



## GROUP ON INTERNATIONAL AVIATION AND CLIMATE CHANGE (GIACC)

### FOURTH MEETING

(MONTREAL, 25 TO 27 MAY 2009)

### SUMMARY OF DISCUSSIONS — DAY 2

#### Agenda Item 3: Planning of actions and policy elements to be developed by the Group

#### Discussion of the Report of the Goals Development Working Group (WG4) and related presentations

1. Responding to a question raised regarding the global aspirational goals for the medium and long terms set forth in the Working Group's Report (WP/2), the Co-Chairperson of WG4 noted that industry was proposing further improvements in the in-service fleet fuel efficiency of 1.5 per cent on average per year for the medium term. In discussing a goal that was more ambitious but practical and achievable, WG4 had agreed on 2 per cent as a floor for both the medium and the long term. She noted that, while there was an historic precedent for achieving 2 per cent, it nevertheless required sustained action. Recalling the introduction of new technology during the 1970s, 1980s and 1990s, the Co-Chairperson indicated that there was a commitment to continue to introduce new technology relating to air traffic management procedures, performance-based navigation, *etc.* which formed a basis for the Group's proposed floor of 2 per cent. Observing that the upper limit of 2.5 per cent for the medium term and 3 per cent for the long term were decidedly more ambitious goals, she noted that the reason they were being put forward was that certain countries were interested in advancing and maturing carbon reduction technology and bringing it to market faster. States interested in implementing such technologies through various programmes might be able to achieve fuel efficiency improvements up to those percentages. The Group had decided to propose a range of percentages rather than a flat 2 per cent goal in order to provide the opportunity to States to achieve more ambitious goals through the use of, *inter alia*, alternative fuels and market-based measures. The Co-Chairperson further clarified that the Group had agreed on the need for the global aspirational goals for the medium and long terms to take into account the needs of developing countries.

2. While supporting the consensus reached regarding WG4's proposed solution to the difficult problem of goals, a Member enquired as to what action was required to go from a 2 per cent improvement in fuel efficiency in the short term to a 3 per cent improvement in the long term. He noted that, when he returned from the meeting, his government would ask why, if the 3 per cent were attainable, it was not set as the short term (2012) goal and, if it were not attainable in the short term, what additional action was required in order to achieve it in the longer term. Observing that there were some programmes that were already underway, such as Sesar and NextGen, as well as research into future aircraft, the Member queried whether it would be through those programmes that the 3 per cent in fuel efficiency would be attained or whether some other means would be required, such as biofuels. Averring that it was a pity that WG/4 had not been able to resolve the dilemma of 2020 or 2025 for the target date for implementing the medium-term

goal, he emphasized that it weakened its proposal. Although he did not have a preference and could support either date, he would prefer it if the GIACC established a specific target date rather than a range of dates 2020/2025 for the medium-term goal. In also enquiring as to how the long-term goal of 3 per cent improvement in fuel efficiency and the more ambitious goal of carbon neutral growth were articulated, the Member indicated that it was his understanding that the difference between the two goals would be attained through the use of biofuels and market-based measures.

3. Recalling that the Working Group was suggesting a range of 2 per cent to 2.5 per cent fuel efficiency improvement for the medium term, the Co-Chairperson of WG4 noted that Members had considered that 2 per cent was achievable; the 2.5 per cent was based on those States that wished to demonstrate greater ambition by implementing new technology and air traffic management procedures. It did not encompass the use of biofuels and market-based measures. Those means were to be used to achieve the goals of greater ambition. With regard to the target date for implementation of the medium-term goal, the Co-Chairperson indicated that there had been interest in the Working Group in aligning with the United Nations Framework Convention on Climate Change (UNFCCC) process, which used 2020 as the target date for the medium term. 2025 was also being suggested given the possibility of States embracing greater ambition and the fact that it took a longer time to bring some of the new technology to market. Underscoring that that issue had not been resolved in WG4, the Co-Chairperson indicated that the target date for implementation could be revisited after the Fifteenth Meeting of the Conference of the Parties (COP15) of the UNFCCC in December 2009.

4. A Member averred that it would be preferable for ICAO to clearly indicate what concrete and meaningful goals could be reached by the aviation sector within the UNFCCC's own timeframe of 2020 for the medium term and to also state what more ambitious goals could be attained if 2025 were chosen as the timeframe.

