

# Today's Topic

# **E-waste Recycling**

ANMC21 Study Course on 3Rs and Waste Management

Wed, 5 February, 2014

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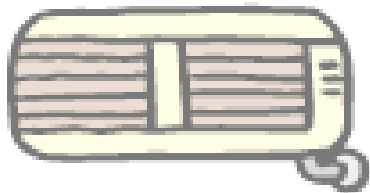
# Sharing experience of Asian cities

- Bangkok, Thailand
- Delhi, India
- Manila, Philippines
- Singapore
- Ulaanbaatar, Mongolia

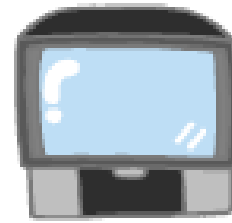
**IN THE CASE OF JAPAN**

# E-waste Recycling in Japan

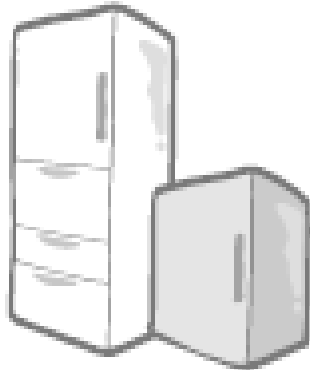
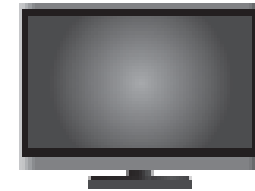
- Law for Recycling of Specified Kinds of Home Appliances (1998)
- Targeting **4 items**



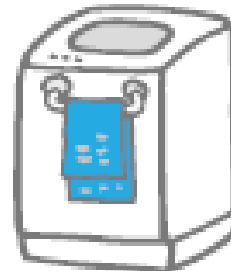
Air Conditioner



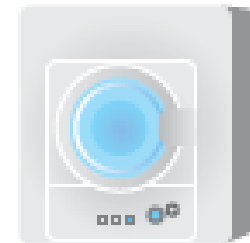
TV

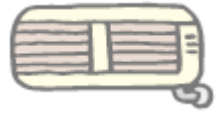


Refrigerator



Wash Machine





# Why were 4 items targeted?



- It was difficult for local governments to dispose of those large sized appliances.
- The 4 items were just dumped at the final disposal site without recycling process.
- The retailer has a home-delivery service for 4 items.



# Stakeholder in this law



Consumer

- Transfer 4 items to retailer properly
- Pay the necessary cost for appropriate recycling

To share cost for recycling

Collection & transportation fee

Recycling fee



Retailer

- Collect 4 items which were sold by their shops in the past
- Collect 4 items when consumer ask them to collect old one when they buy new one at the shop
- Surely transport 4 items to producers

