



GROUP ON INTERNATIONAL AVIATION AND CLIMATE CHANGE (GIACC)

THIRD MEETING

(MONTRÉAL, 17 TO 19 FEBRUARY 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 Working Group 1 on Global Aspirational Goals

1. The Group resumed its consideration of the final report of Working Group 1 set forth in WP/2 (excluding Appendix B), with discussion focussing on short-, medium- and long-term global aspirational goals.

Short-term global aspiration goal

2. The Chairperson of Working Group 1 noted that the Group recommended, in paragraph 37 of its Report, that ICAO adopt a collective annual aspirational fuel efficiency goal in the short term (to 2012) consistent with the historical rate of fuel efficiency improvement achieved by aviation from a particular baseline; the annual average rate of fuel efficiency improvement from 1990 to 2006 was proposed. The Working Group also recommended, in paragraph 38, that ICAO adopt an aspirational fuel efficiency goal to be achieved by 2012; that is, by 2012, the average fuel efficiency of international aviation will not exceed X liters per 100 RTK. It further recommended, in paragraph 39, that ICAO adopt a short-term aspirational goal of Y per cent per year average rate of improvement in fuel efficiency to 2012 resulting in a total fuel efficiency improvement of XX per cent by 2012 (relative to the baseline chosen). Appendix A to WP/2 provided indicative data to guide the Group. Depending on the method used, the average annual rate of fuel efficiency improvement for 1990 to 2012 ranged from 1.7 per cent to 2.1 per cent. If the GIACC agreed, it could set a percentage somewhere in that range for the short-term global aspirational goal. The total accumulated percentage improvement in fuel efficiency in 2012 since 1990 was in the order of 31.5 per cent to 37.8 per cent. If the Group agreed with that indicative range, then it could identify a percentage consistent with that. Applying those same percentages to an actual absolute fuel efficiency number that would be attained by 2012 would result in 35.5 liters to 37.9 liters of fuel per 100 RTK in 2012. The challenge would be for the GIACC to identify specific numbers for the Working Group's recommendations. In so doing, the Group would have to decide whether to pick numbers within the said ranges or to be more ambitious.

3. Responding to a query raised regarding Table 2 of Appendix A showing a comparison between the 2012 fuel efficiency goal of the Air Transport Action Group (ATAG) and that of Working Group 1, the Chairperson recalled that the ATAG had used a different baseline, 2005. While ATAG's average annual rate of fuel efficiency improvement, 2.3 per cent, was slightly higher than that of Working Group 1, 1.7 per cent to 2.1 per cent, it was in the same ballpark. She noted that there were assumptions behind the numbers and that depending on how the average annual rate of fuel efficiency improvement was

calculated there were slight variations and differences. The Chairperson of Working Group 1 reiterated that the percentages were indicative and reflected what seemed feasible based on historical activity.

4. A Member noted that Working Group 1 had established its recommended short-term global aspirational goal in two ways: by setting an absolute fuel efficiency goal in paragraph 38 and by setting a relative fuel efficiency goal in paragraph 39. Recalling that as Working Group 1 had not had actual fuel consumption data, it had made estimates using Official Airline Guide (OAG) planned activity data and technical documents provided by manufacturers, he expressed concern that the recommended absolute fuel efficiency goal might therefore be completely off-base. The Member considered that it would be more pragmatic to use the relative fuel efficiency goal as it reflected a trend in fuel efficiency improvement.

5. Emphasizing that a short-term global aspirational goal to 2012 would not significantly change the way in which operators would function, another Member indicated that it was more of a communications objective. It was the first time that ICAO would be saying to the international community that it wished to progress in reducing international aviation emissions. It was therefore not a serious matter if 1.7 per cent, 2.1 per cent or 2.3 per cent were set as the goal for the average annual rate of fuel efficiency improvement. The GIACC should set a policy goal of 2 per cent reduction per year in aviation CO₂ emissions, which was close to the percentages cited in Appendix A to WP/2. It was not necessary to give much thought as to how that policy goal would be measured, *etc.* It was only necessary for the Group to say that in the short term, between now and 2012, there should be a 2 per cent reduction per year in aviation CO₂ emissions. The Member also observed that the percentages used in the recommended global aspirational goals were very sensitive in terms of the baseline used. In addition, RTK was very sensitive in terms of load factor. As everyone was aware, the world was now in a period, which could last until 2010 or 2012, where aircraft were not carrying as many passengers as they had one or two years ago. He suggested that the Group be realistic. It was not certain that the productivity gains would be extraordinary as today aircraft were flying with more empty seats while still consuming a large amount of fuel. The Group should therefore be careful in considering what a fuel efficiency metric of liters of fuel consumed divided by RTK implied.

6. A Member underscored that it would be very subjective to choose a percentage now for a fuel efficiency improvement goal. In emphasizing that the Group should first decide what it wished to have achieved in the long term and then work backwards to determine its short-term fuel efficiency goal, he indicated that, if the intent was to achieve carbon neutral growth in the long term, then the fuel efficiency improvement rate necessary to attain that should be calculated. Any fuel efficiency improvement rate should serve to produce an industry that had zero carbon growth and a reduced or acceptable level of CO₂ emissions.

7. The Chairperson of GIACC/3 concurred that it was only the initiatives that were already being implemented to reduce aviation CO₂ emissions that would have an impact in the short term to 2012 and not any initiatives adopted between now and 2012. The pace of change would only be altered with the implementation of new initiatives adopted subsequently.