5. Averring that all of the figures were preliminary at the present time, another Member underscored that they could not be confirmed until there was actual implementation of the goals. He considered that the door should be left open to reviewing the figures and possibly adjusting them after 2012, as by that time it would be known whether at least the short-term goals could be achieved. In 2012 ICAO could decide on what the aviation sector was capable of achieving in the medium term of 2020/2025. While the Member was of the opinion that 2025 was the most appropriate target date for the medium term as it would give States and the international aviation community some fifteen years in which to bring new technologies, such as those relating to air traffic management, on stream, he emphasized that the range of 2020/2025 should be maintained as the target date for the medium term for the sake of compromise and achieving consensus.

6. Agreeing, a Member suggested that text be added to provide for a review of the figures in light of future developments, particularly technological advances, when the Organization would be in a better position to determine if fuel consumption could be reduced by the amount proposed. He indicated that the revision could be done in accordance with what was presented in IP/1 (Global aviation CO<sub>2</sub> emissions projections to 2050).

7. The Secretary of the GIACC then made a comparison of the Committee on Aviation Environmental Protection (CAEP) Modelling and Databases Task Force (MODTF) Scenarios 1 to 6 (IP/1), the United States' Scenario B (IP/12) and the proposal of the International Air Transport Association (IATA) (IP/6) relating to fuel burn using the base year 2006. He noted that the MODTF estimated that in 2006 there would be 187 million tonnes of fuel burned. The Secretary of the GIACC recalled that Scenario 1 (Do Nothing), the worst case scenario, assumed no improvements in aircraft technology beyond those currently available and no improvements from CNS/ATM investment or from planned initiatives such as NextGen and SESAR. Scenario 6 (Optimistic Technology and Operational Improvement) was the extreme in the other direction: it assumed that, in addition to the latest CNS/ATM initiatives, including NextGen

and SESAR, an optimistic fuel burn improvement of 1.5 per cent per year for all aircraft entering the fleet after 2006 out to 2036 and additional fleet-wide optimistic operational improvements of 3.0, 6.0 and 6.0 per cent by 2016, 2026 and 2036, respectively. The Secretary of the GIACC noted that under the United States' Scenario B, the short term goal had been adjusted to reflect the economic downturn. There was an optimistic trend in the new aircraft improvement, which was that same 1.5 per cent per year, a high operational efficiency in the United States which was translated globally some five years afterwards; furthermore, the fuel price was very high, which led to a decrease in demand as the price was passed to the consumer through the ticket price. He observed that if 2020 were used as the target date for the medium-term goal, then under the MODTF's Scenario 1, in 2020 the increase in fuel burn was expected to be 88 per cent of what was burned in 2006; in other words, it would almost double. Under the MODTF's Scenario 6, it would increase by 63 per cent. Under the United States' Scenario B, it was estimated to be 29 per cent. IATA was proposing that its member airlines would be carbon neutral, although they had not agreed on a target date (2020 or 2025).

8. The Secretary of the GIACC noted that in 2050, the increase in the fuel burned would be almost eight times the amount of fuel burned in 2006 under the MODTF's Scenario 1. He observed, however, that the GIACC had agreed that that was not a realistic scenario as it was the nature of the aviation industry to continually improve. Under Scenario 6 (the most optimistic), the increase in the fuel burned would be three times what was burned in 2006. Under the United States' Scenario B, there would be a 72 per cent increase in the amount of fuel burned. The Secretary of the GIACC recalled, in this context, that under IATA's proposal, the aviation sector planned to collectively reduce its net CO<sub>2</sub> emissions in 2050 by 50 per cent compared to 2005 levels.

9. Noting that the environmental community was focussed on reducing ambient concentrations of CO<sub>2</sub>, the Secretary of the GIACC indicated that, in order to reduce the latter, it was necessary to reduce the aggregate amount of CO<sub>2</sub> that was being released into the atmosphere from all sources. Of the various proposals on the table for GIACC/4, however, the only proposal that seemed to reduce the aggregate CO<sub>2</sub> emissions was that of IATA, in the timeframe of 2025 to 2050, when its member airlines would cross the threshold of carbon neutrality to actual emissions reductions. He emphasized the importance of keeping in mind how the various scenarios related to one another in terms of their envisaged outcomes.

