these costs are minimised to the greatest extent possible. The consumer offtakes a volume of electricity matching the production of the RES units that the same consumer has added to the Green Pool. However, the supplied electricity matches the consumer's consumption profile. Given that neither the producer nor the consumer are burdened by firming costs, the long-term PPA strike price can be significantly lower than it would have been otherwise.

RES units participating in the Green Pool would not require further compensation under RES support schemes for electricity generated, thereby ensuring that these units can enter the electricity system in a way that minimises the total system cost. Moreover, the Green Pool could also play a crucial role in facilitating the production of green hydrogen (given its electro-intensive nature, green hydrogen producers are facing the same challenges that other electro-intensive consumers are facing with regard to decarbonising their electricity supply), thereby also contributing to the decarbonisation of other sectors that will not be able to electrify their processes.

Given that firming/shaping costs are expected to increase as more intermittent renewable electricity capacity is introduced as part of the transition towards a decarbonised electricity system, the compensation of these costs via public funding is consistent with the purpose of funding possibilities that already exist in the EU, whereby the additional costs involved in applying a low-carbon process or technology may be compensated (for example, under the EEAG, the GBER, and in the context of the Innovation Fund).

Finally, the scheme only for a transitional period, until enough renewable and low carbon energy becomes available in the system

Supporting cross-border renewable energy capacity

One other solution could be a cross-border support mechanism backed by a public guarantee aimed to allow Energy Intensive Users (EIU) to source their renewable energy from where it brings most value while protecting them against electricity costs volatility and cross border risks. Such mechanism could take the form of an EU publicly backed offtake guarantee scheme, also in of a Contract for Difference (CfD), tailored for the consumption of renewable energy by energy intensive consumers. This is already the case in Spain²⁹.

²⁷ Please find [here](#) the detailed green pool proposal by ENERVIS, March 2021

²⁸ Normal balancing costs are an integral part of the power system and are incurred regardless of RES capacity in the grid. Balancing costs, as in intraday trading, manual and automatic frequency reserves must be borne by each participant in the power market. Firming/shaping of production profiles, on the other hand, usually entails selling and buying power in the day-ahead market in order to match power delivered with power declared for consumption by the consumer. These two concepts should be distinguished in the green pool.

²⁹ See [here](#) GIEK Guarantee Scheme for long term PPAs, September 2018 & more information on Spain's PPA credit guarantee scheme [here](#) (December 2020) and the Commission's approval of the scheme [here](#) (January 2021)

Procuring the required volumes of renewable electricity entails numerous challenges. One significant barrier to the further uptake of industrial RES sourcing, is the lack of products for the long-term allocation of cross-border transmission capacity.

Renewable PPAs tend to have a long duration (15-20 years, sometimes even longer). However, it is not currently possible to secure cross-border transmission capacity for a period longer than one year.

As a result, it is effectively impossible for electro-intensive companies to sign a cross-border PPA. This situation is contrary to the provisions of the recast Renewable Energy Directive (2018/2001), which specifically seeks to promote cross-border renewable electricity projects (Articles 8, 9 and 10 in particular, whereas Article 15 also requires Member States to remove unjustified barriers to long-term RES PPAs).

In order to solve this issue, a **third "standard Forward Capacity Allocation timeframe" could be added to the Harmonised Allocation Rules, encompassing a period of five years (the "five-year timeframe"), for which at least one auction would have to be organised every five years.** In order to avoid competition issues (related to the foreclosure of the interconnector capacity), it could be foreseen that a maximum of (e.g.) 20% of an interconnector's capacity could be subject to such long-term allocation. The impending revision of the TEN-E Regulation also constitutes an important opportunity to introduce incentives for the further development of Europe's interconnector capacities, given that larger interconnectors: (i) increase the possibilities for the cross-border trade of low-carbon electricity (*thereby playing a crucial role in enabling the integration of more RES capacity into the European system*), and (ii) reduce the possibility of any foreclosure effects that might be caused by long-term capacity booking. More importantly, long-term capacity booking can play an important role in financing such investment (*as already documented in gas infrastructure*). The net costs for the TSO of issuing LTTR must not be passed on to industrial consumers through grid tariffs or charges.

Decarbonisation of the natural gas supply

Other parts of the energy system must decarbonise. Renewable gases are extremely important in fostering the decarbonisation of the gas demand. So far policies to promote biogas production and consumption have been disorganised. A more strategic approach is needed. Particularly for what concerns the use of biogas to replace natural gas supply. This should be done in the most cost-efficient way. Europe should define a roadmap, with clear milestones, for cost-effectively decarbonise the supply of natural gas. Measures should also be consistent with the internal energy market, to allow for decarbonised molecules injected in the gas grid to flow across Europe without restrictions.

Possible policy options include:

- Establish a clear typology of gases coming from climate-neutral sources in the upcoming "Fit for 55" legislative package as foreseen in the Strategy for Energy System Integration. The current certification system for renewable and low carbon fuels in the existing Renewable Energy Directive is mainly on voluntary schemes and does not yet include all existing low carbon fuels such as for renewable fuels of non-biological origin (RFNBOs) and recycled carbon fuels (RCFs).
- Foster competition in new markets (e.g. hydrogen) from the start (e.g. regulation of transport tariffs, non-discriminatory access) in order to maintain competitive gas consumption costs for energy intensive industries.

