

WEEE Management in Thailand

Surin Area



Contents

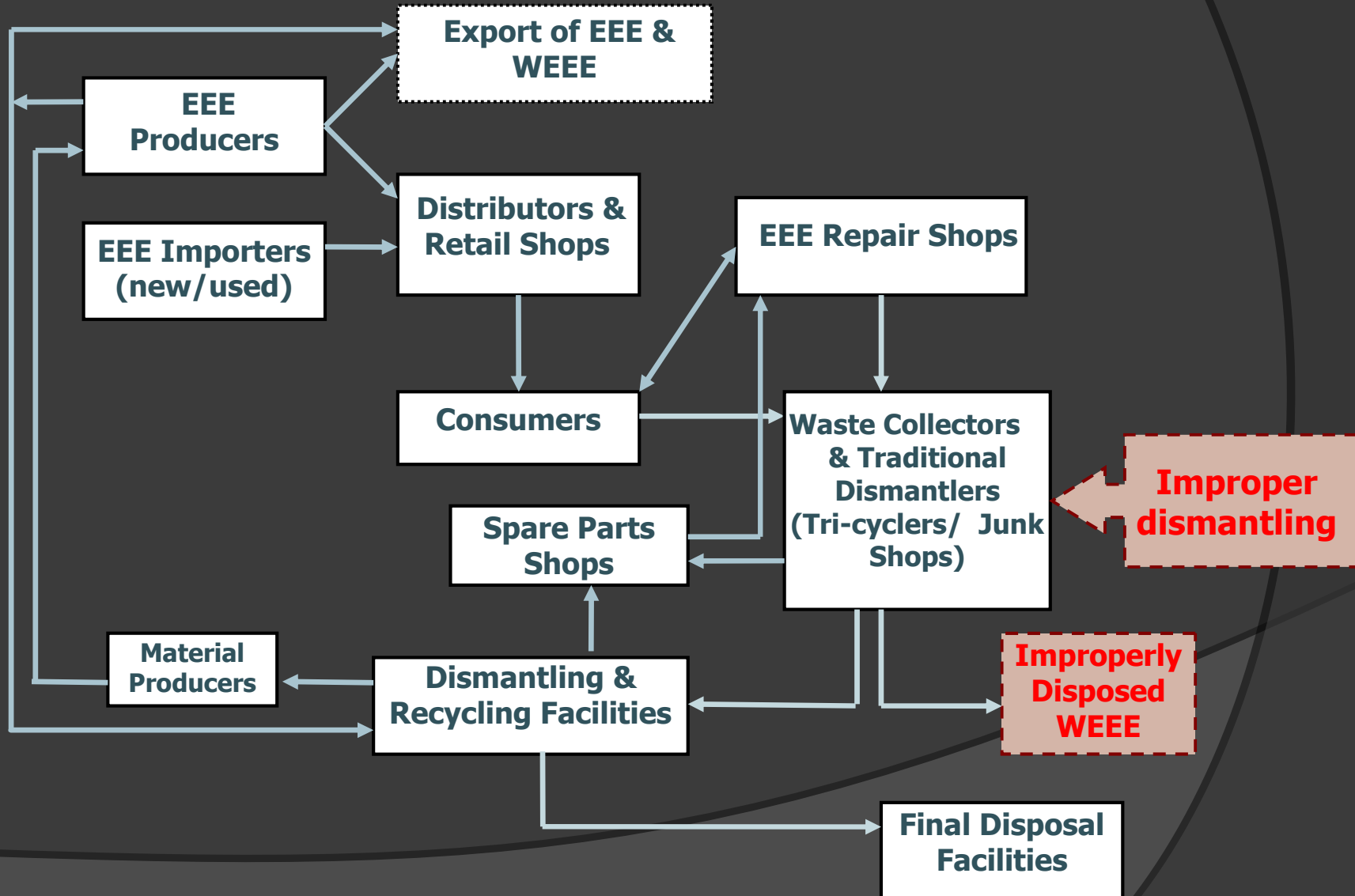
- ① **Background and inventory**
- ② **Policy Framework**
- ③ **Projects/activities**
- ④ **Future tasks**



BACKGROUND



Current Situation of WEEE Flow





General problems

- ◎ Mishandling of E-waste
 - Pollution and residue waste from bad practice by informal waste collectors
 - Non valuable e-waste is discarded with general waste
 - Large portion of e-waste is kept at home/office – loss of recycling opportunity
 - Illegal import





General problems (continued)

◎ Awareness/Knowledge

- Producers, importers
- Consumers
- Local administrations
- Waste collectors, processors

◎ Law and regulation

- No specific law and regulation
- Lack of enforcement
- Most of the local governments are not ready to handle.

