

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

Q1. Name of the voluntary activity.

Japan Business Federation Voluntary Action Plan on the Environment

Q2. Type¹ of the voluntary activity.

- Unilateral commitment Public voluntary scheme Negotiated agreement
 Other (Please describe the activity in the box below)

Each industrial sector's voluntary action plan that Japan Business Federation collects for an environmental emissions and waste issues.

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:

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).

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

<input checked="" type="checkbox"/> Carbon dioxide (CO ₂) <input type="checkbox"/> Methane (CH ₄) <input type="checkbox"/> Nitrous oxide (N ₂ O) <input type="checkbox"/> Hydrofluorocarbons (HFCs) <input type="checkbox"/> Perfluorocarbons (PFCs) <input type="checkbox"/> Sulphur hexafluoride (SF ₆) <input type="checkbox"/> Nitric oxide & Nitrogen dioxide (NO _x) <input type="checkbox"/> Water vapor (H ₂ O) <input type="checkbox"/> Other (Please specify in the next box)

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

<input checked="" type="checkbox"/> International passenger flight <input checked="" type="checkbox"/> Domestic passenger flight <input type="checkbox"/> International cargo flight <input type="checkbox"/> Domestic cargo flight <input type="checkbox"/> 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.

<input type="checkbox"/> Absolute quantity of GHG emission ⁵ (Please outline the index in the box below) <input checked="" 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)
g-CO ₂ /ASK (available seat kilo-meter)

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

The data are provided from the companies of the association participants. (Volume of production and fuel consumption)

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

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.

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.

13.5% reduction per unit (ASK) of fuel used by aircrafts by 2010, compared with 1990.

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

- * Promoting the introduction of more fuel efficient modern aircrafts.
- * Shortening flight time and flight path by introducing new A.T.C. support systems(CNS/ATM) and more precise navigation system.
- * Choosing shorter flight path, more suitable flight altitude, more suitable and economical airspeed under daily operation.
- * Loading most suitable fuel quantity, lightening the weight of the interior components, minimizing the use of APU, making the best use of flight simulators in the flight training , minimizing engine run up time.
- * Lightening the weight of in-flight service equipments.

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.

Once a year

Q9-3. Is 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.

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?

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

Q12-2. Please outline the third party.

<p>Japan Business Federation establishes a third party evaluation committee in order to evaluate the industry total result which included a report of The Scheduled Airlines Association Of Japan.</p>
--

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.

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?

CO₂ emission of 1990 was 14,940,000t. It increased to 20,790,000t in 2008.
 However, though the production volume is on the increase, the order of CO₂ emission has remained in 23,000,000t-CO₂ after 2000.
 CO₂ emission increases in conjunction with the increase of air traffic, but by implementing an action plan, emission per unit has been going down.
 ASK increased 162.8% from 1990 in 2008. On the other hand, CO₂ emission per ASK was 138.0% of 1990 in 2008.
 This means 3,530,000t-CO₂ emission was reduced compared with 1990 BAU(Business as usual)

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

Q14. Please describe additional information, if any.

Name:Tetsuro Nakamura
Organization: The Scheduled Airlines Association Of Japan
Phone: +81-3-5445-9136
Facsimile: +81-3-5445-9527
E-mail: nakamura@teikokyo.gr.jp