

## **Government Plan to Reduce Dioxin Levels Resulting from Business Activities in Japan**

Pursuant to Paragraph 3 of Article 33 (Law No.105 of 1999), a government plan to reduce dioxins released as a result of business activities in Japan has been established. According to Paragraph 4 of the same law, the Plan shall be declared as follows:

### **I. Reduction targets relating to the estimated amount of dioxin emissions categorized by type of business activity in Japan**

As of the end of FY2002, reduction targets relating to the estimated amount of dioxin emissions, categorized by type of business activity in Japan, shall be as follows:

(WHO-TEF(1998) )

Fields of business	Reduction targets ( g-TEQ/year )	(Reference) Estimated amount of dioxin emissions	
		Total emissions in 1997 ( g-TEQ/year )	Total emissions in 1999 ( g-TEQ/year )
1. Fields of waste treatment	576-622	6,841-7,092	2,320-2,522
(1) General waste incineration facilities	310	5,000 "Water" 0.037	1,350 "Water" 0.028
(2) Industrial waste incineration facilities	200	1,500 "Water" 0.51	690 "Water" 0.50
(3) Small-scale waste incinerators	66-112	340-591	279-481
2. Fields of industry	264	454	293
(1) Electric steelmaking furnaces	130.3	228.5	141.5
(2) Steel industry sintering process	93.2	135.0	101.3
(3) Zinc collection (Scowdering furnace, Sintering furnace, Smelting furnace, Melting furnace and dry kiln)	13.8	42.3	18.4
(4) Aluminum base alloy manufacturing industry (Scowdering furnace, Melting furnace and dry kiln)	11.8	21.3	13.6
(5) Other industries	15	26.7	18.0
3. Others	3-5	3.32-5.92 "Water" 0.093	3.42-6.12 "Water" 0.093
<b>Total</b>	<b>843-891</b>	<b>7,300-7,550</b>	<b>2,620-2,820</b>

Note 1: Reduction targets represent annual amount of dioxin emissions after measures to reduce dioxins in gaseous emissions and effluent have been taken.

Note 2: The "total" reduction targets are set at 88.2 to 88.5 percent less than the estimated amount of dioxin emissions in 1997.

Note 3: "3. Others" includes crematoriums, tobacco fumes, car exhaust emissions and final landfill sites of waste.

Note 4: The Chinese character for “Water” in the chart signifies the effluent level discharged into water.

## **II. Points relating to essential measures for businesses to take in order to achieve reduction targets**

### **1. Compliance with emission standards, etc.**

#### **(1) Compliance with the gas emission standard and effluent standards**

Businesses, pursuant to Article 20 of the Law Concerning Special Measures against Dioxins (Law No.105 of 1999, hereinafter referred to as the “Special Law”), shall not release emission gas or effluents where the level of dioxins contained in the emission gas or effluent fails to comply with emission standards, at the outlets of emission gas in the case of a facility subject to gas emission standards and at the drainage outlets of a business establishment to which effluent standards apply where the relevant facility subject to effluent standards is installed in the case of a facility subject to effluent standards.

Also, in cases where the total mass emission control standards are established, businesses must comply with the standards.

#### **(2) Prevention of environmental pollution caused by dioxins**

Businesses, pursuant to Article 4 of the Law Concerning Special Measures against Dioxins, shall be responsible for taking the necessary measures for the prevention of environmental pollution caused by dioxins generated in the course of their business activities including the prevention of accidents that may cause dioxin emissions. Businesses shall also be responsible for cooperating in measures implemented by the national government or local governments with regard to the prevention, etc. of environmental pollution caused by dioxins.

#### **(3) Measures in case of accidents**

Businesses, as stipulated in Article 23 of the Law Concerning Special Measures against Dioxins, must take emergency measures immediately when a large amount of dioxins is released into the air or public water areas.