◎ Supporting mechanism/infrastructure

- Lack of environmentally sound collection
- Concentration of waste processors in the central region





E-waste inventory

- About 80,000 tons of e-waste per year is expected in 2009 [JETRO and PCD 2004].
- More than 2.5 M units of 5 types of e-waste is expected in 2009 [EEI 2007 and SBC]
- About 20,000 tons/y of e-scrap from electrical and electronics manufacturers are expected in 2009 [DIW 2008]



Update on e-waste inventory projection

- ◎ 2009-2010, PCD had assigned the National Center of Excellence for Environmental and Hazardous Waste Management, Chulalongkorn University to study the costs of ESM of e-waste and propose the scheme appropriate to Thailand;
- ◎ The target products in the study include TV, A/C, R/F, PC, MP, camera, media players, etc;
- ◎ This project also includes the inventory estimation for these products.



Approaches and Models

Approaches

- Simple delay approach for short-life products
- Distribution delay approach for long-life products

Models

- Saturation: logistics growth with bounding analysis proposed by Yang & Williams (2009)
- Distribution: Weibull Distribution Model developed by Tomohiro Tasaki (NIES)

Input data:

- Sale data from previous studies and marketing surveys
- Product ages from our survey
- Ownership data from National Statistical Office (NSO)



Results: New Sales [1,000 units]

Product type	Sales (1,000 units) in year				
	2014	2015	2016	2017	2018
TV	3,018	3,212	3,349	3,487	3,590
Digital camera	3,270	3,135	2,911	2,714	2,568
VDO camcorder	237	255	272	292	311
Media player	1,057	1,080	1,090	1,103	1,115
printer	2,052	2,118	2,161	2,205	2,240
Mobile phone	12,978	13,231	13,34	13,51	13,66



Results: WEEE generation

Product type	Waste generation (1,000 units) in year				
	2014	2015	2016	2017	2018
TV	1,835	2,034	2,218	2,375	2,499
Digital camera	616	788	979	1,183	1,393
VDO camcorder	120	131	144	158	172
Media player	583	668	749	825	891
printer	1,365	1,504	1,633	1,748	1,849
Mobile phone	8,405	9,237	10,000	10,697	11,305
PC	1,538	1,737	1,944	2,157	2,374
A/C	538	587	638	691	747
Refrigerator	987	1,046	1,108	1,162	1,205

POLICY FRAMEWORK



Integrated WEEE Strategic Plan

Strategy 1

Technology Development & Best Available Practice

Strategy 2

Capacity building & empowerment

Strategy 3

Law enforcement & development

Strategy 4

Financial & investment system

Strategy 5

Management scheme & organization development

IMPLEMENTATION OF PROJECTS/ACTIVITIES



WEEE-related activities

Project/Activities	Key Players	Year
E-waste Inventory	EEI, PCD	2006-07
Fluorescent lamp take back pilot program	PCD	2006-08
Industrial Standard on Hazardous Substance (voluntary)	TISI	2007-08
Control of importation of Used E-products (Ministerial Notification)	DIW	2007
Capacity building for customs and ports officers on the import/export of hazardous waste	PCD, DIW, Customs	2003-present



WEEE-related activities

Project/Activities	Key Players	Year
WEEE Life Cycle Tracking System	DIW	2007 –08
Prioritization of WEEE types	PCD	2008
E-Waste dismantling and recycling manual	PCD	2007-08
Study on Rules, Procedures, Conditions, and Fee Rate Settings for WEEE Management in Thailand	PCD/CU	2009-10
Development of PCB and refrigerant capture mobile recycling unit and training workshop	PCD/MTEC	2009-10



