International Civil Aviation Organization

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WORKING PAPER

HIGH-LEVEL MEETING ON THE FEASIBILITY OF A LONG-TERM ASPIRATIONAL GOAL FOR INTERNATIONAL AVIATION CO_2 EMISSIONS REDUCTIONS (HLM-LTAG)

Montréal, 19 to 22 July 2022

Agenda Item 1: CO2 emissions reduction scenarios and options for a long-term global aspirational goal for international aviation

ISSUES OF IMPLEMENTATION OF THE LTAG INTEGRATED SCENARIOS AND THEIR RELATIONSHIP WITH CORSIA

(Presented by the Russian Federation and People's Republic of China)

SUMMARY

This paper presents an analysis of the feasibility of achieving the projected results presented in the three integrated LTAG scenarios in the context **of real** and immediate CO_2 emissions reductions in the sector of the international civil aviation and proposes possible actions to be included in the LTAG scenarios to achieve global net-zero CO_2 emissions by 2050.

Action: The Meeting is invited to support the conclusions and recommendations contained in paragraph 4 on activities to be included in the LTAG scenarios for consideration by the 41st ICAO Assembly

1. INTRODUCTION

1.1 According to the IPCC's latest scientific findings, achieving net-zero global CO_2 emissions by around 2050 will provide the best chance to keep the global average temperature increase below 1.5°C, and that the 1.5°C temperature goal is beyond reach without immediate and deep emissions reduction across all sectors[2].

1.2 There is no doubt that the IPCC calls for **a real** and immediate reduction of greenhouse gas emissions in **all** industrial sectors globally to achieve the goals of Paris Agreement. It is also clear that the activities undertaken by the ICAO Member States to implement CORSIA pose obstacles to achieving this goal. This is due to the fact that the CORSIA system is essentially a mechanism for returning investment in environmental projects in other industrial sectors through the acquisition of emission credits in open

[1] English and Russian versions provided by the Russian Federation and People's Republic of China.
[2] Paragraph 2.7 of HLM-LTAG-WP/3

carbon markets, for which the ICAO Assembly has repeatedly expressed its concern[3]. The outflow of funds from the industry slows down its technical modernization and, as a result, increases CO_2 emissions in the international civil aviation sector. In this regard the issue of the CORSIA compatibility with the efforts of the global community to reduce greenhouse gas emissions, as well as with the activities envisaged in integrated scenarios to achieve the long-term aspirational goal of CO_2 emissions reductions for international aviation, is relevant.

2. WHY DO ALL THREE INTEGRATED LTAG SCENARIOS NOT LOOK REALISTIC?

2.1 All three scenarios assign a major role in reducing CO_2 emissions to sustainable aviation fuels (SAFs). There is no doubt that these fuels have the potential to reduce CO_2 emissions. However, at the moment there is significant uncertainty about the possibility of increasing SAF production volumes while reducing their price to an acceptable level, as well as the importance of the contribution of these fuels to a real reduction in CO_2 emissions, taking into account the emission of CO_2 in the course of their production. The significantly increased risks of food and water security should be also taken into account. At the same time, it is obvious that in the near term, investments into aircraft fleet renewal and technical modernization of civil aviation infrastructure will provide much greater efficiency to reduce global CO_2 emissions and improve global flight safety.

2.2 Given the above, it is appropriate to recommend further research into the potential contribution of SAF to achieving projected CO_2 emission reduction levels, not on the hypothetical assumption that by 2040 SAF and LCAF will be able to completely replace conventional aviation fuels, but from **a realistic** assessment of the possibilities for increasing their production volumes. The so-called life-cycle CO_2 emission should also be taken into account, and the results of these studies should be accompanied by a comparative analysis of the cost-effectiveness of investments in aircraft renewal compared with SAF purchases in the context of the sustainable development of the industry, especially in developing countries, and the global reduction of CO_2 emissions in the international civil aviation sector.

