Why ICAO and Corsia cannot deliver on climate

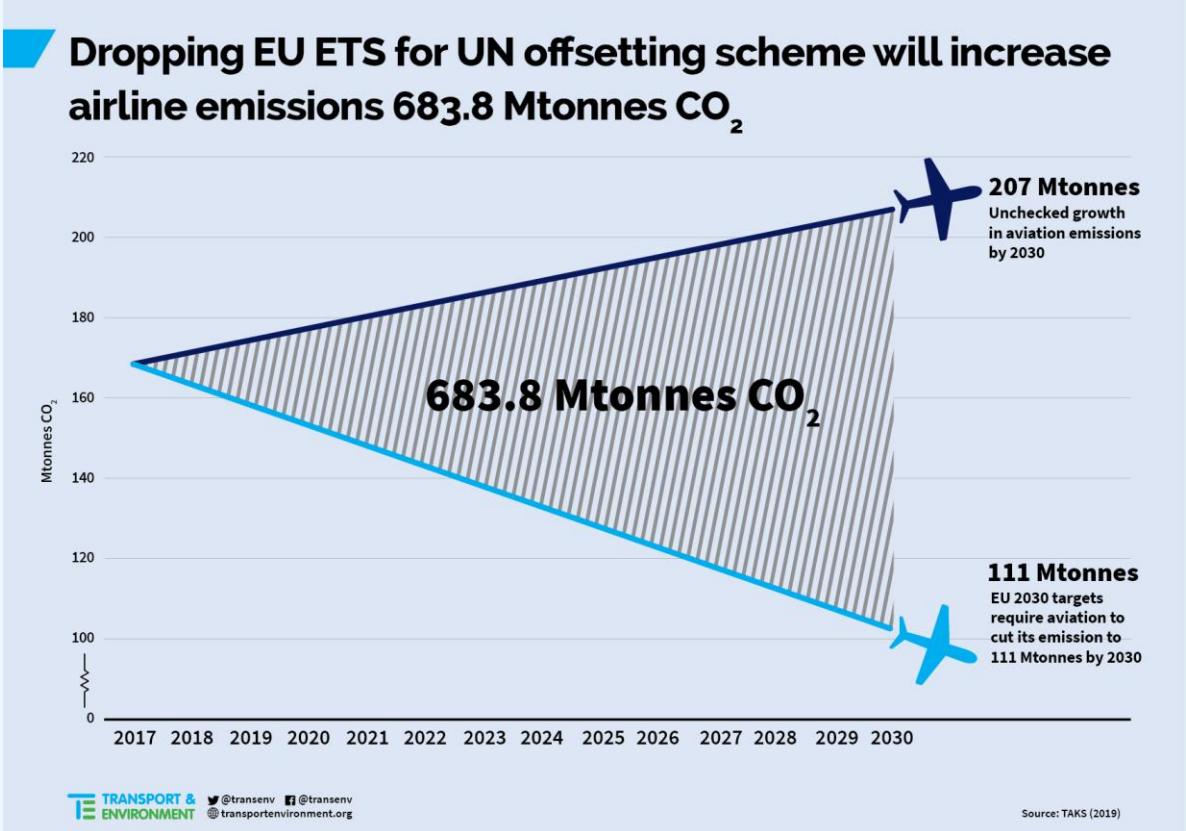
A threat to Europe's climate ambition

September 2019

Summary

Several years of efforts at international level have resulted in the creation of a global offsetting scheme for international aviation, known as the Carbon Offsetting Scheme for International Aviation (Corsia). Further rules for this mechanism were adopted by the UN aviation agency, ICAO, in the June 2019. This provides an opportunity to make an interim assessment of the mechanisms potential effectiveness, and to contrast that potential effectiveness with existing obligations on the aviation sector under the EU's 2030 emissions target and legislation.

