



CONFERENCE ON AVIATION AND ALTERNATIVE FUELS

Rio de Janeiro, Brazil, 16 to 18 November 2009

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS FROM THE THIRD MEETING

1. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS FROM THE SECOND MEETING

1.1 The summary of conclusions and recommendations from the second meeting were approved as presented in CAAF/09-SD/2 (Revised).

2. GLOBAL FRAMEWORK AND DECLARATION

2.1 The Conference considered CAAF/09-WP/23, Global Framework for Aviation Alternative Fuels (GFAAF) and endorsed the GFAAF attached as Appendix A.

2.2 The Conference considered CAAF/09-WP/24 (Revised), Declaration and Recommendations, and approved the Declaration of the Conference on Aviation and Alternative Fuels and the Recommendations of the CAAF, attached as Appendix B.

2.3 The meeting agreed that the GFAAF, Declaration and Recommendations approved by the CAAF, in conjunction with the outcomes of the HLM-ENV/09, provide the basis for the input of ICAO to the on-going negotiations under the UNFCCC.

3. OTHER BUSINESS

3.1 Brazil informed the Conference of the following:

- a) an agreement between Brazil and France to cooperate on the reduction of emissions;
- b) developments in Brazil's biodiesel programme; and

- c) partnership with Embraer, General Electric, Amyris, and Azul Airlines has been formed to develop jet fuel from a sugarcane fermentation process. Brazil anticipates that, by early 2012, the fuel will be available and a flight test conducted.

3.2 The Conference closed with the presentation by ICAO's Secretary General of an ICAO video that will be used as part of the ICAO communications strategy at COP15.

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APPENDIX A

GLOBAL FRAMEWORK FOR AVIATION ALTERNATIVE FUELS FIRST EDITION 2009

FOREWARD

- a) Sustainable alternative fuels show promise of being an intrinsic part of an approach toward reducing the carbon footprint of aviation. As such, it is important to consolidate information about the many initiatives already underway to facilitate and accelerate the development and deployment of sustainable alternative fuels for aviation over the short, medium, and long term.
- b) The purpose of the Global Framework for Aviation Alternative Fuels is to showcase existing activities and communicate what the international community expects to achieve in the area of aviation sustainable alternative fuels.
- c) The Global Framework is envisaged as a living document, highlighting the work already accomplished and describing the objectives of future activities. An online version of the Framework will be updated, as new information becomes available, illustrating the status of key objectives and providing background and reference materials for relevant activities.
- d) The initial Global Framework was approved during the final day of the first ICAO Conference on Aviation and Alternative Fuels (CAAF/09) for communication to COP15 on the accomplished and projected activities related to the development and use of sustainable alternative aviation fuels as a part of the ICAO strategy for addressing international aviation's contribution to climate change.

4. WHY SUSTAINABLE ALTERNATIVE FUELS FOR AVIATION ARE IMPORTANT

- a) Engineering improvements, technology enhancements, and advanced operations (including efficiency improvements in air traffic management) all have a role to play to reduce aviation fuel use and associated carbon emissions. Significant progress has been made in establishing technology goals for reducing aircraft greenhouse gas emissions. On a per-flight basis, efficiency is expected to improve continuously through 2050 and beyond. ICAO is spearheading efforts to promote and harmonize worldwide initiatives for operational practices that result in reducing aviation's contributions to anthropogenic emissions. However, even under the most aggressive technology forecast scenarios, the anticipated gain in efficiency from technological and operational measures does not offset the overall emissions¹ generated by the expected growth in traffic. The gap between air transport emissions growth reduced by efficiency improvements and a

¹"Aspirational Goals and Implementation Options". High-Level Meeting on International Aviation and Climate Change, 7 to 9 October 2009, Working Paper 5. HLM-ENV/09-WP/5. http://www.icao.int/Highlevel2009/Docs/HLMENV_WP005_en.pdf

chosen lower level of emissions represents a “mitigation gap” that must be closed using other strategies.

- b) A promising approach toward closing the GHG emissions mitigation gap is the development and use of sustainable alternative fuels for aviation. Today such fuels are not available in sufficient quantities to meet the overall fuel demand for commercial aviation. Sustainable drop-in alternative fuels produced from biomass or renewable oils offer the potential to reduce life-cycle greenhouse gas emissions and therefore reduce aviation’s contribution to global climate change. They could be an important tool in the efforts to close the mitigation gap while allowing the sector to respond to growing demand. Using these fuels may also offer reduced emissions of particulate matter, lessening aviation’s impact on air quality, as the result of the significantly lower fuel sulphur content.
- c) Finally, as aviation is heavily dependent over a short- and medium-term horizon on drop-in liquid fuels, the development and use of sustainable alternative fuels will play an active role in improving the overall resource allocation and security of supply, stabilize fuel prices.

