

Comprehensive Policies and Programs towards a Sound Material Cycle Society

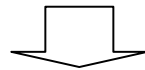
Plenary Session 3: Innovative Approaches and Strategies for Integrated Waste
Management

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on Expanding Waste Management Services in Developing Countries
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Serious Environmental Degradation by Inappropriate Waste Treatment

- According to rapid industrialization and urbanization since 1960s, wastes generation from household and industries had been increasing. Some of them were illegally dumped in rural areas and caused serious environmental degradation.
- The “cheaper but worse” style was widely observed in waste treatment.



*Large-scale illegal dumping of wastes
Increasing hazardous waste generation such as PCB*

[Improper waste management
by open incineration]



[Large-scale illegal waste dumping]



[Improper storage of PCB waste]



History for Japan's Legislative Framework for a Sound Material-Cycle Society

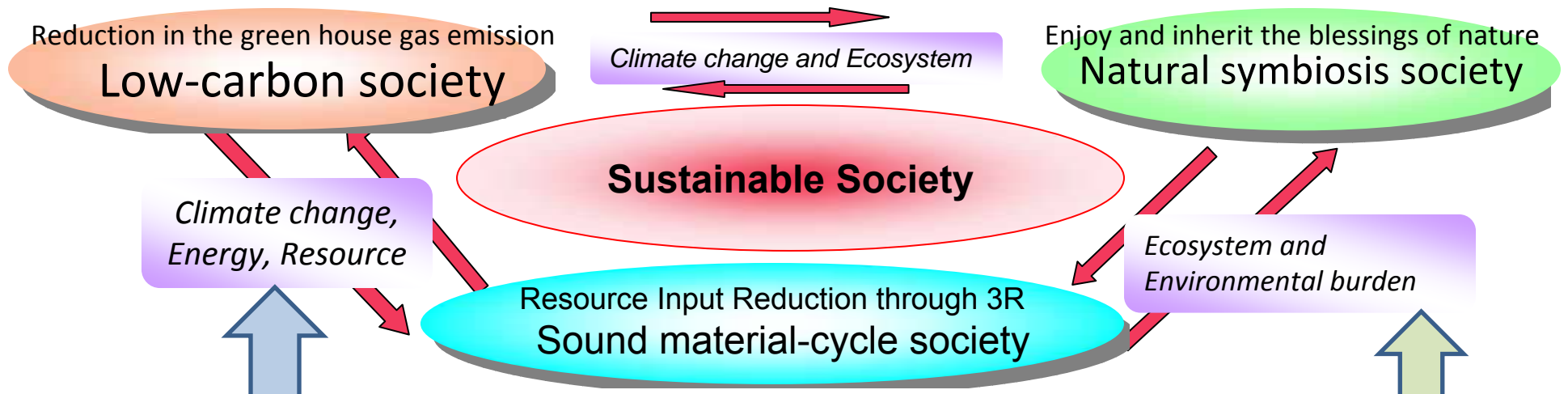
Era	Situations	Establishment of Law
Post WWII ~ 1950s	<ul style="list-style-type: none"> Waste Management for good environmental hygienic Keep the environment hygienic and comfortable 	<ul style="list-style-type: none"> Public Cleansing Law(1954)
1960s ~1970s	<ul style="list-style-type: none"> Clear increase of industrial waste etc. and "Environmental Pollution" with the high Economic Growth Waste management for environmental protection 	<ul style="list-style-type: none"> Basic Law for Environmental Pollution Control (1967) Waste Management Law (1970) Amended Waste Management Law (1976)
1980s	<ul style="list-style-type: none"> Promotion of the development of facilities for waste management Environmental Protection on Waste Management 	<ul style="list-style-type: none"> Law for Bay Area Marine and Environment Consolidation Centers(1981) Septic Tank Law (1983)
1990s	<ul style="list-style-type: none"> Reduce/Recycle of Waste Establishment of Recycling Laws Measures against hazardous materials (inc. Dioxins) Appropriate waste management depends on the diversity of the types/properties of wastes 	<ul style="list-style-type: none"> Amended Waste Management Law(1991) Law to Promote the Development of Specified Facilities for the Disposal of Industrial Waste (1992) Fundamental Environmental Law (1993) Container and Packaging Recycling Law(1995) Amended Waste Management Law(1997) Home Appliances Recycling Law(1998) Law Concerning Special Measures against Dioxins(1999)
2000~	<ul style="list-style-type: none"> Promotion of 3R towards the establishment of a Sound Material-Cycle Society strengthen the measures for industrial waste management Strengthen measures against illegal dumping 	<ul style="list-style-type: none"> Fundamental Law for Establishing a Sound Material-Cycle Society(2000) Construction/Food Waste Recycling Laws(2000) Amended Waste Management Law(2000) Law Concerning Special Measures Against PCB Waste (2001) End-of-life Vehicles Recycling Law(2000) Law on Special Measures Concerning Removal of Environmental Problems Caused by Specified Industrial Wastes(2003) Amended Waste Management Law(2003-2006)

Hygienic

Environmental Pollution

Sound Material-Cycle Society

Integrated approach for establishing Sustainable Society



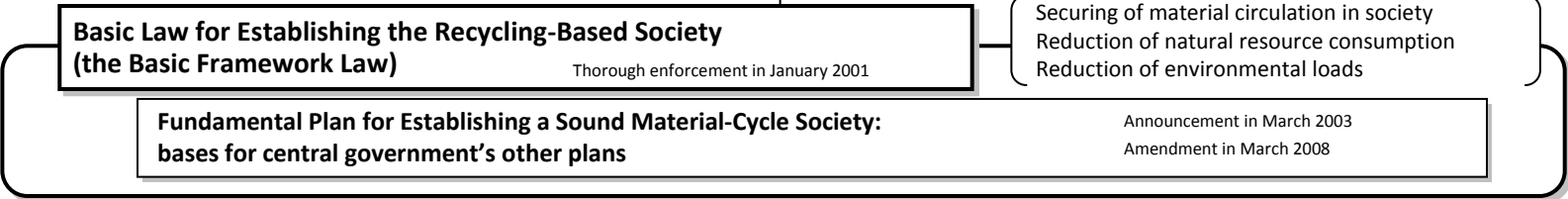
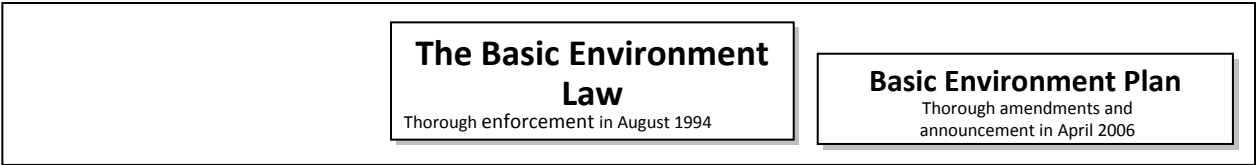
○ Integrated approach to the sound material-cycle society and low-carbon society

- ✓ Improvement of land fill site with the collection of methane
- ✓ Separate collection and composting of organic wastes
- ✓ Strengthen the thermal recovery by waste power generation etc.
- ✓ Reduction of input of natural resources by promotion of 3R

○ Integrated approach to the sound material-cycle society and natural symbiosis society

- ✓ Restrain the new natural resource extraction, by promoting the prolonged utilization of housing and infrastructure.
- ✓ Promote the sustainable use of recyclable resource, considering the conservation of biodiversity.

