

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

Q1. Name of the voluntary activity.

Fuel Saving Project (FSP)

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 agreement³?

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

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)

¹The feature of each type of the voluntary activities is 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: Public: 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 issue.
- 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 to the participants. If you marked “Negotiated agreement”, the public organization which agrees to the contract is included to the participants.

³ “Side agreement” is the agreement between the participant of the activity and 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 third 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).

Q5-2. Please select all operations⁴ which are part of the voluntary activity.

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

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 checked="" type="checkbox"/> Absolute quantity of GHG emission ⁵ (Please outline the index in the box below) <input type="checkbox"/> Unit of GHG emission ⁶ (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)
Absolute quantity of CO ₂ emission, caused by fuel consumption of flights.

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

<p>Amount of fuel saving quantities are converted to Ton-CO₂ by certain formula.</p> <ul style="list-style-type: none"> - Impact of weight reduction is converted to fuel consumption by certain formula. - Impact of Engine performance improvement is calculated by certain formula based on maker's spec. - Impact of flight route improvement. <p>Saved fuel quantity shall be converted to Ton-CO₂ by IPCC default value.</p>

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

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

<input type="checkbox"/> Yes (Proceed to Q7-2.) <input checked="" type="checkbox"/> No (Proceed to Q8.)

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

<p>We conduct FSP as the purpose of simple reduction of absolute CO₂ emission because scale/business model of the company is limited. In the future, we aim to set up the target to respect "the program of action" to be developed by GIACC.</p>
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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.

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

Aircraft weight reduction To reduce onboard equipments, such as unused restraint system etc. To reduce onboard extra fuel by reviewing alternate airport / flight planning processes. To reduce onboard water. Use of light weight body paints / Induce of light weight cargo pallets.
Engine performance improvement Periodical engine water washes.
Flight hour reduction To choose optimal flight routes.
Optimum flight procedures Increase of GPU instead of APU during ground time Prioritized use of delayed flap & delayed gear upon approach RNAV and Tailored arrival upon approach Prioritized use of Idle-reverse upon landing Prioritized use of two engines taxi after landing

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

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

<input checked="" type="checkbox"/> Yes (Proceed to Q9-2.) <input type="checkbox"/> No (Proceed to Q10.)
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Q9-2. Please describe the frequency of the periodic review.

1) FSP meeting is held every 3 months. 2) Annual review.

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

<input type="checkbox"/> Yes (Proceed to Q9-4.) <input checked="" type="checkbox"/> No (Proceed to Q10.)
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Q9-4. Please outline the third party.

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Q10. Please answer the following questions concerning legislative obligation.

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

<input type="checkbox"/> Yes (Proceed to Q10-2.) <input checked="" type="checkbox"/> 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.

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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?

⁷ 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.

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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”.)

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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?

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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”.)

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not applicable

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

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?

<input type="checkbox"/> Yes (Proceed to Q12-2.) <input checked="" type="checkbox"/> No (Proceed to Q12-3.)

Q12-2. Please outline the third party.

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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?

In 2008, the total amount of CO ₂ reduction through FSP was 12,379 [Ton-CO ₂].

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

http://www.nca.aero/e/profile/csr/index.html

Q14. Please describe additional information, if any.

The FSP has been started since 2 nd half of 2006. So far, FSP is company-internal activity only and not opened to the public. However some measurements are opened to the public. (Green freighter etc)
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