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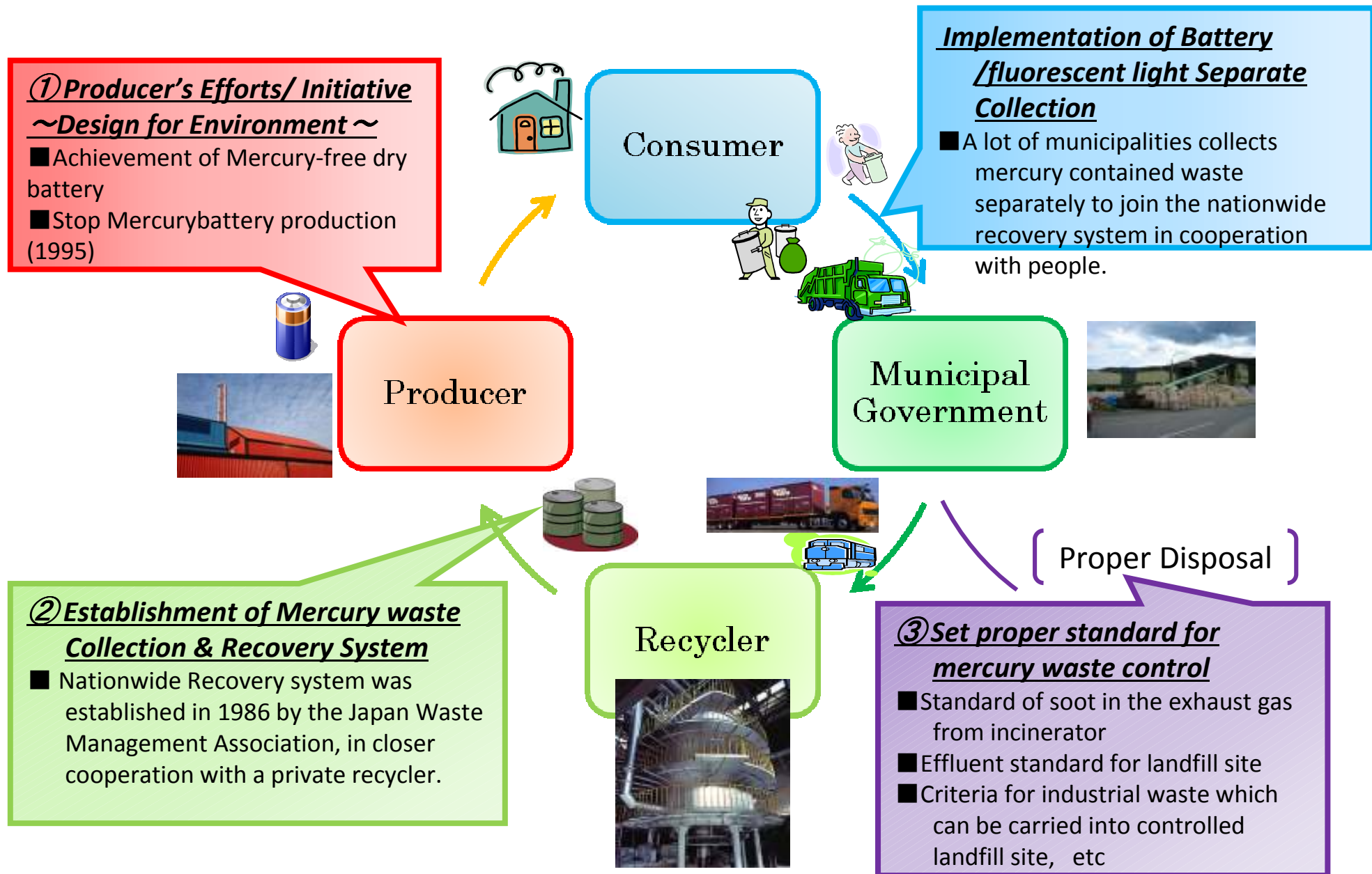


Japan's Effort in Management of Mercury Waste

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Outline of Mercury Waste Control in Japan



History of Mercury Reduction Efforts in Japan

- 1968 Minamata disease certificated as pollution- related illness
- 1973 Stop production of Mercurochrome Chlor-Alkali plant
need closed-system by government (mercury method
nearly 100%)
- 1983 Public anxiety on the risks of environmental pollution
caused by waste battery which includes mercury through
the waste treatment process
- 1986 Nation-wide collection & recycling system was established
Mercury method of Chlor-Alkali plant became “ 0%”
- 1991 Mercury Free completed in Manganese Batteries
- 1992 Mercury Free completed in Alkaline Battery
- 1995 Stop production of Mercury Battery

① Producer's Efforts/Initiative

Central Government's Request to the Battery Association of Japan (BAJ) in 1984

Ministry of Health and Ministry of International Trade & Industry requested BAJ

- (1) Reduction of mercury amount for battery
- (2) Expand of voluntary-collection of battery etc.