10. The Co-Chairperson of WG4 averred that the comparison seemed to mix apples and oranges. While IATA was proposing, for the long term, a 50 per cent reduction in its net CO<sub>2</sub> emissions in 2050 compared to 2005 levels, it was also proposing improvements in fuel efficiency of 1.5 per cent on average per year for the short term and a further 1.5 per cent improvement on average per year for the medium term, which was, in fact, less than anything WG4 had discussed. The Secretary's comparison made it appear that IATA was being more ambitious than the GIACC, when in fact the opposite was true.

11. Agreeing that the IATA scenario had other elements that went beyond technology, the Secretary of the GIACC recalled that in its paper (IP/6) it had introduced its perception of when alternative fuels would reach the market. He underscored that ICAO and the aviation sector would be evaluated by the environmental community on the basis of how much aviation GHG emissions would be reduced in the short, medium and long term, regardless of the various means used to attain those reductions (technology, operational improvements, ATM effects, *etc.*). The Secretary of the GIACC emphasized that if the GIACC only considered technology on an annual per cent fuel efficiency improvement basis, then there would be a significant growth in the amount of fuel burned unless or until the Group also took into account either some other activities, as IATA had, or a more aggressive technology goal.

12. A Member welcomed this approach as it was clear that whatever goals were developed by the GIACC would be evaluated against the industry's goals, not only by COP15 but also by the international aviation community and the world at large. Maintaining that the Group could not recommend

any goals that were below the goals that industry considered were possible to implement, he emphasized that, as difficult as it might be, the GIACC should attempt to add the elements which industry had incorporated into their scenarios, which were fuel efficiency, technology and operational improvements, plus alternative fuels and market-based options, and determine if it was not then at least matching the industry's expectations.

13. The Secretary of the GIACC noted, from his recent conversations with representatives from the aviation industry, that their desire was for the GIACC process to enable them, working through ICAO, to achieve their goals and become carbon neutral. He emphasized the need to bear in mind, when discussing the GIACC's global aspirational goals, that IATA comprised 226 member airlines representing 93 per cent of the international revenue passenger kilometres performed.

14. The Co-Chairperson of WG4 underscored that the Working Group had recognized that fuel efficiency alone would not enable the attainment of carbon neutral growth.

15. A Member noted that from the outset the GIACC had acknowledged the challenge of demonstrating that its aspirational goals were as ambitious as, if not more ambitious than, those of the industries in Members' respective countries. Maintaining that the gap was narrowing considerably between IATA's goals and what the GIACC might propose, she underscored the need to see the text of the Group's recommendation to determine the degree of consensus. The Member underscored that if ICAO's fuel efficiency data was more accurate than IATA's, then the gap that would need to be addressed by market-based measures and biofuels would be less as more would have been achieved through fuel efficiency than IATA had predicted. While she still considered that, in the longer term, there would be a gap between the fuel efficiency gains and some of the more ambitious longer term goals, that should not stop the GIACC from setting such goals.

16. Observing that there was a large gap between the various data and projections, another Member averred that it was a little premature to decide which prediction was the most reliable and constituted a solid basis on which to proceed; further study was necessary. Noting that it had often been stated that the GIACC should adopt more aggressive or ambitious goals, he emphasized that that could not be done without a solid basis. Agreeing that the Group should concentrate on the things that could be done better in the near term, the Member indicated that, in the future, when conditions permitted, more ambitious goals could be adopted that would be more realistic and more effective. He emphasized that if the GIACC took a decision now regarding such goals, without a scientific basis therefor, then it would not be very convincing and would not be accepted by the various governments.

17. Concurring with the Co-Chairperson of WG4 that the said comparison mixed apples and oranges, a Member emphasized that the estimated increase of 290 per cent of fuel burn for 2050 under the MODTF's Scenario 6 (Optimistic Technology and Operational Improvement) did not take into account the impact of market-based measures and biofuels. In emphasizing that governments were accountable and wanted to move forward in addressing climate change, he underscored that all were proposing ambitious figures. What the GIACC was discussing was feasible and would have an impact on global climate change.

18. Averring that it was a misconception that ICAO would be judged by COP15 on the basis of the GIACC's Programme of Action, the Member emphasized that it was the other way around. ICAO should review its Programme of Action for the aviation sector in light of the economy-wide measures adopted at COP15. Agreeing that the GIACC's global aspirational goals should be reviewed periodically in light of technological advances, he stressed that that idea could be retained in the Group's Programme of Action. The Member supported the global aspirational goals in the form of fuel efficiency proposed in WG4's report and agreed on the need to underscore to the public that there would be additional measures that would have a positive impact on the figures cited in that paper.

