Aviation & Climate Change

Three goals

Air transport is a vital feature of our modern, globalized world, connecting people and businesses across oceans and continents. The global aviation industry supports over 63 million jobs and accounts for 3.5% of global GDP ($2.7 trillion – based on 2014 data).

The benefits of air travel are clear, but this connectivity creates an environmental challenge. In 2016, civil aviation as a whole emitted around 814 million tonnes of CO₂, which is roughly 2% of man-made carbon emissions. Our industry recognizes that our operations contribute to climate change and we are taking the responsibility to lessen this impact extremely seriously. Indeed, in 2009, the aviation industry set three global goals to address its climate impact:

• An annual average fuel efficiency improvement of 1.5% from 2009 to 2020. The industry is on track to meet this short-term target.
• Stabilize net CO₂ emissions at 2020 levels with carbon-neutral growth. The Global Market-Based Measure is one of the elements that will enable the industry to meet the mid-term goal of carbon-neutral growth 2020, by complementing technology, sustainable aviation fuels, operational and infrastructure measures.
• Reduce aviation’s net CO₂ emissions to half of what they were in 2005, by 2050. Achieving this ambitious goal will require continued investment in new technologies and strong support mechanisms for the deployment of sustainable aviation fuels (SAF).

Four Pillars

Aviation is approaching the challenge of achieving its climate goals through a four-pillar strategy:

• The development of new, more efficient aircraft and engines can substantially decrease CO₂ emissions. New technology aircraft are, on average, around 15-20% more fuel efficient than the models they replace. Sustainable aviation fuels, which are already being used on certain commercial flights, will have the potential to cut emissions by up to 80%.
• Operational measures include identifying weight savings in the current fleet, allowing the aircraft to burn less fuel. Airlines have been investing in lightweight seats and cabin equipment and even replacing heavy pilot manuals with tablet computers. Other operational measures include single-engine taxiing, idle reverse thrust, and ATC procedures such as continuous descents into airports and traffic flow management that prevent unnecessary airborne holding.
• The ‘infrastructure’ pillar of the strategy relates mainly to navigational improvements, making better use of airspace and streamlining the routes taken by aircraft to cut down on flight time, and optimizing airport layout to improve throughput and prevent unnecessary holding.
• The industry remains confident that technology, operational measures and better infrastructure will provide long term solutions to ensure the sustainable growth of the aviation industry through partnership between industry and government. However, we also acknowledge that a global market-based measure is needed to fill any remaining emissions gap until those other measures have taken full effect. In 2016, ICAO adopted a global offsetting mechanism, called CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation), to ensure that CO₂ emissions from international aviation are stabilized from 2021.