



## **ICSA POSITION PAPER: MARKET-BASED MEASURES ARE ESSENTIAL TO ADDRESS GREENHOUSE GAS EMISSIONS FROM INTERNATIONAL AVIATION**

### **1. INTRODUCTION**

1.1 The primary objective shared by environmental NGOs is to see that greenhouse gas emissions from international aviation are reduced to a level that, in the context of limiting temperature rises to no more than 2 degrees, represents a fair and equitable contribution by the sector. Taking into account the non-CO<sub>2</sub> effects of aircraft emissions (a critical issue that has fallen outside of ICAO's current focus), aviation today accounts for around 5% of the total radiative forcing attributable to manmade activities. In fact, the aviation sector would be the 7<sup>th</sup> largest emitter of greenhouse gases if it were a country. Action to address its accelerating impacts is a central challenge for ICAO's members and for industry if the sector is to secure a sustainable future.

1.2 Achieving this objective will require the sector to deliver significant in-sector reductions. For this reason, ICSA supports the implementation of a range of technological and operational improvements to deliver ICAO's 2% per annum efficiency goal and the State Action Plan process as a means of planning, implementing, measuring and forecasting the expected reductions from these approaches. ICSA also firmly supports the development of a robust and effective CO<sub>2</sub> standard for new and in production aircraft through ICAO's CAEP process. ICSA continues to engage in the ongoing debate to identify sustainable bio-fuels.

### **2. MBMS ARE AN ESSENTIAL COMPONENT TO MEET ICAO GOALS AND THE 2 DEGREE TARGET**

2.1 In March 2013, Manchester Metropolitan University published a study assessing the mitigation potential of i) technology and improved operations; ii) biofuels, and iii) the extension of current regional market-based measures to 2050 based on low, central and high traffic growth projections. The results of the study are shown in figures 1 – 4 below. In the central growth scenario, forecast improvements from technology and operations total 332MtCO<sub>2</sub> per annum by 2050, potentially reducing emissions from international aviation to a level of 1,306MtCO<sub>2</sub> and reinforcing the importance of measures to deliver in-sector reductions. Factoring in the likely contribution of alternative fuels (based on an assumed life-cycle carbon reduction of 50% and penetration rates identified in work by the UK Committee on Climate Change) and of regional MBMs (assuming the scope of current schemes is extended to 2050), provides further potential to reduce emissions from international aviation down to 1,110MtCO<sub>2</sub> and 774MtCO<sub>2</sub> respectively in 2050.

Figure 1 – Forecast technological and operational improvements (source: MMU, 2013)

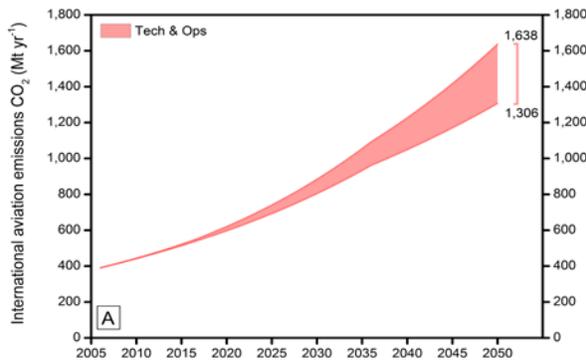


Figure 2 – Forecast emission reduction from technology, operations and biofuels (source: MMU, 2013)

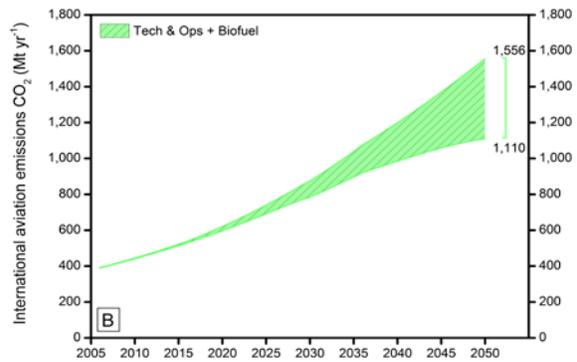


Figure 3 – Forecast emission reduction units from technology and operations, biofuels and regional MBMs extended out to 2050 (source: MMU, 2013)

