

## Basic Policy for Comprehensive and Systematic Promotion of Measures on Waste Reduction and Other Proper Waste Management

Announcement No. 34 of the Ministry of the Environment

Since we set the basic policy for comprehensive and systematic promotion of measures on waste reduction by restraining waste generation, recycling, etc. and other proper waste management in accordance with the provision of Paragraph 1 of Article 5-3 of the Waste Management and Public Cleansing Law (Law No. 137 of 1970), we announce it in accordance with the provision of Paragraph 4 of the same Article.

7 May 2001

Yoriko Kawaguchi, the Minister of the Environment

## Basic Policy for Comprehensive and Systematic Promotion of Measures on Waste Reduction and Other Proper Waste Management

### 1. Basic Direction for Waste Reduction and Other Proper Waste Management

In recent years the socio-economic activities in our Nation have been expanded and the lives of citizens have become materialistically rich. On the other hand, various problems relating to waste have been pointed out, for instance the volume of waste generation has been kept at the high level, final disposal sites are reaching capacity, dioxins have been emitted from incineration facilities of waste and illegal dumping has been increasing. In order to deal with these problems, actions have been taken in recent years, such as several amendments have been made on the Waste Management and Public Cleansing Law (Law No. 137 of 1970 and it will hereinafter be referred to as "the Waste Management Law") and various laws relating to the promotion of recycling have been set.

From now on, in line with the purpose of the Basic Law for Establishing the Recycling-Based Society (Law No. 110 of 2000 and it will hereinafter be referred to as "the Basic Law") and with implementing these laws properly, it is necessary to actualize a so-called recycling-oriented society, in which the consumption of natural resources will be restrained and the burden to the environment will be reduced as much as possible by securing material cycling and by reconsidering the way taken by the conventional society and the lifestyle of citizens which is typified as mass production, mass consumption and mass waste generation.

Therefore, as for measures on waste reduction and other proper waste management, first, waste generation shall be restrained as much as possible, then waste that is generated shall be used cyclically (meaning reuse, reutilization and thermal recycle and it will hereinafter be referred to as "the proper cyclical use") as much as possible in order of reuse, reutilization and thermal recycle with taking into account the prevention of improper management as well as reduction of the burden to the environment. Restraint of waste generation and the proper cyclical use shall be thoroughly carried out, and it is fundamental that the proper disposal shall be ensured for those which still cannot be used cyclically.

In order to promote restraint of waste generation and waste reduction by recycling, it is necessary that citizens, businesses, the National government and local governments will actively work toward them under an appropriate division of their responsibilities.

It is also essential to ensure the proper waste management system as a base to establish a recycling-oriented society. In particular, regarding to industrial waste, the maintenance of facilities, which are necessary for its proper management, is not progressing and improper management such as malicious illegal dumping has increased. Because of that, the distrust of local residents toward the industrial waste management has increased and opposition toward installation and operation of disposal facilities makes even more difficult to maintain those facilities, so the number of permission to install industrial waste disposal facilities such as incineration facilities and final disposal sites is drastically decreasing. If nothing is done, it will significantly disrupt proper waste management and may affect not only the conservation of the living environment but also the economic activities seriously, so there is an urgent need to ensure the proper waste management system.

Therefore, based on the fundamental principle that waste has to be managed properly under responsibility of businesses, restraint of waste generation and the proper cyclical use shall be promoted in line with prospects of volumes of industrial waste to be generated, to be managed, etc. Also, from the point of ensuring the industrial waste management system which is well-balanced

throughout the Nation, it shall be considered to promote the safe and reliable maintenance of disposal facilities through public intervention, if necessary.

Besides that, in responding to the upsurge of citizens' consciousness on the environment, it is necessary to deepen the understanding of local residents by furthering information disclosure on safety, etc. of facilities when the waste management system is to be ensured.