Response by the BAJ in 1984

BAJ committed

- (1) Manufacturers of mercury battery never create new market.
- (2) Strengthening the Collection of mercury battery
- (3) Research for reduction of mercury from Alkali battery & Manganese Battery
- (4) Development of mercury-free dry battery
- (5) Research on environment risk in the soil



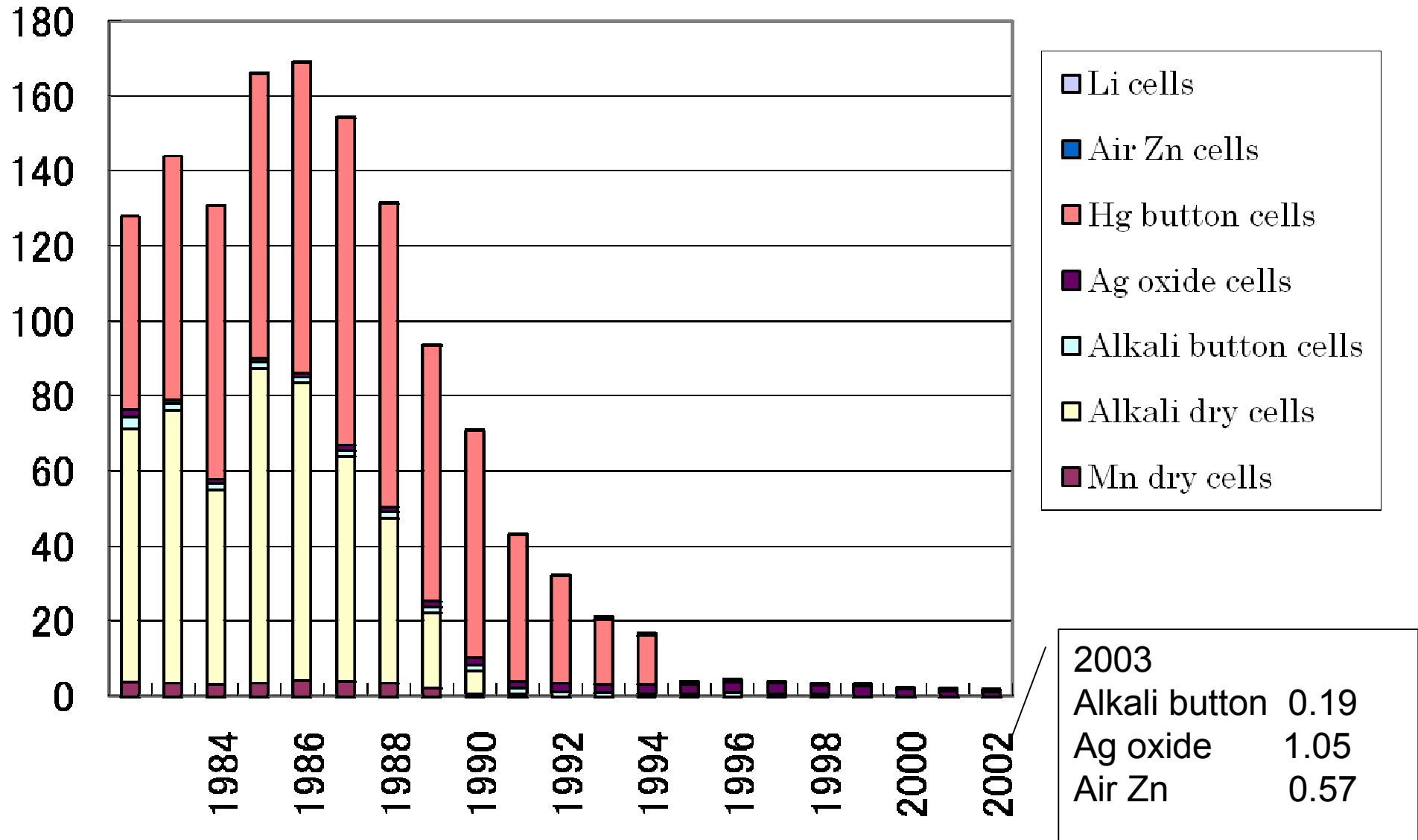
Further Achievement by BAJ

BAJ have achieved

- (1) Dry batteries without mercury by 1992
- (2) Stop of Mercury battery production in 1995

