Ricoh Group's Corporate Environmental Accounting in fiscal 2006

Costs refer to expenditure on environmental conservation activities (in a broad sense), and consist of environmental investments and environmental costs (in a narrow sense).

● Environmental investments
These investments correspond to "investments in fixed assets" in financial accounting. The amount of environmental investments is distributed as environmental costs over the service life of fixed assets in accordance with depreciation procedures.

● Environmental costs
These environmental costs correspond to the "period cost" in financial accounting. (Depreciation cost of environmental investments is included.)

Environmental conservation costs are classified according to "Categories corresponding to business activities" defined in the "Environmental Accounting Guidelines 2005" of the Japanese Ministry of the Environment.

Cost unit: ¥100 million (Exchange rate: $1 = ¥117.02 €1 = ¥150.08)

Item	Costs			Economic Benefits		
	Environmental Investments	Environmental Costs	Main Costs	Monetary Effects	Category	Item
Business area costs	7.5	26.5	Pollution prevention cost ..... ¥190 million Global environmental conservation cost ..... ¥570 million Resource circulation cost ....¥1,890 million	–1.6	a1	Energy savings and improved waste processing efficiency
				63.3	b	Contribution to value-added production
				12.3	c	Avoidance of risk in restoring environments and avoidance of lawsuits
Upstream/ Downstream costs	0.1	83.4	Cost of collecting products, turning recycled materials into saleable products, and so forth	194.0	a1	Sales of recycled products, etc.
				[25.1]	S	Reduction in society's waste disposal cost
Administration costs	0.8	42.7	Cost generated by the division in charge of environmental conservation; cost to establish and maintain an environmental management system	17.1	b	Effects of media coverage and environmental education
Research and development costs	2.4	15.6	Research and development costs for environmental impact reduction	52.9	a2	Contribution to gross margin through environmental research and development
				[1.4]	S	Reduction in user's electricity expenses thanks to an improved energy saving function and product performance
Social activity costs	0.1	13.6	Costs of preparing environmental reports and advertisements	7.9	b	Publicity from environmental advertisements, etc.
Environmental remediation costs	0.3	0.7	Costs of restoring soil and environment-related reconciliation	—	—	None
Other costs	0.3	0.3	Other costs for environmental conservation			
Total	11.4	182.7		345.9	Sum of a1: 192.3, a2: 52.9, b: 88.3, and c: 12.3.	
				26.6	Total S's	

a1: Substantial effect
a2: Estimated substantial effect
b: Secondary effect
c: Incidental effect
S: Social effect (Customer benefits)

• **Environmental investment rate: 1.3%**
[= environmental investment (11.4)/total investment (858)]

• **Environmental R&D cost rate: 1.4%**
[= Total environmental R&D cost (15.6) /Total R&D cost (1,149)]

Economic benefits refer to benefits that were obtained by environmental conservation activities and which contributed to the profits of the Ricoh Group in some form. Economic benefits are classified into five categories as follows:

● Substantial effect (a1)
This means economic benefits that fall into either of the following two cases:

1) Cash or cash equivalent is received as a benefit. This corresponds to "realized gain" in financial accounting.
2) The amount of savings in such costs that would have occurred if environmental conservation activities had not been conducted. This amount is not recognized in financial accounting.

● Estimated substantial effect (a2)
Substantial contributions to sales or profits whose value cannot be measured without estimation. They include improving the environmental performance of a product which leads to an increase in sales or profit.

● Secondary effect (b)
The expected amount of contribution in the case that expenditure on environmental conservation activities is assumed to have contributed to profits for the Ricoh Group. If environmental conservation costs are assumed to be costs that are indispensable for the Ricoh Group to conduct its operations, for example, it can be safely said that such cost contributes to profit in some form. In practice, out of the effects generated by environmental conservation activities, those which do not appear as an increase in sales or profit or a reduction in costs are represented in monetary value calculated by the formula specified for each item.

● Incidental effect (c)
Expenditure on environmental conservation activities can help avoid the occurrence of environmental impact. Therefore, it can be safely said that the expenditure contributed to the avoidance of such damage of environmental impact that would have taken place without the expenditure. In practice, the incidental effect is computed by multiplying the expected amount of damage by an occurrence coefficient and impact coefficient.

● Social effect (S)
Social effect means such effect that is generated by expenditure on environmental conservation activities not for the Ricoh Group but for society. In practice, social effect means the amount of reduction in the expense of electric power and waste disposition that is enabled through environmentally-friendly products for customers.

* For the computation formulas, see page on the right.