## 2. Matters on Setting Targets for Waste Reduction and Other Proper Waste Management

### 1) Current Status of Volumes of Waste Generated, Waste Recycled, Waste Reduced by Intermediate Treatment, Waste Disposed of as Final Disposal and Other Waste Management

Currently (1997), the volumes of waste generated, waste recycled, waste reduced by intermediate treatment and waste disposed of as the final disposal (those are volumes of waste disposed of as landfill disposal and ocean dumping and the same will apply hereinafter) are as follows:

Municipal Solid Waste	Volume Generated	53
	Volume Recycled	5.9
	Volume Reduced by Intermediate Treatment	35
	Volume Disposed of as Final Disposal	12
Industrial Waste	Volume Generated	410
	Volume Recycled	168
	Volume Reduced by Intermediate Treatment	175
	Volume Disposed of as Final Disposal	66

(Unit: 1 million ton/year)

(Note: The total may not add up, since figures of decimals are rounded-off.)

### 2) Target Volumes of Waste Reduction

In regard to the target volumes of waste reduction, its target year shall be set as 2010 for a time and it shall be pursued in line with the idea of "target volume of waste reduction" set in September 1999 in accordance with "the Basic Guidelines of Japan for the Promotion of Measures against Dioxins" (set by the council of concerned ministers on measures against dioxins in March 1999).

Its intermediate target year shall be set as 2005 and the target volumes shall be reviewed, if necessary, with reflecting the status of its accomplishment, the change in the socio-economic situation, etc. at that time.

#### (1) Target Volumes for Municipal Solid Waste Reduction

In regard to municipal solid waste, the volume of its generation shall be decreased by about 5% in 2010 from the current status (1997), the volume of waste recycled shall be increased from about 11% to about 24% and the volume disposed of as final disposal shall be decreased by about 50%.

#### (2) Target Volumes for Industrial Waste Reduction

In regard to industrial waste, the increase of the volume of its generation shall be restrained by about 12% in 2010 from the current status (1997), the volume of waste recycled shall be increased from about 41% to about 47% and the volume disposed of as final disposal shall be decreased by about 50%.

## 3. Basic Matters on Promoting Measures on Waste Reduction and Other Proper Waste Management

1) Basic Framework of Measures

In order to restrain waste generation and to promote the proper cyclical use, it is important that each of citizens, businesses, the National government and local governments will actively work toward them under an appropriate division of their responsibilities.

Therefore, measures based on the legal system such as the Basic Law, the Waste Management Law, the Law for Promotion of Effective Utilization of Resources (Law No. 48 of 1991), the Containers and Packaging Recycling Law (Law No. 112 of 1995), the Home Appliances Recycling Law (Law No. 97 of 1998), the Construction Materials Recycling Law (Law No. 104 of 2000), the Food Recycling Law (Law No. 116 of 2000) and the Law on Promoting Green Purchasing (Law No. 100 of 2000) shall be implemented smoothly by citizens, businesses, the National government and local governments under an appropriate division of their responsibilities.

2) Responsibilities of Citizens, Businesses, Local Governments and the National Government

(1) Responsibilities of Citizens

When citizens are to buy a product, they shall try to select it, which has less containers and packaging to be discarded, which can be reused, which is good in its durability and which is reutilized. When they are to use a product, they shall use it as long as possible by enforcing repairs when it gets broken, thus they shall work on to restrain the volume of municipal solid waste generated by themselves. When citizens are to discard municipal solid waste, they shall cooperate with municipalities of their working on the proper cyclical use by discarding waste according to type that is set by municipal governments. As well as that, citizens shall cooperate with businesses of their taking steps based on laws by handing over waste electric home appliances to retailers, etc. and paying a fee in accordance with their request and paying a cost which is required for demolishing buildings, etc.

(2) Responsibilities of Businesses

Since businesses have to manage waste properly which were generated through their business activities under their own responsibilities, they shall try to restrain the volume of waste generated by themselves through contriving selection of raw materials, manufacturing process, etc. As well as that, they shall try to make the proper cyclical use of their waste by working with other businesses to reutilize waste generated by themselves. Then, they must secure proper management for waste which has to be disposed of.

When businesses are to manufacture, process and sell their products, in order to restrain waste generation and to make the proper cyclical use and its smooth disposal when their products or containers become waste, they must try to simplify containers and packaging and to manufacture or sell products, which can be reused repeatedly and which are good in their durability, they must try to manufacture or sell products which are not difficult to do the maintenance of repairing system, the expansion of longevity of buildings and the proper disposal, and they must try to provide the information needed.

Furthermore, as for those which are recognized that the role of businesses is important in promoting to form a recycling-oriented society, they shall try to spontaneously take back as much as possible the products or containers which were manufactured, etc. by them and became waste, and to promote the cyclical use.

