



# Aviation & Climate Change

## Fact Sheet

### 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 87 million jobs and accounts for 3.5% of global GDP (\$3.5 trillion – based on 2018 data).

The benefits of air travel are clear, but this connectivity creates an environmental challenge. In 2019, civil aviation as a whole emitted around 915 million tonnes of CO<sub>2</sub>, which is a little more than 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 and beat this short-term target.
- Stabilize net CO<sub>2</sub> 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 from 2021, by complementing technology, sustainable aviation fuels, and operational and infrastructure measures.
- Reduce aviation's net CO<sub>2</sub> 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 CO<sub>2</sub> emissions including electric- and hydrogen-powered engines. New technology aircraft are, on average, around 15-20% more fuel efficient than the models they replace
- Operational and infrastructure. This includes identifying weight savings in the current fleet, allowing the aircraft to burn less fuel. Measures include lightweight seats and cabin equipment, replacing heavy pilot manuals with tablet computers, 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' measures relate 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.
- Sustainable aviation fuels, which are already being used on certain commercial flights, will have the potential to cut emissions by up to 80% over the lifecycle of the fuel. SAF is a 'drop-in' fuel – it does not



require modification to the engine. So far more than 300,000 flights have incorporated SAF. The target is to build SAF usage to 2% of the total amount of fuel consumed by 2025. At that level, SAF costs should be on a par with fossil fuels, allowing for a much faster and broader take-up by the world's airlines.

- The industry remains confident that technology, operational measures, better infrastructure and SAF 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 CO<sub>2</sub> emissions from international aviation are stabilized from 2021.