Industrial Waste Mmanagement and 3R policy in Japan

産業廃棄物マネジメントと３R政策

Japan Industrial Waste Information Center
財団法人日本産業廃棄物処理振興センター

Contents(内容)

- Environmental management
  - Edo Period
  - Meiji Period - Now
- Toward the sustainable society

Waste Management in Edo Period

江戸時代のごみ処理

(1603-1867)

Waste Disposal in Edo Period 1

長屋
Tenement

Collection
収集

ごみステーション
Refuse box

大芥留

Bag container
叺 (かます)

積込み
loading

運搬
Transport

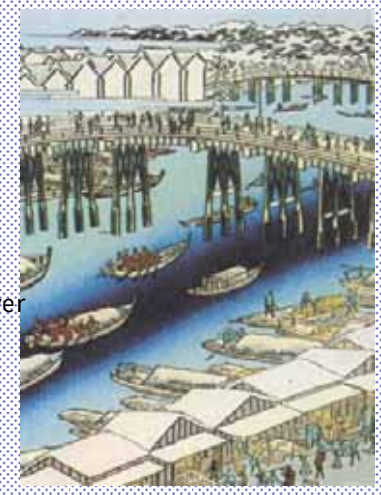
Eitai Irland

永代島
越中島

出典：伊藤好一「江戸の夢の島」、吉川弘文館

Waste Disposal in Edo Period 2

Sumida river



NIhonbashi
riverside fish market

日本橋魚河岸：広重「江戸名所八景」（部分）

Hiroshige

Waste Disposal in Edo Period 3

- Edo period was a typical sound material-cycle society.
- Human waste was traded and used for fertilizer.

江戸時代の「小便買い」の絵

A trader who barters vegetables with human waste.

Waste management from Meiji period to today

明治時代～現代におけるごみ処理

Changes of waste Management in Japan 1

- Meiji period－World War II
  Clean Feculence Law (1900)
  Communicable-disease prevention and public health sanitation
- World War II－1950s
  Public Sanitation Law (1954)
  Environmental sanitation
- 1960s－1980s
  Air Pollution Control Law (1968)
  Water Pollution Control Law (1970)
  Waste Management Law (1970)
  Public pollution issue

Changes of waste Management in Japan 2

- 1990s
  - DXNs guideline (1990)
  - Basic Law on The Environment (1993)
  - Containers & Packaging Recycling Law (1995)
  - Home appliance Recycling Law (1998)
  - Special Measures Law for DXNs (1999)
  - PRTR Law (1999)

    Pollutant Release and Transfer Register Law

Changes of waste Management in Japan 3

- 2000–
  - Basic Law for Promoting the Creation of a Sound Material-Cycle Society (2000)
  - Construction Material Recycling Law (2000)
  - Food Waste Recycling Law (2000)
  - Special Measures Law for PCB (2001)
  - Measures Law for Ground Pollution (2002)
  - Automobile Recycling Law (2002)

Waste Incineration and DXN Issue

焼却処理とＤＸＮ問題

An Early Incineration Plat(1933)

Planned Capacity: 750t/ d

Fukagawa , Tokyo

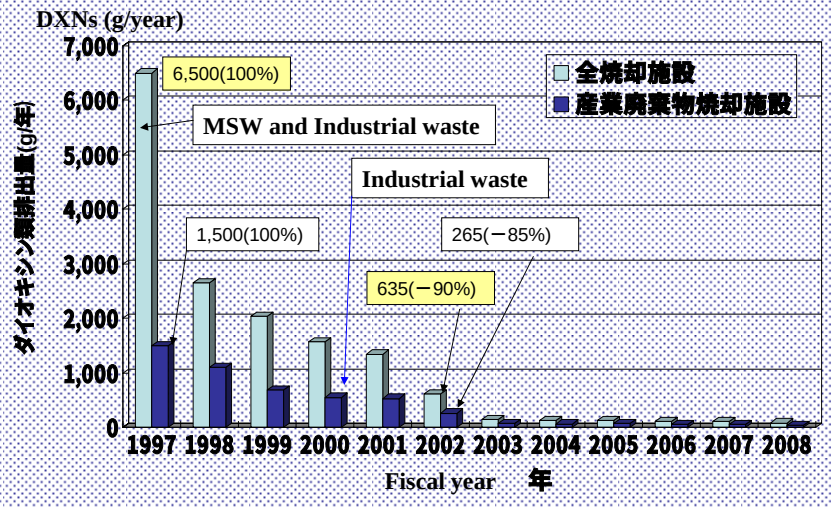
DXN Issue in Japan

How has it be emerged?

