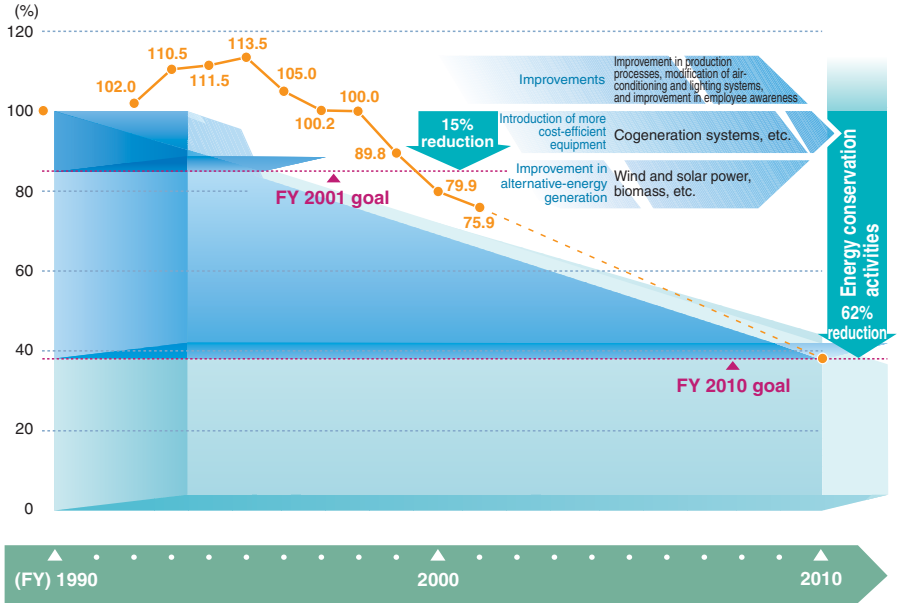
Production (Preventing Global Warming)

Endorsing the Kyoto Protocol, Ricoh promotes a reduction in total greenhouse gas emissions.

In July 2001, Ricoh joined e-mission 55, a signature-collecting campaign that was conducted by companies supporting the Kyoto Protocol. Ricoh was the first leading manufacturer in Japan to sign and make a commitment for the environment. Ricoh is committed to reduce CO_2 emissions 13% from the 1990 level by 2010. In fiscal 2001, Ricoh achieved a 13.8% reduction in total CO_2 emissions from the 1990 level, while Japan itself reduced 12.6%. For the purpose of restricting total CO_2 emissions despite increased production, Ricoh makes further, continuous efforts to tackle the prevention of global warming by reducing total CO_2 emissions per sales unit as a target in fiscal 2010 62% from the 1990 level. Other efforts to be made include a 10% reduction of greenhouse gases other than CO_2 by fiscal 2010 from the 1995 level.

* The Ricoh Group uses greenhouse gases other than CO_2 (i.e., methane, carbon monoxide, HFC, PFC, and SF_6) at its production sites. By fiscal 2004, more products that use these gases are expected to be manufactured, but total emissions will be limited to within a 1% increase from fiscal year 2000 level.

Scenario of Ricoh's Reduction in CO_2 Emissions up to FY 2010 (Reviewed by BVQI [4])



Ricoh is aiming at a 13% reduction in total CO_2 emissions from its production and nonproduction sites from the 1990 level by 2010. Converted into CO_2 emissions per sales unit and taking business expansion into consideration, this reduction is calculated to be 62%. (This is a revision of the target value set in fiscal 1998, i.e., 56%.) The fiscal 2001 goal was a 15% reduction, but Ricoh achieved a 24.1% reduction in that term. In calculating CO_2 emissions per sales unit, a CO_2 emission coefficient set in the environmental assessment program issued in 1996 by the Environment Agency is used.

Changes in Ricoh's Energy Consumption

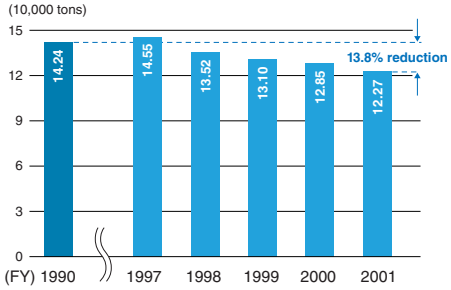
(Reviewed by BVQI [5])

	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001
Kerosene (kℓ)	11,224	11,056	10,054	7,811	6,624
Heavy oil A (kℓ)	4,948	3,763	205	171	183
Town gas (1,000 m^3)	4,027	4,318	8,474	11,958	11,809
Electric power purchased (1,000 kWh)	257,821	247,224	240,883	228,935	222,169