Legal System that Helps Establishment of a Recycle-based Society



< Proper treatment of wastes >

< Promotion of regeneration >

Waste Disposal and Public Cleaning Law
Partial amendment in February 2006

- 1) Reduction of waste generation
- 2) Proper treatment of wastes (including recycling)
- 3) Regulation on installation of waste treatment facilities
- 4) Regulation on waste service companies
- 5) Establishment, etc. of waste treatment standards, etc.

Law for Promotion of Effective Utilization of Resources
Thorough amendment and enforcement in April 2001

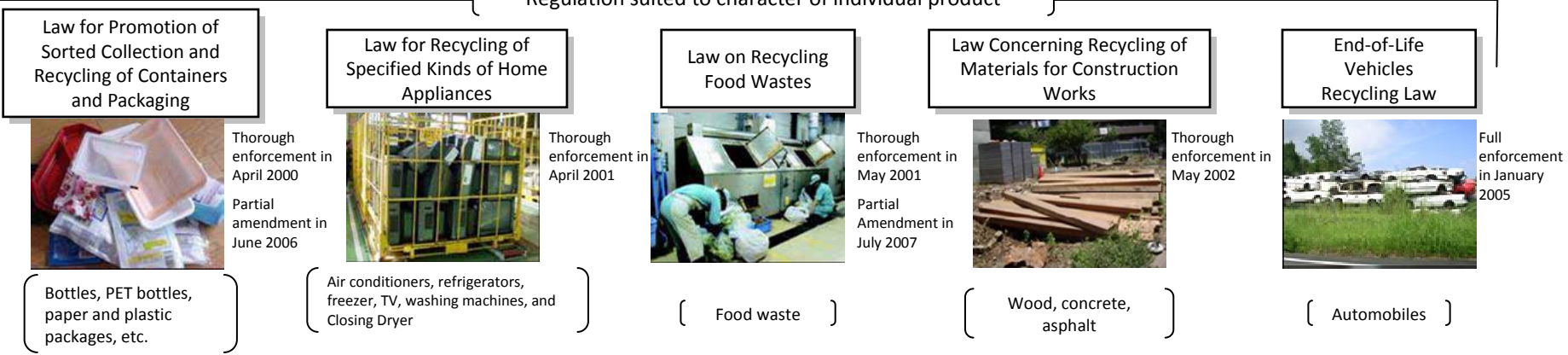
- 1) Recycling of recyclable resources
- 2) Application of structures and materials, etc. that facilitate recycling
- 3) Indication for sorted recovery
- 4) Promotion of effective use of byproducts

Recycle →

Reduce
Reuse
Recycle

(1R) (3R)

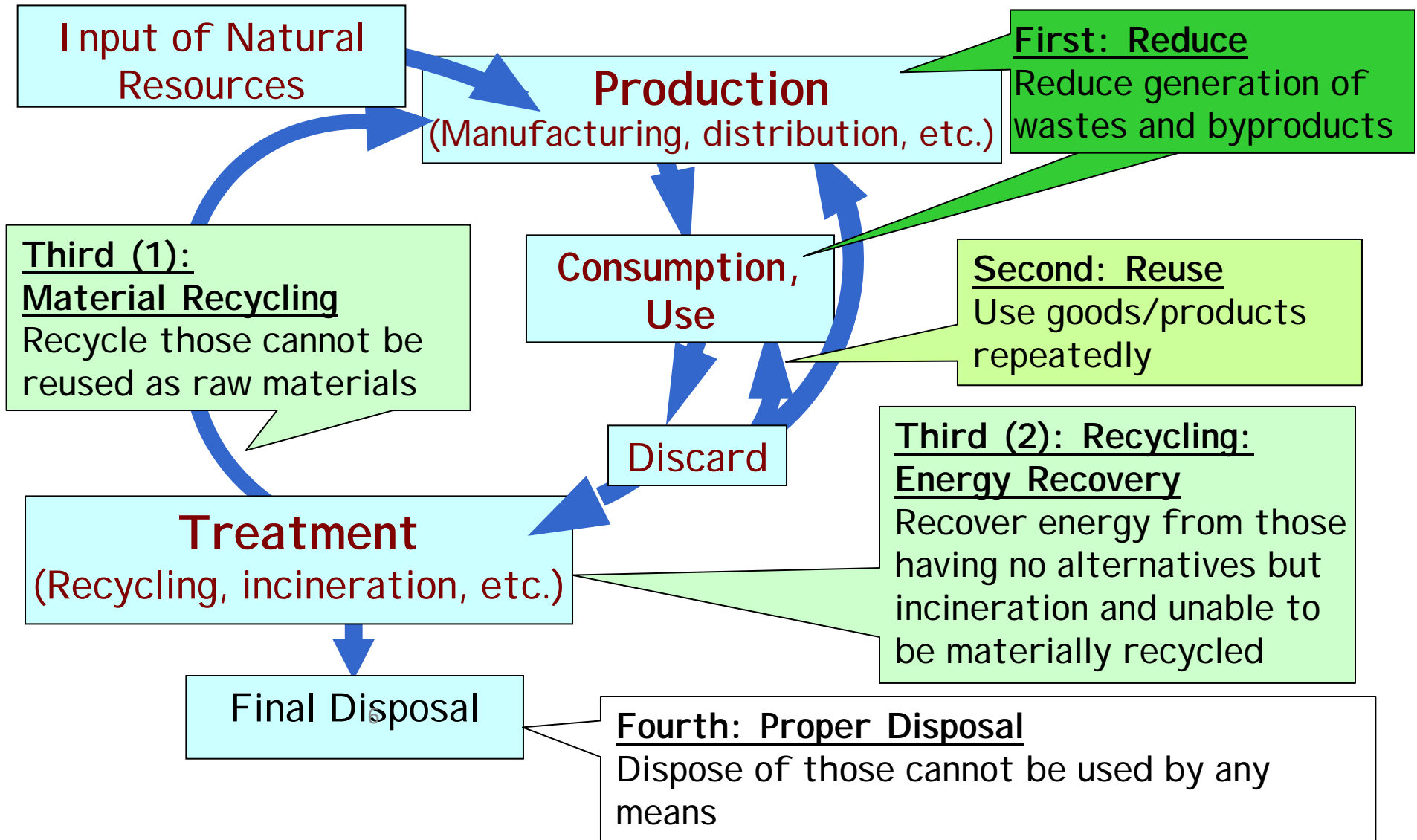
Regulation suited to character of individual product