8. While sharing the concern expressed regarding data discrepancies, another Member agreed that the GIACC was to provide policy guidance and therefore did not need to go into the data itself; it only needed to be informed by the data. She noted that if certain flights were not captured in the OAG planned activity data then it might be possible to make more progress than the figures contained in Appendix A to the paper. While supporting the basic approach of Working Group 1, the Member considered that the data should be refined, on the understanding that not all States would be able to provide additional data. She underscored that the quality of the data could be improved by having States provide radar-tracking data. It would not require much collection and there were already models in existence which could use that data to calculate fuel efficiency estimates for the international aviation sector. Those estimates could then be used to validate the OAG data. The Member emphasized that, depending on the results, the GIACC could consider a range of fuel efficiency improvement instead of a single figure. She was concerned that the

aviation industry might be willing to go beyond the suggested short-term goal of 2 per cent per year reduction in aviation CO₂ emissions. The Member agreed with the Chairperson of GIACC/3 that many of the new technologies and even market-based measures would not have time to have an effect on fuel efficiency performance by 2012. She later reserved her position regarding the proposed short-term goal of 2 per cent per year reduction in aviation CO₂ emissions, affirming that it was premature to specify a percentage. Another Member agreed, emphasizing that defining a percentage without first refining the data was inappropriate. In also concurring, a Member underscored that further investigative work should be carried out between GIACC/3 and GIACC/4 in order to find appropriate answers to any methodological questions that might still remain and to do a comparative analysis between industry's targets and States' targets. She cautioned that the GIACC could not set goals that were less ambitious than the industry's goals. Another Member shared her views.

9. In noting that the European Organisation for the Safety of Air Navigation (Eurocontrol) had radar-tracking data for its Member States, another Member voiced support for the suggested validation of OAG data as it would ensure that for the medium- and long-term there was a validated system in place to monitor performance more accurately. He considered that the proposed 2 per cent per year reduction in aviation CO₂ emissions was a reasonably good ballpark figure as it was the one that the aviation industry roughly worked to as well.

10. In underscoring that a lengthy time span had been used by Working Group 1 in its calculations, 1990 to 2006, another Member noted that many developments had taken place during that period. There had been an increase in the number of carriers and airlines had renewed their fleets. However, there had also been the events of 11 September 2001 and the SARS epidemic, which had caused some airlines to lose profitability. The current global economic crisis was leading to a dramatic reduction in flights, especially among flag carriers, and it was not certain when the situation would stabilize. The Member was therefore concerned that in establishing 2012 as the timeline for the short-term global aspirational goal of fuel efficiency, the Group would not receive objective data from the airlines. Referring to the methods used to calculate the fuel efficiency metric, he underscored that there were some fifteen factors (aircraft design, retrofitted engines, speed, size, meteorological conditions, taxiing time, *etc.*) that impacted fuel consumption and caused a 3 to 5 per cent variation in fuel requirements. While therefore favouring the fuel efficiency metric that used the fuel mass consumed over the one which used the liters of fuel consumed, the Member suggested that the technical experts of the CAEP be invited to discuss the method of calculation of the fuel efficiency metric in an open forum.

11. The Chairperson of GIACC/3 recalled that the need for further expert development of the fuel efficiency metric had also been highlighted during the previous day's discussions. He noted that the said factors which influenced fuel efficiency were encompassed in the table of potential measures to limit or reduce emissions from international aviation contained in the Report of Working Group 2 (WP/3). In concurring that short time periods could be very deceptive, the Chairperson observed that, in a volatile industry such as aviation which experienced upturns and downturns, a comparison of one year to another which seemed to indicate a substantial leap in fuel efficiency might actually indicate a range of other measures which were playing out in the market. In emphasizing that the presentation of the global aspirational goals therefore needed to be made in the broader picture of trends over time, he noted that that should be part of the GIACC's communications strategy.

12. In stressing the need to reflect the principle of common but differentiated responsibilities (CBDR) in setting the short-term global aspirational goal, as well as the medium- and long-term goals, a Member noted that Article 2.2 of the Kyoto Protocol, whose first commitment period would expire in 2012, applied only to Annex I States. He underscored that if the short-term global aspirational goal was applicable to all States, then a distinction should be made between Annex I and non-Annex I States. The Chairperson of GIACC/3 emphasized that it was not being suggested that the principle of CBDR was not important in all cases. It was a question of the extent to which CBDR had a practical effect for the short-term. The

Chairperson of Working Group 1 recalled that the principle of CBDR had been raised throughout the Working Group's discussions and was reflected in its Report. She reiterated that the short-term goal was based largely on historical activities and measures that were already being implemented. It was due to the way in which the numbers were being calculated that they applied to all States. They already took into account the differentiated approaches across carriers. The Chairperson of Working Group 1 therefore agreed with the Chairperson of GIACC/3 that there was not more that should be accommodated in terms of the particular short-term goal under consideration.

13. Another Member observed that Article 4 of the *United Nations Framework Convention on Climate Change* (UNFCCC) reflected that all States were committed to combating climate change but that their obligations were different in nature. The GIACC was now considering a short-term global aspirational goal of fuel efficiency that was valid for all States; however, each State would contribute to the goal's achievement according to its own national circumstances and respective capacities, which was CBDR. The Member suggested that the language used in the draft Chairperson's summary of discussions of the coordination meeting be attached to the short-term goal of reducing aviation CO₂ emissions by 2 per cent per year in order to make it clear that not all States would contribute in the same way to meeting that goal and that some States would have national circumstances and capacities that would not allow them to contribute thereto as much as other States. Noting that that was a useful proposal, the Chairperson of GIACC/3 underscored that the said short-term goal was part of a broader strategy. The means of contributing to the achievement of that goal was a wide basket of measures from which States could choose. The expectation was that States would choose different measures and therefore contribute to the goal's attainment in different ways and to a different extent. That choice of measures and the non-binding nature of the goal were consistent with the principle of CBDR.

14. To a point raised regarding the assessment of the achievement of the short-term global aspirational goal, the Chairperson of GIACC/3 underscored that an important aspect of setting all goals was to have a process to monitor their implementation. That issue would be addressed when the Group considered the Report of Working Group 3. In then summarizing the discussion, the Chairperson of GIACC/3 indicated that the Group agreed to a short-term global aspirational goal for 2012 based on fuel efficiency at an indicative level of a 2 per cent per year reduction in aviation CO₂ emissions, subject to further refinement in light of data that would become available before GIACC/4. The GIACC also recognized the fact that the said short-term goal needed to be presented in the context of the broader strategy, its non-binding nature and the ability of States to choose measures according to their respective capacities.

