

**ATTACHMENT** to State letter AN 1/17-09/093

**QUESTIONNAIRE CONCERNING VOLUNTARY ACTIVITY FOR GHG REDUCTION/MITIGATION  
IN THE AVIATION SECTOR**

A copy of the questionnaire, in Microsoft Word format, has been posted on the Internet at <http://www.icao.int/icao/en/env/measures.htm>.

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**Q1.** Name of the voluntary activity.

<a href="#">Asia and Pacific Initiative to Reduce Emissions (ASPIRE)</a>
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**Q2.** Type<sup>1</sup> of the voluntary activity.

<input type="checkbox"/> Unilateral commitment <input type="checkbox"/> Public voluntary scheme <input type="checkbox"/> Negotiated agreement <input checked="" type="checkbox"/> Other (Please describe the activity in the box below.)
<a href="#">ASPIRE is a voluntary agreement between the air navigation service providers of Australia, United States, New Zealand, Japan, Singapore and Thailand to work closely together to reduce aircraft fuel burn and carbon dioxide emissions through efficiency improvements on key Asian and Pacific routes.</a>

**Q3.** Please mark all the participants<sup>2</sup> of the activity.

<input checked="" type="checkbox"/> Airline <input type="checkbox"/> Airline association <input type="checkbox"/> Manufacturer <input type="checkbox"/> Manufacturer association <input checked="" type="checkbox"/> Airport authority <input checked="" type="checkbox"/> Air traffic control <input checked="" type="checkbox"/> Government <input type="checkbox"/> Other (Please specify in the box below.)
<a href="#">Airlines, air traffic control, airport authorities and governments.</a>

**Q4.** Is the voluntary activity accompanied by a side agreement<sup>3</sup>?

<input checked="" type="checkbox"/> Yes (Proceed to Q4-1.) <input type="checkbox"/> No (Proceed to Q5.)
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<sup>1</sup>The features of each type of voluntary activity are as follows.

- Unilateral Commitment: The environmental improvement plan established by the participant itself, and declared to the stakeholders, such as employees, stockholders, consumers, etc. Target and measures to environmental improvement are established by the participant itself.
- Public Voluntary Scheme: The scheme which the participant agrees voluntarily with the standard on environmental improvement target, technology, management, etc. established by public organization such as Ministry for Environment.
- Negotiated Agreement: Contract based on negotiation between public organization (national government/local government) and industries. Both parties can independently decide whether to agree to the contract.

<sup>2</sup> If you marked “Public voluntary scheme” on Q2, the public organization which establishes the standard is included in the participants. If you marked “Negotiated agreement” on Q2, the public organization which agrees to the contract is included in the participants.

<sup>3</sup> “Side agreement” is the agreement between the participant of the activity and a third party. For example, the agreement between an airline and an engine manufacturer, which prescribes that the manufacturer assist the airline to attain its target by introducing new emission-reducing technologies, is considered as a side agreement. For more information, please refer to Part II Paragraph 6.5.2 on “Template and Guidance on Voluntary Measures”, released on ICAO CAEP website ([http://www.icao.int/icao/en/env/Caep\\_Template.pdf](http://www.icao.int/icao/en/env/Caep_Template.pdf)).

**Q4-1.** If the voluntary activity is accompanied by side agreement, please describe the parties and outline the side agreement.

Current partners are Airservices Australia, Airways New Zealand, the United States Federal Aviation Administration (FAA), Japan Civil Aviation Bureau (JCAB), the Civil Aviation Authority of Singapore (CAAS) and AeroThai.

ASPIRE is an agreement, initially signed in February 2008 by Airservices Australia, Airways New Zealand and the FAA, whereby partners pledge to adopt and promote best practices in air traffic management and operational procedures that have demonstrated and proven success in the reduction of aviation greenhouse gases, as well as to develop work programs to promote future gains for the environment. Since 2008 membership has expanded to include JCAB in October 2009, CAAS in February 2010, and AeroThai in June 2011.

