

# Resource Recirculation Policy of Korea In Moving towards a Resource efficient Economy

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Korea Society of Waste Management

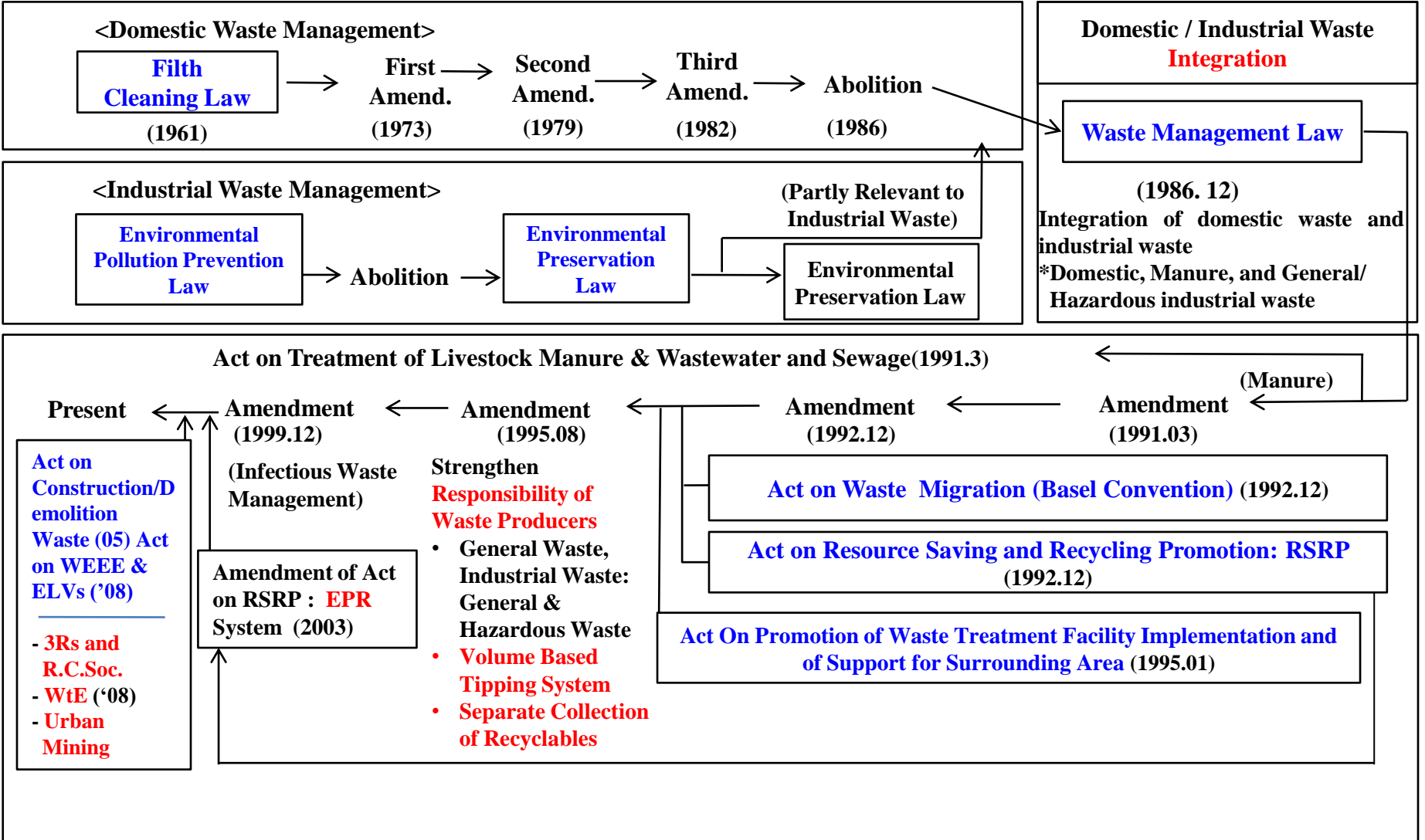


- **Current Status of Waste Management**
  - **Changes in Waste Management Policy**
  - **Prospective Waste Management**
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# Current Status of Waste Management

# Current Status of Waste Management



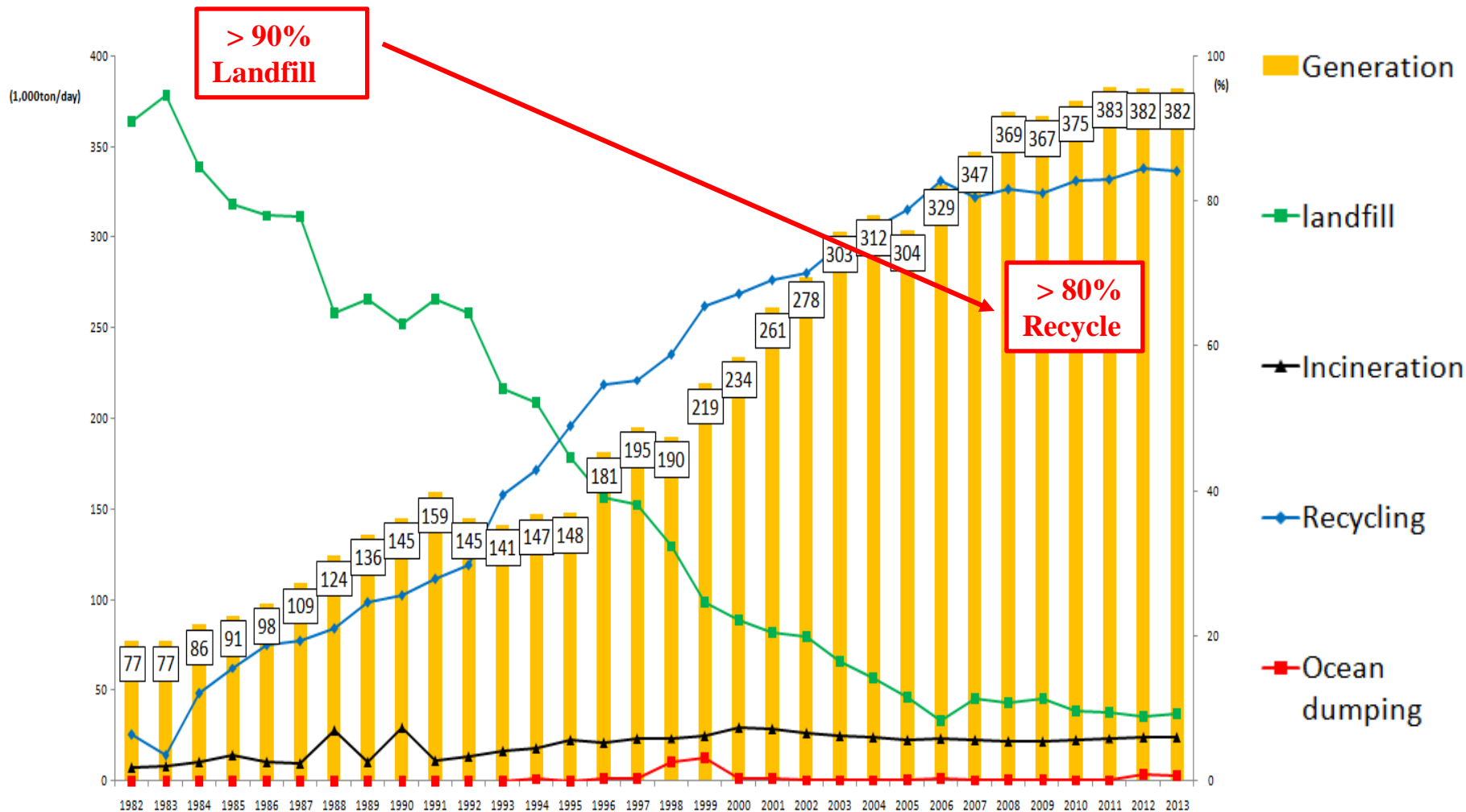
# Current Status of Waste Management

- Current status of waste generation and management
- Waste generation and treatment method with main processing flows for each waste stream in 2013

Waste Streams	Amount	Treatment	Processing flow
Domestic Waste	48,728 tons/day	Landfill(17.2%) Incineration(23.7%) Recycling(59.1%)	Domestic waste → Separating → Loading of waste → Magnetic separation and Crushing → Compression → Packaging → Landfill/ Incineration/ Recycling [SRF]
Industrial Waste	149,815 tons/day	Landfill(16.7%) Incineration(6.0%) Recycling(73.0%) Ocean treatment(4.3%)	Produced → Purchase and use → Large size waste → Separating/Trading → General waste → Recycling/ Landfill/ Incineration [Tracking System Applied]
Construction / Demolition Waste	183,538 tons/day	Landfill(1.4%) Incineration(0.5%) Recycling(98.1%)	Construction/Demolition waste generated → Coarse Pretreatment/Recycling → Landfill(nonflammable)/ Incineration(combustible) [Tracking System Applied]
Hazardous (Designated) Waste	10,000 tons/day	Landfill(18.7%) Incineration(18.2%) Recycling(57.1%) Etc (6.1%)	Waste oil → Liquid(Recycling/Incineration), Solid(Incineration) Organic solvent → Liquid(Recycling), Solid + Liquid(Incineration) Paint → Liquid(Recycling), Solid + Liquid(Incineration) Pesticide → Solid + Liquid(Incineration) Sludge → Landfill, Toxic waste → Landfill, Asbestos → Landfill
End of Life Vehicles (ELVs)	846,251 cars/year	Recycling(about 80%) Landfill(about 20%)	Manufacturer → ELV(End of Life Vehicle) → Dismantling → Crushing → Recycling/Treatment of waste gas/Landfill [Monitored by EcoAS]
Electric · Electronic Products (WEEE)	9,455,000 products/year	Recycling/Reuse/ Landfill/ Incineration (Treatment rates between products are varying)	Waste → Recycling Centers → Sorting → Plastics → Incineration → Electric wire → Recycling of metal → Landfill → Remainder → Grinding → Landfill → PCB → Recycling of metal and incineration [Monitored by EcoAS]

