

Strengthening the EU Emissions Trading System

Clean Air Task Force (CATF) recommendations for the EU ETS revision (2026/0212(COD))

CLEAN AIR TASK FORCE



Executive Summary

The European Commission's July 2026 proposal to revise the EU Emissions Trading System (ETS) initiates a key process in shaping the Union's climate and industrial framework for the period to 2040. The review represents a critical opportunity to ensure that this foundational policy continues to deliver credible, high-integrity emissions reductions, and to further strengthen the system for a decisive decade in the transition to climate neutrality.

Clean Air Task Force (CATF) welcomes the proposal as a considered attempt to adapt the system to new technological, geopolitical, and economic realities, particularly when it comes to integrating permanent carbon removals and introducing funding mechanisms like the Industrial Decarbonisation Bank (IDB). However, the European Parliament and the Council have an opportunity to substantially strengthen the policy in a number of areas.

Drawing on the breadth and depth of our expertise, grounded in decades of experience, we examine below key elements of the proposal and provide recommendations for consideration by the European Parliament and the Council. We call for a cautious and integrity-driven approach to integrating permanent carbon removals, alongside greater ambition and policy clarity in the inclusion of aviation and maritime emissions, as well as the expansion to municipal waste incineration and landfills. For heavy industry, we argue for tightening conditionality on free allowances and propose a possible design for an effective competitive bidding mechanism under the IDB, grounded in existing best practices and coordinated with funding for shared infrastructure. Across all sectors, a more transparent and targeted use of ETS revenues will be essential to driving the transition to a low-carbon, modern, competitive economy.

Recommendations for the revision of the EU ETS Directive

Domestic permanent carbon removals

- Ensure that only permanent carbon removals meeting the conditions necessary for integration into the EU ETS, such as DACCS and BioCCS, are eligible for purchase.
- Complement Article 9c(8) with appropriate follow-up actions in cases where the Commission assessment report identifies shortcomings.
- Ensure the delegated act on permanent carbon removals supports a balanced portfolio of BioCCS and DACCS, avoids biomass overreliance, and enables pre-2031 forward offtake agreements.

- Require the Commission's Article 9c(8) assessment to evaluate system integrity, abatement costs, and the evolution of relevant EU policies.

Aviation

- Assess the role that permanent carbon removals will play alongside SAF in the pathway to net-zero aviation by 2050.
- Establish a bespoke allowance reserve for contrail mitigation, separate from the SAF allowance reserve.
- Present a legislative proposal to account for contrail impacts through a mechanism aligned with the 'polluter pays' principle.
- Extend the EU ETS to all flights departing from EU/EEA airports.
- Increase the SAF allowance reserve to support the volumes required by ReFuelEU aviation

Maritime transport

- Ensure the proposed Sustainable Maritime Alternative Propulsion (SMAP) mechanism is technology-neutral and supports emerging low-carbon propulsion technologies.

Municipal waste incineration and landfills

- Ensure that any temporary opt-out possibilities for Member States introduced until the end of 2035 considers total installed capacity for waste incineration.
- Prevent the allocation of credits for emissions notionally avoided by incineration.
- Develop a robust MRV methodology for landfill methane by 2031.
- Expand the scope of the ETS to include landfill methane by 2033 and require landfills to obtain allowances for their emissions.

Non-permanent carbon capture and utilisation (CCU)

- Carefully address emission leakage via CCU products to safeguard the environmental integrity of the ETS.
- Accompany downstream accounting with a mechanism to shift part of the carbon price signal from MWIs to producers of MWI-destined products.

Industrial Decarbonisation Bank (IDB)

- For the Investment Booster, require review of the fixed premium where market conditions change materially. Undertake a robust pre-selection process and introduce safeguards against excessive concentration of support.
- Strengthen the design of CCfDs in Phase II by requiring full two-way settlement and allowing contracts of up to 15 years. Where the carbon price rises above the strike price, the project should pay the difference to the IDB for reuse in later rounds.
- Require sectoral safeguards in competitive bidding to account for sectors with structurally higher decarbonisation costs.
- Coordinate IDB awards with existing infrastructure funding and allow for IDB to fill the remaining funding gaps.

Conditionality on free allowances for heavy industry

- Strengthen conditionality by increasing the share of free allocation withheld pending delivery from 20% to 40% for 2031-2035, and 60% for 2036–2040.
- Introduce a milestone-based intermediate tranche by releasing 20% of free allocation only if demonstrated progress has been made in the third year of each period.
- Allowances withheld because no plan is approved or the conditions are not met should be auctioned, rather than returned to free allocation in the following period.
- Explicitly recognise both CAPEX and OPEX as eligible decarbonisation investment.

Auction revenue use

- Strengthen transparency on the distribution of ETS revenues, with clear breakdown of spending across priority areas, sectors, and technology-level detail where relevant.
- Establish an industrial decarbonisation subfloor within the 50% priority spending requirement, based on the industry's share of national emissions and an assessment of sectoral decarbonisation spending needs.
- Create a dedicated maritime and aviation decarbonisation window within the 50% priority spending requirement.
- Establish a regular assessment mechanism for Member States' spending compliance to track continued gaps in priority areas.
- Establish a review clause for additional measures if underspending persists in priority categories.



SECTION 1

Domestic permanent carbon removals

Integrating permanent carbon removals into the EU ETS is one of the most consequential design decisions of this review. As the EU advances towards its 2040 climate target and net zero by 2050, carbon dioxide removal technologies - particularly biogenic carbon capture and storage (BioCCS) and direct air carbon capture and storage (DACCS) - will be essential to address residual emissions from hard-to-abate sectors that cannot be fully decarbonised through direct mitigation alone. The Commission's modelling for the EU's 2040 climate target indicates that 49 million tonnes (Mt) of removals via these technologies would need to be delivered annually by 2040, in order to achieve an 88% reduction in net emissions.

The EU Carbon Removal and Carbon Farming (CRCF) Regulation (EU/2024/3012) has established a foundation for certifying permanent carbon removals, but but mechanisms to drive the deployment of these technologies remain underdeveloped, and the EU ETS represents one of the most credible existing mechanisms to create durable demand at scale, provided that supporting policies are developed in tandem.

Carbon removals also offer a potential solution to the so-called endgame challenge of the EU ETS: as the emissions cap approaches zero, issues of price volatility and market liquidity, as well as cost-efficiency are expected to intensify. Integrating permanent carbon removal allowances could help stabilise the system by sustaining traded volumes and mitigating scarcity-driven volatility as the cap declines, offering emitters a cost-effective means to address their residual emissions with carbon removals. However, integrating removals into a cap-and-trade system designed around emissions reductions requires careful design to preserve environmental integrity and avoid deterring the abatement action the ETS is built to drive: these challenges were examined in a joint CATF and Concito report in 2024.

CATF welcomes the Commission's proposal to gradually integrate 250 Mt of certified BioCCS and DACCS credits into the ETS in the period 2031 to 2040, which represents a landmark increase in efforts to deploy permanent carbon removals and can help bring these technologies on to a trajectory compatible with climate neutrality by 2050. The Commission's proposed role as an intermediary procurer of these credits can help ensure that a strategically diverse mix of high-integrity removal projects is developed in a timely manner.

However, the proposed integration relies heavily on the assumption that the revenue from the auction of 250 Mt of additional allowances, in addition to up to 10 Mt of existing allowances, will be sufficient to procure an equivalent volume of domestic permanent removals. The impact assessment determines that the net funding gap could range from net positive to a 3 billion EUR cost for deployment of 175 and 330 Mt of removals, respectively.

This calculation is highly sensitive to factors including the cost of early BioCCS and DACCS projects, the technology mix procured, future allowance prices, and – crucially – the relative timing of auction revenue streams and removal procurement within the period to 2040 and beyond. The costs of BioCCS used in the PRIMES model are at the low end or below the cost range determined by the impact assessment's review, while the assumed cost of DACCS declines steeply to 2040 – in reality, such a cost learning curve will strongly depend on global deployment rates.

At an allowance price of 150 EUR/t, the revenue from the additional 10 Mt of auctioned allowances would only raise 6 EUR for each procured removal. CATF therefore finds there is a significant risk that permanent removals will be underdelivered as a result of revenue shortfall, resulting in a net increase in emissions due to the additional allowances placed on the market.

