International Council on Clean Transportation consultation response on
amending Directive 2003/87/EC as regards aviation's contribution to the Union’s
economy-wide emission reduction target and appropriately implementing a global
market-based measure

The International Council on Clean Transportation (ICCT) welcomes the opportunity to comment on the Proposal to revise the EU Emissions Trading Scheme (ETS) treatment of aviation emissions. The ICCT is an independent non-profit organization founded to provide first-rate, unbiased technical and scientific analysis to environmental regulators. The ICCT’s Aviation Team works to improve policies to reduce air pollution and greenhouse gases from aviation. ICCT’s research focuses on the potential technological and policy routes to aviation decarbonization, including efficiency standards, non-CO₂ emissions, and sustainable aviation fuels (SAFs). ICCT participates in the environmental committee of the International Civil Aviation Organization (ICAO) as a technical observer for the International Coalition for Sustainable Aviation (ICSA).

We thank the Commission for the opportunity to comment on this important Proposal. We suggest that the Commission consider following recommendations.

1. **Expand the Scope of the EU ETS to extend to all flights departing the EU/EEA Region**

ICCT commends the Commission for its proposal to implement the EU ETS for domestic and intra-EEA aviation but recommends expanding its scope to include all emissions from aircraft departing EU airports, including for international flights. The proposed approach will only put approximately 46 million tonnes (Mt) of aviation CO₂ emissions within the scope of the EU ETS by 2030, as compared to approximately 245 Mtonnes compared to the full legal scope, as
estimated using an aviation market activity model. Assuming that international flights to third countries are symmetric (i.e., these emissions are 50% of the difference between the two options), extending the EU ETS to include flights departing the EU/EEA region would extend the scope to approximately 145 Mtonnes. The EU ETS is a substantially stronger instrument for linking aviation emissions to carbon pricing and generating meaningful GHG reductions than ICAO’s Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). Whereas CORSIA is designed to offset only a portion of emissions beyond the adjusted 2019 baseline, the proposed emissions allowances for aviation under the EU ETS will decline from their consolidated 2023 levels based on the proposed 4.2% annual linear reduction factor.

A 2020 analysis commissioned by the European Commission found that despite some overlap in the scope of CORSIA and the EU ETS, the efficacy of CORSIA at reducing emissions is much weaker—noting that CORSIA’s ambitions fall short of what is necessary under the Paris Agreement. Key drawbacks include uncertain participation among some third countries in the later stages of CORSIA, thereby eliminating all round-trip routes from those countries from CORSIA’s scope, exemptions of other countries, and the application of the scope only to a portion of emissions growth, rather than total aviation emissions.

The cost of achieving in-sector carbon reductions from fuel switching is at least an order of magnitude more expensive than purchasing carbon offsets under CORSIA. CORSIA compliance will be achieved primarily through the purchase of out-of-sector carbon offsets and will likely not incentivize in-sector GHG reductions. The quality and availability of carbon offsets is also a high risk to the integrity of the program, relative to the auctioning and trading of emissions allowances within the EU ETS. ICAO’s Technical Advisory Board (TAB) identified six eligible offset schemes under CORSIA’s pilot phase, including the Clean Development Mechanism (CDM). Outside analysis submitted to ICAO by the Oeko-Institut argues that the eligible schemes fall short of the ICAO standards, particularly on double-counting, and must continue to revise and amend their standards to meet ICAO’s emissions unit criteria; including these schemes prior to those changes presents another implementation risk.