5. **THE OBJECTIVES OF USING SUSTAINABLE ALTERNATIVE FUELS FOR AVIATION**

- a) Development of sustainable alternative fuels for aviation is an essential component of future aircraft fuel supply. ICAO has undertaken efforts to promote improved understanding of the potential use and emission effects of sustainable alternative fuels. It was noted in the ICAO alternative fuels workshop (Montreal, 10-12 February 2009) that aviation fuels could be a win-win solution for reducing aviation’s dependence on fossil fuels and a key element to help reduce the impact of aviation on climate change. Given sufficient demand or incentive, significant supplies of jet fuel that offer a significant reduction in life-cycle CO₂ emissions could be available in the mid-term. Certification of alternative fuels for use in aviation is already underway.

6. **ICAO’S ROLE IN SUSTAINABLE ALTERNATIVE FUELS FOR AVIATION**

- a) ICAO is facilitating on a global basis the promotion and harmonization of initiatives that encourage and support the development of sustainable alternative fuels for international aviation. The following summarize the key activities in which ICAO will be engaged in to promote this objective:
 - 1) **Activity A:** Providing fora for education and outreach on sustainable alternative fuels for aviation
 - 2) **Activity B:** Providing fora for facilitating the exchange of information on financing and incentives for sustainable alternative fuels for aviation programmes working with the relevant UN and regional financial entities.

- 3) **Activity C:** Facilitating development of standardized definitions, methodologies and processes to support the development of sustainable alternative fuels for aviation, taking into consideration the work that has been done so far in this area
- 4) **Activity D:** Supporting a platform for access to research roadmaps and programmes

5. SUMMARY OF ACCOMPLISHMENTS ON SUSTAINABLE ALTERNATIVE FUELS FOR AVIATION

2008 - Accomplishments

Tests and Demonstrations

- Airbus flew its A380 test aircraft with one of its four engines running on a 40% blend of Gas To Liquid (GTL) fuel with conventional jet fuel on 1 February 2008
- Virgin Atlantic flew a Boeing 747-400 on 23 February 2008 with one engine operating on a 20% biofuel mix produced from babassu oil and coconut oil
- Air New Zealand flew a Boeing 747-400 with one engine on 50% jatropha derived Hydrotreated Renewable Jet (HRJ) biofuel and 50% kerosene on 30 December 2008

2009 - Accomplishments

Educational Forums/Outreach

- ICAO Workshop on Aviation and Alternative Fuels 10 to 12 February 2009
- Annual US/CAAFI Meeting 30 September to 1 October 2009

Fuel certification/Qualification

- ASTM D-7566 (Standard Specification for Aviation Turbine Fuel Containing Synthesized Hydrocarbons) approved September 1, 2009, first new jet fuel approval in 20 years

Tests and Demonstrations

- Continental Airlines flew a Boeing 737-800 with one engine using 50% jet fuel and 50% algae and jatropha mix on 7 January 2009
- JAL flew a 50% HRJ bio-fuel (derived from camelina, jatropha and algae) and 50% kerosene mix on a Boeing 747-300 on 30 January 2009
- Qatar Airways performed the first revenue flight with alternative fuel on October 12th, 2009. An A340-600 flew from London to Doha with its four engines running with a 48.5% blend of GTL with conventional jet fuel
- KLM flew a 50% HRJ bio-fuel (derived from camelina) and 50% conventional Jet A1 mix on a Boeing 747-400 on 23 November 2009

Policies, Methods and Processes

- European Union requirement lifecycle greenhouse gas emission savings from the use of biofuels shall be at least 35%
- ICAO High-Level Meeting on Aviation and Climate Change 7 to 9 October 2009
- Conclusions and Recommendations from CAAF 2009 (16 to 18 November 2009) on
 1. Environmental sustainability and interdependencies
 2. Technological feasibility and economic reasonableness
 3. Measures to support development and use
 4. Production and infrastructure.
- CAAF2009 declaration and global framework in conjunction with the outcomes of the High-Level Meeting on International Aviation and Climate Change (HLM-ENV) presented as the ICAO input to COP15 (7 to 18 December 2009)

