

# ICAO Stocktaking on Aviation in-sector CO<sub>2</sub> Emissions reductions

By ICAO Secretariat

## Background

The 40th Session of the International Civil Aviation Organization (ICAO) Assembly in October 2019 requested the ICAO Council to explore the feasibility of a long-term global aspirational goal (LTAG) for international aviation CO<sub>2</sub> emissions reduction, for consideration by its 41st Session. In response to this request, the ICAO Council's Committee on Aviation Environment Protection (CAEP) established the LTAG Task Group (LTAG-TG) to provide technical support in exploring the feasibility of a LTAG.

An important cornerstone of the LTAG work by the Organization was the ICAO Stocktaking Seminar on aviation in-sector CO<sub>2</sub> emissions reductions. Building upon the success of the first ICAO Stocktaking Seminar toward the 2050 Vision for Sustainable Aviation Fuels (SAFS 2019), held in 2019, the 2020 Stocktaking Seminar on aviation in-sector CO<sub>2</sub> emissions reductions was organized by ICAO. The 2020 Stocktaking Seminar provided an opportunity to further enhance the basis for the quantification of current and future sustainable aviation fuels (SAF) availability and to expand the scope of the stocktaking process. In addition to sustainable aviation fuels, the 2020 Stocktaking collected information from Member States and aviation stakeholders on the aviation in-sector emissions reduction opportunities through innovations in aircraft technology improvements and operational improvements.

## 2020 ICAO Stocktaking Seminar

The 2020 Stocktaking Seminar<sup>1</sup> was convened as a virtual event from 8 to 11 September 2020. Nearly 100 stakeholders, including aeronautical pioneers, industry leaders, technical experts, researchers, innovators, civil society advocates, and States shared their ambitious plans for decarbonizing international aviation, some of which committing and presenting concrete roadmaps to zero emissions. Numerous concepts and measures were discussed, including advanced and novel aircraft technologies, operational improvements both in the air and on the ground, and opportunities for scaling up sustainable aviation fuels.

As a large-scale ICAO Webinar, there was simultaneous streaming of the event via the ICAO TV platform. A recording of the seminar is accessible at ICAO TV<sup>2</sup>. The innovative solutions addressed, as well as the high-level panellists, and the extent of outreach through coordination and liaison with States and various aviation stakeholders, as well as promotional and marketing activities, sparked significant interest with over 1,000 registered participants. At the 2020 ICAO Stocktaking Seminar, more than a hundred solutions to reduce in-sector aviation emissions were submitted, and all innovative initiatives with the potential to play a significant role in the future of aviation were considered.

1 <https://www.icao.int/Meetings/Stocktaking2020/Pages/default.aspx>

2 <https://www.icao.tv/stocktaking/season:3>



FIGURE 1: Some of Speakers from 2020 ICAO Stocktaking Seminar

ICAO Member States and other stakeholders were also encouraged to contribute quantitative input by returning a completed stocktaking questionnaire to ICAO as part of the Stocktaking process. The data collected via the questionnaires allowed ICAO to develop a more accurate picture of global trends and forecasts for in-sector CO<sub>2</sub> emission reductions through the work of the ICAO CAEP LTAG-TG, which was critical to the work on the feasibility of a long-term global aspirational goal for international aviation CO<sub>2</sub> emissions reduction.

## ICAO Global Coalition on Sustainable Aviation

At the 2020 ICAO Stocktaking Seminar, it was demonstrated that a variety of evolutionary and revolutionary changes are taking place as a result of innovations to reduce carbon emissions from aviation, and that this endeavour involves worldwide stakeholders, some of whom are new to aviation. ICAO has extended an open invitation to all interested parties to join the ICAO Global Coalition on Sustainable Aviation<sup>3</sup> in order to assist bring all stakeholders together. The ICAO Global Coalition for Sustainable Aviation

(Coalition) brings together stakeholders working on aviation technology, operations and infrastructure, and sustainable aviation fuels, as well as the CORSIA as a complementary measure to accomplish the environmental goal.

The Coalition's goal is to promote awareness of the sector's continued efforts in reducing CO<sub>2</sub> emissions from international aviation, by building on current leadership and advocates and strengthening existing collaborations and innovations. New stakeholders are encouraged to join the Coalition to display their CO<sub>2</sub> emission-reduction activities and begin collaboration with all Coalition Members. Interested parties can join by sending an email to [stocktaking@icao.int](mailto:stocktaking@icao.int) or filling out the online form<sup>4</sup> on the ICAO Coalition webpage<sup>5</sup>.

