

## New environmental targets

At JR East, as part of steadily carrying out our environmental activities, we set not only medium- and long-term targets, but also numerical targets for each category of environmental preservation effort. With the completion of the last target period, we have now established new targets and will strive continuously to meet them.

Category of environmental conservation activities	Targets expiring in FY2012	Targets starting in FY2013	
Measures to prevent global warming	Total CO <sub>2</sub> emissions from railway business activities 32% reduction by fiscal 2018 (relative to fiscal 1991 level) 2.76 million t-CO <sub>2</sub> ⇒ 1.88 million t-CO <sub>2</sub> (reduction of 0.88 million t-CO <sub>2</sub> )	[Targets to be met by FY2021] 8% reduction in energy consumption from railway business activities (MJ: relative to FY2011 level) [Targets to be met by FY2021] 30% improvement in CO <sub>2</sub> emissions per unit of electricity generated at JR East's own power plants (kg-CO <sub>2</sub> /kWh: relative to FY1991 level)	
	Total CO <sub>2</sub> emissions from railway business activities 50% reduction by fiscal 2031 (relative to fiscal 1991 level) 2.76 million t-CO <sub>2</sub> ⇒ 1.38 million t-CO <sub>2</sub> (reduction of 1.38 million t-CO <sub>2</sub> )	— <sup>*1</sup>	
Category of environmental conservation activities	Performance indicators	Targets to be met by FY2011	New targets (to be met by FY2014)
Measures to prevent global warming	Energy-efficient railcar utilization rate	86%	6.8% reduction in electricity used for railway operations per unit of transport volume (kWh/car-km : relative to FY2007 level)
	Electricity used for train operation	2% reduction (relative to fiscal 2007 level) 4.17 billion kWh ⇒ 4.09 billion kWh	
	Train electricity used per unit transport volume	2% reduction (relative to fiscal 2007 level) 1.85 kWh/car-km ⇒ 1.81 kWh/car-km	
	Energy saving at stations and offices	4.5% reduction (relative to fiscal 2007 level) 15.3 billion MJ ⇒ 14.6 billion MJ	
Measures for resource circulation	Recycling rate for waste generated at stations and on trains	70%	90%
	Recycling rate for waste generated at General Rolling Stock Centers, etc.	95%	95%
	Recycling rate for waste generated in construction projects	92%	95%
	Recycled office paper utilization rate	100%	100% green procurement
Environmental activities along railway lines	Measures to reduce noise to 75 dB or less along the Tohoku and Joetsu Shinkansen Lines (for areas subject to noise limitation measures)	100% (Fiscal 2010 targets have been achieved)	[Targets to be met by FY2016] Noise Measures for the Tohoku and Joetsu Shinkansen Lines 100% achievement of 75 dB or less <sup>*2</sup> (for areas subject to noise limitation measures)
Environmental communication	Participation in specific environmental protection activities every year	Participation in tree planting, etc.	—
Environmental management	Setting of numeric targets by all group companies	All group companies set their own numerical targets	Targets to be revised continually

■ Targets for the JR East Group

\*1 Targets for FY2031 will be addressed while ascertaining the direction of Japan's energy policy and others.

\*2 Measures to reduce noise to 75 dB or less have been completed in the designated areas in accordance with government guidance. Currently, improvement work is being implemented step by step in other areas, to be completed by March 2016.

### Concepts in setting new targets

● **[Targets to be met by FY2021] 8% reduction in energy consumption from railway business activities (MJ : relative to the FY2011 level)**

JR East has striven to improve efficiency in energy use with energy-efficient railcars, etc. Targets for total CO<sub>2</sub> emissions, however, have been affected by fluctuations in the coefficients of CO<sub>2</sub> emissions of the electric power companies from which JR East purchased electricity, and it had been difficult to measure the results of our own efforts. JR East then set targets whereby its efforts to reduce energy consumption could be reflected better and be less affected by changing external environments.

● **[Targets to be met by FY2021] 30% improvement in CO<sub>2</sub> emissions per unit of electricity generated at JR East's own power plants (kg-CO<sub>2</sub>/kWh : relative to FY1991 level)**

At JR East's thermal power plants, efforts have been made to reduce CO<sub>2</sub> emissions by transforming facilities into "combined cycle generating systems," fuel conversions and other actions. JR East is propping up such efforts with this new target.

\* The two targets above replace the existing target for FY2018. Target for FY2031 will be addressed while ascertaining the direction of Japan's energy policy and others.

● **[Target for FY2014] 6.8% reduction in electricity used for railway operations per unit of transport volume (kWh/car-km : relative to FY2007 level)**

JR East used to set targets for "energy-efficient railcar utilization rates" and "electricity used for train operations" in addition to "electricity used for railway operations per unit of transport volume." As a result of increased use of energy-efficient railcars, total power consumption is being decreased and, accordingly, so is energy consumption per car-km. These two targets have now been integrated into "electricity used for railway operations per unit of transport volume."

