ASEAN Guideline on

Airport Environmental Management System

(AIRPORT EMS)

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AIRPORT EMS

Contents

Introduction

Air transport has been a vital mode of transport among ASEAN countries in regards of geographical, social, and economic reasons. Indeed, in the past decade, there has been a significant growth of air transport among the countries in the Asia Pacific, inclusive of ASEAN countries. When the needs of air transport increases, its infrastructure such as flights, aircraft fleets, airport facilities, or air traffic routes also increases in order to meet such growing needs.

Increase in number and size of an airport reflects the growth of the air transport, which will cause change to the environment of the airport vicinity. In general, an airport operator shall be responsible for maintaining the airport environment in accordance with the laws, regulations and requirements specified by the authority.

In a nutshell, the operation of an airport often affects its environment and surrounding communities in forms of noise pollution from aircrafts' take-off and landing, waste and wastewater from its service to the clients, air pollution, dust, smoke, greenhouse gases from airport ground commuting and external connecting transportations, as well as from the operation of aircrafts. As such, if the airport does not operate efficiently, and/or does not meet the aforementioned requirements, problems such as degradation of environment, non-compliant operation against law or standard, and conflict with surrounding communities would occur.

As we deep dived into the root cause of the inefficiency in the operations of the airport, we found that:

- Airports are unable to identify environmental issues that might cause such problems
- Airports are not aware on all the pertinent and relevant laws and regulations
- Airports do not incorporate the environmental requirements or measures in their daily operation
- Airports have no channels and means to handle complaints

In this regard, a guideline for Airport Environmental Management System (AIRPORT EMS) has been established for ASEAN countries that share several similarities in terms of geography, climate, economic, culture and administration.

Airport Environmental Management System, or AIRPORT EMS is a systematic and efficient management of airport environment that would subsequently contribute to a better performance on the environment.

Airport, nevertheless, is a unique organization with a wide variety of ongoing activities that interconnect one another in a very complex way, compelled with specific laws and regulations. This uniqueness can be intrinsic to Aviation Context. Specifically of being aviation and being ASEAN, these are the two key concepts for developing this ASEAN Guideline on AIRPORT EMS.

Moreover, AIRPORT EMS is created by the collaboration between the seasoned aviation regulation authority, experienced in airport environment supervision, and the national standards authority, experienced in standards development, which provides environmental standards experts, approved by AIRPORT EMS Technical Expert Team, as a working group under ATWG. It can be assured that ASEAN Guideline on AIRPORT EMS will become a successful tool responding to the needs of environmental management and enhancing environmental performance to various airports across ASEAN, leading toward the environmental protection along with economic development and sustainability of ASEAN countries.

Background

At the 40th Air Transport Working Group (ATWG) conference, the Civil Aviation Authority of Thailand (CAAT) proposed to prepare a Guideline on Airport Environmental Management System (AIRPORT EMS) as a tool to aid airports in managing efficiently the environment. The initiative was approved, and it was agreed by all participating nations.

At the 41st ATWG conference, Thailand presented the 1st draft of the Airport Environmental Management System (AIRPORT EMS) guideline, consisting of 10 requirements. The guideline was accepted at the conference as a reference document for airports to manage their environment effectively.

Thereafter, at the 43rd ATWG conference, Thailand proposed to establish a technical working group for AIRPORT EMS, called “AIRPORT EMS Technical Expert Team”. The Technical Expert Team would further enhance the Airport Environmental Management System (AIRPORT EMS) guideline to be consistent to the ASEAN context. The said team consist of participants from 7 member states, which are Cambodia, Indonesia, Lao PDR, Malaysia, The Philippines, and Vietnam, with Thailand being the lead.

Later at the 44th ATWG conference, Thailand, as the team leader of the AIRPORT EMS Technical Expert Team, reported the progress of the ASEAN Guideline on AIRPORT EMS development. It was during this conference that Myanmar decided to participate as part of the AIRPORT EMS Technical Expert Team.

At the 45thATWG conference, Thailand proposed the 2nd draft of the Airport Environmental Management System (AIRPORT EMS) Guideline, an improved and more ASEAN Aviation oriented version. The 2nd draft consists of 13 requirements inclusive of Annex 1 - Environmental Risk Assessment and Risk Treatment. The 2nd draft was prepared jointly with aviation regulating agency of Thailand and Thai Industrial Standard Institute (TISI), the national standard agency of Thailand. It is hoped that the 2nd version of the ASEAN Guideline on AIRPORT EMS be endorsed and adopted at the 46th ATWG conference.

