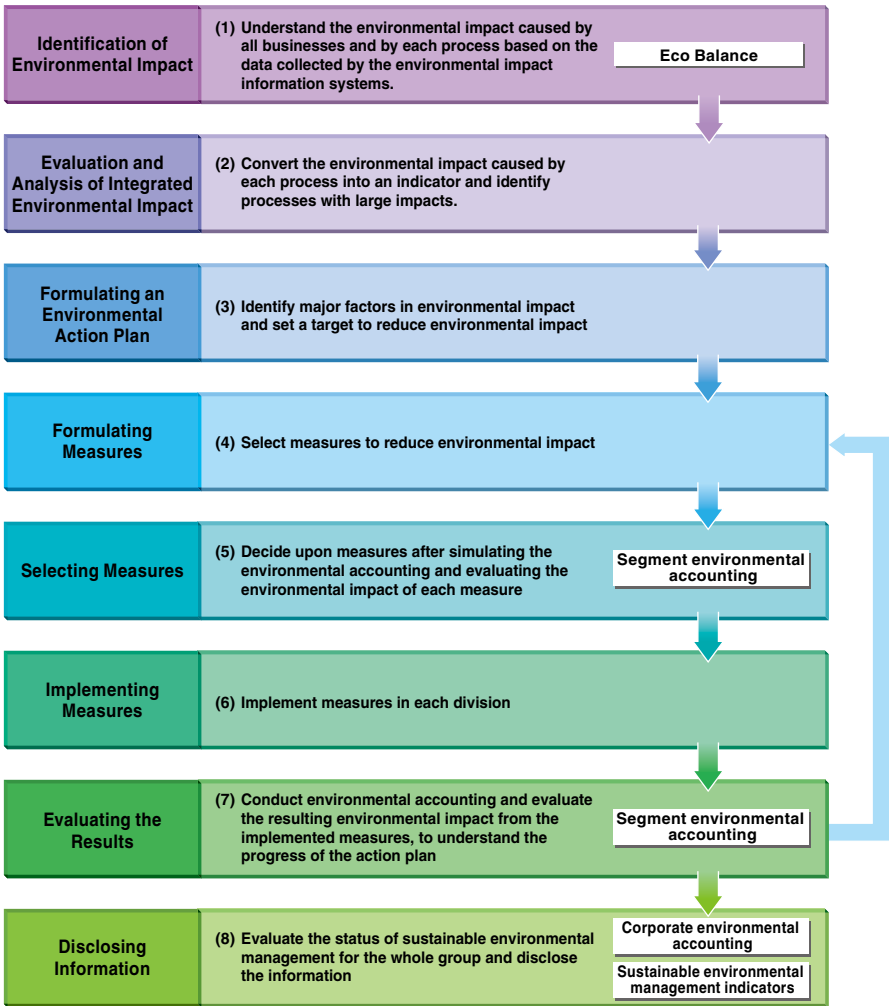


Action plans are mapped out and sustainable environmental management is evaluated using Eco Balance, integrated environmental impact, and environmental accounting as tools.

The Ricoh Group believes that the environmental impact generated by advanced nations must be reduced to one-eighth the fiscal 2000 levels by 2050 (described in the Long-Term Environmental Vision<sup>1</sup>). For our part, we aim to reduce total lifecycle CO<sub>2</sub> emissions by the Group and the input of new resources as well as the impact of chemical substances on the environment by 87.5% (declared in the 2050 Long-Term Environmental Impact Reduction Goal<sup>2</sup>). We pursue these targets by improving the level of sustainable environmental management—that is, by promoting environmental conservation activities that reduce environmental impact and enhance economic effects at the same time. To realize this, an appropriate scheme must be developed so that suitable action plans can be mapped out to reduce the environmental impact caused by all our businesses, and that effective measures can be examined and implemented, with the results properly evaluated and disclosed. At the Ricoh Group, Eco Balance<sup>3</sup>, integrated environmental impact<sup>4</sup>, and environmental accounting<sup>5</sup> serve as tools to operate the PDCA cycle for improvement of sustainable environmental management and for evaluation of action plans, measures and activity results.

1. See page 17. 2. See pages 17 and 18. 3. See pages 62 and 63.  
4. See page 61. 5. See pages 61 and 65.

Eco Balance and integrated environmental impact evaluation flow



Understanding the environmental impact caused by all our businesses using Eco Balance and integrated environmental impact evaluation

The Ricoh Group obtains information on the environmental impact caused by all its businesses and by each process, using Eco Balance<sup>1</sup> and integrated environmental impact<sup>2</sup> as tools, to effectively reduce the environmental impact generated by processes with a large environmental footprint. First, Eco Balance is prepared based upon input and output data for each process and for each environmentally-sensitive substance. The data are collected by the sustainable environmental management information system<sup>3</sup>. At this stage, however, the significance of the environmental impact generated by each process cannot be compared because each process employs different environmentally-sensitive substances. Therefore, an integrated analysis method is used to convert the total environmental impact caused by business activities—including impact upon human health, depletion of resources, and impact upon ecosystems/biodiversity—into indicators to evaluate the integrated environmental impact and identify processes generating a large environmental footprint. The Ricoh Group sets environmental action plans<sup>4</sup> based on its evaluation of the integrated environmental

impact that is identified by Eco Balance.