Currently, the proposal's main mechanism to address such a shortfall is through a Commission progress report due in 2034 (i.e. Article 9c (8)), which will assess progress in the purchase of domestic permanent carbon removals, accounting for available supply and price of such units relative to the allocated budget. It will also examine the possible contribution of nature-based removals and carbon farming. CATF cautions against the implied replacement of permanent carbon removal units with temporary removals and those methods which are inherently challenging to monitor and carry a material risks of reversal without appropriate liability mechanisms in place, such as biochar. The revision should therefore provide alternative means to address an impending shortfall, including: a) securing additional revenue to procure permanent carbon removal units in the event of a funding shortfall; and b) releasing fewer allowances to match the volume of removals being procured.

The timing of the available revenue and delivered removals should be carefully considered. The proposed gradual increase in auction revenue to 48 Mt of allowances in 2040, suggests that a large proportion of the procured removals will be delivered post 2040. This backloading of revenue and procurement should favour increased revenue and give time for the removal project pipeline to grow and for costs to decline. However, there is an urgent need to progress projects in the near term, given many are already in an advanced stage of development and lacking a business case. This can also maximise the proportion of the 250 Mt which can be removed in the period to 2040 and ensure alignment with EU climate targets.

CATF also welcomes the provision for operators, aircraft operators and shipping companies to offset their own ETS emissions via the internal generation of certified BioCCS removals, which could help provide an additional – potentially faster moving – driver for the deployment of BioCCS projects. However, these credits are more likely to be sold on voluntary markets where they can command a higher value than the prevailing ETS price.

To deliver the necessary scale up of carbon removals in the EU, ETS integration must be accompanied by comprehensive supporting policies to ensure sustainable deployment, such as public procurement programmes, reverse auctions, or carbon contracts for difference schemes (CCfDs). These should be developed outside or in conjunction with the EU ETS to bridge cost gaps between allowance prices and permanent carbon removal costs, particularly for DACCS, while avoiding weakening support for other critical emission reduction technologies.

Policy recommendations

- **Ensure that only permanent carbon removals meeting the conditions necessary for integration into the EU ETS, such as DACCS and BioCCS, are eligible for purchase.** For BioCCS and DACCS, geological storage is already embedded in the established regulatory architecture under the ETS and CCS Directive. This includes requirements governing monitoring, leakage, corrective measures, financial security and the surrender of allowances in the event of leakage. By contrast, methods for which equivalent safeguards have not been demonstrated, such as biochar carbon removal should not be considered within the EU ETS, in line with the Commission proposal, even if they are considered permanent under the CRCF Methodology.
- **Complement Article 9c(8) by appropriate follow-up actions in cases where the Commission**

assessment report identifies shortcomings affecting the delivery of the quantity of permanent carbon removals referred to in Article 9c(1), or a funding gap undermining the procurement of those removals. Some of the corrective actions include:

  - A mechanism to source limited additional revenue for the procurement of permanent removals should be incorporated into the revision, in the event that a shortfall of funding is projected in the report produced according to Article 9c(8). For example, such revenue could be derived from auctioning a specified quantity of additional allowances in the period 2036-2040, including any of the free allowance allocation to hard-to-abate sectors which has not been allocated due to failure to meet the proposed requirements under Article 10a(3).
  - In the event that a shortfall of permanent removals persists by 2040, including the projected delivery from projects contracted beyond 2040, the Commission should be empowered to remove from the market a volume of allowances corresponding to the shortfall.

- **Ensure that the future delegated act concerning the modalities for the purchase of permanent carbon removals includes a mixed portfolio of BioCCS and DACCS to guard against the long-term over-dependency on biomass and enables the use of forward offtake agreements which can be signed pre-2031.** This will establish an incentive for first-mover projects and maximise delivery of removals in the 2030s.
- **Require the Commission, in its assessment report pursuant to Article 9c(8), to evaluate the environmental integrity and functioning of the system, abatement costs, and the evolution of relevant Union policy measures.**



SECTION 2

Aviation

A. The role of carbon removals in aviation decarbonisation

Aviation is one of the sectors that are hardest to decarbonise. Synthetic low-carbon fuels (commonly named e-SAF) are expected to play a central role in this process, as biofuel supply will be insufficient to meet the net-zero demand and may create risks associated with land use, ecosystems, and food security. A mix of energy carriers will therefore be needed, including low-carbon biofuels, synthetic fuels, and other hydrogen-based alternatives. CATF analysis indicates synthetic fuels could meet a significant share of demand in mid-century scenarios, but their large-scale deployment will depend on substantial cost reductions, access to low-carbon hydrogen and electricity, and strong policy support.

Given the uncertainty around these enabling conditions, it is essential to also assess alternative pathways for reducing the climate impact of aviation, including the role of permanent carbon removals. However, the integration of carbon removals into the EU ETS could affect investment decisions of the nascent e-SAF industry and the effectiveness of existing legislation like ReFuelEU Aviation. Policy should ensure that all available technologies are available to reach net zero aviation, including e-SAF and permanent carbon removals.

Policy recommendations

- The Commission should be required to assess the role that permanent carbon removals will play alongside sustainable aviation fuels (SAF) in the pathway to net-zero aviation by 2050. In particular, it should evaluate how the availability of removals within the EU ETS would interact with fuel-based decarbonisation pathways, including the risk of diverting investment away from synthetic low-carbon fuels and advanced biofuels that are critical to achieving long-term emissions reductions. The Commission should also assess the trade-offs between competing uses of captured carbon, including the impacts on air quality, public health, and non-CO_2 emissions. It should consider the interactions with ReFuelEU Aviation and broader fuel policy frameworks at both the EU and international level.

B. Non-CO_2 impacts

Contrails are a significant and currently under-addressed driver of aviation's climate impact, while also representing one of the most immediate and cost-effective mitigation opportunities. Contrails are wispy cloud formations that form when aircraft fly through ice-supersaturated regions (ISSRs) at high altitudes emitting soot particles that serve as nuclei for ice crystal formation. These contrails can trap heat and contribute significantly to warming. Their unique characteristics mean they can be mitigated quickly, at relatively low cost, and through highly targeted interventions.

Depending on the methodology and the timescale of the climate metric employed, the warming impact from contrails is comparable to aviation's CO_2 emissions. Recent scientific literature finds that near-term warming from contrails (i.e. warming over the 20-year period after a flight) is equal to or somewhat higher than the near-term warming caused by the flight's CO_2 emissions. Even when assessed over a 100-year period after the flight (which discounts the impact from contrails, since they are short-lived in the atmosphere), contrails add about one third to the warming caused by CO_2 emissions from aviation. Crucially, this impact is highly concentrated: around 80% of contrail warming is generated by just 2% of flights, often on long-haul routes such as transatlantic flights. This concentration makes contrail mitigation particularly effective, as a small number of targeted interventions can deliver disproportionate climate benefits.

Mitigating contrails requires a combination of approaches, as highlighted in the CATF report on non-CO_2 effects of aviation, given that contrail formation depends on fuel composition, engine technology, and atmospheric conditions. In particular:

- Small adjustments to flight paths to avoid ISSRs, on a small fraction of flights, can dramatically reduce overall contrail occurrence. Tests performed by Google and American Airlines show around 2% additional fuel usage to avoid these areas on 3-5% of flights resulted in a 54% reduction in contrail-related warming according to post-flight analysis of satellite imagery. This highlights the potential of targeted contrail mitigation measures.[2]
- SAF contains lower levels of aromatics and sulphur than conventional jet fuel and can significantly reduce soot emissions which play a key role in contrail formation, thereby limiting it. Further reductions may also be achieved through treatment of conventional kerosene to lower its aromatic content.
- Advancements in engine technology present a significant opportunity to mitigate contrail formation by reducing soot emissions.[3] Supporting fleets modernisation towards lower-soot engines could help cut the non-CO_2 climate impacts from aviation.

Policy recommendations

All The EU ETS Directive should incentivise immediate mitigation of non-CO_2 effects of aviation.