(3) Responsibilities of Local Governments

In regard to restraint of municipal solid waste generation within their areas, municipal governments shall try to promote spontaneous activities from residents and to make the proper cyclical use of municipal solid waste by promoting sorted collection and recycling of municipal solid waste, then they shall secure the proper intermediate treatment and final disposal for municipal solid waste which has to be disposed of. Also, when initiating the municipal solid waste management, they shall consider the activities to be conducted in a wide area by cooperating with other municipalities and try to make them effective socio-economically. They shall collect a fee, if necessary, and make use of PFI (special activities prescribed in Paragraph 2 of Article 2 of the Private Finance Initiative Law (Law No. 117 of 1999)).

Prefectural governments shall promote restraint of industrial waste generated within

their areas and its proper cyclical use, and they shall provide businesses with the necessary guidance and supervision in order to secure proper management. Also, in the case where it is recognized to be necessary for securing the proper disposal of industrial waste, they shall consider to maintain industrial waste disposal facilities by making use of the system of industrial waste management centers under the fundamental principle that industrial waste must be properly disposed of under responsibility of businesses.

(4) Responsibilities of the National Government

In order to promote spontaneous activities of citizens and businesses, the National government shall try to disseminate knowledge and enlighten them by providing information on advanced cases, etc. As well as that, from the point of promoting smooth recycling of waste by businesses, on condition that that recycling does not cause a problem to the conservation of the living environment and reliable recycling is ensured without a possibility of improper disposal, the National government shall clarify the requirement to be met by products in order to be added as those subject to the arrangement which does not require permission in accordance with the Waste Management Law, and shall take the necessary steps, for instance to contribute to making smooth use of that arrangement.

Also, in order to enable activities by municipalities and prefectures to be conducted smoothly for securing waste reduction and other proper waste management within their areas, the National government shall try to support them technically and financially.

As well as that, from the point of ensuring the industrial waste management system which is well-balanced throughout the Nation, the National government shall try to coordinate among prefectures and to promote the information exchange. It shall also continue to consider about the role of the National Government for ensuring the proper industrial waste management system.

Furthermore, in order to maintain the management system of waste polychlorinated biphenyl, it shall carry out the maintenance of disposal facilities in a wide area by making use of the Japan Environment Corporation together with cooperating with local governments.

3) Ensure Necessary System in Order to Secure Proper Waste Management

(1) Ensure the Municipal Solid Waste Management System

As for municipal solid waste, municipal governments must collect, transport and dispose of municipal solid waste within their areas without causing a problem to the conservation of the living environment in accordance with their municipal solid waste management plan which is set by themselves.

When municipal governments make a municipal solid waste management plan, it is necessary that it shall be based on measures needed to actualize a recycling-oriented society and that it will match the change in volume and quality of municipal solid waste generation in medium and long term. It is also necessary to maintain the system which is able to manage waste properly in line with the volume and quality of municipal solid waste.

In regard to collection, it shall be ensured that the system which is possible to conduct the proper collection such as collecting municipal solid waste separately according to type with taking into account the method of disposal and recycling.

In regard to transport, the system of allocation of transport vehicles shall be maintained in order to enable to transport waste effectively in accordance with geographical features and population distribution of that municipality, and if necessary, by allocating transshipment stations, a load shall be transshipped to large-sized vehicles.

In regard to disposal, the best method shall be selected among recycling, intermediate treatment, landfill disposal, etc. according to the volume and quality of municipal solid waste with taking into account that volumes of waste disposed of as incineration treatment and final disposal as well as of dioxin emissions are to be restrained.

At the same time, when conducting activities in a wide area with cooperating with other municipalities, it shall be appropriate to consider about broadening the area which is beyond prefectural boundaries, if necessary.

Also, when managing municipal solid waste, since it is essential to obtain the cooperation from residents and businesses who generate them, the publicity of its

management system shall be made enough to get the understanding of its generators.

Among municipal solid waste, as for night soil (human waste) in particular, it is necessary to undertake the maintenance of its management system in order to ensure the hygienic disposal with taking into account the condition of maintenance of combined septic tanks and sewerages, etc.

