

# Environmental accounting and management indicators

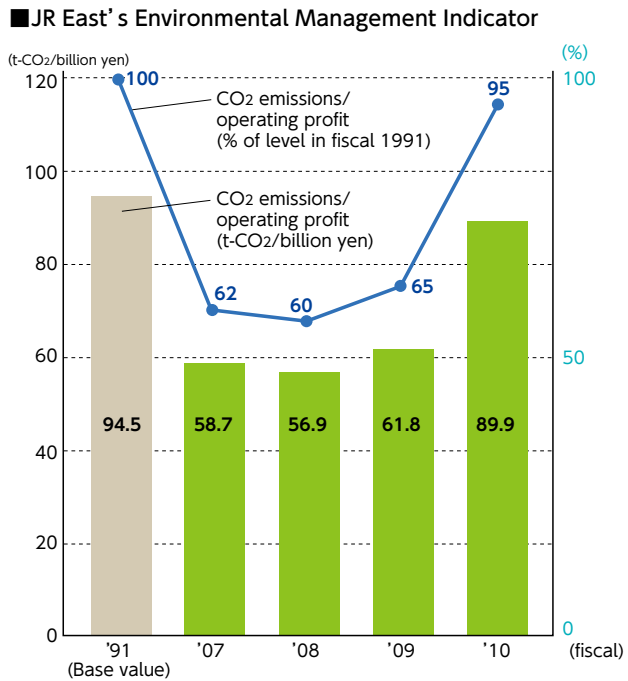
## Using Environmental Management Indicators in business activities

In the fiscal year ended March 2010, our environmental conservation costs amounted to approximately 76.9 billion yen in investments and 31.4 billion yen in expenses. Of these investments, costs for global environmental conservation, which accounted for a large portion, were at the same level as the previous year because we continued acquiring new railcars.

By introducing these new cars, we estimate we will reduce CO<sub>2</sub> emissions by 0.18 million tons during their service lives.

JR East has its own Environmental Management Indicator to assess the relation between our business activities and environmental impacts. These are calculated by dividing CO<sub>2</sub> 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 by giving smaller impacts on the environment. For the fiscal year ended March 2010 the value of the indicator was 89.9 t-CO<sub>2</sub>/billion yen, compared with 94.5 t-CO<sub>2</sub>/billion yen for the fiscal year ending March 1991.

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



## ■ Environmental accounting for fiscal year ended March 2010

Category	Environmental conservation costs (billion yen)		Environmental conservation benefits in relation to environmental targets	Fiscal 2008		Economic benefit of environmental conservation activities (billion yen)
	Investments	Expenses		Fiscal 2008	Fiscal 2009	
Environmental conservation (pollution prevention) activities along railway lines	10.48	24.6	Implementation of noise reduction measures along Shinkansen and conventional lines (soundproof walls, continuous welded rail, and other measures) NOx emissions from JR East's thermal power plant	81% 379 tons	100% 534 tons	—
Global environmental conservation activities	65.13	—	CO <sub>2</sub> emissions through business activities CO <sub>2</sub> 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	2.26 million t-CO <sub>2</sub> 465g-CO <sub>2</sub> /kWh 86% 17.5 MJ/car-km	2.54 million t-CO <sub>2</sub> — 88% —	20.76
Resource circulation activities	1.29	4.98	Recycling rate for waste generated at 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	70% 95% 92% 47% 92%	86% 93% 95% — 92%	2.51
Environmental management	—	0.37	Taking part in specific environmental protection activities every year (Railway Line Forestation Programs and Tree Planting under the Adatara Hometown Forestation Program)	54 thousand trees planted at 18 locations	49 thousand trees planted at 19 locations	—
Environmental research & development	—	1.37				—
Social activities	—	0.06				—
Total	76.9	31.38				23.27

### Notes

Capital investment for the period:

363.7 billion yen

Total R&D costs for the period:

16.5 billion yen \*

■ Targets for the JR East Group

### \* 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's relations with the table for Targets and Results 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"

(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 2008 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.