

# Energy Conservation

(anti-global-warming measures)

## Targets

[Greenhouse gas emissions]

- Reduction of at least 1% in average annual greenhouse gas emissions per net sales for five-year period from fiscal 1998 to fiscal 2002.



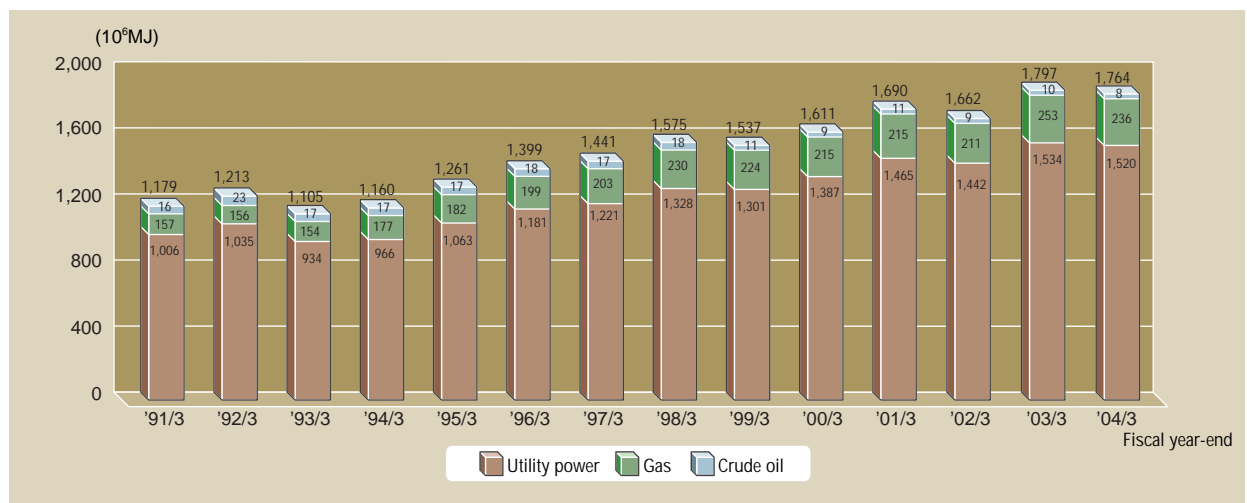
Carbon dioxide (CO<sub>2</sub>), which is released into the atmosphere when fossil fuels are burned, is the main cause of global warming. The Third Conference of the Parties (COP 3) to the United Nations Framework Convention on Climate Change in December 1997 stressed the need for a reduction in greenhouse gas emissions. The control of CO<sub>2</sub> emissions through savings in energy use is one way in which global warming may be slowed.

Nikon has established a target for reduction in energy use, including electricity — a major source of CO<sub>2</sub> emission. We intend to reduce the average annual emissions of greenhouse gases by at

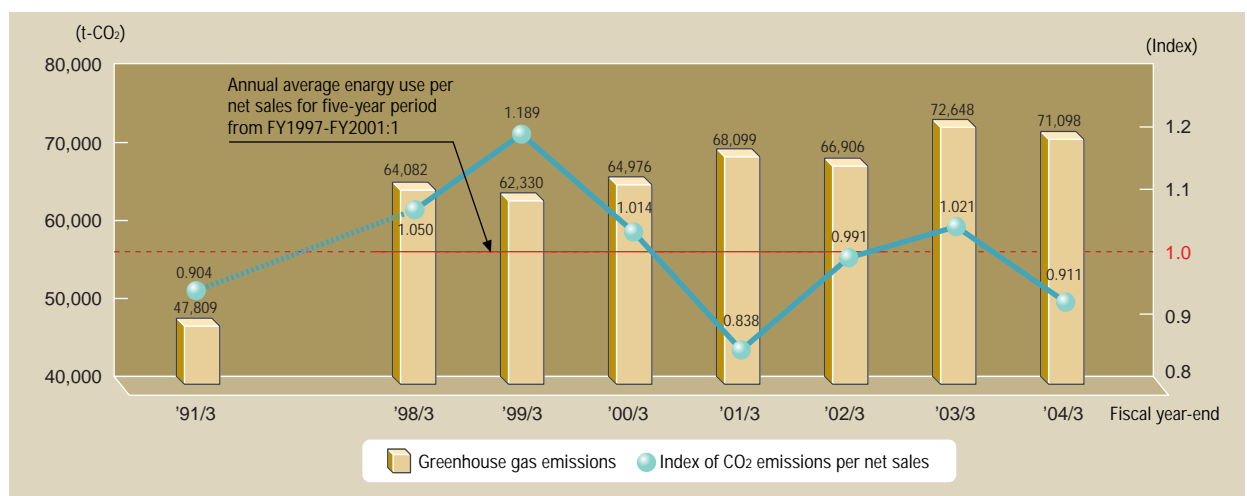
least 1% per net sales for the five-year period from fiscal 1998 to fiscal 2002.