In addition, when a municipality is not able to manage solid waste within its area and is to dispose of it at a municipal solid waste disposal facility in the other municipality, it shall try to harmonize the municipal solid waste management plan of that municipality, and it is also necessary for a prefecture to try to set a waste management plan of the prefecture with taking into account proper municipal waste management.

(2) Ensure the Industrial Waste Management System

As for industrial waste, businesses who have responsibility to manage them must properly conduct necessary incineration, other intermediate treatment and landfill disposal of industrial waste after striving to work on restraint of waste generation and the proper cyclical use at the maximum.

In particular, businesses who generate a large quantity of waste must make a management plan and work toward restraint of industrial waste generation and its proper cyclical use systematically.

Also, when businesses are to commission disposal of their industrial waste to others, they must try to take necessary measures for a whole management from generation of that industrial waste to completion of its final disposal (including recycling) to be conducted properly. In other words, they must ensure that the whole management is conducted properly from generation of that industrial waste to completion of its final disposal by making a proper contract for commission and using a control manifest for industrial waste.

At the same time, prefectural governments shall try to provide businesses, industrial waste management contractors and industrial waste disposal facilities with guidance and supervision in order to secure proper industrial waste management.

Also, it is extremely important to secure safe and reliable industrial waste disposal facilities in order to secure its proper management. In regard to securing industrial waste disposal facilities, it is fundamental that businesses are to secure them under their responsibility. However, regarding to the facilities like final disposal sites, in view of the situation that it is extremely difficult to secure the necessary industrial waste disposal facilities newly, prefectural governments shall consider to maintain them which are mainly final disposal sites and incineration facilities through public intervention when it is recognized to be necessary in order to secure proper management within their areas.

In regard to incineration facilities, when it is highly likely to cause a problem to proper management of the industrial waste generated by medium and small businesses and it is recognized to be necessary by municipalities, as for the industrial waste which can be managed by incineration treatment together with municipal solid waste in continuous-operating incinerators, which operate round-the-clock, in municipalities, municipal governments shall consider to manage them with collecting the necessary cost under the fundamental principle that businesses must manage them properly under their responsibility, until facilities through those public intervention are maintained.

Also, metropolitan areas, in which the volume of industrial waste generation is large and economic activities are conducted integrally beyond prefectural boundaries, shall consider to maintaining their disposal facilities in a wide area.

(3) Prevention of Improper Waste Management

Waste management must be conducted properly according to its nature.

In particular, industrial waste which is regarded as specially controlled industrial waste because of its hazardous nature must be managed properly and surely according to its nature in order not to cause a problem to human health and the living environment. When businesses are to commission management of specially controlled industrial waste generated by them to others, they must follow the standard for commission strictly with making sure to thoroughly separate it from the other waste.

Against waste management which does not fit the standard of waste management, municipal governments for municipal solid waste or prefectural governments for industrial waste shall give an administrative order properly and promptly in order to

prevent a problem to the conservation of the living standard from occurring, and they shall strictly deal with acts such as violation of an administrative order, illegal dumping and violation of prevention of incineration with enforcing the cooperation with the prefectural polices. In particular, against improper industrial waste management which is recognized to have reasons attributable to businesses' responsibility, a prefecture needs to give an order for actions to those businesses strictly. Furthermore, prefectural governments shall try to enhance the surveillance against improper management and shall promote to establish the system of surveillance which involves cooperation from the concerned agencies and local residents in order to prevent the expansion of a problem to the conservation of the living environment through early detection.

The National government shall work toward to support the surveillance by local governments, to disseminate and enlighten about electrical information relating to a control manifest of industrial waste and to develop and promote new technology on the surveillance of illegal dumping by using information communication technology.

4) Information Disclosure on Management Contractors and Fostering Good Management Contractors

It is fundamental that to foster good industrial waste management contractors of having the capability to surely conduct proper management in the market competition shall be tried spontaneously through that businesses select reliable management contractors.

Because of that, the National government shall further promote information disclosure on industrial waste management contractors by maintaining and enhancing the system to provide information contributing to businesses in their selecting management contractors through the Internet by making use of the Appropriate Treatment Promotion Center.

