Utilization of environmental accounting and the environmental management indicator in our management

JR East utilizes environmental accounting to ascertain our environmental conservation investments and expenses, as well as environmental conservation benefits. The results, along with our own environmental management indicator, are used as part of the bases for management decision-making.

Environmental accounting

Summary of fiscal 2006

In fiscal 2006, our environmental conservation costs amounted to approximately 63.3 billion yen in investments and 15.4 billion yen in expenses.

Global environmental conservation activities, which accounted for a major part of the investments, were primarily the introduction of energy-efficient trains on the Chuo, Joban, and other conventional lines and the reconstruction at our own thermal power plant to change its fuel to natural gas.

We estimate that the introduction of energy-efficient trains will reduce CO_2 emissions by 0.45 million tons over their total service life.

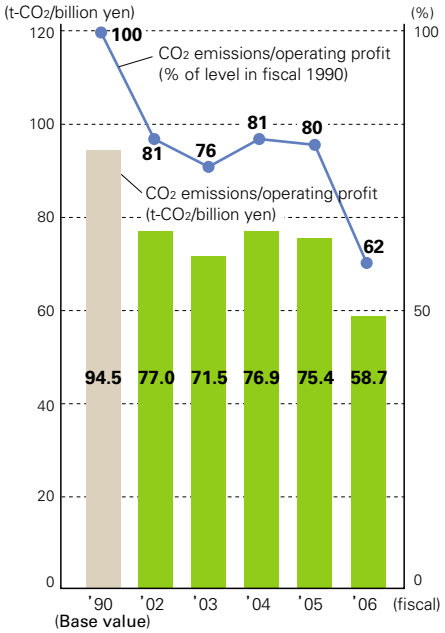
JR East has its own Environmental Management Indicator to assess the relation between our business activities and environmental impacts. It is calculated by dividing CO_2 emissions, which are a major factor in environmental impacts, by operating profits, which represent our Economic Value Added (EVA).

This means that the smaller the number calculated by this formula is, the more Economic Value Added we have created with smaller impacts on the environment. For fiscal 2006 the value of the indicator was 58.7 t-CO_2/billion yen, compared with 94.5 t-CO_2/billion yen for fiscal 1990.

Environmental Management Indicator

$$= \frac{\text{Environmental Impacts}}{\text{Economic Value Added (EVA)}} = \frac{\text{CO}_2\text{ emissions (t-CO}_2\text{)}}{\text{Operating profit (billion yen)}}$$

JR East's Environmental Management Indicator



Environmental accounting for fiscal 2006

Category	Environmental conservation costs (billion yen)		Environmental conservation benefits in relation to environmental targets			Economic benefit of environmental conservation activities (billion yen)
	Investments	Expenses		Fiscal 2005	Fiscal 2006	
Environmental conservation (pollution prevention) activities along railway lines	5.38	5.41	Implementation of noise reduction measures along Shinkansen and conventional lines (soundproof walls, continuous welded rail, and other measures)	Completed in residential areas	25%	—
			NOx emissions from JR East's thermal power plant	462 tons	289 tons	
Global environmental conservation activities	57.89	—	CO_2 emissions through business activities	2.58 million t-CO_2	2.13 million t-CO_2	27.99
			CO_2 emissions per unit of electricity generated at JR East's thermal power plant	534g-CO_2/kWh	453g-CO_2/kWh	
			Energy-efficient train utilization rate	81%	83%	
			Train energy consumption per unit of transportation volume	17.6 MJ/car-km	18.0 MJ/car-km	
			Number of large refrigerators using specified chlorofluorocarbons (CFCs)	10 units	7 units	
Resource circulation activities	—	4.73	Recycling rate for waste generated at stations and trains	47%	50%	1.89
			Recycling rate for waste generated at General Rolling Stock Centers, etc.	90%	90%	
			Recycling rate for waste generated through construction projects	89%	90%	
			Recycling rate for general waste	42%	43%	
			Recycled paper utilization rate	92%	92%	
Environmental management	0	0.53	Taking part in specific environmental protection activities every year (Railway Line Forestation Programs and Tree Planting under the Adatara Hometown Forestation Program)	31thousand trees planted at 18 locations by 3,600 participants	35thousand trees planted at 17 locations by 4,400 participants	—
Environmental research & development	—	4.68				—
Societal activities	—	0.05				—
Total	63.27	15.40				29.88

Notes
Capital investment for the period: 315.3 billion yen
Total R&D costs for the period: 16.9 billion yen *1
Targets for the JR East Group

*1 Total R&D costs
Total R&D costs include 5.7 billion yen of costs for basic research and development commissioned to the Railway Technical Research Institute under a research agreement.

The above table relates to the table for Targets and results pages 40-41 as follows:
"Environmental conservation activities along railway lines" = "Environmental activities along railway lines" and "Chemical substance management"
"Global environmental conservation activities" = "Measures to prevent global warming" and "Chemical substance management"
"Resource circulation activities" = "Measures for resource recycling"
"Environmental management" = "Environmental management" and "Environmental communication"
"Environmental research & development" = "Research & development"
"Societal activities" = "Environmental communication"

〈Notes on calculation of environmental conservation costs and benefits〉
Environmental conservation costs
○Data are for East Japan Railway Company only (i.e., non-consolidated data).
○Environmental conservation costs are mainly based on data available in the current management system.
○The total costs are treated here as environmental costs where the costs have multiple objectives and result in large environmental benefits. (e.g., Global environmental conservation costs include the total amount invested in energy-efficient trains).
○Expenses do not include depreciation charges.
○In the costs for resource circulation activities, expenses for treating waste generated at stations and trains are calculated by multiplying the allocations by the Expenses for cleaning stations and train cars, based on a model for cleaning stations and trains.
○In the costs for resource circulation activities, the expenses for treating waste generated through construction projects are calculated by multiplying waste volume for fiscal 2006 by standard unit prices for the type of waste in that region.
Environmental conservation benefit
○Environmental conservation benefits are calculated based on figures set as our environmental targets.
Economic benefit of environmental conservation activities
○Economic benefit of global environmental conservation activities is calculated by multiplying annual savings (estimates are used in some cases) in electricity and repair costs resulting from the introduction of energy-efficient trains by the expected useful life, to determine useful-life economic benefit.
○Income from the sales of waste generated at General Rolling Stock Centers and through construction projects is included in economic benefit of resource circulation activities.