Making the aviation ETS fit for purpose

How to increase ambition to reach the EU's climate goals

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Summary

As the European Green Deal commits Europe to revising the ETS rules for aviation but also for the stationary ETS, T&E publishes new analysis from the Öko-Institute assessing **potential options to strengthen the ambition of the scheme to incentivise aviation to decarbonise**. As the sector has received over **€33 billion[1] in COVID financial relief so far in 2020** without binding green conditions, the upcoming revision of the EU ETS needs to ensure that aviation effectively pays for its pollution once the crisis recedes. The EU ETS is key in making 2019 the peak year for aviation emissions by ensuring that air traffic doesn't bounce back to its pre-COVID levels. The study considers options to strengthen the EU ETS for aviation (1) as well as the stationary system (2) which feed into T&E's overall policy recommendations (3).

Main findings of the study

- With the current ETS CO2 costs, **there is little to no incentive for airlines to start the transformation and market penetration processes for clean technologies** including infrastructure and supplies of zero emission aviation fuels.
- **Creating sufficient price signals within the next few decades** will be essential for triggering the necessary ramp-up processes to achieve carbon neutrality in aviation by 2050. This includes applying discounting factors to aviation emissions, removing free allowances and introducing a minimum floor price.
- Out of these, **abolishing free allocation is one of the most straightforward approaches.** It would help raise around €1 billion/year to be used to finance deployment of sustainable fuels.
- But unless adopted with the **highest level of environmental ambition**, none of the proposed options to revise the ETS would lead to the necessary decarbonisation of aviation.
- New zero emissions technologies are still in their early phases and costs tend to be prohibitive. **To ensure the necessary transformation policy intervention beyond setting a higher carbon price is needed.**

Policy recommendations (T&E's views on making the EU ETS bigger and better)

- The EU should strengthen the EU ETS for aviation by not only removing free allowances and putting a hard cap on aviation emissions but also by setting up a Fund supporting the deployment of sustainable fuels for aviation (such as e-fuels).

[1] T&E (2020), Bailout tracker

- The EU should reject any attempts to replace the EU ETS by ICAO's carbon offsetting scheme (Corsia) and re-integrate long haul aviation emissions in the ETS, given the change to Corsia's baseline year due to COVID19 has further cheapened the scheme[2], resulting in next to no financial impact for complying airlines.
- Other climate policies should also be implemented to stimulate the uptake of clean fuels and zero emissions aircrafts, such as **introducing kerosene taxation** and **deploying sustainable fuel mandates, focusing on e-fuels.**

1. Options to strengthen the aviation ETS

The study proposes different options to strengthen the effectiveness of the aviation ETS, not only by putting a hard limit on aviation emissions within the ETS, but also ensuring the price of ETS allowances better reflects the environmental cost of flying.

1.1. Putting a hard limit on aviation emissions' growth

Under current rules there is no real hard cap which would directly limit aviation emissions's growth in the ETS. The study finds that the relative size of the aviation sector compared to the stationary market and the willingness to pay for air transport by consumers means that there is a de facto unlimited supply of allowances for air transport. However the study highlights two reforms that could put a hard limit on aviation emissions' growth:

1.1. a) Limiting purchases of EUAs (EU ETS stationary allowances)

The study assesses that currently around 50% of the surrendered allowances from aircraft operators (airlines) come from the stationary ETS and until 2030 (before taking into account COVID19 impact of aviation's growth scenario), that share was projected to grow to approximately 70%. A limit on the quantity of allowances from the stationary sector that can be used by airlines to comply with their ETS obligations, would introduce a hard cap on aviation emissions because if all allowances are used up, airlines would have to defer planned growth until they were able to deploy clean technologies to avoid non-compliance.

Each year by 30 April airlines need to surrender enough allowances to cover their emissions in the previous year and the ETS Directive (Art. 16) includes several rules to ensure compliance including paying a penalty of €100/tCO2 for failure to surrender sufficient allowances. Faced with potential fines, operators would then be encouraged to improve the sustainability of their operations by:

- Deploying more efficient aircraft, increasing operational efficiency, electrification of taxiing;
- Using sustainable alternative fuels, low/zero emission aircraft;
- Rationalising air services in Europe (which could help cut domestic and short haul flights).

[2] T&E (2020), The costs of EU ETS and Corsia for European aviation

1.1. b) Reducing the aviation cap

Currently the cap for aviation is 95% of average 2004-06 emissions until 2020. From 2021 onwards, with the fourth ETS trading period begins, the linear reduction factor (LRF) - the rate at which the amount of auctioned allowances reduces over time - applied in the stationary ETS also applies for the aviation sector, which would mean that the 2030 aviation cap would be 27% below the historic value.

