

**Asia Pacific Workshop on
Global Partnership on Waste Management:**

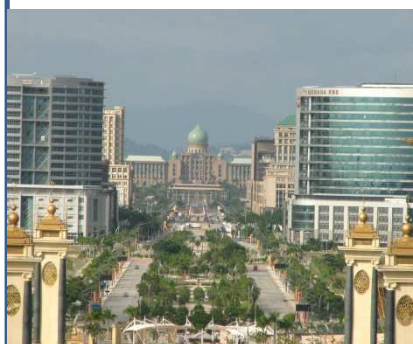
**MAPPING NEEDS AND ACTIVITIES ON
WASTE MANAGEMENT**

Country Report by

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Department of Environment

MALAYSIA



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- POLICIES ON HAZARDOUS WASTES
- CURRENT HAZARDOUS WASTE MANAGEMENT SYSTEM
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INTRODUCTION

MALAYSIA HAS UNDERGONE RAPID INDUSTRIALISATION OVER PAST 30 YEARS. VARIOUS TOXIC AND HAZARDOUS WASTES WERE GENERATED

HAZARDOUS WASTES MANAGEMENT FORMALISED IN 1989.

ENVIRONMENTAL QUALITY (SCHEDULED WASTES) REGULATIONS, 1989 ENACTED AND ENFORCED TO MANAGE THE WASTES

THE SCHEDULED WASTES REGULATIONS PROVIDED A STRONG FOUNDATION FOR THE GOVERNMENT TO MANAGE SCHEDULED WASTES

POLICIES ON HAZARDOUS WASTES INCLUDING E-WASTE

- ✓ **Malaysia does not allow the importation of hazardous waste including e-waste into the country;**
- ✓ **the import of hazardous wastes for recovery or disposal is disallowed.**
- ✓ **Malaysia does allow importation of used electronic and electrical equipment into country for direct reuse, provided such equipment shall not be more than three years from the date of its manufacture.**
- ✓ **This policy is described under the “Guidelines for the Classification of Used Electrical and Electronic Equipment in Malaysia”, published by the DOE in 2008**

POLICIES ON HAZARDOUS WASTES INCLUDING E-WASTE

- Since there are already recovery facilities established in Malaysia to process and recover useful materials from hazardous wastes, it is also the policy of the Government of Malaysia not to allow hazardous wastes to be exported out of the country;**
- Malaysia will only allow the exportation of hazardous wastes for recovery in overseas, if the local recovery facilities do not have capability and capacity to carry out such activity.**
- Before DOE can allow hazardous wastes to be exported, the wastes generator/exporter must submit their proves.**
- The consideration for such exportation is based on case by-case basis and the exportation of hazardous wastes for final disposal is not allowed.**

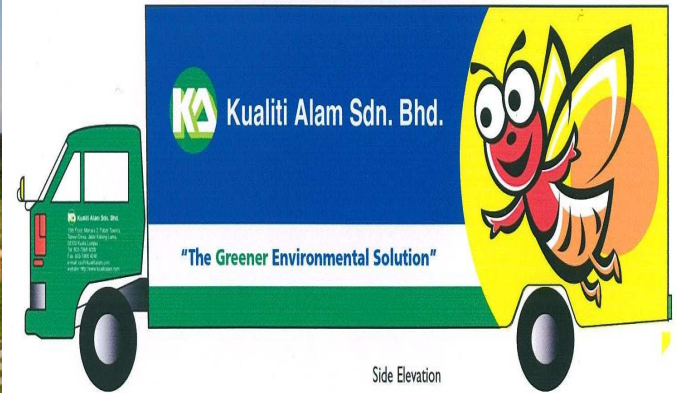
HAZARDOUS WASTES MANAGEMENT SYSTEM



Revolving Waste Management System (RWMS)



