

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>.

Name: Souhaïel DALLEL

Organization: TUNISAIR

Phone: 021693301400

Facsimile: 0021670836924

E-mail: souhaïel.dallel@tunisair.com.tn

Q1. Name of the voluntary activity.

Improving the efficiency of operations

Q2. Type¹ of the voluntary activity.

Unilateral commitment Public voluntary scheme Negotiated agreement

Other (Please describe the activity in the box below.)

Q3. Please mark all the participants² of the activity.

Airline Airline association Manufacturer Manufacturer association Airport authority

Air traffic control Government Other (Please specify in the box below.)

Q4. Is the voluntary activity accompanied by a side agreement?³

Yes (Proceed to Q4-1.) No (Proceed to Q5.)

¹The 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.

² 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.

³ "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).

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

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 (CO₂) Methane (CH₄) Nitrous oxide (N₂O) Hydrofluorocarbons (HFCs)

Perfluorocarbons (PFCs) Sulphur hexafluoride (SF₆) Nitric oxide & Nitrogen dioxide (NO_x) Water

vapor (H₂O) Other (Please specify in the next box.)

Q5-2. Please select all operations⁴ 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.)

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 emissions⁵ (Please outline the index in the box below.)

Unit of GHG emissions⁶ (Please outline the index in the box below.)

Introduction of specific technology

Introduction of specific procedure Other (Please specify in the box below.)

The impact of actions to improve the efficiency of operations is measured by the difference between the amount of CO₂ emitted following the action and the amount that would have been emitted without the efficiency program. The amount of CO₂ emitted is calculated using the formula: CO₂ amount (tons) = amount of fuel burned (tons) x 3.15.

⁴ 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.

⁵ The example of the unit is Ton-CO₂, Ton-C, m³-CO₂, etc.

⁶ The example of the unit is g-CO₂/RPK (Revenue Passenger Kilometer), g-CO₂/ASK (Available Seat Kilometer), g-CO₂/RTK (Revenue Ton Kilometer), g-CO₂/ATK (Available Ton Kilometer), etc.

A-3

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

- **For each flight, the crew records the fuel data (departure gauge, arrival gauge, refill, etc.) on a document called a “line sheet” (*feuille de ligne*).**
- **The document is then entered into a database.**
- **The database entries are used to calculate the fuel burn and CO₂ emissions of each flight.**

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.

Target: reduction of fuel burn and CO₂ emissions by 7% (approximately 2.5% annually)

Base year: 2005

Starting year: 2007

Target year: 2010

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

- **Optimize flight planning**
 - **Introduction of the cost index**
 - **Improved choice of alternate fields**
 - **Take account of wind and real temperatures**
 - **More detailed calculations for fuel forecasts required**
- **More efficient flying**
- **Reduce aircraft weight**
- **Improve aircraft aerodynamics**
- **Improve stopover assistance**

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.

Every six months

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.)

A-4

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.

Q11. Please answer the following questions concerning disclosure of information⁷ 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

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.)

⁷Item(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.

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Q12-2. Please outline the third party opinion.

Q12-3. How much of GHGs amount emitted per year, in CO₂ weight equivalent are reduced or mitigated/expected to be reduced or mitigated by the voluntary activity?

Actions to improve the efficiency of operations have resulted in a reduction of about 45,000 tons of CO₂ emissions per year.

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

Q14. Please describe additional information, if any.

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

e-mail: fpvm@mlit.go.jp

fax.: +81-3-5253-1656

Copy to:

Jane Hupe

Secretary, CAEP

E-mail: jhupe@icao.int

Fax: +1 (514) 954-6744