

A POSITION PAPER PRESENTED BY THE GLOBAL AVIATION INDUSTRY



# REDUCING EMISSIONS FROM AVIATION THROUGH CARBON-NEUTRAL GROWTH FROM 2020

Aviation is a catalyst for growth, a vital conduit for world trade and a major global employer. Nearly 57 million jobs and \$2.2 trillion in global GDP are supported by aviation. Aviation plays a key role in promoting sustainable development and should remain safe, affordable and accessible, in order to ensure mobility on an equitable basis to all sectors of society.

With these benefits comes an impact on the environment. In 2012, aviation produced 689 million tonnes of CO<sub>2</sub>, or around 2% of the global total. The aviation sector recognises the growing need to address the global challenge of climate change and is playing its part: in 2009 it adopted an ambitious set of commitments for the short-, medium- and long-term, including that of carbon-neutral growth from 2020 contingent upon critical aviation infrastructure and technology advances achieved by the industry and government.

In 2010, the 37th Session of the ICAO Assembly adopted the following goals for aviation:

- » a global annual average fuel efficiency improvement of 2% until 2020 and an aspirational global fuel efficiency improvement rate of 2% per annum from 2021 to 2050; and
- » a collective medium-term global aspirational goal of keeping the global net carbon emissions from international aviation from 2020 at the same level (CNG2020).

To achieve these goals, there needs to be a strong commitment from all stakeholders, including governments and non-governmental organisations working together through the four pillar strategy: improved technology, more efficient aircraft operations, infrastructure improvements, and

a properly-designed market-based measure (MBM) to fill any remaining emissions gap. ICAO must continue to play the leading role in these efforts.

The aviation industry is contributing towards these goals by developing fuel efficient technology such as lighter weight materials and advanced engine technologies, improving operational efficiency, supporting the deployment of modernized infrastructure and the commercialisation of sustainable alternative fuels. In addition, the industry is also supporting the work of ICAO's Committee on Aviation Environmental Protection (CAEP) on an aircraft CO<sub>2</sub> standard.

## DISCUSSION

The aviation industry is confident that technology, operations and infrastructure measures will provide long-term solutions for aviation's sustainable growth. However, the industry recognizes that some form of MBM may be needed to fill any remaining emissions gap. Thus, an MBM for aviation should only be considered as part of a broader package of measures to address aviation's CO<sub>2</sub> emissions; it should not be focused on suppressing demand for air travel or raising general revenues.

Any MBM applied to aviation must be global in scope, preserve fair competition, and take account of different types and levels of operator activity. The safe, orderly and efficient functioning of today's air transport system relies on a high degree of uniformity in regulations, standards and procedures. The use of unilateral measures undermines this foundation. Particular attention needs to be given to avoid duplication with existing

## KEY POINTS:

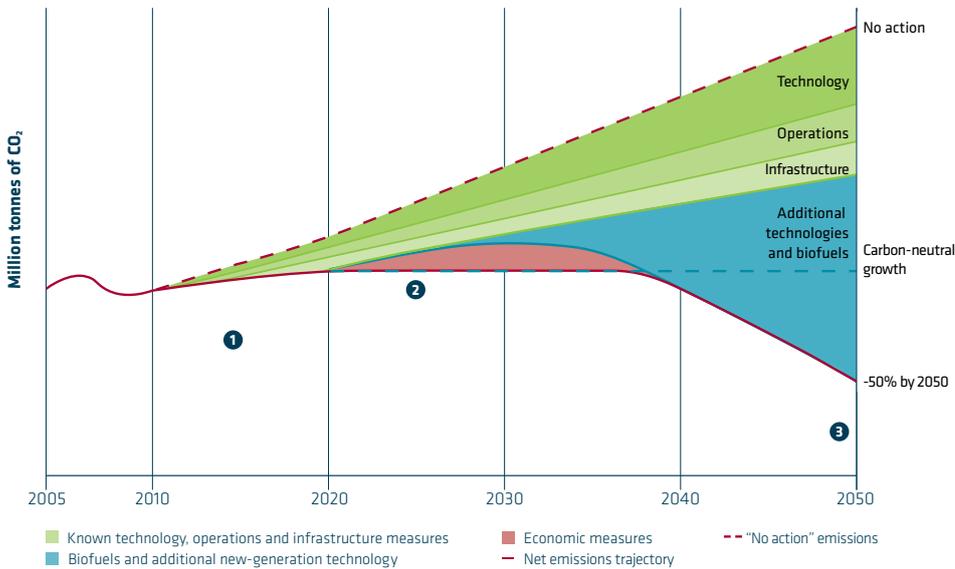
The aviation industry recommends that, as part of a comprehensive approach to address air transport's climate impacts, a single global market-based measure (MBM) be agreed. This must be seen as part of a broader package of measures including new technology, more efficient operations and better use of infrastructure.