# Current Status of Waste Management

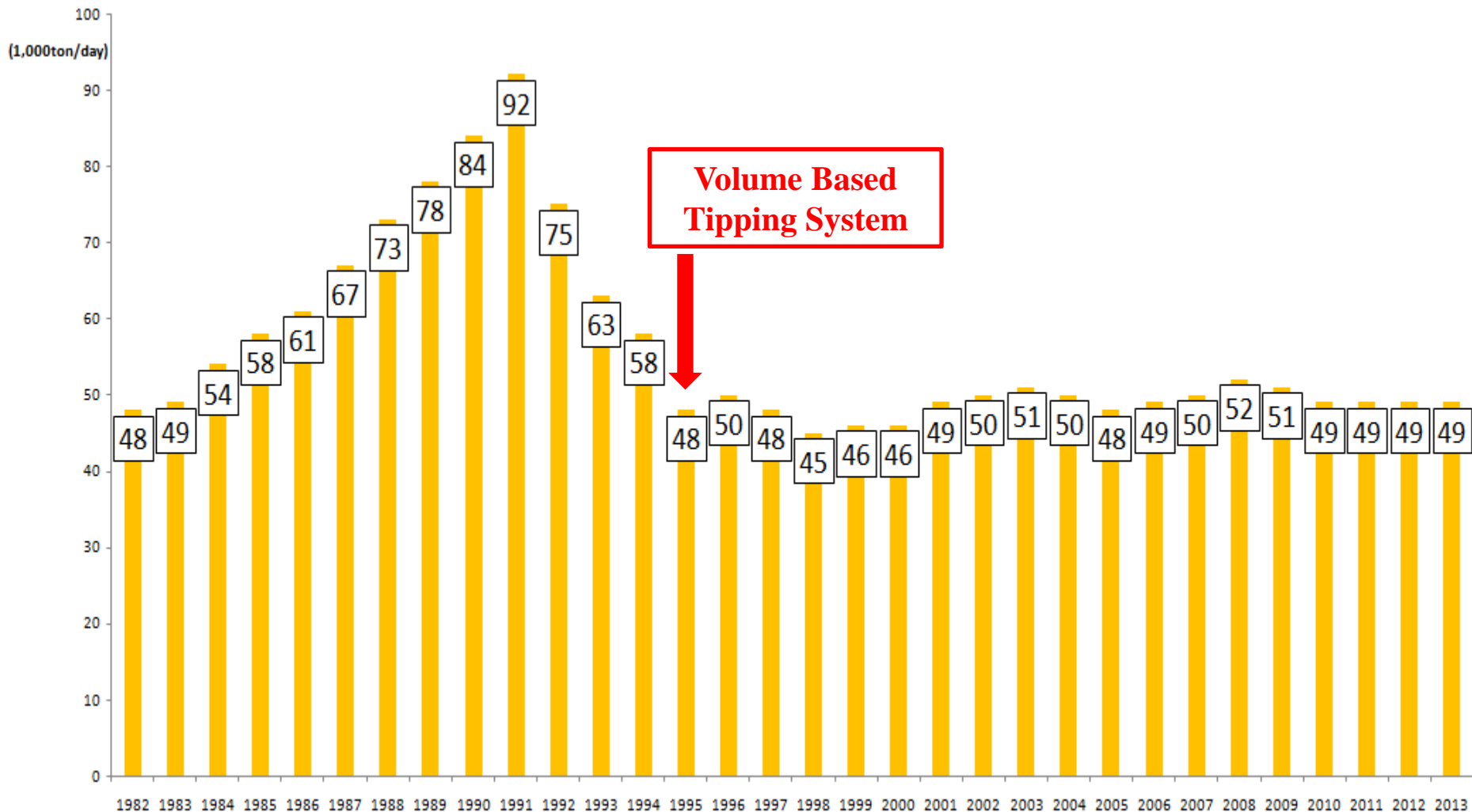
## Waste Generation and Treatment in Overall('82~'13)



# Current Status of Waste Management

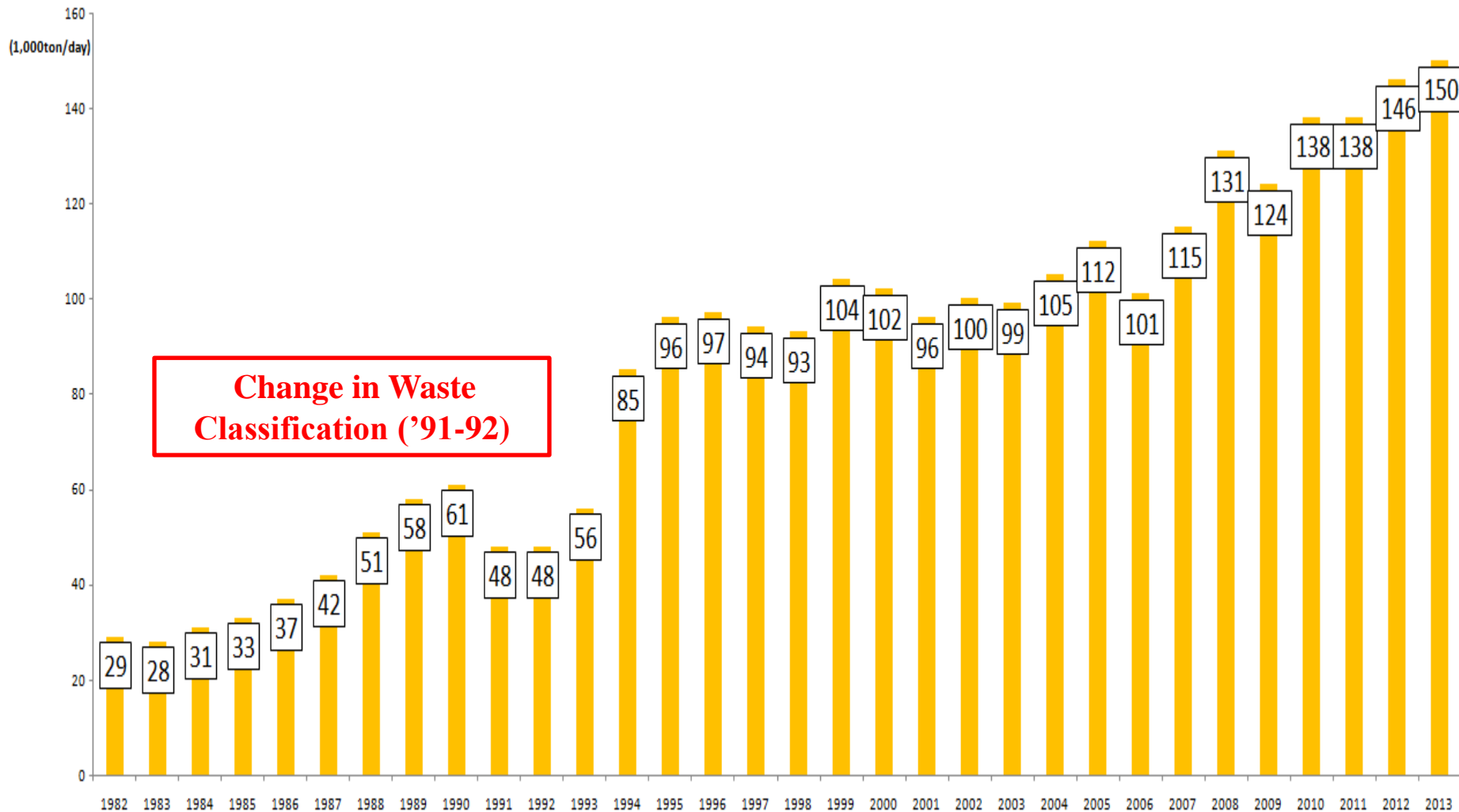
## Domestic waste('82~'13)