#### **(4) Measurement of the status of pollution caused by dioxins**

Businesses, as stipulated in Article 28 of the Law Concerning Special Measures against Dioxins, must report the results to the prefectural governor, after carrying out the measurement of the status of pollution caused by dioxins with respect to emission gas discharged from the concerned facility to which gas emission standards apply or effluent discharged from the concerned business establishment to which effluent

standards apply.

(5) Appointing pollution control officers

Businesses, as stipulated in the provisions of the Law Concerning Pollution Prevention Organization in Designated Factories (Law No.107 of 1971), must appoint pollution control officers as well as environmental health officers in facilities that generate dioxins. A person who has been appointed must conscientiously carry out their duties including monitoring how those dioxins generating facilities are being operated, etc.

6) Others

As stipulated in the Waste Disposal and Public Cleansing Law (Law No.137 of 1970) and in the Offensive Odor Control Law (Law No.91 of 1971), burning waste in the open without using proper incineration facilities is essentially prohibited and should not be carried out.

**2. Dioxin control**

Businesses, pursuant to the provisions of the Law for Ascertaining the Amount of Specified Chemical Substances Released into the Environment and for Promoting Improved Controls ( Law No.86 of 1999 ) , must acknowledge that dioxins are Type I specified chemical substances and could cause serious health damages. In addition, businesses shall be responsible for controlling the manufacturing, use and other handling of specified chemical substances including dioxins in accordance with the guidelines for the management of chemical substances stipulated in Article 3 of the same law, and shall be also responsible for fostering the better understanding of the situation among citizens.

**3. Promoting to minimize, reuse and recycle waste, etc. that could cause dioxin emissions**

Businesses, pursuant to Article 11 of the Basic Law for Establishing the Recycling-based Society (Law No.110 of 2000, hereinafter referred to as “the Basic Law”), shall strive to minimize waste, etc. that could cause dioxin emissions (refer to “waste, etc.” defined in Article 2, Paragraph 2 of the Basic Law. The same shall apply hereinafter), by encouraging consideration at the product development, production and distribution stages, self-restraint relating to the production and selling of throwaway products and over-packaging, efforts to lengthen the life of products, etc. At the same time, businesses

shall take necessary measures to promote the reuse or recycling of recyclable resources and shall cooperate with the national or local governments in carrying out their policies and measures for establishing the recycling-based society.

In addition, businesses, pursuant to the provisions of the Waste Management Law, shall take necessary measures for minimizing waste such as formulating a plan to deal with business establishments generating a large amount of dioxin emissions, etc. Businesses shall also take measures in compliance with the Law for Promotion of Effective Utilization of Resources(Law No.48 of 1991), the Law for Promotion of Sorted Collection and Recycling of Containers and Packaging ( Law No.97 of 1998 ) , the Specified Household Instruments Recycling Law (Law No.97 of 1998), the Law Concerning the Recycling of Construction Materials ( Law No. 104 of 2000 ) the Law for Promoting the Recycling of Recyclable Food Resources, etc. ( Law No. 116 of 2000 ), the Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and other Entities (Law No.100 of 2000), etc. and shall further strive to promote minimizing waste as well as the cyclical use of recyclable resources through their voluntary and active endeavors.

### **III. Points relating to essential measures to be taken by the national and local governments to promote the recycling and reuse of resources, and to reduce waste which could cause dioxin emissions**

#### **1. Promoting measures for waste reduction**

##### **(1) Promoting measures in compliance with the Basic Law**

The Government, pursuant to the responsibilities stipulated in Article 9 of the Basic Law, shall formulate and implement basic and comprehensive measures.

Local governments, pursuant to Article 10 of the Basic Law, shall not only implement necessary measures to ensure appropriate recycling and disposal of recyclable resources, but also formulate and implement the policies in accordance with the natural and social conditions of the local governments' jurisdiction, based on the proper role-sharing with the Government for establishing the recycling-based society.

