

# IDENTIFICATION OF E-WASTE AND SECONDHAND E-PRODUCTS IN INDONESIA

*Beijing, 28-29 March 2007*

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# INTRODUCTION

- Electronic and electrical waste called as e-waste currently is rising an emerging global issue, to date it is not a common terms for many Indonesians.
- Under Indonesian domestic regulations, there is no specific definition for e-waste.
- However, with interpretation to the current existing regulation on hazardous waste, e-waste might be understood as unusable and or unworkable or unwanted electronic or electric and electronic appliances due to become obsolete stuffs and need to be disposed, either in the forms of wholes or as parts.
- Public awareness on electronic waste in Indonesia is relatively left behind.
- Consequently, that expected stakeholders do not have idea what the challenge they faced regarding the e-waste issue.

# INTRODUCTION

- Those who are pro-economic development argue that e-waste should be totally distinguished from second-hand electronic that still has economic value. They also are reluctant to manage e-waste as hazardous waste, as there is no criteria or definition of e-waste and second-hand electronic.
- As the authority to national environmental management, the Ministry of Environment has concerned to raise this issue in the national level, including addresses its associated problems.

# *E-WASTE???*

- Indonesian regulation has no any definition for “e-waste” term
- With refer to international discussion on difficulties to differentiate between e-waste and used electronic goods, these issues were also to be problem for Indonesian stakeholders.
- Stakeholders have a common understanding that in this concern, e-waste might be interpreted as any obsolete electronic and electrical goods or components or parts. In addition, it should be differentiated between non-hazardous and hazardous e-waste.
- E-waste that classified as hazardous e-waste should be any e-waste that contains components or parts made from or containing hazardous substances.
- Hence, the whole obsolete electronic appliances might be considered as a hazardous waste as long as it contains parts or components considered as hazardous waste.
- On the contrary, when it was dismantled, only components contain or contaminated by harmful materials would be considered as hazardous waste.

# IDENTIFICATION OF E-WASTE

- Hazardous waste is defined as the residue from activities which contains hazardous materials and/or harmful to the environment and/or imperil the environment and the health as well as the survival of human beings and other living creatures”.
- Though e-waste might be improperly classified as “residue”, but the risks associated to e-waste are relevant to the risks of hazardous waste.
- E-waste as hazardous waste has consequences that in its management should comply with the provisions of hazardous waste management which is based on the cradle to grave principle.
- It means that from its generation to its final disposal, e-waste should be controlled through an established chain of custody system.
- The only problem with the regulation is that offices and households are exempted as liable entities to manage their hazardous waste.
- Electronic waste basically refers to post-consumer electronic products that are generated as obsolete electronic goods, mainly resulting from households and offices.

# IDENTIFICATION OF E-WASTE

- Guidelines to identify parts or components that categorized as hazardous might be obtained from BCRC SEA.
- Since there is no regulation in managing this waste in Indonesia, there is no available data concerning this waste.
- To figure out how much e-waste generated in Indonesia, its might be essential to track back the sources of the product namely the size of electronic manufacturers. Group of manufacturers usually have a specific code for identification:
  1. ISIC that consists of a specific numeric codes to identify group of industry based on their processes or activities
  2. Harmonised System (HS) of commodities. HS for commodities also employs a specific coding system such as coding system for industry.

# IDENTIFICATION OF E-WASTE

## Industrial Code for Selected Electronic Manufactures

Codes	Remarks
38293	Air Conditioner, Under Fluid Machines Industry
38253	Micro Computer
38330	Refrigerators
38321	Color Televisions And Black And White Television
38330	Washing Machines

# IDENTIFICATION OF E-WASTE

## Harmony System Code for Selected Electronic Commodities

### HS CODE

### Remarks

#### Computers

1847160	Input or Output Units, For Personal And Micro Computer
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#### Washing Machines