Effect on environmental conservation means the effect of activities to prevent and control the occurrence of environmental impact and to eliminate and remove such environmental impact. The Ricoh Group reports the amount of reduction in the emission of substances with serious environmental impact for the current year as compared with the previous year (=emissions in the previous year – emissions in the current year).

● Conversion Coefficient
This is a weighting coefficient that is used in identifying environmental impact by totaling and weighting various types of environmental impact expressed in different units (CO_2 = 1). Values of coefficients are based on the Swedish EPS method.

● Converted Quantity of Reduction/Converted Quantity of Impact
Converted quantity of reduction is obtained by multiplying environmental impact reduction by conversion coefficients and converted quantity of impact by multiplying total environmental impact by the coefficients. In other words, these values refer to the degree of seriousness of such environmental impact reduction and total environmental impact that are converted into figures in t-CO_2.

● Social Cost Reduction Values/Social Costs
Social cost reduction values represent financial figures obtained by converting the converted quantity of reduction into money and social costs by converting the converted value of impact into money. Computations are made using the factor of 108 Euro/t-CO_2 of EPS Ver2000.

This is the quantity of substances with environmental impact emitted by the Ricoh Group in the current fiscal year.

Effect on Environmental Conservation				Environmental Impact			
Environmental Impact Reduction (t)	Conversion Coefficient	Converted Quantity of Reduction	Social Cost Reduction Values	Total (t)	Conversion Coefficient	Converted Quantity of Impact	Social Costs
Environmental impact reduction at business sites							
CO_2 ..... –4,189.1	1.0	–4,189	–0.68	CO_2 317,120	1.0	317,120	51.40
NOx ..... –5.0	19.7	–98	–0.02	NOx 179	19.7	3,528	0.57
SOx 1.1	30.3	33	0.01	SOx 9	30.3	279	0.05
BOD ..... –3.1	0.02	–0.1	–0.00	BOD 9	0.02	0	0.00
Final waste disposal amount 124.3	104.0	12,926	2.10	Final waste disposal amount 172	104.0	17,848	2.89
PRTR substance emissions	(Ricoh standards per substance)	1,017	0.16	PRTR substance emissions	(Ricoh standards per substance)	25,137	4.07
Environmental impact reduction through products CO_2 ..... 3,806.3 (t) NOx ..... 3.1 (t) SOx ..... 2.5 (t) Final waste disposal amount ··· 31,430 (t) Calculation for companies in Japan only							
		9,688	1.57			363,913	58.99

Data coverage
● **Companies: 93 Ricoh Group companies.** See page 74.
● **Period: From April 1, 2006 to March 31, 2007 (for costs and total environmental impact).**
* Social cost is calculated using the factor of 108 Euro/t-CO_2 (16,209 yen/t-CO_2).
* Environmental impact reduction represents the difference between figures in fiscal 2005 and fiscal 2006.

(1) Formula of Substantial Effect

Reduction in heat, light, and water cost	Heat, light, and water expenses in the previous year – heat, light, and water expense in the current year
Reduction in waste disposal cost	Waste disposal expenses in the previous year – waste disposal expenses in the current year
Sales value of valuable materials	Sales value of valuable materials sorted from waste
Sales of recycled products and parts	Sales of recycled products and parts
Subsidies	Environmental subsidies from the government, etc.

(2) Formula for Estimated Substantial Effects

R&D profit contribution amount	Product gross margin × gross margin contribution rate calculated using environmentally-friendly points

(3) Formula for Secondary Effects

Contribution to value-added production	(Production output – raw material costs) × business area cost/manufacturing costs
Effects on media coverage	Area of newspaper advertisement/newspaper page area × advertisement cost per page
Effects of environmental education	Number of people attending internal environmental education seminars × seminar fee for outside participants
Publicity from environmental advertisements	Number of visitors to environmental Web site × unit price of the sustainability report

(4) Formula of Incidental Effects

Amount of incidental effects	Standard amount × occurrence coefficient × impact coefficient x continuance coefficient
Items to be calculated	Areas of improvement to prevent pollution
Standard amount	Amount set aside for lawsuits, suspension of operations, and restoration
Coefficient	Occurrence coefficient and impact coefficient to be set according to occurrence frequency and affected extent

(5) Formula for Social Effects (economic benefits from use of products by customers)

Total electric power	Electric power consumption of a product × number of products sold
Electric power cost reduction effect	(Total electric power for old models – total electric power for new models) × electric power unit cost
Waste disposal cost reduction effect	(Weight of collected products – weight of final waste) × outside disposal unit cost