4 . Basic Matters on Maintenance of Waste Disposal Facilities

1) Target Volumes of Waste Needed to be Disposed of as Final Disposal in the Future and Maintenance of Facilities in the Nation

(1) Municipal Solid Waste Facilities

a . Intermediate Treatment Facilities

In order to achieve the target volumes for waste reduction, the necessary facilities shall be secured by systematically renewing and improving the intermediate treatment facilities relating to incineration, dehydration, etc. and the maintenance of the necessary facilities relating to recycling shall be promoted with taking into account their effective locations.

b . Final Disposal Sites

Currently, as of 1 April 1998, the remaining capacity of final disposal sites of municipal solid waste is 164,310, 000 m<sup>3</sup> and it is expected to last for 11.2 years. However, in view of that the remaining capacity of final disposal sites in some communities is in a critical situation, the necessary final disposal sites on a community basis shall be continually maintained in order to secure them continuously.

Also, it is necessary to try to expand the longevity of final disposal sites by promoting waste reduction in accordance with this Basic Policy.

(2) Industrial Waste Disposal Facilities

a . Intermediate Treatment Facilities

In regard to intermediate treatment facilities of industrial waste, their maintenance shall be promoted in order to secure the treatment capacity needed at the year 2010 which is the target year for waste reduction of this Basic Policy.

As for facilities relating to recycling, the necessary facilities shall be maintained with taking into account their effective locations.

As for incineration facilities, it shall be targeted that to maintain to secure the capacity of which is able to incinerate the waste volume needed to incinerate properly with taking into consideration that the volume of waste generation is varied

from community to community.

Furthermore, it shall be promoted that the maintenance of facilities which can manage the incineration treatment properly through renewal or newly installation by the private sector, and based on the status of their maintenance, it shall be considered to secure the treatment capacity, which is realized to be necessary, through the maintenance of facilities initiated by public intervention.

b . Final Disposal Sites

In regard to final disposal sites of industrial waste, it shall be targeted that to maintain to secure the capacity needed which would last for about 5 years at the year 2010 which is the target year for waste reduction of this Basic Policy.

The total capacity of final disposal sites of industrial waste needed to be maintained newly is estimated about 500,000,000 m<sup>3</sup> by the year 2010. At the current status, the capacity of final disposal sites maintained by the private sector is about 2/3 and that maintained through public intervention is about 1/3, so it shall be promoted that the maintenance by the private sector as the base, and based on the status of their maintenance, it shall be considered to secure the capacity, which is realized to be necessary, through the maintenance of facilities initiated by public intervention.

2) Maintenance of Municipal Solid Waste Disposal Facilities Needed for Municipal Solid Waste Reduction and Other its Proper Management

The maintenance of the necessary disposal facilities shall be promoted in accordance with a municipal solid waste management plan set by municipal governments in order to secure municipal solid waste reduction and other its proper management.

Specifically, the maintenance of intermediate treatment facilities and final disposal sites shall be dealt with in order to ensure the system of proper municipal solid waste management, and in particular, intermediate treatment consists of incineration, (including melting), refuse derived fuel (RDF) manufacturing, high rate composting, material and thermal recycling systems (feed producing from wastes), methane fermentation, etc., so it is necessary to select the best treatment method including the combination of these for that community.

Also, management initiated in a wide area by cooperating with other municipalities has advantages, such as that it may make recycling easier by collecting recyclable municipal solid waste in a wide area, that in the case of selecting incineration treatment, it can make it possible to restrain dioxin emissions through making incinerators into continuous-operating ones by integrating incineration facilities of waste, that it makes it easier to secure a final disposal site which requires a large land, and that it makes the maintenance cost cheaper as a whole by integrating facilities instead of maintaining small-sized disposal facilities individually which are able to manage the advanced treatment. Therefore, the appropriate scale for facilities shall be secured after taking into consideration the features of community socially and geographically, and management in a wide area shall be dealt with.

When installing continuous-operating incinerators, since it is possible to effectively implement the use of remaining heat from power generation by waste, its implementation shall be planned positively.

When maintaining incinerators in isolated lands or depopulated areas where management in a wide area is difficult to do, the maintenance of incineration facilities which are not continuous-operating incinerators will be unavoidable, but they shall be the ones which are able to restrain dioxin emissions as much as possible.

Since measures to restrain dioxin emissions is the most urgent task, they need to be taken as quickly as possible when planning to install continuous-operating incinerators by disusing and integrating medium and small incineration facilities in accordance with a waste management plan in a wide area.