2009 – Accomplishments (continued)**Standardized Definitions and Processes**

- CAAF/09 adopted the Fuel Readiness Level (FRL), developed by CAAFI, as a best practice;
- CAAF/09 defined: drop-in jet fuel blend, drop-in neat jet fuel;
- CAAF/09 recommended the use of life cycle analysis as the appropriate means for comparing the relative emissions from alternative jet fuels to conventional jet fuel;
- CAAF/09 endorsed the use of the existing industry qualification and certification processes as the appropriate means for approving a new alternative jet fuel;
- CAAF/09 took efforts to ensure the consideration of aviation alternative fuels within relevant international, regional and State efforts to develop sustainability criteria for all alternative fuels; and
- Roundtable on Sustainable Biofuels (RSB) published version 1.0 of Principles and Criteria for Sustainable Biofuel Production on 14 November 2009

Key ICAO activities related to sustainable alternative fuels for aviation in 2009**Activity A – Educational Forums / Outreach**

- Workshop on Aviation and Alternative Fuels;
- Conference on Aviation and Alternative Fuels;
- Articles in ICAO Journal Vol. 64, numbers 1 and 5
- ICAO High-Level Meeting on Aviation and Climate Change encouraged wider discussions on the development of alternative fuel technologies and the promotion of the use of sustainable alternative fuels, including biofuels, in aviation in accordance with national circumstances;
- ICAO High-Level Meeting on Aviation and Climate Change encouraged States and international organizations to share their efforts and strategies to promote alternative fuels for aviation, and to bring the results of CAAF/09 to COP15;

Activity B – Facilitating Exchange of Information on Financing and Incentives

- Initial discussions between ICAO and the World and Inter-American Development Banks regarding the financing of sustainable alternative fuel programmes for aviation.

Activity C – Standardized Definitions and Processes

- CAAF/09 adopted the Fuel Readiness Level (FRL), developed by CAAFI, as a best practice to govern communication of technology maturity as a pre-condition to qualification, production and, deployment readiness, including potentially different maturity levels of the fuel production chain, for example, feedstock, conversion technology and fuel qualification;
- CAAF/09 defined: drop-in jet fuel blend, drop-in neat jet fuel;
- CAAF/09 recommended the use of life cycle analysis as the appropriate means for comparing the relative emissions from alternative jet fuels to conventional jet fuel;
- CAAF/09 endorsed the use of the existing industry qualification and certification processes as the appropriate means for approving a new alternative jet fuel;
- CAAF/09 took efforts to ensure the consideration of aviation alternative fuels within relevant international, regional and State efforts to develop sustainability criteria for all alternative fuels;

Activity D – Platform for Access to Research Roadmaps and Programmes

- Plans and objectives presented during CAAF/09 were integrated into an ICAO Global Framework for Aviation Alternative Fuels.

6. SUMMARY OF FUTURE OBJECTIVES ON SUSTAINABLE ALTERNATIVE FUELS FOR AVIATION

2010 – Projected Activities

Educational Forums/Outreach

- Annual US/CAAFI Meeting
- ...

Fuel certification/Qualification

- US/CAAFI anticipates HRJ qualification as a 50/50 blend with petroleum jet fuel
- ...

Policies, Methods and Processes

- ICAO 37th Assembly Meeting in September 2010
 - Programme for sustainable alternative fuels for aviation is presented for consideration
- ...

Key ICAO activities related to sustainable alternative fuels for aviation in 2010

Activity A – Educational Fora / Outreach

- ICAO Environmental Colloquium
- ICAO Environmental Report
- Articles in ICAO Journal Vol. 65

Activity B – Facilitating Exchange of Information on Financing and Incentives

- ICAO continues to facilitate access to financing for sustainable alternative fuels for aviation programmes.

Activity C – Standardized Definitions and Processes

- ICAO and its Contracting States continue efforts to develop a common lifecycle analysis framework for comparing the relative emissions from alternative fuels to conventional fuels for aviation working within national and international framework;
- ICAO continues to facilitate aviation's participation in ongoing efforts to develop a common definition of sustainability criteria for biofuels

Activity D – Platform for Access to Research Roadmaps and Programmes

- ICAO High-Level Plan on Sustainable Alternative Fuels for Aviation updated as required.
- ICAO future work programme on sustainable alternative fuels for aviation decided by the 37th Assembly.