With the current share of free allocation **reducing the aviation cap would essentially be a way to reduce free allocation on top of reducing the overall quantity of allowances**. This is because airlines receive most of the aviation allowances for free, but must purchase all of their stationary allowances. A reduction in the aviation cap reduces the former, and therefore shifts airlines towards having to purchase more of the required allowances.

But reducing the aviation-specific cap **would reduce the overall supply of aviation allowances only slightly.** For example the study estimates that if the LRF for aviation would be 3.8% instead of the current LRF of 2.2%, then the overall supply of allowances in the ETS would be reduced by only 0.2%. This should lead to slightly higher CO2 prices, but would not deliver as much ambition to decarbonise the aviation sector, as getting rid of aviation free allowances altogether (see next point 2.2.).

Given the political will, **adjusting the aviation LRF is however simpler legally as the mechanism is already included in the directive**. The alternative approach to reducing the cap is called rebasing: a one-time offset that reduces the cap once; the LRF would remain constant. It is discussed for the stationary ETS because the cap is still approximately 200 Mt CO2 higher than the verified emissions. But the study states that this approach is less relevant for aviation where the cap is well below emissions already.

Another means of reducing the cap would be through the **voluntary cancellation of allowances in case of reduced aviation demand.** Under Art. 12(4) of the ETS Directive member states have the right to voluntary cancel allowances in the event of a policy driven coal phase out. This means that a quantity of allowances corresponding to a closed power plant will not be auctioned. Such a voluntary cancellation ensures that no other power plant can use the newly available certificates from the closed installation to increase emissions and output.

The study suggests that the right to voluntary cancellation could be expanded to the aviation sector, e.g. in cases where member states withdraw subsidies for regional airports or successfully shift airline passengers to use railways. T&E suggests that the reduction in air travel demand post COVID can also justify the need for voluntary cancellation in order for the ETS to take into account market developments.

1.2. Ensuring ETS prices better reflect flying's environmental cost

In order to drive emission reductions in the sector, the climate impact of flying needs to be better priced. The following reforms can be adopted to achieve that objective:

1.2. a) Removing unnecessary free allowances

Allowances under the ETS, in 2019, traded at €25[3] on average and airlines received a large portion of their emission permits (32 million) for free. This resulted in a benefit to airlines of around €900 million, a negligible cost given that airlines benefit from a jet fuel tax exemption estimated at €27 billion a year [4] if applied to all European outbound (intra and extra-EU) flights. The study assesses why **abolishing free allocation is one of the most straightforward approaches.**

- **No carbon leakage risk for aviation**

The study confirms that carbon leakage is deemed as a low risk for aviation and should not impede reducing/abolishing free allocation to airlines. It states that the formula to calculate carbon leakage risk cannot be used directly for aviation because the underlying principle – production moves from the EU to third countries – is not relevant for the sector: in aviation the "product" is transporting passengers and this cannot be moved to third countries.

The study highlights that the original justification for the free allocation to aviation was to avoid carbon leakage under the full scope of the aviation ETS – when all flights starting and/or landing in the EU were supposed to be covered. With the full scope the risk for leakage was higher: a flight between two extra-EU countries with a stop-over in the EU would have had a disadvantage compared to one with a stop-over in another country (e.g. in the Middle East). But the need for free allocation was not reassessed after the current scope was reduced to only intra-EU aviation in 2016.

- **Fair and easy to implement**

The study highlights that there is **no practical hurdle to abolish free allocation starting in 2021** given the political will, because it builds upon existing legislation which makes it relatively easy to adopt. Airlines in 2019 already needed to buy half of the required allowances, so they have the necessary experience and procedures already in place to comply with their obligations. T&E also notes that because of COVID groundings and fall in air traffic in 2019, airlines will temporarily need to buy less ETS allowances in 2020, while getting the same amount of free allowances as usual. So airlines' ETS dues will be even further reduced in the years to come depending on how fast air traffic recovers, an opportunity to abolish free allowances altogether in the upcoming revision of the ETS.

The study also states that abolishing free allocation would also **reduce the administrative burden somewhat both for airlines and member states.** The same applies for the new entrants' reserve: without free allocation new entrants would just buy all of all the required allowances on the market,

[3] CO2 European Emission Allowances Spot Price Chart

[4] T&E (2019) EU sat on data showing benefits of ending airlines' tax break – leak

identical to the incumbents. Without free allocation all airlines would be treated the same and the distortion due to the different historic emissions would no longer exist.