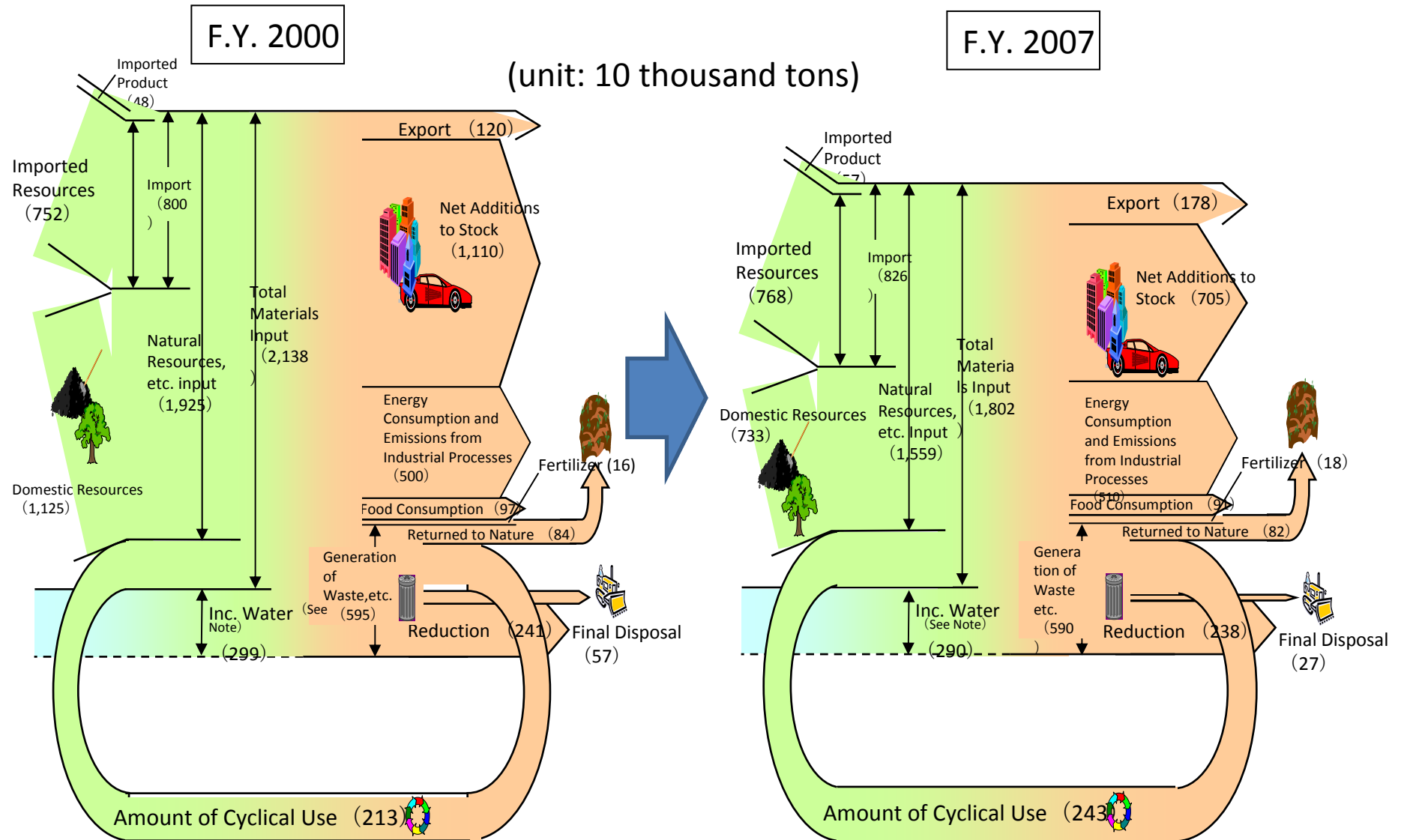
Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (the central government taking initiatives in procurement of recycled products)

Thorough enforcement in April 2001

Concept of a Sound Material-Cycle Society in Japan



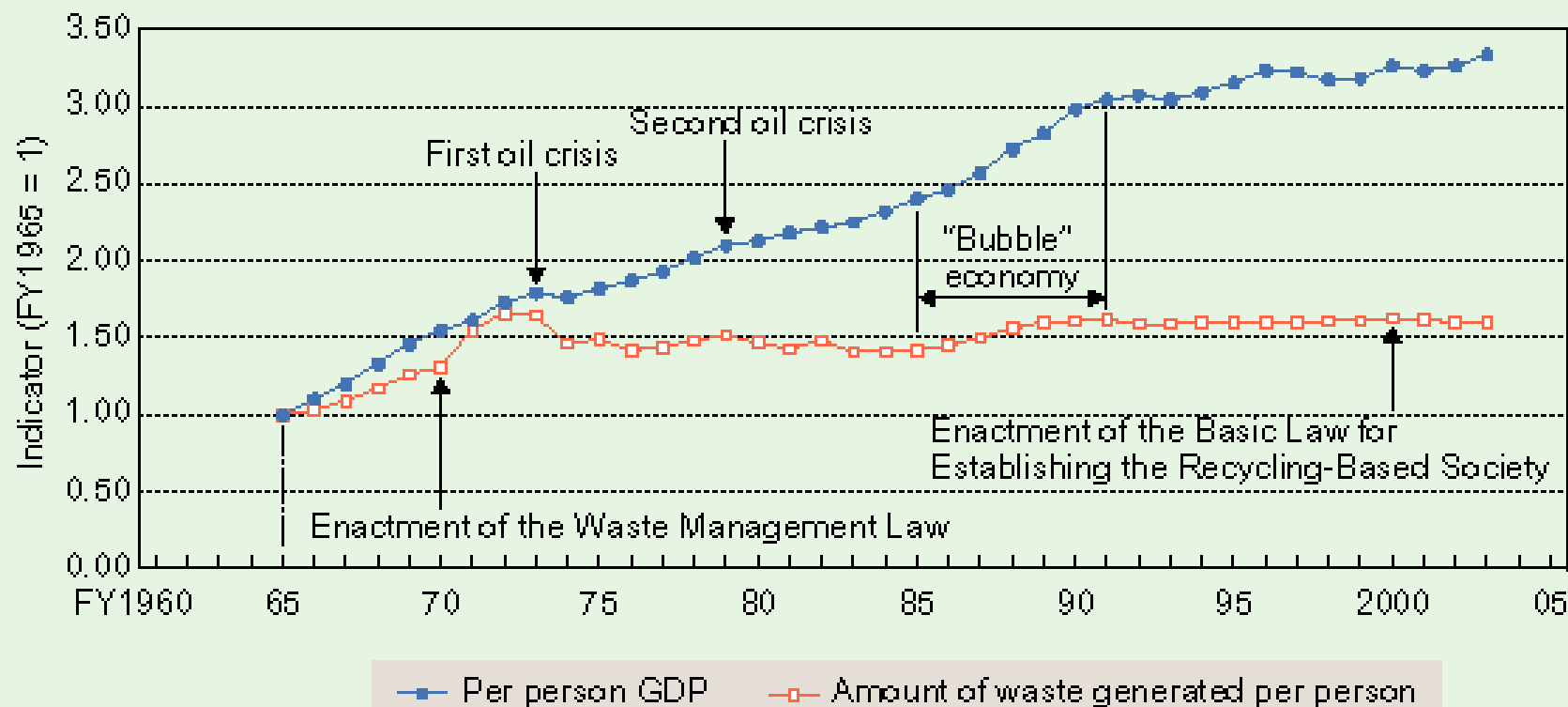
Change of Material Flows in Japan



(Note) Including water: Input of water included in waste and the like (sludge, animal manure, human waste, waste acid, and waste alkali) and sediment and the like associated with economic activities (sludge from mining, building and water works and tailing from mining)