**Agenda Item 1: Administrative Matters**

**Working arrangements**

19. Pursuant to a request from Mr. Yuan Ji (China), the Chairperson agreed that his Advisor, Mr. Guoshun Sun, could participate directly in the Group's discussion of the draft GIACC Report.

**Agenda Item 4: Discussions on the tasks identified during the previous sessions and conclusion of the process by producing a report to the Council**

**Discussion of the GIACC Report: Initial review of the recommended Programme of Action**

20. The Group then gave initial consideration to the first section of the draft GIACC Report entitled *Summary of Programme of Action Recommended by GIACC*. A large portion of the section was taken from the document *A way forward in the GIACC process* which had been adopted by consensus at GIACC/3 (cf. Appendix A to GIACC/3-SD/3). It was noted that WG4 and WG5 had prepared language that would be inserted into the said first section, as well as into the second section (*Recommendations*) and the third, a narrative section.

21. The Group agreed that the title of the first section should be amended to read *Programme of Action Recommended by GIACC*. During the in-depth paragraph-by-paragraph review which ensued, numerous changes were proposed, the most substantive of which are reflected below. The suggested amendments were later synthesized, where possible, and further discussed by the Group the following day.

**Paragraph 1**

**GIACC reached general agreement that ICAO and its Contracting States should undertake to strive to limit or reduce the impact of aviation greenhouse gas emissions from international civil aviation on the global climate.**

The Group agreed on the need for a strong, definitive introductory paragraph indicating that it recognized the importance of the issue and was seized with the necessity for a Programme of Action, as well as for sharper, more action-oriented language so as to have greater impact on the audience. It also agreed on the need to incorporate the principles of non-discrimination and common but differentiated responsibilities referred to in the third paragraph that would orient the action to limit or reduce the impact of aviation GHG emissions. It was understood that laying down the said principles in the first paragraph would obviate the need to refer thereto in subsequent paragraphs as they would apply to the entire text of the Programme of Action. Three alternatives were suggested for introducing the said principles: "acknowledging", which was the language used in Assembly Resolution A36-22, Appendix K, Preambular Clause 3; "in accordance with", considered to be stronger language; and "taking into account", compromise wording.

While a suggestion was made to include a reference to developed countries taking the lead in addressing emissions, a statement commonly used in climate change actions within the UNFCCC, the Group decided to place that text in parentheses in light of views expressed that it should not be inserted as it was not used in Assembly Resolution A36-22, Appendix K, and was covered by the principle of CBDR. It was emphasized that the first sentence should reflect the shared commitment to address climate change. The subsequent reference to the said principles acknowledged that not all States would be taking the same action at the same time.

## Paragraph 2

**Notwithstanding the substantial fuel efficiency improvements achieved by the aviation sector, GIACC recognizes that the global growth of air traffic is likely to outweigh the gains made by fuel efficiency improvements resulting in an average year over year increase in total fuel burned. Additional action is required to contain this projected growth in fuel burn by international aviation.**

It was suggested that, in light of the fact that international aviation was not growing but contracting as a result of the current global economic downturn, the paragraph be amended to refer to the downturn's impact. It was also suggested that it be clarified that additional action was required to address the GHG emissions resulting from the envisaged growth in traffic.

The Co-Chairperson of WG4 suggested that the term "global growth" be replaced with the term "international growth" to reflect that reference was only to international, and not domestic, air traffic. In addition, a suggestion was made by the Chairperson of WG5 that the word "dramatically" be inserted before the word "outweigh" to reflect that there would be significant effects if no action was taken.

## Paragraph 3

**GIACC acknowledges the principles of non-discrimination and equal and fair opportunities to develop international aviation set forth in the Chicago Convention, as well as the principles and provisions on common but differentiated responsibilities and respective capacities under the UNFCCC and the Kyoto Protocol.**

This paragraph was merged with the first paragraph.

## Paragraph 4

**GIACC recommends a strategy for a collective effort based on global aspirational goals.**

A suggestion was made to delete the word "collective" given its ambiguity and the fact that it reflected only States' common responsibilities and not their differentiated responsibilities. It was further suggested that it be amended to refer to an effort to achieve global aspirational goals to reflect that the goals would be periodically reviewed, assessed and refined.

