Study on Criteria and Requirement on Environmentally Sound Management of Hazardous Wastes and Other Wastes (Abstract)

Introduction

Background Information and Objective of the Study

At the second meeting of Country-led Initiative (CLI), which was launched by Indonesia and Switzerland based on the Decision IX/26 on the President's Statement at COP9, the participants elaborated elements and measures for a way forward (Elements for Inclusion in a Possible Way Forward, hereafter "elements") in order to address the objective of the BAN amendment. The meeting identified the following elements.

- Standards of Environmentally Sound Management (ESM)
- Linking standards of ESM to transboundary movement (TBM)
- Ensuring that vulnerable countries do not receive wastes that they do not want:
- Providing further legal clarity
- Improvement of existing tools, promotion of better application of existing measures and instruments within the Convention, and possible extensions or enhancements of the convention
- Support for the Basel Convention Regional Centres
- Dealing with illegal traffic
- Building capacity

Among the elements identified above, ESM standards is the measures that allows TBM of waste only if waste is destined for a facility that is able to fulfill these standards. Considering appropriateness and feasibility of ESM standard in international community, the following issues may need to be addressed:

- What components should be considered for ensuring ESM in waste management facility?
- How does each country define or incorporate concept of ESM-facility in national legal framework (e.g., law, regulation or guideline)?
- What kind of operational and/or technical requirement is placed on facility in order to ensure ESM especially when waste is subject to TBM?
- Considering gaps existing between countries regarding level of economy and technology, which level of ESM should be applied as international standard?

The objectives of this paper are to analyze the above-mentioned issues and to provide the relevant information in order for promoting the understanding on Asian countries' practices as well as for facilitating the discussion with regards to identifying the recommendable components for ESM standard/criteria in the forthcoming CLI meeting.

Scope of the Study

The scope of the study is as follows:

1. Review of ESM in the existing guideline or documents

The study reviews the existing guidelines or documents developed and publicized by the relevant body under the Basel Convention and/or other international organization and identify the recommended ESM criteria in those documents. The study does not focus on the detail technical specification of waste recycling/treatment facility, but general requirement on waste management facility.

2. Study on criteria and requirement for ensuring ESM of imported/exported hazardous wastes and other wastes in Asian countries

The study collects information regarding requirement or criteria being currently practiced in Asian countries for ensuring those imported wastes (especially, E-waste) which are recycled or treated in environmentally sound manner. The information was collected through questionnaire survey addressed to the competent authorities to the Basel convention which permit import of hazardous wastes and other wastes only if certain ESM conditions are met.

3. Consideration on measures for ensuring appropriate resource circulation in Asian countries

Based on the result of the above studies, the following issues are reviewed.

- The possible effect of ESM standards on transboundary movement of hazardous wastes in Asia
- Measures that should be taken for prevention of illegal traffic and promotion of legal resource circulation (the measures taken in parallel with introduction of ESM standards).

4. Recommendations

The study finally summarizes recommendable ESM components and issues to be addressed for further consideration of introducing ESM standards.

Review of ESM in the relevant Guidelines

This Chapter reviews the existing guideline or documents relevant to ESM of hazardous wastes and other wastes and identifies general ESM components which are recommended in the following documents/guidelines.

- ***"Guidance Document on the Preparation of Technical Guidelines for the Environmentally Sound Management of Wastes Subject to the Basel Convention"***
  http://www.basel.int/meetings/sbc/workdoc/framewk.doc
- ***"OECD Guidance Manual on Environmentally Sound Management of Waste"***
  http://www.oecd.org/dataoecd/23/31/39559085.pdf
- ***"Technical Guidelines on the Reduce, Reuse, Recycle (3R) of End-of-life Electronic Product"***
  （developed by Basel Convention Regional Centre for South-East Asia (BCRC-SEA)）
  http://www.bcrc-sea.org/?content=publication&cat=2
- ***"Guideline on Material Recovery and Recycling on End-of-life Mobile Phone"***
  （developed by Mobile Phone Partnership Initiative (MPPI)）
  http://www.basel.int/industry/mppiwp/guid-info/guidmaterial.pdf
- ***"Environmentally Sound Management (ESM) Criteria Recommendations"***
  （developed by Partnership for Action on Computing Equipment (PACE)）
  http://www.basel.int/industry/compartnership/docs/FinalApprovedReportESM-22March2010.pdf
- ***"The e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment"***
  （developed by Basel Action Network (BAN)）
  http://e-stewards.org/wp-content/uploads/2010/02/e-StewardStandard_ExcerptedVersion.pdf
  http://e-stewards.org/wp-content/uploads/2009/10/e-StewardsStandardGuidanceDocument.pdf

Summary

Identification of recommended ESM components

The recommended ESM components identified through the review of the existing guidelines or documents are summarized as follows. Please note that some components are not independent but can be related each other (for instance, monitoring, recording and reporting are not independent but also the part of legal requirement).

