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 more than 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 CO2, 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 our responsibility to lessen this impact extremely seriously. 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 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 from 2021, by complementing technology, sustainable aviation fuels, and operational and infrastructure measures.

• Reduce aviation’s net CO2 emissions to half of what they were in 2005, by 2050. This will reduce emissions to 325 million tonnes. Achieving this ambitious goal will require continued investment in new technologies and strong government 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:

• Technology. The development of new, more efficient aircraft and engines can substantially decrease CO2 emissions including electric- and hydrogen-powered engines. New technology aircraft are, on average, around 15-20% more fuel efficient than the models they replace. Hydrogen or electric powered flight will be a step-change towards our emissions targets.

• Operations/infrastructure. Operations includes identifying weight savings in the current fleet, single-engine taxiing, idle reverse thrust, and ATC procedures such as continuous descents into airports and traffic flow management that prevent unnecessary airborne holding. 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. SAF has already been used in more than 350,000 flights. SAF can cut emissions by up to 80% over the lifecycle of the fuel. It is a ‘drop-in’ fuel – it does not require modification to the engine. Currently it is between 2-4 times more expensive than regular jetfuel. The short-term target is to build SAF usage to 2% of the total amount of fuel consumed by 2025. At that level, the SAF price should start to move towards fossil fuel prices, allowing for a faster and broader take-up by airlines.

• Carbon offsets. The industry remains confident that technology, operational measures, better infrastructure and SAF will provide long term solutions to ensure the sustainability of the aviation industry. 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.