AIRPORT EMS Development Team

AIRPORT EMS development team is a collaboration between aviation environmental experts, from CAAT as airport environmental supervising as well as aviation regulating agency of Thailand, and environmental standards experts from Thai Industrial Standards Institute (TISI) as Thailand's national standards agency.

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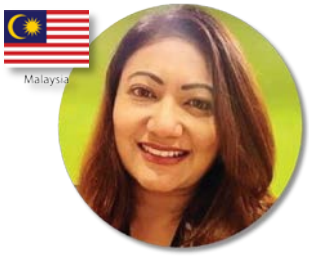

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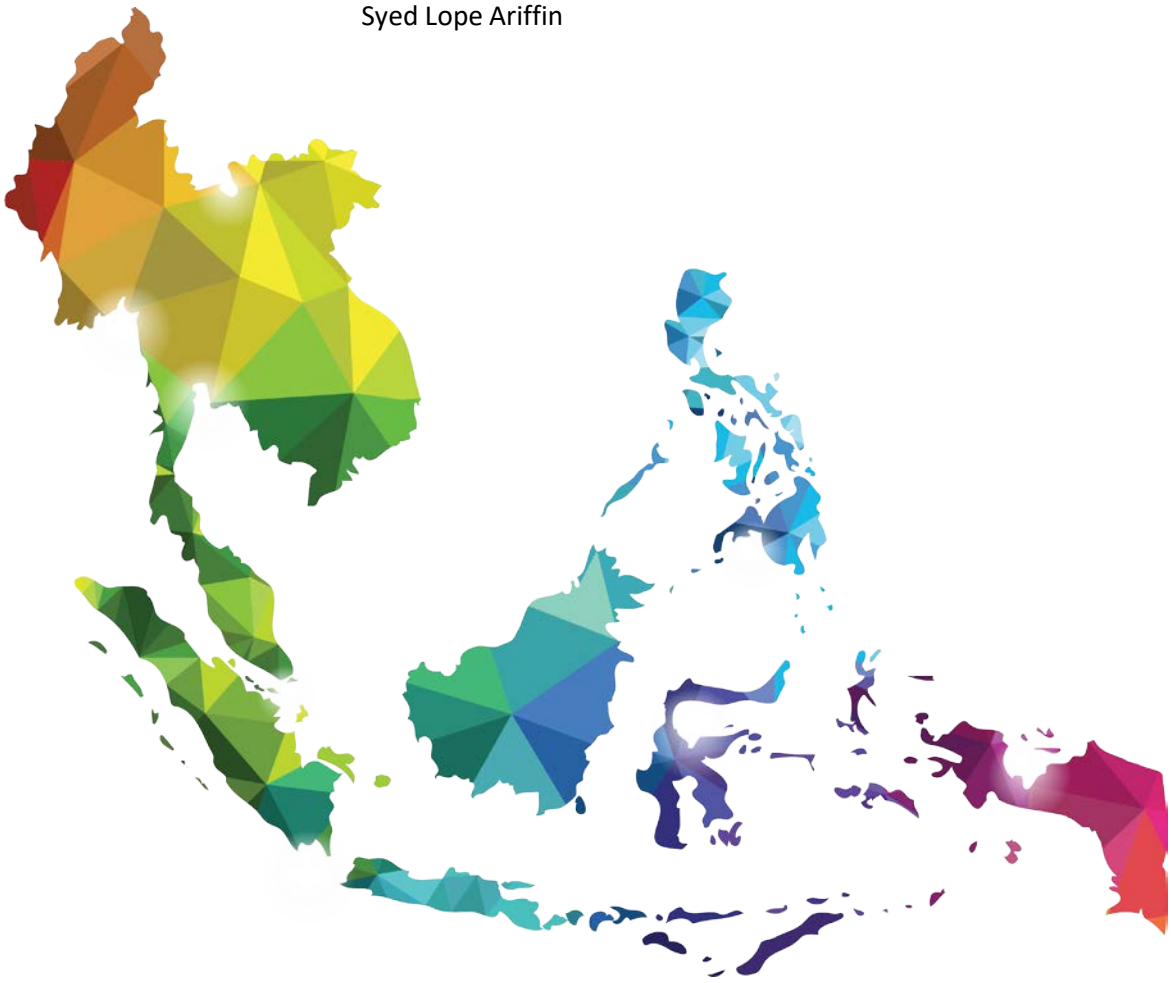