Mercury use in Batteries

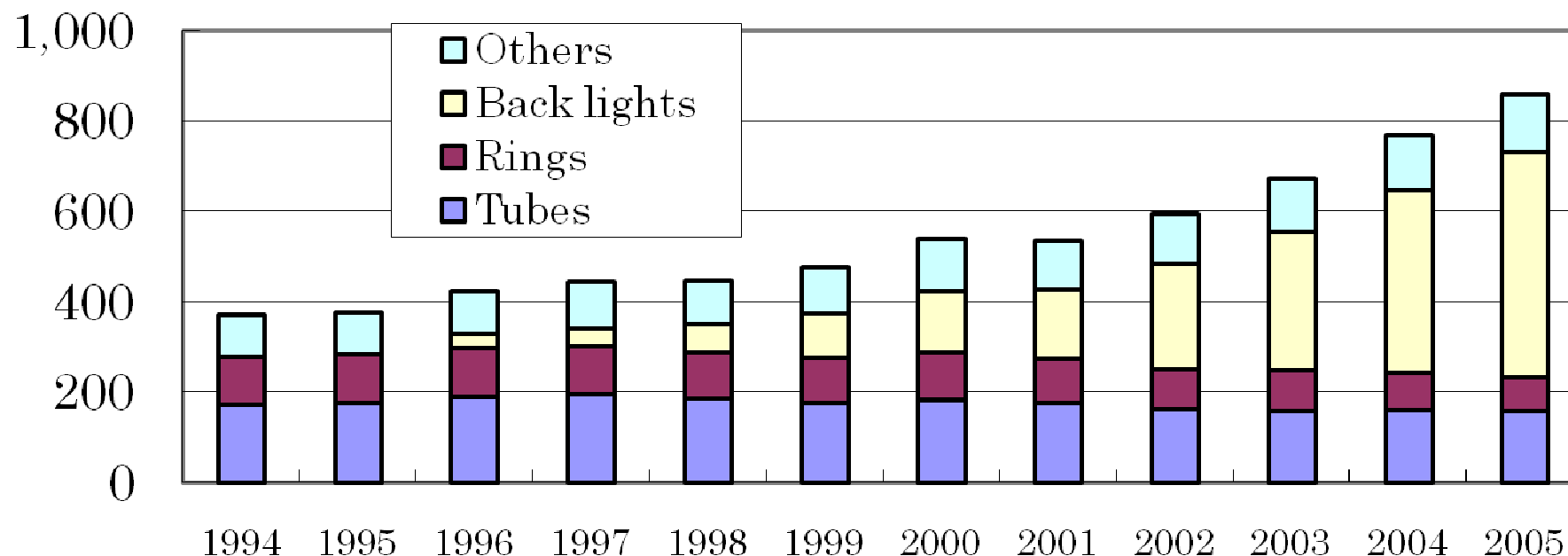
(Metric tons)



Source: Battery Association of Japan

Production of Fluorescent Lamps

(million units)



		2001	2002	2003	2004	2005
Backlight	Hg [mg/unit]	2.4	2.4	2.4	2.4	2.8
	Total Hg [kg]	362	562	745	985	1,386
Others	Hg [mg/unit]	10.6	9.2	8.5	8.0	7.5
	Total Hg [kg]	4,052	3,330	3,118	2,918	2,709
Total Hg [kg]		4,414	3,892	3,863	3,903	4,095