- Depending mainly upon incineration
  (Taisho Period～)
- Small and numerous locally sited facilities
  (due to the principle that every local government should manage his waste.)
- Slow-up of measures

Country		Incineration %	No. of Incineration Plant (rough figure)
Europe	Swiss	80%	30
	Denmark	65%	30
	Sweden	60%	30
	France	40%	250
	Germany	25%	100
	Italy	17%	40
	U.K.	6%	20
Asia	Japan	75%	1700
North America	U.S.A.	15%	150
	Canada	6%	45
Others		5%	
World Ave.		<5%	

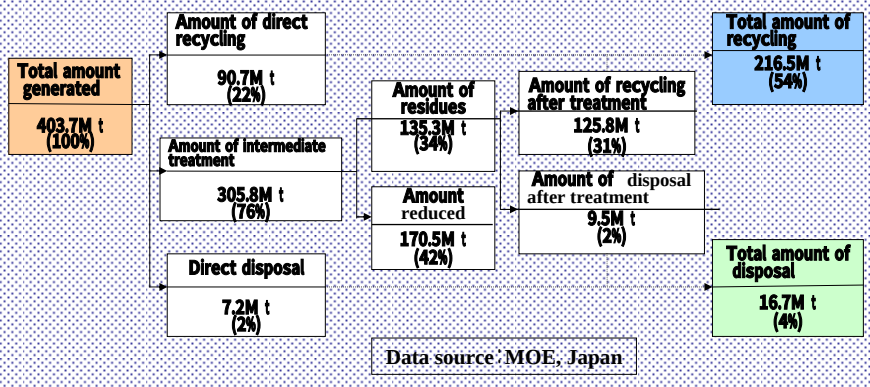
Chronological Changes of DXNs Discharge from Waste Incinerators



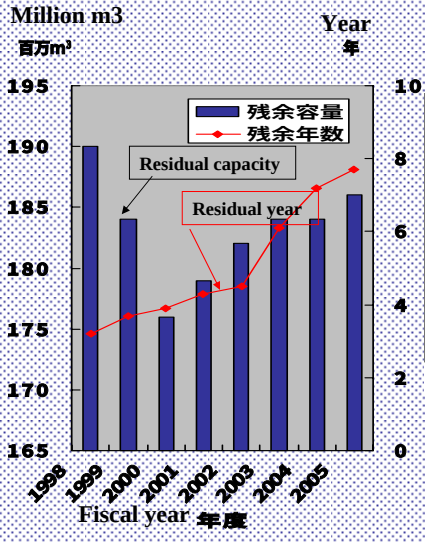
Landfill Site Shortage

最終処分場の逼迫

Flow of Industrial Waste (FY2008)



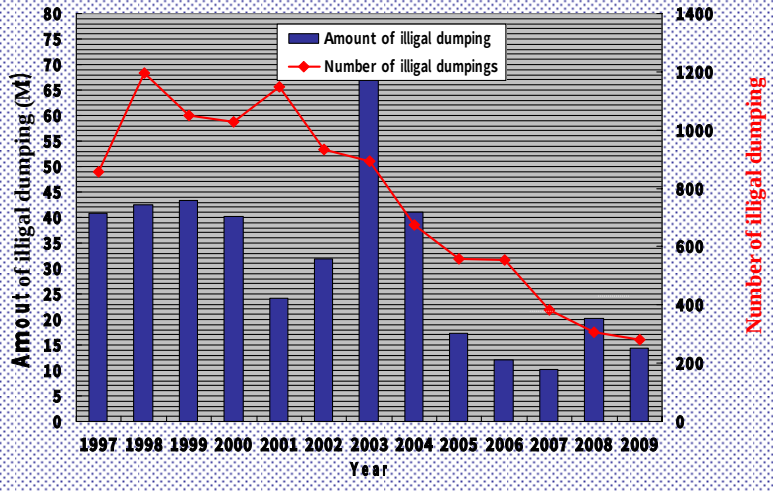
Residual Capacity of Landfill Sites (Industrial Waste)