2845011	Fully Automatic, With A Dry Linen Capacity Not Exceeding 10 Kg
3845012	Not Fully Automatic, With a Built-In Centrifugal Dryer, With A Dry Linen Capacity Not Exceeding 10 Kg
4845019	With a Dry Linen Capacity Not Exceeding 10 Kg, NESOI
5845020	With a Dry Linen Capacity Exceeding 10 Kg
6845090	Parts

# REGULATIONS RELATING TO E-WASTE

- Although e-waste is constituted by hazardous waste and non hazardous waste material and many of e-waste disposed of from household and office activities, Indonesia treats e-waste under hazardous waste regulation, considered that e-waste resulted from manufactured products and the content of hazardous waste.
- Basic regulation on managing e-waste is the most appropriate manner in order to avoid any uncontrollable intention to dump this waste to solid waste disposal site or anywhere else.

# REGULATIONS RELATING TO E-WASTE

- Act Number 23 Year 1997 regarding of Environmental Management (Article 20 and 21, which is stated of the prohibition of hazardous waste import).
- Presidential Decree Number 61 Year 1993 regarding of Basel Convention Ratification, under the Annex VIII stated that e-waste is categorized as hazardous wastes, but if its e-waste do not content of the characteristic under the Annex III is not categorized as hazardous waste.
- The Government Regulation Number 18 Year 1999 jo. Government Regulation Number 85 Year 1999 regarding Hazardous Waste Management.
- To steer implementation of the regulations, some backbones' guidelines have been introduced in 1995.
- Decree of Ministerial Trade and Industry Number 229 Year 1997 that stated imported product should be a new product

# REGULATIONS RELATING TO E-WASTE

- Decree of Ministerial Trade and Industry Number 39 Year 2005 regarding Imported of Used Machinery and Equipment (transportation equipments)
- Decree of Ministerial Trade and Industry Number 520 Year 2003 regarding the prohibition of hazardous waste import
- Wastes in the form of dust and mud/paste/sludge as written in Article 4 to Minister of Industry and Trade Letter of Decree No. 231/MPP/KP/07/1997 on Waste Importing Procedures; and
- Plastic Wastes as specified in the Appendix of Minister of Industry and Trade Letter of Decree No. 230/MPP/KP/07/1997 on Regulated Imported Goods.

# REGULATIONS RELATING TO E-WASTE

- Based on Indonesia's legislation, only selected non hazardous wastes that are allowed to be imported, but must not in the form of sludge, paste, or dust. Importers of wastes must have approval from the Ministry of Industry, and obtained license from the Ministry of Trade. Restriction of waste importations is subject under several industrial and trade legislations, includes:
  - Decree Letter of Minister of Industry and Trade No. 229/MPP/KP/07/1997 on Import Regulations;
  - Decree Letter of Minister of Industry and Trade No. 230/MPP/KP/07/1997 on Regulated Import Goods;
  - Decree Letter of Minister of Industry and Trade No. 231/MPP/KP/07/1997 on Waste Importing Procedures;
  - Law of the Republic of Indonesia No. 10/1995 on Custom Regulation;

# Trans-boundary Movement of E-Waste

- Some policies and legislation concerning import of particular hazardous waste that Indonesian Government has been executed including:
- All hazardous waste are prohibited to be imported. For lead-car battery wastes, the provision took into effect since September 2002;
- Since September 1997, prohibition on issuing permits for any types of business or activities that uses imported hazardous wastes as raw material.
- Since January 1998, import of hazardous wastes including used car-batteries, from countries that are listed in Annex VII to the Basel Convention (OECD, EC, Liechtenstein) was prohibited;
- Car-lead batteries imports are allowed only from developing countries that are members of the Basel Convention, and other developing countries through bilateral, multilateral and regional agreements
- In relation with trans-boundary movement of used electronic appliances and e-waste, there is no official data available.
- However, from field inspections, it was recognized that importation of e-waste actually exists using other common term such as mix metals scrap, plastic for recycle, etc., in their documents.
- This case indicates that control cross border of waste is a difficult task and requires strong coordination among supervisors.

