

# Aviation & shipping emissions and national climate pledges

Ensuring Paris pledges are truly economy-wide

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## Summary

Much confusion exists as to how emissions from international aviation and shipping are regulated. While the Kyoto Protocol explicitly provided a role for the two UN agencies which regulated these sectors, the International Civil Aviation Organisation (ICAO) for aviation and International Maritime Organisation (IMO) for shipping, the Paris Agreement is silent on this point. What's not in doubt is that emissions from these sectors must be regulated, with a view to fully decarbonising them, if the goals of the Paris Agreement are to be met.

This paper from T&E makes the case that the appropriate means to regulate these emissions is through their inclusion by parties in the national pledges submitted under the Paris Agreement – the nationally determined contributions (NDCs). This does not preclude, and in fact should encourage, action at international level through the two UN agencies. It does, however, ensure that countries cannot escape responsibility for the potentially rapid growth in emissions from these sectors.

## 1. Overview

The Paris Agreement (PA), adopted by 195 countries in December 2015, commits its parties to taking action in order to limit an increase in pre-industrial temperatures to 1.5°C/well below 2°C. In order not to exceed this target, all states must over time adopt economy-wide emission reductions and commit to achieving a global net balance of anthropogenic emissions and sinks (i.e. to decarbonise) by an unspecified period in the second half of this century. International shipping and aviation are major economic sectors and significant sources of emissions. Each would be a top ten emitter if treated as a country, therefore the goals of the Paris Agreement cannot be achieved without addressing emissions from these sectors.

The PA's predecessor, the Kyoto Protocol (KP), made specific reference to these emissions, requesting developed states to work through the specialised UN agencies - ICAO for aviation and IMO for shipping - to limit and reduce emissions from these sectors. At the same time, Decision 2 of COP3 (1997) in Kyoto ('Methodological issues related to the KP') urged the Subsidiary Body for Scientific and Technological Advice (SBSTA) "to further elaborate on the inclusion of these emissions in the overall greenhouse gas inventories of Parties". However, the PA is silent on any role for ICAO or the IMO in meeting the Paris goals while at the same time calling for economy-wide decarbonisation under Article 4.

However there remains uncertainty as to who is responsible to reduce these emissions. What is certain is that they must be reduced, like all other sectors, if the goals of the PA are to be achieved. Taking into account this overall goal, and that measures have been adopted to date by both states and through international agencies, T&E is of the view that these emissions should, where not already done so, be included in nationally-determined contributions (NDCs), the pledges submitted by parties to the PA. Such an inclusion would encourage states to take action, both at national and international ICAO and IMO level as appropriate, to address emissions from these sectors. Including these sectors in NDCs would reduce

incidents of states adopting less progressive stances at ICAO/IMO than at UNFCCC, as these states would welcome more effective climate action by these agencies in order to assist in meeting their NDC goals.

## **2. Paris Agreement wording on international transport emissions**

The United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1992 and commits parties to reducing their emissions from all sectors, including transport. The convention does not distinguish between modes of transport, and where it excludes types of emissions it does so explicitly - e.g. it excludes those emissions covered by the Montreal Protocol (Art 4(1)(a) UNFCCC).

The obligations of parties to the UNFCCC were elaborated in a number of subsequent decisions and agreements - the most notable being the PA and the KP. The PA differs from the KP in a number of key respects. The first is that it sets specific temperature targets (1.5°C/well below 2°C - Art 2.1) which require all-sectors of the economy to rapidly decarbonise. Neither UNFCCC nor KP set such a clear objective. That the PA agreed to such a target demonstrates that climate change is now recognised as an existential threat, requiring action from all sectors. The second is that it calls for parties to undertake rapid economy-wide emission reductions (Art 4.4). In parallel it foresees that developing countries should adopt such economy-wide targets over time. Finally, unlike the KP which requested developed states to work through the relevant UN agencies (ICAO for aviation and IMO for shipping) to limit and reduce emissions, there is no such reference in the PA.

The achievement of PA temperature targets is conditional upon humanity not emitting more GHG than the remaining finite carbon budgets as advised by the IPCC's 5th assessment report. These emission limits, set in terms of carbon budgets, encompass all sectors, including to international aviation and shipping. For this reason the temperature targets of the PA require all sectors of the economy to act. Aviation and shipping are clearly part of economy-wide emissions and the PA makes no specific reference to ICAO or IMO. Since economy-wide decarbonisation is the responsibility of parties to the PA, states should make clear in their NDCs what actions they propose to take to reduce these emissions.

