

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>.

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**Q1.** Name of the voluntary activity.

<b>Environmental certifications;</b> - <b>ISO14001:2004</b> - <b>Green Globe</b>
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**Q2.** Type<sup>1</sup> of the voluntary activity.

<input type="checkbox"/> Unilateral commitment <input checked="" type="checkbox"/> Public voluntary scheme <input 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 type="checkbox"/> Airline association <input type="checkbox"/> Manufacturer <input type="checkbox"/> Manufacturer association <input checked="" type="checkbox"/> Airport authority <input type="checkbox"/> Air traffic control <input 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.

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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 checked="" 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 checked="" 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 type="checkbox"/> International passenger flight <input type="checkbox"/> Domestic passenger flight <input type="checkbox"/> International cargo flight <input type="checkbox"/> Domestic cargo flight <input checked="" type="checkbox"/> Other (Please specify in the next box.)
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<p><b>Airport Operations</b></p>
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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 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 checked="" type="checkbox"/> Introduction of specific procedure <input type="checkbox"/> Other (Please specify in the box below.)
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<p><b>As attached,</b></p> <p><b>Appendix i : Green Globe Key Performance Area (KPA) /Benchmarking</b></p>
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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.

**As attached,**

**Appendix ii: Procedure For The Evaluation Of Significance**

**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.

**Objective :**

- **Reduce of carbon emission**
- **Resource management**

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

- **MA Sepang has been certified for Green Globe in 5 continuous years since 2004 and Certified Gold status in 2009**
- **Certified ISO14001:2004 in 2009**
- **Established the KLIA Environmental Management Committee to manage all related environmental activities, analyze the environmental risk assessment, determine the environmental aspect and impact and plan for environmental program.**
- **Landscaping and replanting due to development in KLIA**
- **In the process of making KLIA a carbon neutral airport**
- **Office Initiatives / programs**
  1. **Reduce, reuse and recycle**
    - **Reduce 1% paper usage for 2009 by printing in front and back.**
    - **Reuse the paper**
    - **Recycle waste paper**
    - **Toilet paper from recycled paper**
    - **Sorting, segregation and recycling of waste**
  2. **Staff Environmental Awareness**
    - **Provide internal training to highlight on environmental awareness**
    - **Provide internal training to define staff's roles to minimize carbon emissions**
    - **External training by Neville and Clarke on Schedule Waste Management**
  3. **General Environmental Guidelines for Administration**

**3.1 To reduce 1% of electricity consumptions in 2009**

- Switch off light after office hour
- Switch off light while not in the office
- Switch off light during break hour
- Switch off computer after office hour

**3.2 Photostatting and printing**

- To use email for internal memo and minutes circulations
- To print on both sides of paper
- To use eco-labeled paper

**3.3 Transportation**

- No vehicle in idling mode while waiting
- Provide shuttle schedule for staff
- To use the shortest route for transit from Airport Management Building to Main Terminal Building.

- Established Energy Management Committee for KLIA, purposely to manage electricity usage in KLIA. The target is to reduce 10% of energy usage in 2009. It has been executed in 2008 i.e. :
  - i. Reduction of 75% of corridor lighting, MTB Departure, Arrival and Lift area. Activities has been started since Jan 2008.
  - ii. Shutdown 50% of AHUs from 0000 until 0500 at concourse area.
  - iii. Exercise co-generation system to produce chill water to substitute CFCs in the airport's cooling system

**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.

**1. Yearly audit by the Certification Body.**

**2. Monthly monitoring on Key Performance Areas.**

- Waste Recycling
- Community Contributions
- Paper Products
- Cleaning Products
- Pesticide Products
- Storm water Management
- Noise Nuisance
- Energy Consumption
- Water Consumption
- Water Saving

- **Waste Sent to Landfill**
- **Employee living within 50km of operation/Total employee**

**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.

**External auditor for ISO 14001: 2004 and Green Globe**

**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 information<sup>7</sup> 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:

<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.

