



WORKING PAPER

**HIGH-LEVEL MEETING
ON THE FEASIBILITY OF A LONG-TERM ASPIRATIONAL GOAL FOR
INTERNATIONAL AVIATION CO₂ EMISSIONS REDUCTIONS (HLM-LTAG)**

Montréal, 19 to 22 July 2022

Agenda Item 2: Means of implementation for a long-term global aspirational goal for international aviation

BUILDING SKILLS AND TOOLS TO IMPLEMENT LTAG OPERATIONAL MEASURES

(Presented by the Chile)

SUMMARY

This paper discusses the need for ICAO to support States in creating the skills and tools required to implement operational measures proposed in the *Report on the Feasibility of a Long-term Aspirational Goal (LTAG) for International Civil Aviation CO₂ Emission Reductions*, and to categorize and quantify air operations, with the clear objective of reducing greenhouse gas emissions.

Action by the Meeting is in paragraph 3.

1. INTRODUCTION

1.1 At the 40th Assembly of the International Civil Aviation Organization (ICAO) in 2019, the Council of ICAO was asked to study the feasibility of establishing a long-term aspirational climate goal for international civil aviation (LTAG)².

1.2 Accordingly in February 2022, the 12th meeting of the ICAO Committee on Aviation and Environmental Protection (CAEP/12) approved a technical report on the feasibility of an LTAG which describes a possible reduction in CO₂ emissions of between 4 and 11 per cent by means of operational measures, on the basis of the assumptions defined therein.

¹ Spanish version provided by Chile.

² ICAO Assembly Resolution A40-18, paragraph 9, 2019, <https://www.icao.int/environmental-protection/Pages/LTAG.aspx>.

2. BACKGROUND

2.1 Those assumptions give rise to the three CO₂ emissions scenarios depicted in the graph below from the *Report on the Feasibility of a Long-term Aspirational Goal (LTAG) for International Civil Aviation CO₂ Emission Reductions*:

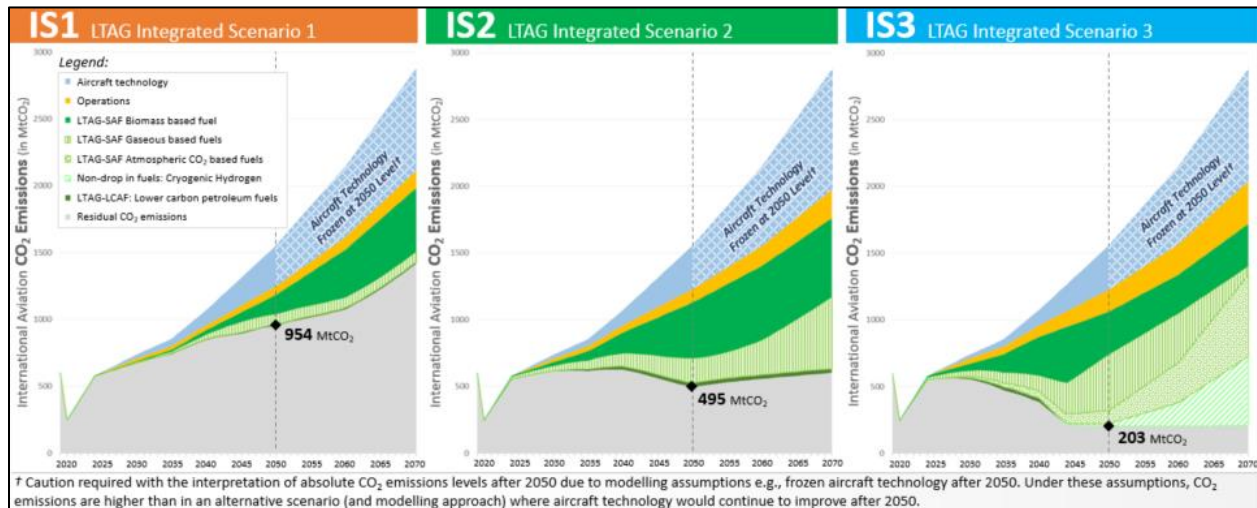


Figure 1. CO₂ emissions from international aviation associated with LTAG Integrated Scenarios

2.2 In this context, as concerns operations management shown in Figure 1 above in isolation from the other variables, and taking into account other factors such as technologies and sustainable aviation fuels (SAF), there is a clear need for assistance from ICAO in the form of workshops, training courses and guidance in the verification and measurement of CO₂ emissions from international aviation.

2.3 As previously indicated, the State of Chile sees such capacity building activities as a priority and a preliminary step for implementing the operational measures set out in the Operations Sub-group report in Appendix M4 of the feasibility report³, specifically to optimize air space design using operational measures identified in paragraph 2.5.

2.4 Although there are currently different models for calculating atmospheric emissions from civil aviation, used mainly by developing countries that lack their own models for gauging their true local emissions, those models use ICAO methodology. The data required for estimating civil aviation fuel burn and aircraft weight for all phases of flight are sensitive, confidential, and sometimes unavailable. Yet such data are an essential pre-requisite for obtaining the relevant fuel burn and emissions estimates.

2.5 To create a model for calculating emissions, there must be the data and skills necessary to analyse the information in painstaking detail: the interactions of the various gases emitted into the atmosphere, the altitudes at which they are emitted, aircraft performance, meteorological and orographic conditions, to mention just a few variables.

2.6 To properly manage emissions reduction, up-to-date information is required for measuring the efficiency of the operational improvements set out in Appendix M4 – *Operations* of the

³ ICAO Report on the Feasibility of a Long-Term Aspirational Goal (LTAG) for International Civil Aviation CO₂ Emission Reductions, Appendix M4 Operations Sub-group Report, March 2022.

feasibility report. This allows States to take necessary actions on an informed basis and estimate the real benefit of the measures adopted, thus contributing as intended to the long-term aspirational goal for CO₂ reductions in international civil aviation.

2.7 As an important player in the drive to reduce civil aviation greenhouse gas emissions, ICAO supports developing States in building their technological and human capacities for quantifying atmospheric emissions in order to decide on the operational measures proposed in the different categories. This would enhance the benefits of emissions reductions.

3. ACTION BY THE HLM-LTAG

3.1 The HLM-LTAG is invited to:

- a) review this working paper and its proposal;
- b) consider development of technology elements together with the skills (knowledge) required to analyse the data obtained on emissions reductions through operational measures;
- c) advocate an analysis of CO₂ emissions reductions, and create performance indicators, for each individual operational measure;
- d) urge ICAO to develop technological tools and create knowledge for prioritizing those operational measures that confer greater environmental benefits; and
- e) urge ICAO to support developing States in implementing the operational measures identified for the best environmental impact.

— END —