The interim analysis finds that, due to the weakness of the Corsia target, issues inherent to offsetting, and concerns with how ICAO operates, implementing Corsia in Europe represents a direct threat to Europe's existing climate commitments under the Paris Agreement. Over the period 2021-2030, such a move would increase Europe's aviation emissions by 683.8 million tonnes CO2, which is equivalent to the 2017 CO2 emissions of Poland and France combined.



1. Background

Aviation remains the most carbon intensive mode of transport, as well as Europe's fastest growing source of emissions. Since 2013, emissions from flights within Europe alone have increased 26%, and this growth is expected to continue unless action is taken.

Faced with rising emissions, and a failure of action at global level, the EU moved to include all flights to, from and within Europe in its Emissions Trading Scheme (EU ETS). The EU ETS, as adopted in 2008, required airlines from 2012 to surrender emission permits (allowances) equivalent to their total emissions under the scheme, and was intended to act as an incentive to reduce their climate impact as, over time, the number of allowances issued each year would decline. However strong international and industry pressure forced the EU to backtrack and limit the scheme only to those flights operating within Europe (intra-EU), equivalent to 39% of total European aviation emissions in 2017 (EASA, 2019).

The EU justified the decision by saying that it took this action to give time for parties to ICAO, the UN aviation agency, to deliver on their criticisms of the EU ETS and develop an alternative global scheme. The September 2016 International Civil Aviation Organization (ICAO) Assembly agreed to implement a global market based mechanism, called the Corsia, to address aviation's climate impact.

This paper details how Corsia is intended to operate, evaluate its potential environmental effectiveness and consider how, if implemented by Europe, would relate to existing European climate commitments.

2. Corsia: how it will operate

Corsia – the Carbon Offsetting and Reduction for International Aviation – is the name given to the market based mechanism adopted by ICAO's triennial assembly in 2016. As that name suggests, Corsia introduces a requirement on airlines to purchase offsets in order to meet the measure's overall goal of stabilising net emissions from international aviation at 2020 levels. The scheme also permits airlines to meet these target through the use of alternative fuels.

Offsetting involves paying another actor to reduce their emissions in lieu of reducing one's own. It therefore does not reduce the emissions of the purchaser. The amount of offsets which each individual airline will have to purchase under the measure is decided by a formula which will evolve over the measure's expected lifetime of 2021 – 2035. Over that 2021 – 2035, the measure is expected to result in airlines being required to offset an estimated 21.6% of their cumulative emissions (CE Delft, 2016).

3. Europe's participation in Corsia

Following their political defeat over EU ETS, European authorities became leading champions of a global approach to regulating aviation emissions. In 2016, shortly before Corsia was adopted by ICAO's triennial assembly, Europe's aviation authorities issued the Bratislava Declaration, which encouraged the development of a global offsetting mechanism for international aviation and proposed European participation in that mechanism "provided that a minimum degree of environmental integrity was attained".

As Corsia is an international agreement which touches on areas of EU competence (climate and aviation), it is ultimately for the EU institutions to determine whether that minimum level of environmental integrity has been reached. This has been codified in the 2017 revision to the EU ETS Directive 2003/87/EC.

In line with that legislation, European member states wrote to ICAO at the end of 2018 to state that they were not yet in a position to confirm, either way, whether they will participate in Corsia. This reflected the

EU position that such a decision can only be made once all the Corsia rules have been decided, and following an evaluation by the European Commission of the scheme's potential environmental effectiveness.

4. Assessment of Corsia

Earlier in the development of Corsia, it was agreed by ICAO that the mechanism would be based on offsetting, as opposed to other proposals such as a carbon tax or emissions trading. Offsetting offers the buyer the opportunity to purchase emission reductions elsewhere, therefore presenting the opportunity to meet an emissions target at the lowest cost. Unlike a tax, which can be structured to increase over time, or emissions trading, where a declining cap can cause increasing allowance scarcity, offsetting offers the possibility to potentially defer, indefinitely, the need for the purchaser to reduce their own emissions.

