

Industrial Waste Management and Electronic Manifest in Japan

**Incorporated Foundation
Japan Industrial Waste Information Center**

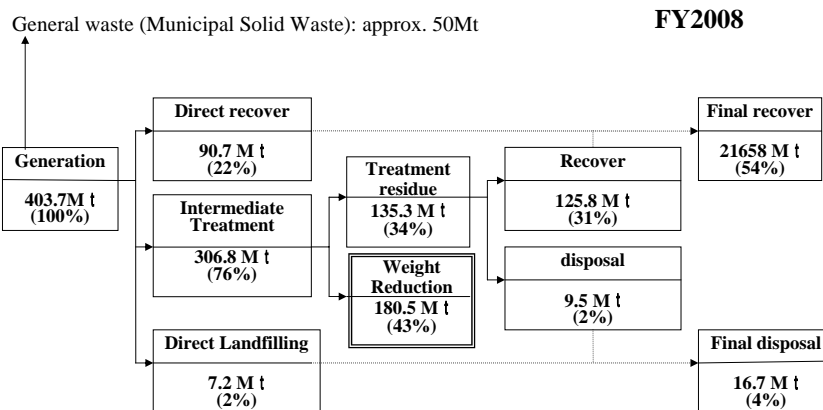
Contents

- 1 . Industrial Waste Policies and Legal systems**
- 2. Electronic Manifest (e-Manifest)**

Chronological View of Waste-related Laws

year	Law promulgated	Note
1900	Clean Feculence Law	•to control infectious disease .
1954	Public Cleansing Law	•to improve public health by sanitarily disposing of waste and cleansing living environment.
1963	Urgent Measures Law on Capacity Increasing of Waste Management Facilities	•to improve living environment through better waste management.
1968	Air Pollution Control Law	•to cope with the increase of waste with economic growth and with pubic pollution emerged.
1970	Water Pollution Control Law Waste Management Law	•to address increasing industrial waste .
1981 1983	Extended Seaside Environment Center Law Septic Tank Law	•to enhance waste management capability.
1990 1992 1993 1995 1998 1999	DXNs Prevention Guideline Revision of Waste Management Law Basic Law on the Environment Containers & Packages Recycling Law Home Appliance Recycling Law DXNs Special Measures Law	•to reduce waste generation, and to promote the reuse and recycling of waste. •to create a sound material-cycle society •to minimize the impacts of hazardous substances (e.g. DXNs).
2000	Basic Law for Promoting the Creation of a Sound Material-Cycle Society Revision of Waste Management Law Construction & Food Wastes Recycling Laws	•to develop a sustainable society .
2001 2002	PCB Special Measures Law Soil Pollution Prevention Law	•to deal with the past negative legacy.
2003	Industrial Waste Special Measures Law	•to address the illegal dumping issue .

State of Industrial Waste Treatment in Japan



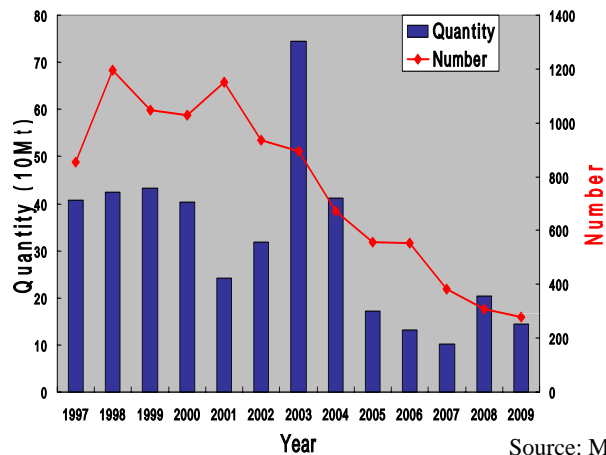
Source: MOE, Japan

Number of Industrial Waste Treatment Businesses

Category of business	Industrial waste	Specially controlled industrial waste	Sum
Collection & Transport	106,236	7,460	113,696
Intermediate treatment	9,905	708	10,613
Final disposal	610	46	656
Intermediate treatment and Final disposal	708	28	736
Total	117,459	8,242	125,701

*Data: as of June 24, 2008
Source: MOE, Japan*

Illegal Dumping



Major cases/

- ✓Teshima /
- ✓Aomori·Iwate/
- ✓Gifu /
- ✓Numazu /
- ✓Kuwana/

Source: MOE, Japan

Structural Issue in Industrial Waste Management

- “Bad money(=improper treatment of waste) drives out good.”