Table 1: Summary of General ESM Components of the relevant Documents

Component	ESM criteria on facilities	Example of requirement on facilities
Compliance with legal requirements	Comply with conditions or standards (environmental and emission standards) required by the country, region, international treaty etc.	◆Implementation of pollution prevention measures to ensure legal compliance
	Obtain approvals, licenses, etc. from appropriate competent authorities to the national or local government	◆Implementation of required actions to obtain the license (e.g. environmental impact assessment (EIA)) ◆Continuous implementation of the action above required for periodical renewal of license

Component	ESM criteria on facilities	Example of requirement on facilities
Introduction of Environmental Management System (EMS)	Establish policy or goals of environmental management on voluntary basis, introduce systems in facility for its achievement, and manage operation based on the system	◆Acquisition of ISO14001 or other ESM certification by the third organization, or introduction of similar management system and its continuous implementation. ◆Ensuring of commitment from top management
Identification of hazards or risk	Identify hazards or risks on the environment	◆Utilization of Material Safety Data Sheet (MSDS) or laboratory results ◆Identification of risks or hazards in facility (rebelling on hazardous substances or appropriate packaging, etc).
Occupational safety and health	Avoid exposures to unrespectable occupational risk in working environment	◆Ensuring occupational health and safety of employees (providing personal protecting equipment, cleaning of working place and sanitary management, periodical medical check, etc.)
Awareness and competency of staffs	Enable workers to understand hazards or risks of hazardous wastes and handle it in appropriate manner	◆Awareness raising and capacity development of employees (through seminar or in-house training, etc). ◆Recruiting of certified experts (in the field of occupational safety or mechanical engineer
Monitoring, recording, reporting	Collect and keep record of information such as material flow or emission status (exhaust gas or effluent) and report it to the appropriate authority.	◆Development of procedure for monitoring and allocate staffs and equipments for its implementation ◆Development of procedure for record-keeping and its implementation. ◆Periodical reporting to the competent authority
Emergency response	Have a capability to deal with unexpectable situation which can create negative effect on the environment	◆Development of emergency response plan ◆Sharing of the above plan among facility employees and local authority.
Secure financial resource	Financially stable which can accommodate unexpectable situation (such as accident or closure of the facility).	◆Ensuring financial resource or having financial instruments (e.g. insurance)
Ensure ESM in downstream	Ensure ESM in downstream recycling chain or destined country	◆Keeping the contract with recyclers in downstream chain ◆(Export case) keeping contract with exporter and all the shipping documents.

It should be noted that some documents mention that for application of those ESM components to the actual waste management facility should be flexible with taking into account the reality of operation of the waste management facility, such as size of the enterprise, especially the situation of SMEs (small and medium-sized enterprise) or the type and amount of waste, etc.

Comparison of ESM component recommended in each document

The following is the summary recommended ESM components described in the reviewed

documents or guidelines.

Table 2: Summary of ESM components recommended in the existing document and guideline

	Basel guideline	OECD guidance manual	BCRC-SEA guideline	MPPI guideline	PACE criteria	e-Stewards
Compliance with legal requirements	**X**		**X**	**X**	**X**	**X**
Introduction of Environmental Management System (EMS)		**X**		**X**	**X**	**X**
Identification of hazardousness and risk			**X**	**X**	**X**	**X**
Occupational safety and health		**X**	**X**	**X**	**X**	**X**
Awareness and competency of staffs	**X**	**X**	**X**	**X**	**X**	**X**
Monitoring, recording, reporting	**X**	**X**	**X**	**X**	**X**	**X**
Emergency response	**X**	**X**	**X**	**X**	**X**	**X**
Secure financial resource			**X**	**X**		**X**
Ensure ESM in downstream				**X**	**X**	**X**

The "*Guidance Document on the Preparation of Technical Guidelines for the Environmentally Sound Management of Wastes Subject to the Basel Convention*" (1994) was the oldest document that was reviewed in this study. At that time, the discussion on ESM components was limited. Following the Basel Convention Guidance Document, various guidelines were published in parallel with further discussions on ESM. Recently published documents cover many of the ESM components listed in the above Table.

