

# Reducing Environmental Impact in Production Activities



Due to changes in the forms of our business, the results of our efforts for energy saving, global warming prevention, waste reduction and chemical substances reduction have become difficult to evaluate. From this year, we will analyze the effects of our activities using a basic unit per net sales as a typical index in order to promote effective measures based on these results.

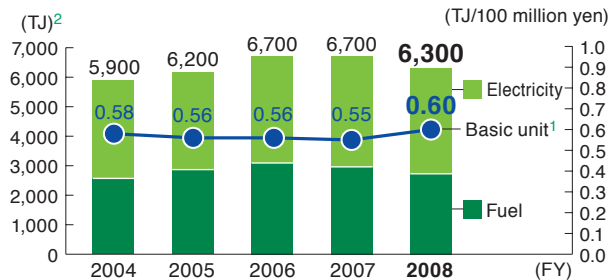
## Energy Saving Activities

In order to reduce the amounts of greenhouse gas emissions, we are implementing energy-saving measures that contribute to reducing electricity and fuel consumption according to the characteristics of each plant.

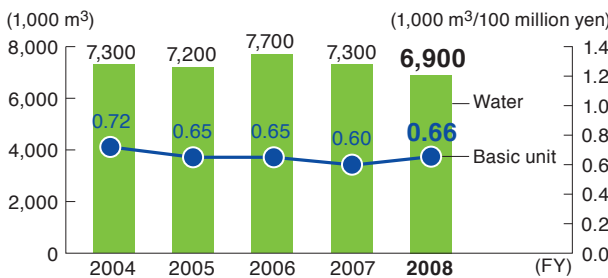
We were able to control the total energy consumption in FY2008.

Moreover, we were able to reduce our water consumption compared to the last fiscal year by implementing thorough measures to conserve water and prevent water leaks from pipes and by recirculating and reusing water in industrial processes.

### Total Energy Consumption



### Water Consumption



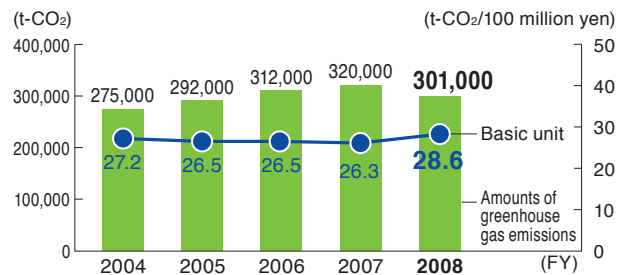
<sup>1</sup> Basic unit: Divided the total energy consumption, water consumption, greenhouse gas emissions, and amount of produced waste by net sales, respectively.

<sup>2</sup> TJ: terajoules (10<sup>12</sup> J)

## Activities to Prevent Global Warming

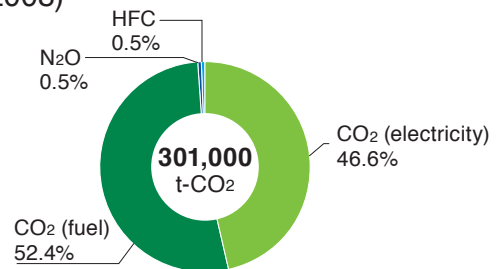
We were able to keep the total greenhouse gas emissions at about the same level as in the last fiscal year. However, the basic unit per net sales, which is an evaluation measure that takes growth in business scale into account, worsened. In order to achieve our targets, an even greater reduction is necessary.

### Amounts of Greenhouse Gas Emissions (CO<sub>2</sub> equivalent)



• Electricity conversion factors used herein were specified by power utility companies. (Electricity conversion factor for FY2007 were used to compute those of FY2008.)

### Breakdown of Greenhouse Gas Emissions (FY2008)



In addition to continuing to reduce the total greenhouse gas emissions, we will analyze the effect of our activities using a basic unit per net sales for evaluating improvements and continue to investigate effective measures.

## Waste Reduction Activities

Among our efforts for waste reduction, we are promoting the reuse and recycling of waste oil. We are also continuing to advance our “zero emissions” efforts in which we seek to recycle 100% of the waste emitted from our plants without simple incineration or disposal as landfill. In addition to efforts that suit the characteristics of each plant, we are also undertaking the “zero emissions” efforts as shared measures at every plant.