Gresham's theorem

Structural Change



- “Good strives out bad.”

(1) Strength of regulation :
Penalty , Manifest

(2) Enhancement of business integrity :
Integrity Evaluation Scheme for Waste
Management business

· Evaluation criteria

➢ Compliance

➢ Environmental behavior

➢ Disclosure of information

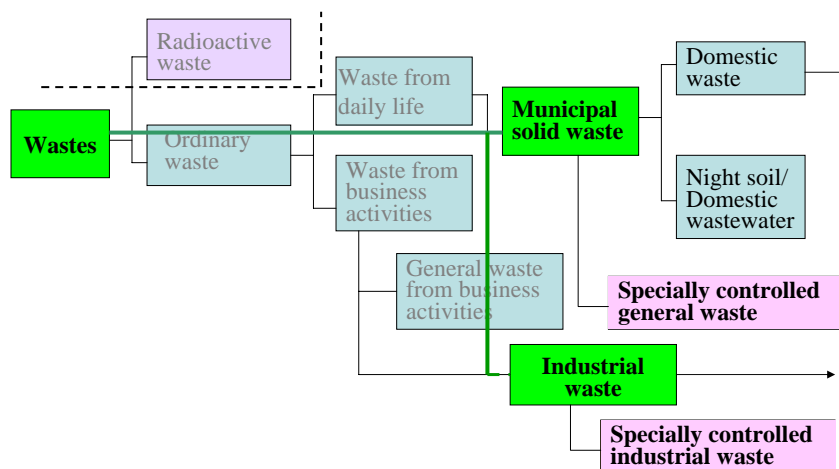
? +e-Manifest



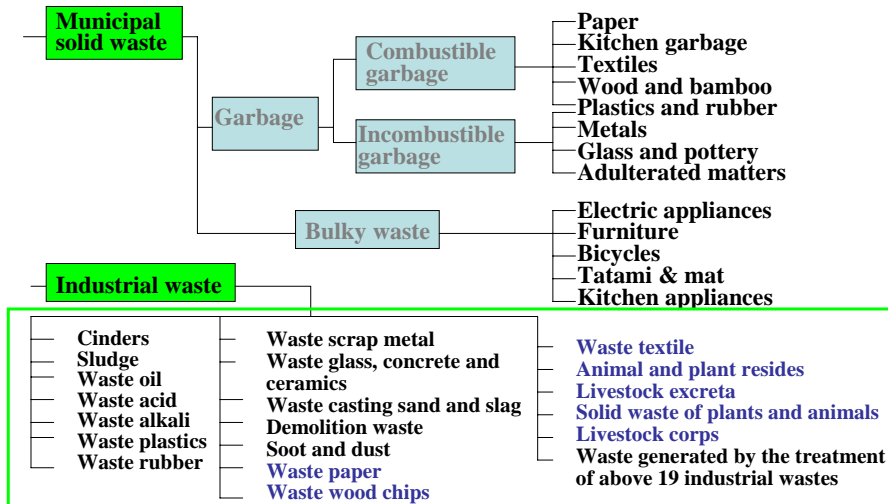
Contents List of Waste Management Law (WML)

- Article 1 (Objective)
- Article 2 (Definition of Wastes)
- Article 3 (Responsibilities of Businesses)
- Article 4 (Standards on Management)
- Article 12 Section 2 (Standards on Storage)
- Article 12 Section 3, 4, 5 (Standards on Commission)
- Article 12-3 (Industrial Waste Control Manifest)
- [Article 13-2 ~ 5 \(Information processing center\)](#)
- Article 14 (Permission for Management Businesses)
- Article 14-3, (Suspension of the Business,)
- Article 14-3-2 (Revocation of the permission)
- Article 15 (Permission of the Installation of Waste Management Facility)
- Article 25 – Article 33 (Penalties)