4.1. Voluntary nature and lack of enforcement

Airlines will be required to surrender offsets for a portion of the emissions resulting from flights on routes covered by Corsia. Whether a route is covered by Corsia depends on whether it is between two states which are participating in the measure. For the first six years of Corsia, participation will be voluntary. From 2027 onwards, all states with a certain level of aviation activity are due to participate in the scheme.

The scheme is being introduced through a Standard and Recommended Practice (SARPs). SARPs are instruments within ICAO's foundational Chicago Convention which enables ICAO member states to implement decisions on everything from safety to security to environmental regulations.

However, the discussion over Corsia's voluntary/non-voluntary phases obscures the fact that ICAO decisions are not binding on member states and the Organisation has no enforcement mechanism for its measures. A state can decline to participate in Corsia in the first phases by not volunteering, and in the post-2027 period through what's known as 'filing a difference', i.e. filing a reservation. And if a state does agree to participate in either stage of the scheme, ICAO does not have the legal capacity to ensure full compliance with the measure's obligation (Mendes de Leon et al, 2015).

At present, it is unclear which states have reserved their position on participation in Corsia, either during the voluntary phase or the post-2027 phase, as ICAO has not made public state responses which were submitted to them at the end of 2018. However many states have announced their intention to participate in this scheme.

4.2. Analysis of offsetting

The impact Corsia will have on mitigating climate change will rest on the environmental effectiveness of the offsets used. However an assessment of offsetting to date suggests that ensuring environmental integrity will be challenging. Offsetting has proven difficult to make work because it is inherently challenging to prove that the mitigation project only occurred because of the offset revenues it generated, or that the emission reduction are correctly estimated, or that the emission reduction was permanent or did not displace an emission reduction which would have occurred elsewhere. One study has found that 73% of offsets from projects registered under the UN's Clean Development Mechanism only partially delivered or failed to deliver the claimed emissions reductions (Oko-Institut e.V., 2016).

ICAO has attempted to overcome these issues by developing offset quality criteria, a process which in June 2019 reached a milestone with the adoption by ICAO's Council of Emissions Unit Criteria (EUC) and the establishment of a Technical Advisory Body (TAB) to assess the offset programmes against these criteria, which include requirements such as additionality, permanence, transparency etc.

TAB's job will be to determine which offset programmes meet these criteria, and then make recommendations to the ICAO Council for their approval as qualified offset programmes under Corsia. It

remains unclear how robust this process will be, and of particular concern is that calls for TAB to operate transparently have been rejected, with ICAO's Council deciding that all its meetings will be closed. Some limited information has been made public however, including the terms of reference and membership.

A major issue which remains unresolved is how to avoid "double counting" – where the same emission reduction is counted toward the reduction requirements of both the country in which the reduction occurred and the airline which purchased the offset. Prior to the Paris Agreement, this was less of a concern because only some (developed) countries had emission reduction targets in the agreement's predecessor, the Kyoto Protocol. As countries with a reduction target were able to purchase offsets from countries without targets, and so as only one target was involved, the risk of double counting was less relevant.

Under the Paris Agreement, all parties have an emissions reduction target, which ultimately is expected to cover all sectors of parties' economies. Therefore, checks need to be put in place to ensure that when an emission reduction occurs, and is sold to, for example, an airline to use for compliance with Corsia, that emission reduction isn't also counted towards the host country's Paris target as well. It is unclear how such double counting can be avoided, as parties are yet to agree a methodology or rules to achieve this.

But as troublesome as the issue of double counting is the risk that offsetting creates a perverse incentive for states to establish weak targets, or to leave sections of their economy outside of their Paris pledge. This risk exists because the Paris Agreement adopts a bottom-up approach to target setting: parties determine for themselves the ambition of their target, and the scope of that target (what parts of its economy are included in that target). Parties are meant to adopt the most ambitious possible target, and for that target to cover all sectors of their economy (now, for developed countries, and over time for developing). However, offsetting creates an incentive for parties to set weak targets, and when they overachieve, to sell that overachievement as an offset. Or, to leave part of their economies outside of their Paris target, and sell emission reductions from that sector as an offset.