In fiscal 2004, we improved the efficiency of our air conditioning system and switched to a lighting system that uses energy more efficiently. We have also implemented and promoted various energy-saving measures such as improvements in the manufacturing process and conscientious use of lighting and office equipment. As a result, we were able to achieve a 9% reduction in energy use, well beyond our target of 1%.

## Energy Use (in joules)



## CO<sub>2</sub> Emission/CO<sub>2</sub> Emission per Net Sales



\*Standard figures for calculating CO<sub>2</sub> emissions are taken from the "Environmental Activities Evaluation Programme 2004" (published by the Ministry of the Environment).

## Future Energy-saving Strategies

We intend to implement the following strategies as we head into fiscal 2005.

- Reduction in harmful emissions from air conditioning
- Highly efficient operation of utilities facilities
- Highly efficient operation of manufacturing facilities
- Renewal of aging facilities/equipment
- Standardisation of electrical load
- Integration of electrical facilities
- Improvements in quality control efficiency

# Activities in the Workplace Environment

## Promotion of Reduction and Recycling of Waste

### Targets

- [Waste generation]  
 • Reduction in amount of waste generation per net sales of at least 5% compared with figures from fiscal 2001.



The manufacturing industry, which evolved as part of the mass production/mass consumption system, is currently at a crossroads in terms of the way things are done.

Economic expansion has brought with it yearly increases in the amount of waste produced. Waste was for too long classified as “refuse”, and simply discarded. As a result, waste has grown in amount and diversity, and there is a great deal of pressure on end-