Classification of Waste {1}



Classification of Waste [2]



Specially Controlled Wastes [1]

Specially controlled industrial wastes

Type	Remarks
Waste oil	Volatile oils, kerosene, and gas oil designated as industrial waste.
Waste acid	Waste acid with pH of 2 or lower.
Waste alkali	Waste alkali with pH of 12.5 or higher.
Infectious industrial wastes	Industrial wastes which are infected or likely to be infected with infectious pathogens, such as blood and used injection needles discharged by medical institutions.
Toxic	PCB contaminated substances Virtually the same as waste PCB, PCB-contaminated articles and PCB-treated matters classified by WML prior to the revision.
	Waste asbestos Airborne asbestos, etc., collected by a device installed at a plant which has a dust generating facility specified by the Air Pollution Control Law in the process of disposing of airborne asbestos and heat insulators including asbestos removed from structures as well as plastic sheets discharged from removal.
	Other toxic substances Industrial wastes containing the toxic substances specified in the WML except PCB and asbestos. For example, cinders and dust containing DXNs , slag containing hazardous metal compounds , and other industrial wastes containing toxic chemical substances.

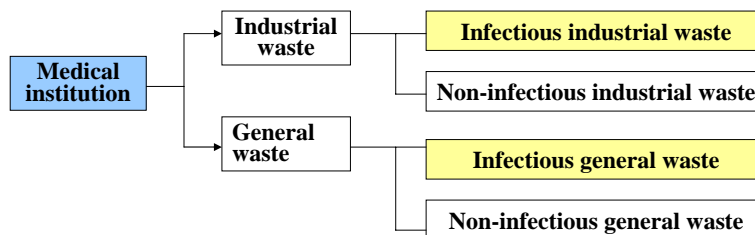
Specially Controlled Wastes [2]

Specially controlled **general wastes**

Type	Remarks
Parts using PCB	Parts removed from waste air conditioners, TV sets and electric ovens (general wastes) to be disposed of in accordance with the Notification by the Director of the Waste Management Division “ On Measures to Manage of Wastes Including PCB” dated March 17, 1976.
Dust (hazardous)	Dust collected by a dust collecting device installed at a garbage incineration facility with a daily disposal capacity of 5 tons or more where ashes and dust are discharged separately.
Infectious general waste	General wastes which are infected or likely to be infected with infectious pathogens, such as blood-tainted gauze , discharged by medical institutions.

Infectious Waste

➤ Wastes from medical institution



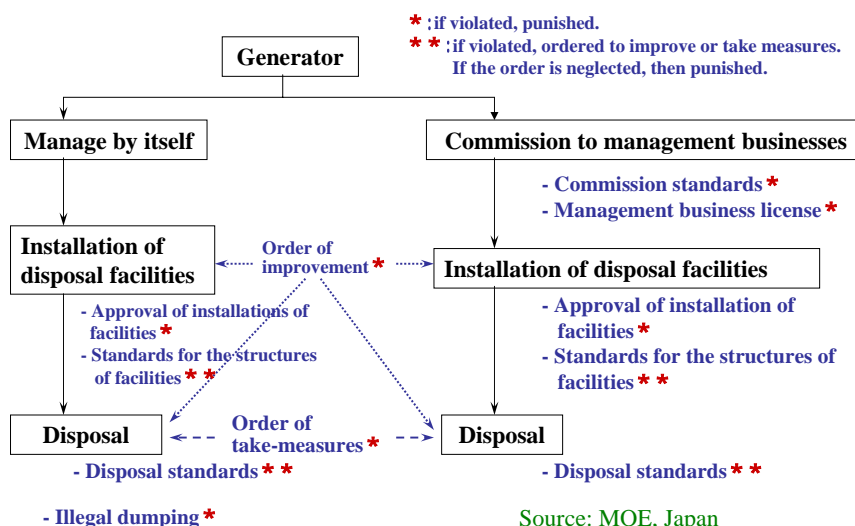
➤ Medical institutions

include hospitals, clinics, public health centers, blood centers, health laboratories, nursing-care facilities, birth centers, animal hospitals, and test and research institutes related to medicine, dentistry, pharmacy and veterinary medicine.