Even with vintage restrictions implemented by ICAO (restricting the eligibility to projects credited beginning in 2016), there are sufficient offsets for these existing projects generate most or all of the offset demand for CORSIA through 2035. This calls into question the

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1 European Commission (2020). “Assessment of ICAO’s global market-based measure (CORSIA) pursuant to Article 28b and for studying cost passthrough pursuant to Article 3d of the EU ETS Directive.” Prepared for DG Clima.
2 European Commission (2020). “Assessment of ICAO’s global market-based measure (CORSIA) pursuant to Article 28b and for studying cost passthrough pursuant to Article 3d of the EU ETS Directive.” Prepared for DG Clima.
3 https://theicct.org/blog/staff/covid-19-impact-icao-corsia-baseline
4 https://theicct.org/blog/staff/corsia-carbon-offsets-and-alternative-fuel
5 https://www.airlines.iata.org/blog/2019/09/countering-misinformation-on-sustainable-aviation-fuels
additionality of the assumed emission reductions. One analysis estimates that if assuming existing offset projects are eligible beyond the pilot phase, they can generate 1.5 billion tonnes of offsets relative to the forecast of approximately 500 million tonnes of demand from CORSIA through 2035.\(^8\) Offsetting a portion of future growth via carbon markets will do less to integrate carbon pricing into aviation than the obligation to purchase all allowances at auction under the ETS, and source additional allowances through trading; the price of EU ETS allowances reflects this difference, as the price of allowances is €60/tonne in Fall 2021, more than 10 times the price of CDM carbon offsets.\(^9\)

Regulating the portion of emissions from EU aviation to third countries solely using CORSIA rather than through the EU ETS presents a substantial missed opportunity to curb aviation emissions. Assuming the current ETS linear reduction factor of only 2.2% (as opposed to the proposed 4.2% in the separate EU ETS proposal), the 2020 analysis prepared by the Commission estimates that the EU ETS under the current proposal for its scope would regulate approximately 4% of global aviation emissions and require offsetting or reducing half of that total.\(^10\) In contrast, CORSIA would cover approximately 30% of global emissions but would only require offsetting approximately 3% of the global total, based on assumed CORSIA participation globally. Extending the scope of the EU ETS to include departing flights from the EU-EEA would therefore cover a greater share of global aviation emissions—approximately 12% of the global total (assuming flights to and from third countries are symmetric)—while also implementing a more ambitious GHG reduction target to be met primarily through in-sector reductions and trading allowances within the EU.

A revision to cover all departing flights into the EU ETS raises the potential for doubly obligating emissions from international flights departing EU airports. However, ICAO’s 2020 revision to the CORSIA baseline makes it likely that no offsetting will be required until at least 2024, potentially later pending a review by ICAO Council. Should that review maintain offsetting obligations from 2024, the EU might consider mechanisms to ensure that international flights that are required to surrender allowances to the ETS are not also subject to CORSIA offsetting requirements. Incoming flights not subject to EU ETS obligations will be unaffected and therefore should be subject to the full CORSIA requirements unless the originate in countries that themselves regulate aircraft emissions from departing flights.

2. **Include life-cycle emissions for SAFs in emissions accounting for the EU ETS**

The increased use of SAFs can reduce in-sector emissions from aviation but crediting them as zero-carbon will overstate their impact on emissions reductions from aviation. Currently, operators are not required to surrender allowances when reporting the use of SAFs. To date, this has not had a material impact because SAFs account for a very small (~0.05%) share of

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\(^8\) European Commission (2020). “Assessment of ICAO’s global market-based measure (CORSIA) pursuant to Article 28b and for studying cost passthrough pursuant to Article 3d of the EU ETS Directive.” Prepared for DG Clima.

\(^9\) [https://ember-climate.org/data/carbon-price-viewer/](https://ember-climate.org/data/carbon-price-viewer/)

\(^10\) European Commission (2020). “Assessment of ICAO’s global market-based measure (CORSIA) pursuant to Article 28b and for studying cost passthrough pursuant to Article 3d of the EU ETS Directive.” Prepared for DG Clima.
global jet fuel use. As markets develop and in particular policies such the proposed Refuel EU SAF mandate take effect, proper accounting of the lifecycle emission impacts of SAFs will be needed.