### Generation, Disposal and Recycling of Waste

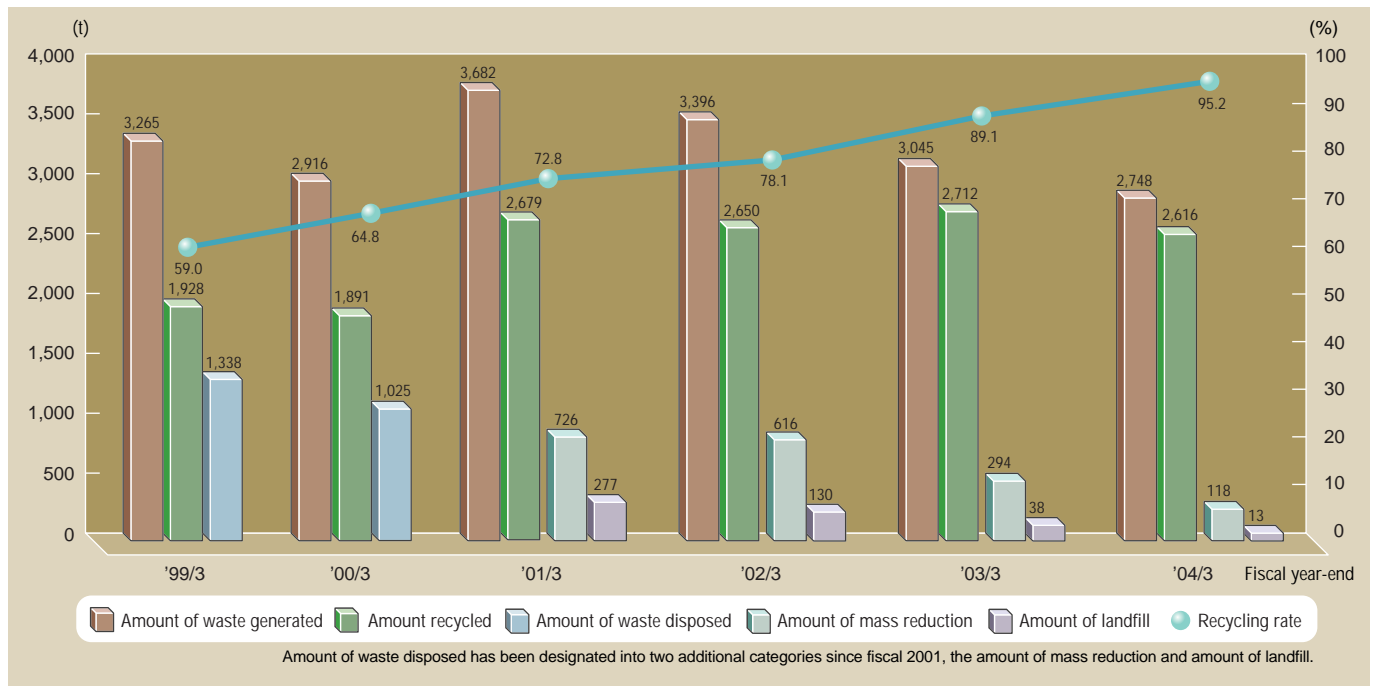
We implemented programmes to reduce both general and plastic waste, and strictly enforced refuse separation guidelines for this period, which enabled us to control our waste output (including that to be recycled). We also actively promoted the recycling of materials. As a result, our rate of resource recycling reached 95.2%, while we reduced landfill rate to 0.5%. We were also able to maintain zero-emission systems at all plants.

of-line disposal agencies to devise more efficient methods for disposing of waste.

Nikon is committed to the concept of a “Resource Recycling Society”, in which the world’s valuable resources are used as effectively as possible. Through our activities, we are headed in the right direction in pursuit of this objective.

These results were achieved through utilising waste in RPF (Refuse Paper and Plastic Fuel)\*<sup>1</sup>, raw material for furnaces and thermal recycling, all of which contribute to the process of recycling.

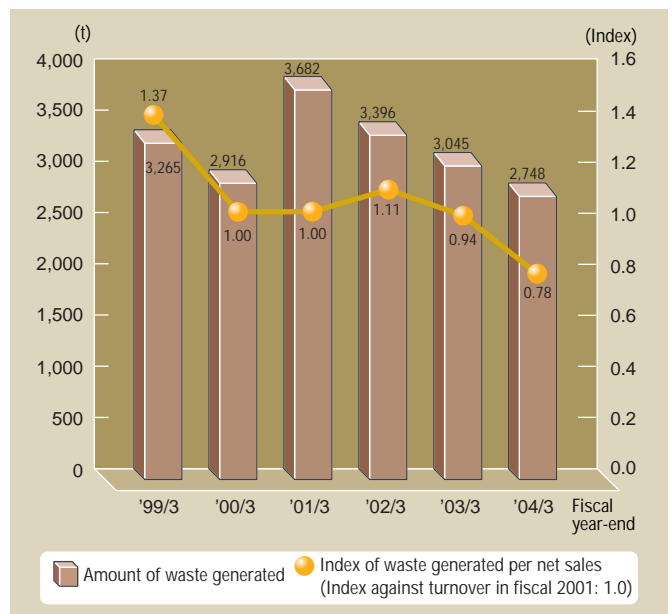
From this point forth, we will maintain our zero emission systems with emphasis on the 3R\*<sup>2</sup> principle, and we will work to develop more recycling technologies and foster relationships with recycling agencies.