Legal Responsibilities for Waste Management

Responsibility item	General waste	Industrial waste
Waste management	Municipal government	Generator
Enforcement of the law and regulations. Administrative services	Municipal government	Prefectural government
Import and export of waste	National government	National government

Mechanism of the Regulation for Industrial Waste



Permit for Waste Management Business

- The capabilities of an applicant are required to be complied with the permit standards as specified in the WML.
- Conditions to be satisfied:
 - A. Facilities to be used satisfy the technological standards specified.
 - B. The knowledge and skill concerned satisfy the criteria set by a competing local authority. → JW Education & Training Courses
 - C. Financial feasibility
- Not fall into the disqualifying provision specified.
For instance: a bankrupted person, a member of a crime syndicate .

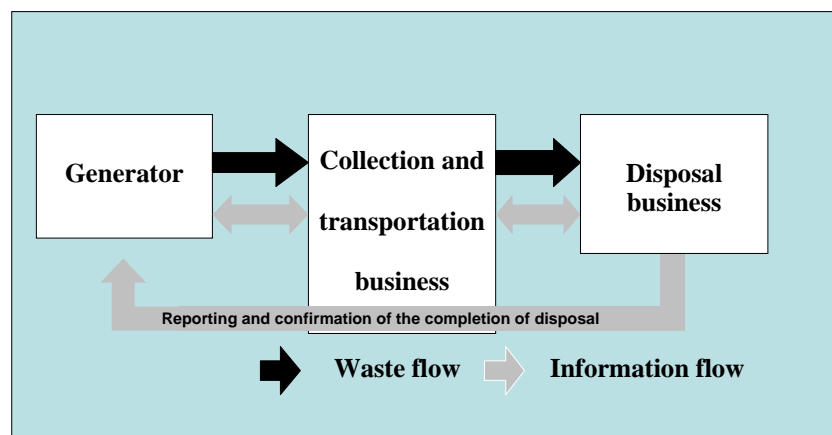
Responsibilities of a Generator on the Commission of Waste Management

- A generator is responsible for managing his waste on a cradle-to-grave base.
- Three key responsibilities:
 1. required to comply with the **commission standards**.
 2. required to confirm the proper treatments of his waste by **a control manifest**.
 3. required to perform **his necessary cares to ensure the proper treatments of his commissioned waste**.

Manifest System-Waste Tracking System

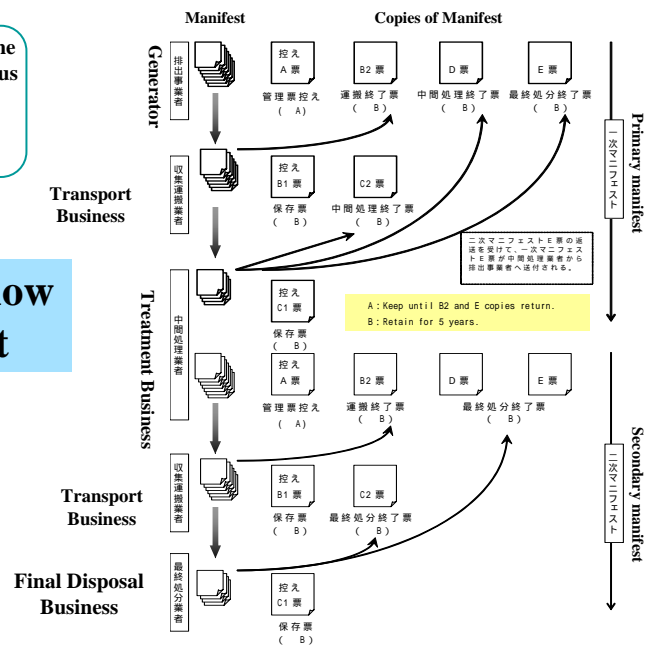
- When a business (including contractors of intermediate treatment) generating industrial waste as a result of his activities are to commission treatment agents to transport or dispose of his waste (including industrial waste of intermediate treatment), he shall issue the treatment agent an “**Industrial Waste Control Manifest**” (hereafter referred to as **Manifest**) at time of delivering his waste.
- **Manifest** shall be transferred to the commissioned treatment agents one after another at the completion of each treatment of the waste and shall return a copy of **Manifest** to the issuer within a period prescribed in the Law.
- When the issuer receives a copy of **Manifest**, he/she must confirm each completion of the treatments and keeps the copies of **Manifest** for a period specified in the Law.
- Annual reporting of the record of issued **Manifests** to a competent governor is required as of April 2, 2008.

