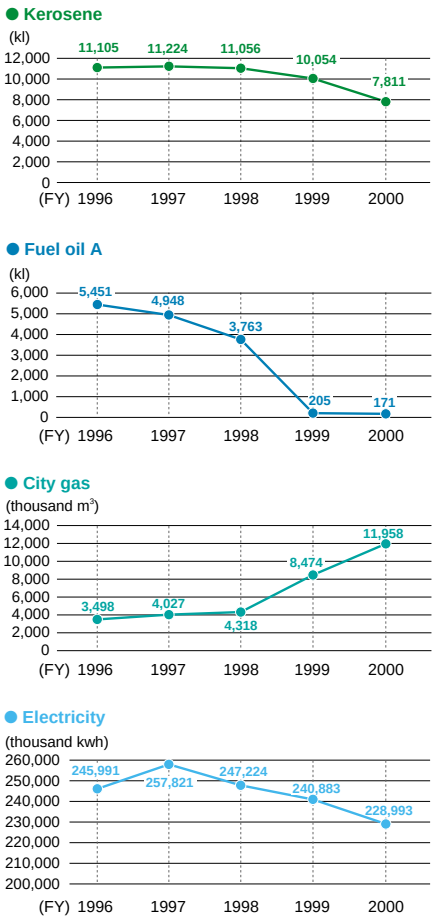
Production (Energy Conservation)

The Ricoh Group conducts a variety of energy conservation activities to reduce the emission of CO_2, which is a greenhouse gas.

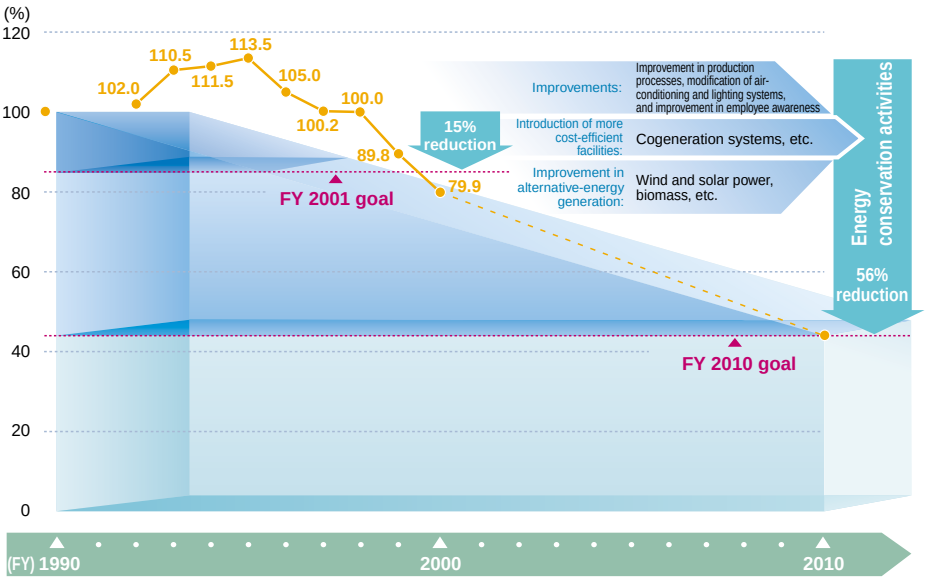
One of its activities includes a Groupwide distribution of case studies on energy conservation at business sites[1] to generate more effective results. Furthermore, using Eco Balance and LCA-based environmental impact analyses[2], more efficient systems, including cogeneration systems, are introduced to business sites that have higher CO_2 emissions as part of their energy conservation activities, taking efficiency and the economic benefits of reducing environmental impact into consideration. These activities were near completion in fiscal 2000, and more improvements are planned for the future. New areas of energy conservation include a solar power generation system[3] and green power generation system[4].

1. See page 30.
2. See pages 21–22.
3. Adopted for the "cart line" in November 2000
4. Scheduled to be introduced in 2002