To charge C&T fee



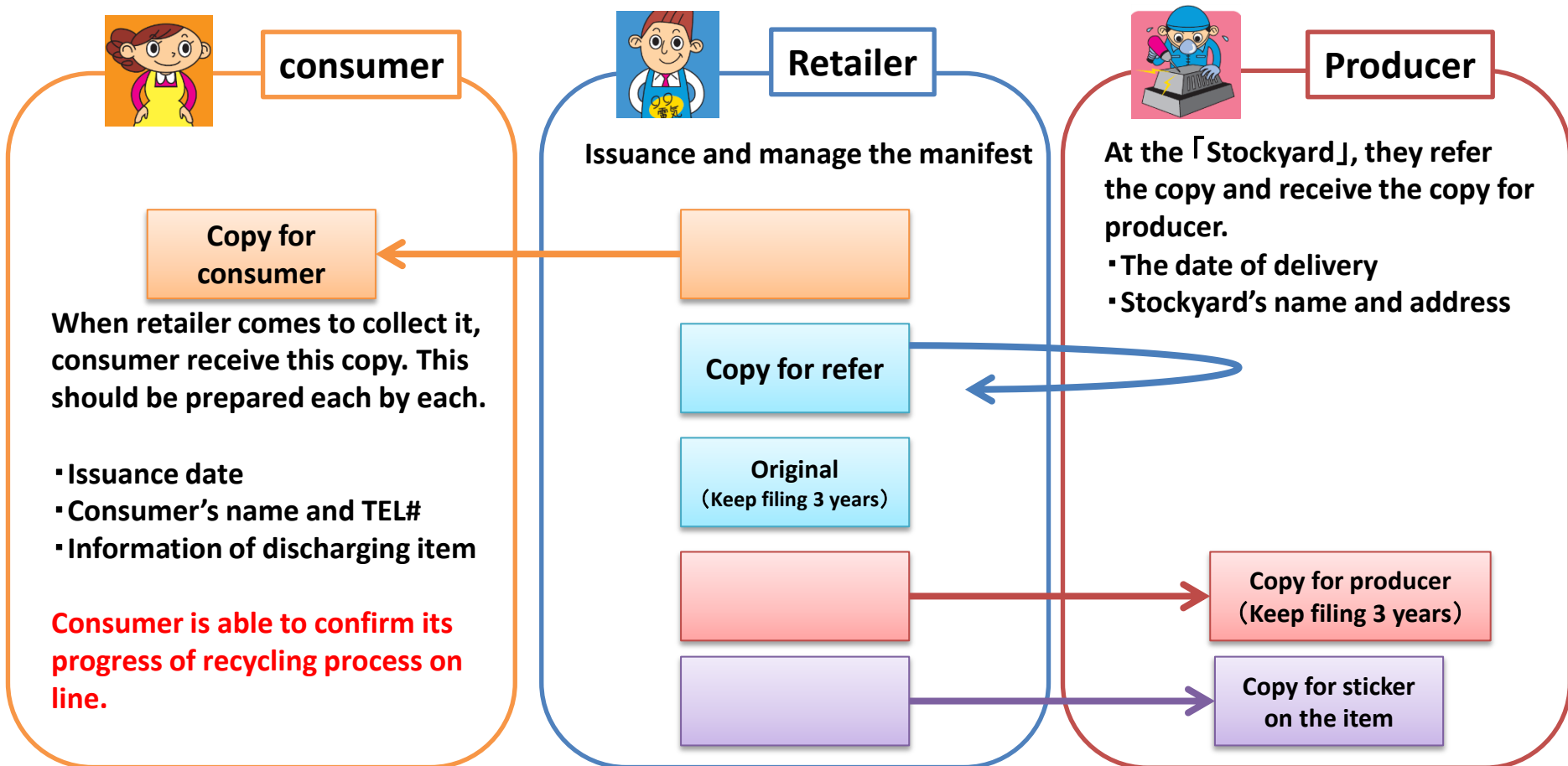
Producer

- Accept 4 items which were produced by themselves in the past
- Recycle

To charge recycling fee

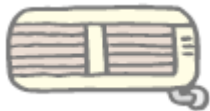
# Manifest system

- This is the mechanism to manage and visualize the transportation of 4 items from retailer to producer.
- The manifest consists of 5 sheets and is issued & managed by retailer.



# How should 4 items be recycled?

- Definition of recycling in this law.
  - A) To remove resources or parts and reuse them by producer itself
  - B) To remove resources or parts and transfer them to other party with charge or free of charge
- Minimum requirement of recycling ratio in each item
  - The rest part should also be recycled as much as possible.