Parties to the Paris Agreement attempted to resolve some of these issues when finalising that agreement's rulebook at the December 2018 COP24 meeting. But no agreement could be found for the markets provisions under Article 6. This was the sole part of the agreement where the rulebook was not agreed, due in part to disagreements over how to avoid double counting.

Offsetting provides a financial incentive for parties to set weak targets, or not have economy-wide targets. Offsetting therefore is not only difficult to reconcile with the Paris Agreement due to the risk of double counting, but risks actively undermining the level of ambition adopted by parties to that agreement.

4.3. Analysis of alternative fuel rules

Airlines can reduce their offsetting obligation through the purchasing of "Corsia eligible fuels", alternative fuels which have lower associated GHG emissions. However the emission reductions which result from alternative fuel use can vary considerably depending on the type of alternative fuel used. In fact, the effects of production of some alternative fuels are such that they have an emissions profile greater than the fossil fuel they replace. It is therefore essential that clear rules are put in place to ensure only alternative fuels which in reality deliver emission reductions are credited under Corsia.

ICAO has developed rules which supposedly aim to ensure only fuels which deliver actual emission reductions are credited under Corsia, however these rules suffer from a number of shortcomings. For example the rules require only that alternative fuel used deliver a minimum emission reduction of 10% compared to kerosene. Given the uncertainties that exist in these calculations, it's therefore possible that alternative fuels used will actually result in emissions equal to, or in excess of, kerosene. And 10% is only a minor emissions reduction, far short of the deep reduction that the Paris Agreement requires.

In order to estimate the GHG emission of biofuels accurately and conservatively, it is important to take into account emissions caused by indirect land use changes (ILUC). ILUC emissions arise from the conversion of natural lands to agriculture as more agricultural land is used for energy, and food demand still needs to be met, thus overall more agricultural land is needed. Rules to account for this have been proposed and are in the course of being adopted, however the method proposed by ICAO of calculating the emissions is based on overly optimistic assumptions, resulting in underestimated ILUC values.

Another failure is the absence of sustainability criteria – a suite of such criteria were developed by technical experts over a number of years, however nearly all of them, including criteria on water rights, biodiversity and food security, were rejected by the ICAO Council, and only criteria linked to GHG reduction remains. By contrast the EU has already adopted a set of sustainability criteria for alternative fuels through its renewable energy directive (RED), and these are at risk from the significantly weaker Corsia criteria.

At the same time as rejecting sustainability criteria, the ICAO Council approved the crediting of 'lower-carbon aviation fuel'. This is fossil kerosene produced in a manner which is supposed to deliver emission savings relative to the average measures of producing kerosene. But it is still a fossil fuel. It therefore can hardly be considered 'alternative' and its inclusion was done at the behest of Saudi Arabia and with the support of the US. "Cleaner" kerosene could be used under Corsia, while "dirtier" ones would be used outside Corsia, simply becoming an allocation exercise, without reducing overall emissions.

As a result of these rules, or rather the absence of rules, Corsia risks crediting alternative fuels or simply oil which have a poor environmental impact – either in failing to deliver the promised emission reductions, or in negative impacts due to the absence of sustainability criteria.

4.4. Issues with ICAO transparency and industry influence

As international carbon markets such as Corsia are extremely complex, there is a risk of non-compliance, or compliance through the use of ineffective offsets or alternative fuels. A way to help reduce these risks is through a strong, independent and transparent regulator of that market. Not only would that regulator facilitate Corsia's implementation, but it would do so in a transparent manner, to ensure public confidence in the scheme.

However ICAO appears neither capable nor willing to act in such a manner. It continues to operate under a high degree of secrecy, declining for example to make public decisions which have been made by its Council or its environment committee (CAEP). NGOs who are observers to the ICAO process, including T&E, are prevented from sharing information without ICAO approval, on threat of expulsion from ICAO. State positions submitted to ICAO are not made public. All this contrasts strongly with the level of transparency which exists in other UN organisations such as its shipping equivalent, the IMO.

