

Achieving more efficient environmental management through cost and effect evaluation of environmental activities

We have employed environmental accounting since fiscal 1998 to provide quantitative assessments of the costs and effects of our environmental protection measures. We have developed environmental accounting guidelines for the Fujitsu Group in conformance with guidelines published by the Japanese Ministry of the Environment, adding new components to the system as needed to enhance the efficiency of our environmental accounting. The introduction of environmental accounting has raised our employees' environmental consciousness, sharpened our focus on cost reduction efforts, and magnified the positive effects of environmental measures by inspiring greater cooperation among our plants and companies.

Environmental Accounting Measures

Objectives of the environmental accounting system

- Disclosure of information to clarify the company's position to stakeholders
- Introduction of ongoing environmental preservation activities
- Enhancing the effectiveness of environmental investment
- Activation of environmental preservation activities

Fiscal 2002 Environmental Accounting Results

(Unit: 100 million yen)

Item		Scope	Fujitsu	Affiliated companies	Consolidated	See pages	
Costs in business operations	Pollution prevention costs* ¹	Costs incurred to prevent air pollution and water contamination (fees for water treatment facilities) and other activities	30 (-2)	31 (-4)	61 (-6)	28, 33, 34, 58	
	Environmental protection costs	Costs of energy-saving measures, as well as costs of global warming reduction measures	9 (-1)	19 (+5)	28 (+4)	28-30	
	Costs of resources recycling	Costs incurred for waste reduction and disposal, as well as for water conservation, rainwater usage and other measures aimed at efficient resources usage	12 (-2)	25 (-2)	37 (-4)	31, 32	
Upstream/downstream costs		Costs of lowering the environmental burden imposed upstream and downstream by manufacturing and service activities (costs incurred for recycling/reuse of waste products and packaging, Green Procurement, etc.)	2 (0)	7 (+1)	9 (+1)	18, 24-26	
Costs	Management costs	Management-related environmental protection costs — including personnel expenses for environmental promotion activities and costs associated with acquiring and maintaining ISO14001 certification, measuring the environmental burden, greenification programs, environmental reporting and environmental publicity	21 (+11)	16 (+2)	37 (+13)	13, 14, 17, 43, 44, 52, 55	
	R&D and solutions business costs	Environmental protection costs for R&D activities and costs of environmental solutions business activities (Green Product/environmental technology design and development costs, environmental solutions business costs, others)	3 (-1)	11 (-1)	14 (-2)	19-23, 35-38, 56, 57	
	Social activities costs	Environmental protection costs stemming from participation in social activities, such as participation in organizations concerned with environmental preservation	0 (-2)	0 (-1)	0 (-3)	45-48	
	Environmental restoration costs	Costs of environmental restoration operations (eliminating soil and groundwater contamination, environmental compensation, etc.)	2 (-1)	1 (0)	3 (-1)	49, 50	
	Total			79 (+2)	110 (0)	189 (+2)	

Effects	Effects on business operations	Pollution prevention effects	Savings from avoidance of operating losses stemming from failure to observe environmental laws and regulations as well as contribution by environmental protection activities to value added in manufacturing	38 (-46)	49 (-6)	87 (-52)	28, 33, 34, 58
		Environmental protection effects	Cost savings from reductions in electricity, oil and gas consumption	16 (+2)	10 (0)	26 (+2)	28-30
	Resource recycling effects	Cost savings from reduction and effective use of waste	14 (+5)	42 (+4)	56 (+9)	31, 32	
	Upstream/downstream effects	Sales value of recycled and reused products	0 (-1)	10 (+3)	10 (+2)	24-26	
	Management effects* ²	Efficiency enhancement through ISO14001 system implementation, effects of employee training, corporate image enhancement from environment-related publicity	4 (+1)	4 (0)	8 (+1)	13, 14, 17, 43, 44, 52, 55	
	R&D/solutions business effects	Contribution to sales made by Green Products, other eco-friendly products and the environmental solutions business	10 (0)	5 (+1)	15 (+1)	19-23, 35-38, 56, 57	
	Environmental restoration effects	Savings of compensation payments to residents for groundwater and soil contamination	6 (+4)	2 (0)	8 (+4)	49, 50	
Total			88 (-35)	122 (+2)	210 (-33)		

The numbers in parentheses indicate increases or decreases in comparison with the previous fiscal year.

We indicate "0" for items whose value is less than 100 million yen.

*1 Since fees for water treatment utilities have been collated as pollution prevention costs since fiscal 2002, increases or decreases in monetary amounts compared with the previous fiscal year include fees for water treatment utilities in the previous fiscal year.

*2 Since the value of corporate image enhancement by environment-related publicity has been collated as a management effect since fiscal 2002, increases or decreases in monetary amounts compared with the previous fiscal year include the value of corporate image enhancement from environment-related publicity in the previous fiscal year.