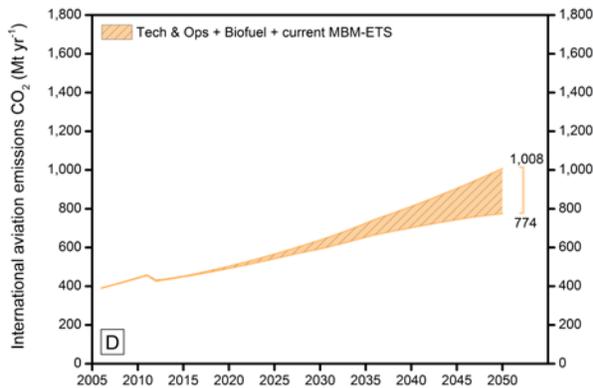
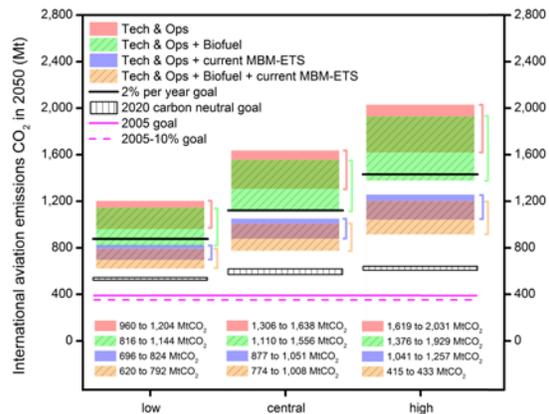


Figure 4 - Growth and reduction scenarios measured against 2020, 2005, and 2005-10% goals (source: MMU, 2013)



## 2.2

The report identified that none of the measures, or their combinations, for any growth scenario would achieve ICAO’s aspirational 2020 carbon-neutral goal by 2050, the 2005 stabilization of emissions goal, or the 2005-10% stabilization of emissions goal. The 2% per annum efficiency goal would only just be met in 2050 by assuming maximum reductions from technology, operations, and a “speculative” availability of bio-fuels. The resulting “emissions gap” in 2050 was put at between 153MtCO<sub>2</sub> and 387MtCO<sub>2</sub> (or approximately 15-38% of the total emissions reduction effort required to achieve a no net increase in emissions from international aviation from 2020). A global MBM is the only feasible mechanism to close this gap, and should therefore be incorporated now as an essential component of ICAO’s approach. Against ICAO’s aspirational goal, the gap already appears shortly after 2020 (in the absence of the EU ETS), highlighting the urgent need for early action. The industry’s own CO<sub>2</sub> roadmap to 2050 also highlights the need for MBMs in the short- to medium-term (with a global MBM preferred by airlines and their trade associations, as well as trade and tourism organisations, when compared to the administrative burden and cost of complying with a patchwork of national or regional carbon pricing systems).

### **3. MARKET-BASED MEASURES**

3.1 Viewed from the perspective of environmental protection, MBMs provide certainty that environmental targets will be met. In the context of ICAO, this approach can ensure effective and efficient delivery of the 2020 aspirational goal, and, in response to Assembly Resolution A37-19 that requested further work on the attainability and other issues associated with longer-term goals, provides the confidence to set binding, ambitious medium- and long-term goals. There is also a strong economic rationale for using MBMs. There are practical limits to how aggressively technology improvements or accelerated fleet replacement can be pursued, and overly ambitious fuel efficiency goals could lead to high abatement costs per tonne of CO<sub>2</sub> reduced relative to other sectors (which would negatively impact costs and thus growth). Access to the carbon markets therefore provides a more cost-effective means of bridging the gap between in-sector reductions and ICAO's own environmental objectives for the sector, while introducing a carbon price that will further encourage airlines to speed up deployment of technical, operational and alternative fuel measures.

3.2 Environmental integrity must be a central priority in this regard. The quality of emission reduction units available to aviation is a key design issue affecting the environmental integrity of a MBM, and demonstrating measurement, transparency, additionality and permanence will be essential. At the same time, the carbon markets are expanding within States and at national levels, and there is no reason to assume that a healthy market will not exist in the future, sufficient to meet both aviation's needs and robust sustainability criteria.

### **4. PREFERENCE FOR A GLOBAL MBM**

4.1 ICSA continues to press the need for the early introduction of a global MBM for international aviation, and it should be agreed at the 38<sup>th</sup> Assembly, along with a decision on the key design criteria where there is common ground and a timeline to finalise any outstanding implementation details next year.