In a medium and long term, the volumes of waste needed to be disposed of as intermediate treatment and final disposal shall be estimated with reflecting reduction in the volume of waste to be incinerated through promotion of recycling, and in accordance with these volumes, a maintenance of facilities in a wide area up to the target year shall be planned with bearing in mind the proper allocation of facilities after the target year.

3) Maintenance of Industrial Waste Disposal Facilities Needed for Industrial Waste Reduction and Other its Proper Management

The maintenance of necessary disposal facilities including those through public intervention shall be promoted in order to secure industrial waste reduction and other its proper management.

Specifically, in order to promote the proper cyclical use, the maintenance of facilities relating to recycling shall be promoted, such as promoting facilities needed for recycling of waste. In regard to final disposal sites, a capacity needed to be secured for final disposal sites for proper management of industrial waste generated in a community shall be calculated on a prefectural basis, and with taking into account prospects of their maintenance by the private sector, the maintenance of final disposal sites through the use of the system of designated waste management centers shall be considered when it is recognized to be necessary.

In metropolitan areas in which the volume of industrial waste generation is large and economic activities are conducted integrally beyond prefectural boundaries, it is important to plan the maintenance of industrial waste disposal facilities within their areas with taking into account the necessity of preparing for a large volume of waste at the time when an earthquake hits a metropolitan area. For that reason, the maintenance of facilities by the Osaka Bay Regional Offshore Environmental Center based on the Law for Regional Offshore Environmental Improvement Center (Law No. 76 of 1981) shall be continued, and as well as that, when it is recognized to be necessary in other metropolitan areas, it shall be considered to establish the system of industrial waste management by making use of the same Law on sea area solid waste disposal of the waste generated by 2 or more prefectures or by making use of waste management centers in a wide area for the cases which are difficult to apply that Law.

In regard to incineration facilities of industrial waste, with taking into account the increase of disuse of facilities, the disposal capacity of those facilities in the future and the volume of waste needed to be incinerated on a prefectural basis, it shall be considered to maintain incineration facilities of industrial waste through the use of the system of waste management centers, when it is recognized to be necessary, with keeping in mind to restrain dioxin remissions as much as possible.

In regard to disposal facilities of waste polychlorinated biphenyl, the maintenance of disposal facilities of those, mainly high voltage transformers and capacitors which constitutes a large percentage of waste polychlorinated biphenyl and needs to be dealt with urgently, shall be carried out by making use of the Japan Environment Corporation in about 5 places throughout the Nation for a time, and development of the system of safe and effective collection and transport shall be put forward.

In regard to other facilities, it shall be promoted that to secure facilities needed for proper management including the maintenance of disposal facilities of construction waste such as concrete chunks and wood generated through construction work that is needed to achieve the target on recycling the waste of special construction materials specified by the laws on recycling materials relating to construction work.

4) Support for Good Waste Disposal Facilities

The National government shall promote the maintenance of good waste disposal facilities by actively making use of tax benefit, loan from government-affiliated financial institutions and construction and transfer programs run by the Japan Environment Corporation.

Prefectural governments shall also promote together with the National government the maintenance of facilities based on the Law Concerning Promotion of Construction of Specified Facilities for Disposal of Industrial Waste (Law No. 62 of 1992) in order to promote the maintenance of necessary and good facilities by businesses or industrial waste management contractors.

5) Promotion of Information Disclosure to Local Residents

In order to ensure trust and to get understanding from local residents on locations of waste disposal facilities, it is important for governments to positively disclose information on a location of a facility, a method of disposal, a maintenance and management plan, etc. It is also important to disclose information on a maintenance and management of industrial waste disposal facilities which are currently in operation in order to enhance the reliability toward industrial waste disposal facilities. In particular, as for locations of municipal solid waste disposal facilities, local residents shall be required to have enough interest and understanding as the concerned party who themselves are involved in generation and disposal of waste.