**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.

**Aspect and Impact Assessment to Stakeholders**

**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?

- **Based on reduction in use of electricity, water**
- **Recycling and paper resource management**

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

**<http://www.klia.com.my>**

**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](mailto:fpvm@mlit.go.jp)  
fax.: +81-3-5253-1656

Copy to:  
Jane Hupe  
Secretary, CAEP  
E-mail: [jhupe@icao.int](mailto:jhupe@icao.int)  
Fax: +1 (514) 954-6744

# ATTACHMENTS

**REGISTER OF PERFORMANCE INDICATORS**

<b>Indicator</b>	<b>Data Required</b>	<b>Dept(s) responsible for collection of data and of type of data</b>	<b>Calculation for benchmarking</b>
Energy Consumption	i. Electricity consumption <ul style="list-style-type: none"> <li>• Supply from CO-gen plant</li> <li>• Supply from Tenaga National (TNB)</li> </ul>	Data collected by EPS Unit of Engineering Division based on monthly meter readings	Total Energy consumption per annum/Area under the roof  (KJ/m <sup>2</sup> )
	ii. Natural gas consumption	Data obtained from GAS Malaysia based on supply to F&B outlets at KLIA	
	iii. Diesel consumption	Data obtained from HR Division based on Purchase Invoice for vehicles	
	iv. Gas consumption		
Potable Water Consumption	v. Quantity of potable water consumed.	Data collected by Infrastructure Unit of Engineering Division based on monthly meter readings	Water Consumed per annum /Total pax.  (KL/ m <sup>2</sup> )
	vi. Quantity of potable water recycled or re-used after treatment.		
Water quality	i. Samples from drinking water	Data collected by Infrastructure Unit of Engineering Division based on tests carried out by an independent lab.	Samples quantity passed / total samples tested
	ii. Samples from waste water		
Solid waste production	iii. Total Quantity of solid waste produced	Data collected by Infrastructure Unit of Engineering Division based on record from Waste Disposal Contractor.	Volume of waste pa/Area under roof  (m <sup>3</sup> /m <sup>2</sup> )
	iv. Total Quantity of solid waste to landfill		
	v. Total Quantity to recycling		

	vi. Total Quantity to other disposal method e.g. incineration		
Social commitment	<ul style="list-style-type: none"> <li>i. Number of employees recruited from specified local area</li> <li>ii. Number of employees from outside specified local area</li> <li>iii. Total number of employees</li> <li>iv. Contributions to local community projects</li> <li>v. Details of positive contributions e.g. protection of local habitat</li> <li>vi. Methods of transport of employees e.g. bus, car, train.</li> <li>vii. Quantity and details of locally produced products purchased</li> <li>viii. Quantity and details of imported products purchased</li> </ul>	Data maintained by Human Resource Division	<p>Employees with permanent address within 20km of the operation/total employees.</p> <p>(Note: Due to urban location of KLIA – request to change the 20 km radius to 50 km – to include surrounding urban areas)</p> <p>Quantity of local products purchased / Total quantity product purchased</p>
Resource Utilization	<ul style="list-style-type: none"> <li>i. Quantity of paper purchased</li> <li>ii. Quantity of paper used</li> <li>iii. Quantity of paper re-used</li> <li>iv. Quantity of Eco-</li> </ul>	Procurement	Eco-label paper purchased / Total paper purchased

	<p>labeled paper purchased</p> <p>v. Quantity of paper sent for re-cycling</p>		
Cleaning Chemicals used	<p>i. Quantity of chemicals used in airport cleaning process</p> <p>ii. Quantity of chemicals used in maintenance operations</p> <p>iii. Total Quantity of chemicals used</p> <p>iv. Total quantity of biodegradable chemicals used</p>	<p>Data maintained by Terminal services based on record by cleaning contractor for Terminal</p> <p>Data maintained by Infrastructure Unit of Engineering Division for cleaning of apron and runway.</p>	<p>Total Chemical Used/ area under roof (KL/m2)</p> <p>Quantity of biodegradable chemical used/ Total chemical used</p>
Storm-water Management	<p>i. Total Quantity of water used</p> <p>ii. Total Quantity discharged through water treatment plant</p> <p>iii. Number of storm-water samples taken i.e. discharged without passing through water treatment plant and natural run off.</p> <p>iv. Number of samples passing regulatory requirements</p>	<p>Data collected by Infrastructure Unit of Engineering Division based on tests carried out by an independent lab.</p>	<p>Water Samples passed pa/Total water samples taken</p>
Optional Indicators & Measures	<p>To be identified based on continual analysis of performance</p>		

## 4.13 PROCEDURE FOR THE EVALUATION OF SIGNIFICANCE

### SCOPE

This procedure details the method of evaluating the significance of the identified aspects within Malaysia Airports Sepang operated either by contractors or permanent staff of the respective departments.