**Air Conditioner**

**70%**



**CRT-TV**

**55%**



**Flat-TV**

**50%**



**Fridge**

**60%**



**Wash machine**

**65%**





**HOW IS TV RECYCLED IN REAL?**

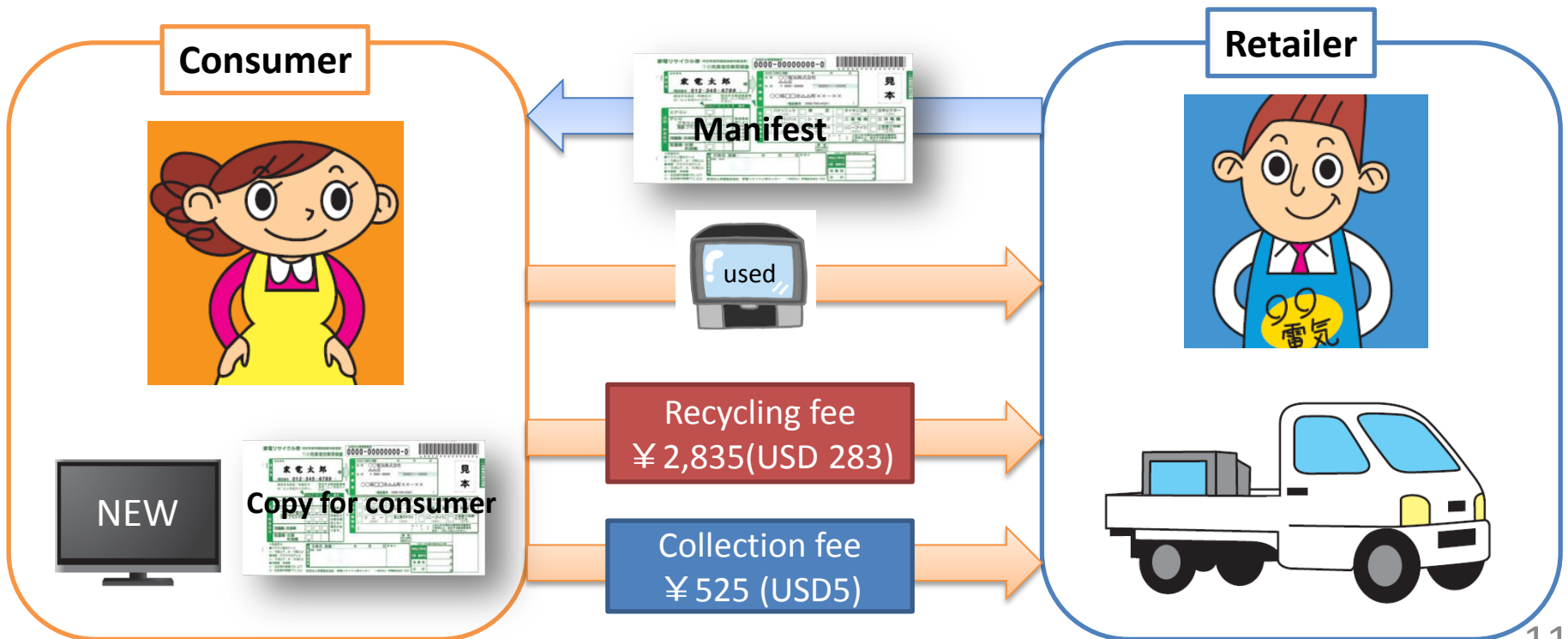
# I bought a new flat-TV at the retail shop.

- ✓ Retailer delivers new TV to my house from the shop.
- ✓ On the way back, retailer collect old TV from my house.