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Terms and Definition

1. Environmental aspect: activities, operations or services of the airport that interacts or can interact with the environment. An environmental aspect can cause (an) environmental impact (s).
2. Environmental impact: adverse change to the environment wholly or partially resulting from the airport.
3. Environmental program: approach, plan, action plan, or measure which indicate specific procedure in order to control environmental aspect or promote environmental procedure of the Airport .
4. Significant environmental aspect: The appraisal outcome resulted from environmental aspect by applying the criteria at significant level.
5. Significant environmental impact: The important environmental adverse impact resulted from significant environmental aspect.
6. Sensitive area: area, including the component of those areas vulnerable to change as a result of negative environmental impacts, both direct and indirect.
7. Internal Audit: The evaluation of AIRPORT EMS by an airport auditor in order to ensure that the activities related to AIRPORT EMS are implemented properly and efficiently.
8. Nonconformity: A procedure/process or action that does not meet the AIRPORT EMS requirements.
9. Corrective action: Activity taken to reduce a nonconformity or other undesirable situation in order to prevent the nonconformity from recurring.

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REQUIREMENT

AIRPORT EMS - Requirements

1. Context of the Airport

The Airport Environmental Management System (AIRPORT EMS) shall be designed and implemented to meet the specific needs of the airport, taking into account its significant environmental impacts, legal and other requirements, activities and business environments.

1.1 Airport Contexts

The Airport shall determine:

a. All relevant components affecting its EMS.

b. General information such as location, physical environment, number of flights with type of aircraft, and flight-handling and passenger-handling capacity.

c. Management information such as organizational structure and business structure.

d. Technical aviation information affecting EMS such as Aeronautical Information Publication (AIP), Noise Abatement Departure Procedure (NADP), significant environmental aspects and sensitive area.

e. Legal and other requirements, consisting of all mandatory requirements, for example, applicable environmental laws and regulations, aviation standards under ICAO and national aviation regulations requirement from civil authority and government and voluntary commitments (if applicable), such as contractual relationship, agreements with community groups or non- governmental organizations.

1.2 Scope and boundary

- The airport shall determine the boundaries and applicability of its AIRPORT EMS in order to establish its scope.
- The scope of the AIRPORT EMS shall include activities, processes, services, and physical boundaries.

1.3 Aviation Safety Concerns

- The airport shall ensure that AIRPORT EMS will not conflict or affect aviation safety.
- In case of conflicts between AIRPORT EMS and aviation safety arose, the airport shall ensure that aviation safety is the priority shall not be compromised.
- The related document in this process shall be retained.

2. Environmental policy

2.1 Environmental policy shall be established by the top management of the airport or the organization and shall be maintained as documented information.

2.2 The Environmental Policy shall:

a. Demonstrate that the airport will be operated in accordance with the laws and relevant standards;

b. Demonstrate its determination to prevent, control, mitigate and treat pollution that are associated with significant environmental aspects of the airport;

c. Be communicated to all person working for or on behalf of the airport;

d. Be made available to the public.

3. Roles, responsibilities and authorities in AIRPORT EMS

3.1 Top management shall provide necessary resources to implement effectively the AIRPORT EMS.

3.2 Top management shall designate or appoint the person(s) responsible for AIRPORT EMS coordination.

3.3 The responsibilities and authorities for relevant roles shall be clearly assigned, documented, and communicated within the airport.

4. Legal and other requirements

4.1 The airport shall:

a. Implement and maintain a process to identify, have access to, and assess the applicable legal other requirements related to environment;

b. Ensure that the applicable law and other requirements are taken into account in implementing and maintaining the AIRPORT EMS;

c. Document this information and keep it up to date.

5. Environmental aspects identification

5.1 The airport shall determine the environmental aspects of its activities, and services that it can control and their associated environmental impacts.

5.2 The airport shall determine those aspects that have or can have a significant environmental impact by using established criteria.

