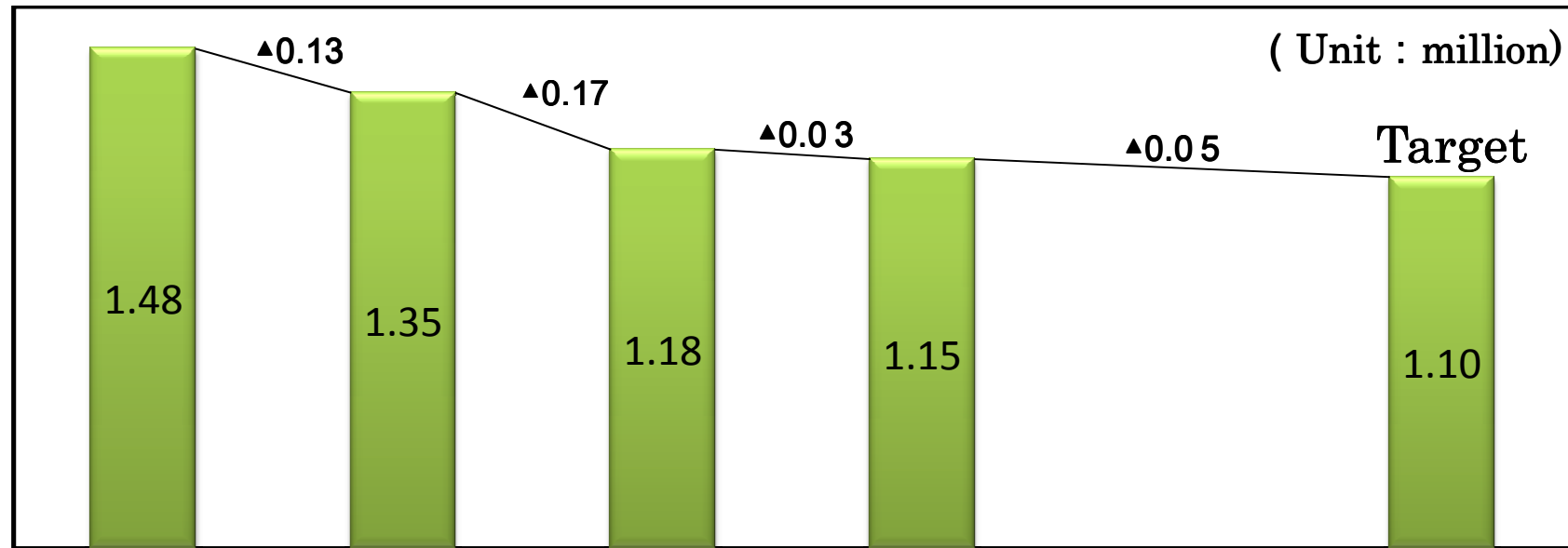


Separate Collection of Small Household Metal Wastes and Survey on Disposal of Small Home Appliances For Waste Reduction in Osaka City



July 15, 2011

Changes in the Amount of Waste Treatment and Mainly Reduction Measures



FY2007

FY2008

FY2009

FY2010

FY2015

- ◎Promoting use of see-through trash bags. (City Government certified bags meeting the specified standards as “recommended trash bags”.)
- ◎Proper sorting and disposal
 - Published a booklet on how to sort and dispose of business wastes.
 - Consultation services

- Support to groups promoting collection of used resources
- Expansion of collection points of recyclable wastes, such as beverage cartons, batteries.
- Support to business sectors on how to sort out and dispose wastes.

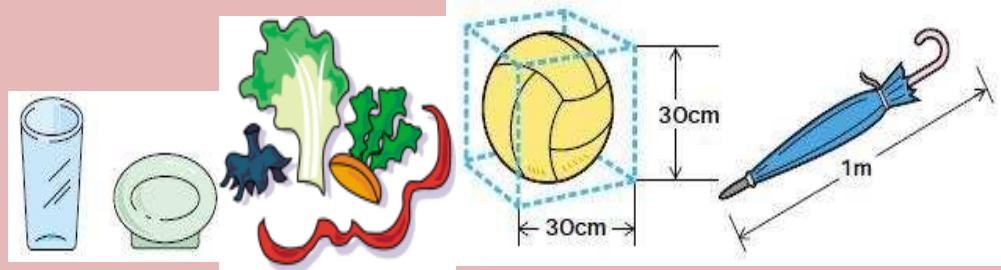
- Separate Collection of Small Household Metal Wastes (E-wastes, etc)**