\*1 Solid fuel created using refuse paper and plastic. Ground waste may be used as raw material in furnaces in place of coke. Certain waste may be burned and the heat released used as an energy source. This contributes both to the reduction of waste and to recycling.  
 \*2 3Rs: Reduce, Reuse and Recycle

### Amount of Waste Generated/Amount of Waste Generated per Net Sales

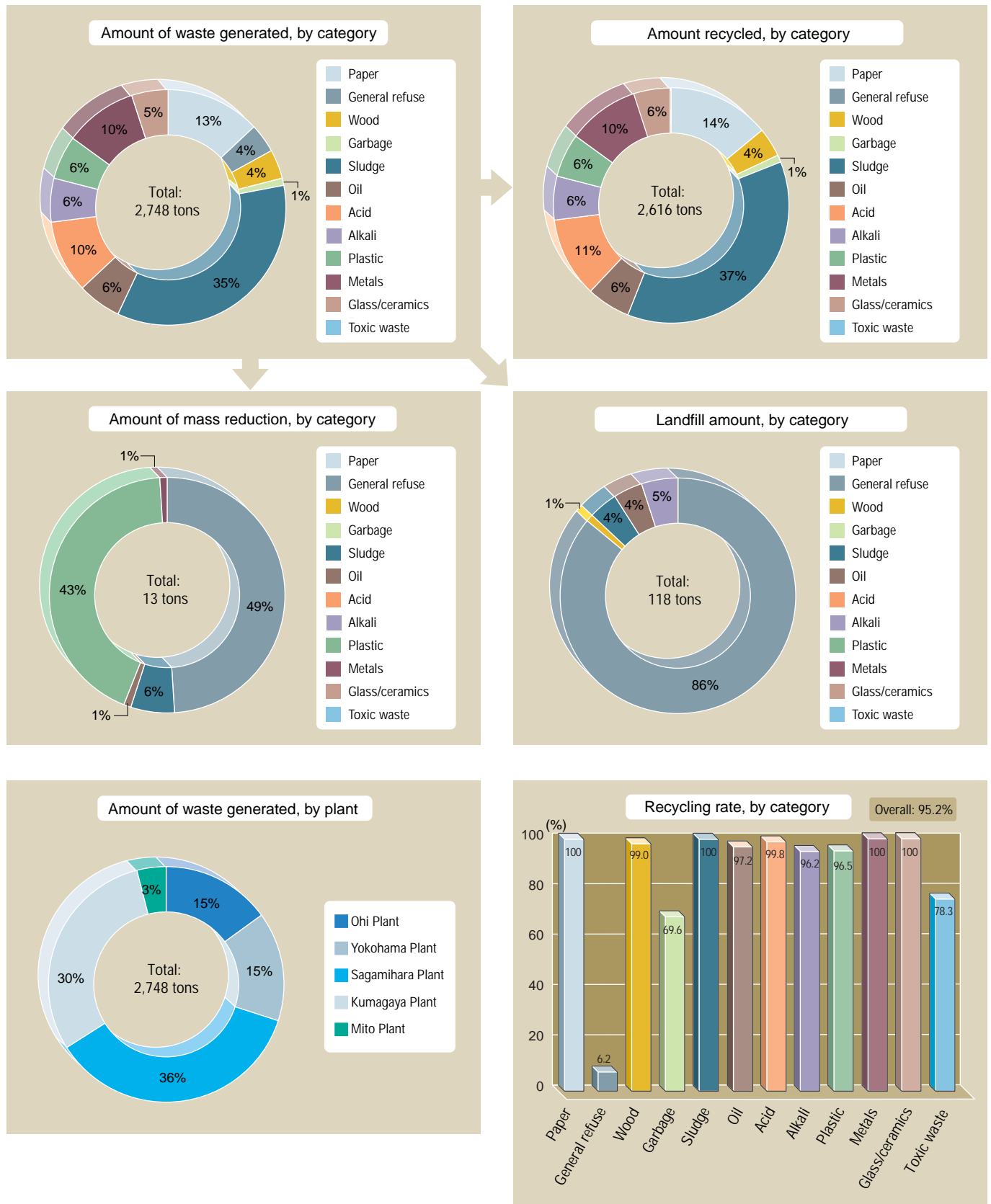
Nikon set a target to reduce waste generation by fiscal 2004 by at least 5% (compared with fiscal 2001 level per net sales) propelled by the momentum created by the 3R principle. We were able to realise our goal, reducing waste generation by 22% in fiscal 2004.