Basic Environmental Accounting Principles

1. Accounting Period

April 1, 2002—March 31, 2003

2. Scope of Data Collation

Data from Fujitsu and all its domestic and overseas consolidated subsidiaries. (Data for a total of 91 companies are collated, but data for some sales, software and service-related consolidated subsidiaries have yet to be included.)

3. Calculation Standards for Environmental Protection Costs

(1) Method of depreciation cost collation:

Calculated using the straight-line method for a use life of five years.

(2) Rules for apportioning mixed costs:

Only the portion related to environmental preservation is counted, employing the methods specified in *2002 Environmental Accounting Guidelines*, Ministry of the Environment.

4. Calculation Standards for Effects of Environmental Protection Measures

(1) Scope of economic effects:

Any actual, measurable effects generated by reductions in the environmental burden during use of any goods or services produced by operations, plus any reduction in the environmental burden at product disposal (taking estimated effects, including risk avoidance benefits and assumed effects, into account).

(2) Basis for accounting concerning timing of effects of investments:

Actual, measurable effects are made to coincide with the investment depreciation period (five years).
In cases of estimated effects, except those considered to have been fully realized within the fiscal year, the effects of environmental protection investments (contribution value, value from operating loss avoidance, etc.) are treated as extending over 12 months.

The basis for calculating the value of effects is as follows:

- Value contributed by environmental protection activities to the added value acquired through production activities

$$\text{Value of effect} = \frac{\text{Added value} \times \text{Ongoing operating costs of all environmental protection facilities}}{\text{Total costs generated}}$$

- Value of avoidance of operating losses due to failure by operations to observe environmental laws and regulations

$$\text{Value of effect} = \frac{\text{Added value} \times \text{Days of operation}}{\text{Estimated days lost}}$$

- Value of contribution to corporate image enhancement by environment-related publicity

$$\text{Value of effect} = \text{Costs of advertising} \times \frac{\text{Number of insertions}}{\text{Number of insertions}}$$

5. Principal Changes in Basic Items during Fiscal 2001

- The costs of greenification programs, environmental reporting and environmental publicity, collated as social activities costs until the previous fiscal year, have been collated as management costs in accordance with changes in the guidelines issued by Ministry of the Environment with which we comply.
- Effects related to the changed effects item (value of corporate image enhancement from environment-related publicity) have also been collated as management costs in accordance with the change in the cost items mentioned in (1) above.
- Measurement of the value of effects associated with basic research was initiated as R&D effects.
- Measurement of the cost of educating personnel as an employee environmental education cost was initiated, as was measurement of the effects of environmental education based on educational hours.

Characteristics of the Fujitsu Group's Fiscal 2002 Environmental Accounting

Our environmental accounting in fiscal 2002 involved collation of data from 91 companies in Japan and overseas. The costs totaled ¥18.9 billion, and the total value of related economic effects was ¥21.0 billion.

1. Environmental Costs

The total environmental costs for plants decreased due to drastic changes in production systems and positive restraints on expenditures. Management costs increased dramatically, on the other hand, because of intensive advertising concerning Green Products in connection with

environmental measures.

Total costs consequently registered ¥18.9 billion, an increase of ¥200 million from the previous fiscal year.

2. Economic Effects

Real measurable effects improved by ¥1,300 million as compared with the previous fiscal year due to measures implemented to limit global warming (environmental protection effects), reduce chemical substances, achieve zero waste emission (resources recycling effects) and improve the recycling ratio (upstream/downstream effects). Pollution prevention effects recorded a year-on-year decrease, and the total related economic effects for the Group as a whole held steady at ¥21.0 billion due to reductions in production. The ratio of the actual measurable effects, calculated based on the certain reduction of the environmental burden, to the actual measurable costs necessary to achieve these effects improved drastically from 1.08 in the previous fiscal year to 1.23 (=¥ 9,100 million/¥ 7,500 million).

3. Future Measures

We are promoting environmental burden reduction activities (green process activities, etc.) in association with cost-cutting activities in the manufacturing process and reflecting the costs and effects in our environmental accounting. We are upgrading our environmental accounting evaluations to activate environmental activities in Green Product development and software services.

Participation in UN Expert Working Group Meeting on EMA

In 1999, the United Nations Division for Sustainable Development initiated an exploratory project concerning the role of government in promoting environmental management accounting (EMA) by corporations. The UN Expert Working Group Meeting on EMA has convened six times, providing a forum for the exchange of information on the application of environmental accounting measures in countries worldwide and for the development of concepts. In December 2002, we participated as a representative of the Japanese corporate community in the 6th Expert Working Group Meeting on EMA, where we made a well-received presentation of measures in Japan for consideration.



6th Expert Working Group Meeting on EMA (Sweden)

Fiscal 2002 Environmental Burden Reduction Improvement Indicators (Fujitsu)

Item	Result
Environmental improvement (EI) indicator*1 [Ton-CO ₂ /100 million yen]	329
Environmental efficiency (EE) indicator*2 [100 million yen/Ton-CO ₂]	0.050

*1, 2 Please refer to page 60 for definitions.