- Total domestic waste generation in 2013 is 48,728 tons/day



## Industrial waste('82~'13)

- Total industrial waste generation in 2013 is 149,815 tons/day

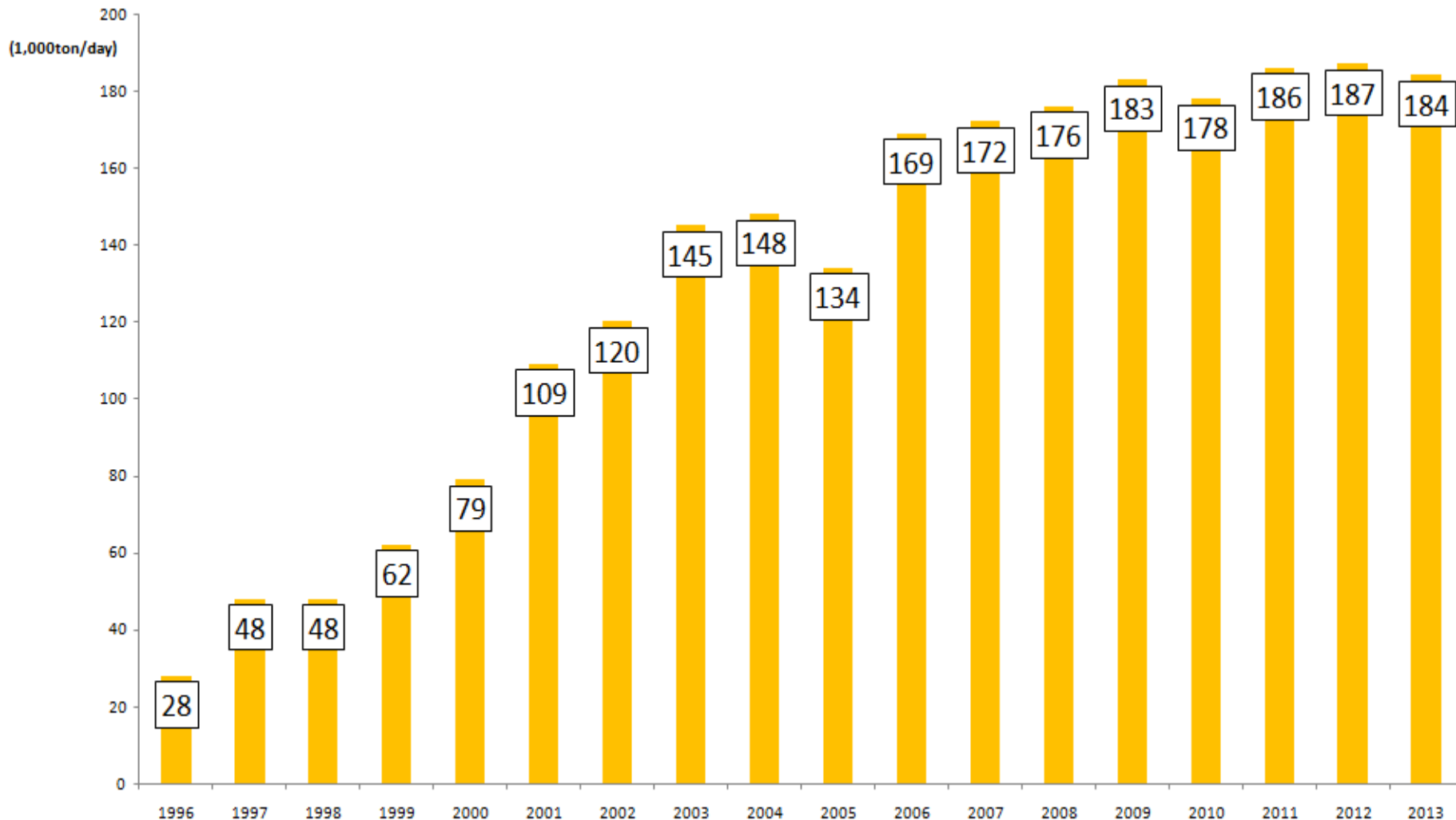




# Current Status of Waste Management

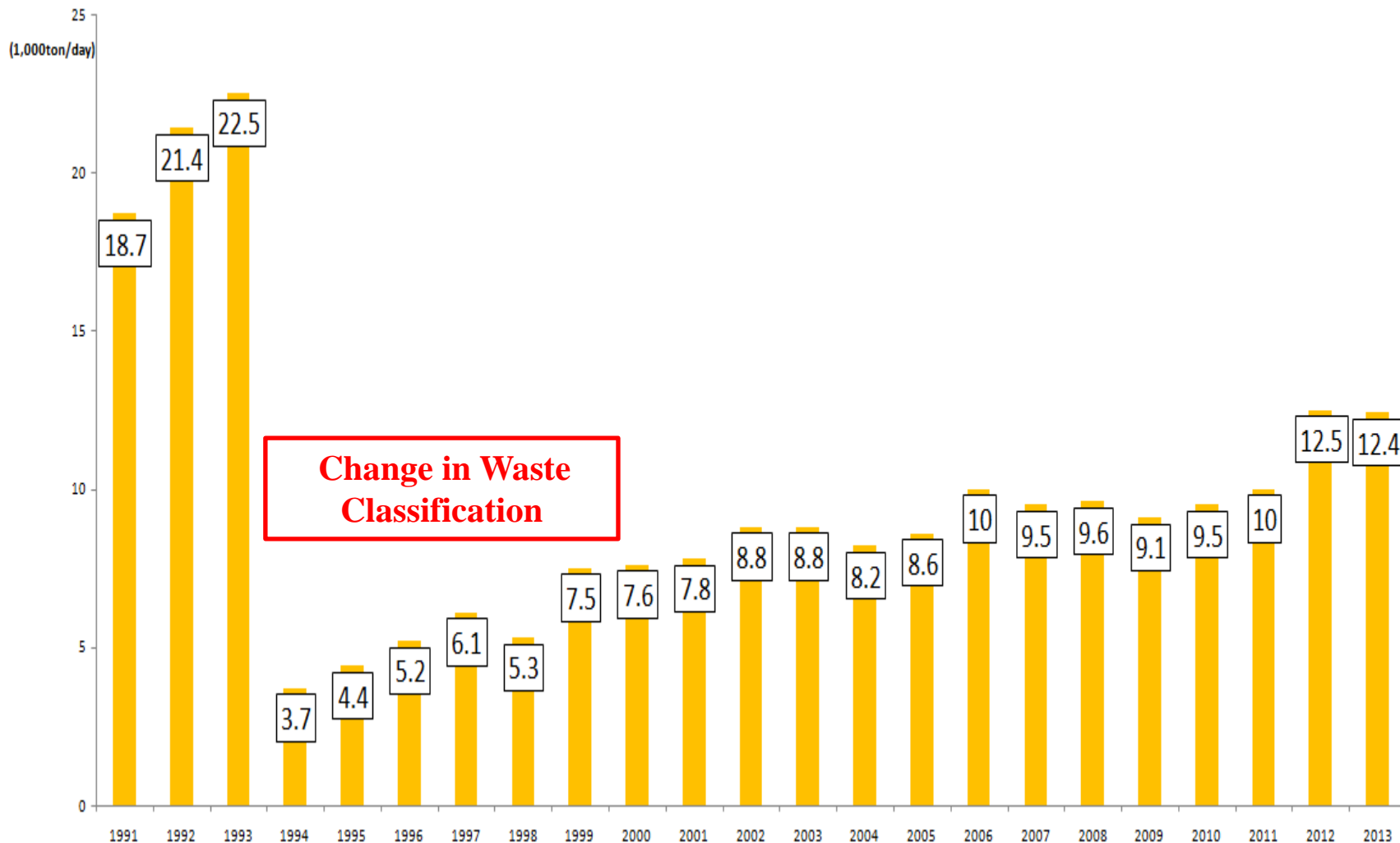
## Construction/Demolition waste('96~'13)

- Total construction/demolition waste generation in 2013 is 183,538 tons/day



## ▪ Hazardous waste('91~'13)

- Total hazardous waste generation in 2013 is 12,400 tons/day

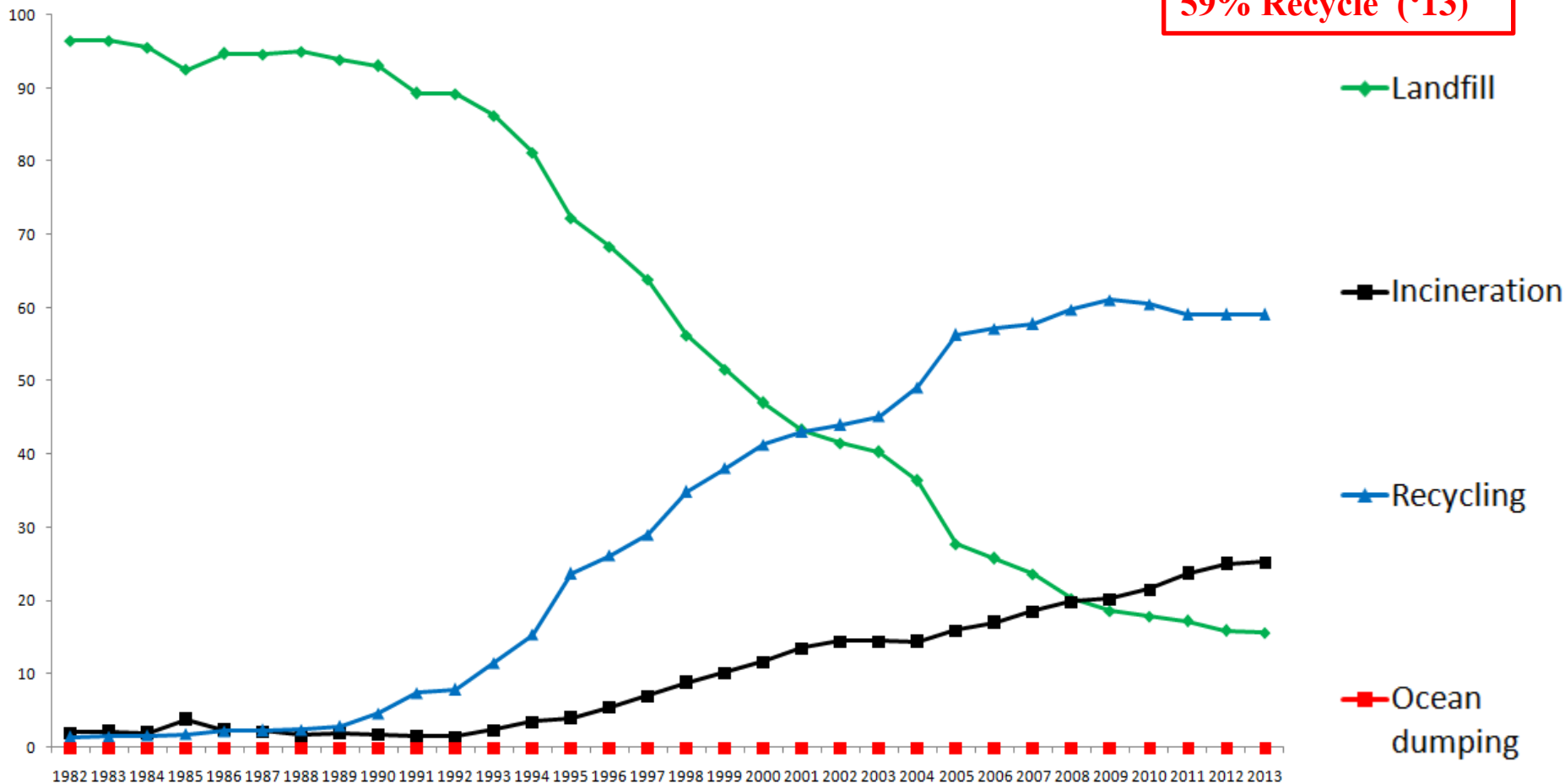


# Current Status of Waste Management

## ■ Treatment of Domestic Waste ('82~'13)

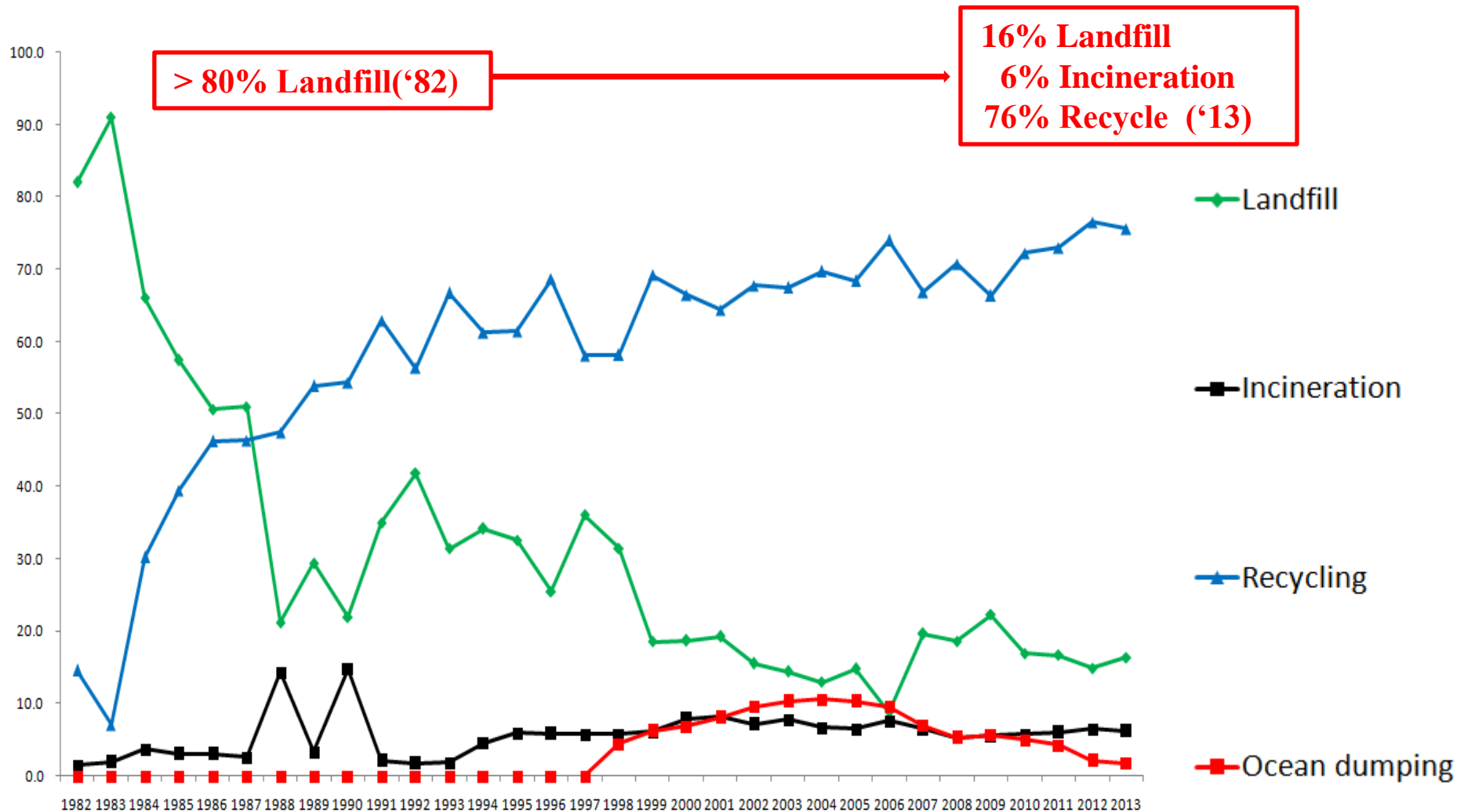
> 96% Landfill('82)