Changes in GDP and amount of waste generated per person in Japan

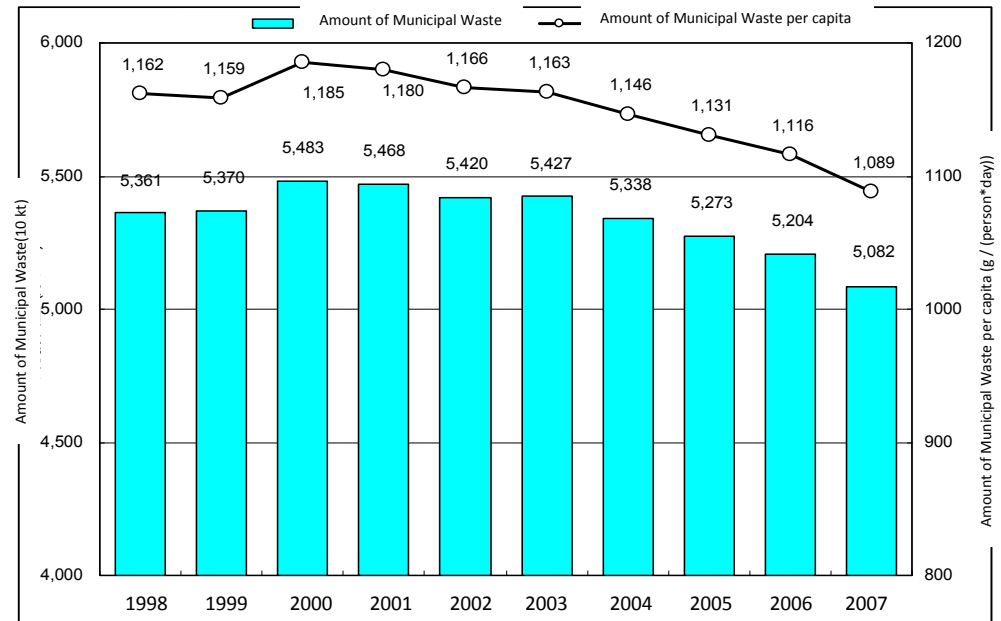
Changes in GDP and amount of waste generated per person



Source: Compiled by the Ministry of the Environment based on GDP data, etc., provided by the Cabinet Office.

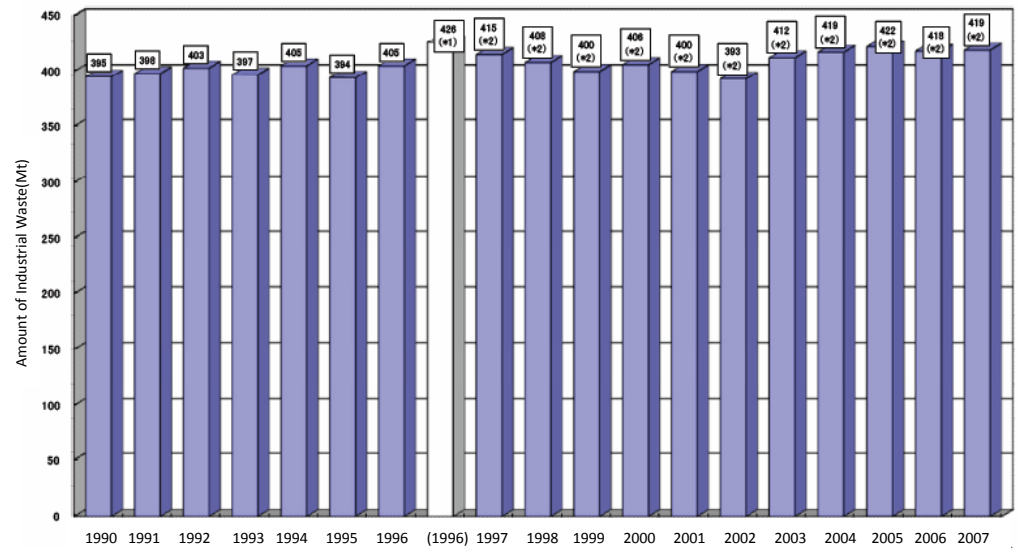
Trends of Waste Discharge

▶ Municipal Waste Discharge is 50.82 Mt (F.Y. 2007)



▶ Industrial Waste Generation is 419Mt (F.Y. 2007)

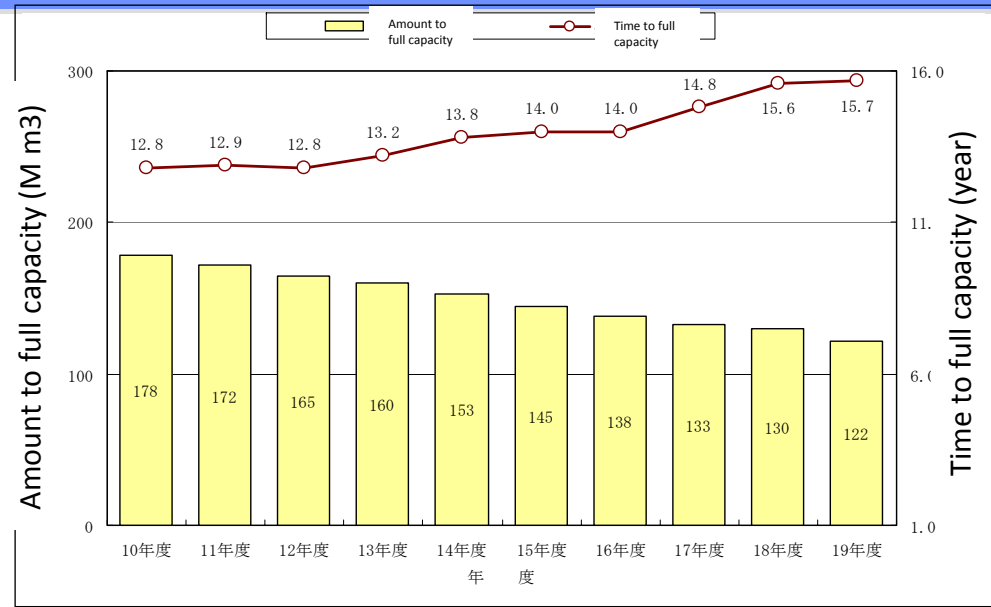
Amount of Waste Generation was increased around F.Y. 1990. After F.Y. 1990, the amount is remained at the same level of about 400Mt.