It should be noted that MPPI and PACE have covered in their guidelines the overall lifecycle of used mobile phones and computers (in case of MPPI, refurbishment, collection, material recovery/recycle, awareness raising at the designing stage and transboundary movements) in collaboration with the industry under the Basel Convention Partnership (consisting mainly of manufacturing companies of the developed countries). On the other hand, BCRC-SEA in their guidelines has put emphasis on repairing and refurbishment to better reflect the realities in the developing countries where secondhand electric and electronic equipments are often reused. It was observed that the levels of requirements on ESM differ among guidelines even if the same ESM components are recommended.

"The e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment"

developed by BAN are not guidelines but are standards for certifying “responsible recyclers”. The standards are comparatively more strict than the standards in other guidelines; certification of SA 8000 (global social accountability standard) in addition to compliance of environmental laws/regulations and standards are required not only for the facility to be certified but also for its recyclers and refurbishers in the downstream of the recycling chain.

Study on Criteria and Requirement for ensuring ESM of Imported/Exported Hazardous Wastes and Other Wastes in Asian Countries

The chapter summarizes criteria and/or requirement imposed on waste management facility by the government in Asian region for ensuring ESM of imported/exported hazardous wastes and other wastes. The information was collected through questionnaire survey addressed to the following countries.

- Japan
- Republic of Korea
- Philippines
- Singapore

Criteria and Requirement for Hazardous Wastes Export in Japan

Pursuant to the provision of Article 3 of the Law for the Control of Export, Import and Others of Specified Hazardous Wastes and Other Wastes (hereinafter referred to as "the Law"), specified hereunder are matters necessary to ensure accurate and smooth implementation of the Convention and the bilateral, multilateral or regional agreements and arrangements specified in Article 11 of the Convention.

The following is the basic matters concerning measures to be taken to prevent damage to human health or the living environment that is likely to occur in association with the export, import, transportation and disposal of specified hazardous wastes, etc.

Table 3: Japan's Criteria for Export of Specified Hazardous Wastes and Other Wastes

<table>
<tr><td colspan="3">Act for the Control of Export, Import and Others
of Specified Hazardous Wastes and Other Wastes (Basel Law)</td></tr>
<tr><td>Basel Law
(Article 4 (3))</td><td colspan="2">Matters listed in Article 3, items (i) to (iv) of the Law for the Control of Export, Import and Others of Specified Hazardous Wastes and Other Wastes pursuant to the provision of Article 3 of the same Law (No.1 2(1) (a))</td></tr>
<tr><td rowspan="3">The Minister of the Environment shall, when the written application is sent to the Minister pursuant to the provision of the preceding paragraph, confirm whether necessary measures to prevent environmental pollution are taken in regard to the disposal of specified hazardous wastes, etc.</td><td rowspan="3">(a) such export shall fall under any of the following cases:</td><td>i) where Japan does not have the technical capacity or the necessary facilities, or the disposal capacity or suitable disposal sites to dispose, in an environmentally sound and efficient manner, of specified hazardous wastes, etc. to be exported;</td></tr>
<tr><td>ii) where specified hazardous wastes, etc. to be exported are required as raw materials for recycling or recovery industries in the State of import; or</td></tr>
<tr><td>iii) where specified hazardous wastes, etc. to be exported are exported, imported, transported and disposed of by the Parties of the Convention (hereinafter referred to as "the Parties") as a whole in accordance with the criteria decided as provided in Article 4-9 (c) of the Convention;</td></tr>
</table>

