

E-Waste Management in Taiwan

Hung-Yi Chen

Taiwan EPA

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Singapore



行政院環境保護署
Environmental Protection Administration
Executive Yuan, R.O.C. (Taiwan)

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E-WASTE IN TAIWAN MEANS GOLD



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Outline

1. Waste clean system and performance
 - Evolution of the Municipal Solid Waste system
 - Performance
2. WEEE collection system and performance
 - WEEE collection system
 - Recycling fee rate
 - Performance
 - System of Auditing and Certification
3. Future vision

Introduction

Taiwan

Demographic

■ Population: 23.2 million

■ Area: 36,000 square kilometers

■ Population Density: 641 persons/ km²



Waste clean system and performance

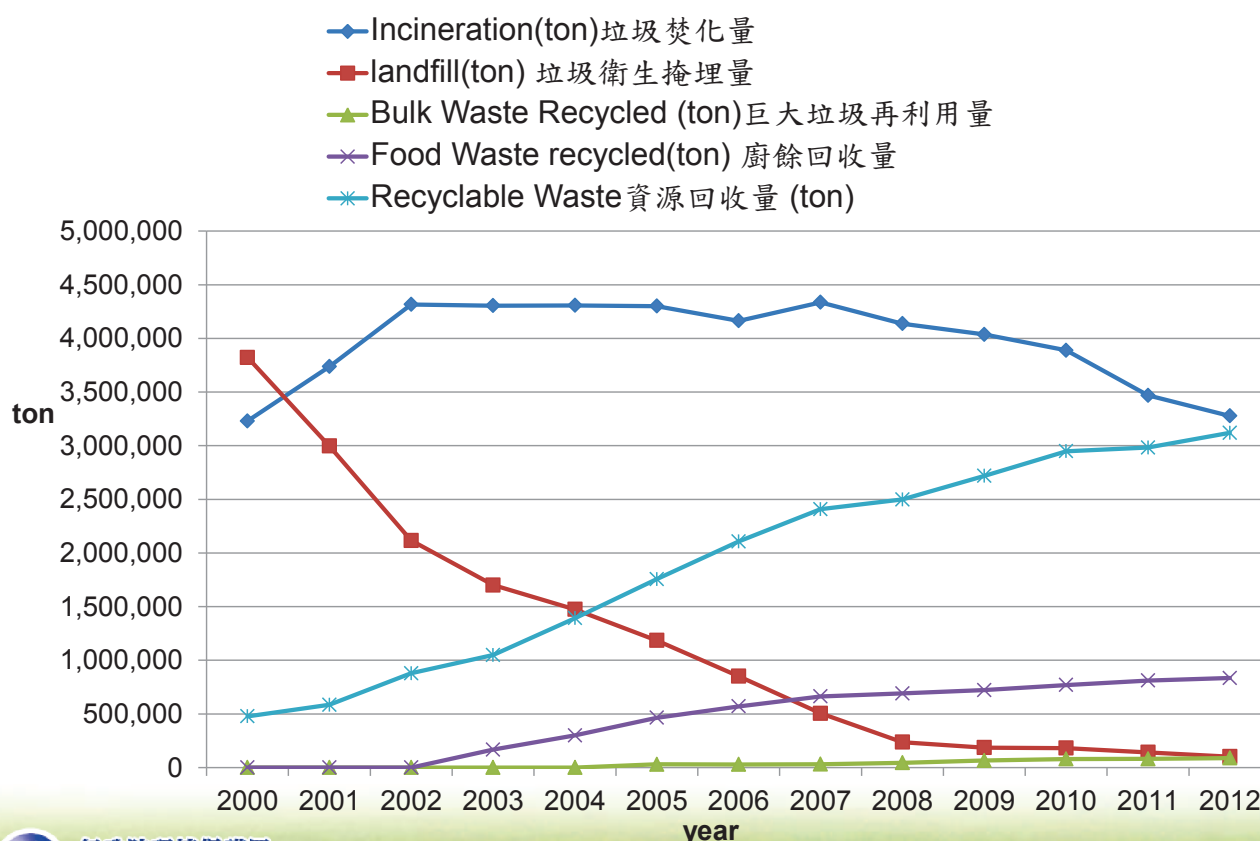
廢棄物清理制度及現況



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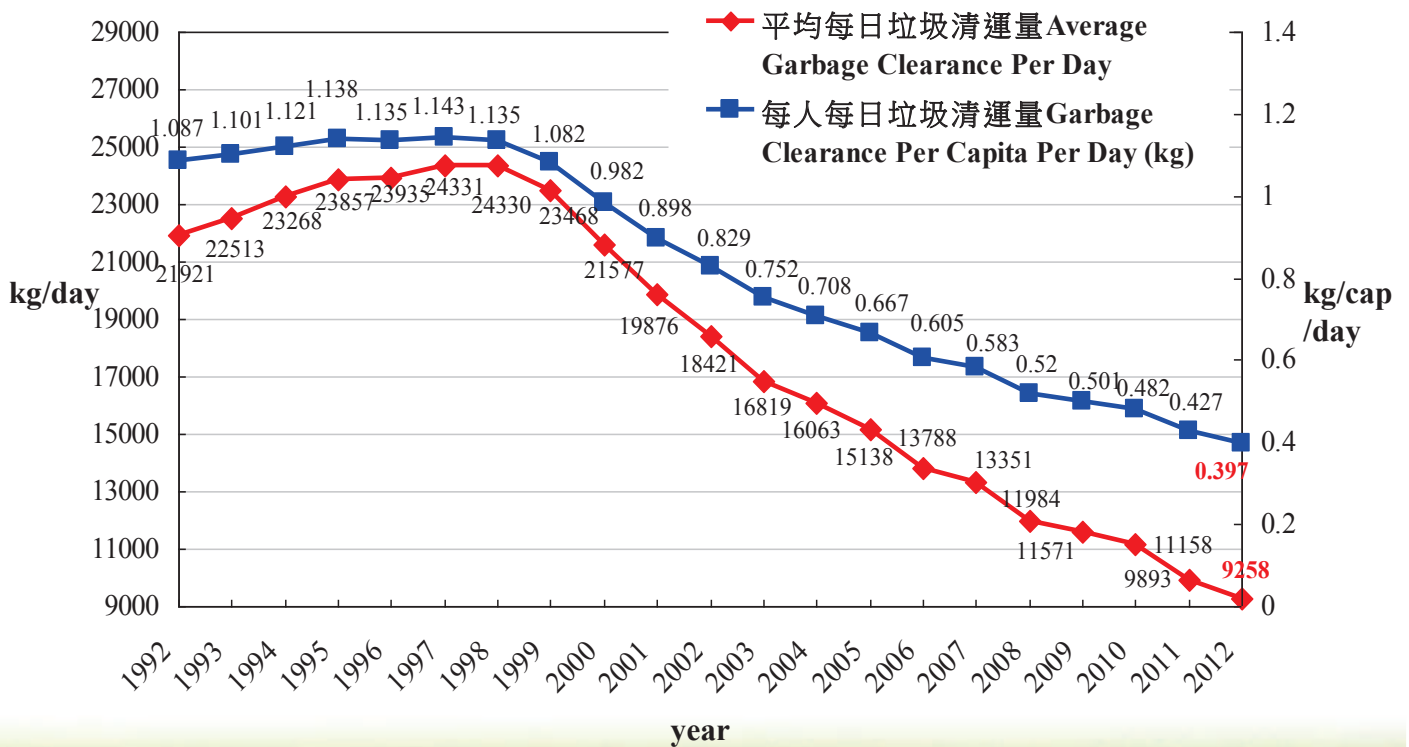
MSW Clearance 一般廢棄物清理概況



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MSW Clearance 一般廢棄物清理概況



Clearance Structure 分類回收與清理架構



WEEE collection system and performance

電子廢棄物回收處理制度 及現況



Recycling Management Fund Function & Operation

(1) Community residents

Form Community-based Recycling organization and promote separation of waste and recyclable.

(4) Recycling Fund

- Financed by producers
- RFMB plans and implements recycling programs.