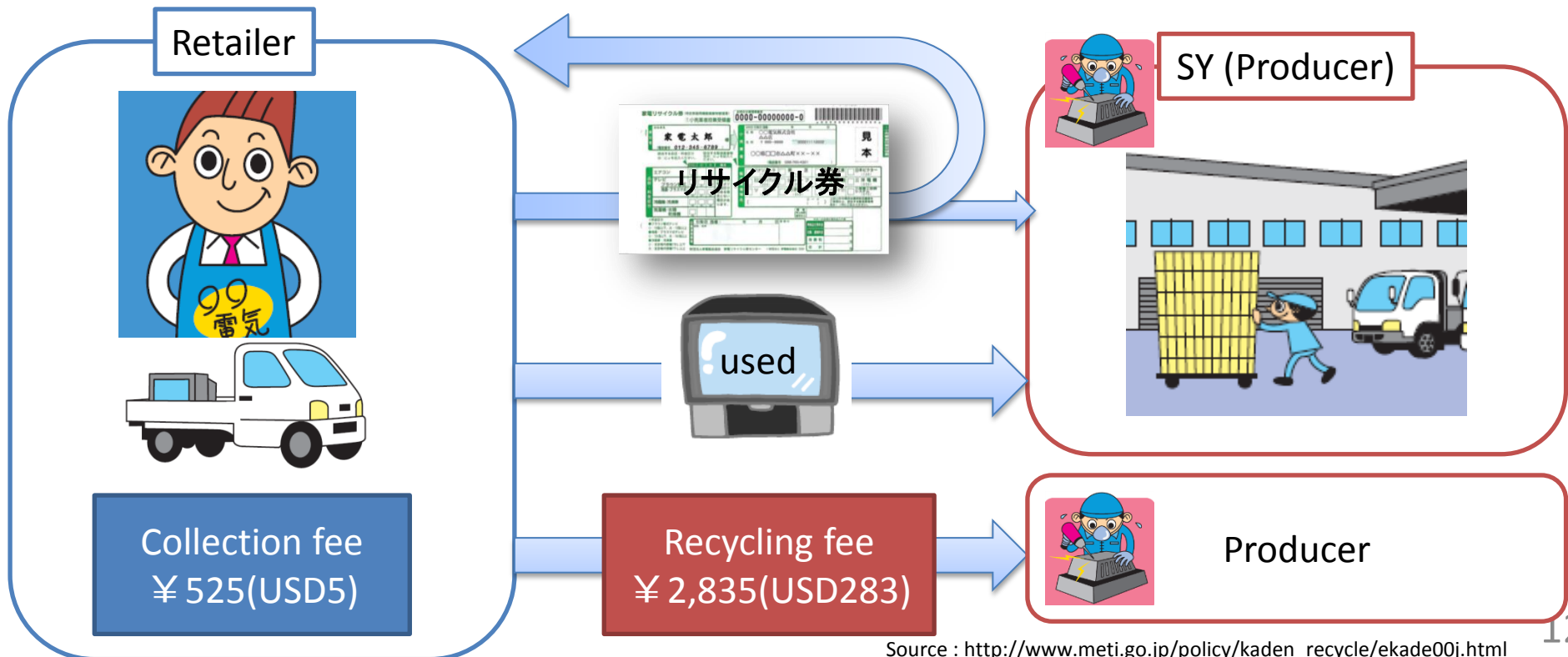
# Retailer collects used-TV

- ✓ Retailer issues manifest and hands a copy to consumer.
- ✓ The manifest is attached to the item.
- ✓ Retailer charges the cost for recycling



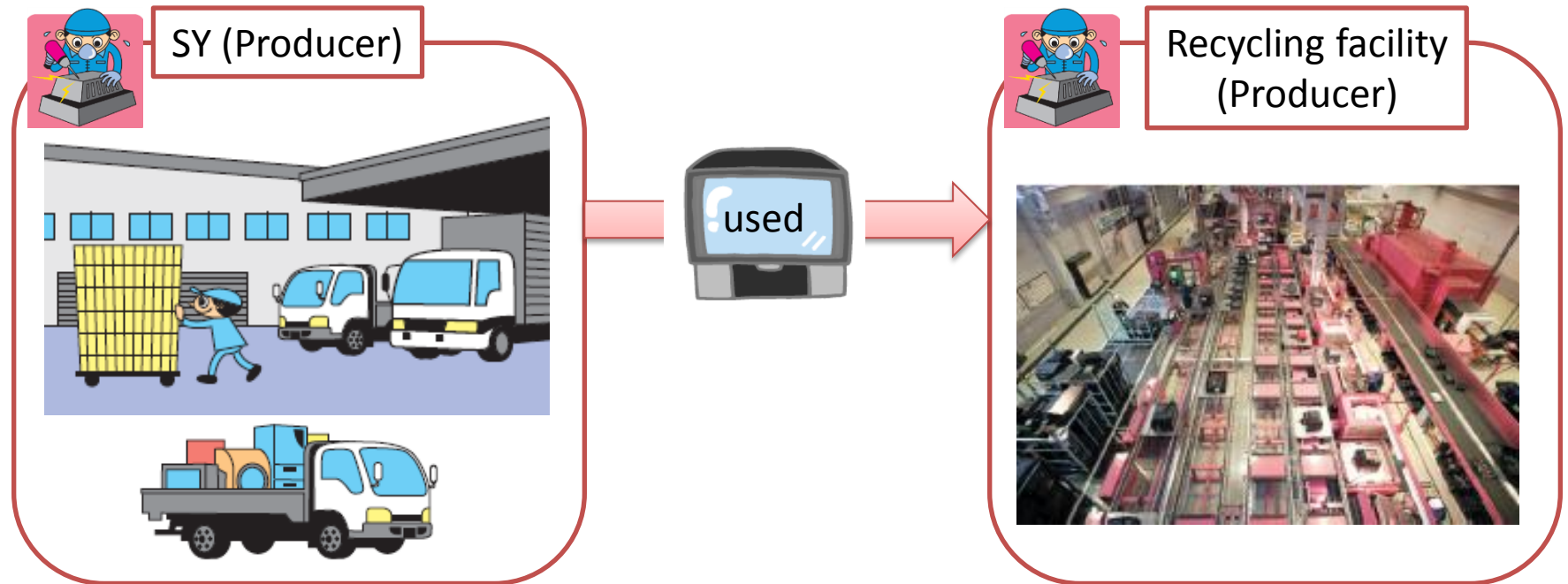
# Retailer transports used-TV to a stockyard(SY)

- ✓ Producer prepares stockyards.
- ✓ Retailer transfers the recycling fee to producer.
- ✓ SY confirms manifest and the item if there is some mistake.