<table>
<tr><td rowspan="8">pertaining to the written application and notify the Minister of Economy, Trade and Industry of the confirmation result.</td><td colspan="2">(b) such export shall not be made to non- Parties;</td></tr>
<tr><td colspan="2">(c) such export shall not be made to the area south of 60 degrees south latitude;</td></tr>
<tr><td colspan="2">(d) such export shall not be the export of specified hazardous wastes, etc. prohibited by the State of import;</td></tr>
<tr><td colspan="2">(e) consent for such export shall have been obtained in writing from the State of import and the Party of transit; provided, however, that this shall not apply to the consent of the Party of transit if the Party of transit in question does not require written consent and when Japan does not obtain any response from the Party of transit in question within sixty days after the day the Party of transit in question has received notification from Japan;</td></tr>
<tr><td colspan="2">(f) confirmation shall have been received from the State of import that a contract between the exporter and the disposer is concluded that clarifies, in regard to the specified hazardous wastes, etc. to be exported, that transportation and disposal shall be implemented in an environmentally sound manner;</td></tr>
<tr><td rowspan="3">(g) it shall be found that the transporter and disposer have the capacity to transport and dispose of specified hazardous wastes, etc. in an environmentally sound manner, and that their transportation and disposal are ensured to be implemented in a manner that falls neither below the level required from an environmental conservation viewpoint applicable in Japan, nor below the criteria to be decided on by the Parties at their meeting, as provided in Article 4-2 (e) of the Convention;</td><td>(g) -1 the transporter and disposer have the capacity to transport and dispose of specified hazardous wastes, etc. in an environmentally sound manner</td></tr>
<tr><td>(g) -2 transportation and disposal are ensured to be implemented in a manner that falls below the level required from an environmental conservation viewpoint applicable in Japan</td></tr>
<tr><td>(g) -3 transportation and disposal are ensured to be implemented in a manner that falls below the criteria to be decided on by the Parties at their meeting, as provided in Article 4-2 (e) of the Convention</td></tr>
<tr><td rowspan="2">(h) necessary measures shall have been taken when the State of import or the Party of transit requires insurance, a bond or some other guarantee for the import, transportation or disposal of specified hazardous wastes, etc., or the exporter, transporter and disposer shall have a sufficient financial base and technical capacity to ensure export, transportation and disposal, respectively, of specified hazardous wastes, etc.;</td><td>(h) -1 necessary measures shall have been taken when the State of import or the Party of transit requires insurance, a bond or some other guarantee for the import, transportation or disposal of specified hazardous wastes, etc.,</td></tr>
<tr><td>(h) -2 the exporter, transporter and disposer shall have a sufficient financial base and technical capacity to ensure export, transportation and disposal, respectively, of specified hazardous wastes, etc.;</td></tr>
<tr><td colspan="2">(i) such export shall be consistent with other necessary matters for the accurate and smooth implementation of the Convention.</td></tr>
</table>

Criteria and Requirement for Hazardous Wastes Import in Republic of Korea

The ESM is defined in the *Act on Resource Recycling of Electrical and Electronic Equipment and Vehicles* and *Waste Management Act*. The imported wastes controlled by the Basel Convention should be

following the regulation of *Act on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal* and other wastes by the *Waste Management Act*.

The criteria and requirement for import of hazardous waste import in Republic of Korea are collected through questionnaire survey sent to the Korean Environmental Corporation (K-ECO).

Table 4: Criteria / requirement on waste management facility in Republic of Korea (ESM standard for operation of waste management facility)

ESM component	Overview of requirement / criteria
Introduction of EMS	The requirements are clarified in the relevant laws. Each operator may have ISO 9000 or 14001 for the assurance of ESM. The ISO certificate is voluntary option for the operator and not mandated for recycling operation.
Occupational safety and health	The health and environmental condition of the facility is defined under the relevant laws in regards with labor and health. The Waste Management Act also follows the relevant regulation enacted in the labor laws for their safety and health measures.
Monitoring, recording, reporting	The conditions for regular reporting are also regulated in the Waste Management Act.
Awareness and competency of staffs	The training and safety instruction are also regulated in the Waste Management Act.
Emergency response	The emergency plan is also regulated in the Waste Management Act.
Secure financial resource	Not required
Ensure ESM in downstream	The decision of the downstream recycling chain should be made under the relevant laws which regulate the general condition for the recycler or operator. For the imported wastes, the importer should clarify the use and the recycling chain of the wastes, especially, under the control of Basel Convention. For general hazardous waste, the domestic standards are adopted for their treatment.

Technical requirement on facility which recycles the items targeted under EPR (extended producer responsibility) system, technical design or system of facility should meet the standards clarified in "*the Act on Resource Recycling of Electrical and Electronic Equipment and Vehicles*". The law defines not only responsibility of the involved party, but also detailed recycling method.