25 12 2011



Side Elevation



29 9 2011



25 9 2008



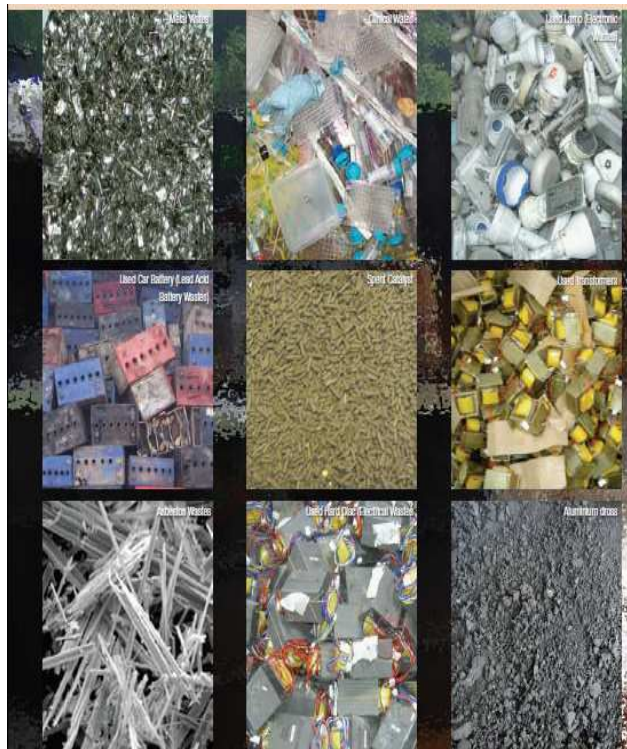
Miles

Aerial View of the Integrated Toxic and Hazardous Wastes Facility at Bukit Nenas, Port Dickson, Negeri Sembilan

HAZARDOUS WASTES GENERATED, 1985-2008



Quantity of scheduled wastes by category, 2008



NO.	CATEGORY OF WASTE	QUANTITY OF WASTE	
		(MT / Year)	PERCENTAGE (%)
1	Gypsum	366,771.99	28.11
2	Dross / Slag / Clinker	208,319.53	15.96
3	Oil & Hydrocarbon	129,701.99	9.94
4	Mineral Sludge	107,122.05	8.21
5	E-Waste	102,808.53	7.88
6	Heavy Metal Sludge	91,730.67	7.03
7	Used Containers	38,876.04	2.98
8	Acid & Alkali	38,179.66	2.93
9	Spent Solvent	38,062.81	2.92
10	Batteries	34,283.59	2.63
11	Mixed Wastes	33,928.70	2.60
12	Clinical/Pharmaceutical	26,967.95	2.07
13	Ink & Paint Sludge	18,695.78	1.43
14	Contaminated Paper & Plastic	17,270.40	1.32
15	Rubber Sludge	15,512.02	1.19
16	Residue	13,544.07	1.04
17	Others	6,627.73	0.51
18	Phenol/Adhesive/Resin	6,184.99	0.47
19	Catalyst	5,225.53	0.40
20	Contaminated Land / Soil	1,324.77	0.10
21	Chemical Waste	1,169.75	0.09
22	Contaminated Active Carbon	934.42	0.07
23	Asbestos	668.94	0.05
24	Mercury	465.31	0.04
25	Photographic Waste	418.77	0.03
26	Sludge Contain Cyanide	84.78	0.01
27	Pesticide	12.26	0.00
28	Peroxide Agent	5.73	0.00
	TOTAL	1,304,898.77	100.00