16% Landfill  
25% Incineration  
59% Recycle ('13)

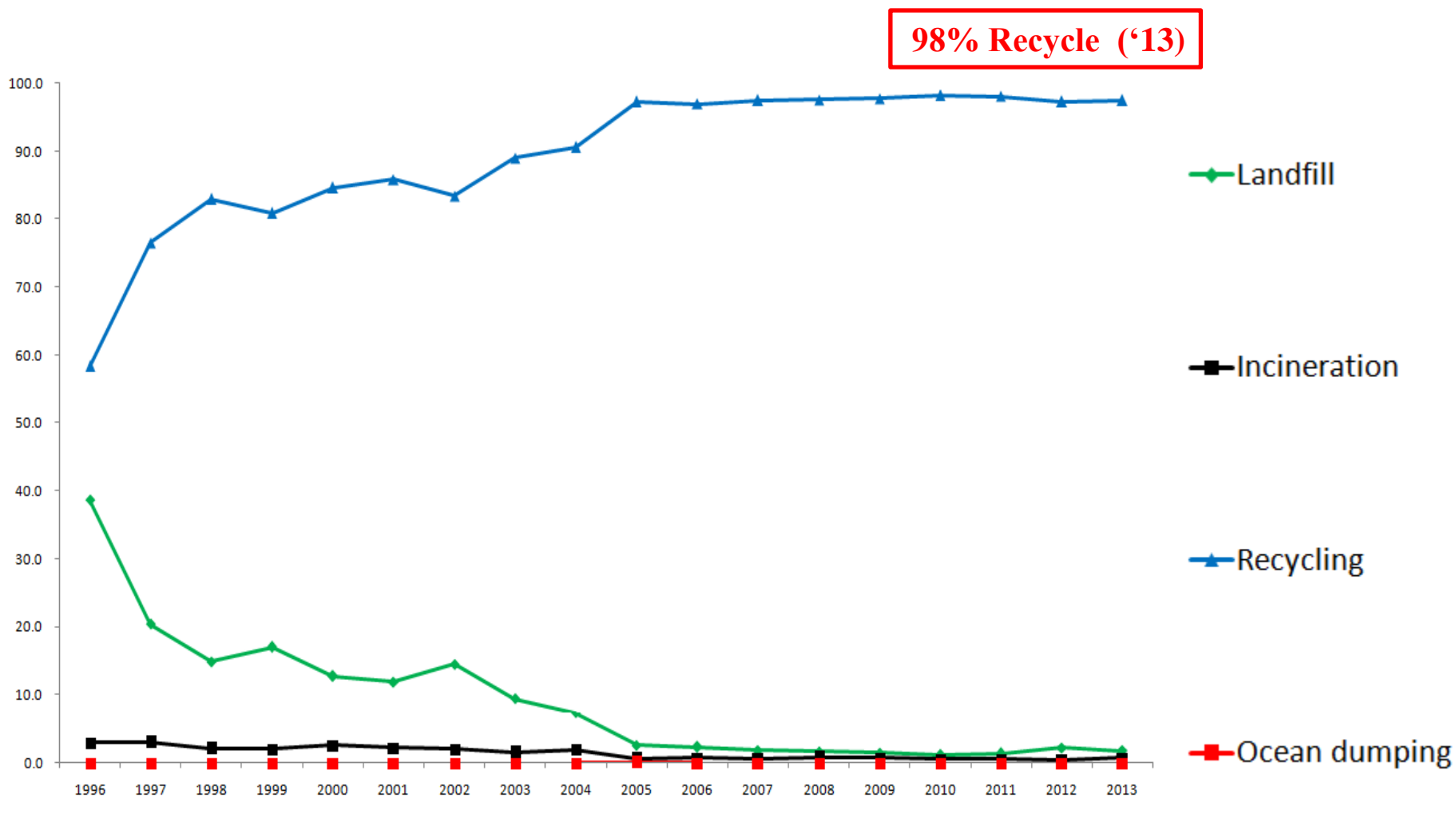


# Current Status of Waste Management

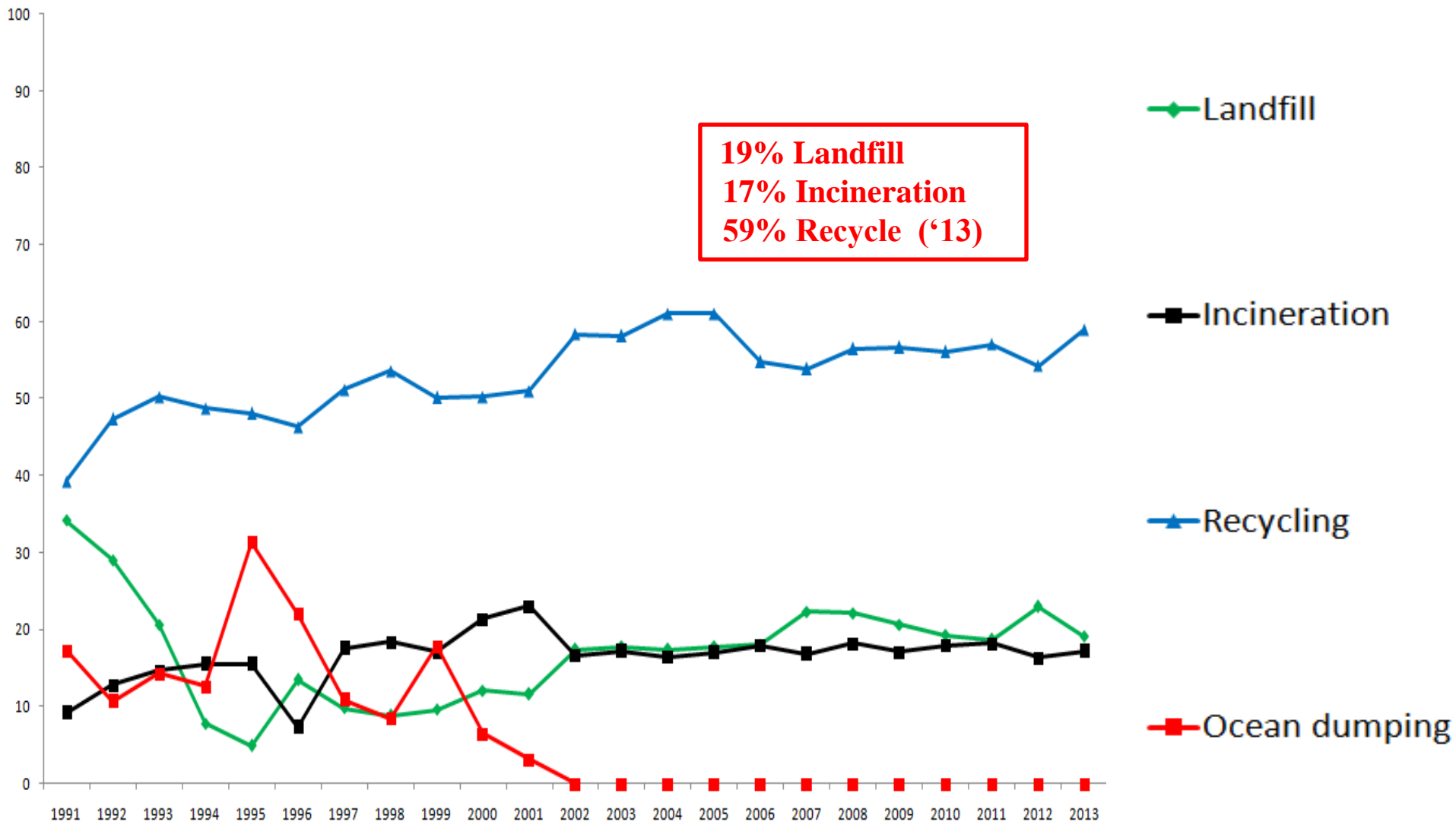
## ■ Treatment of Industrial Waste ('82~'13)



## ■ Treatment of Construction/Demolition Waste ('96~'13)



## ■ Treatment of Hazardous Waste ('91~'13)

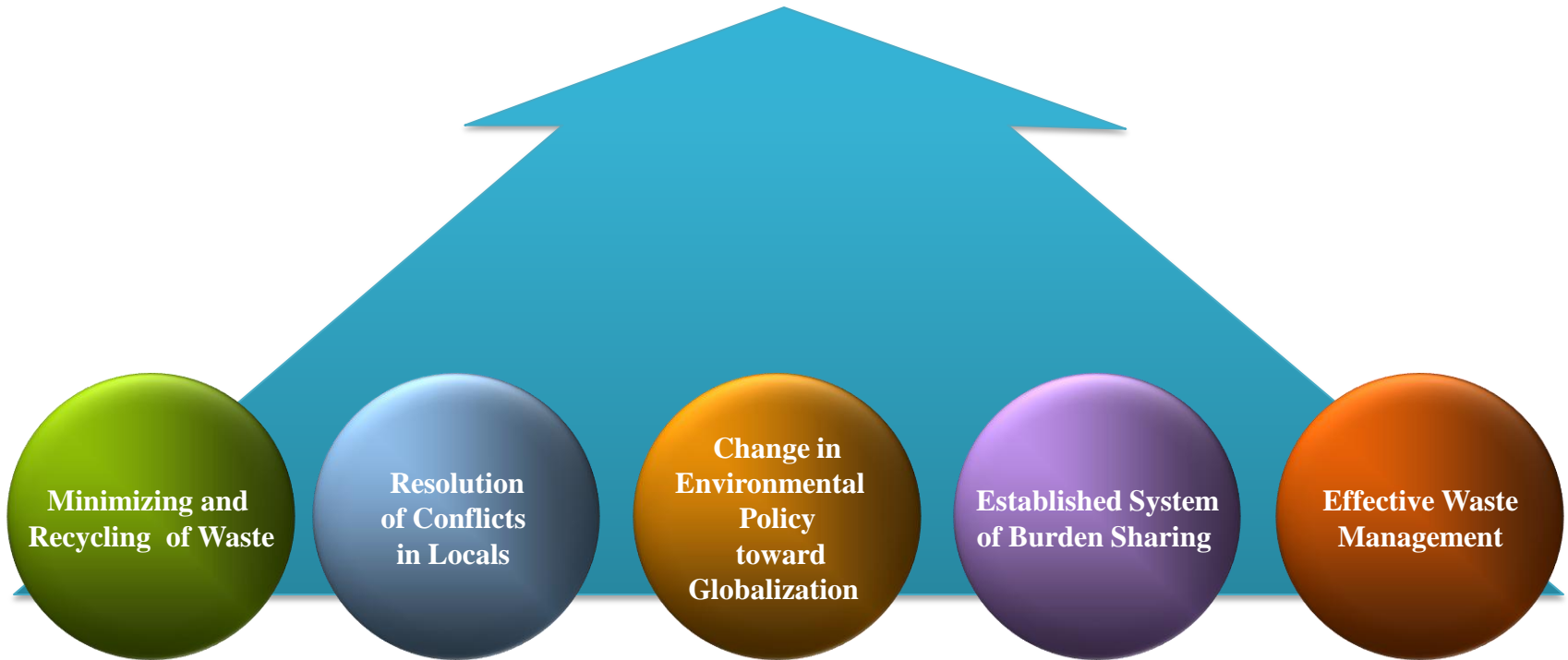


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# Changes in Waste Management Policy