2011 - Projected Activities**Educational Forums/Outreach**

- SWAFEA International Conference
- Annual US/CAAFI Meeting
- ...

Fuel Certification/Qualification

- US/CAAFI anticipates neat Fischer-Tropsch (FT) fuel certification
- ...

Policies, Methods and Processes

- CAAF 2011
- Conclusion of the SWAFEA study for the European Commission
- ...

2012 - Projected Activities**Educational Forums/Outreach**

- Annual US/CAAFI Meeting
- ...

Fuel Certification/Qualification

- US/CAAFI anticipates Fermented Renewable Jet (FRJ) blend research report
- US/CAAFI anticipates Pyrolytic Renewable Jet (PRJ) blend research report
- ...

Policies, Methods and Processes

- Alpha-Bird program complete
- ...

2013 – Projected Activities**Educational Forums/Outreach**

- WAAF2013
- Annual US/CAAFI Meeting
- ...

Fuel Certification/Qualification

- US/CAAFI anticipates neat HRJ certification
- US/CAAFI anticipates FRJ blend certification
- US/CAAFI anticipates PRJ blend certification
- ...

Policies, Methods and Processes

- ICAO 38th Assembly
- ...

2016 - Projected Activities

Policies, Methods and Processes

- US/Consortium for Continuous Low Energy, Emissions, and Noise (CLEEN) goal that 20% of jet fuel available for purchase by United States commercial airlines and cargo carriers be alternative fuels
- ...

2017 – Projected Activities

Policies, Methods and Processes

- European Union requirement lifecycle greenhouse gas emission savings from the use of biofuels shall be at least 50%
- ...

2018 – Projected Activities

Policies, Methods and Processes

- European Union requirement lifecycle greenhouse gas emission savings from the use of biofuels shall be at least 60%
- ...

2020 - Projected Activities

Policies, Methods and Processes

- European Union target of 10% use of renewable energy sources in transport
- ...

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APPENDIX B

The Conference on Aviation and Alternative Fuels, convened by the International Civil Aviation Organization (ICAO) in Rio de Janeiro, Brazil from 16 to 18 November 2009 with the participation from States and industry adopted the following declaration and recommendations:

DECLARATION OF THE CONFERENCE ON AVIATION AND ALTERNATIVE FUELS Rio de Janeiro, Brazil, 18 November 2009

Welcoming the Decision of the ICAO Council to fully accept the Programme of Action on International Aviation and Climate Change, which includes global aspirational goals in the form of fuel efficiency, a basket of measures and the means to measure progress, as an important first step in the work of the Member States of ICAO to address greenhouse gas (GHG) emissions from international aviation;

Whereas the High-Level Meeting on International Aviation and Climate Change recommended inter alia that States and international organizations actively participate in the Conference on Aviation and Alternative Fuels to share their efforts and strategies to promote such work, and to update the 15th meeting of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP15) in December 2009;

Noting that the introduction of sustainable alternative fuels for aviation will help to address issues of environment, economics, and supply security;

Noting the very limited availability of qualified alternative fuels for aviation;

Noting that sustainable alternative fuels for aircraft can be produced from a wide variety of feedstocks for use in global aviation, suggesting that many regions are candidate production locations;

Acknowledging that sustainable alternative fuels for aviation may offer reduced lifecycle CO₂ emissions compared to the lifecycle of conventional aviation fuels;

Acknowledging that sustainable alternative fuels for aviation may also offer benefits to surface and local air quality;

Acknowledging that the technology exists to produce substitute, sustainable fuels for aviation that take into consideration world's food security, energy and sustainable development needs;

Recognizing that the production of sustainable alternative fuels for aviation could promote new economic opportunities;

Recognizing the need for a common definition of sustainability requirements at the international level;

Recognizing that aviation is a highly technology driven industry that is responsive to the development and introduction of new technologies;

Recognizing that industry has successfully demonstrated the technological feasibility of using sustainable alternative jet fuel blends in flight tests without affecting safety;

Welcoming the progress achieved through regional initiatives as a result of the cooperation among the major aviation sustainable alternative fuel stakeholders;

Welcoming the activities of the Commercial Aviation Alternative Fuels Initiative (CAAFI), initiated by the United States and the Sustainable Way for Alternative Fuels and Energy in Aviation (SWAFEA), initiated by the European Commission;

Recognizing that sustainably-produced fuel derived from sugarcane is already being used in piston engine aircraft in Brazil;