- All effective policy must be grounded in robust and reliable data. **Maintaining and fully implementing the MRV system for non-CO_2 aviation effects is therefore critical**, particularly given the high variability of contrail formation. The full implementation of the Non-CO_2 Aviation Effects Tracking System (NEATS), the EU system for monitoring and reporting aviation non-CO_2 effects, and its expansion to all flights as of 2027 will be key. This expanded dataset will be critical for the Commission to present the data and methodology in accordance with its legal obligations as soon as possible.
- **The creation of contrail-specific allowances, proposed by the Commission in article 3c(a), is a fundamental first step. However, contrail allowances should not be covered from the SAF allowance reserve,** which is already constrained and should remain focused on clean fuel deployment. **Contrail mitigation warrants a separate, dedicated mechanism with an increased budget** to support the practical costs of contrail avoidance, including trials and data systems. Support should not be limited to aircraft operators as effective contrail avoidance will require participation across the aviation ecosystem, including aircraft manufacturers and air traffic management and flight planning.

- In addition to contrail allowances, **where robust MRV is available, the EU should exempt from ETS compliance obligations the additional fuel burn directly caused by contrail avoidance,** so that airlines are not penalised for taking climate-positive operational action.
- **The Commission should present a legislative proposal to account for contrail impacts through a mechanism aligned with the 'polluter pays' principle.** This would ideally be done through a dedicated mechanism outside of the EU ETS cap, given that contrail formation is highly variable and dependent on atmospheric conditions, making it difficult to reflect within a predictable and linear reduction pathway. Moreover, the estimated climate impact is highly sensitive to the choice of metric (e.g. 20-year global warming potential (GWP20) vs. 100-year global warming potential (GWP100)), given the short-lived but intense nature of contrail warming.

C. Expansion of scope to extra-EEA flights

International aviation accounts for a disproportionate share of emissions yet remains largely outside of the scope of the EU ETS. While long-haul flights account for less than 10% of departures, they account for more than half of aviation's carbon emissions, a proportion expected to rise to around 56% by 2050. The expansion of the EU ETS scope to extra-EEA flights within a 5000 km radius, as proposed by the Commission, would still keep out a large portion of international flights and represent a significant missed opportunity for revenue generation: pricing emissions from all departing flights would generate an average of 4bn EUR per year, which could be reinvested to accelerate the uptake of SAF and support the sector's transition to climate neutrality.

Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) was designed to address emissions from international aviation, but its current design and implementation raise serious concerns about its effectiveness. While CORSIA will enter its implementation phase in 2027, major aviation countries are unlikely to apply it in practice, not reaching the sufficient global coverage to reach the 70% threshold minimum established by the Commission. As a result, CORSIA currently cannot be relied upon to deliver meaningful emissions reductions at scale. This reinforces the need to consider extending the EU ETS to international flights, in line with the original scope agreed in 2008.

CORSIA cannot serve as the main instrument for cutting emissions from international aviation effectively, given that:

- It is not a cap-and-trade system, but an offsetting scheme based on a baseline (85% of 2019 emissions for 2024–2035).[6] It aims at "carbon-neutral growth" rather than absolute emission reductions and only covers emissions above that baseline. By contrast, the EU ETS applies to total emissions and provides a clearer pathway to net zero, supported by a significantly stronger carbon price signal to drive emissions reductions and investment in low- and zero-carbon fuels.[7]
- Participation remains low and implementation weak. Major aviation markets, including the US or China[8], have yet to transpose key elements such as offsetting obligations into domestic law. So far, the US has only implemented MRV on a voluntary basis, without a legal framework to enforce compliance.
- Enforcement is limited under CORSIA. It lacks a binding international compliance system, leaving enforcement and penalties to national authorities or voluntary application, which reduces incentives for airlines to comply.
- Sustainability safeguards for SAF under CORSIA remain weaker than EU standards, particularly regarding indirect land-use change risks, potentially allowing a greater role for food-based fuels that would not meet EU Renewable Energy Directive (RED) criteria.

Policy recommendations

The scope of the EU ETS should be extended to all flights departing from EU/EEA airports, not limited to a 5000 km radius, to ensure that all emissions linked to these departures are subject to a binding carbon price, addressing the current gap in coverage of long-haul flights. A departure-based approach, with appropriate interaction with CORSIA, would maintain a clear territorial link and be consistent with international law.[9] A limited radius-based approach, proposed by the Commission, would keep most long-haul routes outside the system, including major markets such as the US and China, and would not treat different destination countries, routes, and airline business models equally.

While a well-functioning international market-based measure for aviation remains the preferred mechanism, CORSIA in its current form is not sufficiently robust, nor – as stated by the Commission – effectively implemented to deliver the emissions reductions in line with the Paris Agreement and International Civil Aviation Organization's (ICAO) objective of net-zero carbon emissions by 2050. The EU ETS provides a more credible and immediate pathway to driving emission reductions and supporting the uptake of low- and zero-carbon fuels.

At the same time, **the Commission and Member States should continue to actively participate in ICAO discussions to strengthen CORSIA's ambition, coverage, enforcement, and environmental integrity, with inclusion of contrails.** Clear qualitative and quantitative criteria should be established to assess whether CORSIA can credibly replace EU action, including effective implementation, comprehensive emissions coverage, robust sustainability safeguards, enforceable compliance, and a meaningful carbon price signal.

D. Incentives for sustainable aviation fuels

The EU ETS has been an essential policy to incentivise the uptake of SAF by airlines, particularly through SAF allowances, which are intended to partially compensate for the price differential between SAF and fossil kerosene. The level of compensation varies by fuel type and currently applies to SAF uplifted between 2024 and 2030. The Commission has proposed to extend the SAF allowance mechanism to 2040 and to increase the number of allowances to 110 million. This is a welcome step, but CATF analysis identifies shortcomings in the capacity of this mechanism to create long-lasting system change. Under the proposed approach, support for e-SAF/RFNBO aviation fuels would fall from 95% of the eligible price gap to 60%, or 70% with the origin/feedstock bonus; advanced biofuels would fall from 70% to 50%, or 60% with the bonus; and HEFA/Annex IX-B would fall from 50% to 30%, or 40% with the bonus, only until end-2029.

These measures raise two issues, both pointing to the need for a larger reserve. First, while this reserve can help reduce early cost gaps, it is too limited to serve as the main delivery mechanism for the e-SAF scale-up required under ReFuelEU Aviation. In particular, the reserve is highly volume-constrained for e-SAF. In 2025 prices, 110 million allowance reserve could theoretically only support 1.82 Mt of e-SAF at 60% support, or 1.56 Mt at 70% support. These volumes are insufficient to reach the 2030 ReFuelEU targets, even under optimistic price assumptions. A larger reserve would therefore be needed to cover higher volumes of SAF, in line with ReFuelEU targets.

Second, the proposed adjustments would substantially increase airline exposure to e-SAF costs.[10] For every 10,000 tonnes of e-SAF[11], the airline contribution would rise from around €3.7 million under the current 95% rate to €29.6 million at 60% support, or €22.2 million at 70% support. This means an additional burden of approximately €18.5–25.9 million per 10,000 tonnes of e-SAF.[12] Therefore, a higher reserve would also be required to ensure that higher percentage can continue to be covered.

The Commission's impact assessment examines the option of reserving 280 million allowances for the use of

SAF, which would allow for higher coverage for airlines, compared to the legislative proposal, creating therefore a better case for e-SAF and advanced biofuels demand signals past 2030. Without an increased SAF allowance pool, the support for e-SAF risks becoming increasingly diluted as volumes rise, while airlines would be exposed to substantially larger share of the cost differential. A larger reserve, financed by expanding the scope of the ETS to international aviation, would therefore be necessary to maintain meaningful support levels as ReFuelEU targets rise.

Policy recommendations

The proposed reserve can serve as an early-deployment bridge but is not a credible scale-up strategy. For the EU to reach the required 2035–2040 volumes of e-SAF, **the EU ETS SAF allowance mechanism would need a larger dedicated pot,** complemented by additional instruments such as contracts for difference, long-term offtake mechanisms, hydrogen and electricity infrastructure support, and targeted investment aid. If the SAF allowance pool is increased to 280 million allowances, as outlined in the impact assessment, the price differential coverage for e-SAF and advanced biofuels could remain in line with the current levels of support. The priority should be to ensure sufficient duration and predictability of support to sustain e-SAF and advanced biofuel offtake.



