Waste FL management in Thailand

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Background

• In 2005, Pollution Control Department (PCD), with cooperation of the Japanese government and JETRO, established a study project on FL recycling. At that time Thailand did not have any specific laws and authorities that control management of municipal hazardous waste.

• It was estimated that in 2004 amount of waste FL in Thailand was about 41 million lamps, of which 70% is tubular type and the others are circular and compact lamps. In the studied areas, covering Bangkok Metropolitan Administration (BMA) and vicinities, it was found that about 14 millions of waste FL were tubes or about 50% of waste tube of the whole country.
F/L Waste Management Scheme

Buildings

New fluorescent lamps

Do not dispose of with general waste

Store properly

New tubes

Recycle

Safely transport

Recycle Safely transport

New fluorescent lamps

Do not dispose of with general waste

Store properly

New tubes

Recycle

Safely transport
Background (continued)

- PCD then initiated the partnership program with Toshiba and Phillips who have their own recycling facilities to collect and recycle waste FL from about 100 project partners including government offices, academic institutions, business offices, retailers, etc in Bangkok and vicinity area. The MOU of the partnership project lasted for about 16 months from September 2006 to December 2007.

- In the program, PCD asked for cooperation with BMA and municipalities around Bangkok to collect waste FL from program partners, and negotiated with lamp manufacturers to expand their recycling services to cover lamps generated from households.
Background (continued)

• In 2007, the Public Health Act was amended. The Act authorizes local governments to collect and manage household hazardous waste such as fluorescent lamps, dry-cell batteries, etc.

• At the same time, PCD developed a new household hazardous waste management scheme and disseminate the concept as well as support financially and technically large-sized municipalities.

• In this scheme, the municipalities collect waste FL from households or from the designated points and transfer to the storage facility. The municipalities negotiated with FL recyclers or contract out waste processors.
Current scheme of FL management

**Generator**
- Household
- Business
- Building

**Generator:** business with special arrangement

**Municipalities**

**Designated drop-off point**

**Municipal storage facility**

**Recycling Plant within FL manufacturer**

**Independent FL recycler**

**Glass**

**Aluminum Cap**

**Phosphor**

**Mercury filled carbon filter**

**Other residue**

**Hazardous waste disposal facility**
Household HW (including FL) management scheme

- **Awareness raising**
- **Incentive**
- **Community**
- **HHW**

- **Drop off point**
- **Door to door**
- **Special Day**

**Disposal:** secured landfill, incineration

**Transportation**

**Collection to storage facility**
Household HW management scheme

1. Awareness Raising

People learn “What is HHW?” from playing games in Municipal Event

A Famous Singer assist PCD to promote HHW management in the Community
Incentives
2. Separation Methods

- Door to Door
- Drop Off
- Special Day

Drop off designated point

Door to door collection

Special collection day
Household HW management scheme

Drop Off Container: 1st generation

1. 
2. 
3. 
4.
Household HW management scheme

Separated HHW by Drop Off

- MP Battery
- Dry Cell Battery
- Aerosol Can and others
- Straight FL
- Other FL
Household HW management scheme

Drop Off designated locations

In Communities

Schools

Government Bldg.

Commercial Shops
Community center
Household HW management scheme

Drop Off Container: 2nd generation
Drop-off container: 2\textsuperscript{nd} generation
Household HW management scheme

3. Collection
Household HW management scheme

Vehicles
Household HW management scheme

4. Temporary Storage
5. Transportation to Recycling or Disposal Facilities

Stephen only by permitted transporters
Household HW management scheme

6. Recycling

Only by permitted recycling facilities
1. Put used FL in Hopper and cut both end of lamp
2. After end cutting, Tubes are conveyed to Rough Crusher and Fine Crusher
3. During Fine Crusher, Phosphor and Mercury will be washed out by “closed loop water” for 20 minutes.
4. The rinsed water is drained to the sedimentation tank, all solid substances precipitate in sedimentation tank. The water is circulated to Fine Crusher.

Crushing and cleaning mc

Sedimentation tank

Glass Sludge dispose as hazardous waste

Glass cullet, that use in Furnace
Tube FL recycling machine by Wongpanit Group
Manually place FL in the machine
Recyclable materials
Proposed new law on WEEE and household hazardous waste Management

Excise Department

Product fee

Customs Dept.

Producer

Importer

Users

Local Administration Organizations

Permitted Collection network

Take-back center

Specific fund

Waste processor

Committee
Thank you