Note

- *Annex 1 Environmental Risk Assessment & Risk Treatment for AIRPORT EMS is suggested to be applied as the criteria for determining the environmental aspects of AIRPORT EMS.*
- *The environmental mitigation measures identified by the Airport's environmental report as environmental obligation is strongly recommended as input for this process.*

5.3 The airport shall communicate its significant environmental aspects among the various levels and functions of the airport, as appropriate.

5.4 The airport shall maintain documented information of its:

a. Environmental aspects and associated environmental impacts;

b. Criteria used to determine its significance environmental aspects;

c. Significant environmental aspects.

6. Environmental Program

6.1 The airport shall deal with the significance environmental aspect by establishing environmental programs at relevant functions.

6.2 The environmental programs shall be:

a. Consistent with the environmental policy;

b. Measurable (if practicable);

c. Monitored;

d. Communicated;

e. Updated as appropriate;

f. Approved by the management.

6.3 Environmental programs shall consist of:

a. Objective

b. Person in charge

c. Timeline

d. Resources needed

6.4 The airport shall develop series of action plans that can be integrated into its business process to achieve the intended outcome of the environmental program.

7. Operational Control

7.1 The airport shall establish, implement, control and maintain the processes needed to meet AIRPORT EMS by:

a. Establishing operating criteria for the process(es);

b. Implementing control of the process(es), in accordance with the operating criteria.

8. Documented information

8.1 AIRPORT EMS shall include:

a. Documented information required by AIRPORT EMS.

b. Documented information determined by the airport as being necessary for the effectiveness of AIRPORT EMS.

8.2 Creating and updating

When creating and updating documented information, the airport shall ensure appropriate:

a. Identification and description (e.g. a title, date, author, or reference number);

b. Format (e.g. language, software version, graphics) and media (e.g. paper, electronic);

c. Review and approval.

8.3 Control of documented information

For the control of documented information, the airport shall ensure that documented information required in AIRPORT EMS are:

a. Available and suitable for use, where and when it is needed.

b. Adequately protected (e.g., from loss of confidentiality, improper use, or loss of integrity)

Note:

1) The airport can address control of documented information through the following activities as applicable:

- *Distribution, access, retrieval and use.*
- *Storage and preservation.*
- *Retention and disposition.*

2) External origin determined by the airport for AIRPORT EMS shall be identified appropriately and be controlled.

9. Complaint handling

9.1 The airport shall establish, implement and maintain procedure for complaint handling which related to environment.

9.2 The procedure for complaint handling shall be documented and it shall at least consist of:

a. Complaint channel;

b. Process and procedures;

c. Responsible person or parties;

d. Appropriate response time.

The related document in this process shall be retained.

10. Evaluation on compliance and environmental performance

10.1 Evaluation on compliance with legal and other requirements.

The airport shall evaluate the compliance at least once a year and keep records of the results.

10.2 Evaluation on environmental performance.

The airport shall monitor and evaluate its environmental performance.

The airport shall determine:

a. What needs to be monitored and measured (if applicable);

b. The monitoring process, i.e. to include methods for monitoring, measuring, analyzing, as well as the frequency, so as to ensure that the results are valid;

c. The criteria against which the airport shall evaluate its environmental performance, and appropriate indicators (if applicable).

The airport shall evaluate its environmental performance and the effectiveness of the environmental management system.

The airport shall retain appropriate documented information as evidence of the monitoring, and evaluation results.

11. Internal Audit

11.1 The airport shall ensure that internal audits of AIRPORT EMS are conducted at planned intervals to determine whether AIRPORT EMS has been properly implemented and maintained.

11.2 Audit program(s) shall take into consideration the environmental importance of the operation(s) concerned and the results of previous audits.

11.3 Audit program shall include the responsibilities, audit criteria, scope, frequency, and methods.

11.4 The airport shall select auditors to conduct the audits to ensure objectivity and impartiality of the audit process.

11.5 The airport shall ensure that the results of the audits are reported to relevant management.

The airport shall retain documented information as evidence of the implementation of the audit program and the audit results.

