A Market Based Measure for International Aviation: Need, Design, and Legal Form

In the global effort to cut carbon pollution, international aviation has managed to escape emissions limits – at least so far. This special issue includes a broad spectrum of voices – from industry, former government officials, and the research and environmental communities calling for a cap on carbon pollution from international aviation. Other voices, from the scientific and regulatory communities, lay out the full impact of aviation emissions, and call attention to the risks the aviation industry itself faces from climate change.

If aviation were a country, it would be a top ten emitter. Without change, carbon pollution from airplanes is expected to triple by 2050. International aviation is projected to grow so quickly that, without policy intervention, this sector alone could compromise efforts, set forth in the Paris Agreement, to limit global warming to 1.5 – 2°C. Even these estimates understate the true climate impact of aviation pollution: As Fahey and Lee note, NOx-related warming effects add approximately 50% to the impacts of CO2 emissions, while the warming effects of aviation’s impacts on cloudiness, though short-lived and less certain, are approximately double that of CO2.

Aviation is vulnerable to climate change – an issue that is often overlooked. Thompson provides an overview of these risks, including airport vulnerability to storm surge and sea level rise, reduced payload capacity, and increased passenger and crew exposure to turbulence. Puempel demonstrates that air navigation service providers must manage greater unpredictability of severe weather events, noting that the industry’s approach to risk management, and communication about risk with passengers and crew, may need to change in fundamental ways.

Reducing aviation’s impact on climate change is necessarily a multi-pronged effort. Gill reviews the key “pillars” of the current strategy, which includes increasing fuel efficiency, operational improvements such as modernisation of air traffic control systems, the development and use of sustainable, advanced biofuels, and a market based measure (MBM) to cap total net emissions at 2020 levels. Work is ongoing in each of these areas. For instance, in February 2016, ICAO’s Committee on Aviation Environmental Protection approved the first-ever CO2 emissions standard for aircraft. Unfortunately, these standards are not anticipated to deliver emissions reductions beyond those expected under a business-as-usual
scenario.\textsuperscript{11} Full modernisation of air traffic control systems has been challenging in both the United States and Europe, and market development of advanced biofuels remains slow.\textsuperscript{12} In this context, it is even more critical to secure a cap on net carbon pollution from international aviation, and to ratchet that cap downward in light of climate protection goals.

Progress on limiting aviation’s contribution to climate change has been difficult – States have been grappling with the climate challenge at ICAO since the late 1990s. Historically, efforts to establish an MBM have faltered in part over efforts to reconcile the principle of common but differentiated responsibility, rooted in the United Nations Framework Convention on Climate Change, with the principle of non-discrimination established in international aviation’s governing instrument, the Chicago Convention.

Fundamentally, ICAO’s success or failure is driven by its member States, and in particular by the efforts of the 36-member ICAO Council. Major global aviation States that comprise the majority of the current aviation market – the United States, United Kingdom, China, Germany, France, Singapore, Russia, Brazil, and India, have and must continue to play a leading role in forging the political agreement necessary to achieve the MBM. To date, a number of States have made public statements in support of the MBM, including the United States, Canada, Mexico, Singapore, China, and India. Converting those statements into substantive policy agreement is the urgent and critical job of government negotiators.

A key challenge these negotiators face is how to allocate responsibilities for offsetting the sector’s carbon pollution above 2020 levels. Growth in international traffic, and thus pollution, above 2020 levels is expected to vary by region and airline.\textsuperscript{13} For example, the US-EU market for aviation services is well developed and, while a significant portion of global emissions, is unlikely to grow dramatically in the future. Air traffic within and to other regions, in contrast, is forecasted to grow significantly. Moreover, even within any given region, expectations of growth vary widely from carrier to carrier. To distribute obligations fairly, member States might agree that traffic to landlocked countries, small island nations, and the world’s least developed countries should be offered the opportunity to be exempt from the MBM.\textsuperscript{14} Vaishnav suggests that allocation responsibilities be shared on the basis of individual carrier emissions. Petsonk and Piris-Cabezas offer a proposal for encouraging in-sector reductions while bridging differences between and among states on the allocation question. At press time, discussions on enabling each state to decide, voluntarily, whether to participate in the first five years of the MBM, with subsequent mandatory participation, offered another possible means of reaching agreement.\textsuperscript{15}

If agreement is forged on the allocation issue, ICAO and its member States face another significant challenge – what is the legal form of the MBM, and, in particular, what measures can be taken to ensure that it is successfully enforced? Piera’s analysis shows convincingly that creating an MBM via an ICAO standard established under the Chicago Convention is the most compelling, if imperfect, option. On the one hand, ICAO, with the sup-


\textsuperscript{12} Aeronautics Science and Technology Subcommittee, Committee on Technology of the National Science and Technology Council, Federal Alternative Jet Fuels Research and Development Strategy (Washington, DC: NSTC, 2016).