4.2 A MBM should be viewed as a necessary and complementary measure to other approaches in the ICAO basket and should be designed in such a way that it incentivises, rather than distracts from, in-sector reductions. ICSA also believes that a global MBM must be fair and avoid any competitive distortions (through equal treatment of all carriers operating on a given route), and that it can, and should, reflect the special circumstances and respective capabilities of developing countries (SCRCDC). This recognises that a MBM must be flexible enough to address not only overall growth in the sector, but differential growth rates in regions and differential growth rates over time. As well as the practical options identified in the MBM Expert Group to accommodate these concerns, ICSA suggests there is further merit in considering route-based allocation tools (differentiation between routes rather than between States or nationality of carrier), using the diversity of offset sources available to explore synergies with related sectors (e.g. travel and tourism), and fostering broad participation through program design options that maintain environmental integrity while supporting sovereign choices about domestic implementation.

4.3 ICSA continues to contribute to the development of the three options through the MBM expert group working alongside the Secretariat and commends its continuation. This work, as presented to the Council at its November 2012 session, showed that all options under consideration are technically feasible.

## 5. A FRAMEWORK FOR MBMS

5.1 ICSA reiterates the urgency for ICAO to agree and implement a global MBM but, recalling that Assembly Resolution A37-19 recognised that some States may take more ambitious actions prior to 2020, believes that national and regional MBMs are important tools both in the interim period until 2020 or beyond in the absence of a global MBM. The alternative scenario, namely no action at a State level in the absence of a global MBM taking effect, cannot be supported.

5.2 To create legal and political certainty for States wishing to take action, and to promote harmonised actions that encourage linkages and minimise administrative burdens, ICSA stresses the imperative of agreeing a realistic and workable framework for MBMs at the 38<sup>th</sup> Assembly. Such a framework must be capable of scaling to cover 100% of international aviation emissions, without any duplication of effort. Of the approaches identified to date, only the “all departing flights”, “nationality of carrier” and “FIR airspace” approaches are capable of achieving this objective: a recent study has shown that confining the geographical scope of actions to the proportion of departing or arriving flights that take place in sovereign airspace only can produce a maximum coverage of 22% of emissions:

Location of international aviation emissions (2006)	Distribution of international aviation emissions
Emissions occurring in the sovereign airspace of states for departing and arriving flights only	22%
Emissions from over flights above sovereign airspace of a State that is neither the State of departure or arrival	33%
Emissions in international airspace (over water)	44%
Total emissions	100%

Source: Manchester Metropolitan University, 2013

5.3 Coupled with its associated administrative complexity, a sovereign airspace approach is not considered to be feasible. Of the remaining approaches, the nationality of carrier (while potentially suited to a global MBM solely in the context of minimising administrative burden on participants) has, in the context of national and regional measures, the potential for unequal treatment of carriers operating on the same route, while an FIR airspace approach also suffers from administrative complexity. For these reasons, ICSA supports all departing flights from a State as the only appropriate and practical approach to geographical scope. Furthermore, it is consistent with State reporting of emissions from international aviation to the UNFCCC (with a supporting IPCC methodology).

## 6. THE NEED TO ACHIEVE PROGRESS IN 2013

6.1 Addressing the climate challenge is a common goal of all States and sectors and can only be realised through co-ordinated action. Achieving the objective of stabilising atmospheric concentrations of greenhouse gas emissions at a level that limits temperature rises to no more than 2 degrees Celsius above preindustrial levels depends not only on agreeing goals and measures, but on timely action. Aviation is predicting strong growth out to 2050, and the public visibility of the associated increase in greenhouse gas emissions makes an agreement now in ICAO essential. While opposing political perspectives have prevented an ICAO agreement on MBMs over the past 15 years, ICSA believes that the development of a global MBM is capable of reconciling such differences in practical ways, noting that MBMs are cost-effective, technically feasible and will have only marginal impacts on the future growth projections of the industry even with the generation of revenues (which warrant serious

consideration, both as a step towards full carbon pricing and as a potential means to address special circumstances and respective capabilities).

6.2 ICSA is developing many of the ideas in this paper and, as the recognised observer organisation representing the environmental NGO community at ICAO, wishes to contribute fully to the HGCC, Council and Assembly decision-making, requesting ICAO to embrace the benefits of positive and transparent engagement with civil society at all levels of the debate.

**ICSA, March 2013**