

13 Environment

Environmental Issues and Legal Framework

Japan's high economic growth in the 1950s and 1960s was accompanied by serious industrial water and air pollution, which caused such tragedies as Minamata disease. To combat this problem, the government enacted the Basic Law for Environmental Pollution Control in 1967, and the Environment Agency was established in 1971. With the sweeping reform of Japan's administrative system in January 2001, the Environment Agency was upgraded to ministry status as the Ministry of the Environment.

Today's Japan faces various forms of environmental problems, including air pollution caused by nitrogen oxides in big cities, water pollution caused by household effluent, and both household and industrial waste disposal. On top of these, the issues of dioxin emission from incinerators and endocrine-disrupting chemicals have become a major concern for ordinary Japanese.

In 1993 the government enacted the Basic Environmental Law, which charts the general direction of Japan's environmental policies, envisioning a society capable of sustained development with a minimum burden on the environment. The Environmental Impact Assessment Law came into force in 1999, aimed at preventing damage to the environment by requiring assessment of the potential impact of large-scale construction projects.

In June 2000 the Basic Law for Establishing a Recycling-based Society came into effect, aimed at transforming Japan's socioeconomic system, which has been based on mass production, mass consumption, and mass disposal, into an eco-friendly and sustainable one.

Asbestos-related illnesses have also recently gained attention. In March 2006, a new law, the Asbestos Health Damage Relief Law, which provides financial aid to asbestos victims, was put into effect. As of the end of January 2007, 2,085 families of victims and 1,573 patients under treatment had applied for aid.

Waste Management and Recycling

The volume of waste discharged in Japan has remained at almost the same level since the beginning of the 1990s, but the shortage of landfills and the illegal dumping of industrial waste have become serious problems.

In order to cut down the volume of waste, a law promoting the recycling of containers and packaging was enacted in 1995 and came fully into force in 2000. Ten years after its enactment, a revised law was enacted by the Diet in June 2006 and took effect in April 2007. It promotes the 3Rs (reduce, reuse, and recycle) for containers and packaging wastes, with collaboration by all stakeholders, including national as well as local governments, business operators, and citizens. More than 30 billion

plastic bags are consumed every year, and the government expected a 10% reduction in plastic shopping bag consumption after the law came into effect.

The scope of recycling has expanded with the introduction of such laws as the Household Electric Appliance Recycling Law (effective in April 2001), which makes the recycling of televisions, refrigerators, washing machines, and air conditioners obligatory; the Food Recycling Law (April 2001); the Construction Materials Recycling Law (May 2002); the Personal Computers Recycling Law (October 2003); and the Automobile Recycling Law (January 2005). In April 2001 a law promoting "green" purchasing, which makes it compulsory for the central government and related organizations to procure eco-friendly goods and services, went into effect.

Volume of Waste

(million tons)

| FY | General waste | | Industrial waste |
|------|---------------|------------------------|------------------|
| | Total | Per person per day (g) | |
| 1975 | 42.1 | n/a | 236.5 |
| 1980 | 43.9 | n/a | 291.1 |
| 1985 | 43.5 | n/a | 311.0 |
| 1990 | 50.4 | 1,120 | 393.5 |
| 1995 | 50.7 | 1,105 | 393.8 |
| 2000 | 52.4 | 1,132 | 406.0 |
| 2004 | 50.6 | 1,086 | 417.0 |
| 2005 | 52.7 | 1,131 | n/a |

Source: Ministry of the Environment.

Note: Figures since 2000 are based on a new calculation method.