- Comprehensive Plan in Waste Management

## Integrated Waste Management Since 1993



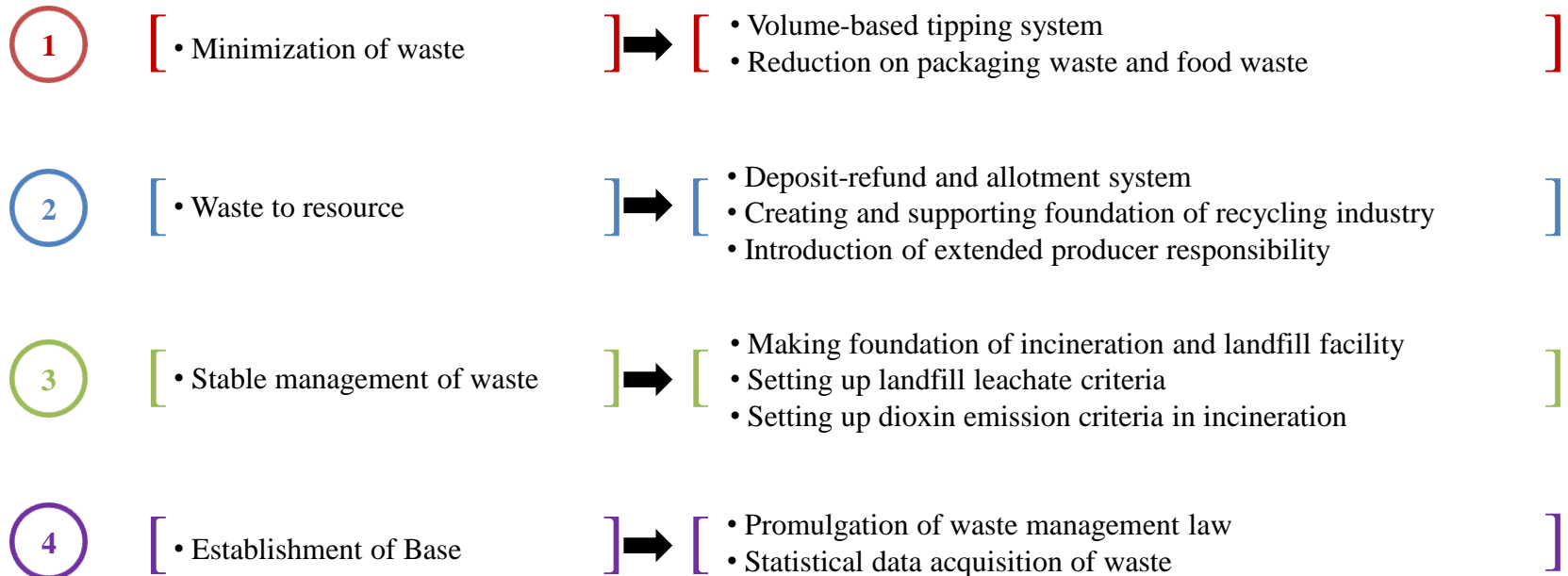


## ▪ 1<sup>st</sup> Comprehensive plan in waste management (1993-2001)

### ▪ Objective

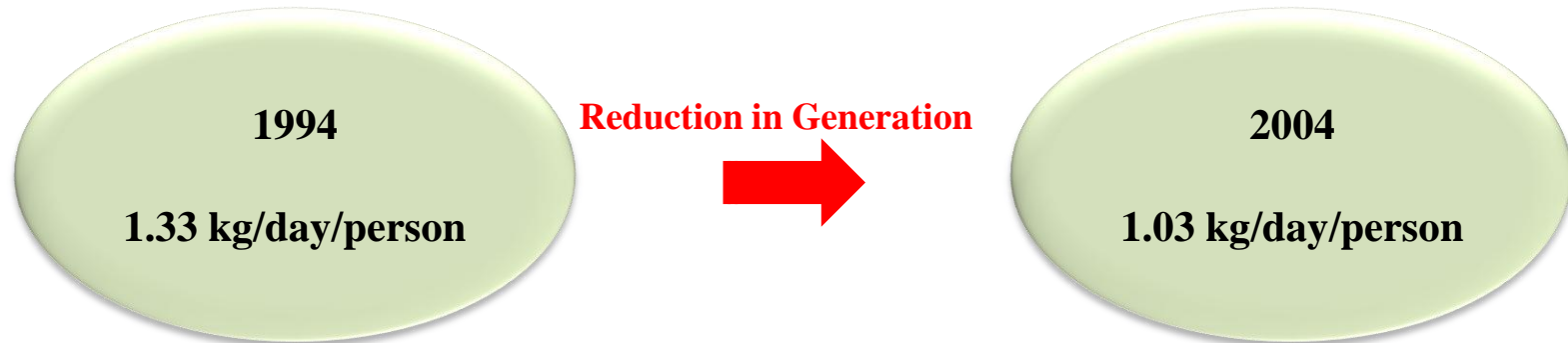
**Establishment of Sustainable Resource Circulation Economy and Zero Waste Society**

### ▪ For effective management, 4 main policies implemented



## ▪ Volume Based Tipping System(1995.1~ )

- Effect(Reduction on waste generation & Benefit on economy)



**Cost saving in transportation and landfilling  
: about 6 billion \$**

## ▪ Summary

Households purchase plastic bags. Price of a bag by volume will be determined by local governments depending on the cost of waste handling.  
(partially supported by central government.)