## **3. Examination of NDCs and action taken to date**

This is confirmed by a number of NDCs which pledge economy-wide emission reductions e.g. the NDCs submitted by the US, EU, Canada, South Korea and Russia. A number of other major NDCs refer to a reduction in emissions per GDP - a 'GDP carbon intensity' target. In this type of target, states commit to reducing emissions per GDP output. Such targets are included in the NDCs of China and India, among others. International aviation and shipping are part of a party's GDP and are therefore, implicitly, included in the carbon intensity NDC commitment. Excluding emissions from these sectors from NDCs would give a distorted view of a party's progress on reducing its GDP/carbon intensity.

Including these emissions in NDCs is also a recognition that a good part of the activity which can be taken to mitigate emissions from these sectors needs to be taken at a national level. The list of possible national actions is extensive, and ranges from fuel taxation and other taxation - e.g. sales tax, removal of subsidies - state aid, passenger taxes, levies, emissions trading and other measures, a moratorium on airport capacity expansion, R&D, mandates for alternative fuels, and aircraft. States can also agree on a bilateral/multilateral basis to remove existing exemptions on taxing aviation fuel or ports can institute such schemes as port discounts and/or mandates for zero emission vessels (ZEVs), CO<sub>2</sub>/air pollution charges, virtual arrival and slow steaming. Many states are already adopting such measures: for example differentiating port charges to reward more efficient ships, or adopting transparent monitoring and reporting rule for ships, or even mandating zero emission vessels (ZEVs) for specific routes or environmentally sensitive areas. Many parties are also rationalising their airspace in order to improve operational efficiency, or putting money into researching alternative fuels and better aircraft design.

Many of the activities undertaken by states affect both domestic and international emissions. For example China's 13th Five Year Plan (2016-2020) calls for operational efficiency improvements, reduction in carbon intensity per passenger/km and the uptake of alternative fuels. If successfully implemented, such policies will impact both domestic and international emissions, and it is necessary that these emissions and the related actions are explicitly recognised and included in NDCs if there is to be an accurate accounting of progress towards the Paris goals. The United States and EU for example have similar approaches to aviation, supporting alternative fuel development and modernising/rationalising airspace management systems, which if successful may reduce emissions from international aviation.

Where parties do take action, it is also both appropriate and essential that they are able to claim credit for the resulting emission reductions. Otherwise an incentive to reduce these emissions would be removed. Conversely, excluding these emissions could see parties allow these emissions to expand uncontrolled, with no implications for their national climate efforts. Such an outcome would be inconsistent with the aims of the PA.

#### **4. Attribution of emissions**

The attribution of emissions to Parties should not be confused with the differentiated responsibility of parties to take action on those emissions via NDCs. Discussion on how to attribute emissions from international aviation and shipping dates back to the first meeting of the parties to the UNFCCC in 1995. At that meeting the UNFCCC's Subsidiary Body for Scientific and Technical Advice (SBSTA) was requested to address the issue of the allocation and control of emissions from international bunker fuels and report on this work to COP 2.

The UNFCCC secretariat prepared a paper that included eight allocation options for consideration. The SBSTA meeting at COP2 noted the eight options and considered that five of these options should be the basis for further work. The five comprised (1) no allocation; (2) allocation to the country where the fuel was sold; (3) allocation to Parties according to the nationality of the transporting company, or to the country where a ship or aircraft is registered, or to the country of the operator; allocation to Parties according to the country of departure or destination of an aircraft or vessel. Alternatively, (4) the emissions related to the journey of an aircraft or vessel could be shared by the country of departure and the country of arrival; (5) allocation to Parties according to the country of departure or destination of passengers or cargo.

However, efforts to resolve the attribution issue by selecting one of these options remain ongoing and as a result there is no commonly agreed means to allocate these emissions. In the meantime Parties to the UNFCCC were requested to report all fuel sales for international transport as a separate item in their national inventories. So at present emissions inventories for aviation and shipping are based on fuel sales in each country. However global mandatory emissions reporting procedures are now being put in place for aircraft and ships on international voyages which will provide for much greater accuracy in calculating emissions, particularly for shipping. These procedures could be adapted as necessary to construct more accurate national inventories both for domestic and international bunker emissions. Emissions could, for example, then be recorded in national inventories by aggregating emissions from journeys between departure/arrival countries.

