

How does the JR East Group utilize environmental accounting and our own environmental management indicator?

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

► Environmental accounting for fiscal 2005

Category	Environmental conservation costs (billion yen)		Environmental conservation benefits in relation to environmental targets	Economic benefit of environmental conservation activities (billion yen)		
	Investments	Expenditures		Fiscal 2004	Fiscal 2005	
Environmental conservation (pollution prevention) activities along railway lines	4.74	4.66	Implementation of noise reduction measures along Shinkansen and conventional lines (Installation of sound proof walls, continuous welded rails, and other measures) NOx emissions from JR East's thermal power plant	– 417 tons	– 462 tons	–
Global environmental conservation activities	59.22	–	CO ₂ emissions through business activities CO ₂ emissions per unit of electricity generated at JR East's thermal power plant Energy-efficient train utilization rate Train energy consumption per unit of transportation volume Number of large refrigerators using specified chlorofluorocarbons (CFCs)	2.39 million t-CO ₂ 510g-CO ₂ /kWh 76% 17.9 MJ/car-km 13 units	2.58 million t-CO ₂ 534g-CO ₂ /kWh 81% 17.6 MJ/car-km 10 units	26.58
Resource circulation activities	–	5.29	Recycling rate for waste collected from stations and trains Recycling rate for waste generated at General Rolling Stock Centers etc. Recycling rate for waste generated through construction projects Recycling rate for general waste Recycled paper utilization rate	43% 82% 91% 38% 86%	47% 90% 89% 42% 92%	1.40
Environmental management	–	0.40	Taking part in specific environmental protection activities every year (Railway Line Forestation Programs and Tree Planting under the Adatara) Hometown Forestation Program	25,000 trees planted at 17 locations by 3,200 participants	31,000 trees planted at 18 locations by 3,600 participants	–
Environmental research & development	0.02	5.13				–
Social activities	–	0.04				–
Total	63.98	15.53				27.98

Notes

Capital investment for the period: 275.3 billion yen

Total R&D costs for the period: 16.7 billion yen*1

■ Targets for the JR East Group

The above table's relations with the table for Targets and Results on pages 36–37 are 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"

"Social activities" = "Environmental communication"

*1 Total R&D costs

Total R&D costs include 5.8 billion yen of costs for basic research and development commissioned to the Railway Technical Research Institute under a research agreement.

Environmental accounting

Summary of fiscal 2005

In fiscal 2005, our investments and expenditures as part of environmental conservation costs amounted to about 64 billion yen and 15.5 billion yen respectively.

“Global environmental conservation activities,” which account for a major part of the investments, were mainly the introduction of energy-efficient railcars on the Tokaido, Joban, and other conventional lines. However, investments in global environmental conservation activities declined by 3.4 billion yen year-on-year to approximately 59.2 billion yen, due to the near-completion of introduction of energy-efficient railcars on the Yamanote line.

The introduction of energy-efficient railcars could reduce CO₂ emissions by 560,000 tons over their total service life.

As part of our environmental conservation activities along railway lines, we implemented various measures, such as the installation of sound absorbers on soundproof walls to reduce noise along Shinkansen lines. Our investments in these

activities totaled approximately 4.7 billion yen, about the same level as fiscal 2004.

JR East's Environmental Management Indicator

JR East has our own Environmental Management Indicator as a management decision-making tool to assess the relation between our business activities and environmental impacts. It is calculated by dividing CO₂ emissions as one of the major factors imposing environmental impacts, by operating profits as Economic Value Added (EVA).

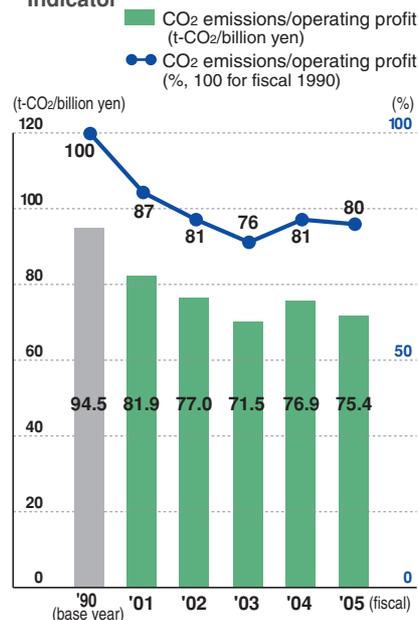
This means that the smaller the number calculated by this formula is, the more Economic Value Added we created with smaller impacts on the environment. The value of the indicator was 75.4 t-CO₂/billion yen for fiscal 2005, compared with 94.5 t-CO₂/billion yen for fiscal 1990.

The increase in this indicator in fiscal 2004 is because the Niigata-Chuetsu Earthquake forced us to suspend the operation of JR East's hydroelectric plant, resulting in an increase in CO₂ emissions from alternative electricity sources.

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



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).
- Figures are calculated with reference to the “Environmental Accounting Guidelines (2005 edition)” issued by the Japan’s Ministry of the Environment.
- 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., Pollution prevention costs include the total amount spent for enhancing performance, such as the cost to install continuous welded rails, and global environmental conservation costs include the total amount invested in energy-efficient railcars).
- Expenditures do not include depreciation charges.
- In the costs for resource circulation activities, costs for treating waste collected from stations and trains are calculated by multiplying the allocations by the costs for cleaning stations and train cars, based on a model for cleaning stations and trains.
- In the costs for resource circulation activities, the costs for treating waste generated through construction projects and at rolling stock factories are calculated by multiplying waste volume for fiscal 2005 by standard unit prices by the type of waste for 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 included in some cases) in electricity and repair costs resulting from the introduction of energy-efficient railcars and cogeneration by the expected useful life, to determine useful-life economic benefit.
- Gains from the sales of waste generated at rolling stock factories and through construction projects are included in economic benefit of resource circulation activities.