**Q5.** Please answer the following questions concerning the coverage of the voluntary activity:

**Q5-1.** Select all green house gases (GHGs) which are part of the voluntary activity.

Carbon dioxide (CO<sub>2</sub>)     Methane (CH<sub>4</sub>)     Nitrous oxide (N<sub>2</sub>O)     Hydrofluorocarbons (HFCs)  
 Perfluorocarbons (PFCs)     Sulphur hexafluoride (SF<sub>6</sub>)     Nitric oxide & Nitrogen dioxide (NO<sub>x</sub>)     Water vapor (H<sub>2</sub>O)     Other (Please specify in the next box.)

All GHGs from aircraft operations with main focus on CO<sub>2</sub>.

**Q5-2.** Please select all operations<sup>4</sup> which are part of the voluntary activity.

International passenger flight     Domestic passenger flight     International cargo flight     Domestic cargo flight     Other (Please specify in the next box.)

International passenger and international cargo flights.

**Q6.** Please answer the following questions concerning the index to measure the effect of the voluntary activity.

**Q6-1.** Select the index used to measure the effect of the voluntary activity.

Absolute quantity of GHG emissions<sup>5</sup> (Please outline the index in the box below.)  
 Unit of GHG emissions<sup>6</sup> (Please outline the index in the box below.)  
 Introduction of specific technology  
 Introduction of specific procedure     Other (Please specify in the box below.)

Absolute quantity of GHG emissions reduction on specific flights.

<sup>4</sup> In case that the voluntary activity describes its coverage from the other viewpoint than listed above, such as “operation under IFR”, “operation of aircraft larger than specific weight”, etc. and that aim of the activity is not linked to operation directly, for example introduction of new technology which contributes reduction/mitigation of GHGs, please mark “other” and please describe feature.

<sup>5</sup> The example of the unit is Ton-CO<sub>2</sub>, Ton-C, m<sup>3</sup>-CO<sub>2</sub>, etc.

<sup>6</sup> The example of the unit is g-CO<sub>2</sub>/RPK(Revenue Passenger Kilometer), g-CO<sub>2</sub>/ASK(Available Seat Kilometer), g-CO<sub>2</sub>/RTK(Revenue Ton Kilometer), g-CO<sub>2</sub>/ATK (Available Ton Kilometer), etc.

**Q6-2.** Please outline the procedure to acquire data to calculate or describe the index of Q6-1.

A series of trans-Pacific demonstration flights have been undertaken for which absolute gate-to-gate fuel savings using existing efficiency procedures with constraints removed have been specifically measured. In addition to the test flights the group has commenced data modelling directly with the participating airlines. The data collection will form the bases for proposed emissions targets.

**Q7.** Please answer the following questions concerning the target of the voluntary activity.

**Q7-1.** Is the target of the voluntary activity clearly defined?

Yes (Proceed to Q7-2.)  No (Proceed to Q8.)

**Q7-2.** Please describe the target of the voluntary activity, including substance of the target, target year, base year.

There is no set quantitative target as such but a general objective to maximise fuel and emissions reductions on long range flights across the Pacific.

ASPIRE is committed to work closely with airlines and other stakeholders in the region to:

- accelerate the development and implementation of operational procedures to reduce the environmental footprint for all phases of flight, from gate to gate;
- facilitate the use of environmentally friendly procedures and standards world-wide;
- capitalise on existing technology and best practices;
- develop shared performance metrics to measure improvements in the environmental performance of the air transport system;
- provide a systematic approach to ensure appropriate mitigation actions with short, medium and long-term results; and
- communicate and publicise ASPIRE environmental initiatives, goals, progress and performance to the global aviation community and the general public.

**Q8.** Please list the measures to attain the target or to reduce/mitigate GHGs.

A range of air traffic management procedures and operational procedures which include:

- Surface Movement and Runway Monitoring
- Departure Management and En-Route/Oceanic Transition
- User Preferred Routes (UPRs)
- Dynamic Airborne Reroute Procedures (DARP)
- Oceanic Separation Reductions
- Reduced Vertical Separation Minima (RSVM)
- Flexible Track Systems
- Arrivals Management – Time-based arrivals management
- Continuous Descent Arrivals (CDA) – including Tailored Arrivals; RNAV and RNP-AR approaches
- Performance Based Navigation (PBN) Implementation

**Q9.** Please answer the following questions concerning periodic review of the voluntary activity.

**Q9-1.** Is the progress of the voluntary activity reviewed periodically?

Yes (Proceed to Q9-2.)    No (Proceed to Q10.)