Medium- and long-term global aspirational goals

15. The Chairperson of Working Group 1 noted that the Working Group had been unable to reach a consensus on anything beyond a short-term global aspirational goal. It had been able to reach some agreement on a definition and had cast that in the context of fuel efficiency. The Group had indicated in its Report that if the GIACC were to speak of carbon neutrality at some stage, a definition would be that point at which the improvement in the fuel efficiency of international aviation activity was equal to the rate of growth in RTKs. It had not been able to articulate when that point might be achieved or to identify any more specific outcomes that the Group might wish to include in aspirational goals. The issues discussed by the Working Group relating to medium-term global aspirational goals were reflected in paragraphs 43 to 58 of its Report. The Chairperson of Working Group 1 recalled the concerns expressed by some Members that to simply maintain the historical annual averages of fuel efficiency, one option, would not signal enough of the industry's intent to push boundaries. It had been noted that industry, the International Air Transport Association (IATA) in particular, had articulated certain medium- and long-term goals, and that that was an important consideration for whatever such goals the GIACC established. The question had been raised whether the GIACC should not be able to go further than industry. IATA, representing carriers, did not necessarily encompass all of the elements of the aviation industry where efficiencies might be possible. Another concern had been the possibility of a credibility gap between a figure that was established early by

the GIACC on the basis of inadequate data and a figure that was subsequently determined on the basis of actual data.

16. The Chairperson of Working Group 1 recalled that, in terms of developing countries, a strong view had been expressed that it was very difficult to discuss medium- and long-term goals, particularly the latter, prior to knowing the outcome of the UNFCCC process. A recurring concern had been that the different needs and expectations of growth in developing countries should be accommodated in how the goals were set in their application to those countries. She noted that, for the longer-term, one of the ideas raised had been whether or not the GIACC could consider a goal that would maintain international aviation's share of global GHG emissions, some 3 per cent, to 2050, which would encourage further efficiencies. No agreement had been reached on the foregoing. The only additional guidance that had emanated from Working Group 1 had been that if the GIACC were unable, for whatever valid reason, such as inaccurate data, to identify targets beyond 2012 at this stage, then it would be very important for ICAO to subsequently articulate its plans and timelines for providing that insight at a high policy communications level.

17. Recalling the previous day's discussion of what goals were achievable by what date, a Member noted that she had suggested the development of various scenarios, such as the use of alternative fuels, technological improvements, which could be grouped as low- or high-level market insertion, *etc.* She proposed that Working Group 1 be requested to continue to work on such scenarios, with the States involved being asked to indicate what was achievable by what date at the global level. The Member underscored that Working Group 1 should leave room for potential growth or advances in technology. Indicating that the GIACC would discuss on Day 3 how to take its work forward between the third and fourth meetings, the Chairperson of the GIACC emphasized that it should not be assumed that the same Working Groups would be used if there was a better way to work outside the session.

18. The Chief of the Environmental Unit (C/ENV), who is also the Secretary of the Committee on Aviation Environmental Protection (CAEP), noted that the CAEP's Modelling and Database Task Force (MODTF) was examining a number of scenarios and timelines. Its initial results, which were to be presented to the CAEP's Steering Group meeting in June 2009, could be made available to the GIACC at the end of May 2009 in time for its Fourth Meeting.

19. A Member suggested the adoption of a medium-term goal of carbon neutrality by 2025 based on the interpretation of carbon neutrality as gains in carbon emissions reductions offsetting growth.

20. Another Member underscored that references to the principle of CBDR would not be sufficient for any medium- or long-term global aspirational goal. Observing that a carbon budget placed a limit on the carbon emissions of a specific sector, he emphasized that his State would not commit to any such target for the aviation sector since emissions were mutually interchangeable. As discussions on that issue were taking place within the UNFCCC, his State was not ready to agree to any sectoral arrangement at ICAO. In underscoring the need to refine the parts of the Report of Working Group 1 relating to medium- and long-term goals, the Member noted that there were terms used therein, such as "carbon-neutral growth", that had not been defined. While the aviation industry had a definition for that term, the GIACC had not yet accepted it. That was also a problem for his State. Noting that the Working Group's recommended long-term relative goal of aviation continuing to represent no more than 3 per cent of the total GHG globally in 2050 would establish a limit for aviation emissions, the Member emphasized that CBDR language would not resolve that problem. He stressed that work on the medium- and long-term goals should continue between GIACC/3 and GIACC/4.

21. A Member emphasized that in considering medium-term goals, the Group should also consider potential technical measures for their attainment. He underscored the need to keep in mind carbon-neutral growth as a medium-term goal, as well as an increase in RTK by 2020 or 2025, especially

given the serious situation of the aviation industry. The Member noted, in this context, that paragraph 35 of the Working Group's Report indicated that "carbon-neutral growth will be achieved when the rate of fuel efficiency improvement is equal to the rate of increase in Revenue Tonne Kilometers".

22. Recalling that during the previous day's presentation by the International Coalition on Sustainable Aviation (ICSA) it had been emphasized that ICAO was not the only forum in which these issues would be deliberated upon and that it was necessary to consider the discussions and actions taking place elsewhere, a Member underscored that at the Hokkaido Toyako Summit on 9 July 2008 the leaders of the world's major economies had made a commitment to take very aggressive action. It was possible that others would measure ICAO against that standard. The Member highlighted, in this regard, paragraph 5 of the Declaration of Leaders Meeting of Major Economies on Energy Security and Climate Change adopted at that summit, which stated: "... In this regard, the developed major economies will implement, consistent with international obligations, economy-wide mid-term goals and take corresponding actions in order to achieve absolute emission reductions and, where applicable, first stop the growth of emissions as soon as possible, ...". In supporting the proposed adoption of a medium-term goal of carbon neutrality by 2025, he indicated that the Group should put down a marker at the present stage but validate it before its next meeting. The Chairperson of GIACC/3 raised the question of how the Group could recognize the commitment by the said major economies and indicate a resolve to put in place a parallel level of commitment for the aviation sector.