The industry believes that a simple carbon offsetting scheme would be the quickest to implement, the easiest to administer and the most cost-efficient.

The industry invites governments meeting at the 38th ICAO Assembly in September 2013 to:

- » Agree a roadmap for development of a single global MBM for aviation to be signed off at ICAO's next assembly.
- » Agree the principles for development of a global MBM, including:
  - the goal of carbon-neutral growth from 2020;
  - that aviation emissions should only be accounted for once;
  - that a global MBM should take account of different types of operator activity;
  - the geographic scope of an MBM.
- » Ask ICAO to develop, in the meantime, several milestones that could help build the foundation for a single global MBM, including:
  - an ICAO standard for monitoring, reporting and verifying emissions from aviation;
  - a mechanism to define the quality of verified offset types that could be used in a global MBM for aviation.

## MAPPING OUT THE INDUSTRY COMMITMENTS



**1** Improve fleet fuel efficiency by 1.5% per year from now until 2020

**2** Stabilise net emissions from 2020 through carbon-neutral growth

**3** By 2050, net aviation carbon emissions will be half of what they were in 2005

(Schematic, indicative diagram only)

measures, or the layering of measures within a State or a group of States.

Many operators fly into dozens of different jurisdictions on a daily basis, with some large network carriers serving over a hundred different countries each day; they need to have a single point of accountability. Also, small operators would face overwhelming administrative challenges in complying with a multiplicity of different schemes. To promote transparency and keep down administration costs, the monitoring, reporting and verification (MRV) requirements related to an MBM should be kept as simple as possible and should be scalable to accommodate both large and small operators, while ensuring data integrity.

Of the three policy mechanisms under consideration at ICAO for a possible global MBM (carbon offsetting; carbon offsetting with revenue generating component; and a global ETS), industry believes that a simple carbon offsetting scheme would be the quickest to implement, the easiest to administer and the most cost-efficient.

In June 2013, the worldwide memberships of ACI and IATA adopted resolutions and CANSO and IBAC issued statements aimed at urging States and other stakeholders to work collaboratively through ICAO to reach an agreement on measures to address CO<sub>2</sub> emissions from aviation as part of a comprehensive package.

As work within ICAO continues to develop a comprehensive proposal towards a single, global MBM, any other measure that a State proposes or continues to impose with respect to international aviation on the airlines from another State in the meantime, should only be in accordance with

agreed ICAO principles. This includes elements respecting sovereign airspace and consent from the airlines' state of registry. These principles should be based on and adhere to the guiding principles from the Annex to ICAO's previous Assembly Resolution on climate change, A37-19.

### CONCLUSION

The Assembly is invited to:

- » recognize the importance of the four-pillar strategy to address aviation's CO<sub>2</sub> emissions and call on ICAO Member States to support the continued investment in airframe and engine technology, and introduce appropriate policies and incentives for sustainable alternative fuels, improved air traffic management and airport infrastructure, and more efficient operations;
- » recommend further development of State Action Plans to include more information on mitigation measures and benefits, and expansion of the program to include more States, thereby confirming government action in support of emissions reductions; and
- » recognize the complementary and transitional nature of market-based measures in the context of the four-pillar strategy.

