

Environmental Action Plan and Environmental Management Goals Starting in Fiscal 2002

Based on a new environmental action plan, the Ricoh Group strives to effectively reduce its environmental impact and benefit from environmental conservation activities.

The Ricoh Group has drawn up a medium-term environmental action plan for activities starting from fiscal 2002 through fiscal 2004. This action plan was prepared with priority given to dealing with processes that suffer from more serious environmental impact first by identifying the environmental impact of each process of the Group's business activities in fiscal 2000 and fiscal 2001. The Group is setting goals to achieve the Passive Stage¹, Proactive Stage², and Responsible Stage³, corresponding to the items of the action plan. Based on this plan, the Ricoh Group aims at reducing the environmental impact of all processes, such as procurement, production, transportation, marketing,

after-sales service, use, and recycling and plans to achieve this goal by using the method with the highest economic efficiency. As for global warming, an issue that attracts the world's attention, the Group set three major goals as follows.

1. Dealing with regulations
2. Voluntarily taking measures to reach higher goals in conserving the global environment
3. Realizing environmental conservation and creating economic benefits at the same time

(1) Prevent Global Warming

To reach the goal of the Kyoto Protocol, the Ricoh Group is making sincere efforts to reduce total CO₂ emissions at its business sites and CO₂ emitted by customers.

Reduce greenhouse gases generated at Ricoh business sites¹

Total CO₂ emissions generated at production sites and nonproduction sites will be reduced 13% and those in terms of the CO₂ emissions per sales unit 62% by fiscal 2010 (Ricoh only², compared with fiscal 1990). Accordingly, the Ricoh Group is planning to reduce 20% CO₂ emissions per sales unit in fiscal 2004 from that in fiscal 2000. Specific measures include improving processes; introducing highly efficient facilities, including cogeneration systems;

and using new types of energy. The costs to launch new businesses will be covered by the savings gained from the improved efficiency of existing businesses. Also, greenhouse gases other than CO₂ will be reduced 10% by fiscal 2010, compared with fiscal 1995. With this in mind, the Group will ensure that emissions increase by no more than 1% by fiscal 2004, compared with fiscal 2000.

Reduce CO₂ emissions by energy-saving products³

The Ricoh Group is making sincere efforts to reduce the amount of power products consume while in operation or on standby. If everyone all over the world uses the Ricoh Group's products, CO₂ emissions would drop approximately 45 thousand tons (reduced 56% of fiscal 2000 figures) in fiscal 2004.

1. See page 35.
2. See table on next page for goals of Ricoh Group companies other than Ricoh.
3. See page 47.

(2) Making the Recycling Business Profitable

The Ricoh Group sets goals for marketing recycled copiers in its Green Solution¹, which is the Group's marketing strategy scheme, and improves the efficiency of collection, recycling, and recovery. Thus, the Ricoh Group aims at making its recycling business profitable² by the end of fiscal 2004.

1. See page 42.
2. See page 50.

(3) Reducing the Use of Chemical Substances*

The Ricoh Group starts marketing new products abolishing the use of lead, hexavalent chromium, cadmium, and polyvinyl chloride, in fiscal 2004 and thereafter.

*See page 32.

Estimated Costs and Effects of Reduction in CO₂ Emissions at Business Sites (Segment Environmental Accounting)

(Unit: millions of yen)

Costs		Effects				El value (t/100 million yen)
Item	Amount	Economic benefits		Effect on environmental conservation		
Energy-saving investments (105 cases)	1,608.8	Item	Amount	Item	Amount reduced (t)	2,425.3
		Reduction in heat and light expenses	1,640.8	Reduction in CO ₂ emissions	39,019.4	

* Costs are calculated from the investment plan. Effects are calculated using the depreciation period for equipment.

Estimated Costs and Effects of Reduction in CO₂ Emissions from Energy-Saving Products (Segment Environmental Accounting)

(Unit: millions of yen)

Costs			Effects			EI value (t/100 million yen)
Item	Main costs	Amount	Economic benefits		Effect on environmental conservation	
Research and development	Development of energy-saving units	600	Corporate effect	Customer effect	Reduced CO ₂ emissions 138,265 t	15,227
	Molds, jigs, and parts	308	Effect on gross margin 18,160	Reduced electricity expenses 8,908		

* Costs are estimated from past development costs. Effects are estimated from the number of products scheduled to be marketed between fiscal 2002 and fiscal 2004.

Figures for reduction in heat and light expenses and CO₂ emissions are estimated from the amount reduced over three years, from fiscal 2002 to fiscal 2004, on the assumption that the machine is used eight hours a day, twenty days a month.