This level of secrecy also increases the influence of the aviation industry, which enjoys a privileged position at ICAO. When rules are made behind closed doors, with little public scrutiny, that makes it easier for industry to exert its influence. This is seen in the weakness of Corsia as a measure, which will have only a minor financial impact on the sector due to its weak target and the expected broad supply of offsets which will depress prices (ICCT, 2018).

5. Corsia compared to EU 2030

Under the EU ETS Directive, the European Commission must conduct an assessment of Corsia's effectiveness before making any potential legislative proposal to implement Corsia into EU law. It is therefore important to contrast Corsia's potential environmental effectiveness against existing EU climate legislation and targets, in particular the EU's 2030 emissions target legislative package.

In establishing its 2030 target, which is the basis for Europe's commitment under the Paris Agreement, the EU has included emissions from outbound aviation (i.e. all flights departing from Europe, and therefore including flights which take-off and land within Europe) and is based on EU ETS Allowances and excludes the use of international credits.

Implementation of Corsia in a manner which replaces or undermines existing EU legislation and targets therefore risks undermining EU climate ambition, and in particular its target under the Paris Agreement, in the following way:

5.1. Target

The EU's 2030 economy-wide target commits the bloc to achieving an emissions reduction target of -40% against 1990 levels. That target is a combination of emission reductions under the bloc's ETS and targets for each member state for sectors of their economy not covered by ETS under the Climate Action Regulation. In establishing the ETS target, the Council of the EU included outbound aviation emissions i.e. emissions from all flights departing EU airports to any destination either within the EU or beyond the EU, with a target of 111 Mtonnes by 2030 (Council of the EU, 2017). As outbound aviation emissions are currently (2017) estimated to be 174 Mtonnes (UNFCCC), that target is a reduction of over 36% from current emissions.

It should be noted that while the initial target includes all emissions from outbound aviation, the scope of aviation's inclusion in EU ETS has been limited to outbound flights within Europe until at least 2024.

By contrast, the Corsia target has been set to stabilise emissions from international aviation at 2020 levels, allowing airlines to continue growing their emissions. Setting aside the manner by which each measure will achieve their respective target (airlines purchasing allowance reductions from other sectors covered by ETS, and airlines purchasing offsets approved by ICAO under Corsia), the Corsia target is a weaker target than the EU 2030 target. Therefore any move to replace the existing ETS target with the Corsia target would represent a regression in Europe's climate ambition, a move which the Paris Agreement explicitly prohibits.