Sorting Categories for Household Wastes in Osaka City

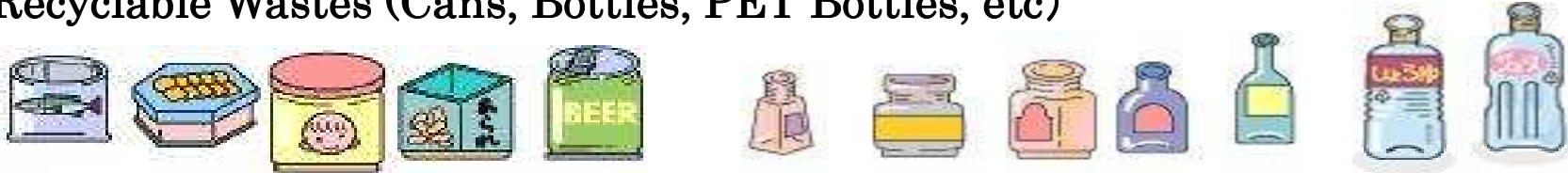
General Wastes (Mainly smaller than 30cm)



Home appliances



Recyclable Wastes (Cans, Bottles, PET Bottles, etc)



Waste Plastic Containers and Packaging



Bulky Wastes (charged collection)



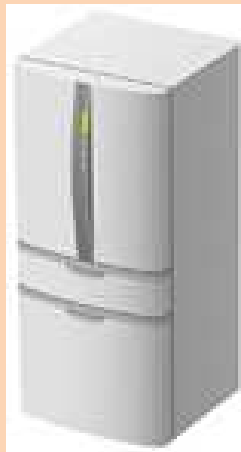
Home appliances



Home Appliance Recycling Law (Outline)

Target Appliances

- Television sets
- Air conditioners
- Refrigerators and freezers
- Washing machines and clothes dryers



Mechanism

Consumers

End users

Payment of recycling fee

◎Proper transfer to retailers, etc.