12. Non-conformity and Corrective Action

12.1 When a non-conformity occurs, the airport shall:

a. React to the non-conformity and, as applicable:
   1) Take action to control and rectify it;
   2) Deal with the consequences, including mitigating adverse environmental impacts.

b. Investigate the cause of non-conformity and evaluate the need for action to eliminate the causes of the non-conformity (corrective action) so as to ensure that it does not recur or occur elsewhere, by:
   1) Reviewing the non-conformity;
   2) Determining the causes of non-conformity;
   3) Determining if similar non-conformities exist, or could potentially occur;

c. Implement any action needed

d. Review the effectiveness of any corrective action taken;

e. make change to AIRPORT EMS, if necessary.

12.2 Corrective actions shall be appropriate to the significance of the effects of the nonconformities encountered, including the environmental impact(s).

The airport shall retain documented information as evidence of:

- The nature of the nonconformities and any subsequent actions taken;
- The results of any corrective action.

13. Management Review

13.1 Top management shall review AIRPORT EMS at least once a year to ensure its suitability, continuity, and effectiveness. The information to be considered under the management review shall at least consist of:

a. The current significant environmental aspect of the Airport;

b. The operational summary of complaints related to environment;

c. Non-conformity and corrective action;

d. Conflict and potential conflict of AIRPORT EMS and aviation safety;

e. The result of compliance and environmental performance evaluation.

13.2 Top management shall decide and take action to rectify and eliminate challenges and barriers in order to maintain AIRPORT EMS.

13.3 The airport shall retain documented information as evidence of the results of management reviews.

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ANNEX 1: Environmental Risk Assessment & Risk Treatment

Environmental Risk Assessment and Risk Treatment

To perform environmental aspect identification as per requirement number 5 of AIRPORT EMS, this document (Annex 1: Environmental Risk Assessment & Risk Treatment of AIRPORT EMS) shall be used to identify and evaluate the potential impact or damage to environment by using Risk-Based Analysis concept.

The 5 steps of risk assessment and risk treatment are:

(1) **Defining Airport's Activities** by listing all activities/operational processes in AIRPORT EMS scope,

(2) **Identification of Environmental Aspects** is to determine the possible environmental issues resulting from those activities, in normal situation, defined in early step,

(3) **Environmental Risk Analysis** is to quantify "Risk" to the environment by considering the environmental aspect(s) identified against the criteria, and

(4) **Risk Evaluation** is to prioritize and classify the risk magnitude from the analysis or assessment.

Risk Treatment where the airport could put forward preventive, control, and mitigation measures to manage those environmental risk to the acceptable level. The environmental aspect identification and risk assessment is described in detail from Step 1 to Step 5 as follows:

Step 1: Defining Airport's Activities

This step is to understand the context of the airport and the activity. All of operations in the airport need to be listed and then break down into activities under each operation. Table 1 (below) is recommended to be used as guidance in defining the airport's activities.

Table 1: Activities associated with airport operations

Category of airport operations	Activities
1. Ground handling, baggage handling and aircraft preparation	• Transferring PAX and luggage • Loading and off-loading catering and cargo items • Aircraft line maintenance • Aircraft refuelling, ground handling operation
2. Aircraft operation	• Landing/Take-off/Taxiing • Aircraft engine on during passenger boarding and disembarking
3. Aircraft maintenance	• Aircraft wash/ engine wash • Aircraft heavy maintenance • Engine run test • Painting
4. Emergency response	• Aircraft accident response and practice • Chemical storage
5. Maintenance and housekeeping	• Tap water production • Emergency generator • Air conditioning system • Automobile/equipment/building maintenance • Handling of dangerous goods contamination • Cleaning
6. Cargo handling	• Dangerous goods handling/ storage
7. Waste management and wastewater treatment	• Solid waste • Wastewater treatment • Aircraft's lavatory waste treatment • Hazardous waste handling treatment • Infectious waste treatment • Landfill of waste
8. Passenger ground service (arrival and departure) office work, supporting units and miscellaneous	• Food and beverage service • Electricity use lighting system • Toilet

*Note * In the view of resource consumption which optional.*

Step 2: Identification of Environmental Aspects

This step is to identify the environmental aspects of each of the activities listed in step 1 which may potentially give adverse effect(s) to environment. Environmental aspects for AIRPORT EMS can be divided into two categories based on the effects they have:

(1) Environmental aspects that lead to pollution;

(2) Environmental aspects that lead to the depletion of natural resources.

