OPPORTUNITY GREEN

Contrail avoidance: a quick climate win for EU aviation

Our proposal for reducing EU aviation's climate impacts beyond CO_2 | April 2026

The problem

Flights departing Europe emitted 140m tonnes of CO_2 in 2023. But these planet-warming CO_2 emissions are only part of the aviation's total climate impact. Flying also causes **non-CO_2 climate impacts**, including from contrails and nitrogen oxide (NO_x) emissions, which can be twice as damaging as CO_2 on short timescales.

The EU ETS covers CO_2 emissions from flights within Europe. However, flights to destinations outside Europe are excluded – to the tune of over 1bn tCO_2e and €26bn in missed revenues between 2012-2023 – as are non-CO_2 impacts. Other than the recently-implemented monitoring, reporting and verification (MRV) regulation, **non-CO_2 impacts are missing from EU policy entirely**.

This omission results in economic climate costs for communities in Europe and elsewhere, but not for airlines or the wealthy fraction of the global population responsible for most flights. This inaction also risks the EU's status as a climate leader: countries are legally required to include non-CO_2 impacts in their climate plans, and tackling them is essential to align the sector with the goals of the Paris Agreement.

(Part of) the solution

Research shows we now know enough to act. On contrails, in particular, there is no doubt these contribute significantly to aviation's climate footprint, being the largest contributor to aviation's immediate climate impacts. At the same time, contrail avoidance – altering flight paths to avoid areas where contrails form – is an effective, and cheap, way to tackle aviation's non-CO_2 impacts. Industry continues to claim that science is too uncertain to address non-CO_2 impacts. However, while it is not yet a fully mature technology (uncertainties remain in contrail forecasting and operational implementation, for instance), research is clear that contrail avoidance targeting the most warming flights – which account for a small proportion of total flights but the vast majority of contrail climate impacts – is a "no-regrets" action.

Our proposal

Progressing contrail avoidance requires large-scale trials and operational experience, as recognised by civil society and industry alike. But it's evident that airlines will not act unless policy steps up. To this end, in the upcoming revision of the EU ETS, the EU should introduce a fee on airlines unless they act on their contrail impacts.

How would the fee work?

- The fee will be introduced as part of the 2026 revision of the EU ETS for aviation, with implementation targeted for 2028.
- The fee will be proportional to airlines' contrail climate impacts for all intra-EEA flights and all flights departing the EU, based on non-CO_2 MRV reporting.
- The fee will be calculated by multiplying an airlines' estimated annual contrail climate impacts (in tonnes of CO_2 equivalent (tCO_2e), on a 100-year Global Warming Potential (GWP) basis) by the annual average EU ETS allowance price for the appropriate year.
- The fee will be separate from the EU ETS allowance infrastructure, and applied retrospectively for the previous year.

How would the fee incentivise action?

- Airlines will initially be exempt from the fee if they demonstrate involvement in efforts to reduce their contrail impacts by onboarding an approved contrail forecasting tool and evidence its use in flight planning.
- The requirements for exemption would become more stringent through time:
    - From 2030, airlines would also need to evidence that they have identified which of their flights cause the largest contrail warming impacts and that they have planned and executed contrail avoidance on those routes.
    - From 2032, airlines would additionally need to adopt approved fuel-based contrail reduction measures (e.g., fuel hydrotreating).
    - By 2035, the possibility of exemption would be removed, and airlines would instead pay the full fee based on their remaining contrail impacts.
- Adopting large-scale contrail avoidance requires coordination with Air Traffic Control (ATC). The phased approach to the fee will help allow ATC time to develop the capacity needed to support large-scale contrail avoidance.
- The measure will remain flexible to incorporate a wider scope of non-CO_2 impacts (e.g., from NO_x) and mitigation measures as appropriate.

How should revenue be used?

- The initial cost of actions to qualify for exemption will be small compared with the fee. Therefore, initial revenue generation is likely to be minimal.
- Once impacts become ineligible for exemption from the fee, revenue generated could be directed toward action on non-CO_2 mitigation. However, contrail avoidance is incredibly cheap, with projected abatement costs ranging from €5-20/tCO_2e. Therefore, revenues may not needed to enable this transition, and instead could be directed to international climate finance.

Call to action

Policy intervention on aviation's contrail climate impacts is long overdue, and measures must address aviation's lack of accountability for its non-CO_2 climate impacts. If the EU is serious about retaining its climate leadership and making polluters pay, a principle which at its core is about ensuring societal fairness and correcting distortions in competitive markets, aviation must start paying for its contrail climate impacts.

Opportunity Green

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Any omissions or errors are the fault of the author alone.

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