Quantity of scheduled wastes by Industry, 2008

NO.	CATEGORY OF WASTE	QUANTITY OF WASTE	
		(MT / Year)	PERCENTAGE (%)
1	Chemical	527,925.57	40.46
2	Electronic / Electrical	174,812.53	13.40
3	Metal / Engineering	168,758.11	12.93
4	Automotive/Workshop	86,672.79	6.64
5	Water Treatment Plant / Power Station	77,344.28	5.93
6	Licensed Facilities	51,970.33	3.98
7	Paper Based	36,983.41	2.83
8	Printing & Packaging	31,095.50	2.38
9	Shipping	31,464.02	2.41
10	Petroleum / Oleo chemical	24,150.73	1.85
11	Industrial Gas	20,212.01	1.55
12	Rubber Based	18,029.75	1.38
13	Solar	16,055.74	1.23
14	Hospital/Pharmaceutical	12,367.68	0.95
15	Batteries	7,640.77	0.59
16	Food	3,947.40	0.30
17	Textile	3,704.32	0.28
18	Mineral / Ceramic / Tiles / Plaster	2,488.34	0.19
19	Wood Based	2,327.91	0.18
20	Glass / Crystal	2,067.48	0.16
21	Resin & Adhesive	1,062.68	0.08
22	Others	875.75	0.07
23	Plastic	794.77	0.06
24	Cement Based	706.82	0.05
25	Laundry	602.88	0.05
26	Photographic	270.96	0.02
27	Hotel	235.33	0.02
28	Quarry	187.91	0.01
29	Asbestos	143.01	0.01
	TOTAL	1,304,898.77	100.00

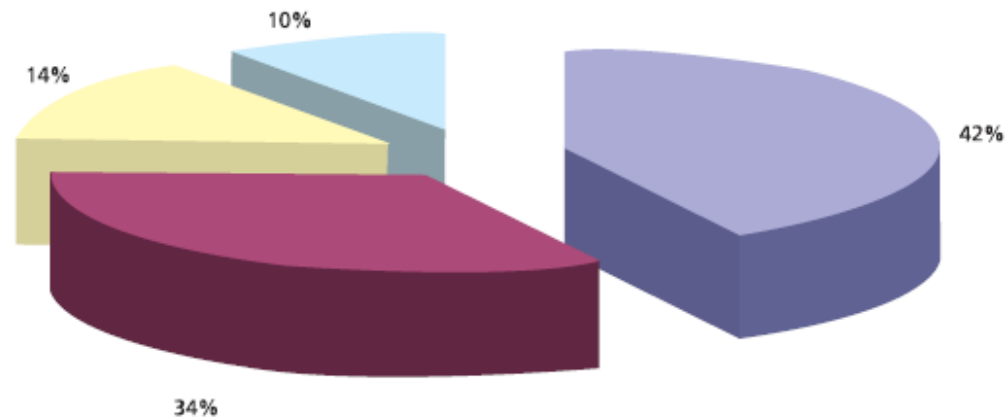
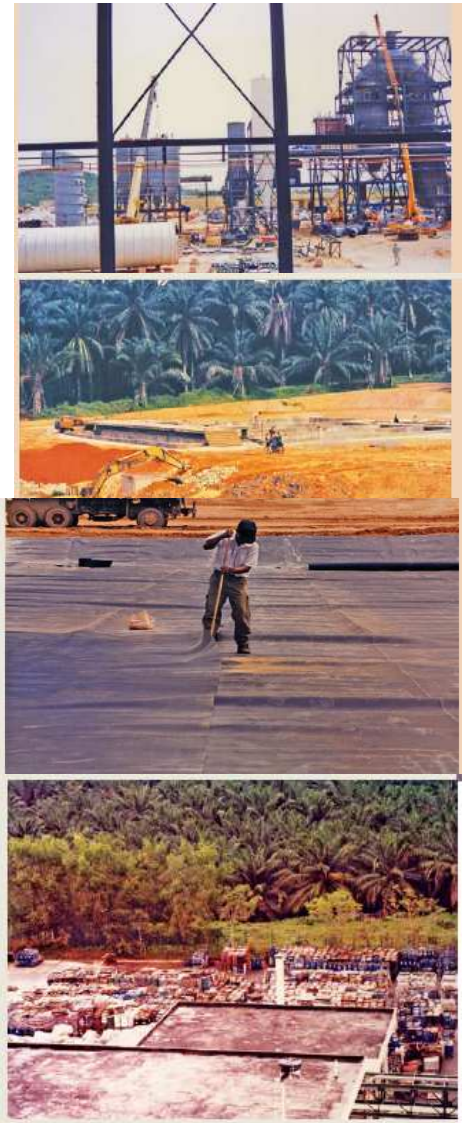
HANDLING OF SCHEDULED WASTES, 2008