Estimated Costs and Effects of Reduction in Chemical Substances at Business Sites (Segment Environmental Accounting)

(Unit: millions of yen)

Segment Environmental Accounting						(Unit: millions of yen)
Costs		Effects				El value (t/100 million yen)
		Economic benefits		Effect on environmental conservation		
Item	Amount	Item	Amount	Item	Amount (t)	
Development expenses	294	Avoidance of risk in soil and groundwater contamination	900	Dichloromethane used	120.3 → 0	11.8
Investments	40					
Personnel expenses	684	Reduced production loss	5.19			
Other costs	1.5					
	1,019.5		905.19			

The Ricoh Group Environmental Action Plan (fiscal 2002—fiscal 2004)

	Goals	Environmental Management Goals* (Scheduled for fiscal 2004)
1. Improving environment-friendly functions and promoting technological development	1) Promote the use of energy-saving technologies in products (See page 47.) • Achieving energy-saving standards	Responsible stage
	2) Promote pollution prevention measures with regard to products (See pages 32 and 49.) • Completely eliminate the use of environmentally sensitive substances (i.e., lead, hexavalent chromium, polyvinyl chloride, and cadmium) in products • Reduce noise levels at least 2 dB (weighted average value for the number of units sold out of the number of units marketed in fiscal 2000) • Observe Ricoh standards that cover environmentally sensitive substances emitted by products, including styrene, formaldehyde, ozone, and dust	Responsible stage
	3) Develop technologies that contribute to reducing the environmental impact in paper production (See page 32.) • Develop practical application technologies for alternative paper or rewritable paper	Responsible stage
2. Reaching the resource conservation rate by improving the productivity of products and materials as well as profitability in the recycling business	1) Improve the amount of reusable parts used by at least 20 times (compared to fiscal 2000 in Japan). (See page 50.)	Responsible stage
	2) Improve collection of the number of used products and toner cartridges at least 10% (the Ricoh Group as a whole, compared to fiscal 2000 figures) (See page 50.)	Responsible stage
	3) Increase the number of resource-recirculating-type products marketed by a factor of 20 or more (Japan, compared to fiscal 2000 figures) (See page 50.)	Responsible stage
	4) Improve the resource recovery rate of used products and toner cartridges (See page 50.) • The resource recovery rate of both products and toner cartridges rises to 98%. (Japan) • The resource recovery rate of both products and toner cartridges increases to 85%. (Europe) • The resource recovery rate of products rises to 95% and that of toner cartridges rises to 100%. (The Americas) • The resource recovery rate of products increases to 85% and that of toner cartridges rises to 90%. (China and Taiwan) • The resource recovery rate of products increases to more than 85% and that of toner cartridges rises to 85%. (The Asia-Pacific region)	Responsible stage
3. Environmental conservation activities at plants and offices	1) Reduce the amount of energy used (See page 35.) • Reduce CO ₂ emissions at plants and offices 62% by fiscal 2010 in terms of CO ₂ emissions per sales unit and 13% in terms of total amount emitted (Ricoch in Japan, compared to fiscal 1990 figures) • Reduce CO ₂ emissions 20% per sales unit (all Ricoh business sites in Japan, compared to fiscal 2000 figures) • Reduce CO ₂ emissions 2% (the Ricoh Group in Japan, compared to fiscal 2000 figures) • Reduce the amount of energy used 20% per sales unit (Ricoch Group manufacturing subsidiaries outside Japan, compared to fiscal 2000 figures)	Responsible stage
	2) Promote pollution prevention (See page 37.) • Reduce environmentally sensitive substances (Ricoch Group's target substances for reduction) 8% of those used and 50% of those emitted. (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries other than those in Japan, compared to fiscal 2000 figures) • Completely eliminate the use of dichloromethane (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries other than those in Japan) • Restrict the increase of greenhouse gas (other than CO ₂) emissions to a maximum of 1% (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries outside Japan, compared to fiscal 2000 figures) • Reduce the emissions of ozone-depleting substances 60% (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries outside Japan, compared to fiscal 2000 figures)	Proactive stage
	3) Promote resource conservation and recycling (See page 39.) • Reduce generated waste at least 13% (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries outside Japan, compared to fiscal 2000 figures) • Improve the waste recycling rate to 90% (Ricoch Group nonmanufacturing subsidiaries in Japan) • Reduce water consumption at least 10% (Ricoch and Ricoch Group manufacturing subsidiaries in Japan, and Ricoch Group manufacturing subsidiaries other than those in Japan, compared to fiscal 2000 figures) • Reduce paper purchase at least 10% (Ricoch manufacturing subsidiaries and Ricoch Group manufacturing and nonmanufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries outside Japan, compared to fiscal 2000 figures)	Responsible stage
4. Promoting green partnerships	1) Promote green marketing (See page 41.) • Improve the recycled pulp use rate for paper products to 60% (Japan)	Proactive stage
	2) Promote green procurement (See page 33.) • Identify environmental impact at suppliers to set goals for reducing impact (Ricoch Group purchasing divisions) • Completely eliminate designated environmentally sensitive substances used in the supplier's manufacturing process (Ricoch Group purchasing divisions)	Responsible stage
	3) Promote green purchasing (See page 34.) • Improve the green purchasing rate (for office supplies, etc.) to 100% (the Ricoh Group in Japan)	Proactive stage
5. Improving the environmental management system	1) Establish a new environmental accounting system (See page 73.)	Responsible stage
	2) Expand areas and locations to collect environmental impact information (See page 23.)	Responsible stage
6. Promoting environment-conscious social contribution activities	1) Promote forest conservation activities to preserve the ecosystem (the Ricoh Group) (See page 61.)	Proactive stage

*See page 17 for the definitions of responsible stage and proactive stage.