23. Recalling that his State had participated in the Hokkaido Toyako Summit, a Member indicated that he fully agreed with the said Declaration adopted at that meeting. He noted that, in light of the expectation of growth in the aviation sector in developing countries, his State supported any ambitious GHG mitigation efforts from Annex I States if the latter wished to add further commitments to their medium- and long-term goals. Such efforts would be consistent with the UNFCCC and Article 2.2 of the Kyoto Protocol. His State could not, however, go beyond fuel efficiency as a global aspirational goal for the medium-term. It therefore ruled out carbon neutrality as defined in the Report of Working Group 1. Observing that the economy-wide mid-term goals referred to in the said Declaration was the same logic used by the UNFCCC, the Member questioned why any targets for developing countries should be established which were not consistent with the Kyoto Protocol when mitigation measures could be taken by other sectors of the economy which might not have the same prospect for growth as the aviation sector.

24. Sharing this view, another Member emphasized that the GIACC should base its work on medium- and long-term goals on Appendix K to Assembly Resolution A36-22 and establish goals only in the form of fuel efficiency. Such goals should be in line with the negotiations taking place in the UNFCCC and should take into account the specific circumstances and capabilities of developing countries.

25. Noting that consensus had been reached on fuel efficiency as a short-term global aspirational goal, a Member underscored that it should also be the basis for medium- and long-term global aspirational goals. The important issue of carbon-neutral growth should only be considered later, once progress had been made in terms of fuel efficiency. In observing that the Group's data would never be perfect and that there would always be a margin of error in its figures, the Member emphasized that that should not prevent the GIACC from setting approximate global aspirational goals for the medium- and long-term which could be refined in the future. Agreeing, another Member stressed that carbon neutrality would be reached through the efficient use of fuel, whether alternative fuels or existing jet fuel. To a comment by the Chairperson of GIACC/3 that in the previous day's presentation by ATAG it had been indicated that industry projected that growth in air traffic would outstrip potential fuel efficiencies unless the introduction of alternative fuels was taken into account, the Member averred that if fuel efficiency improved 2 per cent per year through emissions reductions in accordance with the GIACC's short-term aspirational goal, then eventually it would catch up with the growth in air traffic. He emphasized that if carbon neutrality were adopted as a long-term goal, then it would be necessary to have projections of market

growth. The Chairperson of GIACC/3 recalled that the Group had agreed to request the CAEP for such projections.

26. In underscoring that it was not the first time that aircraft manufacturers had developed technological improvements to make aircraft more efficient, a Member recalled the first oil crisis in the 1970s, when airlines were grounded as they could not obtain fuel. The major manufacturers, mostly from developed countries, had set themselves a standard of achieving a 40 per cent step change in fuel usage. He suggested that the Secretariat research the role that ICAO had played at that time in addressing fuel efficiency so that the GIACC could use it as guidance in addressing that issue now and establishing goals. The Member emphasized that, although there were many improvements which manufacturers could introduce to increase aircraft fuel efficiency, such as the use of open rotor engines, blended winglets or laminar flow wings, they would not take any action until ICAO established goals.

27. Another Member underscored that, with the advent of alternative fuels, it would be necessary to establish a fuel efficiency metric for the longer term which also took into account carbon content and to establish a baseline year.

28. In offering a summary of the discussion of medium- and long-term global aspirational goals, the Chairperson of GIACC/3 noted that there was still a significant number of issues on which there was considerable divergence. There was no consensus on carbon neutrality as a goal just as there had not been consensus thereon in Working Group 1. Suggestions had been made that there be obligations for Annex I States and that the position should be differentiated so that it would be an incentive for non-Annex I States to take action. Suggestions had also been made that the goals should only be in the form of fuel efficiency and that they should be based essentially on the research and forecasting which indicated the trends within the aviation industry. Suggestions had also been made that it was necessary to have goals that would drive the aviation industry to stretch, which would seem to involve doing more than estimating the current trends within the aviation industry. Observing that it would not be possible to resolve all of those issues during GIACC/3, the Chairperson indicated that it would be necessary to set up a process to work further thereon to GIACC/4 and beyond. He noted that the most productive area to work on at the moment was a fuel efficiency goal. The CAEP was being requested to improve its forecasting to that end. A comment had also been made on the need to continue to work on the metric and to determine how it should be structured, using the said forecasting to decide on the level of the target to be set. Noting that it was also necessary to look at a stretch goal for the aviation industry, the Chairperson encouraged the Group to consider how such a goal might be addressed. He recalled, in this context, the suggestion made that the Group reflect the level of aspiration expressed in the Hokkaido Toyako Summit Declaration in its goals, while taking into account that the latter was directed primarily at domestic economies. The Chairperson also encouraged Members to consider if there was another way to express ambition beyond fuel efficiency, carbon neutrality and maintaining aviation's overall 3 per cent of global GHG emissions. He recalled the comment made the previous day that the GIACC should ensure that the aviation industry was making its proper contribution to reducing aviation emissions.

Strategy for working forward on medium-term goals

29. Noting that ICAO's mandate was to maintain growth in the aviation sector, the Chairperson of Working Group 1 indicated that the GIACC, a policy forum, would ultimately have to address the difficult fundamental question of whether there should be some limits on that growth. That issue would also be at the core of the discussions at the High-level meeting. When the GIACC started to discuss issues that went beyond fuel efficiency or intensity measurements that included targets, it would have to consider whether it was prepared to accept some degree of constraints on the aviation industry. Members probably held different views on that. It would be necessary to consider how that related to what ICAO might be expected to do in the broader global dialogue on carbon constraints. Thus in addition to examining issues from a technical perspective, the GIACC would have to spend a significant amount of time drafting

a number of variants that would help to bridge some of the gap. The Group would have to find some way to make some relative statements that would give ICAO credibility in terms of what it was trying to achieve relative to what might or might not happen in the UNFCCC process. She queried how ICAO could say that it was a good corporate citizen because it did much work on fuel efficiency if every other sector could be hit with CO₂ reductions that impacted economic activity. In suggesting that the Group return to this issue when it considered the Report of Working Group 2 (WP/3) on measures to limit or reduce emissions from international aviation, she underscored that the discussion of measures would provide guidance on the establishment of medium- and long-term goals.

