

ATTACHMENT to State letter AN 1/17-09/03

**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 voluntary Memorandum of Understanding to limit or reduce emissions of greenhouse gas from aviation in Canada between Air Transport Association of Canada and Transport Canada
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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 checked="" type="checkbox"/> Negotiated agreement
<input type="checkbox"/> Other (Please describe the activity in the box below.)		

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

<input type="checkbox"/> Airline	<input checked="" type="checkbox"/> Airline association	<input type="checkbox"/> Manufacturer	<input type="checkbox"/> Manufacturer association	<input type="checkbox"/> Airport authority		
<input type="checkbox"/> Air traffic control					<input checked="" type="checkbox"/> Government	<input type="checkbox"/> Other (Please specify in the box below.)

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

<input type="checkbox"/> Yes (Proceed to Q4-1.)	<input checked="" 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.

N/A
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**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.

<input checked="" type="checkbox"/> Carbon dioxide (CO <sub>2</sub> ) <input type="checkbox"/> Methane (CH <sub>4</sub> ) <input type="checkbox"/> Nitrous oxide (N <sub>2</sub> O) <input type="checkbox"/> Hydrofluorocarbons (HFCs) <input type="checkbox"/> Perfluorocarbons (PFCs) <input type="checkbox"/> Sulphur hexafluoride (SF <sub>6</sub> ) <input type="checkbox"/> Nitric oxide & Nitrogen dioxide (NO <sub>x</sub> ) <input type="checkbox"/> Water vapor (H <sub>2</sub> O) <input type="checkbox"/> Other (Please specify in the next box.)
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**Q5-2.** Please select all operations<sup>4</sup> which are part of the voluntary activity.

<input checked="" type="checkbox"/> International passenger flight <input checked="" type="checkbox"/> Domestic passenger flight <input checked="" type="checkbox"/> International cargo flight <input checked="" type="checkbox"/> Domestic cargo flight <input type="checkbox"/> Other (Please specify in the next box.)
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**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.

<input type="checkbox"/> Absolute quantity of GHG emissions <sup>5</sup> (Please outline the index in the box below.) <input checked="" type="checkbox"/> Unit of GHG emissions <sup>6</sup> (Please outline the index in the box below.) <input type="checkbox"/> Introduction of specific technology <input type="checkbox"/> Introduction of specific procedure <input type="checkbox"/> Other (Please specify in the box below.)
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The Memorandum sets out a greenhouse gas emissions reduction goal of 1.1 percent average annual improvement of fuel efficiency, on a per unit basis, expressed in litres of fuel per Revenue Tonne Kilometre.

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<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.

Each year, the Air Transport Association of Canada (ATAC) requested the following data from its membership in order to populate the ATAC GHG Emissions Reporting System (AGERS) database:

- Litres of fuel burned per year
- Available seat-kilometres or miles (ASK or ASM)
- Available tonne-kilometres or ton miles (ATK or ATM) (cargo only)
- Revenue passenger-kilometres or miles (RPK or RPM)
- Revenue tonne-kilometres or ton-miles (RTK or RTM) (cargo only)
- Total available tonne-kilometres or ton-miles (total ATK or total ATM) (total of passengers weight @ 220lbs each plus cargo weight)
- Total revenue tonne-kilometres or ton-miles (total RTK or total RTM) (total of passengers weight at 220lbs each plus cargo weight)

Once that data is collected, de-identified and aggregated the AGERS database is equipped to produce the following data products:

- Current and annual air sector GHG total emission summary reports
- Annual air sector GHG emissions intensity trend reports
- Individual company emissions reports, on request by company affected
- Air sector reports using aggregate data

The reports generated by the AGERS database provide a mechanism whereby we may compare ATAC member fleet greenhouse gas emissions on a per unit basis.

**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.

- The Memorandum sets out a greenhouse gas emissions reduction goal of 1.1 percent annual average improvement of fuel efficiency, on a per unit basis, expressed in litres of fuel per Revenue Tonne Kilometre. The Memorandum sets a target of cumulative improvement of 24 percent by 2012, compared to the 1990 base case scenario.

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

Under the terms of the Memorandum, the ATAC undertakes to encourage its members to improve their efficiency and thus reduce collective member fleet greenhouse gas emissions. The Memorandum also addresses the principles governing the Agreement, the responsibilities of the parties, and provisions for its management and administration.

ATAC has continuously encouraged its member companies to participate in AGERS under the auspices of the MOU. This has taken place through regular emails and articles in Flightplan, ATAC's magazine. Presentations have also been given directly to member companies and at the annual Environmental Affairs Committee meeting.

As a result of these efforts, ATAC has been able to capture data covering in excess of 95% of Canadian domestic passenger and cargo traffic. Participation has steadily increased and ATAC continues to promote participation in this system and in the objectives of the MOU to its membership. ATAC's Vice President, Operations has been vigilant in securing this data as well as de-identifying commercial sensitive information.

ATAC has also encouraged its members to participate in ICAO conferences and other emissions reduction fora.

In addition to the data collected in the AGERS system, the MOU sets out an action plan for the reduction of GHGs from the aviation sector. Various methods for improving operational efficiencies and reducing emissions are set out in the MOU and its appendices.

Pursuant to the terms of the MOU, ATAC's member companies have instituted new procedures to limit fuel burn and make their operations more efficient and green.

**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.

The progress is reviewed on an annual basis, by development and publication of annual Reports.

**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.)

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

The audit of the MOU will be conducted in 2010; third party opinion would be available in 2010.

**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.

N/A

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

<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.

**Q11-1.** 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

**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.

The audit of the MOU will be conducted in 2010; third party opinion would be available in 2010.

**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?

In 2007, total emissions from the aviation sector, measured in CO<sub>2</sub>-equivalents, were 14.38 megatonnes, which represent a 6.9% growth from 2006 levels. The growth of total emissions from both passenger and cargo sectors is consistent with overall growth of the industry, where the efficiency factor of CO<sub>2</sub>-equivalent per RPK improved by 1.9% to 116.7 grams. In contrast, the cargo sector enjoyed gradual improvements in the emissions intensity, where emissions factor per cargo RTK has declined by 11% from 2006 levels to 8854 grams of CO<sub>2</sub>-equivalent. Since the inception of the MOU, the total emissions from the aviation sector rose by 13.6%, which is consistent with the overall growth in both passenger and cargo traffic of 17% from 2005 to 2007, when taking into account the emission reductions undertaken by the industry over this period.

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

<http://www.tc.gc.ca/programs/environment/ecofreight/about/voluntary/voluntaryagreementsair.htm>  
<http://www.atac.ca/en/publications/index.html>

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

On June 29, 2005 the Air Transport Association of Canada (ATAC) and Transport Canada signed a voluntary agreement based on ICAO's template. This agreement was the first of its kind within the aviation sector in Canada and in the world. Upon signing this Memorandum of Understanding (MOU), Canada's air service providers became the first air carriers in the world to have reached a voluntary agreement with their respective governments to reduce the growth of GHG emissions both domestically and internationally.

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  
Civil Aviation Bureau of Japan  
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