(2) Recycling Industries

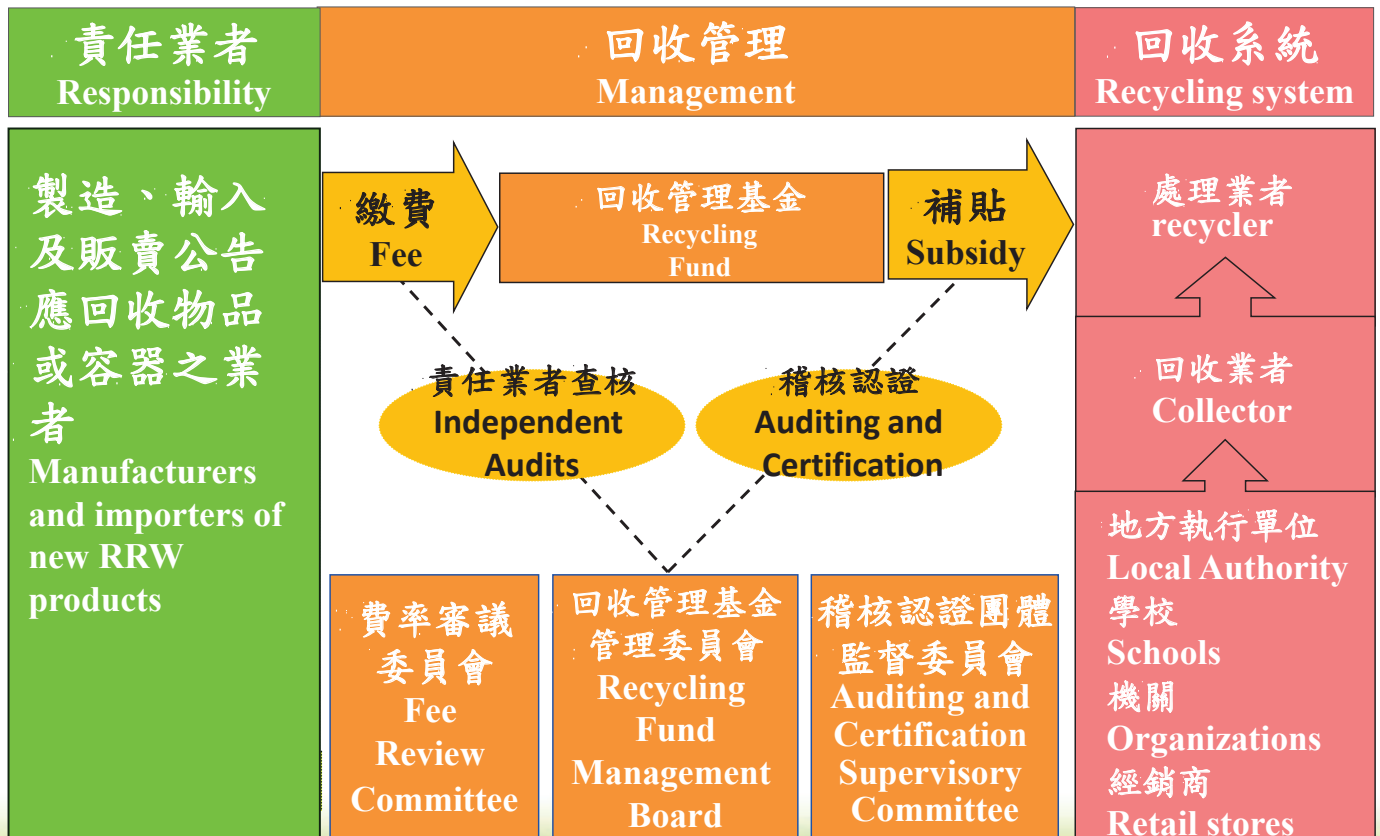
Collect and recycle from households, communities, sellers and municipalities.

(3) Local Authority

- Collect and sort recyclable
- Part of the revenues from selling recyclable must feed back to the general public.




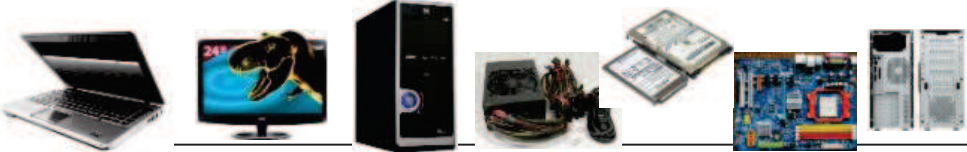


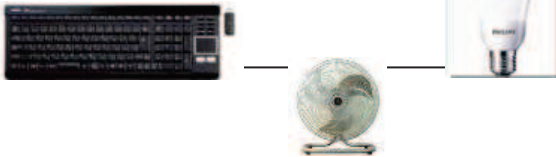




Recycling Management Fund Function & Operation



Evolution of manufacturers and importers Responsibility in Taiwan

Year	Features	Milestone
1998 - now	<p>回收基管會成立(公辦公營)</p> <p>The eight recycling funds are administered by EPA</p> <p>Recycling Fund Management Board</p>	<ul style="list-style-type: none"> ▶ 1998/03: Home appliance was listed as Regulated Recyclable waste (RRW) by EPA ▶ 1998/06: Subsidize the waste appliances storage site (44 company with 67 sites) ▶ 1998/06 : Waste IT equipment collection station(Subsidize the Public) ▶ 2002: EPA promulgated standards for the methods and facilities for the collection, storage, and recycling of waste appliances and waste IT <i>equipment</i> ▶ 2007: Electrical fans and keyboards were listed as RRW by EPA ▶ 2011: EPA promulgated waste home appliance takeback system