Changes in Major Energy Consumption in Ricoh



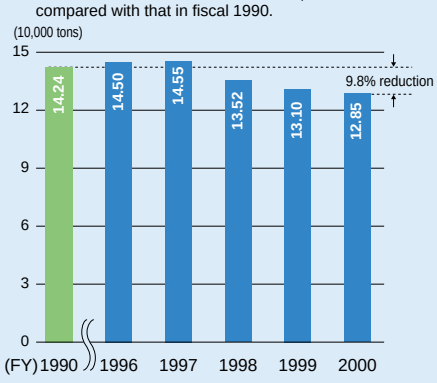
Reducing CO_2 Emissions by 2010



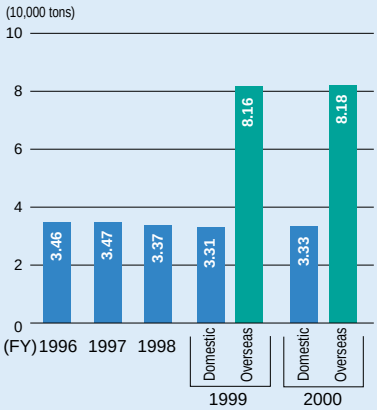
Appropriate for its management scale, Ricoh is aiming for a 56% reduction in CO_2 emission per sales unit in fiscal 2010, compared with that in fiscal 1990. In line with this goal, the environmental action plan established in 1998 aims at a 15% reduction by fiscal 2001. In fiscal 2000, Ricoh achieved a 20.1% reduction. CO_2 emissions per sales unit is calculated using a CO_2 emissions coefficient from an environmental assessment program issued in 1996 by the Environment Agency so that factors other than Ricoh's independent activities are eliminated.

Ricoh's Energy Consumption (CO_2 conversion*)

CO_2 was reduced 9.8% in fiscal 2000, compared with that in fiscal 1990.



Energy Consumption at Production Sites Other than Ricoh's (CO_2 conversion*)



* Calculated using a CO_2 emissions coefficient taken from an examination on greenhouse gas emission calculations issued by the Ministry of the Environment

Cart Line to Achieve Zero CO_2 Emissions

To reduce the amount of energy needed by its production lines, Ricoh Unitechno developed a new manufacturing line consisting of carts chained to one another in a single line. This new system only needs a single 400-W motor to run while conventional lines need one that is in the 5 kW–6 kW range. Ricoh Unitechno aims at reducing the CO_2 emitted from its production lines to zero by introducing a solar power generation system. The company also shares its know-how and offers a consulting service to others.

Green Power Purchased in the Form of Wind

Ricoh concluded an agreement with Japan Natural Energy Company (JNEC) Limited to join JNEC's green power system and purchase 1 million kWh annually for 15 years, starting from 2002. Accordingly, the company's annual CO_2 emissions are to drop approximately 360 tons, or 0.3% of Ricoh's total emissions. The green power system enables any company that wishes to use natural energy to acquire Green Power Certification as a wind power user by paying for a comparatively expensive wind electricity cost to JNEC as a consignment fee.

Green Power Wind logo

Cogeneration Systems

The Numazu Plant, Research Development Center, and other sites that consume copious amounts of electric power began using cogeneration systems. Half the Numazu Plant's power supply, which was once provided solely by power companies, is now complemented by an in-house generation system using city gas. Furthermore, waste-heat produced by the generator is effectively used to cut total annual CO_2 emissions 3,000 tons.

Cogeneration system at the Numazu Plant

■ Examples of Beneficial Energy Conservation Activities at Business Sites

Because the Ricoh Group regards energy as an important resource, the Group's business sites undertake beneficial energy conservation activities, aiming at producing maximum effect using the minimum amount of energy. The Group also believe that sharing the know-how that the business sites have gained will improve the energy conservation efforts of the Group as a whole.

Elimination of Climatic Factors

Most plants in the Ricoh Group apply adiabatic paint to their roofs so that the building can be cooled more efficiently and, in the process, save energy that would have been used for air-conditioning in the summer. Ricoh Optical Industries, which is located in Iwate Prefecture—an area where the temperature can drop to –7°C in winter—adopts double resin window frames that have more efficient adiabatic effect.

Roof painted with adiabatic paint

Double windows with a resin window frame

Energy Conservation of Fluorescent Lighting

Reflective sheets with aluminum evaporating film were attached to fluorescent lamps, making them approximately twice as bright as before. As a result, only half the number of fluorescent lamps is now needed. An inverter control on the lighting system reduced power consumption approximately 20%.

Solar- and Wind-Powered Generators

The Atsugi Plant equipped its parking lot lighting facility with solar- and wind-powered generators. There were no significant costs involved in the installation since no wiring was required. The new system saves ¥480,000 in electricity bills per year. Also, 11.4 tons in CO_2 emissions were cut.

Improve Air-Conditioning Efficiency by Lowering the Ceiling

As part of its plant renovations, Ricoh Optical Industries lowered the ceiling of the building to improve the efficiency of its air-conditioning. This also resulted in the need for fewer fluorescent lamps.

Hybrid Vehicles and Natural-Gas Vehicles

Most Ricoh Group plants use hybrid vehicles as well as natural-gas vehicles. The Atsugi Plant obtained four natural-gas vehicles and six hybrid vehicles. The plant is equipped with its own natural-gas station.

Natural-gas station at the Atsugi Plant