### Examples of 3R Activities

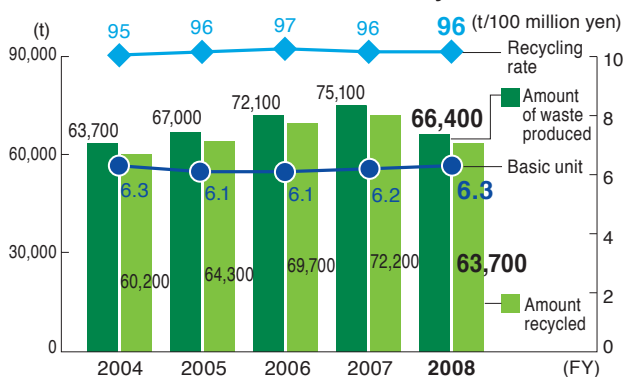
- Suppressed generation of metal scraps, waste oil, wood scraps and other waste
- Expansion of reuse by, for example, using reusable containers instead of pallets and wooden boxes
- Purchase of recycled goods, increase of their use rate and related efforts

As a result of these efforts, our recycling rate in FY2008 reached 96%, which was the same as in FY2007.

Due to the decrease in production volume because of the changing economic conditions and the conclusion of various temporary factors from the previous fiscal year, which included the construction of new company buildings and the renewal of plant facilities as part of business reorganization, the total amount of waste that we produced declined greatly, resulting in a reduction of about 12% from the record of the previous fiscal year to about 66,400 tons.

Moreover, our basic unit per net sales was 6.3 points, which is about the same as last year. Since this basic unit is also an important index for evaluating improvements, we will continue to analyze the results of our efforts and investigate effective measures.

### Amount of Produced and Recycled Waste



### Efforts for Reducing Chemical Substances

As part of our shared efforts for reducing chemical substances, we are working to realize reduction targets set at every site for major VOC, dichloromethane and heavy metals. We are basically on track in moving toward our reduction targets for dichloromethane and cadmium.

We are following up efforts that we believe are necessary to further strengthen reduction measures for major VOC, hexavalent chromium and lead.

### Amounts of Chemicals Subject to Reduction Handled and Emitted

Substance		FY2008	Increase or decrease from FY2007
Major VOC	Toluene (t/year)	328	+7.9%
	Xylene (t/year)	760	-6.4%
	Ethylbenzene (t/year)	301	+5.2%
Dichloromethane (t/year)		50	-18%
Heavy metals	Lead (t/year)	3.6	-43%
	Hexavalent chromium (t/year)	20	+5.3%
	Cadmium (t/year)	0.12	-7.7%

• Amount of major VOC and dichloromethane is the amount emitted, while that of heavy metals the amount handled.

### Major VOC

Reducing major VOC in the paint manufacturing process is important. Due to current conditions, including paint specifications by users for some transportation systems, changes in coating standards because of international regulations, reduction has been difficult. In FY2008, we installed coating robots and adopted electrostatic coating. Our amounts of emissions were almost the same as the previous fiscal year, but we will continue to make systematic efforts to reduce them, including the adoption of powder paints and water-based paints.

### Hexavalent Chromium

Hexavalent chromium is used in numerous special surface treatment processes. We are striving to introduce technologies that do not use hexavalent chromium, but more time is necessary. The amount that we handled increased from the previous fiscal year, but we are continuing to make systematic efforts for chromium-free paints and other possible measures.

### Lead

Lead is included in many paints, so we are working to reduce it by, in particular, switching to lead-free paints. The amount that we handled decreased from the previous fiscal year, and we will continue to make efforts toward the goal of further reducing its use in the future.

### Started Mass Production Operation at the New Painting Shop of Our Consumer Products & Machinery Company

#### Reduction in the Amounts of VOC Emissions

We have installed 12 of the latest coating robots, which are of our manufacture, at the new plant of our Consumer Products & Machinery Company. In addition to automating painting work, we are increasing the transfer efficiency through the adoption of electrostatic coating and striving to reduce the amounts of VOC emissions. Moreover, in order to reduce deficiencies caused by dust adhering to the surfaces being coated, which has been a most important issue for painting plants until now, we are utilizing equipment that incorporates various countermeasures.



Painting robots



New painting shop