Energy Taxation Directive (ETD)

Aluminium producers in Europe have to pay higher energy costs than industries in most G20 countries, with a consequential negative impact on their competitiveness³⁰. Therefore, energy taxation must play a role in mitigating these higher costs and become a crucial additional tool to maintain the global competitiveness of EU industries, while supporting their transformation to deliver the EU Green Deal objectives. Energy prices should allow EU businesses to be competitive in international markets.

Targeted measures (e.g. reforming taxes and levies, including exemptions) should be introduced in order to address the energy-price differential with major competitors and to ensure energy security³¹. In particular:

- The exclusion of energy products use in electrolytic and metallurgical processes from the scope of the ETD has been applied in a uniform manner across Member States, providing for a clear exemption, taking into account the use of the energy products and international competitiveness considerations for electro-intensive industries. Consequentially, Article 2, Paragraph 4 should be updated to reflect this reality, and foresee a clear exemption of energy products used in the metallurgical & electrolytic processes.
- Reduced rates should be allowed to favour the implementation of low-emission fuels by industry or switch to renewable gasses.
- The revised Directive could provide incentives for demand response participation of industrial facilities to the power grid.
- Energy products used in industrial HE-CHP (not just for the electricity producing "part" but also heat) should also be exempted, in order to incentivise primary energy savings;
- The exemptions for the use of mineral oil or fuels for the production of alumina should also continue and be clarified.

EU State Aid Guidelines on Energy and Environment (EEAG)

The new EEAG will be crucial to ensure the necessary national and EU funding to achieve the Green Deal's decarbonisation objectives to be regulated via the fit for 55% legislative package while accelerating the transformation of energy intensive and circular industries like aluminium. State Aid can be a powerful instrument to support the transformation of our industry, especially by supporting key investments and research in those decarbonisation technologies not yet available at scale on the market today but also providing regulatory relief where appropriate.

In particular, the possibility for targeted Renewable Energy Sources (RES) charge reductions under EU State Aid rules has played a crucial role in limiting carbon leakage for our sector, given that Aluminium smelters are particularly sensitive to any increase in the cost of electricity. Such approach should be extended to include all other potential charges caused by the integration of new decarbonisation technologies or policies stemming from the new legislation to be proposed. It is crucial to note that new decarbonisation policies introduced in legislation often have the intended or unintended effect of increasing the electricity price for industrial consumers³².

These reductions have played a crucial role in enabling the introduction of more ambitious renewable policies across Europe, by ensuring the stability of the financing base.

³⁰ See [European Commission report & summary](#): Evaluation of the Energy Taxation Directive, p. 29, September 2019

³¹ See our [response](#) to the Public Consultation on the Revision of the Energy Taxation Directive, April 2020

³² For further information on the EEAG and Aluminium, see our [memo](#) with our proposals annexed to the EU Public Consultation Questionnaire, January 2021

As explained in our response to the EU Public Consultation³³, the Commission must:

- **Preserve the approach adopted in paragraphs 188 and 189 of the current EEAG, wherein relief granted is proportionate to the specific exposure of each sector at the level of undertaking/activity.** In particular, the reduction of RES surcharges has been vital for preserving competitiveness and preventing carbon leakage in our industry. The reduction of RES surcharges by 85% for industry, with the possibility of limiting the costs to 0.5% of GVA for the most electro-intensive undertakings, should thus be maintained. The Guidelines should also specify that in the case of an integrated undertaking with activities in numerous sectors, the GVA should be calculated at the sub-undertaking level.
- **Maintain the principles embedded in EEAG that any aid to renewables' generation must be granted in a cost-effective manner based on competitive bidding.** Furthermore, introduce enabling conditions for the competitive consumption of RES electricity, particularly for electro-intensive industries.
- **Extend the EEAG's scope to reflect recent case law on existing surcharges related to the energy transition. This must carefully consider all future costs as a result of the path towards higher emission reduction targets for 2030 and the 2050 climate neutrality objective.** The GVA cap could potentially cover all related incremental costs.
- **The new EEAG must provide long-term certainty on regulatory costs related to electricity consumption so that solutions such as long-term low carbon PPAs can become more attractive.** One possible form could be a cross-border support mechanism backed by a public guarantee aimed to allow Energy Intensive Users (EIU) to source their renewable energy from where it brings most value while protecting them against electricity costs volatility and cross border risks.
- **Important Projects of Common European Interest (IPCEI) and breakthrough innovation:** The Commission IPCEI criteria should be amended to allow funding for the operational costs incurred by the use of low carbon production processes, including the additional costs incurred when consuming renewable electricity.
- **Support for circular value chains and sorting infrastructure:** The current Guidelines do not reflect the higher ambition for climate and circularity under the Green Deal and recently released Circular Economy 2 Action Plan. Aid should go beyond waste management systems and focus higher up the waste hierarchy to support innovative circular solutions.
- **Operating aid is not the only measure that can ensure the deployment of renewables: Investment aid can be a more viable option that offers certainty to investors.**
- **Competitive bidding process:** Bidding should remain the general rule for when there is competition and when projects are comparable and not at the early stages of the development process. However, industries with hard to abate emissions, and no available scalable technology, will need larger support than other type of industries where technologies are available. Therefore, competitive bidding might not be the only appropriate criteria to be considered and emission reduction potential must be taken into account.

In the review, the Commission should explore the possibility of demand-side measures to incentivise low carbon products.

³³ See [European Aluminium Annex memo](#) to the Public Consultation Questionnaire, January 2021