As part of the Coalition initiative, ICAO also developed the ICAO tracker tools of aviation CO<sub>2</sub> emissions reduction initiatives<sup>6</sup> to closely follow up the development of innovations that can generate in-sector CO<sub>2</sub> emissions reductions. The tracker tools are developed to track innovations from four main streams: technology, operations, sustainable aviation fuels, and net zero initiatives. States and stakeholders are invited to share relevant information by emailing [officeenv@icao.int](mailto:officeenv@icao.int).

3 <https://www.icao.int/environmental-protection/SAC/Pages/learn-more.aspx>

4 <https://docs.google.com/forms/d/e/1FAIpQLSdZxW1PY0HX0w71aXpromgkgK90ciYmWp8GF18xqeOqeKraA/viewform>

5 <https://docs.google.com/forms/d/e/1FAIpQLSdZxW1PY0HX0w71aXpromgkgK90ciYmWp8GF18xqeOqeKraA/viewform>

6 <https://www.icao.int/environmental-protection/SAC/Pages/GCSA%20main%20page.aspx>



**FIGURE 2:** The ICAO Global Coalition for Sustainable Aviation

## 2021 ICAO Stocktaking Seminar

In response to the great success of the 2020 Stocktaking and the need to address the challenges of transitioning to decarbonization of the sector while keeping up with the latest innovations and breakthroughs in aviation technology, operations and infrastructure, and sustainable aviation fuels; the 2021 ICAO Stocktaking<sup>7</sup> was organized and held virtually from from 31 August to 3 September, 2021.

In preparation for the 2021 ICAO Stocktaking Seminar between March and August 2021, a series of six Pre-Stocktaking Webinars were held with the themes of battery technology and fuelling aviation electrification, hydrogen and getting to zero carbon flights, synthetic fuels for aviation, e-VTOL and urban air mobility, infrastructure development for supplying clean energy for air travel, and the 2021 ICAO Stocktaking preview. These Pre-Stocktaking Webinars paved the way for the 2021 ICAO Stocktaking Seminar and provided unique opportunities to discuss important challenges and practical tools by bringing together experts, leaders, and innovators. The monthly Pre-Stocktaking webinars demonstrated how innovation is effectively and realistically implemented into ICAO's

work, in this example in the discovery of pathways to decarbonize the sector and address climate change. The recordings of the Pre-Stocktaking webinars and the main Stocktaking event are available at ICAO TV<sup>8</sup>.

The 2021 ICAO Stocktaking Seminar was organized as a four-day event with a Policy Day at the end of the Seminar. This enabled participants to link the information and discussion by aviation sector innovators in the first three days, to the government policies needed to achieve the green recovery transition.

The event was launched with an opening address by the ICAO Secretary General, followed by keynote remarks from Robert Courts MP, UK Aviation Minister, Amina J. Mohammed, Deputy Secretary General of the United Nations & Chair of the United Nations Sustainable Development Group, and Fatih Birol, Executive Director, International Energy Agency (IEA). During the closing session, the President of the ICAO Council provided an overview of the way forward on the work of ICAO on the feasibility of an LTAG, followed by a special video message from John Kerry, Special Presidential Envoy for Climate, United States, and a statement from Gonzalo Muñoz, High-Level Climate Champion, COP25.