Limited capacity of final disposal sites in Japan

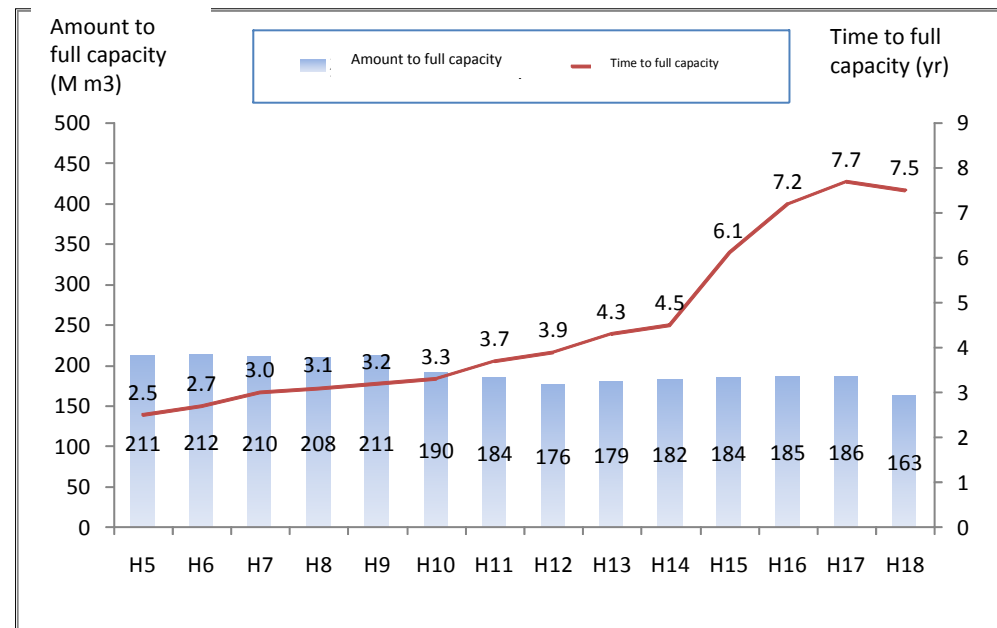
▶ Remaining Capacity of final disposal site for municipal waste is 15.7 years. (2007)

313 municipalities do not have public final disposal site.



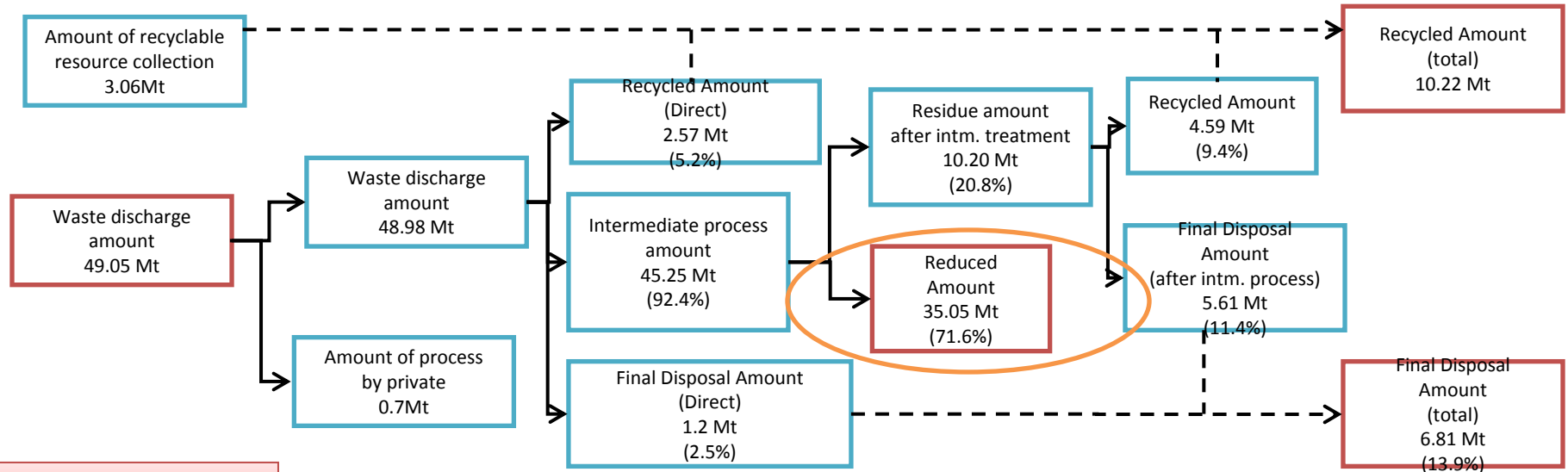
▶ Remaining capacity of final disposal site for industrial waste is 7.5 years. (2006)

Number of new installation of final disposal sites becomes less and less: 136 in 1998, 32 in 2005, and 28 in 2006