◎Recycling fee is used for collection, transportation and recycling

Fees for collection, transportation
+ Recycling

Home Appliance Retailers

Vender

Collection and Transfer

◎Collection of target equipment that the retailer sold in the past

◎Collection of used target equipment when new products are purchased

Monitoring recycling rate by target
appliance item

Manufactures and Importers

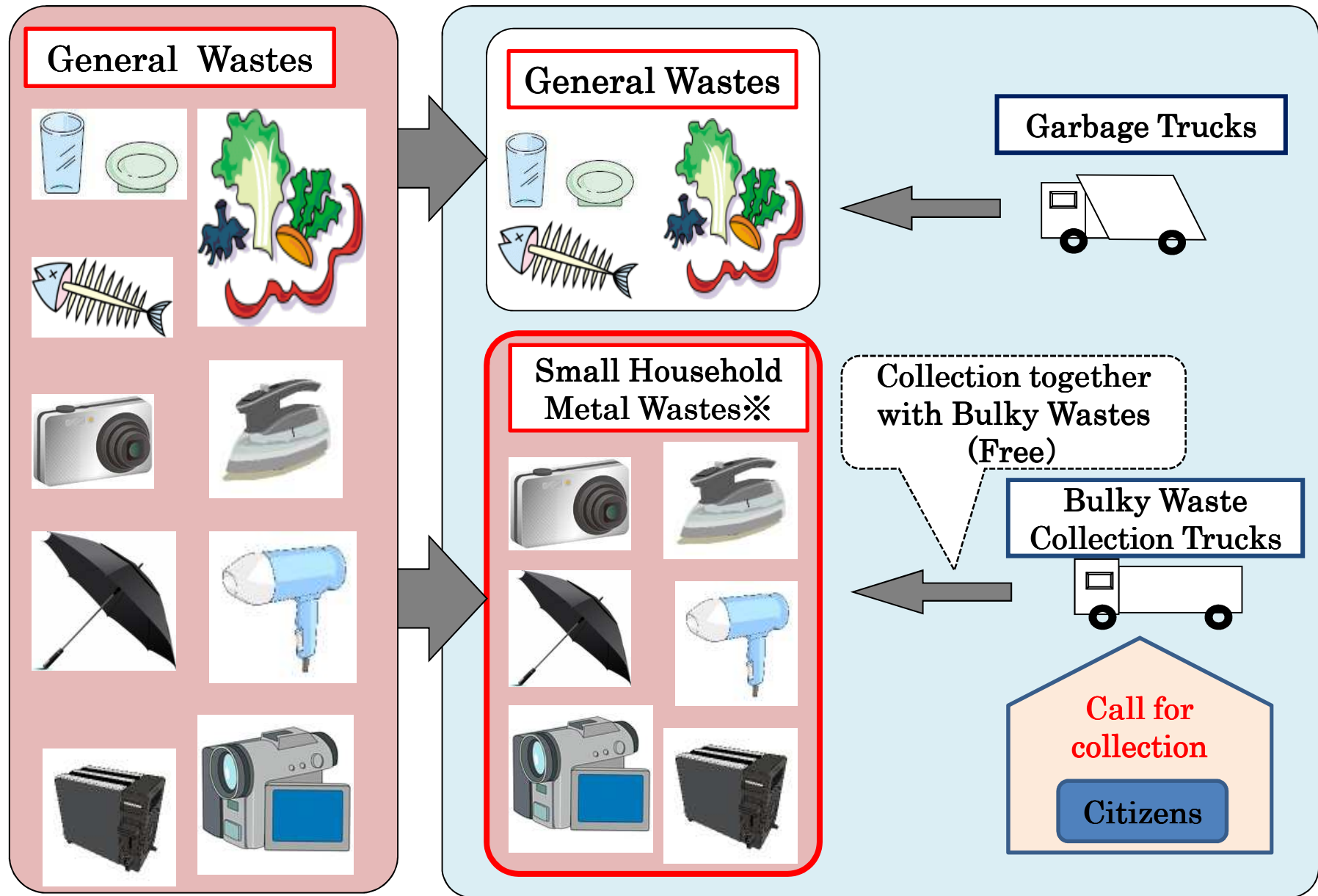
Producer

Recycling

◎Collection of target appliances that were manufactured or imported in the past

◎Recycling of collected target appliances

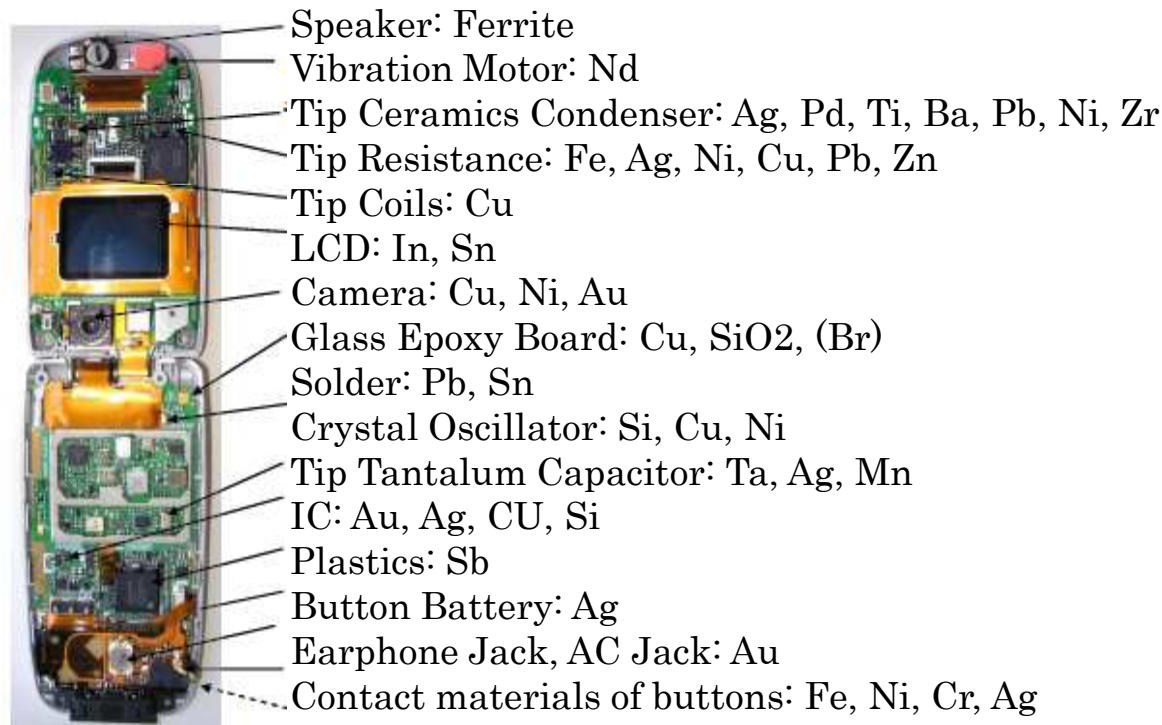
Separate Collection of Small Household Metal Wastes in Osaka City



