

Is success in sight for a global agreement on an effective economic measure to address international aviation emissions?



Thu 30 June 2016 – In the 18 years since being given a mandate under the Kyoto Protocol for reduction or limitation of greenhouse gas emissions from international civil aviation, ICAO has pursued a ‘basket of measures’ for mitigation, with significant effectiveness on the technical and operational side, but the UN agency has made limited progress on a vital global market-based measure (MBM). Following an intense period of activity, with the added stimulus of last December’s UNFCCC Paris Agreement, ICAO’s governing Council has now developed a framework for a Carbon Offset and Reduction Scheme for International Aviation (CORSIA), to be submitted to the ICAO Assembly in September. *Chris Lyle* reviews the substance of the proposal, the issues yet to be resolved, the prospects for adoption by the Assembly and subsequent implementation, and the adequacy of the likely contribution to global GHG emissions mitigation, suggesting possible means of achieving greater ambition.

At its Assembly in 2010, ICAO adopted as a global aspirational goal an industry target of carbon-neutral growth from 2020, or CNG2020. ICAO’s 2013 Assembly Session consequently decided that the Organization should develop an MBM scheme, now emerging as CORSIA.

CORSIA is a critical element in ICAO’s basket of emissions mitigation measures. While aircraft fuel efficiency has steadily improved over a long period of time, traffic growth continues to exceed the consequent per unit reductions in emissions by a sizeable margin. Even with continuing technical and operational improvements – including implementation of a just recommended CO₂ Standard for aircraft and greater use of alternative fuels – aviation emissions are presently expected to continue to grow exponentially for the foreseeable future at a rate of around 3.5% a year, or doubling in 20 years.

UNFCCC and ICAO

While the Kyoto Protocol will now become moot, international aviation was not covered under the Paris Agreement and its associated decision text, which has led to industry and ICAO taking an essentially sectoral perspective to an MBM, seemingly independent of the context of broad-spectrum tourism and trade with their concomitant socio-economic benefits and costs.

The treatment of international aviation emissions mitigation by ICAO separately from the UNFCCC process has meant moving from a structure in which States make individual voluntary commitments (Nationally Determined Contributions, or NDCs), for which implementation is entirely within their own sovereign responsibility, to a global sectoral configuration requiring accord amongst all 191 ICAO Member States. The application of CORSIA is to States rather than directly to air carriers, understandable given sovereignty considerations but adding a layer of international administration. This has made the CORSIA proposal extraordinarily complicated – and difficult for the uninitiated to comprehend.

The stumbling block in Paris of the treatment of the UNFCCC principle of common but differentiated responsibilities (CBDR) has been exacerbated in ICAO, with some States insisting ICAO and the UNFCCC are independent institutions and that ICAO action is only subject to the equal application principles underpinning the Chicago Convention. The greater ambition from Paris regarding climate change is contrasting with a ‘least common denominator’ consequence in ICAO.

In order to progress development of a global MBM, the ICAO Council has since early 2014 convened 15 meetings of an Environment Advisory Group; two regional series of Global Aviation Dialogues; two meetings of a High-level

Group; and in May this year a High-level Meeting attended by 65 States and 17 international organisations; and with technical support provided by the Council's Committee on Aviation Environmental Protection (CAEP). All this activity has finally led to apparent acceptance in principle of a large part of a draft ICAO Assembly Resolution to set up CORSIA.

Current framework

But the current CORSIA framework is fragile, with contentious elements pending ongoing bilateral and regional negotiations, and subject to further consideration by the ICAO Council in late August before submission to the Assembly. The framework is also incomplete, with some key aspects only to be taken up during ICAO's 2017-2019 cycle prior to implementation of CORSIA from 2020.

The CORSIA draft includes two implementation phases, the first applying from 2021 to States with a larger share of international aviation activities (23 countries, representing about 80% of international revenue tonne kilometres, or RTKs), with the second applying from 2026 to some further 15 to 35 countries, with 90-95% of international RTKs then represented. A question of whether an economic development criterion as well as share of air traffic should apply to the phase-in is still open, but if applied could change the coverage a little.

The draft also gives specified exemptions for new airline entrants, which, while not large, seems contrary to the very concept of emissions reduction. Still possibly under consideration are adjustments in favour of 'early movers' and 'fast growers'. The emissions excluded from any phasing-in or exemptions would not be re-allocated to other States and hence ICAO's goal of CNG2020 would not be achieved, and by a significant margin.

CORSIA application has a route-based classification of phase-in and exemption differentiation, which both meets the Chicago Convention's principle of equal application to all aircraft and reduces potential impact on tourism destination developing countries. This does mean, however, that traffic of States included in CORSIA would be exempted from offsetting requirements as far as routes from these States to non-exempted States or between exempted States are concerned. The effect would be to reduce the international traffic coverage in the first implementation phase from 80% to as little as around 60%.