NO.	FACILITY	TONNES	PERCENTAGE (%)
1	Local Off-site Recovery Facilities	624,361.12	47.85
2	On-site Treatment	484,747.54	37.15
3	Kualiti Alam Sdn. Bhd	137,371.50	10.53
4	On-site Storage	24,618.23	1.89
5	Off-site Clinical Waste Incinerators	14,140.05	1.08
6	Trinekens (Sarawak) Sdn. Bhd.	13,940.33	1.07
7	Foreign Facilities (Import/Export)	5,720.00	0.44
	TOTAL	1,304,898.77	100.00

Off-site Recovery Facilities and quantity of hazardous wastes handled, 2008

WASTE CATEGORY	RECOVERY FACILITY	HANDLING PERCENTAGE %
Electronic and Electrical Wastes	141	21.1
Dross/ Slag/ Clinker	39	23.4
Oil & Mineral Sludge	29	17.2
Acid and Alkali	29	6.3
Heavy Metal Sludge/ Rubber	28	8.3
Used containers/ Contaminated Waste/ Ink/ Paint/ Lacquer	26	10.2
Solvent	21	5.2
Photographic Waste	9	0.1
Phenol/ Adhesive/ Resin	8	0.2
Used batteries	7	6.7
Gypsum	4	1.3
TOTAL	341	100

Type of Treatment and Disposal of Wastes in Kualiti Alam Sdn Bhd, 2008



LEGISLATION ON SCHEDULED WASTES

- ❑ SECTION 34B, ENVIRONMENTAL QUALITY ACT, 1974
- ❑ ENVIRONMENTAL QUALITY (SCHEDULED WASTES) REGULATIONS, 1989, REPLACED BY THE ENVIRONMENTAL QUALITY (SCHEDULED WASTES) REGULATIONS, 2005
- ❑ ENVIRONMENTAL QUALITY (PRESCRIBED PREMISES)(SCHEDULED WASTES) ORDER REGULATIONS 1989;
- ❑ ENVIRONMENTAL QUALITY (PRESCRIBED PREMISES)(SCHEDULED WASTES) REGULATIONS 1989;
- ❑ ENVIRONMENTAL QUALITY (DIOXIN AND FURAN REGULATIONS

ESTABLISHMENT OF DISPOSAL FACILITIES

- INDUSTRIES ARE ENCOURAGED TO TREAT WASTE ON-SITE AND DISPOSED OFF THE WASTES AT APPROVED SITES.
- A PRIVATE COMPANY KUALITI ALAM SDN BHD WAS APPOINTED BY THE GOVERNMENT TO ESTABLISH AND INTEGRATED SCHEDULED WASTE TREATMENT AND DISPOSAL SYSTEM IN PENINSULAR MALAYSIA.
- KA WAS GIVEN AN EXCLUSIVE RIGHT TO CONSTRUCT AND TO MANAGE THE SCHEDULED WASTES IN PENINSULAR MALAYSIA FOR 15 YEARS UNTIL 2015.
- IN 2004 ANOTHER FACILITY WAS BUILT IN SARAWAK BY TRINIKENS SDN. BHD.
- 3 PRIVATE COMPANIES WERE APPOINTED BY GOVERNMENT TO HANDLE CLINICAL WASTES.

ESTABLISHMENT OF DISPOSAL FACILITIES

- ❑ BESIDE KA, TRINIKENS (SARAWAK) SDN BHD, OTHER INDUSTRIES ARE LICENCED BY DOE TO REDUCE, REUSE AND RECYCLE THEIR SCHEDULED WASTES.
- ❑ UNTIL OCTOBER 2009, 613 LICENCED WERE ISSUED TO 327 PREMISES
 - TRANSPORT (284)
 - OFF SITE STORAGE (17)
 - FULL RECOVERY FACILITY FOR E-WASTE (55)
 - PARTIAL RECOVERY FACILITY FOR E-WASTE (126)
 - RECOVERY FACILITY FOR NON-E-WASTE (116)
 - INCINERATORS (41)
 - LAND TREATMENT FACILITIES (3)
 - SECURE LANDFILL (5)
 - OFF-SITE TREATMENT (2)