WEEE Subject to Taiwan's WDA Law

The year each item was listed as RRW	WEEE item
March, 1998	
June, 1998	
January, 2001	
July, 2002	Light tubes 
July, 2007	 Light bulbs
October, 2007	
July, 2008	High Intensity Discharge 
Jan, 2014(draft)	 Tablet  CCFL

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Recycling Fee Rate 回收清除處理費率

WEEE's Green Differential Fee Rate 2013

Home appliance

- ✓ Green Mark by EPAT
環保標章
- ✓ Energy Label
節能標章
- ✓ Grade 1 or 2 of the Energy Efficiency Grade Standard
節能分級:1,2級
- ✓ Water Conservation Mark only for Washing machine
省水標章

30%
discount
7折優惠

To encourage the development of green friendly products

IT equipment

- ✓ Green Mark by EPAT
環保標章

30%
discount
7折優惠



Recycling Fee Rate 回收清除處理費率

Items			Regular (NT\$/unit)	Green products (NT\$/unit)	
1	TV sets	No-LCD	Over 27 inches	371	260
			Under 27 inches	247	173
		LCD	Over 27 inches	233	163
			Under 27 inches	127	89
2	Refrigerator	Over 250 Litres	588	412	
		Under 250 Litres	392	274	
3	Washing machine		307	215	
4	Air conditioner (Heater and air conditioner)		241	169	
5	Electric fans	Over 12 inches	34	24	
		Under 12 inches	19	13	



Recycling Fee Rate 回收清除處理費率

Items			Regular (NT\$/unit)	Green products (NT\$/unit, draft)	
1	Monitors	No-LCD	127	89	
		LCD	Over 25 inches	233	163
			Under 25 inches	127	89
2	Printers	Ink-jet type	101	96	
		Laser type	144	137	
		Dot-matrix type	152	144	
3	PCs		114.8	78	
4	Notebooks		39	27	
5	Keyboards		14	10	
6	Tablet (draft)		39	27	