SECTION 3

Maritime transport

The EU ETS for maritime remains a critical instrument for driving decarbonisation of the shipping sector, particularly as progress at the International Maritime Organization (IMO) on a global carbon pricing framework has effectively stalled and there are few indications of a near-term breakthrough. Maintaining a robust EU ETS covering international voyages is therefore essential. By upholding a credible carbon pricing signal, the EU plays a key role in advancing innovation and accelerating the transition towards low- and zero-carbon shipping both within Europe and globally.

The system is already acting as a pull factor for the deployment of low-carbon vessels and fuels, including dual-fuel ships and the development of scalable options such as ammonia. As such, the EU ETS should remain a cornerstone of the EU's shipping decarbonisation strategy and continue to support early investment in clean maritime technologies and infrastructure.

Notably, the Sustainable Maritime Alternative Propulsion (SMAP) mechanism, proposed by the Commission, represents an important evolution in the design of the EU ETS, moving beyond carbon pricing alone and following the logic already established through the aviation SAF allowances mechanism. The proposed support levels are ambitious, particularly for RFNBOs, hydrogen, and zero-emission propulsion technologies. However, the overall size and duration of the mechanism are likely to be insufficient relative to the scale of investment required to decarbonise the maritime sector. Moreover, shipping fuel demand, infrastructure requirements, and fleet renewal cycles extend well beyond 2040, so early assessment and potential extension of the mechanism will be critical.

Policy recommendations

- **The scope of the EU ETS should be extended to cover emissions from smaller vessels above 400 gross tonnage (GT), including offshore ships,** as proposed by the Commission. Bringing these vessels into the EU ETS would close an important regulatory gap, ensure greater consistency across the fleet, and strengthen incentives for early deployment of scalable low- and zero-carbon fuels such as hydrogen, ammonia or e-fuels. It would also expand the revenues available for reinvestment in clean fuel development and infrastructure. Additionally, smaller ships that perform shorter routes are better

suited to early adoption of alternative propulsion technologies, including full electrification and hybrid solutions, given their predictable operational profiles and proximity to ports where charging or clean fuel bunkering infrastructure can be deployed efficiently.

- **The proposed Sustainable Maritime Alternative Propulsion (SMAP) mechanism should focus on accelerating the deployment of low- and zero-emission fuels and transformational propulsion technologies.** Broader retrofit support should primarily be delivered through earmarked ETS revenues rather than drawing resources away from fuel deployment. The Commission's proposal is not sufficiently clear on how ETS revenues from maritime transport will be recycled into the sector and whether retrofit investments will receive dedicated support. Furthermore, **SMAP should be fully technology-neutral, supporting additional low-carbon technologies as they mature**, potentially including advanced nuclear propulsion systems where they can demonstrate compliance with applicable safety, security, and environmental requirements.



SECTION 4

Municipal waste incineration and landfills

The waste sector accounts for roughly one quarter of EU anthropogenic methane emissions.[13] While total methane emissions from the EU waste sector have been reduced over the past 25 years[14], likely due to the diversion of biodegradable waste mandated by the EU Landfill Directive, independent measurement campaigns[15] and satellite data[16] continue to reveal significant emissions at many EU sites.

A. Incineration

Municipal waste incineration (MWI), also known as thermal waste-to-energy, refers to a suite of technologies that treat solid waste by combusting it in a controlled environment to reduce its volume and destroy pathogens. In this revision, the Commission proposes to extend the current coverage of the EU ETS on waste co-incineration, to cover all non-hazardous waste incineration and co-incineration installations with a capacity exceeding 3 tonnes per hour as laid out in Directive 2010/75/E with a gradual phase in of allowances between 2031 and 2034. **CATF welcomes this extension as it will further disincentivise incineration of waste as the EU continues to transition towards a circular economy** and contribute towards achieving the recycling and re-use targets (EU 2018/851). To this end, the inclusion of support for local authorities in implementing measures in line with the higher steps of the waste hierarchy as an eligible use of auction revenues (article 10(3) is a positive and welcomed step showcasing how the ETS can further support this shift towards a more circular EU.

The proposal also establishes that MWI installations are obliged to surrender 100% of their verified emissions as of 2034 (Article 12a). By derogation, the proposal establishes that Member States implementing appropriate equivalent measures should be eligible to a temporary national opt-out. **However, the opt-out for Member States that can meet two of three conditions** (having an equivalent national carbon tax, on track to achieve the EU municipal waste recycling targets, and on track to achieve the municipal waste landfill target) **is counter intuitive and works against the decarbonisation goals of the ETS**. These criteria measure how well a country is doing on recycling and landfill but ignore the overall scale of waste incineration and its emissions in a Member State. Of the 10 Member States which manage the most waste via incineration in the EU (tons managed), six have met the landfill waste target as of 2024, and five have met the 2020 recycling and re-use targets as of 2024.[17] Therefore, a**ny opt-out included by the Commission should therefore consider total installed capacity for waste incineration**, to ensure that Member States are not granted an exemption solely on the basis of their progress towards recycling and landfill targets, while continuing to operate large-scale incineration capacity and generate significant emissions.

CATF also strongly supports that technologies, processes and techniques that directly reduce emissions from municipal waste incineration installations, particularly through carbon capture and storage, will be eligible for support from the Industrial Decarbonisation Bank, Innovation Fund and Modernisation Fund.

An undesirable consequence of disincentivising incineration would be the continued landfilling of municipal solid waste in Member States that are lagging in implementation of landfill and recycling targets. Many of these Member States, such a Spain, Portugal, Greece, Romania, etc., continue to landfill large quantities of municipal waste, including bio-waste, and are a major source of methane emissions, as evidenced by repeated satellite observations by groups like Carbon Mapper.[18] Methane is a potent greenhouse gas, with a stronger impact than CO_2 on warming our planet. Therefore, **it is critical that landfill methane emissions be also covered by the EU ETS.** This will help to further incentivise source separation, waste treatment, and circular economy goals in the EU and limit the overall climate impact of the waste sector.

It is also important that **operators of waste incinerators not be allowed to utilise accounting that allows any form of credit for avoided emissions**, either within the ETS or through a parallel mechanism, based on claims of emissions that would have occurred from landfills if waste had not been incinerated. First, given the variability in methane emissions, it is inherently challenging to produce a credible estimate of the amount of methane emissions that would have resulted from landfilling waste, making the "baseline" needed to quantify avoided emissions uncertain. Second, such an approach could lead operators of incinerators to pursue actions that would be detrimental to climate, particularly due to the potential high value of the credits (a result of the high global warming potential of methane). For example, operators might seek to incinerate food waste (despite its low heating value) because food waste generates large amounts of methane when landfilled. It is very challenging to create general guardrails to prevent all such detrimental practices, so they should not be allowed within or outside of the EU ETS for incineration.

Policy recommendations

- **Ensure that any temporary opt-out possibilities for Member States introduced until the end of 2035 considers total installed capacity for waste incineration.**
- **Prevent the allocation of credits for emissions notionally avoided by incineration.**

B. Landfills

Emissions of methane from landfills are substantial. While regulatory requirements (e.g., mandating pre-treatment of waste, minimisation of landfilling, and restrictions on landfilling recyclable materials), have led to critical mitigation of this source, emissions are highly variable and are determined by a number of factors, including local climate and topography.

CATF welcomes the Commission's intention to require mandatory monitoring of methane emissions from landfills in Articles 14 and 15, and to develop an appropriate MRV methodology for landfill methane by 2031. CATF also stresses that this methodology should be measurement-based to include recent advances in landfill monitoring technologies and methodologies as well as incorporate the future Best Available Techniques for Landfills to ensure regulatory consistency and environmental integrity. The methodology should also include a protocol for third-party verification based on relevant International Organization for Standardization (ISO) standards, and require landfills to obtain allowances for their emissions.