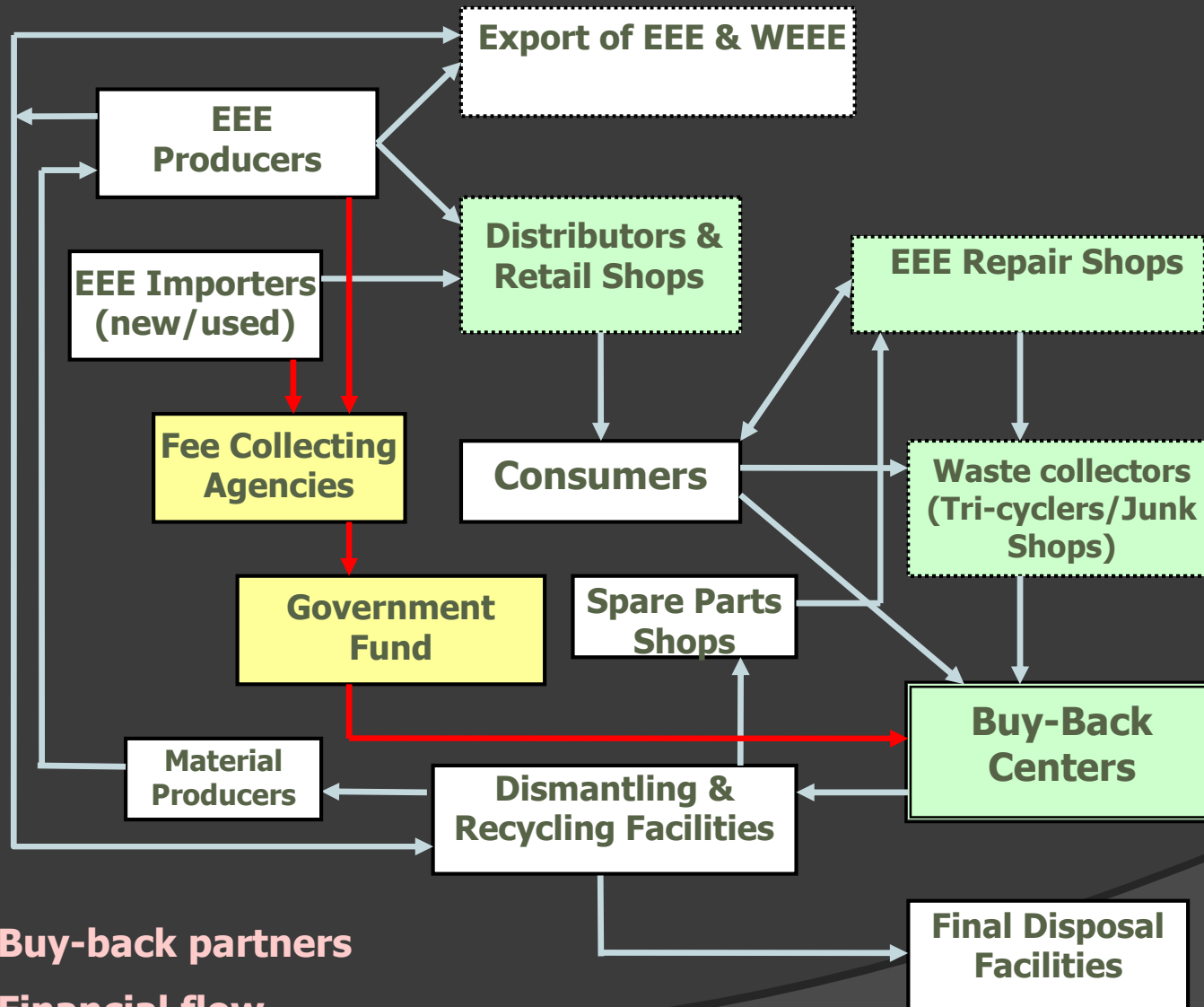
Pilot Project on Take-Back program



FUTURE TASKS



Proposed WEEE Management System



 Buy-back partners

 Financial flow

 Product-waste flow



Area of WEEE management

•Capacity Building

- Strengthening local administrations on WEEE collection and technology transfer for recyclers.

•Information system

- Improvement of information exchange and database

•Law and regulation

- Code of practice for WEEE take back center
- Pollution prevention and control for WEEE recycling facilities
- Development of comprehensive law and overall management system with financial mechanism



WEEE Management Law

• **Draft Act on *Economic Instruments for Environmental Management***

- combine all the economic instruments including product fee
- The Draft Act allows products to be charged a certain fee for the management of end-of-life products
- Details of the types of products to be regulated and the fee rates will be elaborated in a Royal Decree and Ministerial Notification

• **Pollution Control Department's tasks**

- Propose types of WEEE and household hazardous waste to be regulated
- Propose appropriate fees and conditions for the regulated product types



Thank you