The exemption classification, while still under negotiation, is currently not based on socio-economic impact but rather solely on aviation operations and, within those, aviation activity of a State's operators rather than traffic to and from the country concerned. The contribution that aviation makes to a national economy varies significantly from State to State and some States have limited or even no international aviation activity by national airlines yet are heavily dependent on air transport; at least there is some recognition of this in that Least Developed Countries (LDCs), Small Island Developing States (SIDS) and Landlocked Developing Countries (LLDCs) have a specific element of exemption from CORSIA.

The ICAO Council has decided that the key issues of Emissions Unit Criteria (EUC) and Monitoring, Reporting and Verification (MRV), along with the establishment of Registries, would only be determined in the 2017-2019 cycle, raising uncertainty at this stage as to the quality and price of offsets and the makeup, administration and cost of the Registries – which would be separate from the UNFCCC process and potentially duplicative. There is no indication yet as to how the administrative costs would be covered and who would be paying for them, both in individual States and in ICAO.

IATA [presented](#) to the ICAO High-level Meeting some selective examples of the estimated cost per flight in 2030 under CORSIA (presumably at current prices) according to an earlier analysis by CAEP and concluded that on this basis the costs would be "manageable". These estimates seem to be somewhat on the low side. The highest per passenger cost example, for a Santiago-Miami flight by a B787-800 (3578 nm) shows a cost range from a low of \$3.52 to a high

of \$9.16, and the lowest cost example, for a Singapore-Denpasar flight by an A320 (901 nm) ranging from \$0.57 to \$1.49 (even excluding any offset attribution to freight for these flights). The carbon offset costs for the same flights currently shown by the non-profit provider used by this author for his travel, applying a Gold Standard in conjunction with the UN Clean Development Mechanism, are \$34 and \$8 respectively for economy class. These costs, of course, relate to full offset rather than just reduction to CNG.

Governance issues

The issue of governance is critical. The legal basis for CORSIA in relation to the Chicago Convention and to air services agreements has yet to be fully assessed. For example:

- A flight by an airline whose State is not included in CORSIA using fifth freedom traffic rights between two States included in CORSIA would in fact be subject to CORSIA.
- A 'route' has yet to be defined, whether in terms of origin/destination or sector, intermediate points (for either technical or traffic right stops), or other economic regulatory factors such as beyond points, code-sharing, etc.
- The interaction between domestic and international flights (not just the different treatment but, for example, application of CORSIA to a domestic leg of an international service).
- The treatment of non-scheduled flights.
- The fact that CORSIA would have mandatory application, and the proposed use of annual emissions based on increases of the international aviation sector as a whole rather than an individual operator, raises sovereignty and non-compliance issues. As with the Paris Agreement, any hint of mandating in any element of CORSIA or in subsidising 'third party' operations would in the US, for example, require approval by Congress, which is unlikely – in the case of the Kyoto Protocol this concern meant it was never submitted to Congress and thus was not ratified by the US.
- There is a question over the basis of the adoption and implementation of CORSIA via ICAO Assembly Resolutions rather than a legal convention. ICAO Resolutions are not in themselves binding and become less suasive if reservations are placed on them – as has been the case in the past three Assembly Resolutions on climate change. It is worth noting that no reservations may be made on the Paris Agreement.
- The use of ICAO Standards for EUC and MRV is a long reach from the usual and fundamental application of Standards to safety, security and air navigation matters. A State may 'file a difference' to any ICAO Standard and this is either simply accepted or, in the case of serious concerns, another State may take action (for example, even to limit the access by the filing State's aircraft to its territory). In the case of EUC or MRV, the impact of a difference filing might be ignored, especially if a small traffic State files that "I haven't the resources right now" or "I can't afford to apply this".

The draft Resolution has included language to the effect that CORSIA should be an exclusive market-based measure applied to international aviation. This is possibly aimed in particular at barring application of the EU Emissions Trading Scheme (EU ETS) to international air transport, even for flights within Europe for which the EU ETS continues in effect and which the European Commission claims has already saved 60 Mt of CO₂. However, ICAO has no authority over sovereign States except through the Chicago and other aviation legal conventions. It is the sovereign right of all States to decide if they wish to apply CORSIA exclusively – or at all – and European States will no doubt be comparing the environmental effectiveness of CORSIA vis-à-vis the EU ETS for flights within Europe in particular.

Will CORSIA do enough?

Many of the above issues are being treated intensively in the run up to the ICAO Assembly and others will no doubt be taken up in the next ICAO three-year cycle. There will very likely be an agreement at the coming Assembly. There is some feeling that it is more important not to worry too much about the content right now in order to get an agreement which could be built on at a later stage, through the next triennium and a later 'ratcheting-up' review process. But history has shown that an initial premise can become 'cast in stone', the 1944 Chicago Convention itself

being an example. There is also concern that ICAO lacks the breadth of expertise and the mandate to treat socio-economic matters and environmental issues beyond a narrow aviation construction, getting out of its comfort zone and in danger of drifting away from its fundamental safety and security focus. ICAO will need to synchronise with the UNFCCC rather than operate independently and simply report on its emissions mitigation activities.

