

Environmental Accounting

Characteristics of the environmental accounting in the Nitto Denko Group

Environmental accounting is implemented from the original viewpoint to reduce both environmental impact and costs.

Environmental accounting was introduced to Nitto Denko on a non-consolidated basis in fiscal 2000, to major Japan domestic group manufacturing companies in fiscal 2001, and to major overseas group manufacturing companies in fiscal 2002. While referring to the guidelines by the Ministry of the Environment and the Ministry of Economy, Trade and Industry, we carry out environmental accounting as a tool to reduce both environmental impact and costs from the original viewpoint.

The group's environmental accounting has two characteristics. One is to make the environmental budget as a goal that should be achieved at each business division and group company and to clarify the environmental issues and responsibility. The other is to clarify the environmental impact costs, which represent the amount of money spent on the environmental impacts, in addition to the environmental conservation costs articulated in the Environmental Reporting Guidelines of the Ministry of the Environment. The environmental impact costs include the value of industrial waste (material and processing costs of industrial wastes that are not treated and made into products) as well as the cost of energy, solvent, and water used at manufacturing stages.

The group aims at improving resource productivity and realizing low cost in total by making efficient use of the environmental conservation costs and reducing environmental impact costs. In fact, however, we do not take full advantage of environmental accounting in the context of corporate management. We will continue studying environmental accounting to fully utilize it in the corporate management.

For change in the ratio of industrial waste value, see [P22](#)

Result of Nitto Denko on a non-consolidated basis in fiscal 2004

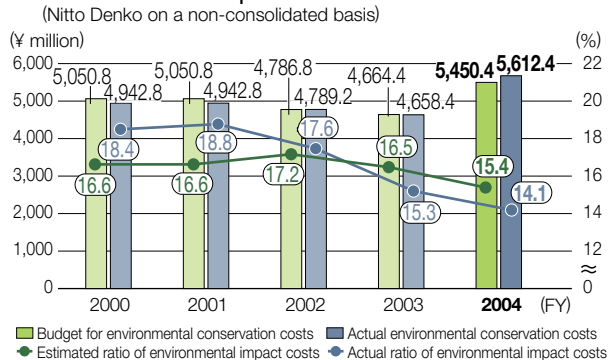
Efforts toward reducing the value of industrial waste is continuously committed.

The environmental conservation costs showed an increase in fiscal 2004 compared to fiscal 2003. This was caused by the increase in waste disposal costs due to increase in production and industrial wastes in consequence, as well as an increase in depreciation and investment in environmental facilities. Major environmental facilities introduced in fiscal 2004 were equipment for fuel conversion, solvent recovery equipment, and deodorizing furnaces. [→P23, 24](#)

Nitto Denko on a non-consolidated basis improved the ratio of environmental impact costs (the ratio of environmental impact costs to net sales) to 14.1% (15.3% in fiscal 2003) and the ratio of industrial waste value to 12.3% (13.8% in fiscal 2003), showing continuous improvement following the previous year.

The value of industrial waste is expected to decrease due to the reuse of waste solvents in the Toyohashi Plant and activities of the total loss reduction project [→P22](#). But, we still regard it a serious problem we should continue to tackle.

Environmental Conservation Cost and Environmental Impact Cost Ratio



TOPICS

Nitto Denko was the first in Japan that invested in facilities based on the material flow cost accounting.

Material flow cost accounting is an environmental management accounting method developed in Germany, a nation that is conscious of environmental conservation. Its characteristic is to split the production costs including materials, energy, and others into a flow to products and a flow to wastes and to grasp both the amounts of materials and money in each process. Their precise analysis clarifies places that need improvement, including the costs of electricity, labor, and the materials used in wastes and defectives, or the cost not used in the finished products. It enables efficient improvement and capital investment.

In October 2000, when the Ministry of Economy, Trade and Industry started the model program, Nitto Denko made a test introduction of the material flow cost accounting in the adhesive tape production process in the Toyohashi Plant, as the first model corporation in Japan.

The method revealed that the ratio of the cost for wastes and energy not used in the finished products accounted for as much as 30% of the total production cost. At the same time, the manufacturing processes contributing to the loss were identified. Although the ratio was improved to 20% in fiscal 2003, through reviewing raw materials and improving production methods, Nitto Denko determined to make a substantial investment in facilities based on this accounting method in fiscal 2004, which was the first such decision in Japan. We expect that the new facility, which is scheduled to start operation in summer 2005, will significantly reduce these unnecessary costs. The accounting method also has the advantage of counting the value of industrial waste for each process and therefore is useful when making decision regarding capital investment.

Results of domestic and overseas group companies in fiscal 2004

The ratio of environmental impact cost and the ratio of industrial waste value worsened compared to the previous year due to the skyrocketing oil prices.