Basic Flow of a Manifest

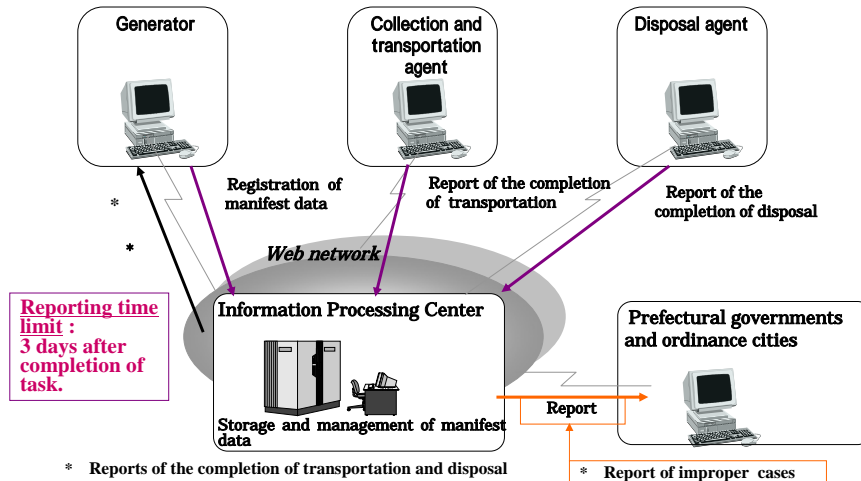


Source: Manual for the Treatment of Infectious Waste Based on the Waste Management Law, MOE, Japan

Detailed Flow of Manifest



How JWNET works



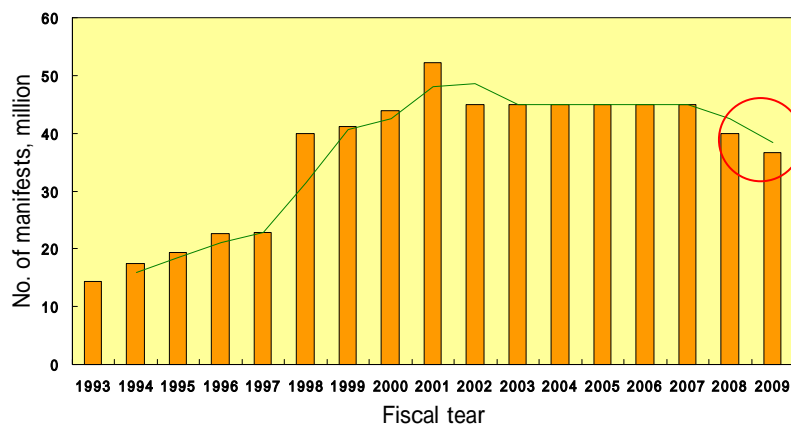
History of Introduction of the Manifest System

- March 1990: The manifest system was introduced in accordance with the administrative directive by the Ministry of Health and Welfare.
- April 1993: The manifest system has been made obligatory for specially controlled wastes by law.
- July 1998: Designation of Information Processing Center.
- December 1998: The manifest system has been made obligatory for all types of industrial wastes. E-Manifest system has been implemented.