### OBJECTIVE

The basis of Environment Management System in Malaysia Airports Sepang is to establish appropriate controls, monitoring and measuring methods and establishment of Objectives and Targets to continually monitor and where possible improve our performance.

In order to do this, it is necessary to identify all the environmental aspects and identify the associated significance.

The objective of the procedure is to detail the method of the accurate evaluation of significance to the applicable aspects, both positive and negative, which shall be conducted on numerical based risk assessment and also the method of reviewing and updating of the register of significance.

In addition the register of significance will also include cross-references to associated procedures, Management Programs etc. and therefore will provide a “map” to our Environmental Management System.

### PROCEDURE

#### 1. *Calculating Significance*

The main formula is as follows:-

*Significance (RF) + Business Risk = Final Level of Significance*

The formula to calculate Environmental Significance (RF) is as follows:-

$$[\text{Likelihood of occurrence (L)} + [\text{Severity of Impact (I)}] \times \text{Extend of Impact (E)} \\ = \text{Significance (RF)}$$

The numerical values are determined by using the following tables:-

OCCURRENCE	RISK FACTOR
The activity involved is a normal part of day-to-day operations or business activities and the aspect involved is a normal by-product of that activity	4
The activity involved is a regular/scheduled, periodic activity as part of operations or business activities and the aspect involved is a normal by-product of the activity when it does occur	3
The activity involved will occur in an accident, incident or breakdown situation and there are records of such occurrences in the past 3 years	2
The activity involved will only occur in an Emergency situation and there are no records of such occurrences in the past 6 years	1

SEVERITY	RISK FACTOR
The materials involved are, by nature, highly toxic/hazardous and dangerous and <b>large volumes</b> are used and will result in immediate and severe environmental damage	4
The materials involved are, by nature, highly toxic/hazardous and dangerous and <b>small volumes</b> are used and will result in immediate and severe environmental damage	3
The materials involved are, by nature, slightly toxic/hazardous and dangerous and will result in immediate minor damage The activity results in a reduction of non-renewable resources.	2
The materials involved are, by nature, non toxic/hazardous but are harmful	1

and will result in delayed minor damage	
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EXTENT	RISK FACTOR
Local – Impact will be limited to Malaysia	2
Global – Impact is on global resources.	1

Chapter 1 Others considerations i.e. Business Risks etc.

1. If legislation exists add 10 to RF
2. If benchmarking report requires improvement or no benchmark result yet add 50 to RF
3. If benchmarking result is acceptable add 30 to RF
4. If legal non-compliance exists add 20 to RF
5. If subject to complaint add 30 to RF

The above is added to the calculated RF and the total determines the significance rating.

Very High	=	>71
High	=	51 - 70
Medium	=	16 - 50
Low	=	<15

Significance	Action Required
Very High	Objective and Target established supported by a Management Program
High	Increased monitoring and subject to improvement initiatives and improved controls (Possible Objective and Target)
Medium	Close monitoring and control
Low	Maintain Monitoring and control

In additional to the list of negative aspects, the positive contributions will also be listed as part of the main register. This is to demonstrate and support the commitment to enhance a contribution to the environment and social aspects.

The actions identified in table above will be implemented and monitored. This will be included during the management review meeting.

## **2. Review and Amendment of Significance Register**

1. The register will be subject to review based upon the following:

- Notice in change of aspects identified by departments
- Changes in legislation
- Results of benchmarking
- Complaints
- Legal Non-Compliance
- Completion of management programs, other corrective actions or improvements
- Change in business activities

2. The GG21 committee is responsible for the initial establishment of the register and all reviews

3. The revised register will be distributed in accordance with the document control procedure.

## **3. Associated procedures and forms**

1. Aspects identification procedure Number Ops / Dcc / 005

2. Significance calculation form XXXXXXXX

3. Register of significance form xxxxxx