The Assembly is also invited to:

- » reaffirm support for the collective medium-term goal of carbon-neutral growth from 2020;
- » establish a clearly defined process for the Council to develop, for consideration at the 39th Assembly in 2016, a single, global MBM based

on the principles set out in the Appendix;

- » request the Council to develop an ICAO Standard for the monitoring, reporting and verification of emissions, and agree on the principle that each operator should report its emissions to one State only;
- » request the Council to establish a mechanism to define acceptable types of verified carbon credits under a global offset mechanism;
- » agree that aviation CO<sub>2</sub> emissions should be accounted for only once and duplication with existing MBMs must be avoided;
- » agree that a global MBM should take account of different types and levels of operator activity;
- » agree on the scope of application of a global MBM respecting each State's exclusive jurisdiction over its sovereign airspace; and
- » reaffirm that, while ICAO continues to develop a single, global MBM, any MBM that a State proposes or continues to impose with respect to international aviation should be consistent with the guiding principles for MBMs adopted as part of Resolution A37-19, including elements respecting sovereign airspace and consent from the airlines' state of registry.

56.6 MILLION JOBS  
\$2.2 TRILLION IN GLOBAL GDP  
35% OF WORLD TRADE  
51% OF INTERNATIONAL TOURISTS



TECHNOLOGY



INFRASTRUCTURE



OPERATIONS



MARKET-BASED MEASURES

#### APPENDIX: PRINCIPLES FOR DETERMINING RESPONSIBILITIES FOR INDIVIDUAL AIRCRAFT OPERATORS UNDER A SINGLE, GLOBAL MBM TO SUPPORT CNG2020

1. Market-based measures (MBMs) for aviation should only be considered as part of a broader package of measures to address aviation's CO<sub>2</sub> emissions that cannot otherwise be achieved through cost-effective, in-sector reduction measures.
2. MBMs should not be designed or used to raise general revenues or to suppress demand for air travel.
3. Given the globally competitive nature of the aviation industry, any MBM agreed by governments must be cost-efficient and preserve fair competition.
4. Any MBM for aviation must fulfill the key criteria of maximizing environmental integrity, while minimizing competitive distortion and administrative complexity.
5. When agreeing to an MBM for aviation, only governments can decide whether to take into account - and, if so, how - the Special Circumstances and Respective Capabilities of States (SCRC). However, if they choose to do so, it should be done in such a way as to minimize market distortion by granting equal treatment to all operators on a given route.
6. Any MBM to operationalize CNG2020 should be easy to implement and administer as well as cost-efficient. The industry believes that alignment with this principle would be better achieved with a single mandatory carbon offsetting scheme than with alternative schemes.
7. The following principles for determining individual operator responsibilities under CNG2020 would help ensure that the collective industry CNG2020 commitment to offset its growth post-2020 is equitably and fairly distributed among carriers:
  - » the collective industry emissions baseline for CNG2020 should be defined as the average annual total emissions over the period 2018-2020;
  - » individual operator baselines should be defined as and fixed at each operator's average annual total emissions over the period 2018-2020;
  - » a new entrant provision should be included that provides an adjustment for the first two years of operation;
  - » individual carrier responsibilities should be fairly determined using an equitable balance between an 'emissions share' element (reflecting the individual carrier's share of total industry emissions) and a post-2020 'growth' element (reflecting the individual carrier's growth above baseline emissions);
  - » specific adjustments for fast- and high-growth should be applied when determining individual carrier responsibilities so as to alleviate the burden on fast-growing carriers;
  - » an early movers provision, based on a 15-year benchmarking timeframe (2005-2020) and combined with a five-year sunset clause (2020-2025) should be incorporated to recognize carbon reduction measures taken prior to 2020;
  - » an additional adjustment should be made to ensure any net reductions in emissions below an individual carrier's baseline are captured for use by the industry as a whole;
  - » data integrity should be ensured through an industry-accepted ICAO Standard for the monitoring, reporting and independent verification of emissions data;
  - » emissions data reporting should be kept simple with flexibility for operators to select from a hierarchy of reporting methodologies;
  - » a periodic CNG2020 performance review cycle should be mandated to assess the proper functioning of the mechanism and to revise individual elements and parameters as appropriate.

# TOWARDS SUSTAINABLE AVIATION

Aviation brings enormous benefits to communities and economies around the globe. It is a key enabler of economic growth, social development and tourism providing connectivity and access to markets. Air transport, currently supporting 56.6 million jobs and over \$2.2 trillion of global GDP with a strong track record of fuel efficiency and CO<sub>2</sub> emissions savings, is a strategic contributor to sustainable development.