# SY transports used-TV to recycling facility

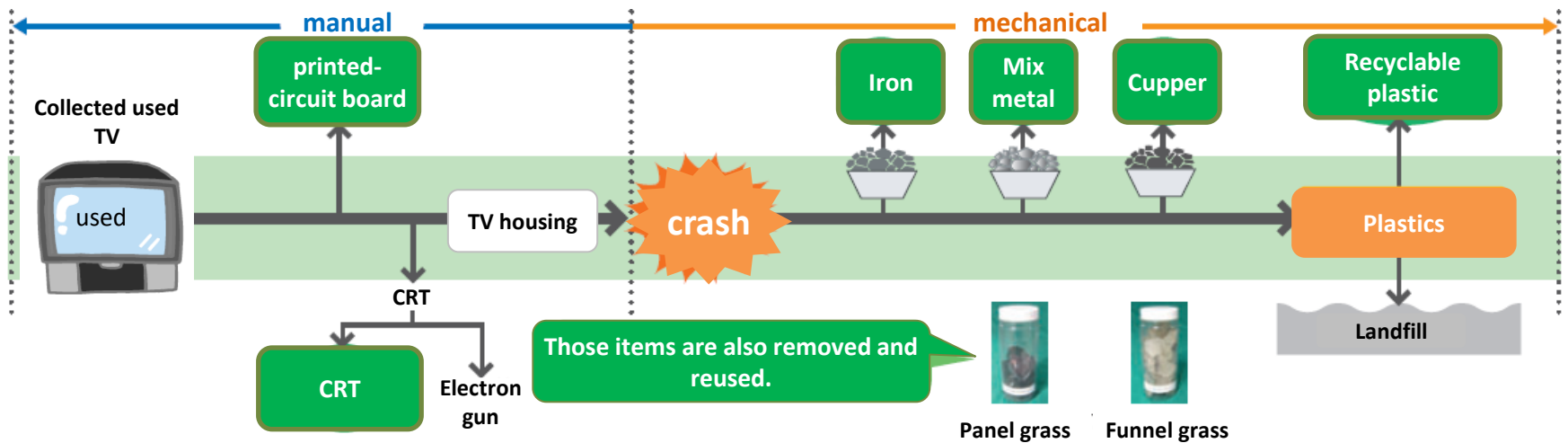
- ✓ Producer prepares recycling facility.
- ✓ The recycling facility conducts recycling activity.





# My used TV is recycled!

✓ There are several process such as manual dismantling, crushing and magnetic sorting.





# Cooperation of recycling practice

✓ Producers make two group to practice recycling.

## Group-A

No. of producers : 31

Toshiba  
Panasonic  
LG Electronics Japan  
Samsung Japan  
JVC Kenwood  
Etc.....