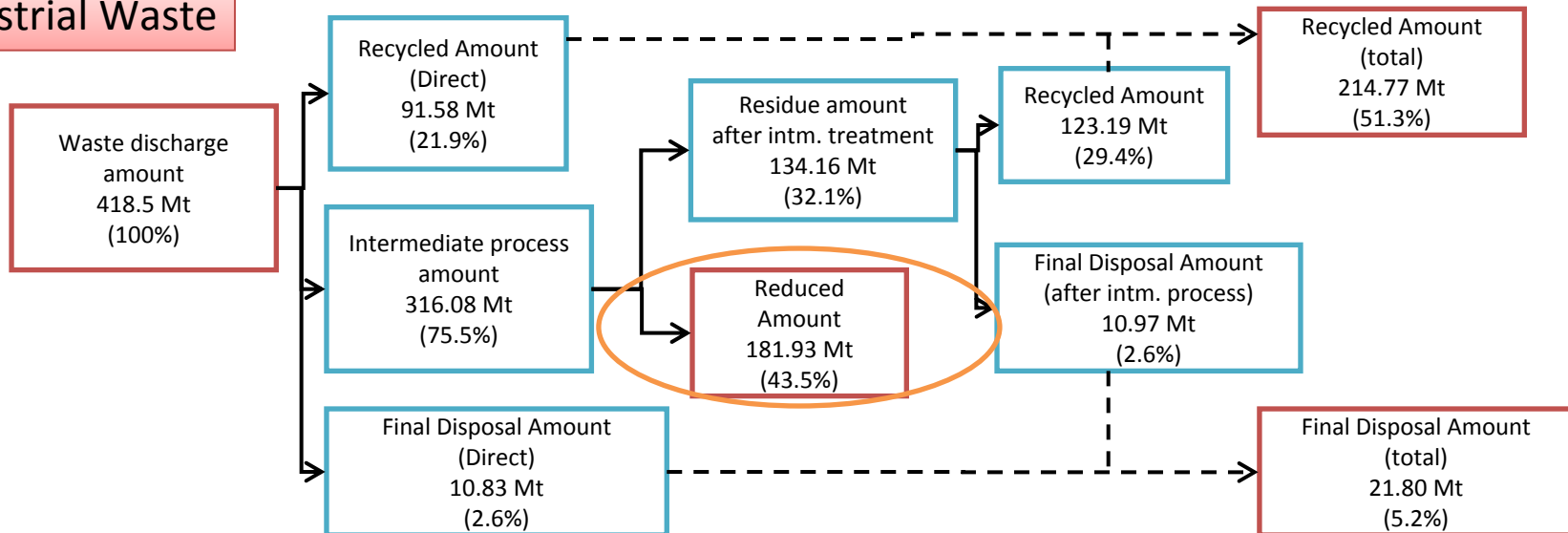


Process Flow of the waste management: Incineration is major technology in Japan

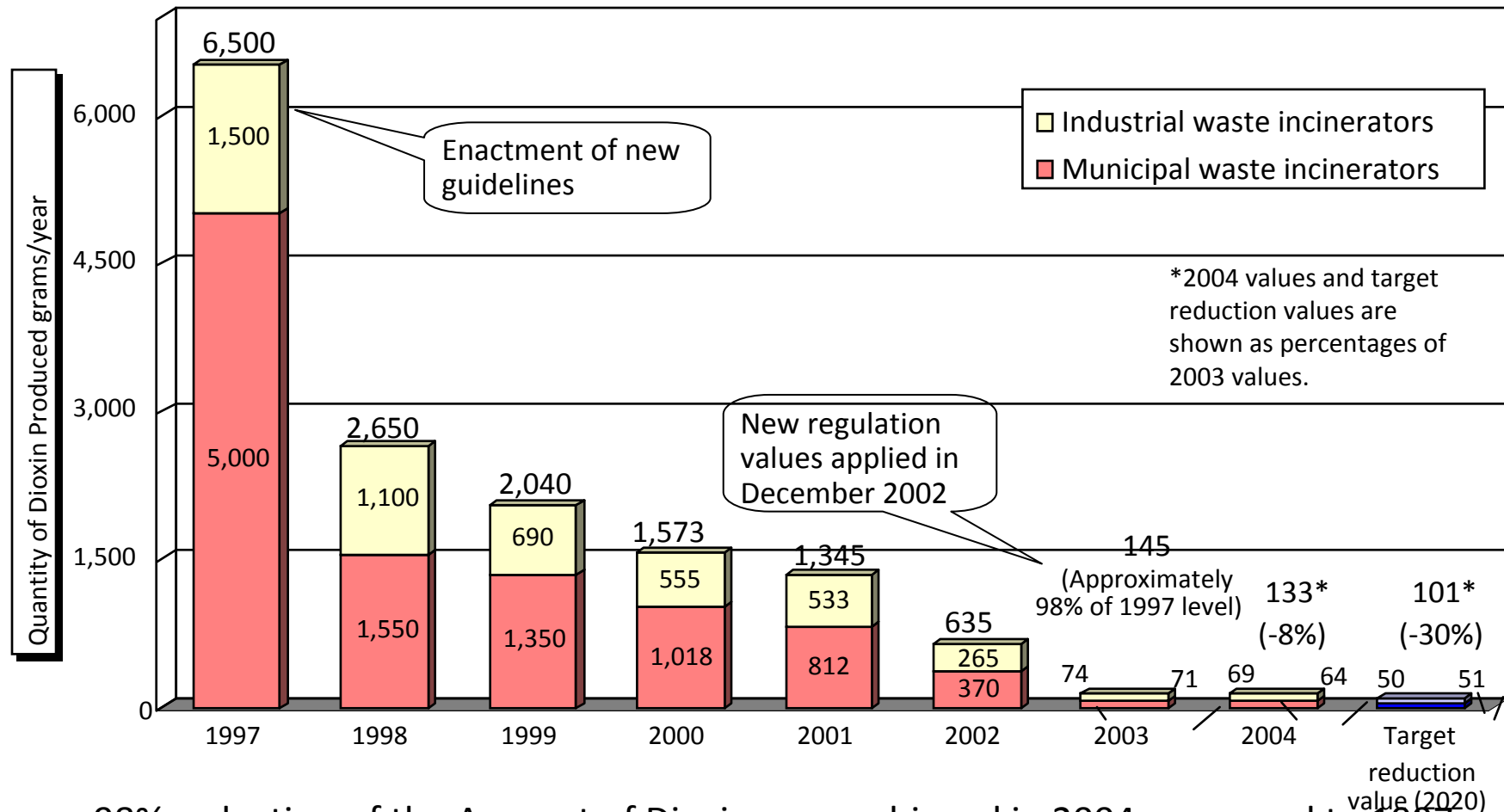
Municipal Waste



Industrial Waste



Changing Quantity of Dioxins Produced by Waste Incinerators



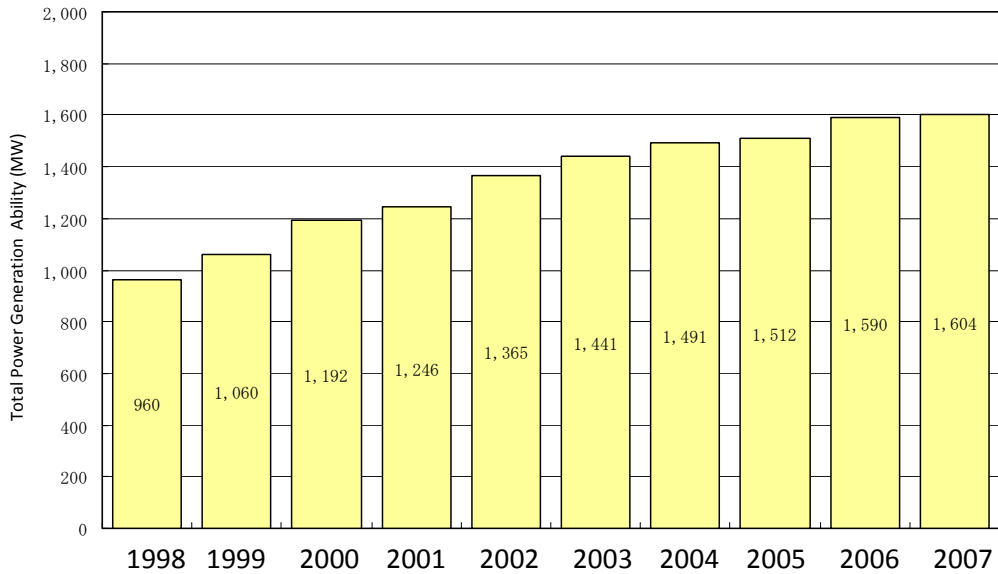
98% reduction of the Amount of Dioxins was achieved in 2004 compared to 1997.