● **[Target for FY2014] 3% reduction in energy consumption per unit of floor area at branch offices, etc. (kL-crude oil equivalent/m<sup>2</sup> : relative to FY2011 level)**

The target of "energy saving at stations and offices" was set to understand and reduce total energy used at stations, branch office buildings, etc. The target set this time is for energy consumption at "factories, etc.," as used in the Law on Rational Use of Energy (the Energy Saving Law), and JR East will promote reduction of energy consumed at its head office and branch offices accordingly.

● **[Target for FY2014] Recycling rates for various kinds of waste**

For recycling of waste, although a rate of over 90% has already been achieved, JR East will promote the 3Rs - reduce, reuse and recycle - toward realization of a recycling-oriented society without lowering numerical targets.

● **[Target for FY2014] 100% green procurement (group target)**

In the past, numerical targets for goods, etc., were limited to office paper and thus the "recycled office paper utilization rate" was established in 1996. Currently, however, "green procurement" is the favored approach within society. The JR East Group thus sets this green procurement target for environmentally friendly goods and materials used within the group. Specifically, whether or not group companies purchased goods, materials or services according to the basic policy provided in Article 6 of the "Law on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (Green Purchasing Law)" is used as an indicator. In parallel with this, each group company establishes guidelines for goods, materials and services, how to deal with them, etc.

● [Target for fiscal 2016] Noise Measures targeting 75 dB or less along the Tohoku and Joetsu Shinkansen Lines (for areas subject to noise measures)

As for noise measures along Shinkansen lines, measures to reduce noise to 75 dB or less have been completed in the designated areas in accordance with government guidance. Currently, improvement work is being implemented step by step in other areas to be completed by the end of March 2016.

● Implementation of specific environmental protection activities every year (group target)

Targets have not been set for FY2014. This is because individual companies in the JR East Group are regularly involved in various environmental protection activities in response to society's increasing awareness of global environmental issues.

## Progress on New Environmental Targets

Category of environmental conservation activities	Performance indicators	Targets to be met by FY2021	Results for FY2012
Measures to prevent global warming	Energy consumption from railway business activities <sup>※1</sup>	8% reduction (MJ: relative to FY2011 level) (52.7 billion MJ⇒48.5 billion MJ)	1.9% reduction (51.7 billion MJ)
	CO <sub>2</sub> emissions per unit of electricity generated at JR East's own power plants <sup>※2</sup>	30% improvement (kg-CO <sub>2</sub> /kWh: relative to FY1991 level) (0.457 kg-CO <sub>2</sub> /kWh⇒0.320 kg-CO <sub>2</sub> /kWh)	26% improvement (0.337 kg-CO <sub>2</sub> /kWh) <sup>※3</sup>
Category of environmental conservation activities	Performance indicators	Targets to be met by FY2014	Results for FY2012
Measures to prevent global warming	Electricity used for railway operations per unit of transport volume	6.8% reduction (kWh/car-km: relative to FY2007 level) (1.85 kWh/car-km ⇒1.72 kWh/car-km)	4.7% reduction (1.76 kWh/car-km)
	Energy consumption per unit of floor area at branch offices, etc.	3% reduction (kL-crude oil equivalent/m <sup>2</sup> : relative to FY2011 level) (0.0467 kL-crude oil equivalent/m <sup>2</sup> ⇒0.0453 kL-crude oil equivalent/m <sup>2</sup> )	12% reduction (0.0409 kL-crude oil equivalent/m <sup>2</sup> )
Measures for resource circulation	Recycling rate for waste generated at stations and on trains	90%	93%
	Recycling rate for waste generated at General Rolling Stock Centers, etc.	95%	95%
	Recycling rate for waste generated in construction projects	95%	95%
	Rate of green procurement	100%	94%
Environmental activities along railway lines	Measures to reduce noise to 75 dB or less along the Tohoku and Joetsu Shinkansen Lines <sup>※4</sup> (for areas subject to noise limitation measures)	[Targets to be met by FY2016] 100%	Being implemented
Environmental management	Setting of numeric targets by all group companies	Targets to be revised continually	Established

■ Targets for the JR East Group

※1 Energy consumption from railway business activities is the target in and after FY2013; result in FY2012 is a reference value.

※2 CO<sub>2</sub> emissions per unit of electricity generated at JR East's own power plants is the target in and after FY2013; result in FY2012 is a reference value.

※3 Numerical values are those reported according to the "Law on Rational Use of Energy (the Energy Saving Law)."

※4 Measures to reduce noise to 75 dB or less have been completed in the designated areas in accordance with government guidance. Currently, improvement work is being carried out step by step in other areas, to be completed by the fiscal year ending March 2016.