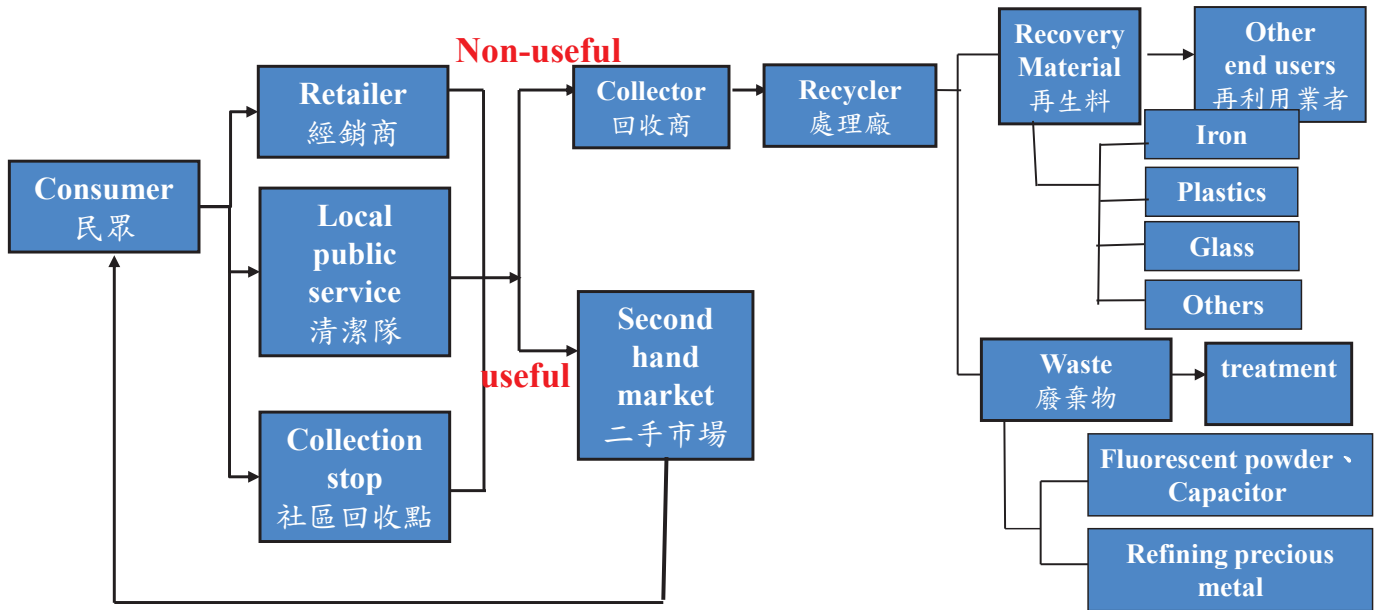


WEEE Recycling Flow-chart

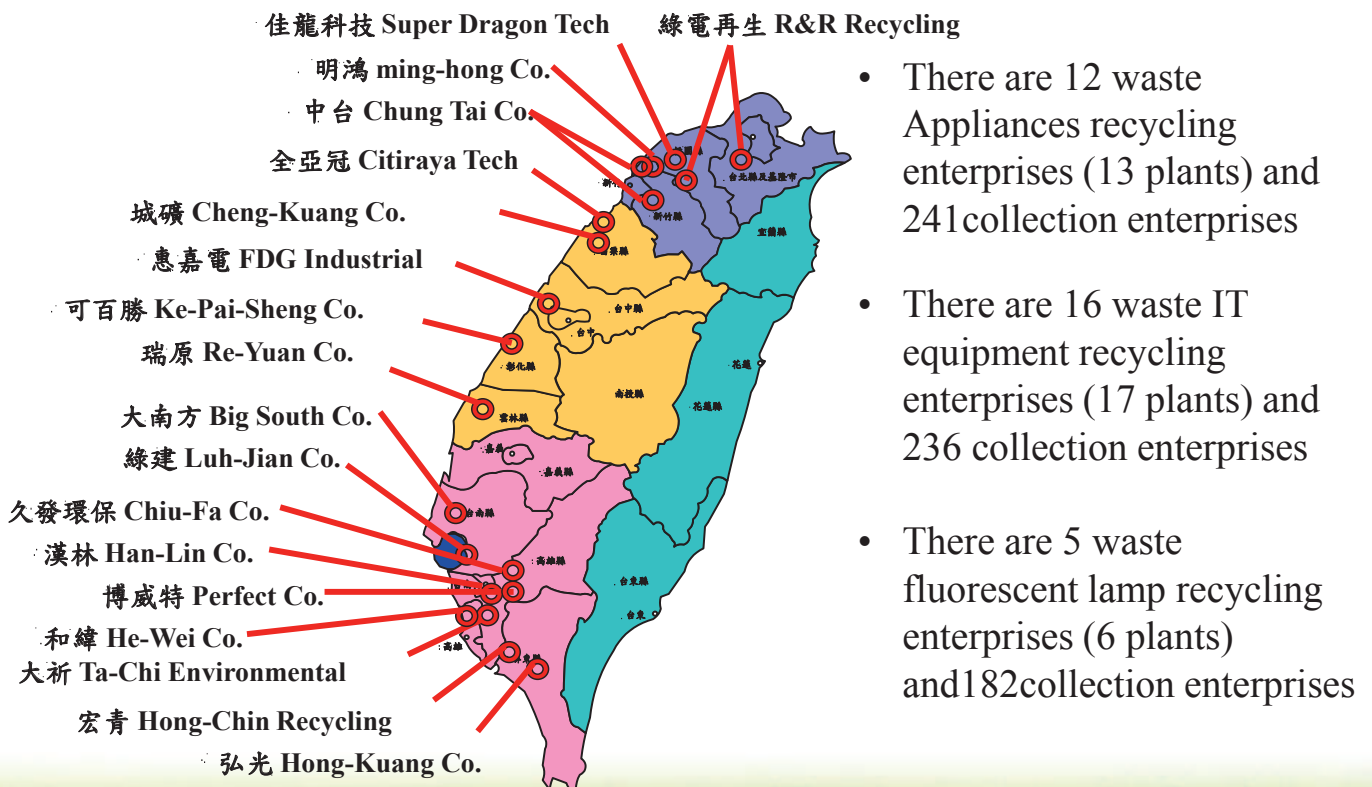
Generation (Recycling) Source 來源端

Collection Organization 收集端

Recycling Enterprise (Facility) 處置端



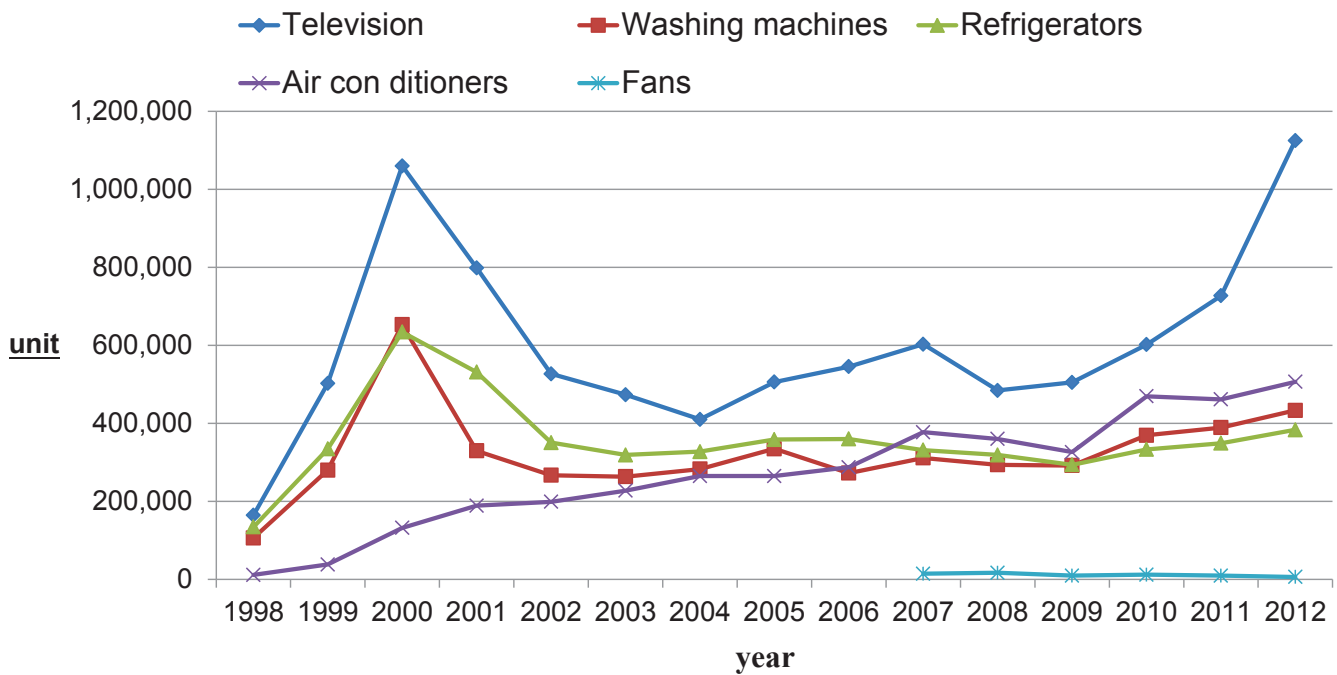
Distribution of WEEE recycler



- There are 12 waste Appliances recycling enterprises (13 plants) and 241 collection enterprises
- There are 16 waste IT equipment recycling enterprises (17 plants) and 236 collection enterprises
- There are 5 waste fluorescent lamp recycling enterprises (6 plants) and 182 collection enterprises