##### **(2) Promoting measures in compliance with the Waste Management Law**

The national and local governments, pursuant to the regulations of the Waste Management Law, shall take the necessary steps for minimizing waste, including formulating a basic national policy concerning waste reduction and proper treatment, prefectural waste disposal plans in accordance with the basic national policy, municipal general waste treatment plans which lay down restrictive measures for minimizing general waste, etc.

In addition, by formulating a basic policy and taking necessary steps in compliance with the Law for Promotion of Effective Utilization of Resources, the Law for Promotion of Sorted Collection and Recycling of Containers and Packaging, the Specified Household Instruments Recycling Law, the Law Concerning the Recycling of Construction Materials, the Law for Promoting the Recycling of Recyclable Food Resources, etc., the Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and other Entities, the national and local governments shall strive to promote waste reduction and the cyclical use of recyclable resources through voluntary and more active endeavors.

##### **(3) Broad-based garbage disposal and treatment schemes**

In accordance with broad-based waste disposal and treatment schemes to reduce dioxin emissions resulting from garbage treatment, prefectural governments shall give each municipality advice, instruction, etc. so as to immediately implement the plan.

(4) Providing support for the necessary investments in facilities to reduce waste

In order to strive for waste reduction, the Government shall provide financial and technological support to any person who has installed an improved facility for waste reduction or recycling.

**2. Achieving waste reduction targets**

With the aim to achieve “waste reduction targets” established in accordance with the “Basic Guidelines of Japan for the Promotion of Measures against Dioxins (decided in March, 1999, at the ministerial conference on dioxin)”, the entire Government shall promote unified and systematic waste reduction countermeasures.

**3. Others**

(1) Minimization and proper disposal of waste emerging from governmental facilities

The national and local governments shall promote the minimization and proper disposal of waste emerging from governmental facilities.

(2) Improving and strengthening of environmental education and environmental learning

The national and local governments shall improve and strengthen broad environmental education and environmental learning for facilitating waste reduction, including issues relating to minimizing waste and promoting recycling, for all ages from children to seniors.

## **IV. Other necessary points relating to the reduction of dioxins resulting from business activities in Japan**

### **1. Promoting measures to deal with the sources of dioxin emissions, etc.**

#### (1) Promoting measures to deal with waste

The national and local governments, pursuant to the Waste Management Law (the Waste Disposal and Public Cleansing Law), shall steadily promote measures to deal with waste, and further tighten controls over unlawful waste incineration through stringent monitoring measures based on the provisions of the Waste Management Law, the Air Pollution Control Law (Law No. 97 of 1968) as well as the Law Concerning the Special Measures against Dioxins.

#### (2) Promoting measures to deal with non-regulated sources

The national and local governments, pursuant to the Law Concerning the Special Measures against Dioxins, shall strengthen regulatory measures targeting waste incineration facilities. Also, for non-regulated sources, they shall promote measures to achieve emission reductions based on the latest information about emissions and on the results of fact-finding studies about emissions.

#### (3) Promoting financial and technical support for waste incineration plants being built by local governments, promoting improved facilities along with upgrading industrial waste incineration facilities

The Government shall promote financial and technical support for waste incineration plants being built by local governments, and promote improved facilities on an area-wide basis. In addition, for industrial waste incineration, the Government shall strive to improve model facilities by implementing financial support for improved facilities at waste disposal centers, and further promote the upgrading of facilities through the utilization of financing programs of governmental financial institutions, etc.

#### (4) Financial assistance for the necessary investments in facilities for emissions reductions measures

The Government shall provide financial assistance for the necessary investment in facilities, for parties who conduct measures to reduce emissions.

### **2. Ascertaining the amount of dioxin emissions, etc.**

#### (1) Reporting of a dioxin emissions inventory, etc.

The Government shall annually prepare and report a dioxin emissions inventory, classified by source of emissions as well as by medium of emissions.

Local governments, pursuant to Article 28 of the Law Concerning the Special Measures against Dioxins, shall report the results of measurements conducted by businesses.