## Breakdown of Waste during Fiscal 2004

The breakdown of Nikon's waste during fiscal 2004 is as shown in the graphs below.

(Figures in the graphs have been rounded up or down to the nearest whole number, so some of the graphs do not total 100%).



## Activities in the Workplace Environment

# Zero Emissions

### Targets

[Zero emissions]  
 • Achievement of zero-emission system for at least one more major manufacturing subsidiary.



Under the Nikon Environmental Action Plan, we established as a priority goal the achievement of zero-emission systems at all manufacturing sites in fiscal 2005, and have been working to reduce waste and promote recycling through a variety of programmes. As a result, we were able to achieve our goal well in advance of our original target date. Nikon's total waste output for fiscal 2004 was 2,748 tons, with a landfill rate of only 0.49%, representing a significant improvement from the 3,045 tons and 1.26% landfill rate of fiscal 2003.

### Examples of recycling

Paper	Recycled paper Paper materials (toilet paper) Solid fuel
Wood	Return to vendors Chips (raw material/compost) Particle boards Thermal recycling
Garbage	Return to vendors Animal feed
Sludge	Fertilizer Cement material Thermal recycling
Plastic	Raw material Reducing agent for blast furnace Thermal recycling
Metals	Metal materials
Glass	Materials Roadbed materials

Nikon plant name	Target to develop zero-emission system
Ohi Plant	Fiscal 2003 (completed)
Yokohama Plant	Fiscal 2003 (completed)
Sagamihara Plant	Fiscal 2003 (completed)
Kumagaya Plant	Fiscal 2003 (completed)
Mito Plant	Fiscal 2003 (completed)

Major manufacturing subsidiaries	Target to develop zero-emission system
Sendai Nikon Corporation	Fiscal 2002 (completed)
Tochigi Nikon Corporation	Fiscal 2004 (completed)
Kurobane Nikon Co., Ltd.	Fiscal 2004 (completed)
Mito Nikon Corporation	Fiscal 2005
Zao Nikon Co., Ltd.	Fiscal 2005

### Waste Sorting and Reduction

Until recently, incineration was the most widely employed method of waste disposal in Japan. However, dioxin — a highly toxic chemical produced during incineration — is discharged into the atmosphere. It is believed that dioxin poses a serious threat to organisms at the top of the food chain — including human beings. With mass consumption accepted as the norm and a constant decrease in available landfill sites, it is more important than ever for us to make the wisest possible use of our valuable resources and reduce waste generation as much as possible.

Nikon is fully aware of the danger of dioxin and excess waste generation, and is making a serious and continuing effort to preserve our environment for our descendants through a range of activities including effective sorting and reduction of waste generation.

In the Nikon Group, a zero-emission system was attained at Nikon Sendai in February 2002, followed by the Mito Plant in September of the same year. By March 2003, the Ohi, Yokohama, Sagamihara and Kumagaya plants had also achieved zero emissions. In March 2004, Tochigi Nikon and Kurobane Nikon completed their zero-emission systems.

**Definition of zero emissions:** No more than 1% of total waste output is disposed of as landfill. Note that this excludes sewerage, household effluent and industrial waste water.

### Recycling Day (Sagamihara Plant)

The 5<sup>th</sup>, 15<sup>th</sup> and 25<sup>th</sup> of each month are designated as Recycling Days. On these days we actively promote the recycling of unneeded resources such as paper (documents, newspapers, magazines, scrap paper, etc.) and plastic. After 12 years of continued efforts, Recycling Day is recognised as a tradition by the employees.



### Reduction and Recycling Promotion (Tochigi Nikon)

Tochigi Nikon established its zero-emission system in fiscal 2004, and has been improving storage and transport efficiency by reducing waste volume. They are also promoting the recycling of sludge and waste plastic.



### Recycling Garden Waste (Mito Plant)

The clippings from the lawn are pulverised and spread over the grounds to help control weed growth.