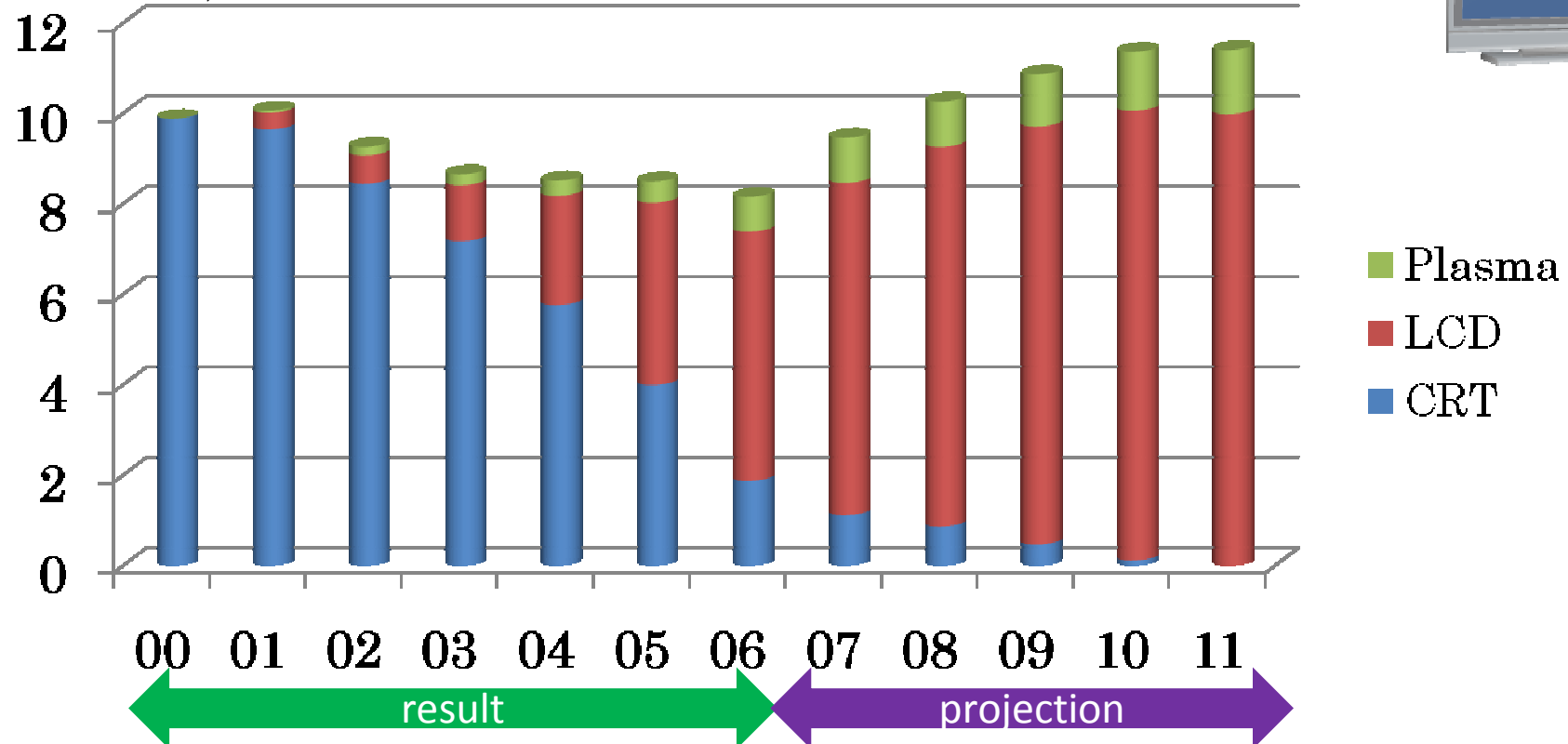
Source: Japan Electric Lamp Manufacturers Association

Mercury Collection from Backlight of LCD

- LCD collection & recycling will start from April 2009, based on “Home Appliances Recycling Law”.
- Mercury will be collected from backlight of LCD, and recovered in the proper way.

Shipment of TV in Japan

(unit: million ton)



Source: Japan Electronics & Information Technology Association

②Establishment of Nationwide mercury waste Collection & Recovery System

Government's Advisory Panel's Recommendation in 1985

The Living Environment Council established by Ministry of Health made a report

- (1) Mercury waste can be controlled as far as relevant standards under Waste Management & Public Cleansing Law are observed
- (2) Set up the nationwide waste battery collection & recycling system



Japan Waste Management Association set up the nationwide collection system in 1981

- (1) JWMA made a “Nationwide Waste Dry Battery Collection & Recovery Plan”.
- (2) JWMA organized “Nationwide Waste Dry Battery Collection & Recovery Consortium” which consists of municipalities.
- (3) Fluorescent light has also been collected under this framework



Result of the plan (JFY2006)