E-CONSIGNMENT NOTE

On-line tracking and monitoring system for transportation or movement of scheduled wastes :

- Waste generator
- Waste transporter
- Waste receiver

INTERNATIONAL PROGRAMMES AND COOPERATION ON SCHEDULED WASTES



Bags of oil tanker sludges from tanker cleaning activities awaiting proper disposal

INTERNATIONAL PROGRAMMES AND COOPERATION ON SCHEDULED WASTES

- **MALAYSIA IS A PARTY TO THE BASEL CONVENTION ON THE TRANSBOUNDARY OF HAZARDOUS WASTES AND THEIR DISPOSAL 1989 SINCE 1993.**
- **THE IMPORT AND EXPORT OF SCHEDULED WASTES ARE PROHIBITED EXCEPT WITH WRITTEN PRIOR APPROVAL FROM THE DG OF ENVIRONMENT**
- **INVOLVED ACTIVELY IN INTERNATIONAL AND REGIONAL FORA TO COMBAT ILLEGAL MOVEMENT OF SCHEDULED WASTES**
- **MALAYSIA JOINS IN A REGIONAL NETWORK FOR COMBATING ILLEGAL TRANSBOUNDARY OF HAZARDOUS WASTES**
- **THE FIRST JAIL SENTENCE OF SIX MONTHS WAS IMPOSED ON AN OFFENDER THAT EXPORT BATTERY WASTES WITHOUT APPROVAL FROM THE DG OF ENVIRONMENT. HE WAS ALSO FINED RM 10,000 OR 3 MONTHS IMPRISONMENT**

PENANG E-WASTE PROJECT

**The Project for Model Development
for E-waste Collection,
Segregation and Transportation
from Households for Recycling**