The annex to this guideline instructs airports to prioritize environmental aspects that lead to pollution in a comprehensive manner. On the other hand, the airport can also appropriately associate environmental aspects that lead to natural resource depletion.

The list of main environmental aspects from airport activities are listed in Table 2.

Table 2: List of main environmental aspects from airport activities

Category of airport operations	Activities	List of main environmental aspects
1. Ground handling, baggage handling and aircraft preparation	● Transferring PAX and luggage ● Loading and off-loading catering and cargo items ● Aircraft line maintenance ● Aircraft refueling ● Ground support/ handling operation	• Air pollution and Greenhouse Gases emissions as result of fossil fuel powered vehicle's combustion. • Chemical spill and leak cause in contamination to environment • Fuel leak from refueling causing water contamination and waste from the used absorbent • Aircraft noise from aircraft engine running
2. Aircraft Operation	● Landing/ Take-off/ Taxiing ● Aircraft engine on during passenger boarding and disembarking	• Aircraft noise from take-off and landing • Air pollutant from take-off and landing • GHG emissions during take-off and landing

Category of airport operations	Activities	List of main environmental aspects
3. Aircraft maintenance	● Aircraft Wash/ Engine Wash ● Aircraft heavy maintenance ● Engine Run Test ● Painting	• Used water becomes wastewater • Used water from aircraft washing becomes wastewater Chemical (contamination) • Aircraft noise from the test affecting maintenance staff and the people in residential area nearby • Chemical contamination from leakage during painting process
4. Emergency response	● Aircraft accident response and practice ● Chemical storage	• Smoke and soot spreading in the airport and area nearby • Wastewater from firefighting operation(practice) leaking or draining into water resource and some chemical (Fluoroprotein foam) can cause eutrophication when spilled in water resource • Chemical spill and leak cause contamination to environment • Used packaging of the chemical will turn into hazardous waste
5. Maintenance and housekeeping	● Tap water producing ● Emergency generator ● Air conditioning system ● Automobile/ Equipment/ Building maintenance ● Handling of dangerous good contamination ● Cleaning	• Back wash released and contamination to water resource • GHG emitted by fossil fuel powered equipment • Some coolants (such as CFC) can cause ozone depletion when leaking • Chemical spill and leaks cause contamination to environment • Dangerous goods turn into hazardous waste when leaked
6. Cargo handling	● Dangerous good handling/ storage	• Dangerous goods turn to be hazardous waste when leaked
7. Waste management and	● Solid waste ● Wastewater treatment	• Accumulation of solid waste causing pest invading and poor environmental condition • Improper wastewater treatment can cause the effluent to exceed the legal standard

Category of airport operations	Activities	List of main environmental aspects
wastewater treatment	● Aircraft's Lavatory Waste treatment ● Hazardous waste handling treatment ● Infectious waste treatment ● Landfill of waste	• Wastewater treatment from aircraft lavatory increase workload to the treatment facility • Disposal of hazardous waste to landfill causes adverse effect on ecosystem and food chain and long-term land contamination • Disposal of infectious waste causes diseases to spread • Governmental landfill site that received solid waste and hazardous waste from airport could cause long-term land contamination and possible leached contamination
8. Passenger ground service (arrival and departure) office work, supporting units and miscellaneous	● Food and beverage service ● Electricity use* ● Toilet	• Generation of solid waste and hazardous waste such as fluorescence • Generation of infectious waste from first aid • Electrical consumption*

*Note * In the view of resource consumption which is optional.*

Step 3: Environmental Risk Analysis

Considering the activities distinguished in Step 2, environmental risk shall be analysed in each activity to further understand the characteristic and to determine the level of risk by using the agreed risk criteria. (Table 3: Environmental Risk Matrix). This process is called environmental risk analysis.

The recommended criteria for identifying and assessing environmental risk of AIRPORT EMS is shown in Table 3: Environmental Risk Matrix.

It should be noted that the matrix (Table 3) covers environmental aspects which potentially leads to pollution only, but not for natural resources consumption or depletion. Therefore, airport is allowed to expand the scope of environmental aspect identification by covering natural resources consumption or depletion and shall determine the specific criteria accordingly.

