

The European Aluminium industry is committed to achieving the EU's ambitious decarbonization objectives. If we are to achieve climate neutrality by 2050, industries will have to rely on carbon removals and both mitigation and removal technologies will be necessary to decarbonize the aluminium sector.

In the sector's Greenhouse Gas Pathways to 2050 document released in September last year, the International Aluminium Institute (IAI) modelled three credible and realistic approaches to emissions reductions for the aluminium industry¹, in line with the International Energy Agency's Beyond 2 Degree Scenario. These were respectively 1) electricity decarbonisation (60% of the sector's global emissions derive from the consumption of electric power); 2) Direct emissions reduction; 3) and Recycling & resource efficiency. Carbon removal technologies such as CCS and CCU are identified under the direct emission reduction pathway as a crucial tool to achieve the beyond 2 Degree Scenario and reach net zero.

For this reason, we need to ensure a robust legislative and regulatory framework for removals to not only enable but also incentivize necessary new enabling technologies. We therefore welcome the Commission's initiative to develop carbon removal certificates to encourage the development of carbon removals and mitigation technologies in Europe and the opportunity to participate to the consultation process.

Support the development of emerging technologies

Firstly, it is pivotal that the EU supports the development of both carbon capture and abatement technologies to achieve climate neutrality in 2050. It is paramount industry is encouraged to test out new technologies. As of 2020, only 13 commercial facilities are in operation (in various stages of development) across Europe². If CCS is to play an important part in the fulfilment of the Climate Law objectives, industrials must receive support for risky investments.

Current CCS installations have a typical capture rate in the order of 90-95%³, meaning that 5-10% of the CO₂e generated is emitted to the atmosphere. To achieve a net zero-emission target, there is thus a need to install direct air capture to complement the off-gas capture systems, thereby ensuring the complete removal of the amount of CO₂e produced.

Going beyond the research stage, the Innovation Fund should support innovative carbon removal projects, including DACCS and BECCS. Support should be given to both CAPEX and OPEX (including operation of capture plant, transport, and storage). Also, Horizon Europe and the Connecting Europe Facility should cover CO₂ capture, transport, and storage from off-gas as well as through DACCS, in addition to other negative emission solutions.

To speed up commercialization of innovative technologies, we support the Commission's proposal to increase the size of the Innovation Fund and to include the possibility CcFDs in the revised EU ETS Directive. However, it is of great importance to create a thorough in-depth analysis of the possible design options and implementation modes for getting a successful CcFD. As designed as of now, they do not offer a sufficient comprehensive commercial risk mitigation for projects because of the following reasons:

- Hedging carbon abatement costs will not by itself ensure commercial viability of low carbon projects sold on global markets where willingness to pay for these low-carbon projects does not always match the cost of developing them, even with CcFDs.

¹ See [here](#) Aluminium Sector Greenhouse Gas Pathways to 2050, September 2021

² See [here](#) Global CCS Institute, *Global Status of CCS 2020, CCS, vital to achieve net-zero*

³ See [here](#) Global CCS Institute, *Global Status of CCS 2020, CCS, vital to achieve net-zero*

- The way CCfDs are designed should factor in the lack of a global level playing field compared to third countries where producers are not subject to similar carbon costs.
- An effective CCfD would be one that compensates the full abatement costs in the EU. e.g., the difference should be calculated between production costs of carbon removal technologies and production costs without carbon removals.
- Right now, CCfDs only compensate the difference with the EU ETS price, which fails to provide an actual incentive in investments in high-risk carbon-reducing technologies leading to decarbonization.

Wide-spread CO₂ transport and storage

Not all industrial installations in Europe benefit from the proximity of CO₂ storage sites. Currently, it is much easier to implement CCS in countries that have access to old, depleted natural gas fields where the CO₂ can be stored.

The EU therefore also needs to develop a flexible and efficient regulatory framework for transport and storage to facilitate those removals become an eligible option for all industries across the European territory, including via the TEN-T regulation. Also, the revised TEN-E Regulation should include CO₂ transport via pipelines in the criteria for Project of Common Interest to encourage investment in CO₂ pipelines. Developing the necessary infrastructure for the transport and storage of CO₂ is absolutely crucial in order to preserve a level playing field under the EU ETS. If this does not happen, ETS benchmarks will be set by installations in countries with access to CO₂ storage sites, whereas installations in other countries will face exorbitant carbon costs but will not be able to reduce their emissions by implementing CCS.

Finally, building on the positive experience of the EU Hydrogen Hubs (or clusters), the EU should develop similar carbon removal hubs for ETS-eligible removals, for industries to exploit synergies and accelerate the deployment of new technologies/processes through co-operation. This would allow to ensure the entire European value chain can benefit from the scaling up of both public and private investment and ensure cross industry cooperation on carbon removal technologies.

Coordination with the EU ETS

Carbon removal certificates offer a perfect framework for inclusion of removal and mitigation technologies in the ETS. If certificates are tradeable against EUAs, it will incentivize investments in new projects. The earlier this is allowed, the more it will contribute to mitigating climate change.

To deliver on the Climate Law objectives, the combination of CCS and DACCS should serve as a source of “emission reduction” in annual ETS compliance obligation. As a first step, installations using CCS in combination with DACCS should not be obliged to surrender allowances in EU ETS.

The ETS should allow for the purchase and use of all types of removal credits as emissions compliance instruments in case the removal is considered permanent. This should cover emissions from all installations. The accounting rules for all types of removal credits need to follow certification procedures ensuring a robust, transparent, and permanent reduction.

A new EU ETS compliance flexibility allowing the use of these new credit types should gradually become eligible as soon as possible.

All removal credits should in principle be exchangeable with an EUA if they satisfy the definition of the “long-time/permanent” emission removal requirement and should be bankable without any time limitation. All removal credits should be traceable and thereby tradeable without any restrictions to create a viable and liquid market.

An adequate monitoring, reporting and verification framework

The carbon removal certificates should ensure traceability of captured CO₂ and should track how much fossil, biogenic or atmospheric CO₂, respectively, is transported, processed, stored, and potentially reemitted to the atmosphere each year.

As soon as possible any ton of CO₂ captured, transported, used, and stored by industries should be reported and accounted for by its fossil, biogenic or atmospheric origin.

Finally, if emissions trapped in a product via CCU are not considered as long-time/permanent removal of CO₂, a CCU credit should not have a one-to-one exchange with an ETS allowance (EUA). Therefore, CCU should initially represent a possible option towards our future voluntary contributions under scope 3.

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