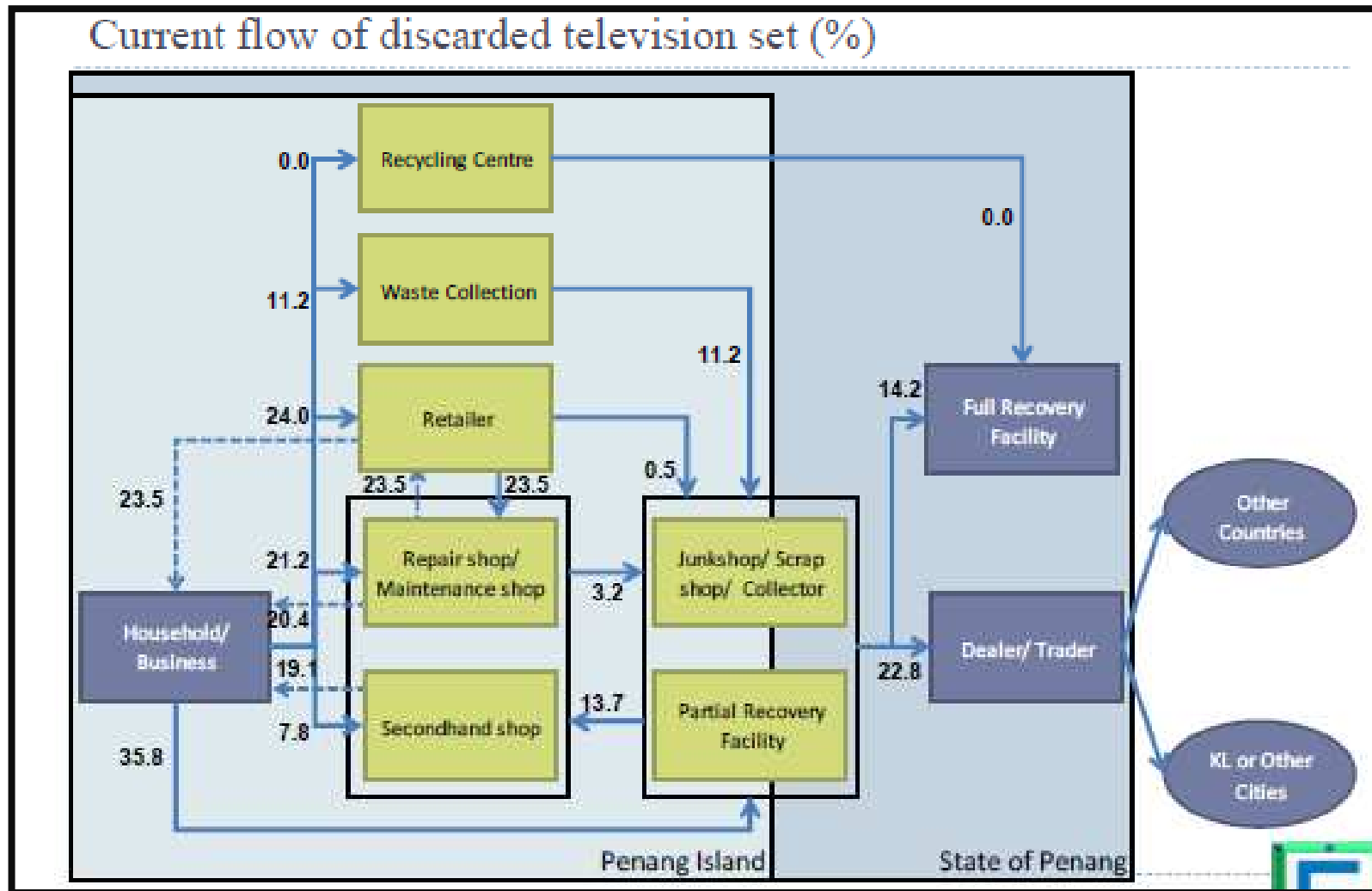
PENANG E-WASTE PROJECT

- **A JICA Project for Technical Cooperation**
- **Major objective**
To draw implications for new policies by Department of Environment (DOE) for enhancing e-waste collection from households through pilot projects in Penang Island
- **Project duration**
October 2011 – March 2013
- **Pilot project : June 2012 – (tentative)**
- **Project members**
DOE HQ, DOE Penang, MPPP
Experts dispatched by JICA

Surveys and current e-waste flow

- **Target products**
Television set, Refrigerator, Washing machine, Air conditioner,
Personal computer, Mobile phone
- **Questionnaire Survey**
Survey to e-waste generators
Household, Hotel, Office and others
- **E-waste flow survey**
Survey to e-waste recyclers
Retailers, Secondhand shop, Repair shop, Junk shop, Partial recovery facility, Full recovery facility, Dealer/Trader

Surveys and Current E-Wastes Flow (Material Flow)



ISSUES ON E-WASTE

- **DOE IS IN THE PROCESS OF DRAFTING A SPECIFIC REGULATION ON E-WASTE MANAGEMENT TO ENCOURAGE THE MANUFACTURES OF ELECTRICAL AND ELECTRONIC EQUIPMENT TO IMPLEMENT TAKE –BACK SCHEME OF E-WASTE FOR RECYCLING AND SAFE DISPOSAL**
- **IN OCTOBER 2009, AN OFFENDER WAS IMPOSED A ONE (1) DAY JAIL SENTENCE AND FINE OF RM 180,000.00 FOR ILLEGALLY IMPORTED E-WASTE FROM USA.**