Further, CATF urges co-legislators to ensure that an expansion of the scope to methane emissions from landfilling is planned for 2033, as opposed to the proposed review clause (Article 30(9)) to assess the appropriateness of extending the ETS to emissions from landfilling. Including landfills in the scope of the EU

ETS as a complement to other regulatory measures would incentivise operators to rapidly implement measures tailored to individual landfills and so prevent the release of methane, further reducing emissions substantially, as well as the harmful co-pollutants that are present in landfill gas. This would also incentivise systems to separate food waste and other organics for composting, as well as research and the dissemination of innovations. It would also complement efforts to capture and use landfill gas (rather than controlling landfill gas through flaring).

Policy recommendations

- **Develop an appropriate measurement-based MRV methodology for landfill methane by 2031** including a protocol for third-party verification based on relevant International Organization for Standardization (ISO) standards.
- **Expand the scope of the ETS to include landfill methane by 2033 in a separate bracket, revising the proposed review clause in Article 30(9).**
- **Require landfills to obtain allowances for their emissions.**



SECTION 5

Non-permanent carbon capture and utilisation (CCU)

The inclusion of MWI in the ETS increases the possibility of any non-permanent carbon capture and utilisation (CCU) products facing 'double pricing' under the ETS – both at the point of capture and disposal at the MWI. CATF and Concito have explored policy options and developed recommendations for the inclusion of fossil-based, non-permanent CCU in the ETS in this report, including downstream (emitter pays) and upstream (capture installation pays) approaches. Both approaches face similar challenges of mitigating double pricing, minimising carbon leakage from the ETS, and ensuring the incentive to decarbonise is appropriately distributed among actors in the value chain. Both approaches require the categorisation of CCU applications to identify those product classes likely to be disposed of at MWIs or other ETS facilities, as well as regular analysis of the scale of leakage pathways for this embedded carbon (via landfill, waste export, product export etc.).

According to most EU and sectoral projections, CCU with CO_2 of fossil origin is unlikely to play a significant role in meeting the EU's decarbonisation targets. It is nevertheless important to maintain the integrity of the ETS when applied to these value chains and ensure it drives rational decarbonisation choices in the relevant sectors. The Commission's proposal closely corresponds to CATF and Concito's recommended approach for a downstream option. Key points to ensure the viability of this approach include the establishment of a list of CCU applications at risk of carbon re-emission in the ETS and placing the allowance surrender obligation on distributors of CO_2-based fuels (a 'midstream' approach).

However, without appropriate safeguards, downstream pricing carries a risk of over-incentivising CCU, as facilities capturing CO_2 will effectively have an incentive to provide CO_2 for free, or even pay up to the cost of permanent storage – currently this could be over 100 EUR/t for many EU plants – to avoid paying the carbon price. While much of this carbon should ultimately be exposed to the ETS at the point of waste incineration, that price signal is not transferred up the value chain as a disincentive to use carbon of fossil origin in the manufacture of products. The chain of CO_2 liability is broken once carbon enters the economy as a product. Furthermore, permanent abatement at the point of incineration may be more costly than for the original emitting facility.

To provide a level playing field with alternative decarbonisation routes, producers of all fossil-based materials would have to be exposed to the costs and carbon price of disposal. This could take the form of an extended producer responsibility mechanism on MWI-destined products, covering a portion of the cost of disposal – including the ETS price. Indeed, such a mechanism would complement the inclusion of MWI in the ETS, regardless of the future role of captured fossil CO_2 as a material feedstock. In practice, there may remain a significant risk

that hard-to-abate industries will pay CCU producers to offtake CO_2, at the expense of the development of infrastructure for permanent disposal.

Furthermore, a proportion of captured and used carbon entering the economy will inevitably escape the ETS system, through pathways such as product export, waste export, and landfill (pending inclusion of landfill in the ETS). The proposed gradual phase in of MWI emissions to the ETS also contributes to this leakage risk during the ramp up period. These leakage pathways should be regularly assessed and compensated for through the partial surrender of allowances by relevant CCU facilities.

Policy recommendations

- **Carefully address emission leakage via CCU products to safeguard the environmental integrity of the ETS.** Given the uncertainty regarding the future scale and end-of-life treatment of non-permanent CCU products, the Commission should conduct a regular assessment of leakage risks and pathways, including via CCU product exports, waste export and landfill, triggered when non-permanent CCU production reaches a certain threshold (such as 1 Mt of CO_2 annually). Based on the assessments, the Commission shall, where necessary, update the list of CCU products, update any partial surrender requirements to reflect actual leakage risks, and introduce additional safeguards if needed. Any de minimis threshold should be set at a level which is genuinely negligible to preserve the environmental integrity of the EU ETS.
- **A downstream accounting approach should be accompanied by a mechanism to shift part of the carbon price signal from MWIs to producers of MWI-destined products.** This can ensure that the incentive to decarbonise acts across the value chain and avoid over incentivisation of CCU as an upstream abatement option, for example, via an extended producer responsibility policy on MWI-destined products. The Commission should be required to present a legislative proposal to address this imbalanced decarbonisation incentive by 2028.



SECTION 6

CO_2 transport and storage

Carbon capture and storage (CCS) cannot scale without access to storage sites and the cross-border transport infrastructure that will be needed to connect them with industrial installations. CATF welcomes the proposal's efforts to accelerate this process by clarifying national responsibility for cross-border CO_2 and enabling storage in ETS-aligned third countries. The impact of these measures will depend on whether the conditions for third-country storage are met and whether the wider framework for CO_2 transport infrastructure is put in place.

The proposal removes a significant barrier to storing captured CO_2 outside the EEA. Under the current framework, an installation that captures CO_2 must surrender allowances unless the CO_2 is permanently stored in a facility permitted under the CCS Directive. The proposal amends Article 12(3a) so that, from 2031, the surrender obligation would also not arise where CO_2 is transported for permanent storage to a third-country facility, on a reciprocal basis, provided that the third country operates an emissions trading system linked to the EU ETS under Article 25, the Commission confirms that sufficient safeguards under the CCS Directive are in place, and the site is not used for enhanced oil or gas recovery. This could open access to significant storage capacity in the United Kingdom once the two emissions trading systems are linked, addressing a barrier CATF has long called for the EU and UK to remove.

The opening is real but conditional, and its value will depend on the linking requirement being satisfied in time. Recognition applies only where the third country's emissions trading system is linked to the EU ETS under Article 25, and while negotiations to link the EU and UK systems are under way, no agreement is yet in force. Until that condition is met, UK storage cannot benefit from the exemption, so its value for EU industry will depend in part on the progress of negotiations outside this Directive. A further Commission implementing decision will also be required to confirm that the necessary safeguards for third-country storage are in place.

The proposal also clarifies which authority is responsible for CO_2 transport infrastructure crossing more than one Member State, addressing an uncertainty that has complicated cross-border projects. Article 6a assigns responsibility to the competent authority of the Member State where the CO_2 is captured or, where it is captured outside the EEA, to the first Member State through which it transits. Member States through which the CO_2 only passes are not involved in permitting the CO_2 transport activity under the ETS, although their authorities must exchange the information needed for approval of monitoring plans and verification of emissions reports. This gives operators a clearer point of regulatory responsibility, but it addresses only the requirements arising under the ETS. The wider framework governing CO_2 transport infrastructure and access to those networks will also be important in determining whether the shared infrastructure on which clustered CCS projects depend can be built and used.

A significant remaining barrier to investment in first-mover CCS projects is the cross-chain risk faced by capture installations. If CO_2 transport or storage infrastructure is delayed or temporarily inoperable, industrial capture plants lose the revenue streams or avoided ETS costs which underpin their business case, while still having to repay significant capital investment and cover fixed costs associated with the capture plant. This risk of exposure to both the ETS and capture costs -often referred to as a double burden – is not currently covered by commercial insurance and can therefore severely inhibit financing and investment in capture projects – particularly when they are reliant on planned infrastructure. A portion of ETS revenue should be used to support a time-limited guarantee mechanism to cover ETS-related costs arising from specific, unplanned disruptions to downstream infrastructure.