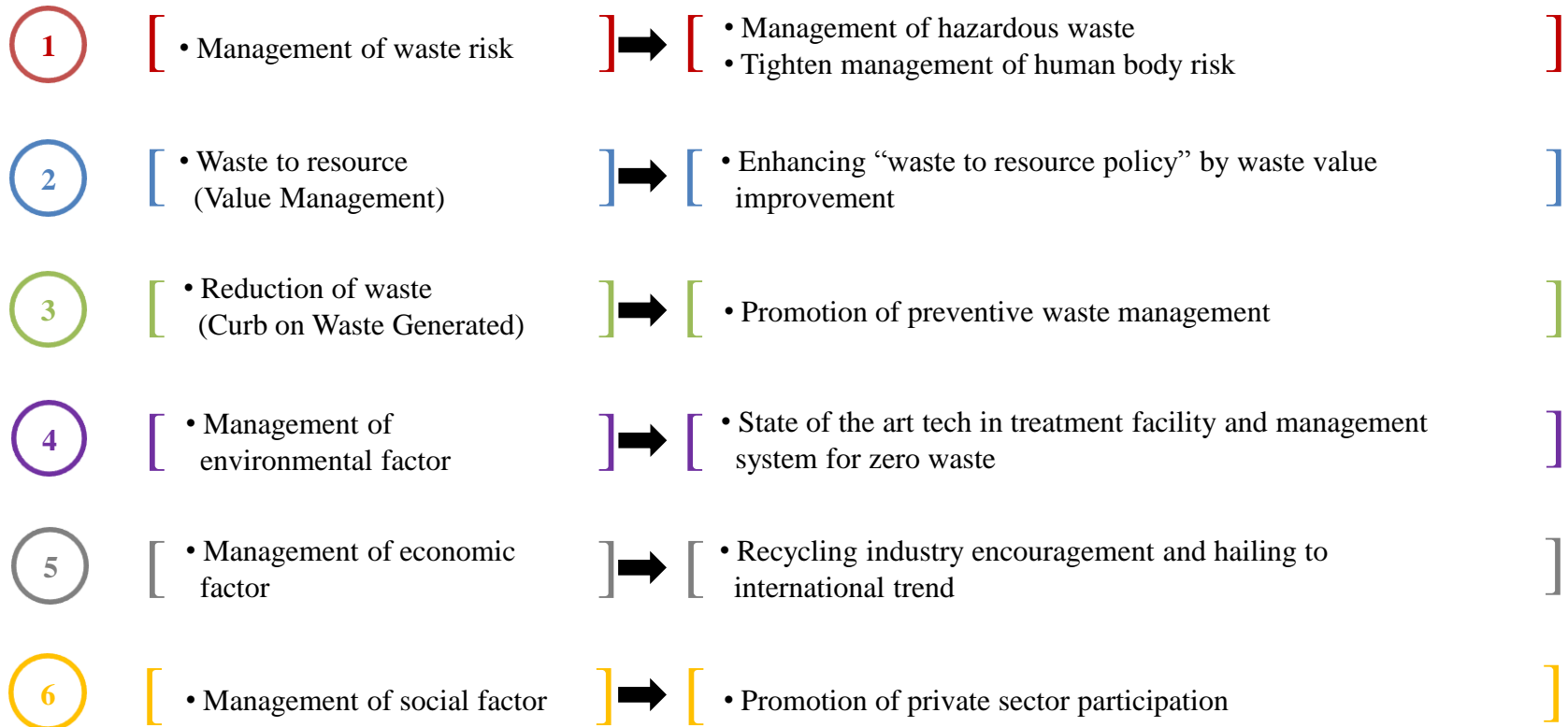


## ▪ 2<sup>nd</sup> Comprehensive plan in waste management (2002-2011)

### ▪ Objective

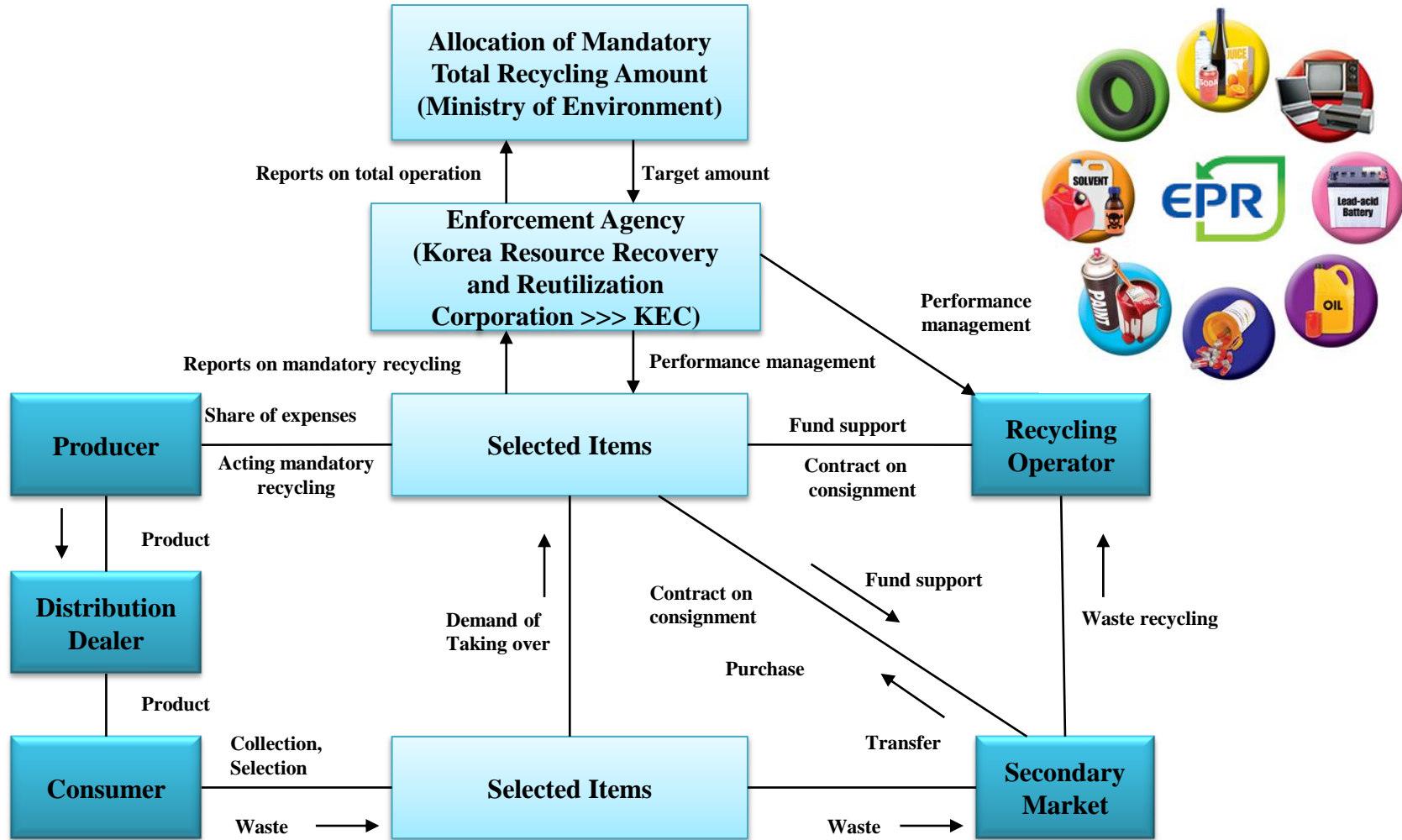
**Maturation of Sustainable Resource Circulation Economy and Zero Waste Society**

### ▪ For settling sustainable resource circulation economy and zero waste society, 6 main policies implemented



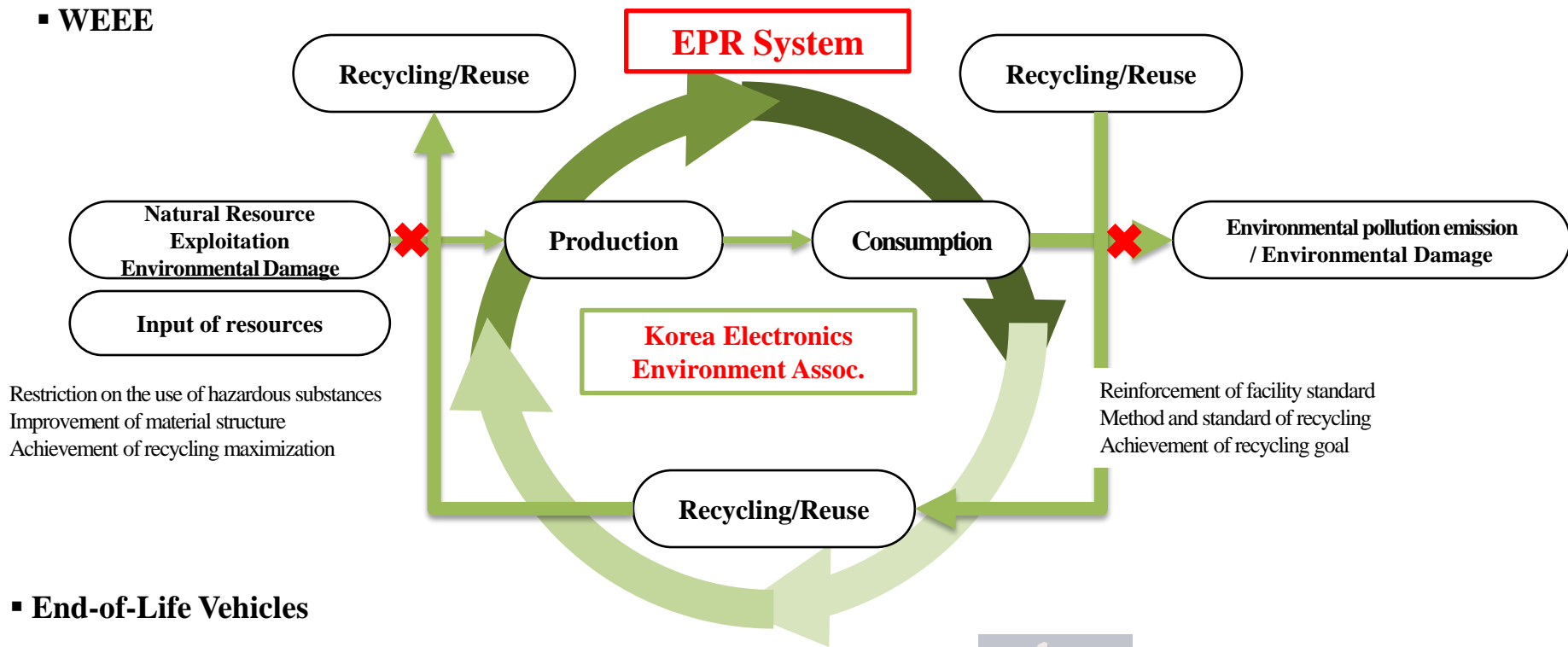
# Changes in Waste Management Policy

## ■ EPR(Extended Producer Responsibility) System (2003.1~ )



## Resource Circulation of Electric · Electronic Products and Automobiles (2008)

### WEEE



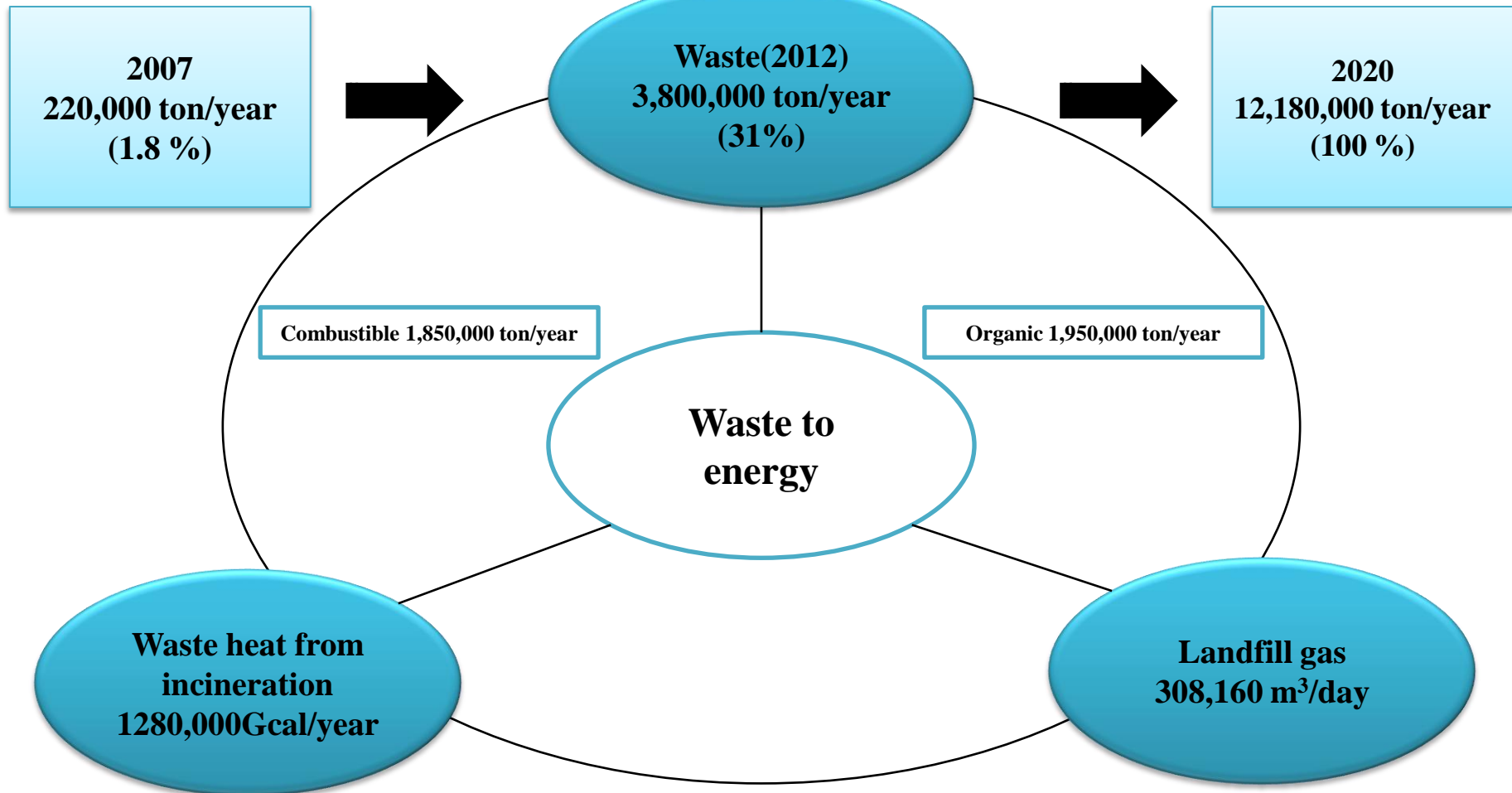
### End-of-Life Vehicles



# Changes in Waste Management Policy

- Comprehensive plan in “Waste to Energy” (2008-2020)