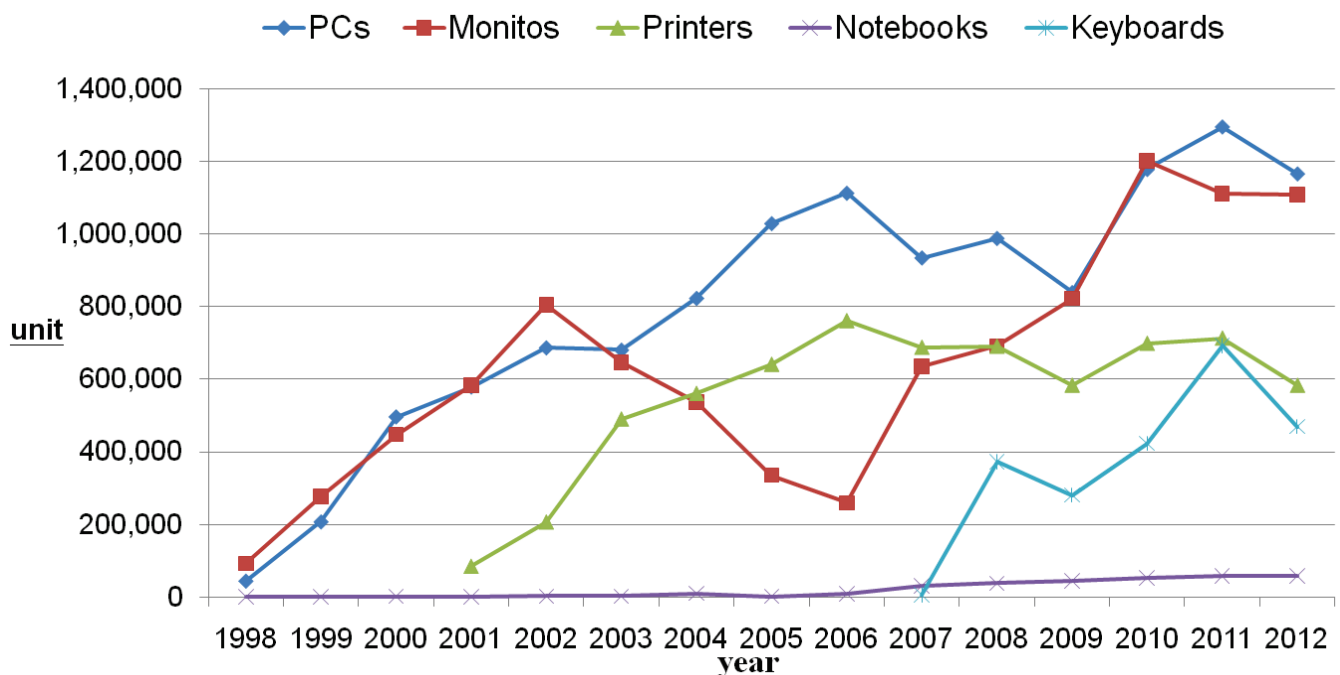
Household appliance collection amounts



The Waste Appliance recycling volume increased 5.9 times in 2012 , as compared to 1998.



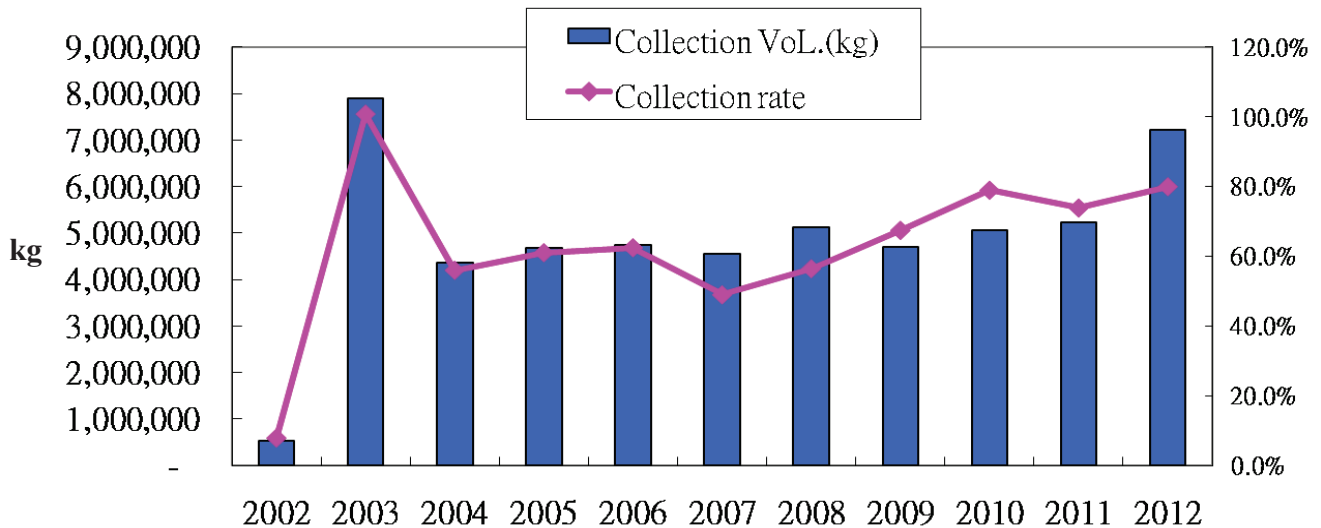
IT equipment collection amounts



The Waste IT equipment recycling volume increased 24.4 times in 2012 , as compared to 1998.



Fluorescent lamp collection amounts



The Waste fluorescent lamp recycling volume increased 13.7 times in 2012 , as compared to 1998.