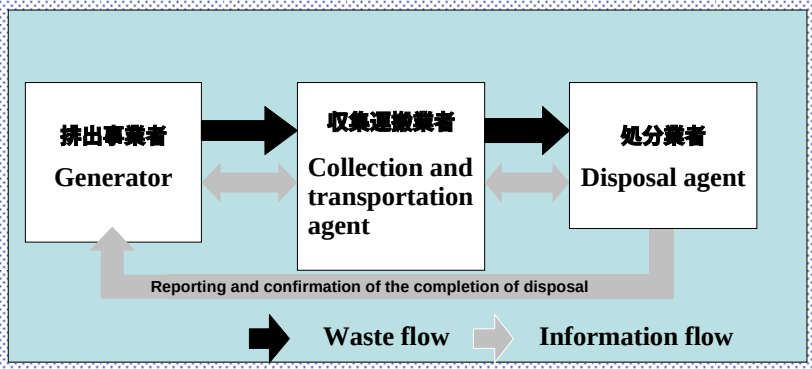
Industrial waste landfill site

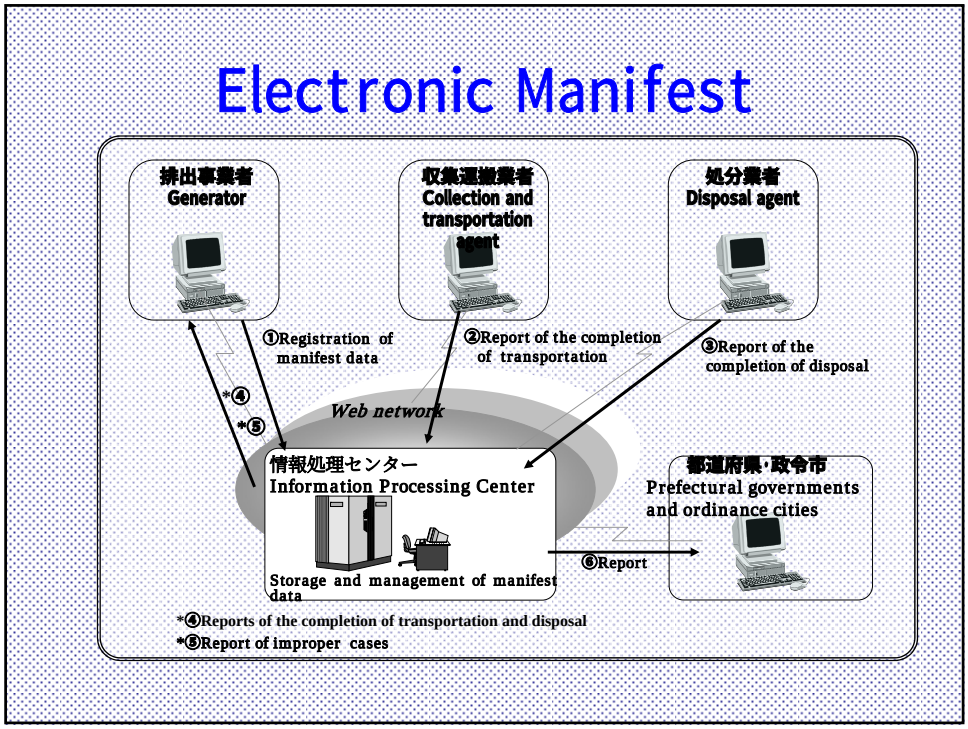
出典：環境保全機構

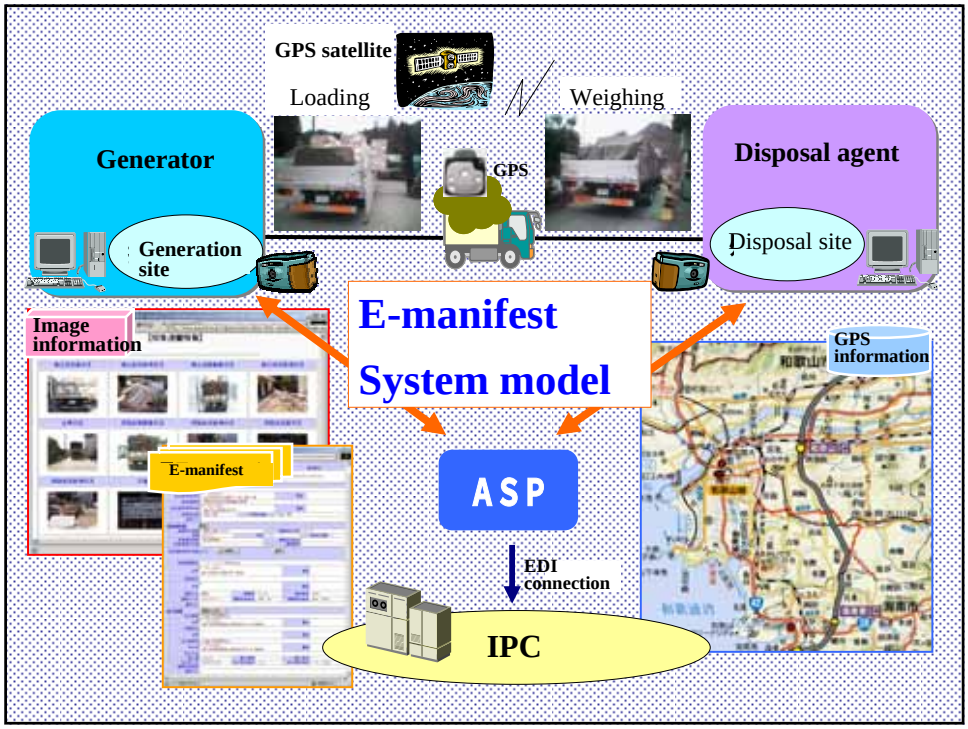
Illegal Dumping in Japan



Manifest System




Electronic Manifest
排出事業者
Generator
収集運搬業者
Collection and transportation agent
処分業者
Disposal agent
①Registration of manifest data
②Report of the completion of transportation
③Report of the completion of disposal
*④
*⑤
Web network
情報処理センター
Information Processing Center
Storage and management of manifest data
⑥Report
都道府県・政令市
Prefectural governments and ordinance cities
*④Reports of the completion of transportation and disposal
*⑤Report of improper cases


GPS satellite
Loading
Weighing
Generator
Generation site
GPS
Disposal agent
Disposal site
Image information
E-manifest System model
GPS information
E-manifest
ASP
EDI connection
IPC

Hazardous Substances

- PCB
  5 facilities (kitakyushu, Tokyo, Osaka, Toyota, & Hokkaido)
- Asbestos
  Vitrification technologies
- Heavy metals
- Chemical substances
- Infectious substance and waste
- Other hazardous substances and articles

Toward the Sustainable Society

持続的な社会に向けて

Issues

- Global warming
- Eco-system
- Resources dissipation
- Hazardous substance pollution

21C Japan Model Founded on the Principle of Environmental Protection

- Japan Model
  - A beautiful nation based on the traditional material and nature views.
  - Environmental protection as well as economical and regional development.
  - Share the development with Asia and the world.

Japan's Strategy for a Sustainable Society 1

- Stabilizing green house gas concentration world widely.
- Achieving the target set in Kyoto Protocol.
- Preserving biodiversity over a coming hundred years.
- Creating a sound material-cycle society and its diffusion into Asian countries.
- Enhancing 3R technologies and systems.
- Further enhancement of energy utilization efficiency
- Promoting renewable energy utilization including biomass.
- Coping with water issue.

Japan's Strategy for a Sustainable Society 2

- Creating vital countryside
- Creating beautiful urban environment
- Creating fertile waterside
- Creating rich forest
- Enriching environmental study and education

Promotion of 3 R

◆ 3 R
Reduce
Reuse
Recycle

＊3R initiative was proposed by Former Prime Minister Koizumi .