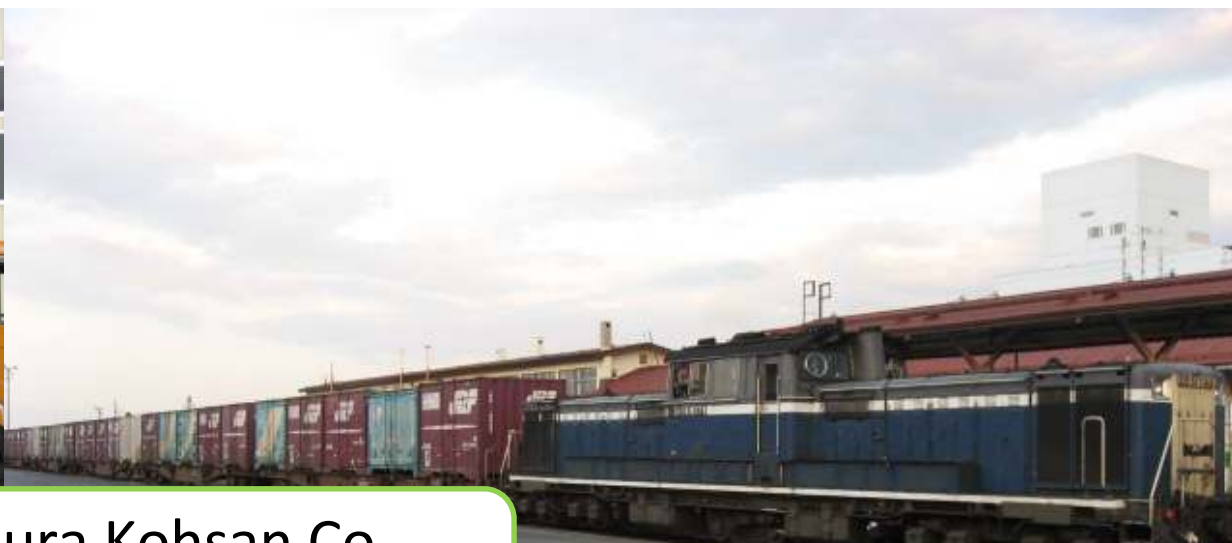
- (1) Total 1,151 municipalities joined the above consortium as of Mar. 2006.
- (2) Total amount of waste dry battery collected is 6,592t/yr
- (3) Amount of waste fluorescent light collected is 2,588t/yr.

Example of "Collection Route" of Waste Battery & Fluorescent Lamp





Containers carried to Nomura Kohsan Co. Ltd. by track or train from all over Japan