## Paragraph 5

**The short-term goal agreed by the GIACC is for improvements in the in-service fleet average fuel efficiency of international aviation operations at the rate of 2% per year, calculated on the basis of volume fuel used per Revenue Tonne Kilometre performed.**

It was suggested that the paragraph be amended to refer to the agreed target date of 2012 for achieving the short term goal.

## Paragraph 6

**Agreement was reached in GIACC to work on goals in the form of fuel efficiency for the medium and longer terms. [Add update following GIACC/4].**

The Group agreed to amend the paragraph to refer to WG4's recommendation of an annual fuel efficiency improvement from 2 to 2.5% for the period between 2013 and 2020/2025 and for a range from 2% to 3% for the period between 2021/2026 to 2050.

### **Insertion of a new paragraph**

Recalling that WG4 had discussed possible baselines for the medium and long term of 2000 and 2005, the Co-Chairperson of WG4 proposed that a new paragraph be added indicating that 2005 was the baseline year. It was noted, in this regard, that industry had selected 2005 as its baseline. A Member maintained, however, that a baseline was not relevant when considering year over year annual fuel efficiency improvement, although it might be pertinent when considering longer term stretch goals.

### **Insertion of a new paragraph**

The Group agreed to add a new paragraph indicating that the goals would be periodically reviewed in light of scientific and technological advances and referring to the large investment in technological development needed to attain the goals, as outlined in the concluding observations of the MODTF contained in Appendix C to WP/2. In averring that no reference should be made to such a review, a Member underscored that that would weaken the GIACC's conclusion regarding the goals.

### **Paragraph 7**

**In addition to fuel efficiency goals, consideration has been given to the scope for additional goals beyond fuel efficiency and statements to indicate a strong ambition for addressing emissions, including goals for carbon neutrality. [Add update following GIACC/4].**

The Group agreed that the paragraph should be strengthened to reflect what it was putting forward in terms of an aspiration. While a suggestion was made to refer to Annex I countries after the reference to strong ambition to be consistent with Article 2.2 of the Kyoto Protocol, it was not retained in light of the view expressed that non-Annex I countries should not be precluded from implementing goals beyond fuel efficiency. A Member underscored that GIACC was working not in the UNFCCC framework but in the ICAO framework, which did not encompass the concept of Annex I countries. Another Member emphasized that States should maintain the same position regarding climate change in the various organizations.

### **Paragraph 8**

**Under the recommended strategy, goals would not attribute specific obligations to individual States. The different circumstances, respective capacities and historical contribution of developing and developed States to the contribution of aviation GHG emissions to anthropogenic CO<sub>2</sub> in the atmosphere will determine how each State should contribute to achieving the global goals.**

It was suggested that the word "historical" be deleted from the second sentence to be consistent with the third paragraph of the document *A way forward in the GIACC process* which had been adopted by consensus at GIACC/3 (*cf.* Appendix A to GIACC/3-SD/3).

### **Paragraph 9**

**GIACC recommends that the Council should adopt the basket of measures developed by GIACC, from which States may choose, including measures to facilitate access to assistance particularly for developing countries. GIACC has provided an initial table showing the basket of measures, which can be further developed through ICAO. GIACC also recommends that ICAO should continue to develop, and update as necessary, guidance to States on the adoption of those measures.**

While suggestions were made that the first sentence be amended to refer to a basket of measures from which States may choose for their domiciled carriers or industries or markets or within a framework of action

based upon mutual consent, they were not retained. It was agreed, however, to refer to the various measures set forth in the Report of WG2 (GIACC/3-WP/3).

In response to concern expressed by a Member that the reference to measures to assist developing countries was inadequate, it was agreed to include the options identified in the said Report. Suggestions that reference be made to the development of a mechanism of action to assist developing countries or to provide technical assistance to the developing world, including in the reporting process, were not retained, however. A suggestion that a sentence be added indicating that the GIACC also recommends that States not implement any measures on operators from other States without mutual agreement was likewise not retained, nor was a suggestion that a sentence be added to reflect the UNFCCC principle that measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade (*cf.* Article 3, paragraph 5, of the UNFCCC). The Chairperson of GIACC/4 underscored, in this regard, the need to keep in mind the context in which the Group was working, namely, the development of a Programme of Action. The latter was not a list of international principles, nor a list of actions taken or to be taken by industry. A Member expressed concern over the inference that might be drawn if the said UNFCCC principle were referred to in the Programme of Action, namely, that a unilateral action that did not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade might be appropriate, even without a framework.