Policy recommendations

- The Commission and Member States should advance the EU-UK emissions trading system linking agreement, on which recognition of third-country storage under Article 12(3a) depends, so that this capacity can become available to EU industrial projects in practice.
- The permitting clarification in Article 6a should be complemented by the forthcoming CO_2 transport framework, with clear rules for access to shared infrastructure.
- Define a portion of ETS revenue to fund a time-limited guarantee mechanism to cover a portion of ETS-related costs faced by operational CO_2 capture facilities due to delayed or unavailable infrastructure, for specified reasons outside of the capture facilities' control. This mechanism could be funded through the Industrial Decarbonisation Bank.



SECTION 7

Industrial Decarbonisation Bank (IDB)

The Industrial Decarbonisation Bank (IDB) is a key opportunity to deliver much-needed funding for industrial decarbonisation. The true measure of success, however, will be whether this mechanism ultimately results in operating projects. CATF has put forth detailed recommendations for the design of the instrument in this policy brief, including prioritising projects with a clear path to construction, sizing support to what each project genuinely needs, and coordinating the shared infrastructure that individual projects cannot deliver alone.

A. Phase I (2028-2030): Investment Booster

As per the Commission's proposal, in the IDB's first phase of operation the Investment Booster would support projects with a fixed carbon premium per tonne of CO_2 avoided, allocated on a 'first in, first served' basis and paid in allowances.

Industrial decarbonisation projects can face significant commercial and upfront investment risks, making predictable support important to the investment decision. The impact assessment supports this rationale, finding that administrative schemes with fixed premia provide predictable cash flows and a more robust financial model, increasing the likelihood that projects materialise, and that they are most needed in the early years when uncertainties are highest. That predictability, however, also depends on the premium remaining aligned with the support a project needs over time. The premium is intended to cover the cost gap a low-carbon project carries relative to conventional production. The proposal recognises this by providing that the rate should be based on a funding-gap analysis and differentiated by technology, so that support reflects the costs of different decarbonisation pathways. The funding gap, however, will not remain fixed over the ten-year support period. Changes in the EU ETS carbon price, energy prices, and technology costs can alter the level of support a project needs. A premium set administratively at the outset does not automatically adjust to these developments. The impact assessment identifies this risk, finding that a static support level can lead to overcompensation or unforeseen cost gaps and that a single rate may not reflect the different costs of decarbonisation across technologies. The Commission's proposal allows the Terms and Conditions to provide for a review of the fixed premium rate if it is no longer appropriate in light of market developments but leaves that review optional. Without such a review, the premium may cease to reflect the underlying funding gap as market conditions change.

Because the premium is paid in allowances, the number of allowances required by the Booster depends on the carbon price. If the carbon price falls, more allowances are needed to deliver the same support. Where the Booster's own allocation is insufficient, the proposal allows the Commission to draw on allowances reserved for

Phase II, without any specific limit. A lower carbon price could therefore reduce the resources available for Phase II, including for carbon contracts for difference (CCfDs). The proposal accounts for carbon-price risk in Phase II by requiring the Commission to estimate payment exposure against a plausible range of carbon price scenarios before making commitments. This helps ensure that commitments remain within the available Phase II allowance envelope even under lower carbon prices. No equivalent assessment is required for the Booster, even though it can draw on allowances reserved for Phase II.

The 'first in, first served' allocation will depend heavily on the quality of the pre-selection process. As per the proposal, projects would be pre-selected, with the detailed criteria left to the Terms and Conditions, after which allowances would be allocated in chronological order based on the date and time of submission of a completion bond. Among projects that pass pre-selection, access to support would therefore depend on how quickly they can arrange the bond, rather than on a comparative assessment of readiness, delivery, or cost-effectiveness. The impact assessment finds the same: support may go to the fastest projects rather than those that are the most cost-effective, and well-resourced applicants may queue ahead of smaller ones. Much will therefore depend on whether the Terms and Conditions apply sufficiently robust readiness and delivery criteria before chronological allocation applies, and whether they contain safeguards against excessive concentration of support.

The proposal also requires projects to start physical construction within 30 months or lose the support. The provision does not, however, distinguish between delays caused by the project and those arising from permitting, access to infrastructure such as electricity grids, CO_2 transport and storage or hydrogen networks, or other circumstances outside the project's control. A narrowly defined exception in such cases would preserve the discipline of the deadline without penalising projects for external delays.

The timing of access to competitive support is also important. The impact assessment envisages competitive mechanisms such as CCfDs assuming a greater role as technologies mature and carbon prices rise. For some industrial decarbonisation projects, however, waiting until 2031 may be too late. Where abatement costs remain high relative to prevailing carbon prices, a CCfD may make more efficient use of available support, as support can be higher when the gap is widest and decline as the carbon price rises. The proposal allows Phase II to open before 2031 only once the Booster allowances have been fully used. This makes exhaustion of the Booster allocation, rather than market maturity, the trigger for an earlier start. Where demand for the Booster is insufficient, or too few allowances remain to support a further project, Phase II would not open early and the remaining allowances could stay unused until 2031.

Policy recommendations

- **Require a review of the fixed premium where market conditions change materially.** This should include changes in the carbon price or other relevant costs which materially alter the underlying funding gap.
- **Limit the risk that Booster commitments reduce the resources available for Phase II.** Before making Booster commitments, the Commission should assess whether the Booster's own allowances would be sufficient under a plausible range of carbon-price scenarios, and limit commitments accordingly. Allowances reserved for Phase II should be used only as a last resort.
- **Undertake a robust pre-selection process.** The Terms and Conditions should apply robust readiness and delivery criteria before chronological allocation and include safeguards against excessive concentration of support.
- **Allow limited flexibility in the 30-month construction deadline for delays outside the beneficiary's control.** A narrowly defined exception should apply where construction is delayed by permitting, access to necessary infrastructure, or comparable external circumstances.
- **Allow Phase II to open before 2031 not only once the Booster allowances are fully used, but also where the remaining allowances are insufficient to support further projects or demand is insufficient to use them.** Any remaining Booster allowances should then be made available for Phase II.

B. Phase II (from 2031 onwards): Competitive bidding

The competitive bidding phase will only deliver cost-efficiency if it limits overcompensation and non-delivery. For instance, the proposal allows, but does not oblige, the Commission to require a project to repay excess support, only where the carbon price exceeds the strike price by more than a pre-determined percentage. Similarly, the bid bond, construction deadline, and completion bond are left optional, despite the impact assessment finding the risk of non-delivery greater under competitive allocation and identifying these guarantees as measures to mitigate that risk.

Predictability matters here as well. For large-scale projects with long investment horizons, longer-term revenue certainty can be critical to reaching an investment decision. The proposal limits CCfDs to a term of up to ten years, while the German scheme cited in the impact assessment offers 15-year contracts. Extending the maximum term would provide projects with greater revenue certainty.

Moreover, the proposal does not ensure the distribution of support across sectors, for instance by introducing technology baskets or sectoral earmarking. In a technology-neutral auction, ranking projects on cost per tonne would favour lower-cost pathways and leave sectors with structurally higher decarbonisation costs at a disadvantage. The impact assessment identifies this directly, finding that a cost-ranked auction leaves higher-cost but strategically relevant technologies (such as synthetic fuels for maritime and aviation and synthetic hydrocarbons for the chemical industry) unsupported unless budget is earmarked for specific sectors.

Policy recommendations

- **Strengthen the design of CCfDs by requiring full two-way settlement and allowing contracts of up to 15 years.** Where the carbon price rises above the strike price, the project should pay the difference to the IDB for reuse in later rounds.
- **Make delivery safeguards (a bid bond, construction deadline, and a completion bond) mandatory in competitive procedures,** with a narrowly defined exception for delays outside the beneficiary's control.
- **Require sectoral safeguards in competitive bidding** to account for sectors with structurally higher decarbonisation costs, with the detailed design set through Terms and Conditions. A proposal for a possible design is outlined in this policy brief.

C. Enabling infrastructure

The IDB cannot deliver industrial decarbonisation projects if it does not also enable the infrastructure on which those projects depend. The proposal determines that IDB support can be used for capital investment, including grid connection, storage and flexibility costs incurred by projects, and operational expenditure for emission reductions or removals in installations carrying out or substituting industrial production processes (defined in Annex I). Each category is tied to an individual installation and to costs incurred by that project. This leaves no clear route for supporting shared infrastructure, whose costs sit at network level, and which may serve several eligible projects. Phase II may use forms of support other than CCfDs, but the proposal does not specify that these can be used for shared infrastructure.