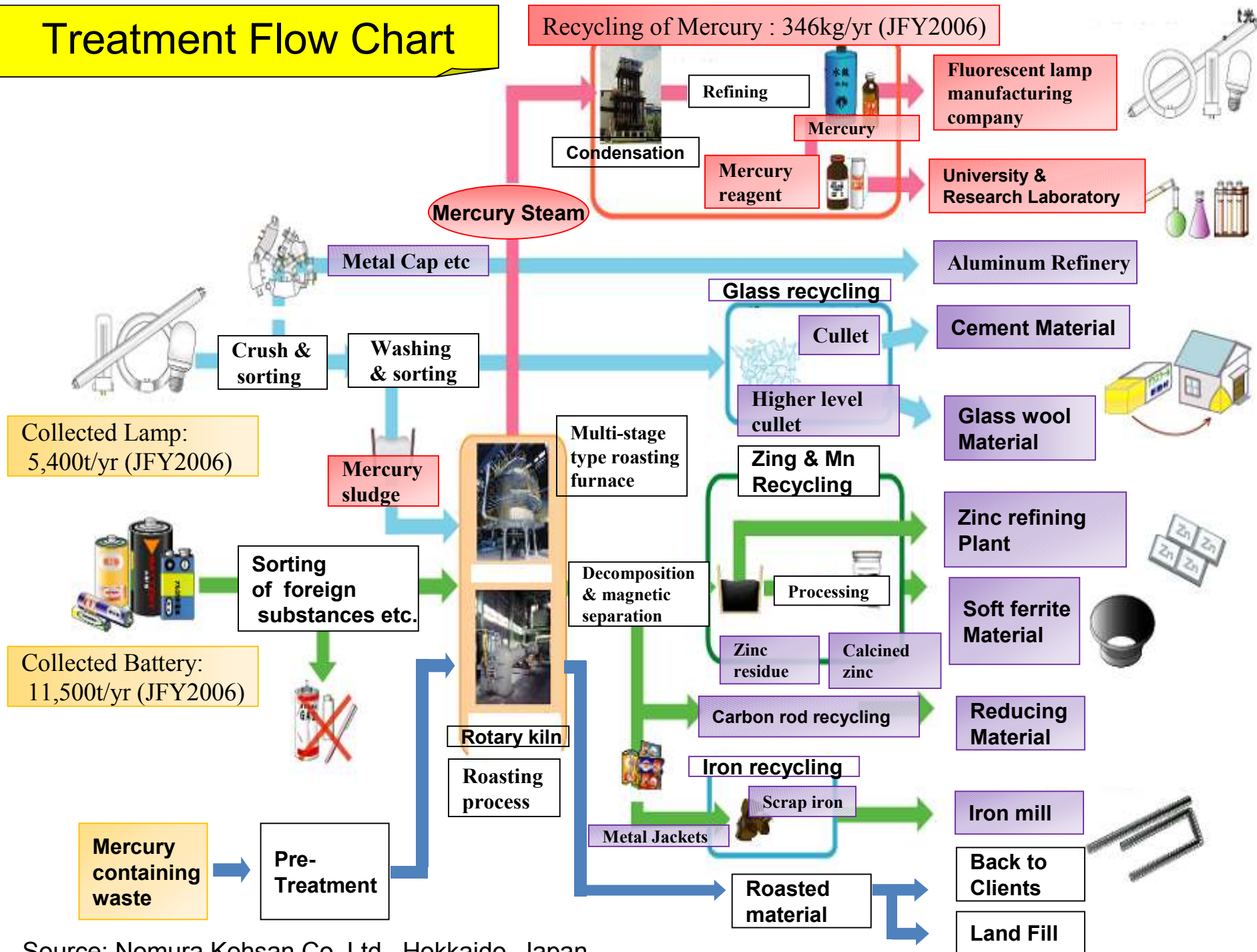
Drums for waste batteries



Containers for waste Fluorescent lamp

Treatment Flow Chart

Recycling of Mercury : 346kg/yr (JFY2006)



Source: Nomura Kohsan Co. Ltd. ,Hokkaido, Japan



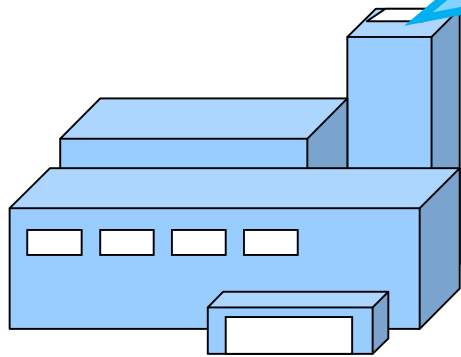
Multi-stage type roasting furnace



Refined Mercury

③ Proper Standard for Waste Mercury Control

Incineration Plant



Standard for Dust Emission from Incinerator

0.04 g/Nm³ for 4t/h and more

0.08 g/Nm³ for 2t/h and more

0.15 g/Nm³ for less than 2t/h

** In addition, improvement of soot filter in response to Dioxins control, also plays an important role for mercury control.

Soot & dust

Stabilization

Soot and dust generated in waste incinerators is categorized as waste under special control

Criteria for particulate matter which can be carried into controlled-type landfill site

- (1)Mercury & other Mercury Compound : 0.005mg/L or Less
- (2)Alkyl-Mercury: Not detected

Landfill Site



Technical Standard for Effluent of waste water treatment plant at landfill site

- (1)Alkyl-Mercury : Not detected
- (2)Mercury & other Mercury Compound : 0.005mg/L or Less

Ground water quality standard around landfill site

- (1)Alkyl-Mercury : Not detected
- (2)Total Mercury : 0.0005mg/L or Less

Japan's Technical Support for Hazardous Waste Management

JICA Training Course on Hazardous Waste Management and Appropriate Disposal for Asia

■ Aim of the Project

- To assist officials of national and local governments in Asian countries enhancing capacities for planning hazardous waste management policies suitable to their conditions through providing them with basic knowledge and Japan's experiences in hazardous waste management.

■ Implementing Agency

- Japan International Cooperation Agency
- Japan Environmental Sanitation Center

Summary

■ Each stakeholder plays an important role for mercury waste management in Japan.

- Government Establish proper standard/criteria
- Producer Reduce mercury use in the product
- Municipality Separate collection of mercury
- Recycler Proper recovery of mercury

■ Japan's experience on mercury waste control system can contribute to improve the environment in other countries, especially developing countries.



**Thank You
for Your Kind Attention!**