Criteria and Requirement for Hazardous Wastes Import in the Philippines

In the Philippines, facilities that treat, recycle, reprocess, store and dispose of hazardous wastes are required to register as Treatment, Storage and Disposal (TSD) facilities under *Republic Act 6969 (Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990)*. The above-mentioned criteria are requirements for TSD registration and are stipulated in *DENR Administrative Order (DAO) 36, Series of 2004 (Procedural Manual for Hazardous Waste Management)*. The TSD Registration Certificate must be secured from the Environmental Management Bureau (EMB) before the facility can operate and handle

hazardous wastes[1]. (*copy of RA 6969 and DAO 04-36 can be downloaded from our website,)

ESM is not specifically defined in RA 6969, DAO 92-29. However, under Section 2 (Declaration of Policy) of the DAO, it is stated that "it is the policy of the State to regulate, restrict or prohibit the importation, manufacture, processing, sale, distribution, use and disposal of chemical substances and mixtures that present unreasonable risk and/or injury to health or the environment."

ESM Criteria/requirement on TSD facilities are summarized as follows. Information was collected through questionnaire survey for the Basel officer in EMB.

Table 5: Criteria / requirement on waste management facility in the Philippines

(ESM standard of TSD facility in the Philippines)

ESM component	Overview of requirement / criteria	Relevant law / regulation
Introduction of EMS	• Not required	—
Occupational safety and health	• As part of the Environmental Impact Assessment (EIA) , prior to issuance of Environmental Compliance Certificate (ECC), measures to address occupational, environmental and health and safety are already identified • Facility has accredited pollution control officer (PCO) • Facility practices good housekeeping	- PD 1586 (EIA) and its IRR (DAO 03-30) - RA 6969 and one of its IRR (DAO 04-36)
Monitoring, recording, reporting	• Facility submits quarterly Self-Monitoring Reports (SMR)	- DAO 04-36
Awareness and competency of staffs	• Facility train its personnel and staff on the implementation of the emergency contingency plan and the hazard posed by improper handling, transport, and use of chemical substances and their containers	- DAO 04-36
Emergency response	• Facility submits an emergency contingency plan as part of the requirement for TSD registration • Facility submits abandonment plan as part of the requirement for ECC and TSD registration	- DAO 04-36 - DAO 03-30
Secure financial resource	• Facility submits financial resources (i.e. letter of credit, surety bond, trust fund) to conduct proper hazardous waste treatment continuously and to cover liability for accidents.	- DAO 04-36
Ensure ESM in downstream	• Facility submits residuals management plan and long-term plan for the recycled/reprocessed/ end-product as part of the requirement for TSD registration	- DAO 04-36
Others	• Facility submits copy of ECC and their Environmental Impact Assessment or Initial Environmental Examination as part of the requirement for TSD registration • Facility submits valid Permit to Operate Air Pollution Control Installations and/or Discharge Permit as part of the requirement for TSD registration	- DAO 04-36 - DAO 03-30 - DAO 04-36 - RA 8749 (Clean Air Act) and its IRR (DAO 00-81)

[1] The copy can be downloadable from the website of EMB (www.emb.gov.ph)

		- RA 9275 (Clean Water Act) and its IRR (DAO 05-10)

TSD facility is required to submit process flow and detailed description of technology used in each treatment/recycling/disposal process, including overall material balance identifying all/by-products, and end-products and residues as part of the requirement for TSD registration

Criteria and Requirement for Hazardous Wastes Import in Singapore

The following is summary of the requirement on waste management facility which information was collected through the questionnaire survey and interview to the competent authority to the Basel Convention in Singapore (NEA: National Environmental Agency).

Table 6: Criteria / requirement on waste management facility in Singapore
（ESM standard for operation of waste management facility）

ESM component	Overview of requirement / criteria	Relevant law / regulation
Introduction of EMS	• Not required	—
Occupational safety and health	• Ensure that the workplace safety complies with the Ministry of Manpower's requirements on occupational safety and health.	- Workplace Safety and Health Act[2]
Monitoring, recording, reporting	• The recycling facility shall submit to PCD monthly records on quantity of e-wastes imported, resold, recycled and disposed.	—
Awareness and competency of staffs	• Persons licensed to handle Hazardous Substances and Hazardous Wastes are required to undergo training on safe use and handling of hazardous substances.	- Environmental Protection and Management Act -Environmental Protection and Management (Hazardous Substances) Regulations
Emergency response	• It is a requirement for facilities using Hazardous Substances or dealing Hazardous Wastes to prepare and keep up to date an emergency action plan to deal with incidents of spills, leaks. • For closure plan, tenants are required to perform Environmental Baseline Study (EBS) as a condition to assign or transfer the lease[3]	-Environmental Public Health (Toxic Industrial Wastes) Regulations - Environmental Protection and Management Act -Environmental Protection and Management (Hazardous