Resolving the allocation issue should be a priority for parties to the Paris Agreement. An allocation method can either be agreed at UNFCCC level, or individual parties could select one of the five SBSTA options. They could, for example, decide provisionally to agree on a 50:50 approach under the option allocating emissions to the country of departure or destination as that would seem to be a fair and workable way of dividing responsibilities between parties, particularly if national inventories had also been based on emissions from journeys between departure/destination countries.

A uniform allocation method, agreed at international level, is preferable. However despite the preference for an agreed allocation method, it is not essential. Parties can include action on these sectors in their NDCs, without necessarily deciding immediately how they attribute the emissions. Such an approach leaves parties free, for example, to pursue abatement measures, including fuel mandates, CO2 charges and operational efficiency improvements for aviation or slow-steaming requirements for shipping.

## 5. What role for ICAO and IMO

Acting on these emission through NDCs may raise the question of how action taken at international level, through ICAO and IMO, can be accounted for. As for many sectors of the economy, international cooperation plays an essential role in facilitating climate ambition. However, there should be no suggestion that joining international efforts means that a party is excluding these emissions, in this case international aviation and shipping, from their commitments, and therefore is not under an obligation to take early or additional and complementary national action.

Parties working through ICAO and IMO are at different stages in adopting targets and measures to help address these sectors' climate impact. ICAO has established an insufficient target of offsetting CO2 emissions above 2020 levels and is in the early stages of a process of reviewing this target. It is also working to establish a measure which aims to offset all CO2 emissions above 2020 levels. In April 2018 IMO agreed a long-term goal of at least a 50% reduction by 2050 from 2008 levels as a start towards decarbonisation, but it is only the beginning work as discussions on actual reduction measures have yet to start in order to achieve this target. The adoption and implementation of these measures may take many more years.

Parties working through ICAO and IMO aim for the broadest possible participation in their collective action. Experience over the past 20 years shows the level of ambition for collective action at ICAO and IMO level will continue to remain below what is required under the Paris Agreement. While states must continue to work to boost ambition in these agencies by agreeing more effective measures and more urgently, and in particular align the positions they adopt in ICAO/IMO with the positions adopted in UNFCCC, ultimately states will likely need to pursue additional ambition on a national, regional or bilateral basis.

This ambition may be complementary or subsumed partly or wholly in whatever measures and targets are adopted by ICAO/IMO. In some areas, such as fuel taxation, ICAO has no competence and so is not in a position to adopt the measure that is widely used in other transport modes. Any move at the IMO on marine fuel taxation/levy would require all major flag and port states to agree and strictly enforce a global levy. Such a levy could only be implemented through the adoption and ratification of a new international treaty, which would take 10-15 years to put in place. Some measures, such as taxation of shore-side electricity, environmentally friendly port charges, as well as investment in the development and deployment of zero emission fuels/propulsion technologies is even outside the remit of the IMO.

## 6. Conclusion and recommendations

Excluding international aviation and shipping from national and regional efforts, sectors which if they were states would both be top ten emitters, risks fatally undermining the objective of the Paris Agreement. It is therefore appropriate that they are included by parties in their NDCs. This would reduce incidents of states not aligning their UNFCCC positions with their ICAO/IMO positions, and inclusion would therefore boost ambition in these agencies. The absence of a commonly agreed method for allocating emissions is not a barrier to states taking action, including committing to do so in their NDCs. States should adopt national measures and targets, additional to measures and targets agreed at ICAO/IMO, to address emissions from these sectors.

Recommendations include:

- As required by the Paris Agreement parties should progressively move towards economy-wide NDCs which include commitments to act on emissions from international and domestic aviation and shipping.
- States should continue to work through ICAO and IMO to establish the strongest global measures possible with a highest level of environmental ambition.
- In the 2018 Facilitative Dialogue (FD), as required by COP Decision 1/21, progress on reducing emissions from international transport should be included in parties' submissions and in submissions prepared by ICAO and IMO.

## **Further information**

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