- **Earmarking some auctioning revenue for a Fund to develop e-fuels**

The Art. 3d of the ETS Directive already states that all revenues from auctioning in the aviation sector should be used "to tackle climate change" including in the aviation sector itself. The study suggests that provisions could be strengthened by **moving a share of allowances to a special fund which would have dedicated decarbonisation goals such as supporting e-fuels** in aviation. Such an approach is already implemented in the stationary ETS with the modernisation and the innovation funds. **The study estimates that based on current CO2 prices and the current cap around €1 billion/year could be raised from full auctioning and used to finance such funds**.

1.2. b) Adapting price to environmental costs and aviation demand

The study acknowledges that under current CO2 prices, **there is little to no incentive for airlines or manufacturers to start the transformation and ramp-up the necessary innovation and market penetration processes for clean technologies**, including infrastructure and potentially international supplies of zero emission aviation fuels. It therefore proposes ways of strengthening the carbon price signal to better reflect aviation's environmental cost.

- **Applying a CO_2 multiplier to trigger aviation decarbonisation**

In order to further encourage emissions reduction in the sector and also address irregularities in the way the sector has been treated over the past years, the study suggests that a multiplier (called a "discounting factor") could be applied to increase the amount of allowances airlines would need to surrender. The study states that this would drive emissions reductions by creating sufficient price signals to contribute to the achievement of carbon neutrality in aviation by 2050.

Discounting has been proposed in other ETS schemes, e.g. the Waxman-Markey proposal in the US included a discounting factor of 1.25 for international credits[5]. The impact of such a discounting factor on emissions from aviation would be indirect, i.e. through increasing ticket prices. The study finds that a factor of five would lead to an increase of roughly 15-30% in ticket prices if passed through completely. These factors could be implemented for the following reasons:

- **Compensation for lack of kerosene taxation**: The minimum kerosene tax of 33 cents/litre in the Energy Tax Directive equals a CO2 price of €130/ton. Based on the current CO2 prices a discounting factor of 5 could be applied to compensate for the energy tax exemption for kerosene fuel.

- **Compensation for non-CO2 impact of aviation**: Aviation's impact on global warming is estimated to be three times as high as the effect of its CO2 emissions alone, a discounting

[5] Center for Climate and Energy Solutions, 2009

factor of 2 could be therefore applied to cover for non-CO2 impact, as flights covered by the ETS have lower non-CO2 impacts than long distance flights.

The **Market Stability Reserve (MSR) should however take into account demand from aviation with these discounting factors**, in order to adapt the amount of allowances it would need to absorb and avoid having a surplus or a shortage of allowances on the market. The MSR started operating in January 2019, with the aim to absorb each year a certain percentage of unused allowances in the stationary market in order to reduce any oversupply in the market.

- **Minimum auctioning price**

The study assesses the benefits and feasibility of setting a minimum auction price for both stationary (EUAs) and aviation allowances (EUAAs). If the closing price is below the minimum price no allowances would be sold but put into a reserve or cancelled. A minimum auction price for EUAAs alone would however not be feasible unless EUA purchases are limited (as discussed above). Because operators would just buy more EUAs and avoid using EUAAs altogether. **A minimum price for EUA on the other hand would directly lead to higher prices for EUAAs**.

The study acknowledges that there is no provision yet for setting a minimum auctioning price, but that several member states are discussing this option in the stationary ETS. The study recommends that an **EU-wide minimum price** could be introduced either through a surrender charge or a minimum price for auctioning.

2. Options to strengthen the ETS

The study reiterates that despite being part of a separate ETS, the aviation sector is still influenced by the ambition of the stationary ETS. Emissions in the aviation ETS are growing year on year and exceed the number of EUAAs available to the market (both allocated for free and auctioned), which is why the aviation sector buys allowances from the stationary sector. Therefore if the stationary ETS is strengthened leading to higher allowance prices, the aviation ETS would also be strengthened as EUAAs prices follow those of the stationary sector. The study proposes measures to reform the stationary ETS in a way that it aligns with the Paris Agreement and carbon neutrality objectives and also assesses a proposal to implement a carbon border adjustment tax to compensate for the lack of carbon pricing of aviation in third countries.

- **A cap in line with an EU-wide GHG reduction target of 55-60% below 1990 levels**

The current cap is aimed at reaching -43% GHG emissions by 2030 compared to 2005. The study identifies that in order to contribute to an 55%-60% economy wide reduction target, the ETS would be required to step up the reduction within the sector to around 60-65% below 2005 levels. Therefore it proposes to **rebase the current cap with a faster declining pace** to reach the revised target in 2030. It mentions that an **ETS reform should ensure that the cap is reduced to actual emission levels** (rather than being related to historic cap levels), with the LRF linking the rebased cap with the 2030 & 2050 emission reduction targets. Whereas the LRF has more effect in the long term by providing long

term certainty to investment decisions made today, the study finds that **rebasing could reduce the oversupply of allowances of the market already in the short term**.