Power Generation from Incineration

Trend of the Number of Incineration Facilities

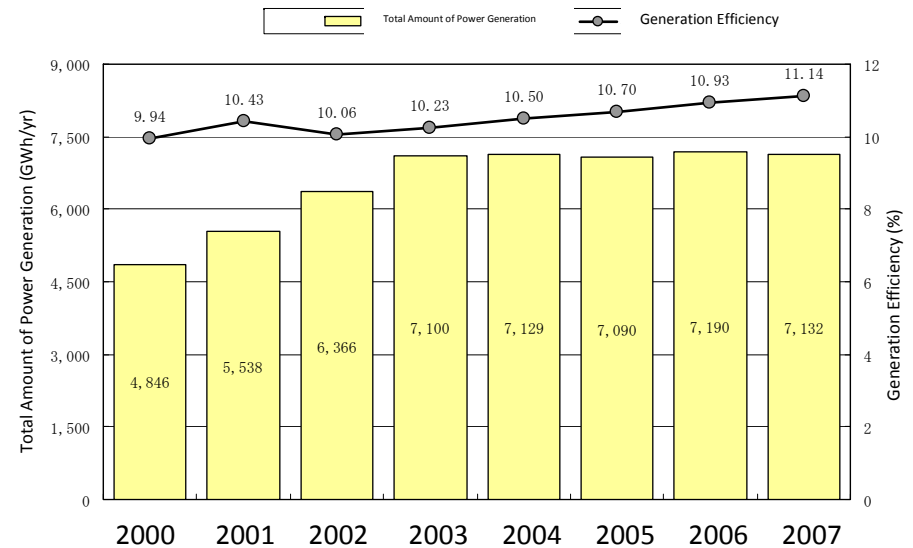
(Fiscal Year)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Num. of Incineration Facilities	1769	1717	1715	1680	1490	1396	1374	1318	1301	1285
Num. of Power Generation Facilities	201 (11.4%)	215 (12.5%)	233 (13.6%)	236 (14.0%)	263 (17.7%)	271 (19.4%)	281 (20.5%)	286 (21.7%)	293 (22.5%)	298 (23.2%)

(Ministry of the Environment, Japan)



(Ministry of the Environment, Japan)

Improvement for total power generation ability of Incineration



(Ministry of the Environment, Japan)

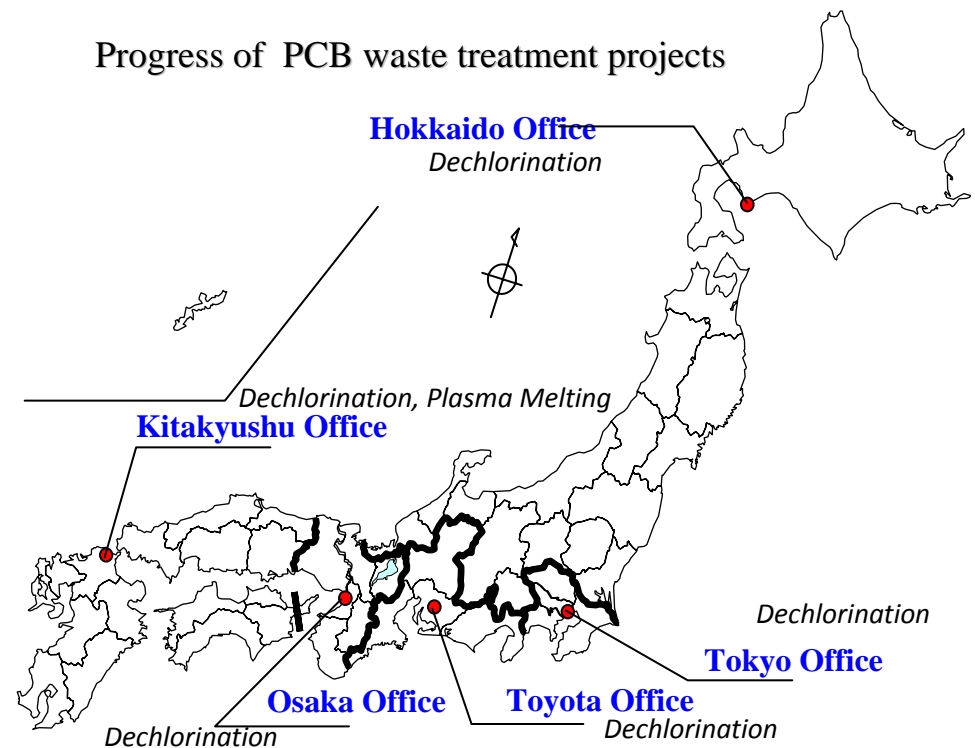
Improvement of generation efficiency and amount of power generation from incineration

Proper disposal of Polychlorinated Biphenyl (PCB)

- Establishment of a legislative system for the purpose of proper disposal of PCB waste
- Japan Environmental Safety Corporation (JESCO) constructed facilities to treat high-pressure transformers and other PCB wastes that contain PCB in 5 big cities.