## Group-B

No. of producers : 25

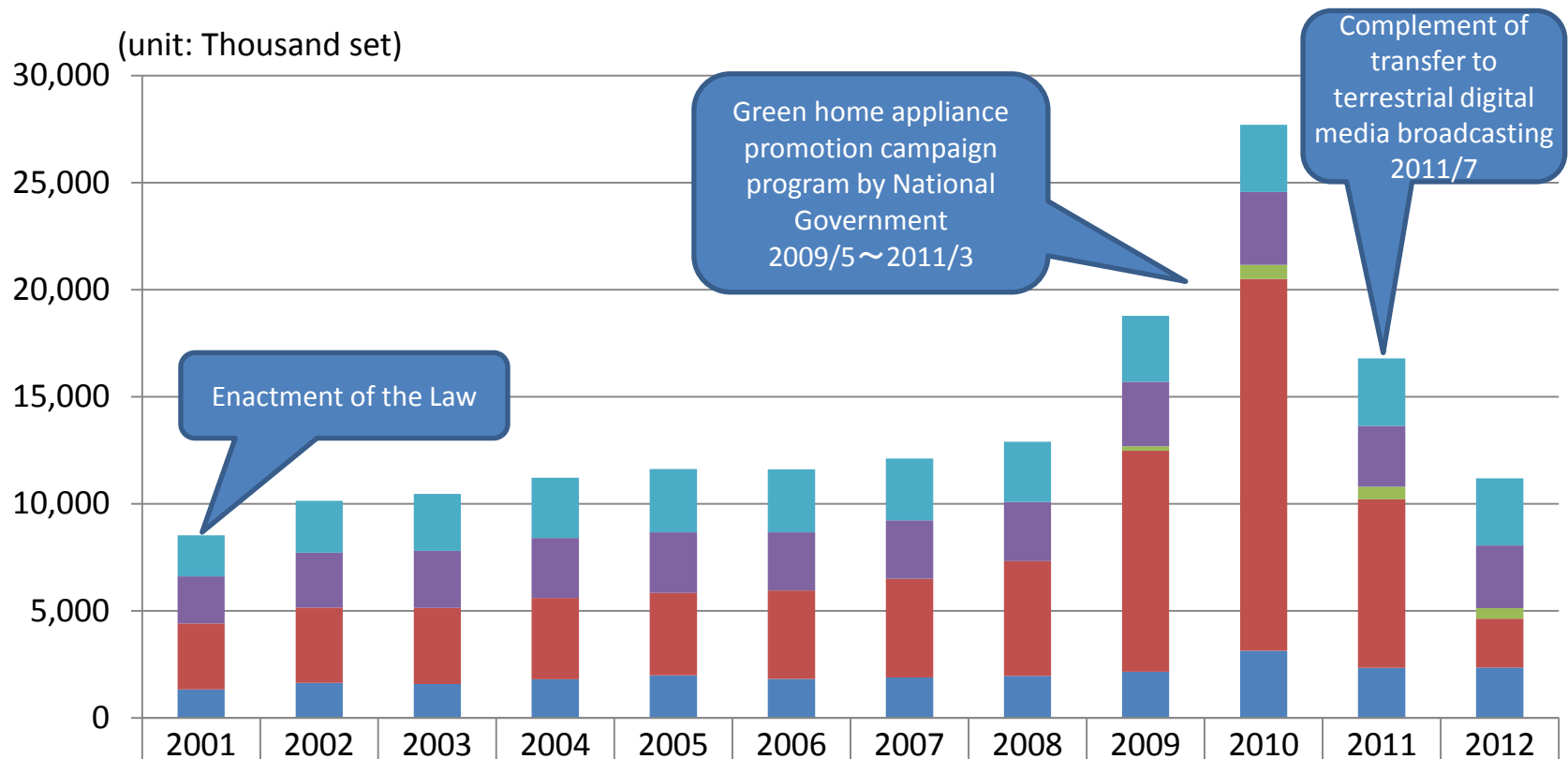
Sharp  
Sony  
Hitachi  
Mitsubishi  
Etc....