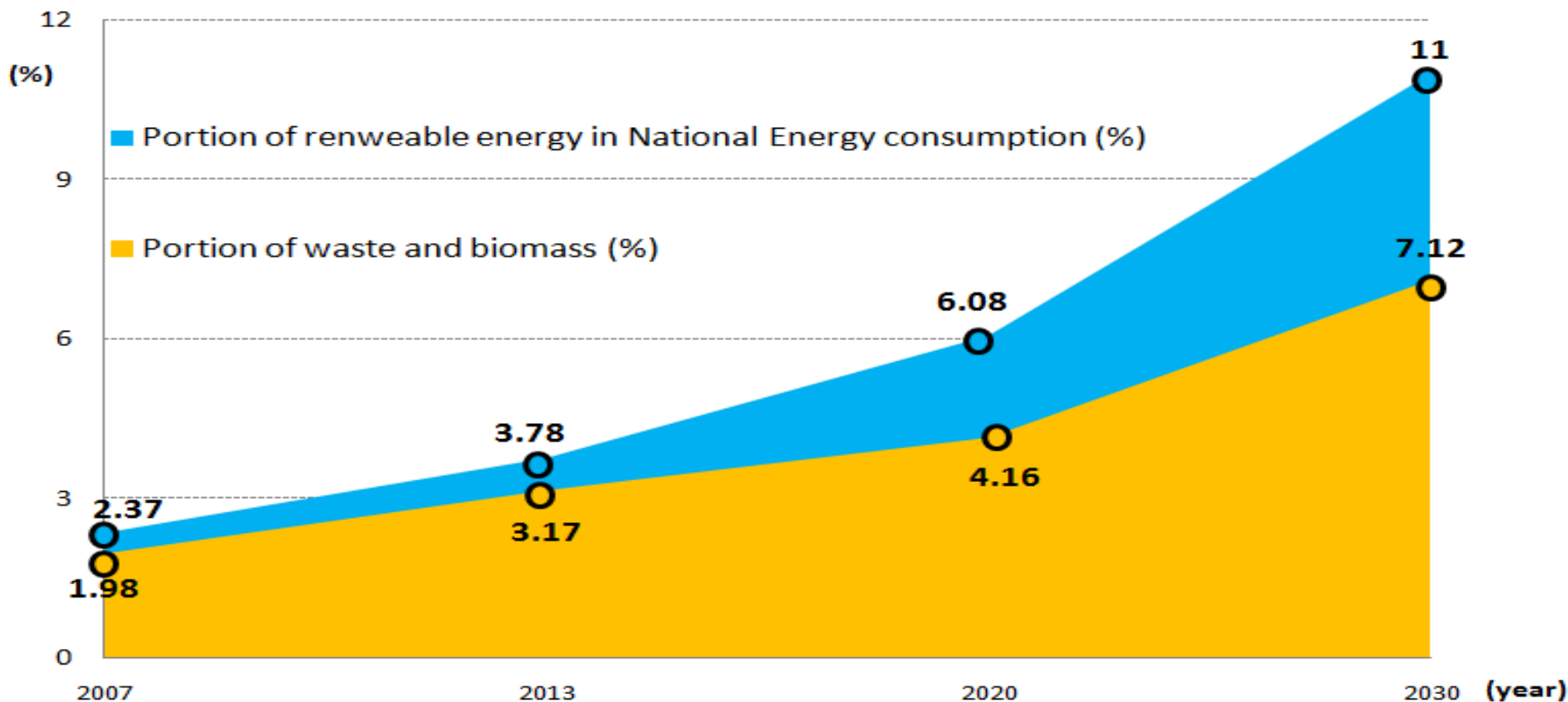
- Objective



# Changes in Waste Management Policy

## ▪ Comprehensive plan on waste to energy (2008 - )

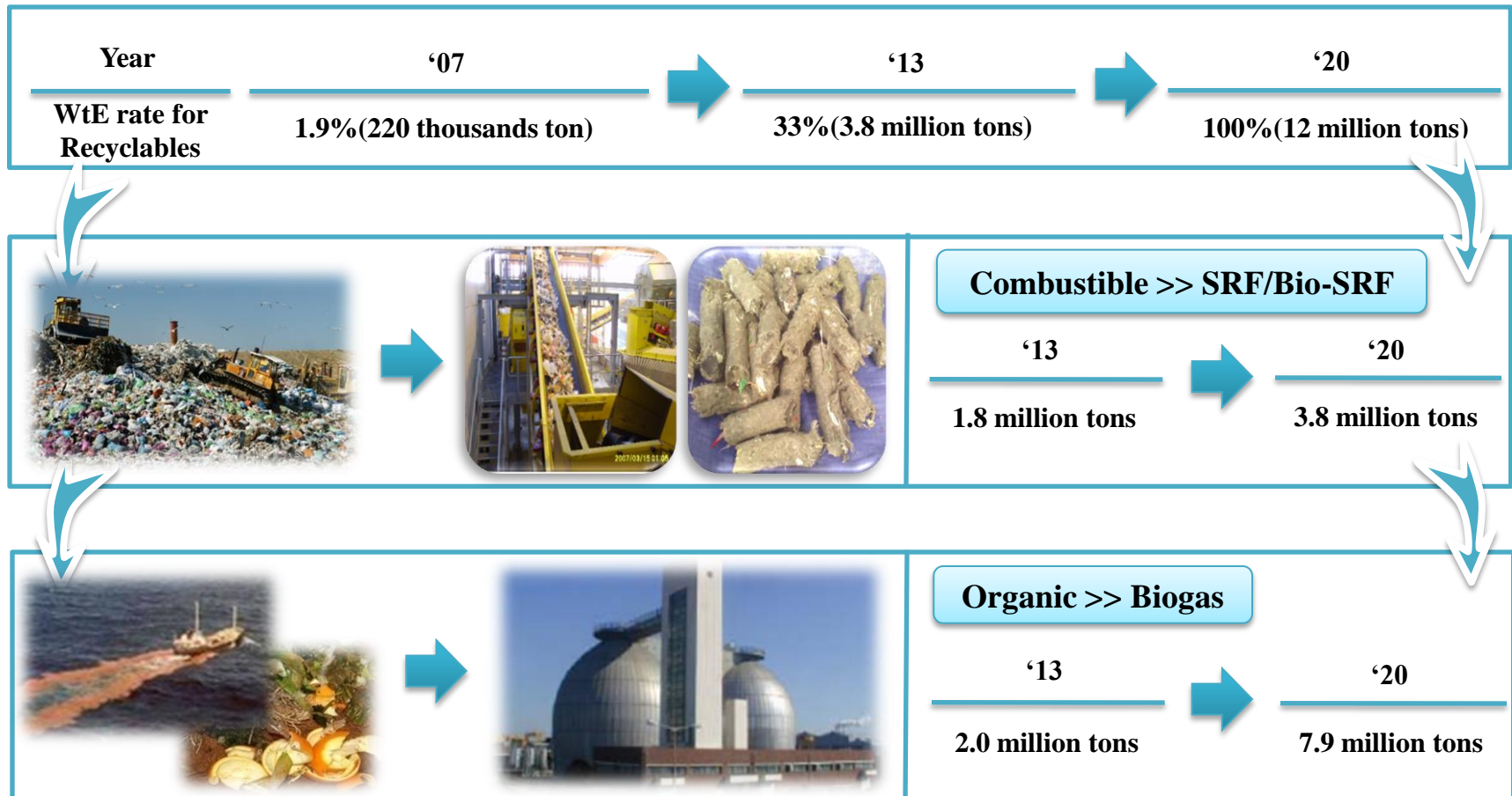
Background : Target of **renewable energy** portion in Korea



- To meet the share of national renewable energy (6.08 and 11% in 2020 and 2030, respectively), still around 70% of renewable energy would be supplied from waste and biomass.
- Waste to Energy has taken major fraction of renewable Energy in Korea.

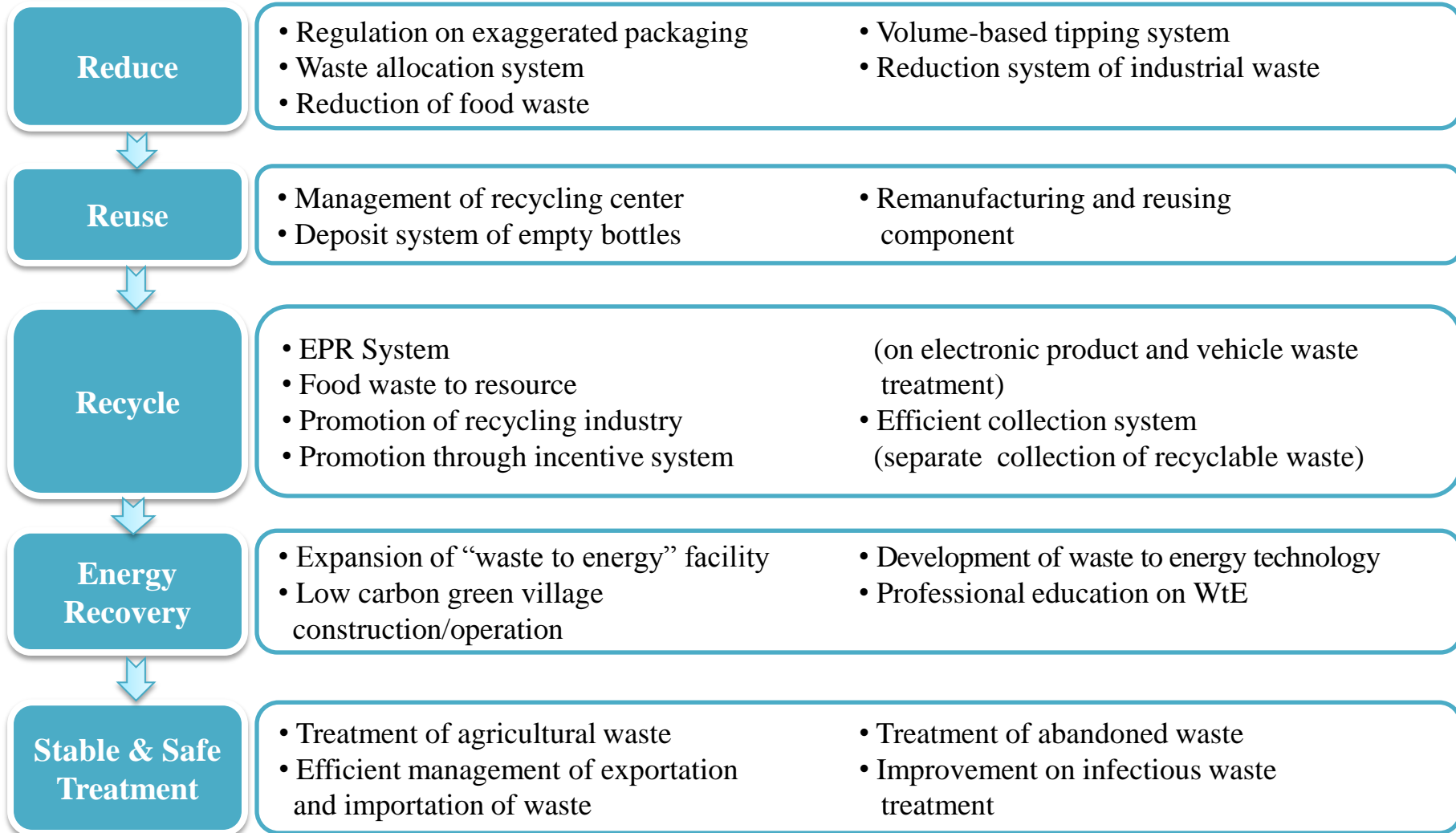
# Changes in Waste Management Policy

## ▪ Comprehensive plan on waste to energy (2008-2020)





## ▪ Maximization of Resource Circulation (4R policy)



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# Prospective of Waste Management