This matters because shared infrastructure faces a coordination problem that support for individual projects cannot solve. Shared infrastructure network cannot reach a final investment decision without a credible base of users, while projects will not commit without confidence that the infrastructure network will be available.

The competitive bidding phase offers a way to resolve this, as the support allocation reveals where sufficient demand exists. Where several projects in a cluster receive contracts, those awards provide the network with a credible base of users and can support its investment decision. The IDB could therefore commit infrastructure funding against confirmed project awards, rather than requiring infrastructure networks to be financed ahead of demand.

Policy recommendations

- **Coordinate IDB awards with existing infrastructure funding.** Confirmed project awards under the competitive phase should inform support for the shared infrastructure on which those projects depend, including through the Connecting Europe Facility and, for electricity grids, the Strategic Infrastructure Investment Fund.
- **Allow for the IDB to fill the funding gaps for shared infrastructure in Phase II.** Where other EU instruments cannot provide sufficient support, the IDB should be able to support shared infrastructure that will be used by eligible projects. The Commission should assess this need before each competitive bidding procedure and provide support where a need is identified.
- **Enable consortium bidding in the competitive phase.** The Terms and Conditions should allow projects that depend on the same shared infrastructure to submit coordinated bids, so that interdependent projects can be selected together where their delivery depends on common infrastructure.



SECTION 8

Conditionality on free allowances for heavy industry

Conditionality on free allocation is one of the most significant reforms in the ETS proposal. Free allocation is worth tens of billions of euros a year.[19] As the proposal extends free allocation that was otherwise due to be phased out, strong conditionality will be essential to ensure that these allowances are accompanied by meaningful investment in decarbonisation. Conditioning free allocation on credible and verifiable decarbonisation measures could therefore turn the ETS's largest form of industrial support into an incentive for the necessary investments the transition requires.

This builds on an existing principle. The 2023 review already linked free allocation to the implementation of certain recommendations from energy audits or energy-management systems and, separately, required the 20% least-efficient installations under each product benchmark to establish and implement climate-neutrality plans. However, so far, conditionality attached to free allocation has provided only a very limited incentive for industrial decarbonisation.

The proposal makes free allocation more generous than what was planned under the current ETS. It slows the phase-out of free allocation into the 2040s and, for sectors covered by the carbon border adjustment mechanism (CBAM), reintroduces 15% of the allocation that would otherwise have been removed, delaying the full phase-out from 2034 to 2038. A more generous allocation risks weakening the carbon price signal and, consequently, the incentive to decarbonise. With more support available for longer, the robustness of these conditions matters all the more, since it is those conditions that determine whether this continued free allocation translates into real investment and emissions reductions.

Yet conditionality alone will not deliver the investment required where decarbonisation projects still lack a business case, and complementary funding through instruments such as the IDB and dedicated Member State support will therefore remain essential.

Much will depend on the detailed design of the conditional allocation. The challenge will be to balance robust protection against carbon leakage with clear and ambitious incentives for industrial innovation and decarbonisation. Article 10a(3b) requires operators of installations applying for free allocation to invest in the EU an amount equivalent to at least the economic value of 100% of their free allocation over each five-year allocation period from 2031, with the first plan due by 30 September 2029.

Under Article 10a(3c), the free allocation of allowances is made in two parts. The first, covering 80% of an installation's allocation for the period, is released in annual instalments once the operator has an approved Invest in EU decarbonisation plan. The remaining 20% is withheld until the end of the period, and released only once the required investment has been implemented and a 'significant emissions reduction' has been verified at the installation. As verification can take up to two years after the period ends, the withheld 20% for the first period could be released as late as 2037. Where a project is already supported by the Innovation Fund or the IDB (including the Investment Booster and Phase II), the installation is exempt from preparing a separate plan, and the release of its withheld allocation is tied instead to the supported project reaching its own milestone, the disbursement of Innovation Fund support or the start of construction for a project under the IDB. This avoids duplicating the assessment of an investment already approved for EU support.

The effect, however, is that only the withheld 20% is directly contingent on verified delivery of the investment. The first 80% of free allowances is released against the plan alone. Once it is granted, there is no equivalent mechanism to reclaim it if the investment is not made, except where the operator relocates outside the Union. The larger part of the allocation is therefore not conditioned on verified delivery, and the only consequence of not investing is the loss of the final 20%, which is not established until the end of the period. Because most of it has already been received, that 20% may provide too limited an incentive to ensure that the required investment is delivered. There is therefore a significant risk that most of the free allocation is disbursed without securing the investment it is meant to support.

This risk is compounded by what becomes of the allocation the conditionality holds back, since allowances that are never released, whether because no plan is approved or because the conditions are not met, are not withdrawn but returned to the free allocation envelope in the following period.

The Commission's impact assessment had considered a different approach, in which the conditional share of free allocation would rise each year, from 20% in 2031 to 100% in 2035 while the remaining share would be unconditional. The conditional share would be released only once the operator had taken a binding financing decision for an investment of equivalent value, with implementation verified at the end of the period.

The proposal also allows operators to meet the investment obligation jointly rather than individually. Under Article 10a(3d), several installations may form a pool through a joint decarbonisation investment agreement, under which one or more of them invest on behalf of the others, provided that the combined investment corresponds to at least the economic value of 100% of the free allocation granted to all installations in the pool over the five-year period. This is a sensible flexibility, since installations differ in their access to the infrastructure decarbonisation depends on, including CO_2 transport and storage, electricity grids and hydrogen, and it allows investment to be directed to where it can deliver the greatest decarbonisation benefit.

Several conditions that will determine how pooling works in practice are left to delegated acts under Article 10a(3e). The proposal envisages a higher level of emissions reduction from the installation that invests on behalf of the pool but does not say how much higher, and it defers the distribution of liability between pool members, should the pool fall short of its obligation, to those acts. The agreement must also be concluded before any installation in the pool applies for free allocation, and no further member can join until the following five-year period, when a new agreement, plan and investment obligation apply.

Policy recommendations

- **The share of free allocation withheld pending delivery should be increased from 20% to 40% for 2031-2035, and 60% for 2036–2040.** This conditions a larger portion of the allocation on the investment being delivered rather than just planned, along the principle modelled in the impact assessment. (Article 10a(3c))

- **Introduce a milestone-based intermediate tranche by releasing 20% of free allocation only if demonstrated progress has been made in the third year of each period.** The instalments should be withheld unless the operator shows progress against the milestones in its Invest in EU decarbonisation plan, with completed feasibility studies as the minimum.
- **Allowances withheld because no plan is approved or the conditions are not met should be auctioned,** rather than returned to free allocation in the following period. The proceeds should be directed to the Industrial Decarbonisation Bank or the Innovation Fund.
- **Clarify that "significant emissions reductions" definitions by Delegated Act will include sector-specific thresholds linked to available near-zero options for each sector.**
- A project that has already passed an EU-level competitive quality assessment, such as the Competitiveness Seal, should be treated as meeting the plan requirement rather than required to duplicate that assessment (Article 10a(3c)).
- **Explicitly recognise both CAPEX and OPEX as eligible decarbonisation investment in the operative provisions.** Recital 46 already provides that both capital and operating expenditure may count towards the investment obligation, but this is not reflected in Article 10a itself, which leaves eligible costs to be defined through a delegated act. The operative text should therefore make clear that both CAPEX and OPEX can qualify, while the delegated act under Article 10a(3e) sets the detailed eligibility criteria and, for OPEX, distinguishes genuine decarbonisation expenditure from ordinary running costs.



