# Initiatives to Prevent Global Warming

Activities as a Global Corporate Citizen

Casio's total emissions of CO<sub>2</sub> greenhouse gas in fiscal 2008 amounted to approximately 270,000 tons. Of this, sites in Japan accounted for 43%, while sites outside Japan accounted for 57%.

In order to achieve sustainable growth and help ensure the survival of human civilization developed over the centuries, Casio is working, as a good corporate citizen of the globe, to suppress and reduce greenhouse gases. Casio is mobilizing its intellectual capabilities to achieve whatever it can immediately, reducing greenhouse gases whether directly or indirectly, and continuing its activities to protect the irreplaceable natural environment of the Earth.

### Trends in Energy Conservation Regulations

**Casio Facts** 

To date, Casio has accepted that increases in the amount of energy used are unavoidable as the scale of its business expands, and it has used per-unit targets in its  $CO_2$  reduction activities. Recently, however, Casio is beginning the transition to managing its  $CO_2$  reduction activities in terms of absolute amounts.

This step also reflects upcoming amendments to Japan's Energy Saving Law<sup>+1</sup> and Global Warming Law,<sup>+2</sup> expected to go into effect in fiscal 2010, that require reporting by business unit, notification of  $CO_2$  emissions from commuting and business travel (large businesses), and other changes.

In addition, due to changes in the Tokyo Metropolitan Government's environmental regulations, regulations concerning total CO<sub>2</sub> emissions (large businesses) and energy conservation reporting (small and medium sized offices) are expected to go into effect from 2010.

 \*1 Energy Saving Law = Law Concerning the Rational Use of Energy
\*2 Global Warming Law = Law Concerning the Promotion of the Measures to Cope with Global Warming

### Casio's CO<sub>2</sub> Emissions

Under the Kyoto Protocol, Japan's CO<sub>2</sub> reduction commitment is set at a 6% reduction compared to 1990 total emissions in the first commitment period (2008 to 2012).

Four electrical and electronics industry associations have set a new target of a 35% improvement averaged over the five years of the first commitment period on the basis of  $CO_2$  emissions per unit of actual production.

Casio has also set new reduction targets for sites in Japan during the first commitment period, with 1990 as the base year.

### CO<sub>2</sub> equivalent total emissions (fiscal 2008)



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		Emissions	Share (%)	
1	Logistics	2,184	1.9	
2	Electronic Components (production)*	93,088	79.1	
3	Electronics (production)	7,763	6.6	
4	Offices (including Electronic Components offices)	9,350	7.9	
5	Products (use of products sold in the year)	5,268	4.5	
	Total	117,653	100.0	
*Including 21,486 tons-CO <sub>2</sub> of SF <sub>6</sub> emissions				

### **Overseas**

		Emissions	Share (%)
1	Logistics*	112,557	71.8
2	Electronic Components (production)	0	0.0
3	Electronics (production)	33,569	21.4
4	Offices (including Electronic Components offices)	6,489	4.1
5	Products (use of products sold in the year)	4,190	2.7
	Total	156,805	100.0
*Emissions from logistics are emissions from the logistical			

missions from logistics are emissions from the logistical processes involved in the sale of products. Initiatives at Production Sites and Offices

Casio's CO<sub>2</sub> emissions from production sites (not including SF<sub>6</sub>) and offices are about 130,000 tons. This comprises 47% of total emissions of 274,000 tons. Limited to sites in Japan, the figure is 32.3%. Casio has changed the reduction target for Japan production sites to a 35% reduction compared to the fiscal 1990 level, averaged between fiscal 2009 to 2013, on the basis of CO<sub>2</sub> per unit of actual production. In addition, it has changed the reduction target for production sites outside Japan, which account for 12% of total emissions, to a 30% reduction compared to the fiscal 2005 level by fiscal 2013, on the basis of CO<sub>2</sub> per unit of production. Furthermore, it will change the reduction targets for offices to absolute volumes from fiscal 2009. In addition, Casio will start considering possibilities for the gradual implementation of absolute volume reductions from production sites in the mid-term.



products 5,268 tons-CO<sub>2</sub> of SF6 emissions, logistics 2,184 tons-CO<sub>2</sub>,





»Ref. p14. CO<sub>2</sub> Emissions (Electronics segment, Electronic Components segment)

### The Approach and Achievements of the Hachioji R&D Center

Casio's Hachioji R&D Center, completed in November 2003, is an

R&D building with an outstanding environmentally friendly design. High-efficiency thermal storage tanks, a natural ventilation system, lighting control, and predictive control are used for conserving energy, and energy usage is precisely controlled. In fiscal 2008, excellent results were achieved in meeting the energy saving targets.

> Kiyoshi Kazama Hachioji R&D Center

### Logistics Initiatives

In order to reduce  $CO_2$  emissions from logistics, Casio is undertaking the following three action plans.

### Shortened transport distances

Casio promotes direct shipments from its logistics centers to its customers, in Japan and overseas. From fiscal 2009, it rerouted marine transportation between Thailand and the Eastern United States from the Panama Canal to the Suez Canal.

### Promotion of a shift in modes of transport

In Japan, Casio is actively using rail transport between the logistics and distribution centers.

## Improvements in load efficiency and reductions in amounts transported

Casio is working to improve the packaging design of digital cameras, musical instruments and printers, and to reduce the volume of packaging.

Looking to the future, Casio will assess the  $CO_2$  emissions of the group as a whole, and continue to implement these plans to achieve reductions.

### Marine transportation from Thailand to North America



### CO<sub>2</sub> reduction results in Japan

Casio's fiscal 2008 results showed a reduction of 9.6% in CO<sub>2</sub> emissions compared to fiscal 2007, and a 41.6% reduction compared with the base year per unit of sales.

### CO2 emissions and emissions per unit of sales for logistics in Japan



## Center Earns AAA Evaluation from the Tokyo CO<sub>2</sub> Emission Reduction Program

Casio's participation in this program calls for submitting a plan for CO<sub>2</sub> reductions of 10.4% by fiscal 2010, compared to fiscal 2005. Casio is still midway through implementation, but it has already received the highest AAA evaluation on its interim report, accompanied by an award from the Prefectural Governor in June 2008.

These accolades are not only in recognition of achievements in reducing greenhouse gases, but also represent acclaim for the planned reduction measures and activities in carrying them out. Casio will continue to work to reduce its impact on the environment through constant improvements in order to earn a high final evaluation.

### CO<sub>2</sub> reduction results outside Japan

Casio's fiscal 2008 results showed an increase of 2.4% in CO2 emissions compared to fiscal 2007, and a 5.5% increase compared with the base year per unit of sales. Air freight to Europe had an impact on the increase.

Henceforward, to achieve the targets for fiscal 2010, Casio will reduce air freight, reduce the size of packaging, and reduce transport distances.

### CO2 and emissions per unit of sales for logistics outside Japan



## Reductions in Greenhouse Gases

Casio is pursuing targets for reducing greenhouse gases other than  $CO_2$  in line with the JEITA\* voluntary action target for reducing total emissions of greenhouse gases other than  $CO_2$  to below 2000 levels by 2010. In 2007, Casio's total emissions was about 20,000 tons- $CO_2$  equivalent. Casio aims to reduce this to 7,300 tons- $CO_2$  or less, and is seeking to attain a zero warming factor following its successful development of a substitute gas for SF<sub>6</sub>.

\*JEITA: Japan Electronics and Information Technology Industries Association

#### ●Usage and Emissions of SF<sub>6</sub>, and Equivalent CO<sub>2</sub> Emissions (Japan production sites)