#### **Insertion of a new paragraph**

The Group agreed to include a new paragraph to reflect that there remained disagreement on the application of market-based measures across national borders.

#### **Insertion of a new paragraph**

The Group agreed to add a paragraph to reflect the recommendation by WG5 for the establishment of a process to develop a global sectoral framework for market-based measures in international aviation, taking into account the conclusions of the High-level Meeting and the outcome of the UNFCCC COP15 with a view to complete the process expeditiously.

#### **Insertion of a new paragraph**

The Group agreed to add a paragraph in line with the recommendation of WG5 that the ICAO Council ensure that, under such sectoral framework, major issues related to the implementation of market-based measures are properly addressed and, in particular, that (a) the principles of non-discrimination and equal and fair opportunities set forth in the Chicago Convention are fully taken into account; (b) the specific circumstances and different capabilities of each State and Region are fully taken into account; (c) only the most effective and efficient measures are chosen; (d) industry compliance is facilitated; (e) market-based measures can be coordinated and are not duplicative; and (f) the geographical scope issues are addressed.

#### **Paragraph 10**

**GIACC recommends that Council should request States to develop and publish action plans which articulate the proposed approach in that State to its contribution and file those plans with ICAO.**

It was suggested that the word “request” be replaced with the word “encourage” to reflect the voluntary nature of the action to be taken to implement the global aspirational goals.

A suggestion was made by the Co-Chairperson of WG4 that the paragraph be further amended to refer to a minimum threshold for reporting to ICAO, such as 0.25 per cent of total international Revenue Tonne Kilometres (RTK), so as to distinguish between those States with strong international aviation sectors, which would be required to file their action plans with ICAO, and those with less developed sectors, which

would not be so required. That possibility had been raised by WG1 in its report (GIACC/3-WP/2), considered during the Third Meeting. It was noted that a minimum threshold of 0.25 per cent of total international RTK would involve the top thirty international aviation States (measured by share of total RTK). It was also noted that the establishment of a minimum threshold was a way of recognizing the burden that the reporting requirement might place on developing countries with small international aviation sectors.

In light of the view expressed that such a minimum threshold would contradict the UNFCCC distinction between Annex I and non-Annex I countries and that no criteria should be set for reporting as States were only being encouraged to file their action plans with ICAO, it was agreed to return to this issue later.

### **Paragraph 11**

**GIACC recommends that Council direct the Secretariat to develop and implement a mechanism under Article 67 of the Convention to collect annually from States monitoring and implementation data that measures and evaluates progress towards achieving the global aspirational goals.**

This paragraph was not amended.

### **Paragraph 12**

**GIACC also recommends that Council seek to develop means for providing technical assistance in the reporting process, particularly to developing countries.**

This paragraph was not amended.

### **Insertion of a new paragraph**

A suggestion was made that GIACC's draft Recommendation 3 ("Requests CAEP to further consider the development of a CO<sub>2</sub> standard for aircraft engines") be added to the Programme of Action to demonstrate ICAO's commitment to addressing aviation emissions. The Vice-Chairperson of GIACC/4 noted, in this regard, that the recommendations were supporting measures to assist in the implementation of the items contained in the Programme of Action.

Drawing attention to paragraph 4.1 of IP/2, the Chief of the Environment Section (C/ENV), who was also the Secretary of the Committee on Aviation Environmental Protection (CAEP), indicated that, as requested by GIACC/3, the CAEP had intensively discussed the development of an aviation CO<sub>2</sub> standard and had come up with the following initial view: that one of the major considerations in addressing the issue was that any standard should apply to aircraft, not just engines alone; that it may be easier to develop and implement an accurate methodology if it is based upon, and solely applicable to, new aircraft; that it is essential to avoid metrics and methodology that may contribute to perverse incentives and counterproductive influences on aircraft/engine development; and that there is a need to take into account operational considerations in order to avoid unintended consequences. In light of this clarification, it was suggested, and the Group agreed, that a new paragraph be added recommending that the Council seek to develop a CO<sub>2</sub> standard for new aircraft. The Group also agreed to discuss the issue further when reviewing draft Recommendation 3.