## Our goals and achievements to date

As leaders of the aviation industry, we signed a Declaration in 2008 committing ourselves to action on climate change. Since then we have put forward a set of ambitious goals and implemented initiatives to meet them. We are delivering already on our short-term promises for fuel efficiency of 1.5% per annum improvement through to 2020 and are firmly on track to meet our longer term commitments.

Now, we, the undersigned aviation industry companies and organisations, broaden our commitment to advancing and strengthening the interdependent pillars of sustainable development – economic growth, social development and environmental stewardship – at the local, national, regional and global levels. We will continue to:

- » provide an air transport sector that is a key socio-economic contributor to the world economy and catalyst for growth, building connectivity to enhance trade, tourism, personal opportunity and mobility to all people everywhere;
- » provide high value jobs, innovative partnerships with the communities we serve and investment in skills and training, whilst maintaining a high level of investment in research and development around the world; and
- » demonstrate environmental leadership by delivering on our goal to cap net aircraft carbon emissions from 2020 and work to achieve our ambitious goal of a 50% reduction in net carbon emissions by 2050 compared to 2005 levels.

**We believe that our commitments to work in partnership with governments, other industries and civil society will deliver an efficient aviation sector, fit to meet the needs and provide the services required by the world economy.**

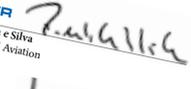
**We strongly encourage others to join us in this endeavour.**

## Our request to governments worldwide

As one of the most highly-regulated global sectors, we cannot continue to deliver these benefits alone. We commit to show leadership and work with governments to pursue our common goal of economic prosperity and sustainable development through:

1. continued investment in academic and international collaborative research for the development and implementation of new green technologies and operational practices;
2. urgent action for advancement of a highly-efficient air traffic control capacity;
3. encouraging the use of alternative renewable energy by providing appropriate policies and incentives to facilitate the timely, cost-effective and sustainable development of aviation biofuels;
4. continued development of sustainable airport infrastructure to meet the anticipated future demand for aviation services within the context of the economic, social and environmental needs of society;
5. providing a positive regulatory environment that encourages aviation development as part of a broader government economic growth policy, co-ordinated across national borders; and
6. urging governments to reach agreement at the International Civil Aviation Organization (ICAO) for a global framework for reduction of emissions from aircraft operations using technology development, efficient operations and infrastructure, and the use of international multilateral market-based measures to address any remaining emissions gap.

Signed on Thursday 22 March 2012, at Geneva, Switzerland by:

 Angela Gittens Director General		 Paul Riemens Chairman of the Executive Committee		 Tony Tyler Director General and CEO	
 Marion C Blakey Chair		 Thomas Enders President and CEO		 Jim Albaugh President and CEO	
 Filippo Bagnato Chief Executive Officer		 Guy Hachey President and COO Bombardier Aerospace		 Jean-Paul Ebanga President and CEO	
 Paulo Cesar de Souza e Silva President Commercial Aviation		 David Joyce President and CEO GE Aviation		 Tim Mahoney President and CEO Honeywell Aerospace	
 John Saabas President Pratt & Whitney Canada		 Eric Schulz President - Civil Large Engine Programmes		 Paul Steele Executive Director	

6<sup>th</sup> Aviation & Environment Summit, 22 March 2012



[www.atag.org](http://www.atag.org)

This paper was developed by the following organisations, representing the combined global commercial aviation sector, and coordinated by the Air Transport Action Group:

- **Airports Council International**, representing over 1,600 airports serving 95% of the world's passengers.
- **Civil Air Navigation Services Organisation**, representing 80 air navigation service providers, serving over 85% of global air traffic.
- **International Air Transport Association**, representing 240 airlines, comprising 84% of global air traffic.
- **International Coordinating Council of Aerospace Industries Associations**, representing global commercial aircraft and engine manufacturers.
- **International Business Aviation Council**, representing over 8,500 companies operating in the global business aviation community.

Facts and figures on aviation's global economic and social benefits can be found at [www.aviationbenefitsbeyondborders.org](http://www.aviationbenefitsbeyondborders.org)

Facts and figures on aviation's global efforts to reduce emissions can be found at [www.enviro.aero](http://www.enviro.aero)