

Introductory Chapter

Toward an Era of Environmental Revolution

<Summary of Introductory Chapter>

Our pursuit of convenience and comfort over the years has increased the environmental load. Fortunately, through technological advances, a possibility is arising to reduce the environmental load while simultaneously maintaining the quality of life. If we look at the fact that industrial activities are dependent on market needs, we can infer that it is possible to change the flow of goods and capital and to revolutionize industrial activities through consumer behavior. As a result, this can give rise to the “*Environmental Revolution*,” following in the footsteps of the “*Industrial Revolution*” and the “*IT Revolution*.”

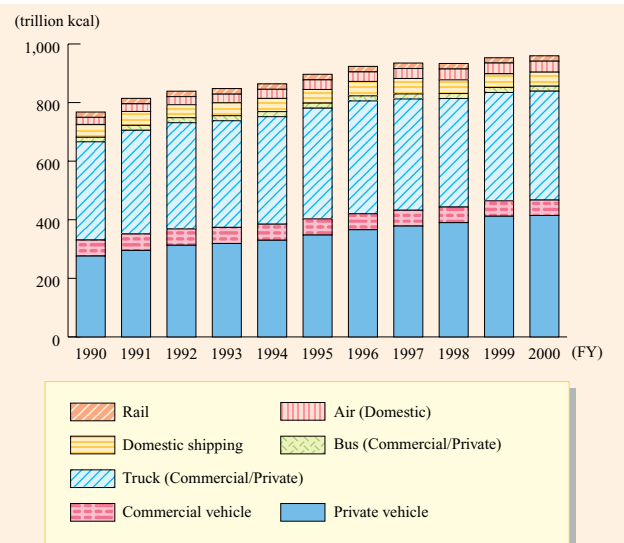
Section 1: Conventional Lifestyle in Pursuit of Convenience and Comfort

1. Increasing Energy Consumption and Global Warming

The convenient and comfortable lifestyle that we have pursued over the years has increased energy consumption. The rise in the drive distance of motor vehicles and deterioration in the actual driving fuel efficiency have increased energy consumption from fuel combustion. Changes in energy consumption categorized by transport mode show that private vehicles consume a large percentage of energy and consumption is rising rapidly. Diffusion of home electrical appliances and the greater number of households have also increased household energy consumption.

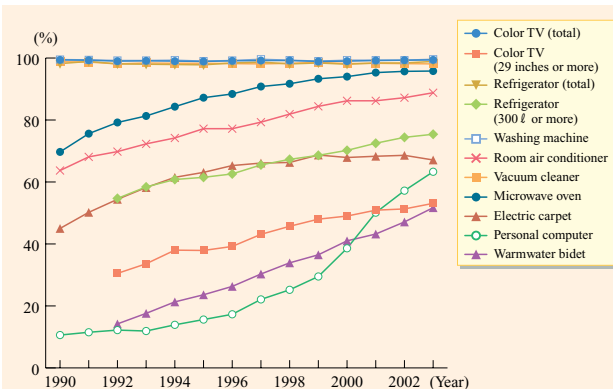
Energy consumption from motor vehicles and households place a load on the environment because the combustion of fossil fuels from the operation of motor vehicles and generation of electricity emit carbon dioxide. Rising carbon dioxide emissions is one of the main factors that trigger global warming.

Changes in Energy Consumption by Transport Mode in the Transport Sector



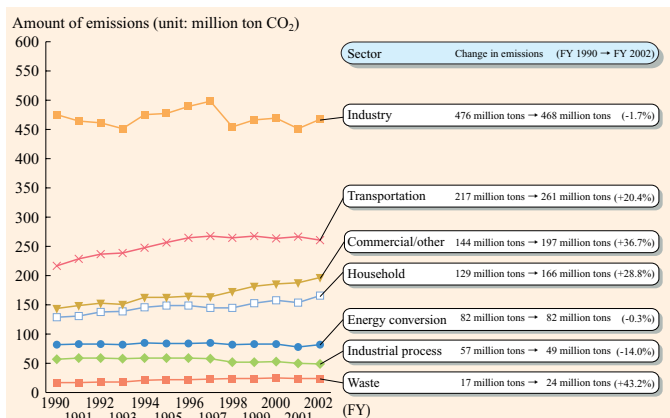
Sources: Compiled by the Ministry of the Environment based on the Ministry of Land, Infrastructure and Transport, *Annual Report on Domestic Shipping Transport Statistics*, *Annual Report on Air Transport Statistics*, *Annual Report on Rail Statistics*, and *Annual Report of Road Transport Statistics*; and materials issued by the Maritime Bureau and the Japanese Shipowners' Association.