“ Mottainai spirit”

People should be aware of the real value of a thing.

Prospect for Environmental Technology and Business

環境技術とビジネスの動向

Conventional fields

➢Treatment technologies

Waste, Water, Off-gas, Soil

- Incineration technology
  - Stoker
  - Gasifying-melting furnace

  Incinerator, DXN control equipment, Vitrification furnace, Energy recovery
- RDF
- Landfill technology
- Soil remediation
  - Plasma arc

RDF

Ohmuta city in Kyushu

RDF production & combustion – power generation plant

315 t/h, 20,600 kW

Plastics shredder

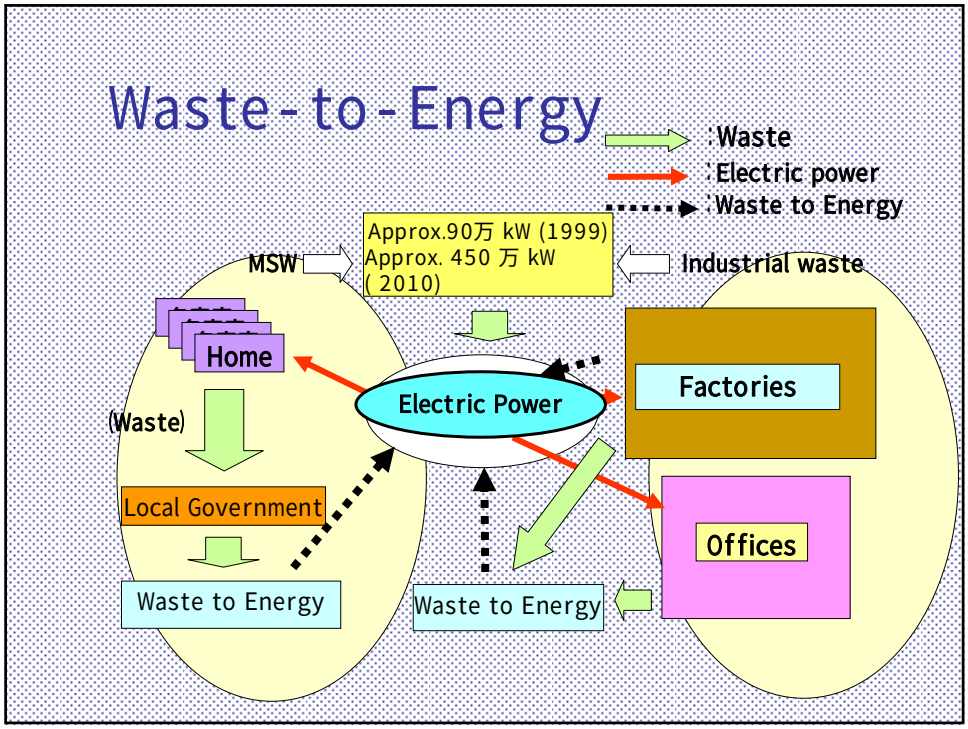
Forecast for Environmental Business in 2010 by MOE, Japan

1 EUR=\160

- Achievement in FY1997
  24兆7,000億円 (15.5 billion EUR)
- Forecast in FY2010 ↓ 1.6 times
  40兆円 (25 billionEUR)
- Businesses related 3R : Approx.50%
- Predicted Growth rate is 3.7%

Growing Fields

- Global warming
  Co_2 reduction, Energy saving
- Pollution & Hazardous substances control
  Clean water, air and ground
- Monitoring
- Waste management(3R)
- Waste-to-energy, Raw materials saving
- Biomass, Water (drinkable+tasty)
- Energy recovery
- Ecology & Urban Greening
- Awareness-raising & Education


Waste-to-Energy
:Waste
:Electric power
:Waste to Energy
Approx.90万 kW (1999)
Approx. 450 万 kW
(2010)
MSW
Industrial waste
Home
(Waste)
Local Government
Waste to Energy
Electric Power
Factories
Offices
Waste to Energy


THE END
Asakusa Kan-non