Piles of imported e-waste, mainly telephone boxes, founds in one recycling facility.

Document import stated the materials as metal scrap



# Trans-boundary Movement of E-Waste

- In year 2005 there are 50 containers 40 feet in size entered Indonesia. Import document stated that goods for shipment were new office equipment and mixed metal scrap with HS Number 3926.10.20.00. The purpose of import was reclaiming the scrap then reexport. However, government inspectors found that among wastes there were components that contaminated or containing PCBs, which according to the regulation categorized as hazardous waste.
- This clearly indicates, though there are some regulations, chance to be violated is not impossible.

Example of waste containing or contaminated with hazardous waste (PCBs waste) from Electrical utilities (transformers) which imported considered illegally (it stated in the Import document as metal scrap).



# Import of Second-hand Machinery and Equipment

- Under Ministerial Decree of Ministry of Industry and Trade No. 756/MPP/Kep/11/ 2002 regarding Imported of Used Machinery and Equipment defined used machinery and equipment as *machinery and equipment that can be reused or refurbished and not in the form of scrap*.
- These machinery and equipment can only be imported by licensed end-users for production process or other direct use in its business activity and licensed refurbishment facilities.
- In relation with electronic waste, this Decree prohibits import of used electronic as follow: air conditioner, refrigerator, fan, house-hold washing machine, television and video projector, telephone (including wireless telephone), PCB and CRTs.

**Used Electronic Equipment that can be Imported**  
**(Based on Ministerial Decree of Ministry of Trade No. 39/M-DAG/PER/12/2005)**

<b>No.</b>	<b>HS Number</b>	<b>Description</b>
1	8418	Refrigerator, freezer and its component, electrical and others, compressor exclude for AC in HS Number 84.15
2	8419	Machinery, plant or laboratory equipment, heated electrically or not (exclude burner, oven, and others in 85.14) to process material with temperature difference such as heating, cooking, grilling, distillation, rectification, sterilisation, pasteurisation, condensation, cooling, exclude machinery or installation for household appliances; instant water heater and with storage, non electric
3	8419.11	Instant water heater with gas
4	8422	Dish washer
5	8465	Machinery for processing of PCB
6	8471	Automatic data processing machine and its units, magnetic and optical reader, machinery for data writer on coded data media and its processor, not described or not include in other HS Number
7	8475	Machinery for assembling of electrical lamp, tube or valve or flash lamp, in glass envelope, machine for making glass or glass product by heating
8	8501	Electric motor and generator (exclude electric power plant)
9	8514	Burner and electric oven for industry or laboratory for heating material process by induction or dielectric loss
10	8517	Electric apparatus for telephone or telegraph
11	8525	Transmission, receiver, recorder and reproduction apparatus, television camera, recorder camera and video, camera digital
12	8525.20	Wireless LAN, internet mobile phone, internet video conference, other mobile phone
13	8539	Light bulb or tubular lamp, include sealed beam and ultra violet and infra red lamp