Total WEEE collection in 2012 reach 5.45 Kg per Capita



WEEE recycling process 處理再利用流程



Disassembly
拆解



Cutting the CRT tube
映像管切割



Fluorescent powder Collect
螢光粉吸取



Extracting the refrigerant
冷媒抽取



Shredding
破碎



Sorting
分選



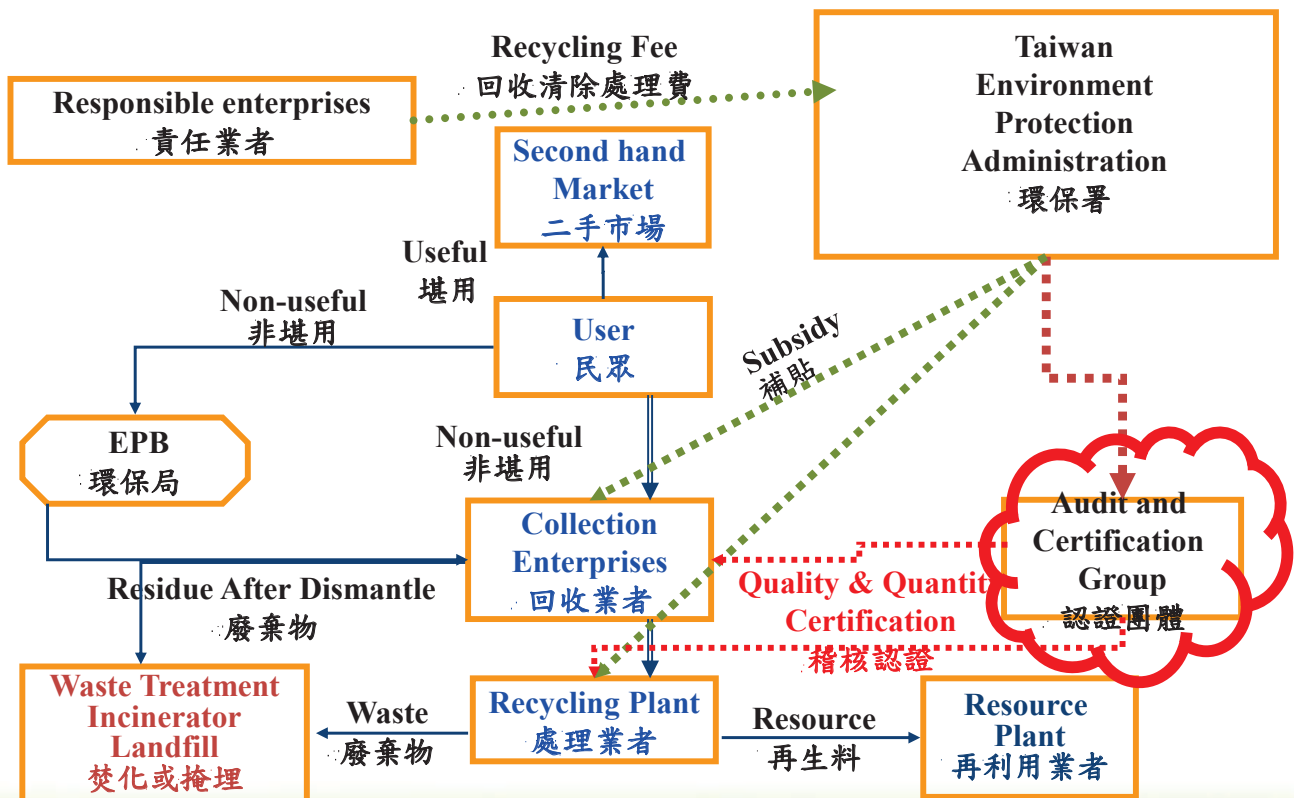
WEEE recycling rate 再利用比例



Recycling rate 資源化再利用率	Household appliance 廢家電物品	IT equipment 廢資訊物品	Fluorescent lamp 廢照明光源
regulation 法令規範	70.0%	70.0%	90%
operation 實際運作	81.3%	82.3%	98%



System of Auditing and Certification



System of Auditing and Certification

- **Purpose :**
 - To confirm the quantity of regulated recyclable waste
 - To ensure the quality of regulated recyclable waste
- **Legal basis**
 - Article 18 of WDA
 - To determine recycling, storage, clearance and disposal method and facility standards
 - **To determine auditing and certification procedural regulations**
 - To determine management regulations for applications and reviews for the recycling, clearance and disposal subsidies



System of Auditing and Certification

1		2		3		4	
Quality Checking 進廠品質確認		Volume Checking 進廠數量確認		Marking the checked waste 認證註記		Storing Checking 分類貯存	
5		6		7		8	
Loading Checking 出廠確認		Shipping Checking 出廠重量確認		Documentation for the certification lists 業者報表審查		Operational reports Checking 稽核認證報告	



Future vision

未來展望



Future vision

- Raising collection performance. To Increase the number of listed recyclable wastes
- To encourage the development of environmental friendly products. Implement Green Differential Fee Rate for IT equipments.
- Promoting the quality of recycling process. Planning of differential subsidy fee by incentive
- To prevent from ozone damaged and global warming. To Increase refrigerant recycling collection results.



Did You Recycle Today?

Thank You for Your Attention

**Recycling Fund Management Board
Environmental Protection Administration
<http://recycle.epa.gov.tw>**