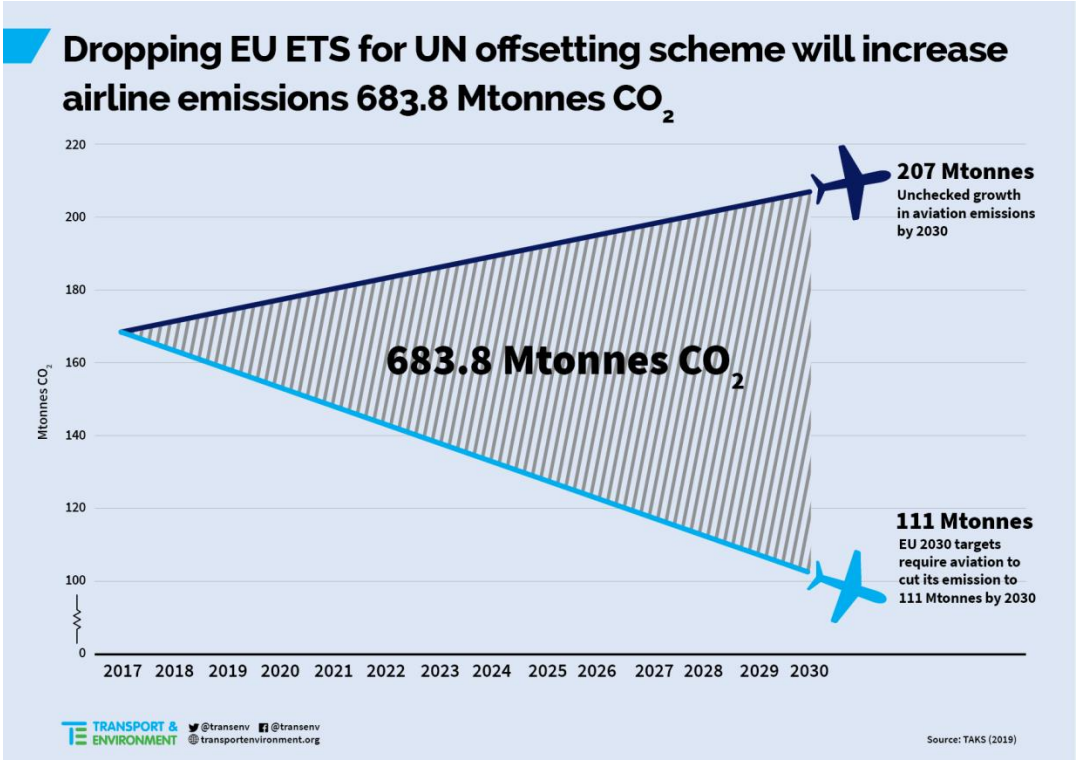
5.2. Use of offsetting

A further distinction between the EU 2030 targets and the Corsia scheme is that the former is to be solely achieved through reductions within the EU, and therefore does not recognise the use of international credits. In contrast, Corsia is built explicitly around the use of such international credits. As a result, implementation of Corsia into EU law, in a manner which replaces existing EU legislations, risks creating a situation where all sectors of Europe's economy, bar aviation, are legally obliged to achieve emission reductions without offsetting.

As the commitment to domestic reductions was stated in Europe's NDC, which explicitly states "No contribution from international credits" a backtracking on this for any part of its economy would, like with a weaker target, count as backsliding which the agreement prohibits .

5.3. Emissions effect of legislating for Corsia

Due to the weaker target and the use of offsets, implementing Corsia in EU law in a manner which replaces existing legal commitments would weaken Europe's overall climate ambition. According to independent research commissioned by T&E, over the period 2021-2030, Europe's aviation emissions would increase 683.8 Mtonnes CO2 (TAKS, 2019), which is equivalent to the 2017 CO2 emissions of Poland and France combined (Global Carbon Atlas, 2019).



That increase in ambition is on course to be achieved, owing to increased emission reductions in other sectors, and Europe is currently debating a potentially significant increase in its ambition beyond a 40% reduction. However that increased in ambition by other sectors must not be cancelled out by a lowering of ambition in the aviation sector.

6. Conclusion

Corsia as a measure will not mitigate aviation's climate impact. Offsetting risks creating incentives which could undermine the Paris Agreement. The use of international offsets directly contradicts EU climate legislation, which explicitly excludes the use of such offsets for its 2030 targets. The rules adopted by ICAO for both offsetting and alternative fuels are weak, and there are doubts as to that organisation's ability to enforce them.

Europe may ultimately decide to implement Corsia partly or fully into EU law. If it does so in a way which replaces existing EU legislation under the 2030 targets and package, it would be undermining European climate ambition and the bloc's commitments under the Paris Agreement. If Europe introduces Corsia in a complementary manner (i.e. on top of the original aviation ETS), it would make no meaningful dent in GHG emissions.

Further information

Andrew Murphy, Aviation Manager
andrew@transportenvironment.org
Tel: +32(0)4 85 00 1214

Endnotes

EASA, Environment Report 2019 (2019)
Council of the EU WK 2310/2017 INIT (2017)
CE Delft A comparison between Corsia and the EU ETS for aviation (2016)

Mendes de Leon et al Possible legal arrangements to implement a global market based measure for international aviation emissions (2015)
Oko-Institut e.V. How additional is the Clean Development Mechanism? (2016)
The ICCT, ICAO's CORSIA scheme provides a weak nudge for in-sector carbon reductions (2018)