

## Environmental Preservation

### Environmental Accounting

Daicel has introduced an environmental accounting system with the goal of implementing efficient environmental preservation activities and increasing the transparency of the status of those activities.

In fiscal 2016, we invested approximately ¥800 million in measures to preserve the global environment, such as the renewal of boiler, a switchover to low-pressure steam at plants and the installation of pulp crusher machines. These investments accounted for approximately 65% of total investment in the environment. Total investment in the environment accounted for 5% of total investment, compared with 17% in the previous fiscal year. This was attributable to the absence of major investments in energy-saving measures, which have almost been completed by the end of fiscal 2015. However, in the area of R&D, investment in the environment increased approximately ¥100 million year on year due mainly to the installation of pilot facilities to verify new reaction processes that contribute to energy conservation and resource saving.

The economic benefits resulting from environmental preservation activities were approximately ¥1.7 billion, attributable to cost reductions from the use of energy-saving facilities. In the previous fiscal year, similar cost reductions amounted to ¥0.3 billion.

We will continue to assess these impacts through environmental accounting and promote environmental preservation.

**Time period for reported totals:** April 2016 to March 2017

**Calculation method for reported totals:** Calculated according to the Environmental Accounting Guidelines, Year 2005 Edition, published by the Ministry of the Environment of Japan and the Environmental Accounting Guidelines for the Chemical Industry, published by the Japan Chemical Industry Association (JCIA).

**Amounts invested:** Actual sums for capital investment in environmental preservation in fiscal 2016.

**Cost amounts:** The totals for actual expenses of equipment depreciation, maintenance, management and labor related to environmental preservation.

**Economic effects resulting from environmental preservation activities:** Indicated as monetary benefits only and do not include risk avoidance effects or de facto effects. Economic effects attributable to reductions in energy costs are presented as the effects of energy cost reductions over a 12-month period realized through energy-saving initiatives.

### Environmental Preservation Costs

Classification		Major Initiatives	(Millions of yen)	
			Amounts Invested	Cost
Environmental preservation costs of controlling the environmental impact of our production and service operations that occur within business areas (business area costs)			882	5,728
Breakdown	Pollution prevention costs	Prevention of air and water pollution, control of harmful substances, levies for pollution-related health damages	61	1,937
	Global environmental preservation costs	The renewal of boiler, a switchover to low-pressure steam at plants and the installation of pulp crusher machines	767	1,987
	Resource recycling costs	Appropriate treatment and disposal of industrial waste	54	1,804
Costs of controlling the environmental impact of production and service operations occurring upstream or downstream (upstream and downstream costs)		Costs of recycling containers and packing materials and green purchasing	0	291
Environmental preservation costs in management activities		Labor costs of environmental management, expenses for EMS operations and maintenance, costs of environmental education, costs of environmental impact alleviation	0	586
Environmental preservation costs in R&D activities (R&D costs)		R&D work for reducing the environmental impact of products and technologies	304	238
Environmental preservation costs in community activities (community activities costs)		Costs of environmental promotion activities and participation in community events	2	32
Costs of environmental damage (environmental damage costs)		Environmental remediation costs, costs for environmental preservation related to environmental damage (environmental damage costs) and compensation related to environmental preservation	0	3
Total			1,188	6,878

Item	Amount (Millions of yen)	Environmental Rate (%)
Capital expenditures in the applicable period	21,862	5.4%
R&D expenditures in the applicable period	12,321	1.9%

### Economic Effects (Monetary Benefits) Resulting from Environmental Preservation Activities

(Millions of yen)	
Item	Amount
Cost reduction through energy conservation	1,673
Cost reduction through resource conservation	228
Benefits obtained by recycling	459
Reduction of expenses for waste treatment or disposal	48
Total	2,408