[2] http://agcvldb.agc.gov.sg/html/homepage.html

[3] The more detailed information can be found at the website of Jurong Town Corporation （http://www.jtc.gov.sg/aboutjtc/policies/LeaseManagement/AssignmentOfLease/EBS/Pages/index.aspx）

ESM component	Overview of requirement / criteria	Relevant law / regulation
		Substances) Regulations
Secure financial resource	• A Banker's Guarantee of $100,000 and $30,000 is required for the issuance of Basel Import/Export and Transit Permit respectively. • Not a requirement for import of non-hazardous e-wastes.	-Hazardous Waste (Control of Export, Import & Transit) Act and its Regulation
Ensure ESM in downstream	• The recycling facility shall submit to our department monthly records on quantity of e-wastes imported, resold, recycled and disposed.	-Hazardous Waste (Control of Export, Import & Transit) Act and its Regulation

Comparison of ESM criteria/requirement

The following is summary of the ESM criteria which can be identified in screening criteria on export of hazardous waste or requirement in licensing system or EIA on waste management facility in Asian countries.

Table 7: Summary of ESM criteria introduced in the Asian countries

Major ESM components in each country's criteria for ensuring ESM of exported/ imported wastes	Japan (export case)	Republic of Korea	Philippines	Singapore
	Japanese Basel Law	Korean Basel Law, Waste Management Law	DENR Administrative Order 92‐29, 2004‐36	Hazardous Waste (Control of Export, Import and Transit) Act
Compliance with the legal requirement	X	X	X	X
Introduction of EMS				
Occupational safety and health	X	X	X	X
Monitoring, recording, reporting	X	X	X	X
Awareness and competency of staffs	X	X	X	X
Emergency response	In Basic Matter	X	X	X
Secure financial resource	X		X	X
Ensure ESM in downstream		X	X	X

Summary

The study in this Chapter can be summarized as follows;

- In countries that allow import of hazardous waste for the purpose of environmentally sound recycling (e.g. Republic of Korea, Philippines, Singapore), there are various mechanisms in place that ensure the ESM of waste management facilities, which also function to ensure the

ESM of imported hazardous wastes.

- As seen in Japan, exporting countries are introducing screening criteria for exports in order to ensure ESM in the importing countries.
- Some waste generating companies have made their own standards to select only waste management facilities that implement environmental management system (EMS). However, in many cases, waste generators do not have such standards, and facilities are implementing EMS only on a voluntary basis.
- The target of this study was countries with high level of economic development, but the levels of institutional development differed among countries. In countries with relatively low economic development, it is hoped that the institutions will further develop, as facilities are currently inadequate and the concept of ESM is still not widespread.

Consideration on Measures for ensuring Appropriate Resource Circulation in Asia

Taking into account the current situation of transboundary movements and the recent development of waste management facilities in Asia, this Chapter addresses the following issues:

- The possible effect of ESM standards on transboundary movement of hazardous wastes in Asia
- Measures that should be taken for prevention of illegal traffic and promotion of legal resource circulation (the measures taken in parallel with introduction of ESM standards).

The Expected Effects of Introducing ESM Standards System in Asia

The followings are the expected effects of introducing ESM standards in Asia.

- Transboundary movement of hazardous wastes for the purpose of ESM will be ensured.
- The Basel Convention competent authorities and customs authorities have clear mapping of the ESM facilities located in the region.
- For some recyclers in the non-OECD countries, recycling business only with domestically collected wastes cannot ensure sustainable profitability. Therefore some of them have demand for continuous import of wastes. If the ESM standards can enable the continuation of transboundary movements of hazardous wastes from OECD countries to non-OECD countries (i.e. if it can be the alternative measure of the BAN amendment), introduction of ESM standards may be beneficial for those countries that wish to keep the future option of importing wastes.
- It may provide incentives to the waste generating companies and the waste management facilities that are planning to expand the business of recycling imported wastes to build their capacities regarding ESM practices.
- ESM standards may be able to simplify and accelerate the import/export procedures under the Basel Convention which is currently time consuming. Establishment of the ESM standards system may require some time, but once it is introduced, it may promote appropriate resource circulation which endure ESM.