# Primary Data Collections

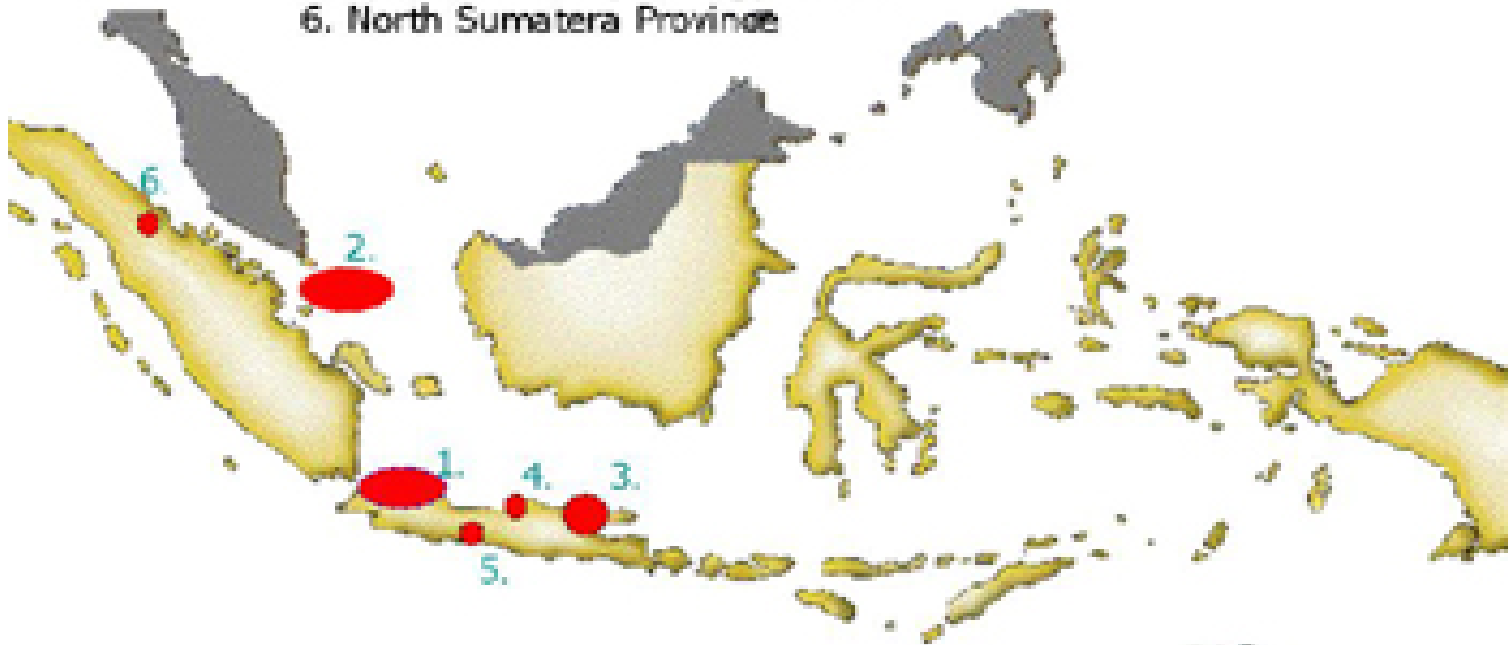
- This Preliminary Study for National Inventory of E-waste basically served as preparation in developing strategy and framework for the actual inventory.
- Primary data collection was focused to identification of refurbishment and recondition facilities, potential e-waste recycle facilities and influx of illegal used electronics goods that potential to increased generation e-waste in Indonesia.
- Refurbishment and recondition facilities were interpreted as shops or workshops that conduct electronics services and trading the used ones.
- The purposes of survey basically to identify the presence of used electronic market and refurbishment premises in particular area. Moreover, management of obsolete products or electronic spare parts and components were also as part of observation (West Java, Jakarta, Batam)

# Primary Data Collections

- Though officially there was no e-waste recycle facilities in Indonesia, there was an indication that some facilities conduct recycling of waste that probably categorized as e-waste.
- Focus of survey was to identify kinds of waste that collected and managed by those selected recycle facilities (East Java and Batam)
- In identifying potential illegal import of used electronic goods into Indonesia. These examination was emphasized on to find out the pattern of the incoming of used electronic goods, factors affecting the situations, and whenever possible the volume of importation and its management of obsolete electronic goods. (Batam and Wakatobi Islands)

# Distribution of electronic industries in Indonesia

1. Banten, DKI Jaya and West Java Provinces
2. Batam of Kepulauan Riau Province
3. East Java Province
4. Kudus of Middle Java Province
5. Special Territory of Yogyakarta
6. North Sumatera Province



# Primary Data Collections

Results was performed:

1. Small islands is market targeted for illegally e-waste import into territory.
2. Identification of Individual shops provide used electronic goods and refurbishment. In respect to ability extending of the end-of-life electronic products, some workshops have play important role in reduction peneration of e-waste.
3. Most of e-waste recycle industry have recycling facility to produce metal scrap.
4. As a special bonded area, Batam has privilege to import almost anything but prohibited goods. For this reason, brand new goods might be imported cheaply and even lower for used ones. Most goods supplied to Batam were imported particularly from Singapore or Malaysia
5. Used electronic goods in Batam Island mostly are still valued including hazardous e-waste ( PC Board, residue and scrap metal).
6. Most industries in the industrial area have followed several activities; collecting, separating, reconditioning, recycling, packing and re-selling (national market and export).