\textsuperscript{13} See Petsonk and Piris-Cabezas, “Bridging the Allocation Gap”, supra, note 4.

\textsuperscript{14} See ICAO, “Background Information on a Global Market-Based Measure (MBM) Scheme for International Aviation”, 25 July 2016, available on the Internet at ⟨http://www.icao.int/Meetings/GMBMFP/Documents/Friends_MBM_Background.pdf⟩ (last accessed on 12 August 2016), at Appendix B, para. 7(c).

port of the United States and European countries, has played a central role in establishing standards that have enabled the aviation sector to deliver a level of safety that surpasses all other modes of transport. On the other hand, ICAO’s own data shows that many States have not fully implemented all safety standards. In particular, Piera provides an instructive tale of how competitive considerations have led to less than comprehensive security standards at Tocumen Airport in Panama. The story is a cautionary one, given that climate figures less prominently in the public’s eye than do security risks, and that an MBM’s effectiveness is tightly linked to a high levels of compliance.

To mitigate the risks of lax enforcement by one State, Campos suggests that ICAO and its member States ensure that the standards implementing an MBM include clear provisions for overlapping, distributed enforcement. States issuing operating certificates or authorising the provision of air traffic services by foreign carriers, and private actors such as trade associations and leasing and financing companies can all require demonstration of MBM compliance as a condition of access to services.

In a best case scenario, where disputes over allocation of responsibilities are resolved and legal form and enforcement requirements are addressed, can the aviation sector actually reduce its emissions as required? No one expects industry to be able to maintain its direct CO₂ emissions at 2020 levels while satisfying growing demand for international air services. One purpose of an MBM is to afford each airline the flexibility to meet its climate protection responsibilities by acquiring real emission reductions undertaken outside that airline’s individual carbon footprint. Rafael Grillo and colleagues present analyses demonstrating that sufficient high-quality, forest-based offsets are likely to be available to the aviation sector, even after accounting for countries’ needs to first use these offsets to meet domestic emissions and Paris Agreement commitments.

In a worst case scenario, where ICAO fails to reach agreement on the MBM, the aviation industry will find itself in a reprisal of prior debates over the ability of regional actors such as the European Union to regulate international aviation emissions. Without further action, the European Union’s emissions trading system for international aviation will automatically restart. Failure to reach agreement on the MBM would increase already-existing pressures to tighten the international CO₂ emissions standard and to adopt initiatives at State and regional levels for even tighter standards.

Success at ICAO could provide important precedent for global climate governance. The aviation industry and leading aviation states have the opportunity to demonstrate that international industries can work with governments to set meaningful limits on carbon pollution. Aviation could provide a model for other cross-border sectors such as the shipping industry, and potentially other global actors. Precedents made in establishing oversight of emissions reduction units and transparent access to data could form the foundation for future efforts to establish cross-border market tools under Article 6 of the Paris Agreement. To fully realize these benefits, ICAO must complete the work of developing MBM standards in a timely way, while cooperating with States, industry, and civil society stakeholders to ensure the MBM is ready for robust implementation beginning in 2021.

ICAO’s success in adopting and implementing a global market-based measure and other climate initiatives, such as emissions and biofuels standards, will also hinge on the extent to which stakeholders and the public can observe these policies under development and at work. Historically, policy development at ICAO has been opaque – access to major meetings can be difficult and many ICAO working papers and publications are restrict-

ed. To its credit, ICAO has taken steps in recent years to make some processes more transparent. For instance, nearly a dozen Global Aviation Dialogue Sessions (GLADS) were held around the world in an effort to provide greater transparency on the development of MBM.\textsuperscript{17}

Public and industry confidence in ICAO’s efforts to address the climate impacts of international aviation will depend on continued and deepened transparency. Key stakeholders, including those from civil society such as the International Coalition for Sustainable Aviation (ICSA), a network of non-profit organisations working to reduce pollution from air travel, must be involved.\textsuperscript{18} Full implementation of the MBM must include ready access to monitoring, reporting and verification of both emissions and emissions unit development and transaction. As ICAO continues to assess and take actions to reduce the climate impacts of international aviation, future emissions and biofuels standards development efforts must be broadly transparent to key stakeholders.

ICAO’s critical work at the intersection between aviation and climate is an opportunity to demonstrate that the institution can deliver the transparency on which durable climate policy will depend, while honouring the spirit of the global climate agreement made in Paris as well as the operational realities of the aviation sector.

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\textsuperscript{17} See ICAO, “2016 Global Aviation Dialogues (GLADs)”, available on the Internet at <http://www.icao.int/meetings/GLADs-2016/Pages/default.aspx> (last accessed on 12 August 2016).

\textsuperscript{18} EDF is a member of ICSA.

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