Measures to Prevent Illegal Traffic and to Ensure ESM in Circulation of Resources

As reviewed in the previous section, introducing ESM standards in Asia may have a number of beneficial impacts. However, the following issues are remaining challenges for enforcement of the Basel Convention.

1. Illegal transboundary movements (due to lack of strict border control)
2. Illicit transboundary movements (due to different interpretations of gray area of the Convention, such as waste/non-waste, hazardous/non-hazardous, etc)
3. Lack of ESM capacity in each country

In consideration of the issues above, the following measures need to be addressed in parallel with discussion on ESM standards.

Strict border control through better cooperation among relevant authorities

Introducing standards alone is not sufficient to prevent illegal transboundary movements. The following measures are needed in order to strengthen border control.

- ✧ Measures to strengthen cooperation between competent authorities and customs in each country (e.g. implementation of joint inspections, implementation of risk profiling such as identification of the HS codes at high risk for deliberate disguised declaration, etc.)
- ✧ Various measures to be implemented in through collaboration between the Basel Convention and the World Customs Organization (WCO)

Promotion of information sharing

In order to prevent illicit transboundary movements, implementation of the following measures may be effective

- ✧ Promotion of information sharing among Basel Convention competent authorities through the existing regional networks (e.g. Asian Network, IMPEL-TFS)
- ✧ Awareness raising of importers and exporters regarding regulations of the other countries
- ✧ Notification of national definitions of hazardous waste as provided in Article 3 of the Basel Convention
- ✧ Notification of export prohibition of import of hazardous wastes as provided in Article 4 of the Basel Convention (if introduction of the ESM standards becomes the alternative measure of the BAN Amendment, it is important to respect the countries that wish to prohibit the import of hazardous wastes and to ensure that hazardous wastes are not exported to such countries)

Reinforcement of existing mechanisms under the Basel Convention

The Basel Convention provides various regulatory provisions in order to ensure ESM when subject to transboundary movement. However, not all provisions are being effectively implemented. The following existing mechanisms among others may effectively complement the ESM standards.

- ✧ Take back obligations (waste is taken back to the State of export when it is found that the purpose of its transboundary movement was not destined for ESM facilities as provided in Article 8 and 9 in the Basel Convention)
- ✧ Reporting on completion of disposal (disposer inform both the exporter and the competent authority in the State of export the completion of disposal as specified in the notification as provided in Article 6(9) of the Basel Convention).
- ✧ Notification procedures as provided in Article 3 and 4

The reasons why these existing tools are not effectively functioning, the challenges in their implementation and the ways to overcome those challenges must be investigated.

Support in establishing and introducing ESM standards

As situation is different for each country, support should be provided to countries that face difficulties in establishing or introducing ESM standards for economic or technical reasons.

Recommendations

Identification of Recommendable ESM Standards

The basic components of ESM that have been identified through reviewing existing guidelines and relevant documents are incorporated in requirement on waste management facility or import/export criteria in Asian countries. These basic components of ESM can be classified into three major types; operation of recycling/treatment facilities of hazardous wastes, competency of workers and the management structure.