Welcoming the pace at which new alternative fuels for aviation are being qualified and in particular, the qualification of aviation jet fuels containing synthesized hydrocarbons;

Recognizing that the ICAO Council will further elaborate on measures to assist developing States as well as to facilitate access to financial resources, technology transfer and capacity building including possible application of flexible mechanisms under UNFCCC, such as the Clean Development Mechanism (CDM), to international aviation;

Recognizing the urgent need for measures to facilitate access to financial resources, technology exchange, and capacity building specific to aviation alternative fuels;

Acknowledging that the demand for sustainable fuels extends beyond international aviation, but that aircraft have unique fuel specification requirements;

Recognizing the need to encourage supply chain stakeholders to ensure that sustainable alternative fuels are made available to aviation;

Acknowledging that with sufficient incentive and supply, international aviation could deliver a substantial CO₂ reduction benefit from the use of sustainable alternative fuels for aircraft; and

Recognizing that due to its small network of fuel distribution points and its predictable demand international aviation is well suited to becoming a global first adopter of sustainable alternative fuels.

Declares that:

1. ICAO and its Member States endorse the use of sustainable alternative fuels for aviation, particularly the use of drop-in fuels in the short to mid-term, as an important means of reducing aviation emissions;
2. ICAO establish a Global Framework for Aviation Alternative Fuels (GFAAF) on aviation and sustainable alternative fuels to communicate what individual and shared efforts expect to achieve with sustainable alternative fuels for aviation in the future for consideration by the 37th Session of the ICAO Assembly. The GFAAF will be continually updated;
3. Member States and stakeholders work together through ICAO and other relevant international bodies, to exchange information and best practices, and in particular to reach a common definition of sustainability requirements for alternative fuels;
4. Member States are encouraged to work together expeditiously with the industry to foster the research, development, deployment and usage of sustainable alternative fuels for aviation;
5. Funding efforts that support the study and development of sustainable alternative fuels and other measures to reduce GHG emissions, in addition to the funding for research and technology programmes to further improve the efficiency of air transport, be maintained or improved;

6. Member States are encouraged to establish policies that support the use of sustainable alternative aviation fuels, ensure that such fuels are available to aviation and avoid unwanted or negative side effects, which could compromise the environmental benefits of alternative fuels;
7. ICAO Council should further elaborate on measures to assist developing States as well as to facilitate access to financial resources, technology transfer and capacity building;
8. There is an urgent need for measures to facilitate access to financial resources, technology exchange, and capacity building specific to sustainable aviation alternative fuels;
9. ICAO takes the necessary steps with the aim of considering a framework for financing infrastructure development projects dedicated to sustainable aviation alternative fuels and incentives to overcome initial market hurdles;
10. ICAO continue to facilitate efforts to develop a lifecycle analysis framework for comparing the relative GHG emissions from sustainable alternative fuels to the lifecycle of conventional fuels for aviation; and
11. ICAO and its Member States should strongly encourage wider discussions on the development of alternative fuel technologies and support the use of sustainable alternative fuels, including biofuels, in aviation in accordance with national circumstances.

RECOMMENDATIONS BY CAAF

The Conference on Aviation and Alternative Fuels has recommended, in order to progress the work leading to the upcoming 37th Session of the ICAO Assembly in 2010 and beyond, that the ICAO Council:

Present the CAAF2009 Declaration and Global Framework for Aviation Alternative Fuels (GFAAF) in conjunction with the outcomes of the High-level Meeting on International Aviation and Climate Change (HLM-ENV) as the ICAO input to COP15.

This input shall:

1. *Highlight* the significance of the CO₂ reduction potential from sustainable alternative aviation fuels in its position to COP15;
2. *Seek support* from States at COP15 for the development and implementation of these fuels;
3. *Encourage* Member States to inform ICAO of any plans to establish sustainable alternative aviation fuel production facilities in the short, medium, and long-term;
4. *Incorporate* those plans into the ICAO Global Framework for Aviation Alternative Fuels; and
5. *Promote* the production and use of sustainable alternative fuels for aviation.

Ensure that a programme for sustainable alternative fuels for aviation is presented for consideration during the next Assembly.