No. of Stockyard : 369

No. of recycling facility : 31

No. of recycling facility : 16

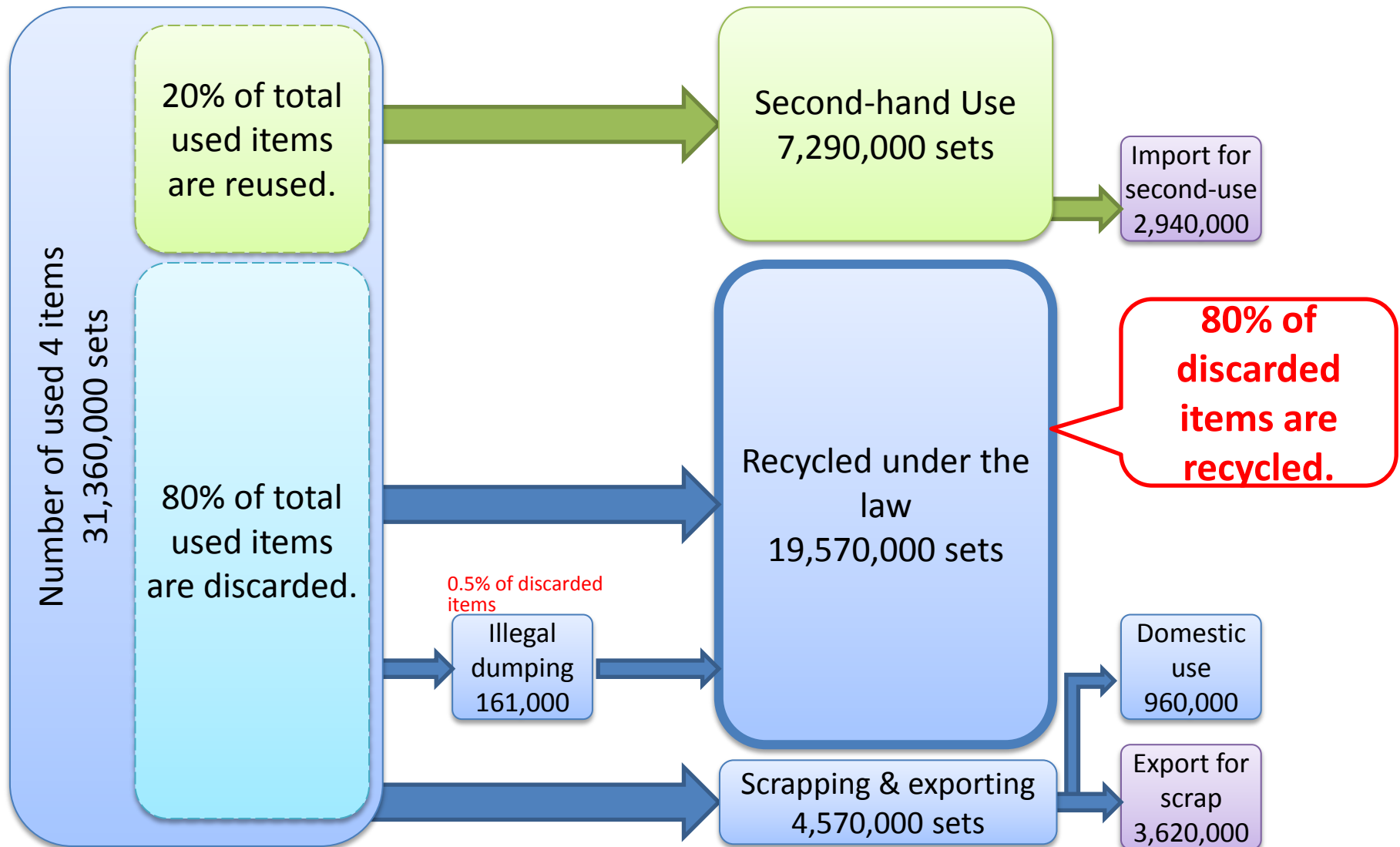
# Enforcement of law



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Wash machine	1,929	2,425	2,662	2,813	2,953	2,943	2,884	2,821	3,087	3,136	3,151	3,145
Fridge	2,191	2,563	2,665	2,802	2,820	2,716	2,725	2,746	3,007	3,400	2,843	2,919
flat-TV	0	0	0	0	0	0	0	0	218	654	599	491
CRT-TV	3,083	3,517	3,551	3,787	3,857	4,127	4,613	5,365	10,320	17,368	7,866	2,282
A/C	1,334	1,635	1,585	1,814	1,990	1,828	1,890	1,968	2,154	3,142	2,341	2,359



# 80% of discarded items are recycled under the law in 2011



# Important role of local government

- Collected by local government before the enactment of law
- PR campaign toward residents have been conducting to support the enforcement of the law.

- Distribution of guidebooks for waste & recycling
- Visit communities and call for residents to be cooperate with the law

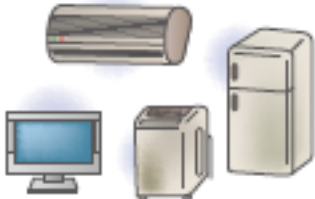
**The items that city cannot collect**

Source : Shinjuku city, Tokyo

●家庭用のエアコン、テレビ、冷蔵庫・冷凍庫、洗濯機・衣類乾燥機

粗大ごみではありません。家電リサイクル法に基づき、リサイクルが義務付けられています。

販売店または家電リサイクル受付センターへお申込みください。  
リサイクル料金と運搬料金が必要です。  
(メーカーによって差があります。下記の金額は標準金額です。)