Table 3 Environmental Risk Matrix

AIRPORT EMS Environmental Risk Criteria				Probability				
Severity	**Category**	**Environmental Impact Characteristic**	**Scales of impact**	**Never (1)**	**Yearly or rarely (2)**	**Monthly (3)**	**Daily (4)**	**Every flight movement (5)**
	Very serious (5)	• Disaster, Long term damage • Direct effect, Acute effect causing serious injury or lethal • Abuse the law, regulation or standard (e.g. EIA) • Lead to public protest against the airport • Immediate environmental impact	Area : Large scale (larger than local area) Time : Along with the operation of airport through Long-life	5	10	15	20	25
	Serious (4)	• Heavy damage • Lead to conflict with the community, complaint, compensation or fine • Chronic effect to health or nuisance • Direct or In-direct effect • Not comply to the law, regulation or standard • Immediate environmental impact	Area: Cover airport area and also affect to outside of the airport. Time : Along with the operation of airport.	4	8	12	16	20
	Substantial (3)	• Substantial damage • Treatment is required • Likely to be incompliance • Direct or In-direct effect • Immediate environmental impact from direct effect or Delayed environmental impact from indirect effect	Area : Cover most of airport area (immediate impact) Large scale (delayed impact) Time : • Immediate impact takes several days • Delayed impact is prolonged (for several years) but covering larger scale (up to global scale)	3	6	9	12	15
	Moderate (2)	• Visible Impact but under control • Treatment is preferred The impact does not affect immediately but slowly occur	Area: Some area(s) in the airport Time : while the activity happening Moderate time natural remediation or recovery	2	4	6	8	10
	Small (1)	• No mention The impact does not affect evidently	Area: An area in the airport Time : at the point of time Short time natural remediation or recovery	1	2	3	4	5

The assessment of environmental risk shall take into consideration these two factors, which are probability of occurrence, and severity of the impacts to the environmental condition using the risk magnitude formula below:

Risk magnitude = Probability x Severity

The probability of occurrence mentioned in the formula can be ranked according to 5 different levels ranking from high frequency to low frequency, starting from **Rank 5** - Highest frequency where the impact is occurred on every flight movement, **Rank 4** - high frequency which is on daily, **Rank 3** - medium frequency is on monthly, **Rank 2**- low frequency is on yearly, and **Rank 1** - lowest frequency is never.

The severity of the environmental impact is quantified in five levels ranking from the highest severity of the environmental impact to the lowest one. The severity level considers, firstly, the characteristics of the environmental impact, such as a disaster and long-term damaged from the immediate impact as well as, the acute direct effect causing serious injury or fatality to human, and non-compliance to law and standard, the acute direct effect causing serious injury or fatality to human, and non-compliance to law and standard obligations, or any circumstances that could lead to public protest against airport.

Secondly, the severity level of the environmental impact considers the scales of impact in two factors, taking into account: a) the extent of area affected by the impact, and b) the duration of the environmental impact.

Other rankings of severity of environmental impact are: very serious level, serious level, substantial. level, moderate level and small level. Description of each ranking is explained and summarized in Table 3.

Step 4: Risk Evaluation

This process could help the airport to know which risk or environmental aspect should be acted upon first by prioritizing the risk magnitudes from Step 3 and then classify those quantitative results into 3 groups of risk level. The criteria to determine risk level and acceptability of risk as presented in table 4 is recommended to be applied.

Table 4: Risk Level and Acceptability Criteria

Risk Magnitude (Score)	Risk Level	Acceptability of Risk	Guideline for risk treatment
17 to 25	High level	Not acceptable	• Take immediate measures to mitigate the impacts (if necessary), and; • Establish environmental program, implement an-and report progress to the airport manager
7 to 16	Medium level	Tolerable	• Establish control, communication and data monitoring procedures for the performance evaluation.
1 to 6	Low level	Acceptable	• Maintain the current practice and/or use opportunity for continual improvement

Step 5: Risk Treatment

Each level of risk requires a different treatment approach. The high level risk (which can be considered as significant environmental risk or aspect) should be prioritized and taken action on, in order to bring the risk lower until it reaches the acceptable or tolerable level.

At medium level which corresponds to tolerable level, risk shall be a) controlled by using control measure to lower its risk level; or b) monitored closely to ensure that risk would not rise up.

At low level, airport may decide to retain its conditions or take the opportunity to improve by eliminating the risk since this level is already at acceptable level. The guidelines for risk treatment are included in Table 4.