Effects of E-Manifest

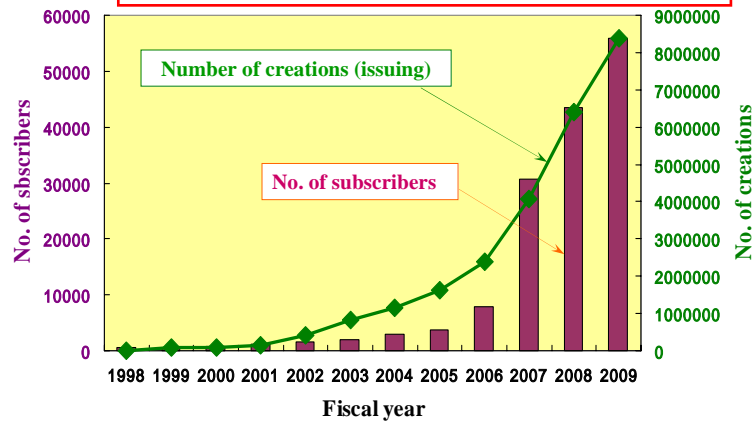
1. To prevent improper treatment of waste with enhanced monitoring capability
2. To prevent improper input of Manifest information
3. To speed up in searching, retrieving and processing input data
4. To reduce paper work burden and cost
5. To streamline waste management
6. To enhance CSR

Trend in Distribution of Paper-Manifests



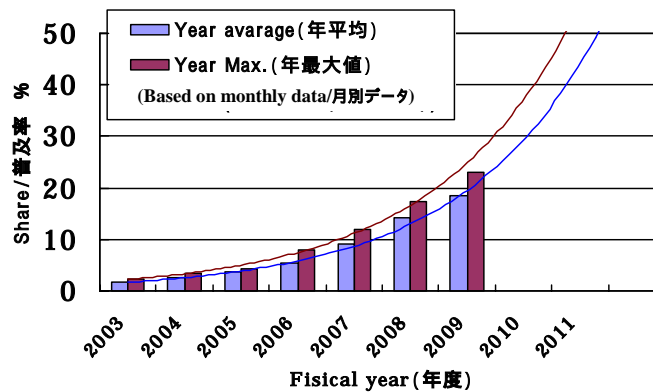
Trend in the Use of E-manifest

·Share	30%	50%
·No. of Creations	13.5 M	22.5 M

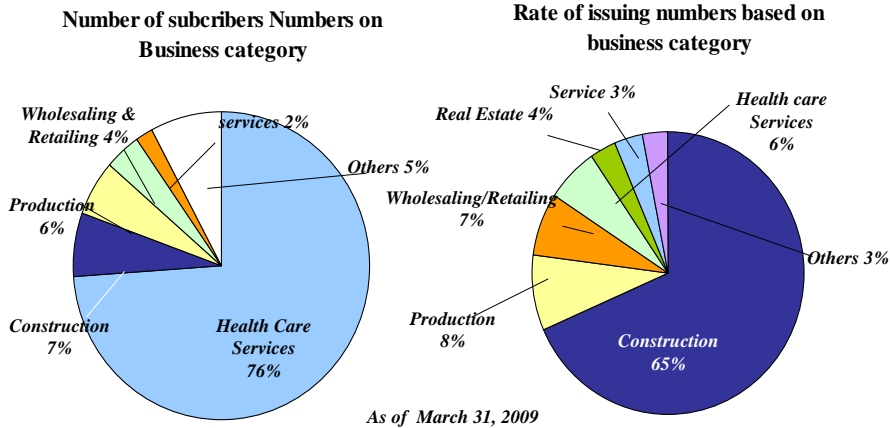


Trend of Share-Rate of e-Manifest

電子マニフェストの普及率の推移



E-manifest and Business Category



Unit of Subscription

- **Waste generator**
By each generation site, each branch office supervising generation sites or each sales office.
- **Collection and transport business**
By each business. Multiple subscription numbers may be provided, if needed.
- **Disposal business**
By each disposal facility. In a case where a intermediate treatment facility and a final disposal facility are placed on a premise, it may be recognized as an unit site.

A subscription number obtained can be used for different treatment agents. It is not necessarily required for a generator or a treatment agent to subscribe separately.
When re-commission is made, the subscription of an agent re-commissioned is required.

Promotion Measures for Share-Up

Political measures

- Implementation of Annual Status Reporting requirement on Manifest creations (issuing)
- Recommendation by local governments for using in their public works.
- Additional resolution by the Diet
“In order to promptly cope with the improper treatment issue, measures to promote the further use of e-Manifest should be examined having the view of its mandating.”