Energy Consumption in Japan

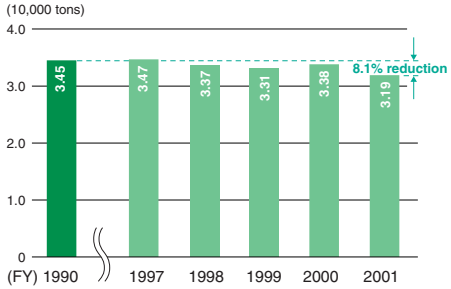
Ricoh's Energy Consumption (CO_2 conversion[1])

(Reviewed by BVQI [6])



Energy Consumption at Production Sites[2] in Japan Other than Ricoh's (CO_2 conversion[1])

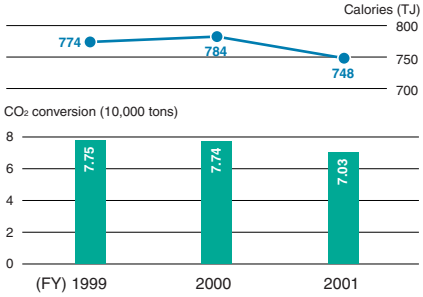
(Reviewed by BVQI [7])



Energy Consumption in the Americas, Europe, and China and Taiwan

Energy Consumption at Production Sites (CO_2 conversion* and calories)

(Reviewed by BVQI [8])



1. Calculated using a CO_2 emissions coefficient taken from an examination on greenhouse gas emission calculations issued by the Ministry of the Environment
2. From fiscal 2000 and thereafter, more data have been collected from Ricoh Unitechno Co., Ltd., and Ricoh Elemex Co., Ltd. The figures are different from those listed in the *Ricoh Group Sustainability Report 2001*.

* Calculations were made based on the CO_2 conversion coefficients of the countries in each region. There is no production site in the Asia-Pacific region.

Japan

Installation of Energy-Saving Equipment

To update the air-conditioning systems at its manufacturing plants, Ricoh Microelectronics Co., Ltd., conducted segment environmental accounting to compare an ice thermal storage/chilled water system with an absorption-type chilled/hot water generation system and determine which is better for environmental conservation and cost reduction. From its results, Ricoh Microelectronics decided to introduce the ice thermal storage/chilled water system because, although the initial cost of the system was ¥34.45 million more than that of the absorption-type system, it would reduce running cost by 30% and CO_2 emissions by 60%.

Estimated Costs Efficiency of an Ice Thermal Storage/Chilled Water System in Environmental Conservation (Segment Environmental Accounting)

Costs			Effects				EI value (t/100 million yen)
			Economic benefits		Effect on environmental conservation		
Item	Main costs	Amount	Item	Amount reduced	Item	Amount reduced	
Business area costs	Investment	34.45 (millions of yen) (Difference from the conventional method)	Heat and light expenses	146 (millions of yen)	CO_2 emission	15,015 (t)	8,884.6*

Effects are calculated using the statutory depreciation period for equipment.
* Calculated from total investment (¥169 million)

The Americas

Reducing Electricity Consumption by Half

When the cost of electricity rose from 7 cents/kWh to 12 cents/kWh in California, Ricoh Electronics, Inc., (REI) in the United States began to systematically promote energy conservation activities by identifying which locations used the most electricity. It accomplished this by examining the electricity bills of all relevant facilities.

REI identified 78 problems that were associated with electricity consumption. Sixty of them were solved by installing smaller air compressors and relocating air conditioner switches so that the air conditioners can be turned on or off as frequently as needed. As a result, REI successfully reduced its electricity consumption by half, cutting its electricity bills by $26,195 in three months.

China and Taiwan

Zero-Electric-Power-Consumption Production Line

Ricoh Asia Industry Ltd. (RAI) in China accepts ideas from employees from time to time on how to reduce energy consumption. Some of the improvements that resulted from this include the introduction of a manually-moving production line, which improves work efficiency and aims at eliminating electricity consumption.

Manually operated production line for printers (RAI)

Cell Production

Smaller production lots are more suitable for cell production, which is assembled by a single person from start to finish.

One idea from an employee led to “a revolving table production system” at Ricoh Component (H.K.) Ltd., in China. Each product is fully assembled with one complete turn of the table. The number of products manufactured is automatically calculated by a counter set under the table. This is also a Zero-Electric-Power-Consumption system.

Revolving table production system
(Ricoh Component (H.K.) Ltd.)

Hybrid Production Line

Taiwan Ricoh Co., Ltd., integrated its automated main production line and manual subline into a hybrid production line. This improved the line’s production efficiency, ease of operation, and energy consumption and reduced the amount of workspace needed.

Hybrid production line (Taiwan Ricoh)