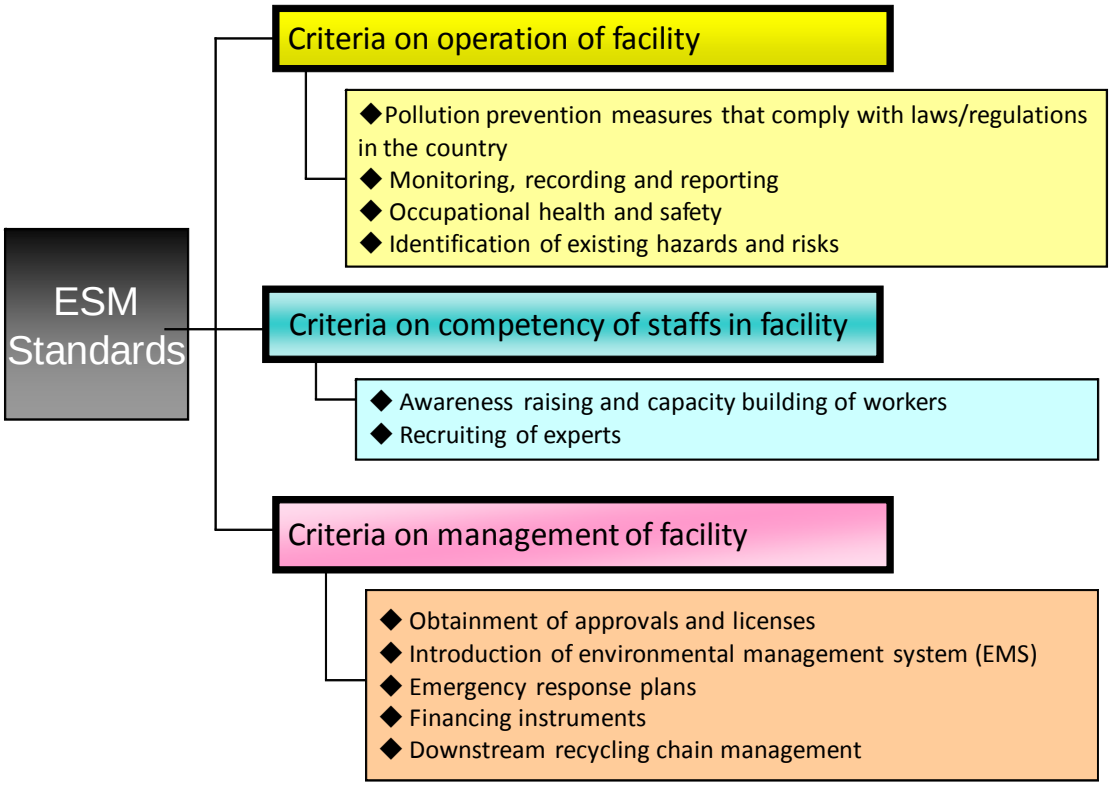

Figure 1: Concept of ESM standard

Figure. 1: Concept of Recommended ESM Standards

However, in Asian countries levels of economic development and technology as well as type of target wastes (i.e. the target of ESM) differ greatly among countries. Considering the existing gaps among countries, in order to introduce the ESM standards as international standards, the following issues need to be discussed.

- Should regulations concerning environment and sanitary/safety conditions be applied at levels adapt to each country or should they be applied at the uniform level for all Asian countries?
- With regard to pollution prevention measures, should there be standards with regard to the outputs (i.e. should the focus be to ensure that the level of pollution does not exceed the permitted level) or should there be standards with regard to technical specification such as

facility design or processes?

- Considering the operational characteristics of facilities will change depending on types of wastes they handle, should different ESM standards be applied for different types of facilities or wastes?
- Should the level of standards be as high as those of OECD countries or should it change depending on the economic level of countries, also taking into account the technical capacity of the developing countries?
- Should the system be designed so that small and medium enterprises (SMEs) can also be certified? (requirement on financial stability may be satisfied only by enterprises with abundant capital)
- Is it feasible in Asia to satisfy standards such as those under e-Stewards of BAN which require that sound usage and treatment is ensured in the downstream of the recycling chain?

Issues that should be Reviewed for the Establishment and Operation of ESM Standards System

The following issues must be reviewed in preparation for the establishment and operation of ESM standards system.

- How would shared understanding and coordination be ensured within each country as components of ESM standards involve not only authorities in the environment sector but also those in other sectors (e.g. authorities of workplace safety),?
- How should the ESM procedures be incorporated into the existing Basel Convention procedures in a manner that does not create overburden or prevent the current circulation of resources?
- Which entity will certify the ESM of facilities? Can BCRCs be assigned such a role?
- What kind of an evaluation process would be conducted in order to certify the ESM facilities? If on-site visit of the certifying entity is required, how will the cost be covered?
- How often should ESM certificates be renewed?
- How should information regarding ESM certified facilities be shared? Should there be access restrictions when disclosing information on such facilities?

Additional Issues to be Studied

This study reviewed existing guidelines and actual ESM policies in some of the Asian countries in order to provide information necessary to facilitate the discussions with regard to ESM standards. However, the following issues need to be studied further.

- This study reviewed the general requirements to ensure the ESM of hazardous wastesl. For detailed discussions, studies must be conducted on more technical aspect of recycling and/or treatment of different type of wastes (e.g. lead-acid battery, etc.).
- The target of the questionnaire survey was only four Asian countries. In order to discuss policy options that are more realistic and feasible, studies in additional countries is desirable.