2.3 Although hydrogen fuel has a very modest role in the latter scenario, the prospects for its use for aviation deserve more attention. However, as in the case of SAF, there is still considerable uncertainty regarding the safety of the use of hydrogen fuel due to its exceptionally high explosion risk. At the same time, the costs of designing, certifying, and manufacturing fundamentally new types of electric aircraft powered by hydrogen fuel cells, as well as the necessity to create a global industry infrastructure for the safe transportation and refueling of hydrogen fuel for aircraft should be envisaged.

2.4 The restoration of international aviation traffic after COVID-19 has pronounced regional differences. So, in developed countries, traffic volumes are already reaching pre-pandemic values, while in the vast majority of developing countries the restoration of aviation activities is very slow, primarily due to a lack of financial resources. At the same time, all three scenarios ahead of 2050 suggest significant investments in the industry in the range of 274.4 billion to 1 trillion 563.2 billion US dollars. In the short term, in many cases, the additional financial burden will be devastating for the civil aviation sector of developing countries. In this regard, it is appropriate to invite developed countries to undertake the bulk of global financing commitments under the proposed integrated LTAG scenarios.

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[3] ... *"reaffirming* the concern with the use of international civil aviation as a potential source for the mobilization of revenue for climate finance to the other sectors, and that MBMs should ensure the fair treatment of the international aviation sector in relation to other sectors;..." (15th preambular paragraph of resolution A40-*19. Consolidated statement of continuing ICAO policies and practices related to environmental protection — Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA))*

2.5 None of the integrated LTAG scenarios provides net-zero global CO_2 emissions by 2050. In this regard, should be expected proposals to "fill" the existing gap through the CORSIA mechanism, taking on even more ambitious commitments. It is obvious that this level of ambition will lead to a global collapse of the industry, and net-zero CO_2 emissions will be achieved solely by stopping international air traffic. In this regard, the World aviation community needs to decide either to consolidate efforts to achieve the goals of LTAG to **effectively** reduce in-sector emissions based on its technological modernization or to continue the CORSIA implementation, which leads to capital outflows from the industry and a global increase in CO_2 emissions in the international civil aviation sector.

3. CAN INTERNATIONAL AVIATION MEET THE GOAL OF NET-ZERO GLOBAL CO_2 EMISSIONS BY 2050?

3.1 The issues raised in section 2 of this document illustrate the need for further research to develop more objective scenarios for **a real** reduction of CO_2 in-sector emissions and to identify possible sources of funding at the global level for the activities being designed. However, additional elements need to be explored for inclusion in the LTAG scenarios that would achieve more ambitious goals. For example, it is known that the annual global greenhouse gas emissions from forest fires are comparable to the total CO_2 emissions in the civil aviation sectors of all ICAO Member countries. To this should be added a reduction in the absorptive capacity of forests, and megawatts of radiated thermal energy, which affects the increase in the number of natural disasters – droughts and floods, significant material, and social damage, as well as damage to wildlife.

3.2 The proposal to create an international aviation force to combat forest fires and other natural calamities under the auspices of the UN has already been repeatedly submitted to the ICAO Assembly but has not yet received proper consideration at the ICAO site. The inclusion of this element in the LTAG scenario will achieve or at least approach achieving net-zero global CO_2 emissions around mid-century, as well as provide real support for achieving the UN Sustainable Development Goals until 2030 at the global level.

4. ACTION BY THE HLM-LTAG

4.1 The HLM-LTAG is invited to recommend the 41st session of the ICAO Assembly:

a) *agree* on the necessity to continue research in order to develop more objective scenarios for a **real** reduction in CO_2 emissions in the sector and to identify possible sources of funding for projected activities at the global level;

b) *agree* to include in the LTAG scenarios the establishment of an international aviation force under the auspices of the United Nations to combat forest fires and other natural calamities; and

c) *agree* on the need for an evolutionary transition from CORSIA to the implementation of activities under the harmonized LTAG scenario to **effectively** reduce CO_2 in-sector emissions of the international civil aviation and encourage ICAO Member States to eliminate the use of regional market-based measures on CO_2 emissions trading for international civil aviation[4].

– END –

[4]EU ETS, UK ETS and others.