## ■ Background

### ■ Resource circulation not work well!

\* About 56% of incinerating or landfilled waste can be recycled

### ■ Most of recycling is down-cycle

\* About 60% of recycling is simple shattering and pulverizing

### ■ No more landfill sites

\* Landfill sites for industrial and C/D waste will be full up in 4 years

→ if waste crisis begins, disposal cost shoot up



Enhanced policy to reduce use of natural resource and energy by  
Minimizing the incineration and landfilling,  
and Maximizing the recycling

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- **Outline**

- **MOE will legislate**

- **‘Act on Promotion of the conversion to resource circulation society’**

- **(Special feature) This act will overwhelm all other waste related acts**

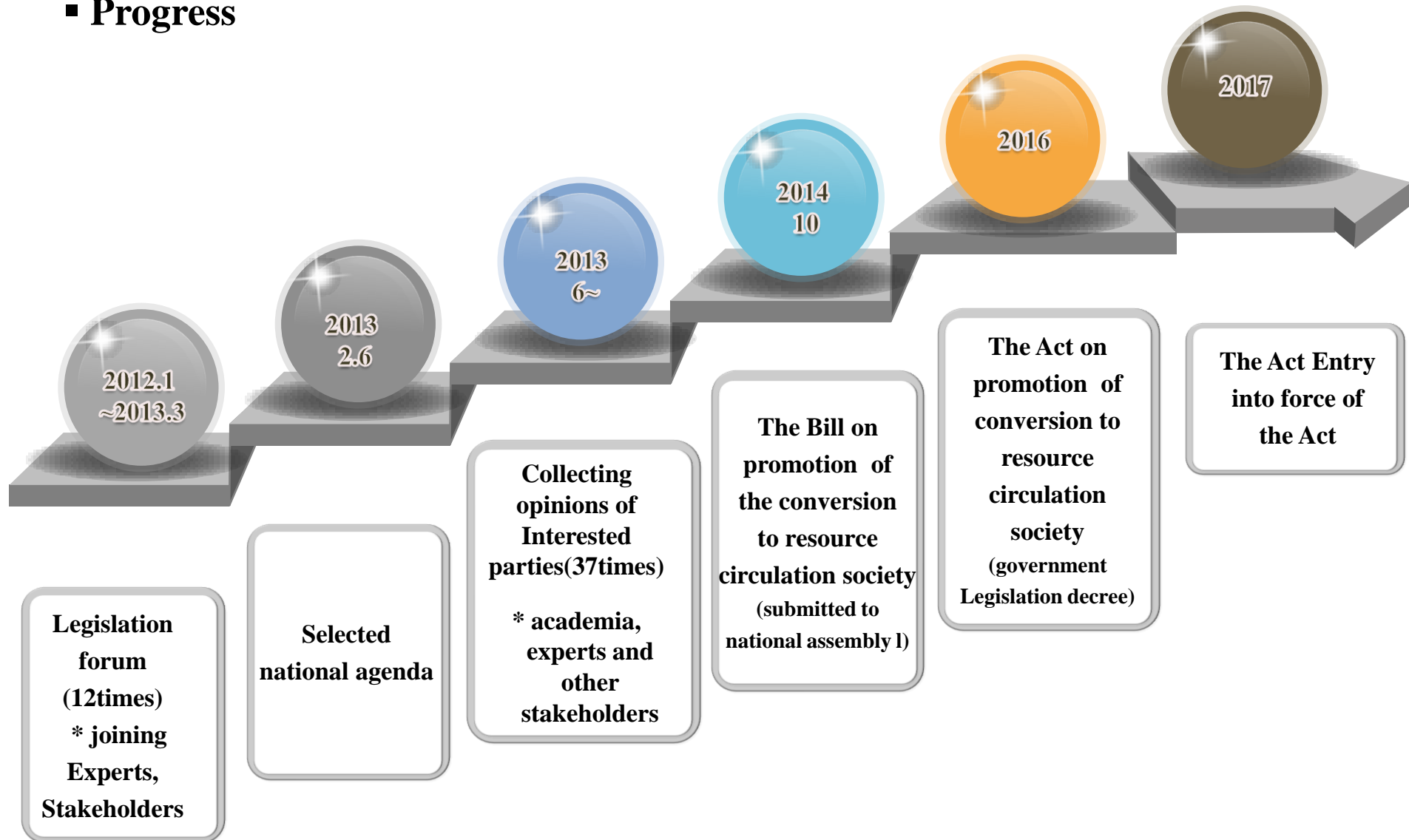
- **The act has not only basic act features(recycling principle etc.), but has specific policy and discipline to guarantee effectiveness**

- **(Goals) To achieve zero landfilling of recyclable waste by 2020**

- **MOE will decrease landfilling below 3% among waste treatment streams**

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## ■ Progress



## ■ Features

**Conversion to resource recycling economic system,  
support recycling business**

### **(1) Minimize waste of recyclables**

- **Introduce ‘landfill and incineration charges’ which promote recycle and prevent incineration and landfilling**
  - \* **Netherland, Sweden, Swiss imposed landfill charges and achieved zero-waste**

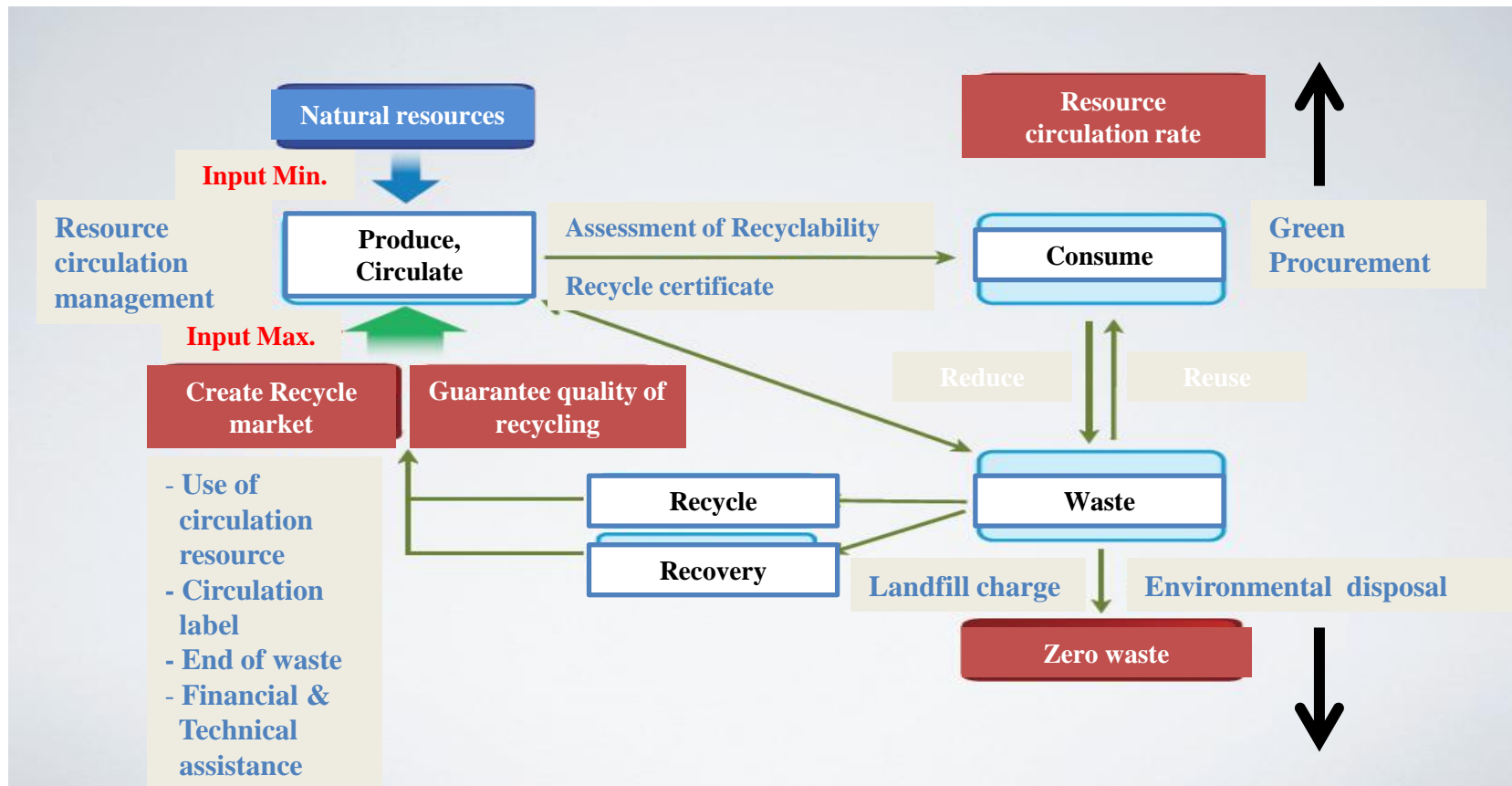
### **(2) Reinforce policies to support recycling businesses and create market for recyclables/ products from recyclables**

- **Certificate for circulation resources[products] to guarantee quality, mandatory use of circulation resources, Operation of circulation resource exchange depot**
  - \* **Recognize end of waste, alleviate stringent regulation on recycling facilities**

### (3) Framework to support circulation

- Establishes definition of resource circulation society, formulate basic plan for resource circulation, supports conversion to resource circulation culture and economy

#### < resource recirculation system >



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## ▪ **Expectations**

### **(Economic) Make recycling market and jobs**

- **Expanding recyclable resource volumes 10M tons/yr, making recyclables market [1 billion \$/yr] and recycling related jobs [11 thousands/yr]**

### **(Environmental) extend life of landfill sites, reduce use of natural resources**

- **Use of circulation resource increase led to decreasing dependence on overseas import of natural resources**
- **Landfill charge decreases waste, and enterprise benefit from extending life of land fill sites**

### **(Social) Common benefit and mutual prosperity between local government and neighbor of landfill sites**

- **Landfill charge for improvement of environmental near landfill sites and support the community nearby**
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# **Thank you**

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