30. A Member emphasized that while Appendix K of Assembly Resolution A36-22 referred to global aspirational goals in the form of fuel efficiency, it also explicitly mentioned offsetting and market-based measures. He underscored that if the GIACC wished to establish a fuel efficiency goal, then it should be an important and realistic goal that also integrated offsetting and market-based measures; otherwise, the goal would have a limited effect in reducing aviation's impact on climate change. He suggested that that be reflected in the mandate of any new working group formed to progress the GIACC's work outside the session. Such a working group should also consider how to introduce the principle of CBDR into that goal. While the GIACC agreed that the aspirational goals were global, collective and non-binding in nature, it had been emphasized during the present discussion that that formulation would not suffice for a medium-term goal if it did not reflect CBDR as at the UNFCCC COP15 in Copenhagen in December 2009 States would be assuming obligations that were differentiated.

31. The Chairperson of GIACC/3 noted that it was now a question of moving the discussion from the concept of an increase in traffic being offset by fuel efficiency gains to the introduction of the idea of economic measures to cover the gap, if there was one. That issue would be discussed when the GIACC considered the Report of Working Group 2. In terms of goals, on Day 3 the GIACC would discuss the establishment of a mechanism to continue to develop a medium- and long-term fuel efficiency goal that would take into account the technical information that was available from the CAEP. It was necessary to bear in mind that the Group was a policy forum and would not attempt to complete that technical work. While there was no consensus on a global aspirational goal beyond fuel efficiency for the medium- or long-term, there was encouragement to craft a statement of ambition and an exhortation to look for a level of ambition beyond merely reflecting the projection of "business as usual" in the aviation industry. That issue would need to be discussed further at GIACC/4.

Presentation of the Report of Working Group 2 on Measures to Achieve Emissions Reductions

32. As the Chairperson of Working Group 2 on Measures to Achieve Emissions Reductions since the resignation of Mr. R. Cron (Switzerland) from the position on 1 November 2008, Mr. J. Doherty (Australia) elaborated on the Working Group's Report (WP/3) which had been presented during the coordination meeting on 16 February 2009.

33. The Chairperson noted that the main element of the Report was a series of framework principles to set the context for a range of measures identified therein that were expected to be applied. Key was that each State retained the authority to choose its own measures from the proposed basket of measures, recognizing that it might be a mix of measures. It was important to pursue the maximum environmental benefit in a cost-effective way. There was encouragement for States to work together and recognition that no one date for implementation would apply. The measures would be applied at different paces and in different ways. The Report also recognized the special circumstances of developing countries. Drawing attention to Section 2 on the framework principles, the Chairperson noted that in the introductory paragraph and paragraph a) the words "market" and "industry" appeared in parentheses as the Working Group could not resolve the wording. Apart from that, the general direction and wording of the framework principles were supported by all of the Members of Working Group 2.

34. The Chairperson then referred to Section 3 of the Report, which contained a table of potential measures to limit or reduce emissions from international aviation in the five categories of aircraft-related technology development, improved air traffic management (ATM) and infrastructure use, more efficient operations, economic/market-based measures, and regulatory measures/other, and also provided an assessment of their potential impacts, costs and timescales. A large number of the measures were already being implemented. The extent to which additional measures would be adopted would be facilitated through reference to the said table and any supplemental material thereon that might become available. As indicated in the table, views had diverged on the relative gains, costs and timescales of the potential measures.

35. Section 4 of the Report set forth a number of options for assisting developing countries (economic/market-based measures, technology transfer, appropriate financial assistance, education and training; and support for adaptation). It was a clear recognition of the second element of the principle of CDDR. The proposal was not imposing obligations which would be unreasonable for developing countries; rather it was suggesting a range of ways to provide positive assistance to developing countries.

36. Section 5 of the Report was a brief summary of proposed approaches to support the implementation of measures across all States. It recommended the continued development of guidance and supporting information working through ICAO and building on the excellent work that had already been done in a range of ICAO fora. It encouraged a coordinated approach among regional groupings, recognizing the benefits that that could bring. It recommended the sharing of information and expertise among States, as well as the development and publication of an action plan for each State. In the case of developed countries, their action plans should set out approaches for assisting developing countries. It also referred to the importance of a mechanism for monitoring and reporting progress and of provision for assistance from other States and industry, possibly facilitated through ICAO, in the assessment of areas for action and development of the action plan.

37. In the course of the discussion, it was emphasized that a distinction should be made between the actions recommended to be taken by ICAO, those that individual States should consider or that ICAO should consider collectively, and those to be considered only by the aviation industry or by the aviation industry with implementation assistance by States in terms of incentives, regulatory changes, *etc.* With regard to the role of ICAO, the Chairperson of Working Group 2 noted that in its envisaged Programme of Action the GIACC would identify a number of areas where ICAO organs could contribute or continue to contribute. That might require reinforcement by the High-level meeting and involve prioritization as there would be a series of expectations that would have to be met with finite resources.

38. Underscoring that the proposed measures were only a means to achieving the global aspirational goals, a Member averred that the GIACC should have established the said goals before discussing the measures. In further emphasizing that practically none of the measures had any meaning for the achievement of the short-term fuel efficiency goal by 2012, he noted that almost all of them had a perspective of 2020 and beyond. Thus while it would still be useful to review the proposed measures to determine if some were more helpful than others, the GIACC should return to them when it had clearly defined the medium- and long-term goals.