**Q9-2.** Please describe the frequency of the periodic review.

Ongoing process of exploring opportunities for more efficient procedures.

**Q9-3.** Is a third party's opinion considered/to be considered in the periodic review?

Yes (Proceed to Q9-4.)    No (Proceed to Q10.)   All stakeholders' opinions are considered.

**Q9-4.** Please outline the third party opinion.

**Q10.** Please answer the following questions concerning legislative obligation.

**Q10-1.** Is there any legislative obligation on attainment of the target?

Yes (Proceed to Q10-2.)    No (Proceed to Q11.)

**Q10-2.** Please describe legislative obligation, including measures taken in case that the participant of the voluntary activity fails to attain the target.

No legislative obligation involved.

**Q11.** Please answer the following questions concerning disclosure of information<sup>7</sup> on the voluntary activity:

**Q11-1.** Is the name of the participant of the voluntary activity disclosed to the public?

Yes    No

**Q11-2.** Is the target of the voluntary activity disclosed to the public? (If you marked "no" at Q7-1, the answer to this question shall be "not applicable".)

Yes    No    Not applicable

**Q11-3.** Are the measures taken/to be taken by the participant of the voluntary activity to attain the target/reduce or mitigate GHGs disclosed to the public?

Yes    No

<sup>7</sup> Item(s) to which the answer is/are "no" from Q11-1 to Q11-5, are considered but this information will not be included in the final report.

**Q11-4.** Is the result of each periodic review disclosed/to be disclosed to the public? (If you marked “no” at Q9-1, the answer to this question shall be “not applicable”.)

Yes    No    Not applicable

**Q11-5.** Is the effect of the voluntary activity disclosed/to be disclosed to the public?

Yes    No

**Q12.** Please answer the following questions concerning effect of the voluntary activity:

**Q12-1.** Is third party’s opinion considered/to be considered when examining the effect of the voluntary activity?

Yes (Proceed to Q12-2.)    No (Proceed to Q12-3.)

**Q12-2.** Please outline the third party opinion.

Not applicable

**Q12-3.** How much of GHGs amount emitted per year, in CO<sub>2</sub> weight equivalent are reduced or mitigated/expected to be reduced or mitigated by the voluntary activity?

There is a potential annual saving of over 37 million litres of fuel and more than 100,000 tonnes of CO<sub>2</sub> emissions if all flights between Australia, New Zealand, the United States and Canada were operated under ASPIRE conditions.

**Q13.** Please provide the website address for the voluntary activity, if any, in the box below.

[www.aspire-green.com](http://www.aspire-green.com)

**Q14.** Please describe additional information, if any.

With the success of ASPIRE, a sister initiative called the Indian Ocean Strategic Partnership to Reduce Emissions (INSPIRE) was established in March 2011 between the air navigation service providers of India, Australia and Africa. INSPIRE has now expanded to include Abu Dhabi Airports, the Abu Dhabi Department of Transport, the General Civil Aviation Authority (GCAA) of the United Arab Emirates, Dubai Air Navigation Services, the Sri Lankan Airport and Aviation Services, Maldives Airport and the Sultanate of Oman Civil Aviation Authority. INSPIRE focuses on improving operational fuel efficiency in the Indian Ocean and Arabian Sea region – more specifically on routes linking the Arabian Gulf to Australia; Southern Africa to Australia and South East Asia; and the South-West Indian Ocean to the Arabian Gulf region.

Duly completed questionnaires should be returned to:

Voluntary Measures Focal Point  
ICAO Committee on Aviation Environmental Protection (CAEP)  
Attention: Mr. Tetsu Shimizu  
Policy Coordinator for Global Environment

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