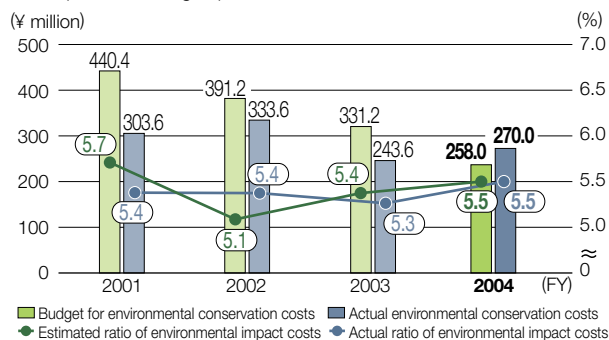
The ratio of environmental impact cost of the Japan domestic group companies was 5.5% (5.3% in fiscal 2003), and the ratio of industrial waste value was 5.7% (5.4% in fiscal 2003), both of which were aggravated compared to fiscal 2003. The target for the ratio of industrial waste value was not achieved.

The ratio of environmental impact cost of the overseas group companies was 8.5% (8.2% in fiscal 2003), and the

ratio of industrial waste value was 5.3% (4.5% in fiscal 2003). Again, both worsened from the previous year, and the target was not achieved.

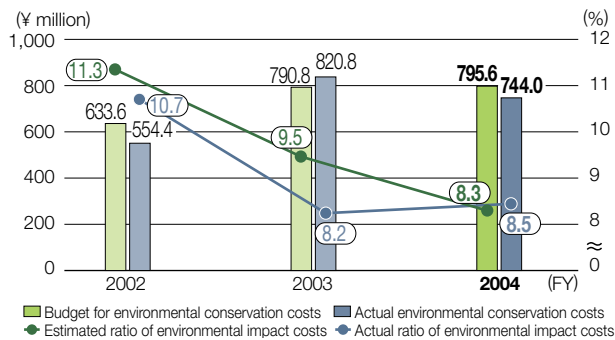
Reasons both in Japan and abroad are the increase in solvent cost and value of industrial waste due to the steep rise in oil prices.

Environmental Conservation Cost and Environmental Impact Cost Ratio (Japan domestic group)



Japan domestic group companies include Nitto Shinko Corp., Nitoms Inc., Mie Nitto Denko Corp., and Nitto Life-tech Co., Ltd.

Environmental Conservation Cost and Environmental Impact Cost Ratio (Overseas group)



Overseas group companies include Permacel, Hydranautics, Nitto Europe N.V., Nitto Denko (Shanghai Songjiang) Co., Ltd., Nitto Denko (Taiwan) Corporation, Nitto Denko Electronics (Malaysia) Sdn. Bhd., and Nitto Denko Material (Thailand) Co., Ltd.

The Method of Environmental Accounting Calculations

◆ Period under review

Nitto Denko Group's accounting period (from April 1 to March 31 of the following year)

◆ Definition

- 1) The activities related to the environment and have an impact on the environment are evaluated by monetary value (accounting information) or the amount of materials (quantitative information).
- 2) Environmental cost consists of environmental conservation cost and environmental impact cost.

Environmental conservation costs	Cost consumed for environmental conservation
General expenses	From the total environmental conservation cost, waste disposal, outsourcing, personnel, depreciation, and R&D&E costs are deducted. (Maintenance and repair costs for exhaust gas/wastewater treatment equipment, cost for ISO 14001 acquisition, activity cost required for reducing waste and saving energy, cost and donations for environmental information disclosure and environmental advertisements)
Waste disposal	Cost for waste disposal and recycling outsourced to subcontractors.
Outsourcing	Cost for subcontracting operations required for environmental conservation to the companies within/outside the group.
Personnel	Cost for the employees engaged in environmental conservation
Depreciation	Total depreciation of the equipment targeted at environmental conservation (hereinafter referred to as "environmental equipment") in the target period (fiscal year)
R&D&E cost	Total of general expenses, waste disposal, outsourcing, personnel, and depreciation for the technological development, which are mostly targeted at environmental conservation.

Environmental impact costs	Cost of the things that have an impact on the environment
Value of industrial waste	Material and treatment costs for industrial waste
Energy	Total amount of the costs for electricity and fuel (heavy oil, LPG, natural gas, etc.) purchased by production factories from external parties
Organic solvents	Total amount of the costs for organic solvents purchased from external parties
Water	Total amount of industrial and tap water expenses

$$\begin{aligned} & \text{[Environmental Impact Cost Ratio (\%)]} \\ & = \text{[Environmental impact cost]} / \text{[Sales amount]} \times 100 \end{aligned}$$

$$\begin{aligned} & \text{[Industrial waste ratio (\%)]} \\ & = \text{[Industrial waste cost]} / \text{[Production amount]} \times 100 \end{aligned}$$