Input to the Assembly would:

6. *Encourage* Member States to develop policy actions to *accelerate* the appropriate development, deployment and use of such fuels;
7. *Encourage* Member States to work together through ICAO and other relevant international bodies, to exchange information and best practices, and in particular to reach a common definition of sustainability requirements;
8. *Encourage* Member States to work together expeditiously with the industry to foster the development and implementation of sustainable alternative fuels for aviation;
9. *Recommend* that policy recommendations and decisions considered by ICAO and individual States consider environmental, social and economic sustainability aspects, while also taking into account technical requirements including safety aspects;
10. *Encourage* Member States and *invite* industry to actively participate in further work on sustainable alternative fuels for aviation facilitated by ICAO; and
11. *Inform* the Assembly of initiatives by States and other organizations related to sustainable alternative fuels for aviation.

Promote the use of sustainable alternative fuels for aviation.

The ICAO Council:

12. *Resolves* that the use of sustainable alternative fuels for aviation is an important opportunity to reduce aviation CO₂ emissions;
13. While *noting* the past and ongoing efforts of the aviation sector in developing and deploying sustainable alternative fuels for aviation, and their potential for substantially reducing aviation's CO₂ emissions, *affirms* that the prospect of reduction in CO₂ emissions through sustainable alternative fuels should not lead to any relaxation or reduction of efforts related to other measures to reduce the environmental impact of aviation;
14. *Encourages* manufacturers to pursue fuel cell technology with the aim of providing energy for on-board electrical supply and/or on ground operations; and
15. *Encourages* relevant industry stakeholders to work with financial institutions and fuel producers to ensure that adequate supplies of sustainable alternative fuels for aviation are introduced expeditiously.

Facilitate exchange of information on financing and incentives for sustainable alternative fuels for aviation programmes working with the relevant UN bodies.

The ICAO Council:

16. *Commits* to further elaborate on measures to assist developing States as well as to facilitate access to financial resources, technology transfer and capacity building;
17. *Recognizes* the urgent need for measures to facilitate access to financial resources, technology exchange, and capacity building specific to aviation alternative fuels;
18. *Commits* to encouraging cooperation among stakeholders for the development and deployment of sustainable alternative fuels for aviation with the aim of ensuring adequate financing for the successful execution of those programs;
19. *Commits* to take the necessary steps with the aim of considering a framework for financing of infrastructure development projects dedicated to aviation alternative fuels and incentives to overcome initial market hurdles;
20. *Encourages* Member States to consider measures to support sustainable aviation alternative fuels research and development, investments in new feedstock cultivations and production facilities, as well as incentives to stimulate commercialisation and use of sustainable alternative fuels for aviation to accelerate the reduction of aviation CO₂ emissions; and
21. *Recommends* funding efforts that support the study and development of sustainable alternative fuels and other measures to reduce GHG emissions, in addition to the funding for research and technology programmes to further improve the efficiency of air transport, be maintained or improved.

Facilitate standardized definitions and processes to support the development of sustainable alternative fuels for aviation.

The ICAO Council:

22. *Recommends* the use of life cycle analysis according to internationally harmonized methodologies as the appropriate means for comparing the relative GHG emissions from sustainable alternative jet fuels to conventional jet fuel;
23. *Encourages* Member States, working with industry, to develop an agreed methodology for determining the characteristics of blended jet fuels at the point of fuel delivery to aircraft operators;
24. *Considers* the use of the global industry qualification process as the appropriate means for approving a new drop-in alternative jet fuel;
25. *Adopts* the Fuel Readiness Level (FRL) as a best practice to govern communication of technology maturity leading to qualification, production and, deployment readiness; and
26. *Encourages* Member States to continue the development of sustainability criteria for sustainable aviation fuels that are consistent with any general sustainability criteria for fuels.

Facilitate the exchange of information regarding sustainable alternative fuels for aviation.

The ICAO Council:

27. *Facilitate* the dissemination of best practices for cost benefit analysis methodology appropriate for evaluating sustainable alternative fuels for aircraft;
28. *Directs* the Secretariat to establish a web site to facilitate the exchange of information between States and International Organizations interested in advancing sustainable alternative fuels for aircraft; and
29. *Recommend* that Member States and International Organizations share best practices and techniques that can apply to the development and scale up of the production of sustainable alternative fuels for aircraft through ICAO.

Facilitate research activities to expand the global knowledge base on sustainable alternative fuels for aviation.

The ICAO Council:

30. *Recommends* that ICAO further explore the environmental benefits and trade-offs of sustainable alternative fuels with reference to surface and local air quality; and
31. *Recommends* that ICAO actively monitor the overall process already engaged in the study, development and approval of alternative fuels for aviation.