(2) Implementing constant surveillance and other fact-finding studies

The Government shall ascertain the actual situation regarding dioxins annually and continuously, with regards to and including the environment, living organisms, the human body, work environments, waste incineration facilities, and industrial sectors, etc. At the same time, the Government shall provide information to the public in an easy- to-understand way.

Local governments shall conduct fact-finding studies including constant surveillance in accordance with the Law Concerning Special Measures against Dioxins and the national government shall provide necessary support.

**3. Promoting research and technological development and improving inspection systems relating to dioxins**

(1) Promoting research and technological development

The Government shall promote research on impacts on living organisms including finding out the mechanisms of generation and emission, the mechanism of concentration in living organisms, the behavior of dioxins in the environment, etc. along with the technological development necessary for dioxin countermeasures such as proper waste incineration, detoxification and decomposition of dioxin, simple methods for measurement and analysis, etc. The Government also shall promote the application and dissemination of the outcomes.

(2) Promoting quality assurance/quality control

The Government shall strive to improve inspection systems relating to dioxins by supplying environmental standard samples and considering how to guarantee the reliability of external organizations, etc. in the case where they are commissioned to conduct inspections.

(3) Improving and expanding public and private inspection institutions

While improving and strengthening precision management initiatives, the Government shall improve and expand public and private inspection institutions to be

able to conduct measurement and analysis of dioxins by creating guidelines to realize proper precision management for dioxin analysis.

(4) Conducting systematic training of technicians in public inspection institutions of local governments to improve analysis techniques

To improve analysis techniques, the Government shall conduct systematic training of technicians in public inspection institutions of local governments.

#### **4. Providing the public with proper information and promoting information disclosure**

(1) Providing proper information and information disclosure

The Government shall provide the public with accurate and timely information in an easy-to-understand manner, including facts on health and environmental impacts, results of research and technological development, trends overseas, and the meaning of various numerical indicators.

(2) Expanding systematic public relations activities

In order to obtain the understanding and cooperation of the public regarding the dioxin issue, the Government shall expand unified and systematic public relations activities, including publication of pamphlets and annual reports jointly produced by related Ministries and Agencies, which comprehensively explain the situation and tasks for establishing a recycling-based society, holding lectures, etc.

In addition, the Government shall strive to provide accurate information relating to dioxins through citizen's information centers, consumer information centers throughout the country, various journals, the Internet, the mass media, etc. Furthermore, the Government, using every opportunity, shall encourage citizens to reconsider their own values and lifestyles and to shift to a new less-waste-producing way of life.

**<Reference> Dioxins emissions inventory**

(WHO-TEF (1998))

Source of dioxin emissions	Total amount of dioxin emissions (g-TEQ/year)		
	1997	1998	1999
General waste incineration facilities	5,000 "Water" 0.037	1,550 "Water" 0.037	1,350 "Water" 0.028
Industrial waste incineration facilities	1,500 "Water" 0.51	1,100 "Water" 0.51	690 "Water" 0.50
Small-scale waste incinerators	340-591	340-591	279-481
Crematorium	2.1-4.6	2.2-4.8	2.2-4.8
<b>Industrial source of dioxin emissions</b>			
Electric steelmaking furnaces	228.5	139.9	141.5
Steel industry sintering process	135.0	113.8	101.3
Zinc collection	42.3	20.4	18.4
Aluminum base alloy manufacturing industry	21.3	19.4	13.6
Other types of industry	26.7	26.1	18.0
Tobacco fumes	0.1-0.2	0.1-0.2	0.1-0.2
Car exhaust emission	1.12	1.12	1.12
Final landfill sites of waste	"Water" 0.093	"Water" 0.093	"Water" 0.093
<b>Total</b>	<b>7,300-7,550</b>	<b>3,310-3,570</b>	<b>2,620-2,820</b>

Note: The Chinese character for "Water" in the table signifies the effluent level discharged into water.