Diffusion Rate of Major Home Electrical Appliances in Households



Source: Compiled by the Ministry of the Environment based on the Economic and Social Research Institute of the Cabinet Office, *Consumer Confidence Survey (Quarterly)*.

Emissions of Carbon Dioxide in Japan



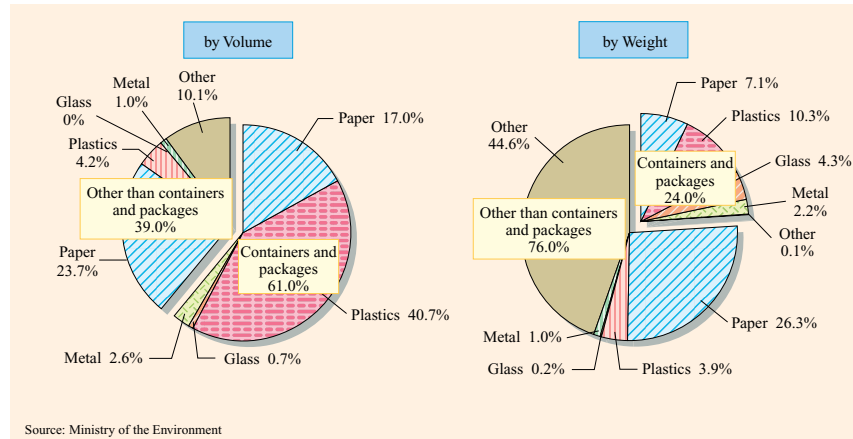
Source: Ministry of the Environment

2. Plastic Containers Discarded as Waste

A tremendous amount of waste is generated from daily life. The total amount of waste in FY 2001 in Japan was 52.1 million tons, with the per capita daily amount reaching approximately 1.1 kg. Of this amount, about 67% is domestic waste. In terms of volume, plastic containers account for about 40% of the domestic waste. Though they provide convenience to daily life, when plastic containers are discarded as waste, they place a load on the environment.

Despite progress in reducing the final disposal volume through recycling, securing enough final disposal sites continues to be a big problem. In addition to the strain on final disposal sites, illegal dumping has also become rampant. Its adverse effect on the living environment causes concern.

Percentage of Containers and Packaging Materials in Domestic Waste (FY 2001)



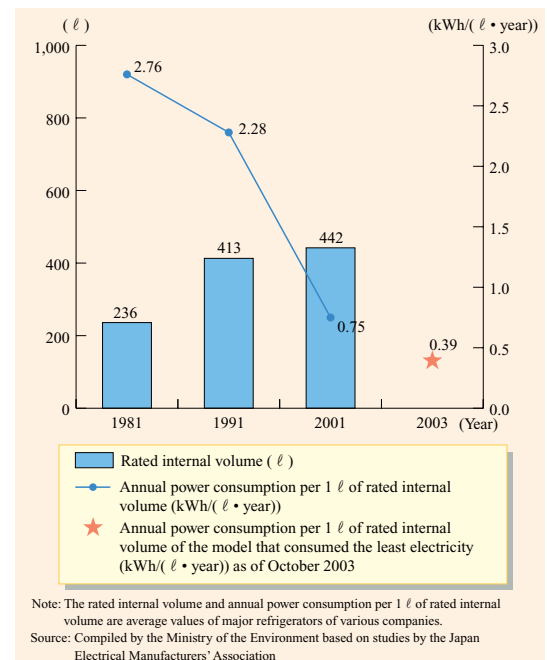
Section 2: Signs of the Environmental Revolution

Because industrial activities are dependent on demand, the directions of environmentally conscious efforts of businesses will change according to the choices consumers make everyday. By engaging ourselves in environmental conservation measures as the ultimate player and supreme ruler of the social economy, we can institute a drastic reform to the society as a whole, including industries.