* Small household metal wastes collection will be implemented from October 2011 in designated districts.

Useful Metals contained in Small Electrical/Electronic Equipment(Example of Mobile Phones)

- Small electrical/electronic equipment contains various useful metals.
- Components like substrates, which contain useful metals in concentrated amount are valuable. Many components contain rare metals.
- More components per chip tend to contain more useful metals.



A case of analysis result of a mobile phone

Metals	Contained Amount	Per unit
Cu	19 %	15.2 g
Al	9 %	7.2 g
Fe	8 %	6.4 g
Ni	1 %	0.8 g
Sn	1 %	0.8 g
Cr	8,970 ppm	0.7 g
Pb	6,870 ppm	0.5 g
Nd	3,870 ppm	0.3 g
Ta	2,590 ppm	0.2 g
W	2,240 ppm	0.2 g
Ag	1,400 ppm	0.1 g
Ti	1,400 ppm	0.1 g
Mn	1,160 ppm	0.1 g
Pd	1,110 ppm	0.1 g
Mg	520 ppm	42 mg
Ba	390 ppm	31 mg
Au	340 ppm	27 mg
Bi	150 ppm	12 mg
Li	120 ppm	10 mg
Co	80 ppm	6 mg
Ru	50 ppm	4 mg
Zr	50 ppm	4 mg
Be	40 ppm	3 mg
Sr	40 ppm	3 mg
Ga	10 ppm	1 mg
Y	10 ppm	1 mg

Metals and other materials contained in a mobile phone

Reference :T. Shiratori and T. Nakamura: journal of MIMU, Vol.123, P.171-178,(2007)

Movement on small e-waste collection and recycling

- At national levels, several model projects are implemented in some areas in Japan, such as collection of used small home electrical appliances, in order to promote recovering useful metals, including rare metals. An panel concerning recycle of small waste electrical and electronic equipment has been established since March 2011.
- Osaka City Government will start to separately collect small household metal wastes from October 2011. These wastes contains small e-wastes, such as digital cameras and IC recorders, where rare metals, precious metals and other useful metals are used.
- In this regard, Osaka City Government is planning to originally carry out a survey on the actual volume and the actual situation of the small e-wastes disposals in order to collect the basic data before the city government officially start the small e-wastes collection service in the near future.

Survey on actual volume and situation of small e-waste disposals

- Target items of the survey:
 - Mobile phones
 - Portable game machines
 - Portable CD/MD players
 - Car navigation system
 - Digital cameras, etc.
- The number, volume, weight of collected small e-wastes will be counted during the survey in each survey areas.
- The collected small e-wastes will be once kept in a warehouse for further investigations for a while, then recycled to check the cost/value of recovering rare metals and valuable metals, observing the movement/development of the national policies and the channels for recycling and resource recovery.

Current E-waste Collection System in Osaka City

Collected by City Waste Collection Service

Small Household Metal Wastes
(Starting as a pilot implementation in some designated districts in Oct. 2011)

Small E-waste
(Actual volume and situation will be surveyed)



Bulky Wastes



Crushing



Recovering metal materials

Collected by Retailers, etc.

Items designated in the Home Appliance Recycling Law

Televisions sets
Air conditioners
Refrigerators and freezers
Washing machines and clothes dryers



Recycling