39. Another Member observed that there was no low-hanging fruit in terms of measures which would generate medium to high gains at a low to medium cost and in a short to medium timeframe, which implied that industry and States had already taken the easiest measures. Noting that the CAEP was updating Circular 303 (*Operational Opportunities to Minimize Fuel Use and Reduce Emissions*), she suggested that it be encouraged to take the Report of Working Group 2 as a guide. The Member also queried whether the GIACC should consider whether there should be a sectoral approach to international aviation. She further queried whether, to bridge the Group's thinking on measures, goals and CDDR, a stretch goal, aspirational or otherwise, should be developed that would require more to be done than what would be done in any event

under existing approaches, operational efficiencies and plans. Such a stretch goal would demonstrate to the global community that international aviation was willing to look more closely at how it could contribute to carbon reductions. Within that stretch goal, consideration could be given to whether there was means to close the gap that might exist between the global aspirational goals and what it was possible to do with existing various measures, perhaps through a global universal charge that would generate resources that could be reinvested, either in the sector, in offsets or credits. The Group could discuss if such a charge should be reinvested in the aviation sector and/or more broadly. Such a charge could potentially be administered through ICAO, not necessarily by ICAO but with its leadership and facilitation. It could be non-attributable to Member States and done at an industry level, although there would be some challenges in terms of compliance and enforcement. Such a construct might address some of the concerns expressed regarding developing countries that would not require attribution to individual States but which would demonstrate a greater degree of commitment and engagement than perhaps what had been discussed thus far. The Chairperson of Working Group 2 recalled that during the ATAG presentation, Mr. Steele had indicated that while the aviation industry was prepared to pay its fair share for its CO₂ emissions, it considered that the revenue generated by any levy should be reinvested in the industry's initiatives to reduce such emissions.

40. Referring to the bracketed text “[market][industry]” in the introductory paragraph and paragraph a) of Section 2 of the Working Group's Report, a Member queried why the words were viewed as alternatives and suggested that the text be replaced with the term “market and/or industry”. Observing that that would not solve the problem, the Chairperson of Working Group 2 noted that whereas some of the proposed measures, such as airport and air traffic measures, would benefit domestic and international carriers equally, others, such as the levying of an economic charge, would not and would therefore lead to problems with the market. He suggested, and it was agreed, that the bracketed text “[market][industry]” be retained for the time being, on the understanding that the Group would review it during its next meeting in considering its final report.

41. In then summarizing the discussion, the Chairperson of Working Group 2, who also served as the Chairperson of GIACC/3, noted that the Group agreed to take forward the approach outlined in the Report of Working Group 2 (WP/3) based on the framework principles, the table of potential measures to limit or reduce emissions from international aviation, the mechanisms for assisting developing countries and the mechanisms to support implementation set forth therein. The Group also agreed to encourage the Secretariat and the CAEP to consider the Working Group's Report in setting priorities for related tasks, such as the updating of Circular 303.

Presentation of the Report of Working Group 3 on Monitoring and Implementation

42. Mr. M.V. Pinta Gama (Brazil), the Chairperson of Working Group 3 on Monitoring and Implementation, then elaborated on the Working Group's Report (WP/4 Revision No. 1) presented by Brazil with comments by Germany and Nigeria, which had been introduced during the coordination meeting on 16 February 2009.

43. The Chairperson noted that Working Group 3 recommended that the template attached to State letter 08/44 dated 27 May 2008 be used for the reporting of data. It was proposed that such reporting incorporate the idea of differentiation among States, with Annex I States reporting annually to ICAO on a mandatory basis and non-Annex I States reporting annually to the Organization on a voluntary basis. The Working Group also proposed that ICAO provide, upon request, technical assistance and cooperation to developing countries on the collection, processing and dissemination of data. On the basis of the national reports, ICAO would issue triennial comprehensive progress reports containing consolidated data on fuel consumption, fuel efficiency and traffic, as well as an assessment of the progress made at the global level in attaining the global aspirational goals.

44. With regard to data collection and implementation, the Working Group considered that ICAO should play a leading role in coordinating the collection and analysis of data gathered from all available sources. The CAEP should continue to analyze the data and report on measures adopted by States to reduce international aviation greenhouse gas (GHG) emissions. Data on fuel consumption from the aviation industry and operators around the world should be collected in close collaboration with pertinent international entities such as IATA. The Working Group recommended that ICAO adopt appropriate mechanisms to verify States' progress in reducing international aviation GHG emissions. If the GIACC agreed to the proposed differentiation among Annex I and non-Annex I States, then the mechanisms could take that differentiation into account in accordance with the principle of CBDR in assessing the progress made by States in reducing international aviation emissions.

45. The Chairperson of Working Group 3 underscored that the Working Group's recommendations for monitoring and implementation were consistent with the principle of CBDR and the envisaged global aspirational goals. As indicated during the review of the Report of Working Group 1 (WP/2), such goals were of a global, collective nature. As recommended in the Report of Working Group 2 (WP/3), there would be a basket of measures that could be adopted by States on a voluntary basis to achieve those goals. In the monitoring of the implementation of the global aspirational goals, there would be differentiation among Annex I and non-Annex I States to take into account the principle of CBDR.

46. While supporting the use of the template attached to State letter 08/44 dated 27 May 2008 for the reporting of data, a Member recommended that the template be expanded to encompass non-scheduled traffic, reiterating her concern that such data was not otherwise captured. In underscoring that reporting was not a CBDR issue, she noted that the provision of information on traffic and costs was already required of ICAO Member States under Article 67 (*File reports with Council*) of the Chicago Convention. The Member nonetheless was of the view that consideration should be given to the special circumstances of developing countries. She suggested that the Secretariat give a briefing to the GIACC on current Form A, outlining its strengths and weaknesses and proposing ways to improve data quality, and that IATA give a briefing on the information to which it currently had access and on how the annual reporting to that organization might assist the GIACC in its task. Indicating that it was appropriate to consider the concerns of developing countries regarding infrastructure and their reporting ability, the Member recalled the proposal referred to in the Report of Working Group 1 (*cf.* WP/2, paragraph 18), that only the top twenty or thirty international aviation countries (measured by share of total RTK), whose airlines were responsible for some 95 per cent or more of total emissions from international aviation, be required to report annually to ICAO. The actual number of countries to be included in that top tier was still open for discussion. Below that tier there did not need to be the same reporting threshold. The Member suggested, as an alternative to the said reporting requirement, the use of radar-tracking data in the CAEP's models to capture the emissions savings.