Promotion Measures for Share-Up

2. Efforts by JIWTC

- Provision of seminars and workshops
- Implementation of promotion campaigns
e.g. Sign-up fee saving campaign
- Introduction of a reduced fee-menu for small users
- Distribution of promotion materials
- Continuing enhancement of capability and operability of the system

System Development

System	1st	2nd	3rd	4th
Needs	Implementation of e-Manifest scheme	Amendment to the Waste Management Law	Capacity & speed up with internet	Enhancement of capability and reliability
Operation start	1998/12/01	2001/04/01	2006/06/26	2010/05
Transmission	Phone line	Phone line & Internet network	Internet network	Internet network
Access method	C/S	C/S, Web, EDI, Portable phone	PC, EDI Portable phone	Web, EDI
Operation hour		Mon.-Sat. 12 h	Sun.-Sat. 21 h	
Data processing		Batch-wise	Real-time	

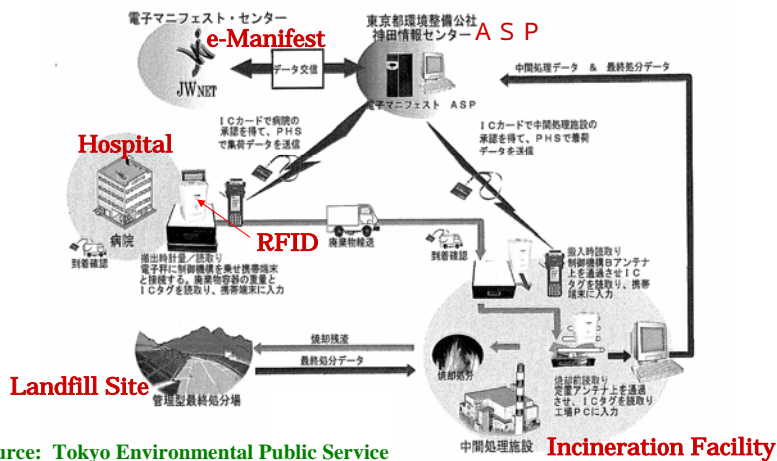
Challenge by Other Countries

- **Asia**
 - Korea (2002 ~)**
 - Taiwan (1998 ~)**
 - Singapore (2003 ~)**
 - Malaysia (2007 ~)**
 - China (Under planning)**
- **Australia**
 - QLD (2002 ~)**
 - NSW (2006 ~)**
 - VIC (2009 ~)**
- **Europe**
 - Austria (2005 ~)**
 - Germany (2010 ~)**
 - EU (pilot stage)**
- **North America**
 - Canada Ontario (2002 ~)**
 - U.S.A. (FY2009 budget pending)**

Different names

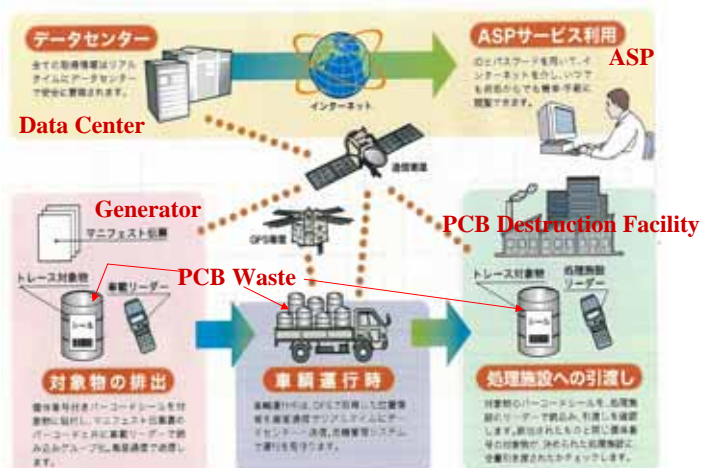
- ✓ Electronic Manifest
- ✓ Electronic Consignment Note
- ✓ On Line Reporting System
- ✓ On Line Waste Tracking
- ✓ WasteCert

Medical Waste Tracking System with the Aid of e-Manifest and RFID



Source: Tokyo Environmental Public Service Corporation

PCB Waste Tracking System with the Aid of GPS



Source: NEC Networks & System Integration Corporation, Routevi Catalog

Tokyo Sky Tree



Completion Image