1. See page 61. 2. See page 61. 3. See page 59. 4. See pages 19 and 20.

Selecting measures by environmental accounting and evaluating activity results

Reducing environmental impact using measures that will lead to the creation of benefits is crucial to promoting sustainable environmental management. The Ricoh Group uses environmental accounting to determine what measures should be taken for what processes and for what operations so that the maximum effect can be obtained. A number of improvement plans to reduce the identified environmental impact are examined in consideration of developments in society and changes in laws/regulations as well as the activities of competitors to improve processes generating large environmental impact identified through evaluation based upon Eco Balance and the integrated environmental impact. Then, using segment environmental accounting, we simulate how much environmental impact is reduced and how much profit is created compared with the costs for each measure, while surveying the results of the individual measures.

## Eco Balance of the Ricoh Group

The Ricoh Group introduced the concept of Eco Balance in fiscal 1998 to clarify the environmental impact caused by all its businesses and effectively reduce it. Currently, the Ricoh Group is calculating the integrated environmental impact using EPS, which is an integrated analysis method developed by IVL Swedish Environmental Research Institute Ltd. We adopted EPS after evaluating various methods used in Japan and/or overseas because we found that its characteristics

agree with the Ricoh Group's ideas about environmental impact reduced by the collection of resources and the Comet Circle\*, Ricoh's original concept aimed at establishing a sustainable society. We have mapped out environmental action plans based upon the concept of Eco Balance since fiscal 2002 and have applied the concept in the formulation of environmental goals that take a longer perspective since fiscal 2005. [\\* See page 15.](#)

## Ricoh Group's Environmental Accounting

The Ricoh Group disclosed its environmental accounting for the first time in 1999. Since then, the Group has introduced corporate environmental accounting to determine the status of sustainable environmental management and disclose related information, as well as segment environmental accounting, that is used to prepare environmental action plans, select measures, and verify achievements. Thus efforts are being made to establish environmental accounting as a tool for sustainable environmental management.

### ● Corporate environmental accounting

The Ricoh Group calculates and announces the cost spent in its business activities for environmental conservation, as well as the conservation and economic effects, as quantitatively as possible. Such data is prepared in compliance with the Environmental Accounting Guidelines 2005—set by the Japanese Ministry of the Environment—by taking the necessary portion from the Eco Balance data and calculating the cost and effect (in quantity and monetary value) of the Group's environmental conservation activities based on its own formulas and indicators. In fiscal 2007, the Group started disclosing its environmental impact from a product lifecycle perspective, in addition to direct environmental impact (i.e., environmental impact generated at business sites). [See page 65.](#)

### ● Segment environmental accounting

This is an environmental accounting tool to forecast the costs and environmental conservation/economic effects of individual investment activities and projects for environmental conservation from among all processes of operations and to evaluate their results, in order to judge the effectiveness of respective measures.

### Eco Balance

Eco Balance means the preparation of a list of input and output data on environmental impact to identify, quantitatively measure, and report environmental impact caused by companies; or such a list itself. It is based upon the same concept as LCA, and direct environmental impact as well as indirect environmental impact is calculated.

### Integrated environmental impact

This is an integrated indicator shown in ELUs (Environmental Load Units), incorporating various types of environmental impact caused by environmental load. Substances that put a load on the environment cause various phenomena including global warming and air pollution, which negatively affect the ecosystem, biodiversity and human health. In addition to these, the depletion of resources is taken into consideration, and all these factors are incorporated into one single indicator that represents the significance of environmental impact overall. Determining the environmental load caused by all our businesses and calculating the integrated environmental impact allow us to formulate specific plans to reduce them. In calculation, we apply the EPS (Environment Priority Strategies for Product Design), a method developed by IVL Swedish Environmental Research Institute Ltd, to allow us to convert the results into monetary values (1 ELU = 1 Euro).

## Review of environmental accounting in fiscal 2010

Environmental accounting is designed to present the costs incurred for environmental conservation activities during a given period in comparison to the resulting environmental and economic benefits.

The scope of environmental accounting covers the entire product lifecycle, from the procuring of raw materials, the production and use of the products to recycling and final disposal.