# Activity of Recycle Facilities in Batam City

No.	Company Name	Activity	Kinds of e-waste Collected
1	PT. Sentral Agung Himalaya	Collecting metal waste from domestic sources, segregation, packing, export or domestic sale, no physical treatment	Rejected small parts of electronic components
2	PT. Interco Bisnis Langgeng	Collecting metal waste from domestic sources, segregation, packing, export or domestic sale, no physical treatment, producer polybag and garbage bag made from used plastic and new plastic	Plastic, e-waste: used PCBs, rejected PCBs, computer monitor, electrical and electronical parts
3	PT. Indo Batam Ekatama	Collecting metal waste from domestic and imported, segregation, packing, export or domestic sale, no physical treatment	Scrap: Al, Cu, brass, tin solder, plastic. e-waste: Used PCBs

# Activity of Recycle Facility in East Java

No	Company Name	Activity	Kinds of e-waste Collected
1*	PT. Wajar Logam Jaya	importer mix scrap metal, TV and monitor, dismantling CPU and printer; recondition monitor, produce scrap metal or aluminum, brass ingots, grinded casings, export	e-waste: CPU, printer, TVs, monitor,
2*	PT. Sun Doly	Importer mix scrap metal, TV and monitor, dismantling CPU and printer; recondition monitor, produce scrap metal or aluminum, brass ingots, grinded casing, export	e-waste: CPU, printer, TVs, monitor,
3	PT. Kingson Metal Industry	Metal smelter using imported material in form scrap of vehicles	e-waste: not found
4	PT. Metalindo Jaya Abadi	Recondition of CPU, fax machine, and printer from domestic originated for local market	e-waste: computer's CPUs, printer
5	PT. Fremont Nusa Metal	Non ferrous smelter using local mix scrap metal, metal apparatus reconditioned	e-waste: not found
6	PT. Hanjaya Perkasa Metal Indonesia	Non ferrous smelter using imported mix scrap metal, recondition metal apparatus, imported PCBs powder	e-waste: used PCBs, PCBs sacrap, PCBs powder



# Disposal Area of Electronic Waste at Special Bonded Area in East Java



# Metal Smelter Facility and Waste Produced at the E-Waste Recycling Facility in East Java



# An open storage of imported monitors in a reconditioning facility in East Java



# Recycling and refurbishment E-Waste Product Based on its Functions that Ready to Export



A small informal seaport in Batam Island was used for transshipment of used goods



# Electronic parts and components found in a recycle facility in Batam



# CHALLENGES OF E-WASTE MANAGEMENT

- The absence of such regulation would result in difficulties in collecting data on e-waste from households which considered as the largest consumers of electronic products.
- In addition, no obligation for producers to “take back” their obsolete products indicates that there is no liable party responsible for generation of e-waste including its management.
- The Ministry of Environment has not yet had any specific regulation or policy on electronic waste treatment and disposal rather than treated as other hazardous waste or controlled waste.
- Factors to be Considered in Preparing National Inventory of E-Waste:
  1. Collecting Data from Specific Sources
  2. Collecting Data from Recycle Facilities
  3. Collecting Data of Post Consumer Electronic Products

# **NEED ASSESSMENT ON MANAGING NATIONAL E-WASTE**

- Regulation Aspect
- Institutional Aspect
- Technical Aspect
- Law Enforcement and Inspection
- Consumers Protection
- Environmental and Economic Aspect

***THANK YOU***