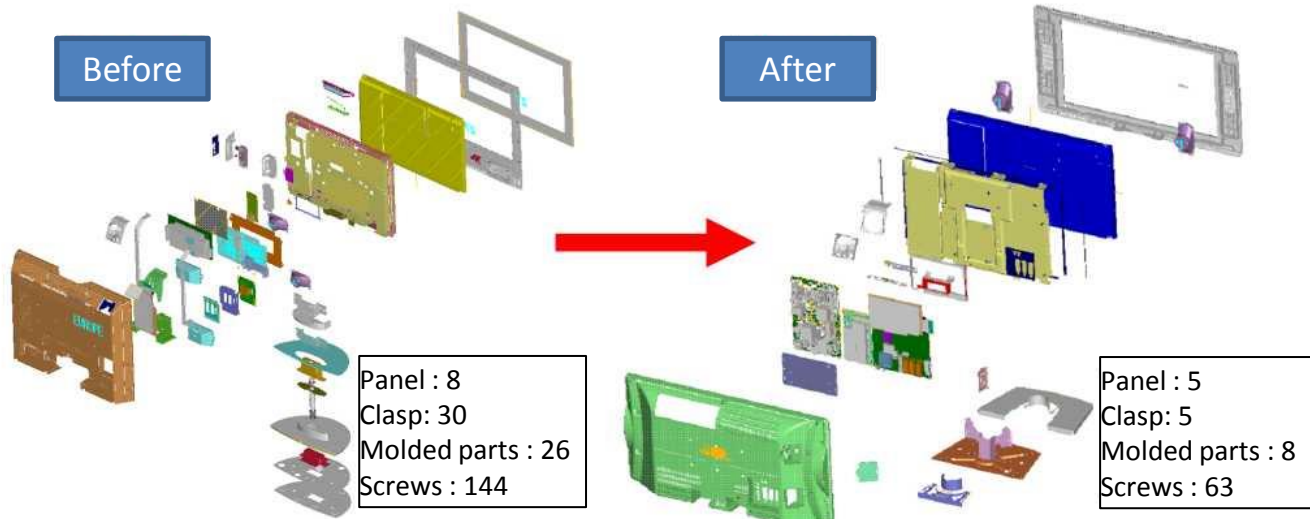
リサイクル料金標準額	
エアコン	2,100~3,139円
ブラウン管テレビ	
液晶テレビ	1,785~3,795円
プラズマテレビ	
冷蔵庫・冷凍庫	3,780~5,869円
洗濯機・衣類乾燥機	2,520~3,444円

+ 運搬料金

- 買い替える場合  
新しい製品を買う販売店にお申し込みください。
- 処分のみの場合  
①処分する製品を購入した販売店にお申し込みください。  
②購入した販売店が廃棄するなど販売店に引き渡せない場合は、家電リサイクル受付センター(☎03-5296-7200)にご連絡ください。

# Movement of “Design for Environment”

- Producer voluntarily practices :
  - Design of ease-to-dismantle for recycling
  - Use ease-to-recycle material
  - R&D for environmental friendly design and production considering the lifecycle of products



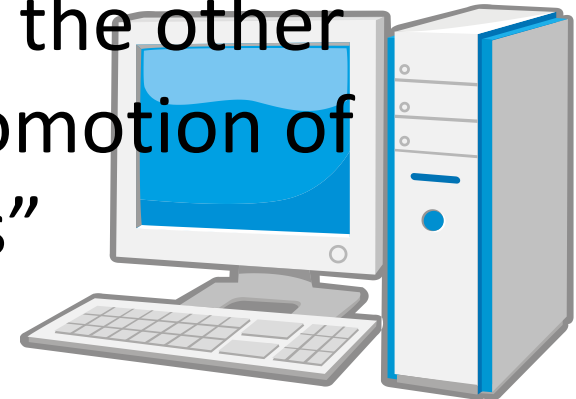
# Key Points of E-waste Recycling in Japan

- The recycling of 4 items is accomplished a certain result now.
  - Utilizing the existing home-delivering route for collection was effective.
  - Producer practices proper recycling and fulfills the requirement of recycling ratio.
  - “Design for Environment” was driven by producers as a ripple effect



# What about PC recycling in Japan?

- Producer and importer have mandate responsibility to recycle from collection
- The recycling cost has been added to the selling price (Consumer pays the cost at purchase)
- This system was practiced under the other national law named “Law for Promotion of Effective Utilization of Resources”



# For further promotion of resource recycling

- New recycling law for small home appliances
  - This is not a mandate program
  - Interested local government can join this program
  - Licensed recycler conducts recycling activity

- Must accept the appliances collected by local government



**LET'S VISIT RECYCLING FACILITY AND  
HAVE A LOOK AT ACTUAL OPERATION!**