In compiling environmental accounting data for fiscal 2010, part of the existing data collection processes pertaining to the recycling business outside of Japan and to environment-related labor costs in Japan were revised. The purpose of this revision was to remove redundant entries detected in certain data regarding the recycling business outside of Japan, and to include the part of environmental-related labor cost in Japan which was erroneously omitted in the previous process. As a result of the revision, the labor costs in question increased approximately 15%.

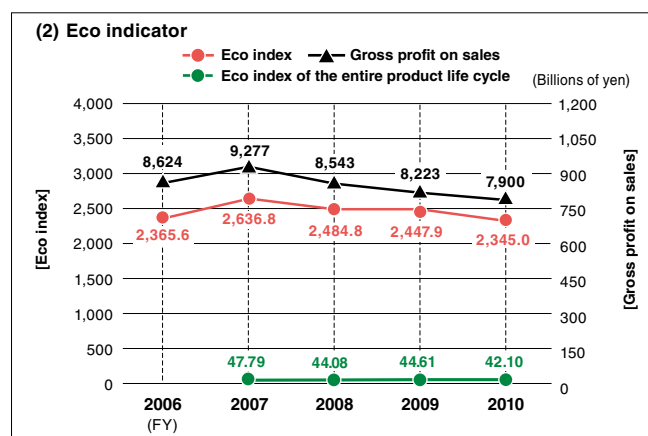
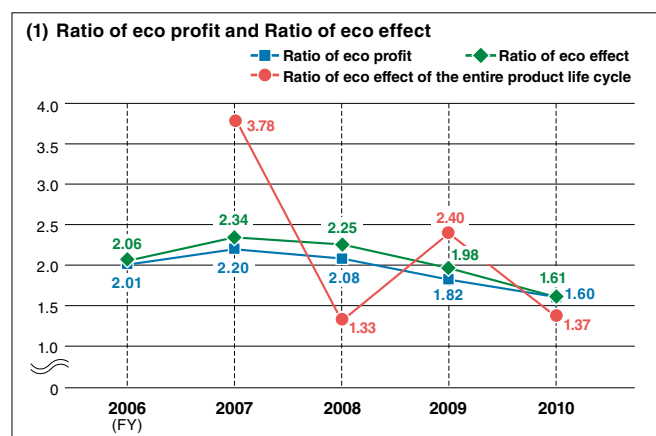
Other changes include the discontinuation of data collection of reduction effects in society's waste disposal cost reduction effects, which were included in the "social effect" category.

For fiscal 2010, the total environmental impact of the Ricoh Group showed a slight decline to 336,889 from 335,926 in fiscal 2009. However, our Eco Index for the fiscal 2010 saw a decline from the previous year because of the decrease in gross profit on sales affected by sluggish economies in and outside of Japan (see graph (2)).

The Ratio of Eco Profit and the Ratio of Eco Effect (an indicator that takes into account social cost reduction values) for fiscal 2010 also decreased from the previous year, mainly due to the increase in environmental conservation costs as a result of the aforementioned revision of environmental-related labor cost calculation (see graph (1)).

Meanwhile, recycling-related items, which make up the majority of costs and economic effects, showed relatively good progress during fiscal 2010, particularly in Japan, although our overall trend during the year was affected by the global economic downturn. We anticipate this upward trend of recycling-related items is likely to continue in the future.

### Changes in the Ricoh Group's sustainable environmental management indicators



The Ricoh Group's sustainable environmental management indicators (fiscal 2010)	Results in fiscal 2010	Calculation formula
REP: Ratio of Eco Profit	1.60	Total economic benefit (35.77) / Total environmental conservation cost (22.38)
REE: Ratio of Eco Effect	1.61	[Total economic benefit (35.77) + Social cost reduction values (-0.02 + 0.25)] / Total environmental conservation cost (22.38)
Eco Index	2,345.0	Gross profit on sales (790.0) / Total environmental impact (33,688.9) × 10 <sup>5</sup>
RPS: Ratio of Profit to Social Cost	191.7	Gross profit on sales (790.0) / Total social cost (4.12)

\* Unit: Billions of yen

Sustainable environmental management indicators of the entire product lifecycle (fiscal 2010)	Results in fiscal 2010	Calculation formula
REP: Ratio of Eco Profit	1.60	Total economic benefit (35.77) / Total environmental conservation cost (22.38)
REE: Ratio of Eco Effect	1.37	[Total economic benefit (35.77) + Social cost reduction values (-5.26 + 0.25)] / Total environmental conservation cost (22.38)
Eco Index	42.1	Gross profit on sales (790.0) / Total environmental impact (1,878,200.2) × 10 <sup>5</sup>
RPS: Ratio of Profit to Social Cost	3.44	Gross profit on sales (790.0) / Total social cost (229.78)

\* Unit: Billions of yen