

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

Q1. Name of the voluntary activity.

"ANA Group Ecology Plan" 2008-2011

Q2. Type¹ of the voluntary activity.

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

In 2003, ANA launched comprehensive environment management plan named "ANA Group Ecology Plan" , followed by the enhanced new management plan duration from 2008 through 2011.

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)

Airline and its subsidiaries concerned

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.

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

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

<p>Target:</p> <p>Absolute quantity target = Sum of all ANA domestic fuel consumption</p> <p>Unit-basis Target = Data1(All flight's total CO₂ emissions of the year) / Data2(Sum of all flight's revenue ton kg of the year)</p> <p>= Data1 × 0.672 × 3.667 (=2.464) / Data2</p> <p>Data1: Sum of the fuel used in all ANA flight operations in the year: we get this data from Purchasing department. These are sum of all fuel data out of each operation.</p> <p>Data2: Sum of all ANA flights revenue ton-km of the year: we get this data from Finance and Accounting department. These are the correct transportation data using annual report.</p> <p>CO₂ emission is estimated based on fuel consumption. We use a conversion factor of 0.672 as 1 liter aviation fuel produces 0.672 kg Carbon emission (2.464 kg CO₂ emission).</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.

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.

<Domestic flights>
 Absolute quantity to cap the CO2 emission less than 4.7million tons on average through 2008-2011

<International & Domestic flights >
 10% reduction compared with 2006 in terms of Revenue Ton Kilometer (RTK) by 2011

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

- Introduction of fuel efficient state-of- the-art model aircraft and retirement of old ones
- Prioritized use of Ground Power Unit
- Efficient flight planning
- Optimum fuel control
- Using RNAV navigation
- Promoting Energy efficient Descent Mode
- Reducing the power of thrust reversers for landing
- Taxiing after landing with partially-shut engines
- Maximum utilization of Training with flight simulators
- Recovering engine performance by periodic washing of engine compressor
- Weight reduction of cargo container and passenger seat , onboard magazines etc
- Reducing the weight in the cabin including potable water

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.

Annually in total.
 Several months in some operational sections

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.

ANA joins emissions trading system in Japan (JETS), though the participation itself is voluntary.

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.)

Q12-2. Please outline the third party.

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.