## 5 . Necessary Matters on Other Waste Reduction and Other Its Proper Management

### 1) Promotion of Research and Development of Technology on Waste Management

Waste is varied in its shape and characteristics according to type and waste containing chemicals which do not exist in nature are also to be generated along with a new product development. In the situation like this, in order to promote waste reduction by restraining waste generation and recycling and to manage these various waste properly without causing a problem to the conservation of the living environment, it is important that businesses shall put forward by themselves the promotion of expanding longevity of products, structure to facilitate a separation of raw materials according to type, contrivance of materials, display of quality of materials, etc. in the manufacturing process as well as the development of manufacturing technology which generates less residuals. It is also important to further promote the research and development on disposal technology which enables the proper recycling and disposal of waste containing various chemicals with various natures and the research on the waste management system to be the most suitable for a recycling-oriented society.

For that reason, it is necessary to develop technology to promote reutilized products with trying to develop not only technology to reutilize the waste of which reutilization is hardly carried out right now but also technology which are already in practical use by trying to enhance technology to sort and that to make reutilized products stabilized in its quality, high in its quality and low in its cost.

In order to secure the proper disposal when the waste is difficult to be reused or reutilized so will be disposed of, it is also necessary to further research and development to increase safety, stability and reliability of that disposal. In particular, it is necessary to promote to develop technology on detoxification of specially controlled industrial waste which has a hazardous nature and disposal technology to restrain emissions of chemicals from disposal facilities which are discharged unintentionally along with disposal of waste, such as dioxins. As well as that, it is also necessary to conduct research and development on technology for operation and management of facilities and on indicators for their management which are more proper. As for persistent organic pollutants which are expected to be dealt with internationally by a treaty, it is necessary to consider and study the standard for their management and to develop their disposal technology.

Furthermore, it is necessary to put forward development of the system to understand and control the status from collection and transport of waste to its disposal by making use of information communication technology and satellite technology and to prevent improper waste management as well as the system to provide various information relating to waste.

### 2) Dissemination of Necessary Knowledge to Secure Restraint of Waste Generation and its Proper Management

In order to establish a recycling-oriented society which reduces the burden to the environment through waste reduction and restraint to generate substances which may affect the environment, it is essential to get cooperation from citizens and businesses widely. Therefore, it is important for the National government and local governments to try to disseminate knowledge to secure restraint of waste generation and its proper management as well as to enhance their consciousness. Specifically, they shall deepen the understanding of citizens through environmental education, environmental learning and public relations as well as ask for cooperation from concerned parties for that waste generation is to be restrained and its proper management is to be initiated.

### 3) Other Matters to be Considered

When making a waste management plan, it shall be harmonized with a national land use plan prescribed in the National Land Use Planning Law (Law No. 92 of 1974), a comprehensive national land development plan, a plan on promotion and improvement of community and a plan on the conservation of the environment by the National government or local governments prescribed in the National Land Development Law (Law No. 205 of 1950). Also when performing sea area solid waste disposal, necessary procedures in accordance with the Waste Management Law shall be completed before carrying forward procedures in accordance with the Public Water Body Reclamation Law (Law No. 57 of 1921). Besides that, when making a waste management plan and a municipal solid waste management plan, it shall be fully taken into account that a plan for a harbor concerned, and its development, use and conservation as well as a conservation of an adjoining community to that harbor.

Also, when carrying out a plan, it shall be fully taken into account that traffic safety and its smooth running as well as accident prevention.

(Reference)

#### 1 Target Volumes for Municipal Solid Waste Disposal Reduction

	1997	2005	2010
Volume Generated	53	51	49
Volume Recycled	5.9 (11%)	10 (20%)	12 (24%)
Volume Reduced by Intermediate Treatment	35 (66%)	34 (67%)	31 (63%)
Volume Disposed of as Final Disposal	12 (23%)	7.7 (15%)	6.4 (13%)

(Unit: 1 million ton/year)

(Note 1: The total may not add up, since figures of decimals are rounded-off.)

(Note 2: The number in blankets is a percentage)

#### 2 Target Volumes for Industrial Waste Disposal Reduction

	1997	2005	2010
Volume Generated	410	439	458
Volume Recycled	168 (41%)	205 (47%)	217 (47%)
Volume Reduced by Intermediate Treatment	175 (43%)	197 (45%)	211 (46%)
Volume Disposed of as Final Disposal	66 (16%)	36 (8%)	30 (7%)

(Unit: 1 million ton/year)

(Note 1: The total may not add up, since figures of decimals are rounded-off.)

(Note 2: The number in blankets is a percentage)