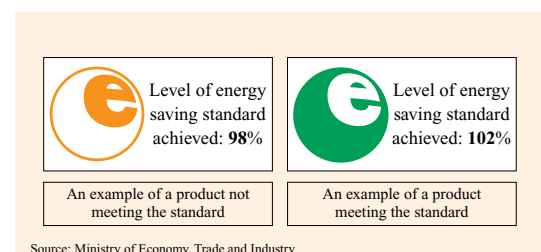
In recent years, a wide range of products incorporating various technologies to reduce environmental load have been launched. For example, the number of units of low-emission vehicles, such as hybrid vehicles and certified fuel-efficient, low-emission vehicles has increased to as much as 65.8% of all motor vehicles shipped in Japan. Thanks to energy-saving technology, the average annual electricity consumption of major refrigerators (per liter of internal volume) made by major companies has been reduced to one-third of the level of twenty years ago. Technological development has also made it possible to recycle used PET bottles into new ones.

The emergence of these signs of reform shows the possibility of revolutionizing industrial activities through changes in our daily lives.

Changes in Energy Efficiency of Refrigerator



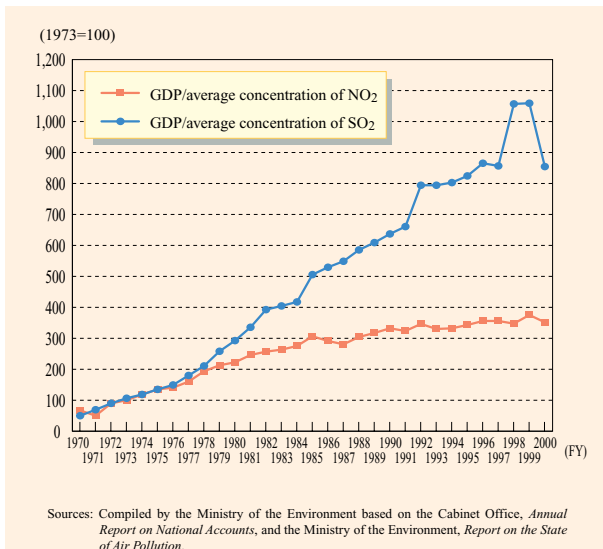
Energy Conservation Rate Mark



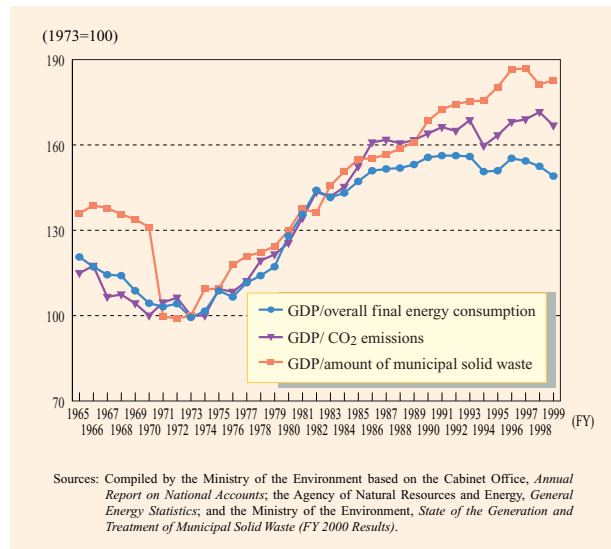
Section 3: Living in the Environmental Century

In Japan, eco-efficiency has shown some improvement in the areas of NO₂ and SO₂ emission reduction as a result of the increase in the number of units and processing capacity of flue gas denitration facilities and flue gas desulfurization facilities. In terms of energy and carbon dioxide, the improved energy efficiency of individual equipment and machinery is unfortunately cancelled out by the expansion of office areas in recent years. On the other hand, as the resource productivity is heightened, we can see the gradual advent of a society in which the consumption of natural resources is controlled and the environmental load is reduced.

**Changes in Eco-efficiency
(Average concentrations of NO₂ and SO₂)**



Changes in Eco-efficiency (Overall final energy consumption, CO₂ emissions, and amount of municipal solid waste)



The 20th century, marked by our tireless efforts to acquire as much as possible from the environment and by the tremendous burden we exerted on the environment, has ended. We must make the 21st century the Environmental Century by respecting environmental values and maintaining harmony with the environment. A fundamental reform of our mindset to reduce environmental load and to share the environmental blessings with future generations while improving the quality of life for all generations, and the technological innovation that the reform makes possible, will bring further growth to our daily lives and to socio-economic activities. We can call such development the “*Environmental Revolution*,” following in the footsteps of the “*Industrial Revolution*” and the “*IT Revolution*.” The actions taken by each one of us will bring new possibilities to the “*Environmental Century*.”

Changes in Resource Productivity