Though most SAFs have lower life-cycle emissions than conventional petroleum jet, few are truly zero carbon—the range of life-cycle emission factors for e-fuels and advanced biofuels ranges from 1 gCO₂e/MJ to as much as 28 gCO₂e/MJ (a 70-99% GHG reduction relative to petroleum).\(^\text{11}\) The magnitude of this effect changes based on the assumed SAF blend and the types of SAFs consumed; for example, at the 2030 projected SAF blend of 5% under ReFuel EU and Intra-EU/EFTA CO₂ emissions of 46 Mt (based on the above Commission analysis), SAF blending would reduce emissions by approximately 2.3 Mt as proposed. If the SAF mix averages 20gCO₂e/MJ, the current EU ETS accounting would overestimate emissions savings by approximately 0.5 Mt, and this gap could grow annually.

To mitigate the risk of overcrediting these emissions, ICCT recommends aligning the emissions reductions attributed to SAFs with their estimated LCA emissions under the Renewable Energy Directive (RED II) rather than assuming that they are zero-carbon. This approach will still maintain the incentive to use SAFs within the EU ETS while preserving environmental integrity and the accuracy of emissions accounting.

3. **Earmark a portion of EU ETS revenue to support SAFs and zero-emission aviation pilot projects**

The transition from free allocation of aviation allowances to full auctioning can generate a substantial revenue stream that could be reinvested into decarbonizing aviation. This could create a virtuous cycle by investing in the technologies necessary for long-term aviation decarbonization and thereby reducing the long-term cost of emissions reductions. Starting from the estimated 2021 aviation allocations of 24.5 Mt (based on the current EU ETS scope for aviation), and implementing an LRF of 2.2% through 2024, followed by the proposed LRF of 4.2% starting in 2025, aviation allowances would decline to 17.8 million tonnes by 2030. Assuming a carbon price in line with the Commission’s modeled scenarios in its proposal to revise the EU ETS of €30 to €52 per tonne for existing sectors, this could generate approximately €500 to €900 million of revenue annually solely from auctions.\(^\text{12}\) The revenue generated would be significantly higher if departing flights to third countries were included in the EU ETS scope.

ICCT recommends that revenues from aviation allowance auctions are set aside specifically for aviation decarbonization projects, including investments in novel and emerging technologies such as advanced biofuel SAFs, electrofuels, and zero-emission planes (ZEPPs). Particularly in the early stages of these technologies’ scale-up, direct financial support can be critical for reducing

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\(^\text{11}\) Assuming that they comply with the 70% GHG reduction threshold in the RED II.  
\(^\text{12}\) [https://ec.europa.eu/info/sites/default/files/revision-eu-ets_with-annex_en_0.pdf](https://ec.europa.eu/info/sites/default/files/revision-eu-ets_with-annex_en_0.pdf)
investment risk and encouraging their commercialization. The cost of GHG reductions from SAF blending exceed €200/tonne for most SAFs and are unlikely to be incentivized at current EU ETS prices; the cost of SAFs ranges from 2 to 5 times the cost of conventional petroleum jet fuel.\textsuperscript{13} However, the compliance costs of the ETS as well as reinvestment into SAF projects of auction proceeds can together bridge the gap between SAF and conventional fuel costs. Allocating a portion of revenues to a central auctioning mechanism (i.e., contracts for difference) to secure a price floor and market for advanced SAFs could complement other policies such as ReFuel EU while providing greater market certainty for new fuel producers.\textsuperscript{14}

Please let us know if you have any questions regarding these recommendations. Commission staff may feel free to contact Nikita Pavlenko (n.pavlenko@theicct.org) or Dr. Dan Rutherford (dan@theicct.org).

Best regards,

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\textsuperscript{13} https://theicct.org/sites/default/files/publications/Alternative_jet_fuels_cost_EU_20190320.pdf
\textsuperscript{14} https://theicct.org/publications/sustainable-aviation-fuel-policy-eu-apr2021