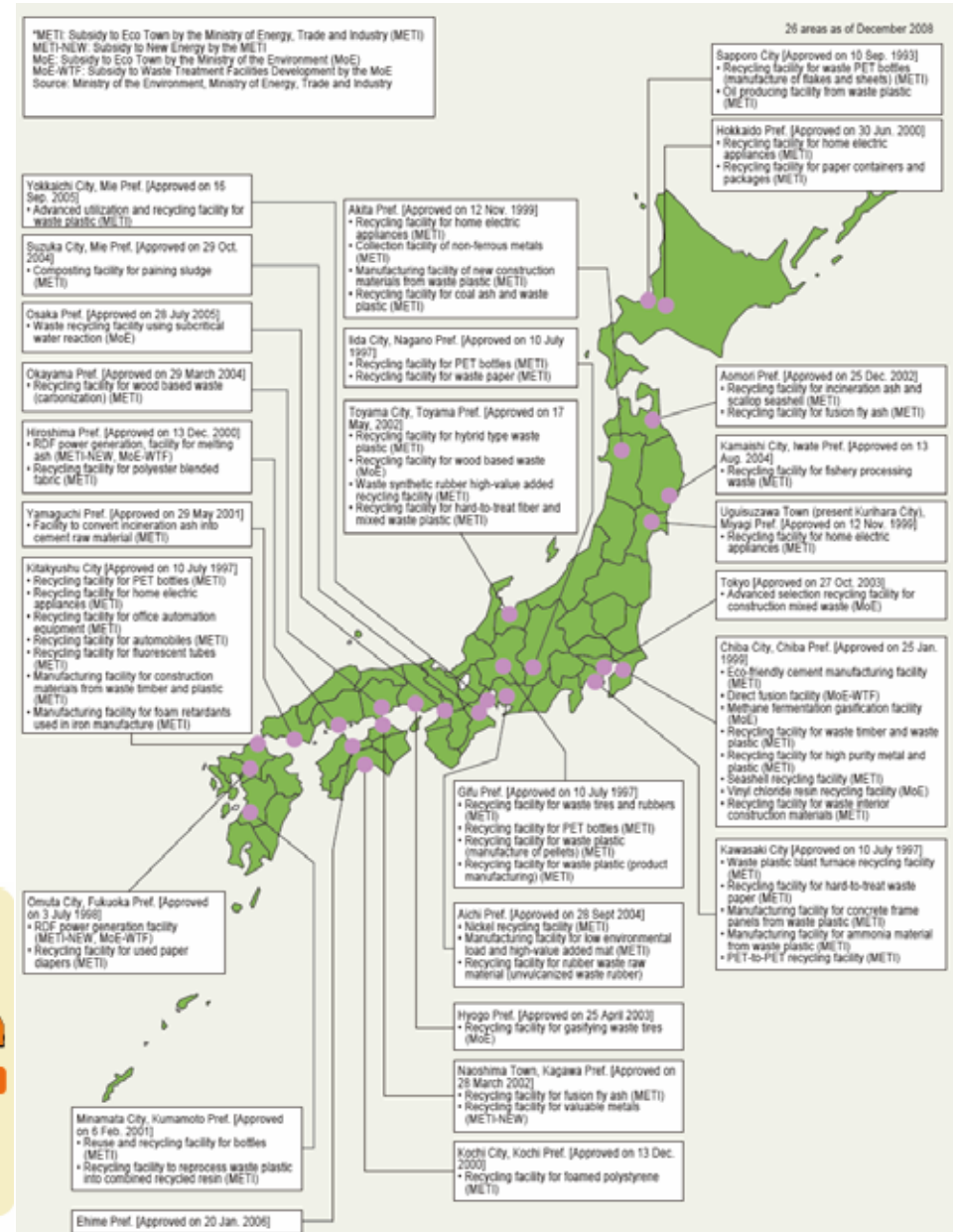
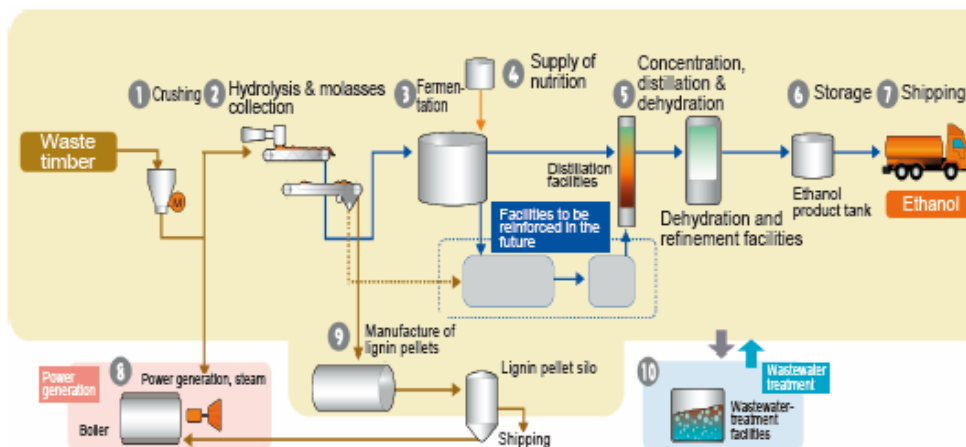
Kitakyushu Office



Eco Town

Eco Town:

- an eco-investment program in major industrial estates in which recycling business are operated for implementation of sectoral recycling laws and regulations.
- Central government provides subsidies to private sectors for construction of recycling plants.



Market scale of 3R business in Japan

on	Business examples	Market (trillion yen)		Employment (thousand people)	
		2000	2007	2000	2007
Supply of machinery, equipment and plants	<ul style="list-style-type: none"> • Intermediate treatment plants • Melting equipment • Oil manufacturing facilities from plastics • Composting equipment • Construction of final disposal sites 	0.8	0.5	2	8
Supply of services	<ul style="list-style-type: none"> • Waste treatment • Resource recovery • Recycling 	2.8	3.0	195	130
Supply of materials, consumer goods	<ul style="list-style-type: none"> • Reclaimed oil from plastics • PET-recycled fiber • Products made of timber from forest-thinning • Recycled products (e.g. scrap metals, recycled paper) • Refillable products • Repairs of machinery, furniture 	17	34.6	332	512
Total of 3R business		20.5	38.1	529	650
Total of all eco-business		41	69 (on 2006)	1,060	1,300 (on 2006)

Japan's Initiative for 3Rs

2004

G8 Sea Island Summit (U.S.)

3R Initiative was agreed upon .

2005

Ministerial Meeting on the 3R Initiative (Tokyo)

Assistance to National 3R Strategy Development started (Indonesia, Philippines, Thailand, Viet Nam, Bangladesh, Cambodia)

2006

Senior Officials Meeting on the 3R Initiative (Tokyo)

Asia 3R Promotion Conference (Tokyo)

2007

2nd Senior Officials Meeting on the 3R Initiative (Bonn, Germany)

2008

G8 Environment Ministers Meeting (Kobe)
` **Kobe 3R Action Plan** ` agreed upon

2nd Asia 3R Promotion Conference (Tokyo)

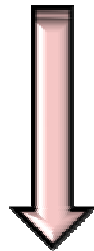
G8 Summit (Hokkaido, Toyako)
` **Kobe 3R Action Plan** ` was endorsed

EAS Environment Ministers Meeting (Hanoi)
Japan's Proposal of Regional 3R Forum was appreciated

2009

Asia 3R High-level Seminar (Tokyo)

Inaugural meeting of the Regional 3R Forum in Asia (Tokyo)



G8 will follow up their progress in 2011

Establishment of Regional 3R Forum in Asia

Inaugural Meeting of Regional 3R Forum in Asia

Host : MOEJ, UN Centre for Regional Development(UNCRD)

Date : 2009. November 11-12

Venue : Tokyo

Participants : Representatives of 15 Asian Countries(inc. Ministers),
16 international organizations, and experts

Chairman : Nobumori Otani (Parliamentary Secretary for Environment, MOEJ)

Result : • Adoption of "Tokyo 3R Statement: Towards the Establishment of the Regional 3R Forum in Asia"

• ~~Next meeting will be held in Malaysia on 2010~~



Next Steps

- ◆ Facilitate high-level policy dialogues on 3R issues, challenges, and opportunities;
- ◆ Promote mainstreaming the 3Rs in national development agenda in Asian countries
- ◆ Support practical Activities for 3Rs
 - Identify Needs/Seeds of each countries and share the information with the international organization
 - Support to activate 3R projects in each country with the help of international organization and/or donor organization
 - Support to develop 3R related business including the formation of the Eco-industrial zones
 - Promote Co-benefit projects between 3Rs and GHG emission reduction(ex. CDM etc.)
- ◆ Support international cooperative research about 3Rs in Asia
- ◆ Facilitate information/knowledge sharing about 3Rs
- ◆ Announce internationally that Regional 3R Forum in Asia can be a model to other regions in the world