Recycling Ratios for Solid Waste

(%)

| FY | General waste | Steel cans ^a | Aluminum cans | Used paper ^a |
|------|---------------|-------------------------|---------------|-------------------------|
| 1990 | 5.3 | 44.8 | 42.6 | 51.5 |
| 1995 | 9.9 | 73.8 | 65.7 | 53.4 |
| 1996 | 10.3 | 77.3 | 70.2 | 53.6 |
| 1997 | 11.0 | 79.6 | 72.6 | 54.0 |
| 1998 | 12.1 | 82.5 | 74.4 | 54.9 |
| 1999 | 13.1 | 82.9 | 78.5 | 56.1 |
| 2000 | 14.3 | 84.2 | 80.6 | 57.0 |
| 2004 | 17.6 | 87.1 | 86.1 | 60.4 |
| 2005 | 19.0 | 88.7 | 91.7 | 60.3 |
| 2006 | n/a | n/a | n/a | 60.6 |

Source: Ministry of the Environment; Japan Steel Can Recycling Association; Aluminum Can Recycling Association; Paper Recycling Promotion Center.

a. Calendar year.

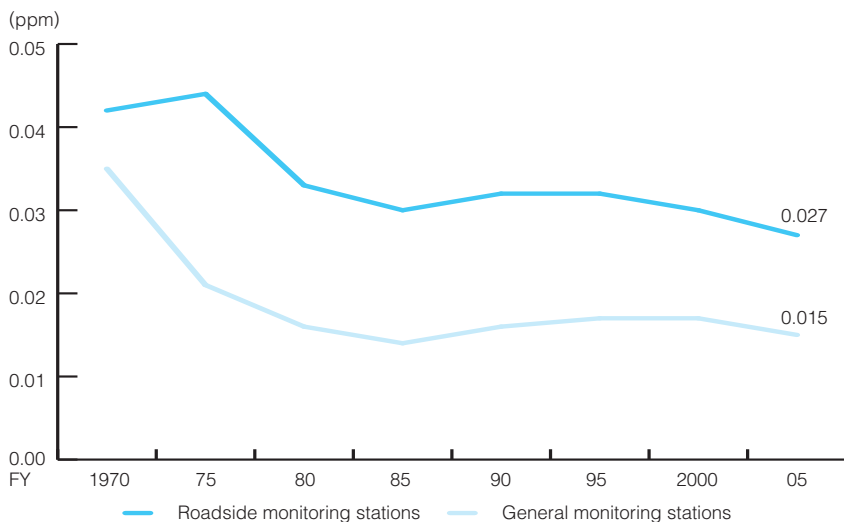
Air Pollution

In order to tackle the problem of air pollution, the government in 1968 enacted the Air Pollution Control Law and in 1970 and 1996 revised that law to tighten regulations.

There has been a remarkable improvement in the atmospheric levels of sulfur dioxide and carbon monoxide since the law came into force. By fiscal 2002 most of the sulfur dioxide monitoring stations and all the carbon monoxide monitoring stations met the environmental quality standards of 0.04 ppm and 10.0 ppm per day, respectively.

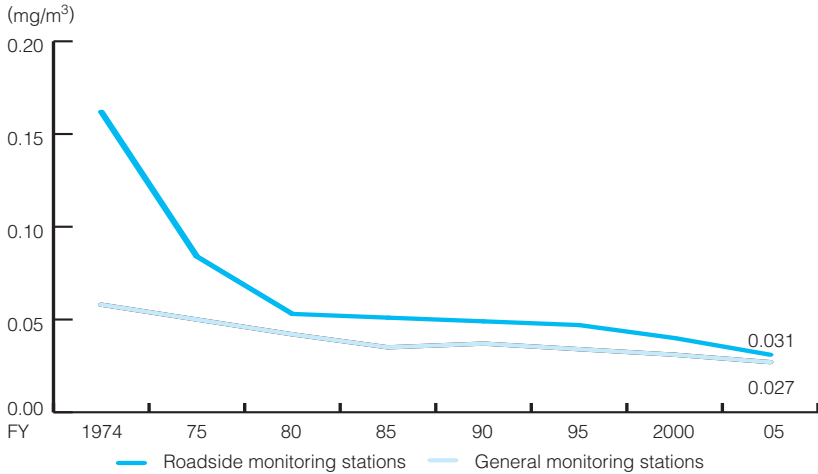
In an attempt to clean up the polluted air in the traffic-heavy metropolitan area, Tokyo and three neighboring prefectures (Kanagawa, Saitama, and Chiba) in October 2003 introduced tougher regulations targeting diesel-powered trucks and buses, which are major sources of suspended particulate matter (SPM) and nitrogen oxide. In fiscal 2005 the percentage of monitoring stations that met the environmental quality standard of 0.06 ppm for nitrogen dioxide reached 99.9% for general monitoring stations and 91.3% for roadside monitoring stations. As for SPM, 96.4% of general and 93.7% of roadside monitoring stations met the standard of 0.10 mg/m³.