NEEDS ASSESSMENT

Hazardous Waste

<p>Policy and regulatory</p>	<p>Capacity building among policy makers to develop necessary policy, support and incentives to encourage waste minimisation. Coordinated effort between relevant ministries are needed.</p> <p>Capacity building to enhance regulatory procedures to facilitate environmentally sound management of the new and emerging waste stream.</p>
<p>Technical and scientific understanding</p>	<p>Transfer of environmentally sound technology on waste reduction, reuse and recycling</p> <p>Technology transfer on used of alternative chemicals that are less hazardous.</p> <p>Technology transfer on waste minimization in process, redesign of product with the focus on life cycles where lower amount of raw material and energy are used during product lifetime.</p>
<p>Financial</p>	<p>Need to set up a waste recovery or recycling system that is financially sustainable</p>
<p>Social</p>	<p>Public awareness campaign continuously</p>
<p>Institutional</p>	<p>Building infrastructure for waste recycling and recovery as well as collection centre for new and emerging waste streams.</p>

NEEDS ASSESSMENT

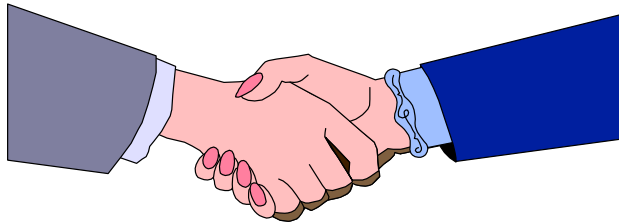
E-WASTE

<p>Policy and regulatory</p>	<p>Malaysia does not allow the importation of hazardous waste including e-waste into the country; Malaysia does allow importation of used electronic and electrical equipment into country for direct reuse, provided such equipment shall not be more than three years from the date of its manufacture. the import of e-waste for recovery or disposal is disallowed.</p> <p>This policy is described under the “Guidelines for the Classification of Used Electrical and Electronic Equipment in Malaysia”, published by the DOE in 2008.</p> <p>Malaysia will only allow the exportation of e-wastes for recovery in overseas, if the local recovery facilities do not have capability and capacity to carry out such activity.</p> <p>Before DOE can allow e-wastes to be exported, the e-wastes generator/exporter must submit their proves. The consideration for such exportation is based on case by-case basis and the exportation of e-wastes for final disposal is totally not allowed.</p>
<p>Technical and scientific understanding</p>	<p>main technology employed to recover e-wastes in terms of precious metals in Malaysia is still limited to wet chemical processes and electrolysis</p>
<p>Financial</p>	<p>Voluntary take back scheme of e-wastes has not been implemented widely by the producer/ importer of electronic and electrical equipment, hence a compulsory requirement of take back scheme through legislation is required;</p> <p>A thorough study needs to be done on how to establish a take back scheme of e-waste in Malaysia which is financially sustainable.</p> <p>Many consumers are in the opinion that e-wastes contain valuables materials hence they are supposed to be paid when they disposed of the e-wastes rather than to pay to the recyclers.</p>
<p>Social</p>	<p>Continuous Awareness raising is needed</p>
<p>Institutional</p>	<p>Building infrastructure for waste recycling and recovery as well as collection centre for new and emerging waste streams including e-wastes and end of life electrical and electronic equipment.</p>

CONCLUSION

- HAZARDOUS WASTES MANAGEMENT HAS MET PRIMARY GOALS OF THE EQA**
- MALAYSIA WILL CONTINUE TO ENHANCE HAZARDOUS WASTES PROGRAM FOR THE SAFE TREATMENT AND DISPOSAL OF HAZARDOUS WASTES**
- HAZARDOUS WASTE MANAGEMENT PROGRAM SHOULD RECEIVE WIDER SUPPORT FROM INDUSTRY AS COST OF MANAGING AND DISPOSING WASTES WILL UNLIKELY BE REDUCED**
- INDUSTRIES SHOULD ENGAGE IN WASTE MINIMISATION THROUGH CHANGING THE PROCESS OR RAW MATERIAL USED OR REUSING OR RECOVERING THEIR WASTES. USE OF CLEANER TECHNOLOGY SHOULD BE WIDELY ENCOURAGED TO ENABLE EMISSIONS TO BE REDUCED, RESOURCES TO BE CONSERVED AND WASTES TO BE MINIMISED.**

THANK YOU



For more information please visit the DOE website at
www.doe.gov.my