47. The Chairperson of Working Group 1 recalled that the Working Group had recognized that data required further refinement. It had considered that it would be helpful to have a discussion on that issue, not necessarily in the GIACC timeframe but in 2012 or some other forward date which would allow ICAO, perhaps the CAEP, to do the necessary internal due diligence assessment of options, of refinement of the information required and of what information was readily available elsewhere and to report later on the findings. That would be done with the view to establishing ICAO as the definitive player capable of reporting on aviation activities from a fuel consumption/fuel efficiency perspective.

48. The Chairperson of Working Group 1 noted that the Working Group had also discussed a differentiated approach to reporting for developing countries which took the broader UNFCCC parameter as reflected in the draft summary of discussions of the coordination meeting entitled *Aspirational Goals: A way forward in the GIACC process*, namely, that all States respected the fact that they wished to reduce climate change emissions. In that broader context, Working Group 1 had thought that it was useful to consider whether only the top twenty (or some other proportion) international aviation countries (measured

by share of total RTK), representing a substantial part of aviation emitters based on international aviation activity and to develop a reporting régime that would apply to that smaller subsection of the whole, with a view to not burdening the smaller players that might not have the capability to provide data.

49. With regard to monitoring, the Chairperson of Working Group 1 observed that there was a linkage between the recommendations of Working Groups 2 and 3 regarding action plans. She supported the development of a requirement that all States, to the extent possible, table with ICAO their action plans, reporting on their use of the proposed basket of measures made available, whether through the work of Working Group 2 or the use of Circular 303 or some combination, as that would further strengthen ICAO's future story of how it was continuing to deliver on its mandate to reduce aviation's impact on climate change.

50. The Chairperson of Working Group 1 suggested that the GIACC discuss whether and how to place international aviation in the UNFCCC Clean Development Mechanism (CDM). She recalled that Working Group 1 had recommended that ICAO and its Member States seek the expansion of the CDM to include investments in international aviation projects in developing countries (*cf.* WP/2, paragraph 25). Furthermore, Working Group 2 had suggested that the CDM be used to provide assistance for such projects in developing countries (*cf.* WP/3, Section 4). She affirmed that that was one of the more practical elements that the GIACC would be able to advance with respect to addressing the needs of developing countries.

51. Reiterating the importance of assessing whether or not the global aspirational goals were achievable, a Member emphasized the need for data, especially fuel consumption data, to be collected. He indicated, however, that if the traffic reports submitted by international airlines to the ICAO Council under Article 67 of the Chicago Convention included such fuel consumption data, then there was no need for States to collect that data.

52. To a question by the Chairperson of GIACC/3 regarding the role of ICAO in data collection, the Secretary of the GIACC indicated that such data collection was an appropriate function of the Secretariat, working through the Economic Analyses and Databases Section (EAD) in close coordination with the Environmental Unit (ENV). He considered that the CAEP's role was not to collect data but to interpret it on a technical level. The Chairperson of GIACC/3 indicated that the Group might then wish to ask the Secretariat to provide information at its next meeting on data collection that might be done to meet the global aspirational goals (RTK and fuel consumption), bearing in mind the need to cover scheduled and non-scheduled traffic. The Secretary of the GIACC recalled that the subject would be raised at the upcoming Statistics Panel (STAP) meeting.

53. In agreeing that reporting did not lend itself to CBDR deliberations, at least, to a far lesser extent than other activities that had been discussed, a Member underscored that that was the reason why ICAO came into play: it was the easiest way to collect universal data, even if the response rate to its requests for data was not always satisfactory. He noted, in this regard, that the Secretariat could find ways to improve that response rate. The Member considered that having ICAO collect the data was better than the recommended approach of having Annex I States reporting to ICAO annually on a mandatory basis and having non-Annex I States reporting annually on a voluntary basis as that approach would not yield a sufficiently mature range of data needed to assess progress in achieving emissions reductions. The Member was not in favour of having only the top twenty or thirty international aviation countries report their data as that would be the first time that the GIACC would be moving away from the concept of global, collective responsibility and shifting that responsibility to only a number of developed countries. He underscored that the GIACC would, again, not have a universal view of the data which it so desperately needed. The Member suggested that the Secretariat present a paper at GIACC/4 elaborating on how best to expand the template attached to State letter 08/44 to include the necessary fuel consumption data in order for ICAO to obtain as much data as possible.

54. Underscoring that the GIACC's work was successive, not concurrent, a Member shared the view expressed that the Group should have established the global aspirational goals before considering the measures proposed to meet those goals. He noted that the reporting on the implementation of the measures was not complicated as ICAO already had a reporting process in place, which could be enhanced if necessary. The Member suggested that ICAO monitor the progress in implementing each measure adopted in order to reach its long term goal. The Chairperson of GIACC/3 clarified that ICAO would be monitoring the results of the implementation of the measures and not the individual means of achieving those results. The proposed reporting related to the total fuel consumed and the total RTK performed. Such information was important in order to monitor progress towards the global aspirational goal. In his view, the Working Group 3 proposal did not include, at least initially, the idea of layering the monitoring down to each measure which might be adopted by a State. The Chairperson of Working Group 3 confirmed that it was the intention to monitor the actual results rather than the measures taken to achieve those results.

55. A Member emphasized that ICAO should take into account the data that already existed rather than creating new collections of data that might not be necessary.

56. In offering clarifications to some of the points raised, the Secretariat recalled that Form A had been in existence since 1946. There was a comprehensive data collection mechanism, as well as a verification and validation mechanism, that formed part of the integrated statistical database. The data covered scheduled and non-scheduled traffic, including all freight services – 95 per cent of total traffic. Reporting was consistent as it was such an old collection form that carriers were aware of the definitions used. In underscoring that RTK data had been made available by ICAO for a long period of time, the Secretariat noted that the Organization published State-wide rankings. A mechanism was thus already in existence in the form of the said database. Furthermore, the data was disseminated worldwide.