- **Enhanced resilience with an improved MSR**

The current MSR is fit to reduce the historic surplus, but if emission levels continue to decline as in the last decade, then the MSR as currently designed should be revised to increase the intake rate (the amount of allowances to be absorbed in case of a surplus above a certain limit). The study proposes for **the intake rate of allowances in the MSR to be at least 24% or even higher**. This would ensure that the MSR continues to play a key role to enhance the resilience of the system and **avoid price drops which hamper investment in emission abatement technologies**.

- **A carbon border adjustment ticket tax**

The study discussed the feasibility of implementing a special ticket tax to flights outside the scope of the EU ETS to compensate for the lack of carbon pricing in third countries and perceived unfair competition between European and foreign carriers. It states that outbound ticket taxes are applied in many countries worldwide and not contested from a legal perspective. The ticket tax discussed would only be applied on flights not covered by the EU ETS and would need to be high enough to compensate for the carbon costs incurred in the ETS. The study identifies two cases where direct competition could occur between flights covered by the current ETS scope and those outside the scope.

- Long-distance flights leaving the EEA which require a stop-over within the EEA which would be covered by the ETS (e.g. Berlin – Madrid – Quito vs. Berlin – Dallas – Quito). However the study estimates that under current carbon prices the danger of carbon leakage is so low that such an approach does not seem necessary, especially as complex to design and politically sensitive.

- Intra-EEA flights where a stop-over in a third country is feasible to avoid ETS coverage (Portugal to Cyprus: a flight with a stop-over in North Africa (e.g. Egypt) to avoid the ETS). After Brexit there is some concern that the UK could become a hub for such flights, but the EU could avoid this through the bilateral air service agreement which will need to be agreed.

3. T&E's policy recommendations

The Öko Institute study concludes that unless adopted with the **highest level of environmental ambition**, **none of the proposed options (taken in isolation) to revise the ETS above would lead to a real decarbonisation of aviation.** The report stresses that with current ETS CO2 costs, **there is no incentive for the industry to start the transformation and market penetration processes for clean technologies.** The aviation industry has also admitted that low oil prices has blocked the market deployment of certain efficient aircraft technologies[6].

[6]ATAG (2020), Waypoint 2050 (p45), Balancing growth in connectivity with a comprehensive global air transport response to the climate emergency

Based on these findings, T&E continues to stress the need for the upcoming revision of the EU ETS to ensure aviation effectively pays for its pollution, especially as the aviation sector has received over **€33 billion[7] in financial support so far in 2020** without binding green conditions. However, **as the study suggests that policy intervention beyond setting a higher carbon price is needed**, T&E recommends the following policies to ensure aviation's emissions don't continue rising after COVID-19:

- **Strengthening the EU ETS for aviation by:**
  - Removing free allowances for aviation and using the revenues to develop and deploy Sustainable Alternative Fuels (SAF), particularly e-fuels.
  - Applying discounting factors to aviation emissions to compensate for the overall lack of effective carbon pricing.
  - Reducing the overall ETS cap & limiting the use of allowances from the stationary ETS.
  - Establishing a minimum price for CO2 allowances.
  - Enabling voluntary cancellation of allowances to take into account any future reduced aviation demand.

- **Countering any international attempts to undermine the ambition of the EU ETS** as a tool to regulate aviation emissions
  - Consider options to reintegrate long haul aviation emissions through the ETS until Corsia (ICAO's offsetting scheme) actually starts requiring airlines to purchase quality offsets (not before at least 2027).
  - Reject any attempts to replace the EU ETS by Corsia (i.e. options 3, 5 and 6 of the European Commission's Inception Impact Assessment).
  - Assess the cost impact of applying both ETS & Corsia on the same routes given the change to Corsia's baseline year due to COVID19 has further cheapened the scheme[8], resulting in next to no financial impact for complying airlines.

- **Introduce kerosene taxation to reduce the cost-gap with cleaner more expensive sustainable aviation fuels[9]**. Member states can already implement bilateral taxation agreements today, while waiting for the EU to agree to an EU wide kerosene tax when revising the Energy Taxation Directive.

- **Stimulate the creation of SAF fuels[10] by establishing mandates** for clean alternative fuels, particularly synthetic kerosene, in the context of the EU's RefuelEU initiative.

[7] T&E (2020), Bailout tracker
[8] T&E (2020), The costs of EU ETS and Corsia for European aviation
[9] T&E (2020), Implementing jet fuel taxation in Europe today
[10] T&E (2020), How EU legislation can drive an uptake of sustainable advanced fuels in aviation

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Further information

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