SECTION 9

Auction revenue use

The proposed 50% binding earmark for priority spending is a necessary corrective to a system that has raised over €258 billion since 2013, yet has resulted in only a small fraction of investment committed towards the industrial transition. While nearly 80% of past ETS revenue has flowed into Member State national budgets, the Commission stresses that only around 5% of revenues were spent on industrial decarbonisation and only 0.1% on aviation decarbonisation.[19] Persistent underinvestment has contributed to the deployment gap that has become a central challenge to the EU's decarbonisation efforts. The proposal sets out priority spending areas for auction revenue and gives Member States three years to disburse it. It also prohibits the use of revenue to prolong reliance on fossil fuels in power generation and requires consistency with the 2040 framework and climate neutrality. The enforcement of these requirements, however, remains limited. The proposal does not specify a consequence where a Member State fails to meet either the three-year disbursement deadline or the 50% spending floor. Under amended Article 30m, the proposal tightens visibility requirements by requiring Member States to publicly disclose ETS-funded measures.

CATF supports the Commission's efforts to better allocate ETS resources towards their intended purposes and the clear recognition that the transparency, effectiveness, and scale of current Member State spending patterns are insufficient. This review is an opportunity to make ETS revenue spending a more direct mechanism of supporting the energy transition.

Policy recommendations

The Commission's proposal is a good first step and CATF suggests further improvements to strengthen the efficacy of ETS revenue while giving Member States adequate flexibility.

- **Strengthen transparency on the distribution of ETS revenues.** Member State reporting should provide a clear breakdown of spending across the Article 10(3) priority areas and the sectors receiving support, with technology-level detail where relevant. Where an Article 10(3) priority area or sector receives little or no funding, Member States should explain the reasons for this discrepancy.
- **Establish an industrial decarbonisation subfloor within the 50% priority spending requirement.** The Commission recognises plainly that industrial decarbonisation continues to be an underfunded area,

despite industry accounting for about a fifth of total emissions and requiring significant capital to decarbonise. The Commission should develop industrial decarbonisation subfloor bands by delegated act, based on an assessment of each Member State's industrial emissions, decarbonisation pathways, sectoral abatement costs and availability of other sources of funding. Based on this assessment, Member States could be assigned to a limited number of fixed tiers for assignment of an appropriate industrial decarbonisation subfloor.

- **Create a dedicated maritime and aviation decarbonisation window within the 50% priority** spending requirement calibrated to both the scale of the aviation and maritime activity and the availability of credible decarbonisation investment opportunities in each Member State. Higher requirements should apply where significant sectoral activity coincides with a pipeline of investable projects such as e-SAF or maritime e-fuel production, major port infrastructure needs or fist of a kind projects approaching final investment decision. Both sectors are entering a critical investment period as 2030 fuel targets approach, while e-SAF, advanced biofuels and maritime e-fuels remain far from commercial scale and continue to face high capital costs and significant price gaps with fossil fuels. Eligible spending should complement SAF allowances and SMAP by addressing remaining investment gaps and long-term offtake support as well as additional research on contrail mitigation.
- **Establish a regular assessment mechanism for Member States' spending compliance.** CATF recommends establishing periodic reviews to assess how Member States are using ETS revenues and track continued gaps in priority areas.
- **Establish a review clause for additional measures if underspending persists in priority categories.**

References

1 Teoh, R., Engberg, Z., Schumann, U., Voigt, C., Shapiro, M., Rohs, S., & Stettler, M. E. J. (2023). Global aviation contrail climate effects from 2019 to 2021. EGUsphere https://egusphere.copernicus.org/preprints/2023/egusphere-2023-1859/egusphere-2023-1859.pdf

2 Tests performed by American Airlines and Google show that the flights that attempted to avoid creating contrails burned 2% additional fuel. However, given that only an average of 3- 5% of flights need to be adjusted in Europe to avoid 80% of contrail warming the total fuel impact could be as low as 0.3% across an airline's flight.Google and American Airlines AI contrail mitigation project: https://blog.google/innovation-and-ai/technology/ai/ai-airlines-contrails-climate-change/

3 For example, the CFM Leap-1B engine, used in Boeing's 737 MAX aircraft, has demonstrated lower soot emissions, potentially reducing contrail formation. Newer aircraft engines burn fuel more efficiently and produce fewer soot particles, which leads to weaker and shorter-lived contrails.

4 EUROCONTROL, Think Paper No. 22: Decarbonising long-haul flights by 2050: Is there a pathway through sustainable aviation fuel use, fleet renewal and green energy upscaling?, 17 October 2024. www.eurocontrol.int/sites/default/files/2024-10/eurocontrol-think-paper-22-long-haul-decarb.pdf

5 Report from the European Commission on the functioning of the European Carbon Market in 2024 climate.ec.europa.eu/document/download/ddc1b1de-652b-49ed-8f15-d9fa8badd39f_en

6 Under CORSIA, the offsetting baseline for the period 2024–2035 is set at 85% of 2019 aviation emissions. Airlines are only required to offset emissions above this level, meaning a significant share of total emissions remains outside the scheme.

7 Platts, part of S&P Global Energy, assessed the price of EU Allowances at Eur71.81/mt of CO_2 equivalent ($83.95/mt$CO_2$e) on Aug. 12, while Platts CEC prices, which reflect CORSIA Phase 1-eligible credits, were assessed at $22/mt$CO_2$e (Eur18.82/mt$CO_2$e).

8 The United States remains the largest civil aviation market, followed by China. Source: IATA, 2024 World Air Transport Statistics Report https://www.iata.org/en/pressroom/2025-releases/2025-08-04-01/

9 The Court of Justice of the European Union confirmed that EU ETS obligations can be lawfully triggered by departures from or arrivals at EU/EEA airports, and that covering emissions from the full flight is proportionate and compatible with international law (Case C-366/10, Air Transport Association of America and Others v Secretary of State for Energy and Climate Change). The Court found that the obligation is triggered by the operator's decision to depart from or land at an EU/EEA airport, providing a sufficient jurisdictional link, and rejected claims of extraterritoriality. It also upheld the ETS as a non-discriminatory environmental measure, not a tax on fuel, and considered the coverage of full-flight emissions proportionate given the practical difficulty of separating emissions by airspace.

10 Calculation note: the eligible SAF price gap is calculated after deducting the ETS cost avoided when SAF replaces fossil kerosene. The calculation uses an average 2025 EUA price of €73.43/tCO_2 and a fossil kerosene emissions factor of approximately 3.16 tCO_2/t fuel, giving an avoided ETS cost of €73.43 × 3.16 = approximately €232/t fuel. That avoided cost is deducted from the gross fuel premium before applying the relevant SAF allowance support rate.

11 Scale reference: 10,000 tonnes is small relative to major European airline fuel consumption. Approximate annual jet fuel consumption is around 9.3 Mt for Lufthansa Group, around 8–9 Mt for IAG, and around 5.46 Mt for Ryanair Group.

12 Using the official 2025 FEETS price calculation

13 EEA, 2025. Methane, climate change and air quality in Europe: exploring the connections. www.eea.europa.eu/en/analysis/publications/methane-climate-change-and-air-quality-in-europe-exploring-the-connections

14 Ibid.

15 Papaconstantinou et al., 2026 Concurrent Mobile–Aerial Monitoring of Landfill Methane Emissions, EGU General Assembly 2026, https://doi.org/10.5194/egusphere-egu26-13620, 2026.

16 Domínguez-Sáez et al., 2026. Detection and quantification of large fugitive methane emissions in the Madrid region using ambient concentration measurements and dispersion modeling. Atmospheric Environment, https://doi.org/10.1016/j.atmosenv.2026.121931.

17 Eurostat. (2024). Municipal waste by waste management operations. https://ec.europa.eu/eurostat/databrowser/view/env_wasmun__custom_22748696/default/table

18 Carbon Mapper. (2026). Carbon Mapper Data Portal.

19 European Commission, "What Are ETS Revenues Used For?," Climate Action, https://climate.ec.europa.eu/areas-action/carbon-markets/eu-emissions-trading-system-eu-ets/what-are-ets-revenues-used_en (accessed 15 September 2026).

About Clean Air Task Force

Clean Air Task Force (CATF) is a global non-profit organisation working to safeguard against the worst impacts of climate change by catalysing the rapid development and deployment of low-carbon energy and other climate-protecting technologies. With 30 years of internationally recognised expertise on climate policy and a fierce commitment to exploring all potential solutions, CATF is a pragmatic, non-ideological advocacy group with the bold ideas needed to address climate change. Visit cleanairtaskforce.org and follow us on LinkedIn.