57. Observing that there was, however, a gap in the Organization's fuel consumption data, the Secretariat indicated that it was intended to present a paper on the collection of such data to the said Statistics Panel. The EAD could work closely with ENV on the requirements of GIACC or any future group. The Secretariat noted that one option for the collection of fuel consumption data would be to incorporate that data into the regular reporting form through the Statistics Panel rather than obtaining such data through a State letter. It was emphasized that the integrated statistical database covered 21 per cent of total traffic that was not covered by IATA – another distinct advantage. The data was already being given to the CAEP for its extensive modelling work. The Group could look into the collection of fuel consumption data, where there was a large gap, as well as the pros and cons of a State letter versus a regular collection mechanism through the Statistics Panel.

58. The Chairperson of GIACC/3 noted that a few Members had underscored that there was no need for the proposed differentiation among States when it came to reporting on the implementation of measures as such reporting was essentially provided for under Article 67 of the Chicago Convention. The Members had also underscored that State letter 08/44 dated 27 May 2008 had been issued requesting the required fuel consumption data. He queried whether the different currents in the discussion could be resolved.

59. The Chairperson of Working Group 3 then proposed the following two-element approach to the issue of monitoring and reporting in light of the comments made and the explanations provided by the Secretariat: that Member States should report annually to ICAO data on fuel consumption and traffic in accordance with Article 67 of the Chicago Convention; and that ICAO should provide, upon request, technical assistance and cooperation to developing countries for collecting, processing and disseminating data. He emphasized that the latter was the CBDR element. The GIACC agreed to this approach as being a very useful way forward.

60. C/ENV, who is also the Secretary of the CAEP, observed that the Secretariat had been providing assistance to States in their emissions reporting for a long time. There was thus clearly a role for the Secretariat in that regard. She further indicated that the CAEP was developing guidance on the collection, verification and reporting of emissions. Noting, however, that the way that data was collected through the ICAO EAD was not exactly how the UNFCCC required the data to be presented for its process, C/ENV emphasized that it was thus very important to take a broader view of the issue so as to avoid placing a heavy burden on States by having different reporting requirements for the same issue for different organizations.

61. In then referring to the presentation which she had given the previous day, C/ENV reiterated that there was a role for ICAO in the collection of data, monitoring and provision of assistance for reporting. It was necessary to clarify, however, whether ICAO was to be the source of information for the UNFCCC for international aviation emissions, reporting thereon on behalf of its Member States, or whether each Member State was to report on its respective international aviation emissions to the UNFCCC. C/ENV stressed the importance of taking into account in that discussion the need to minimize the burden on Member States. She further noted that the models used in the CAEP to verify the quality of its data would be very useful in the monitoring and verification process. In agreeing on the need to support States in the reporting of data, C/ENV emphasized that ICAO would never have a robust set of data unless it provided such assistance.

62. A Member averred that ICAO's mandate under Article 2.2 of the Kyoto Protocol excluded any form of direct reporting by States to the UNFCCC on their international aviation emissions as such information was to be channelled through ICAO. States should only report directly to the UNFCCC on their domestic aviation emissions. C/ENV clarified that, in accordance with the guidelines issued by the Intergovernmental Panel on Climate Change (IPCC), States currently reported directly to the UNFCCC on both their domestic and international aviation emissions but under separate items.

63. Responding to a question raised, the Secretariat noted that ICAO was already providing regular assistance to States regarding the collection and analysis of data. Workshops were held each year on that subject. In addition, on-the-job training was provided to States at ICAO Headquarters upon request. These mechanisms could be expanded if and as necessary, depending on the availability of funds.

64. In summarizing the discussion, the Chairperson of GIACC/3 observed that there was a strong sense of agreement regarding the two-element approach proposed by the Chairperson of Working Group 3, whereby Member States should report annually to ICAO data on fuel consumption and traffic in accordance with Article 67 of the Chicago Convention and ICAO should provide, upon request, technical assistance and cooperation to developing countries for collecting, processing and disseminating data. The Chairperson of GIACC/3 underscored that the provision of such assistance should enhance the response rate for data reporting. He further noted that the Group agreed to request the Secretariat to report to GIACC/4 on how ICAO's current data collection process could be expanded or improved to support the monitoring of progress in achieving the global aspirational goals, taking into consideration the data available from other sources, including the aviation industry. The Chairperson of GIACC/3 emphasized the need to take into account the scope of the UNFCCC requirements in order to avoid, as far as possible, any duplication of requirements.

65. The Chairperson of GIACC/3 then thanked the Chairpersons of Working Groups 1, 2 and 3 and the contributors to those Working Groups for their excellent work.

Review of the Chairperson's draft summary of discussions of Day 1

66. The Chairperson of GIACC/3 suggested that, further to a comment received from the Secretary of the CAEP, the draft summary of discussions of Day 1 be revised to note the importance of an

effective presentation of GIACC's work and the aviation industry's achievements at the UNFCCC COP15 in Copenhagen in December 2009 by both ICAO and States, as the latter saw fit. He also proposed that paragraph 6 be amended to reflect that the CAEP would report on environmental goals analyses for 2012, 2020 and 2025 and a scenario for 2050. Noting that responsibility for the development of emissions standards rested with the American Society for Testing and Materials (ASTM), the Chairperson further suggested that the phrase "and to examine the development of standards relating to alternative fuels and their use in aircraft engines" be deleted from the last sub-paragraph of paragraph 6. He indicated that he would consult with the Secretary of the CAEP regarding the wording of that sub-paragraph. The Group accepted these proposals on the understanding that the revised text of the draft summary of discussions would be circulated.

Agenda Item 1: Administrative matters

Scheduling of GIACC/4

67. Expressing concern that the dates of GIACC/4, 1 to 3 June 2009, overlapped with the dates of an important preparatory meeting of UNFCCC subsidiary bodies, 1 to 12 June 2009, a Member enquired whether the GIACC/4 could be postponed to the end of June 2009 or to the beginning of July 2009. It was noted that C/ENV, who is also the Secretary of the CAEP, would be attending the said UNFCCC meeting.

68. In indicating that he would review the dates of GIACC/4, the President of the Council underscored that the intention was to present a report on the outcome of that meeting to the Council during its 187th Session, which would be held from 8 June to 3 July 2009. He also emphasized that the dates of the GIACC/4 could not coincide with those of other ICAO meetings as it would result in additional costs for the provision of interpretation services.

— END —