### **Paragraph 13**

**The cumulative progress achieved by States on a global level should be reported by ICAO on a triennial basis.**

The Group agreed to amend the paragraph to indicate that ICAO would report progress on a triennial basis to the Assembly.

**Discussion of the GIACC Report: Initial review of the draft recommendations to the ICAO Council**

22. The Group commenced consideration of the recommendations to the ICAO Council contained in the second section of the draft GIACC Report.

23. The Group agreed to insert the following introductory paragraph: “GIACC commends this Programme of Action to the Council so that it may be considered and reviewed at the proposed High-level Meeting”. It also agreed to add a new first recommendation that would read “Endorse the Programme of Action and consider the actions recommended below for implementation of the Programme”.

**Recommendation 1** (renumbered Recommendation 2)Original text

Requests CAEP to adjust its timelines for reporting and forecasting on international aviation and climate change to coincide with UNFCCC timelines, wherever possible.

The Group accepted this recommendation without amendment.

**Recommendation 2** (renumbered Recommendation 3)Original text

Requests CAEP to develop a new fuel efficiency metric that best represents the actual performance of international aviation in terms of emissions of CO<sub>2</sub> and which also takes fully into account the mitigation achieved from alternative fuels as they become available.

Observing that the CAEP was already developing a new fuel efficiency metric, C/ENV suggested, and it was agreed, to amend the paragraph to request the Committee to continue to develop such a metric. She also emphasized the need to indicate the corresponding timeframe. The Chairperson of GIACC/4 noted, in this regard, that the Council would determine the timeframe. The Group agreed that the word “expeditiously” be added before the word “develop” to demonstrate the importance of the task.

Amended text

Requests CAEP to continue to expeditiously develop a new fuel efficiency metric that best represents the actual performance of international aviation in terms of emissions of CO<sub>2</sub> and which also takes fully into account the mitigation achieved from alternative fuels as they become available.

**Recommendation 3** (renumbered Recommendation 4)Original text

Requests CAEP to further consider the development of a CO<sub>2</sub> standard for aircraft engines.

The Group agreed that the word “expeditious” be inserted before the word “development” to reflect the importance of the action. The Chairperson of GIACC/4 suggested, and it was agreed, to include in parentheses the wording used in the related new paragraph of the Programme of Action, as well as wording suggested during the discussion, and to return to this issue later.

Amended text

Requests CAEP to further consider the development of a CO<sub>2</sub> standard for aircraft engines. [GIACC also recommends that the Council [directs CAEP to study the feasibility of] seek to develop a CO<sub>2</sub> standard for new aircraft].

**Recommendation 4** (renumbered Recommendation 5)

Original text

Requests CAEP to further explore the net life cycle environmental benefits of alternative fuels, develop methods to reliably quantify these and incorporate that into the current fuel efficiency metric when the information becomes available.

A suggestion was made by C/ENV, and supported by several Members, that this recommendation be deleted as it was covered by Recommendation 3 and as the issue of the life cycle of alternative fuels was being addressed by entities outside of CAEP, such as the United States' Commercial Aviation Alternative Fuels Initiative (CAAFI), the European Sustainable Way for Alternative Fuel and Energy in Aviation (SWAFEA) and the Intergovernmental Panel on Climate Change (IPCC). The Secretariat would be providing the CAEP with information on life cycle analysis of alternative fuels for use in formulating a fuel efficiency metric. Some Members opposed the deletion of Recommendation 4 and suggested, as an alternative, that CAEP be requested to obtain data on the net life cycle environmental benefits of alternative fuels and make it available within ICAO. It was agreed to retain that suggestion in parentheses.

Amended text

[Requests CAEP to gather data from other concerned organizations on net life cycle environmental benefits of alternative fuels and provide it to ICAO.]

**Recommendation 5** (renumbered Recommendation 6)

Original text

Requests CAEP to establish a standard average weight for passengers (across carriers on a given route) to be used in calculating the fuel efficiency metric.

This Recommendation was not amended.

**Recommendation 6** (renumbered Recommendation 7)

Original text

Tasks the ICAO Secretariat to develop and implement a mechanism under the authority of Article 67 of the Convention to collect on an annual basis from States, monitoring and implementation data that measures and evaluates progress towards achieving these global aspirational goals.

This Recommendation was not amended.

24. The GIACC agreed to resume consideration of its draft recommendations during the next day's meeting.