<sup>7</sup> <https://www.icao.int/Meetings/Stocktaking2021/Pages/default.aspx>

<sup>8</sup> <https://www.icao.tv/stocktaking/season:1>

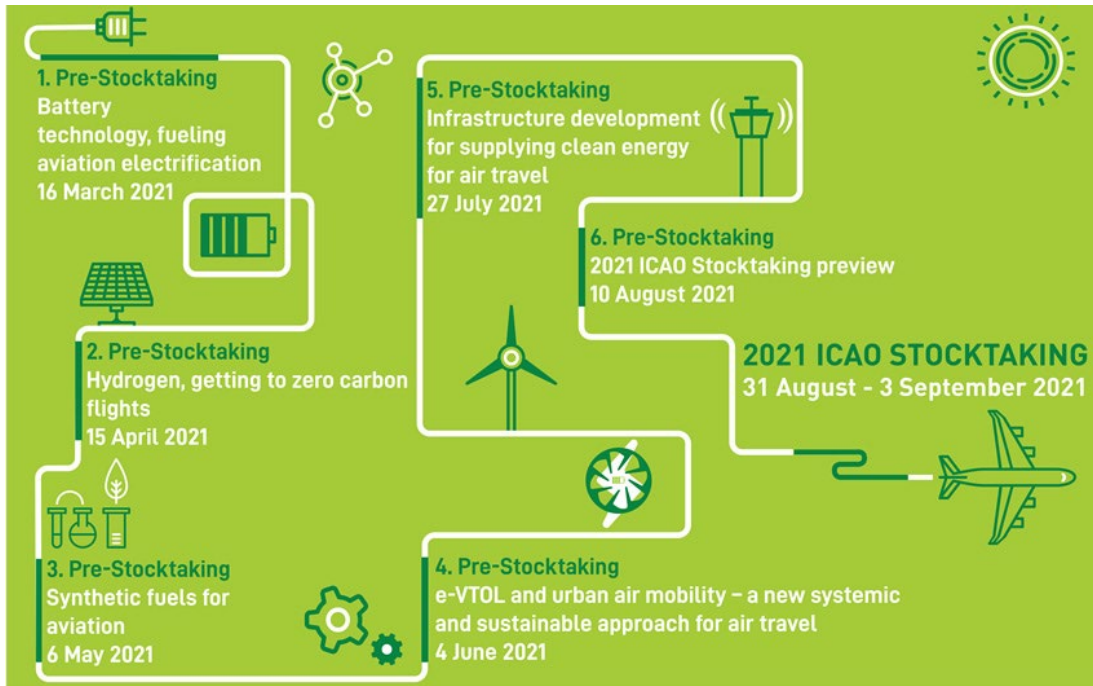


FIGURE 3: Monthly Pre-Stocktaking Webinars through 2021 ICAO Stocktaking

The 2021 ICAO Stocktaking Seminar provided a forum for youth involvement, including young entrepreneur initiatives. This forum provided a base in the event ICAO issued an open call for the establishment of a youth umbrella group to allow young people from around the world to engage with the aviation community on sustainable aviation. A number of other announcements were made during the event, including the Institut Supérieur de l’Aéronautique et de l’Espace, ISAE- SUPAERO’s announcement of the establishment of their Institute for Sustainable Aviation, Germany’s announcement of funding and demonstration projects for Power to Liquid (PtL) fuels as part of a 1.5 billion euro funding scheme, and Air Liquide’s announcement of a partnership with Airbus and Group ADP to develop a first study of 30 airports to assess liquid hydrogen production, supply and distribution.

The 2021 ICAO Stocktaking Seminar confirmed the strong momentum for more ambitious action on climate change by underlining the importance of cooperation, inclusivity and transparency. The significance of multi-stakeholder collaborations was underlined on the Green Policy Day, which underlined the crucial need for green policies for aviation innovations.

## 2022 ICAO Stocktaking Seminar

The ICAO Secretariat aims to continue to facilitate the monitoring of the latest environment-driven technologies and innovations to reduce aviation CO<sub>2</sub> emissions, through the continued ICAO Stocktaking process toward the 41<sup>st</sup> Assembly. ICAO will organize a 2022 ICAO Stocktaking Seminar<sup>9</sup> virtually from 18 to 19 July 2022.

The 2022 ICAO Stocktaking Seminar will provide another opportunity to hear from the ICAO Coalition partners about the achievement of innovations in aviation CO<sub>2</sub> emissions reduction by allowing the exchange of the most up-to-date relevant information on technology, operations, and fuels.

The 2022 ICAO Stocktaking Seminar will also set the scene for the subsequent ICAO High-level Meeting on the Feasibility of a Long-term Global Aspirational Goal (HLM-LTAG), which will take place as a hybrid event from 20 to 22 July 2022. All stakeholders who wish to showcase their latest initiatives during the ICAO Stocktaking Seminar are encouraged to join the Coalition by emailing [stocktaking@icao.int](mailto:stocktaking@icao.int).

9 <https://www.icao.int/Meetings/Stocktaking2022/Pages/default.aspx>