Average Nitrogen Dioxide Level



Source: Ministry of the Environment.

Average Suspended Particulate Matter Level



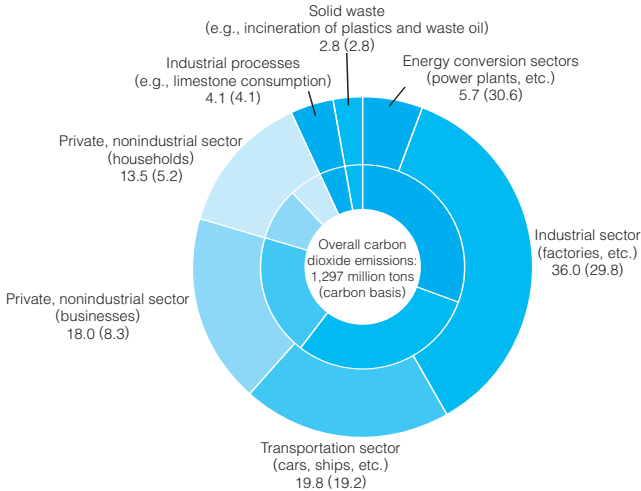
Source: Ministry of the Environment.

Global Warming

The Kyoto Protocol was adopted at the Third Session of the Conference of the Parties (COP3) to the UN Framework Convention on Climate Change held in December 1997 in Kyoto and went into effect on February 16, 2005. It explicitly sets an overall reduction target of more than 5% below 1990 emission levels for carbon dioxide and five other greenhouse gases by industrial countries during the commitment period between 2008 and 2012. The protocol, which Japan ratified in June 2002, imposes a 6% reduction target on Japan, which was estimated to be responsible for 4.6% of world CO₂ emissions in 2003, the fifth highest figure after the United States, China, Russia, and India.

The total volume of greenhouse-gas emissions in Japan in fiscal 2005 was 1,364 million tons (carbon dioxide equivalent), an increase of 8.1% over fiscal 1990 and a 0.6% increase over the previous year. Of the total emissions, 1,297 million tons were carbon dioxide.

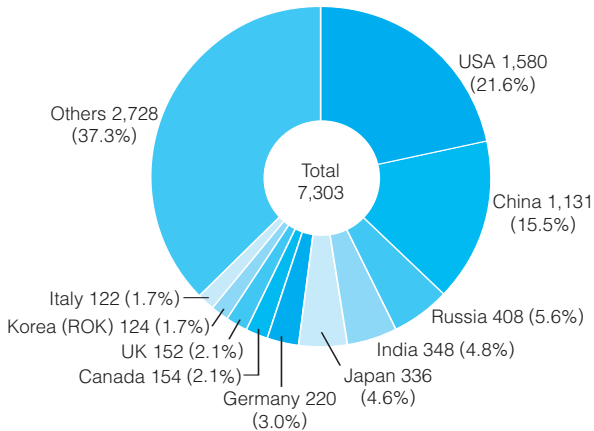
Japanese CO₂ Emissions by Economic Sector, FY 2005 (%)



Source: Ministry of the Environment.

Note: The inner circle indicates the proportion of total direct emissions represented by each sector (figures in parentheses), and the outer circle gives the proportion of total emissions arrived at by assigning CO₂ emissions associated with power generation according to power consumption by the final demand sector. Preliminary figures.

CO₂ Emissions by Country (million tons, carbon equivalent)



Source: Oak Ridge National Laboratory; US Department of Energy.

Note: Figures are for 2003.