While moving towards CNG would be a step in the right direction, there is a need to go well beyond CNG if the aviation industry target of 50% reduction in net emissions levels in 2050 over 2005 is to be more than a pipe dream. International aviation emissions are not part of NDCs but, unlike the vast majority of the NDCs, are predicted to show significantly continued growth to, and even beyond, 2030 rather than any peaking or reduction. ICAO's CNG aspirational goal was established in 2010 – well before the Paris summit and its achievement of generally greater ambition – and with all the above caveats, ICAO has since actually lessened its own ambition quite significantly. Perhaps it is no surprise that IATA, which has been an active participant throughout the ICAO process and effectively a driver of it, claims that CORSIA “secures our licence to grow”.

The UNFCCC, using ICAO data, forecasts by 2020 international aviation will emit 750 Mt of CO₂ emissions. Therefore, even with 100% successful offsetting to CNG, international aviation would still be adding 750 Mt of CO₂ annually that would for many years be beyond the reach of ICAO's basket of measures, and CO₂ can last over 100 years in the atmosphere. And, of course, CORSIA relates only to CO₂ emissions and not the other GHG emissions covered under the UNFCCC.

There is a danger the aviation industry and ICAO will be sending a deceptive message on the climate impact of flying. CORSIA may well have some influence on reducing voluntary offsetting and, perhaps more importantly, on the psyche that you now do not need to feel guilty when you fly or receive air freighted shipments. There are a large number of voluntary commercial offsetting schemes dealing with aviation emissions already in existence, if of varying price and quality. Offset brokers will presumably recognise and draw attention to the unchallenged 750 Mt and continue to offer offsets to cover at least the difference between CNG and 100%. ICAO itself may well take a more full offset approach to its own staff travel. It is working with other UN agencies under the Climate Neutral United Nations Initiative, which is now aiming at organisation-wide carbon neutrality by 2020.

A wider public educational programme would help but what is really needed is stronger government action, individually or preferably in co-operation. While the UNFCCC will continue to be a forum where such stronger action is likely to be propounded – and Article 6 of the Paris Agreement allows for Parties to pursue greater ambition – it seems unlikely at this stage the UN climate agency itself would revert to direct action on international aviation emissions.

Coalition of the more ambitious

One way forward would be for States to take additional aviation emissions mitigation action, preferably complementary to and not duplicative of CORSIA rather than as a substitute.

A simple way to do this would be for individual States to include selected emissions of their air carriers not covered by CORSIA in their national inventories and commitments. The advantages of such an approach were described in an earlier [Commentary](#).

Amongst other options a ‘Coalition of the more ambitious’ States might be established to take additional mitigation measures. While carbon offsetting might not be an ideal mitigation mechanism, a single ‘higher level’ regime to build on CORSIA could be relatively simple and yet effective. Coalition members might apply additional carbon offsets for routes between their territories for the same flights as covered by CORSIA, so as to go below CNG for these routes. The logical initial contenders for participation in such a coalition would be developed countries but the convening

agreement would be voluntary and could be plurilateral, open to any State that wished to join. The projects offset would be optional for each individual airline, for example limited to its home territory or the destinations which it serves.

There might be progressive levels of achievement of additional offsets, leading eventually to the 50% reduction goal for 2050 as may be required should technical and operational improvements not achieve this, although in the later stages the availability and price of offsets may dictate use of another form of action. The procedures used would parallel those of CORSIA for ease of administration and with a view to eventual adoption of greater ambition through ICAO. Indeed the application would be similar to the present CORSIA phasing-in process but adding to the baseline rather than subtracting from it, and providing, for example, pilot project experience of a higher ambition level.

IATA is on record as opposing national and regional emissions mitigation policy measures as costly and complex. A single higher level regime would reduce this concern as well as those of airlines regarding potential imposition of taxation on air transport for the general exchequer – even if international air transport today remains largely exempt from both value added and fuel taxes.

Efficiency, at which the aviation industry in general excels, is not the same as sustainability. While aviation may have a positive balance in respect of the economic and social pillars of sustainability, for the time being it makes a patently negative contribution to the third pillar, environmental sustainability.

All other sectors, except international shipping, are covered by the Paris emissions mitigation targets and if international aviation is not covered then production abroad is implicitly subsidised via local production through low transport prices and induced higher GHG emissions. There is a need to get a carbon price on all aviation operations, in line with other sectors, otherwise they may ultimately require demand management by governments.

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This article was published in [GreenAir Online](#)