

Annual Environmental Report 2000



1. Environmental management system

JR East established the Committee on Ecology in April 1992 as a means of tackling a variety of worldwide environmental issues, and in May of that year, we set forth our Basic Philosophy and Policy on the Promotion of Ecological Activities. Then, in March 1996, we established guidelines as a means of dealing with environmental impact caused by our business operations, together with goals to be met by fiscal 2001.

Basic philosophy and policy on the promotion of ecological activities (Established in May 1992)

Basic philosophy

The entire JR East Group, working together, will diligently strive to reconcile environmental protection with its business activities.

Basic policy

To contribute to customers' lives and local communities by providing a comfortable environment

To develop and provide the technology needed to protect the global environment

To maintain an awareness of environmental protection and raise the environmental awareness of our employees

Activity guidelines and goals for the promotion of ecological activities

(Established in March 1996;
partially revised in February 1998)

Activity guidelines

- 1** We work to prevent the waste of precious energy and to reduce CO₂ emissions—a known source of global warming—by enhancing our energy efficiency and introducing cleaner forms of energy.
- 2** We ensure the proper management and processing of environmental pollutants and ozone-depleting substances, in conformance with laws and regulations. Moreover, we do our best to reduce the usage and generation of these substances, and to use environmentally responsible substitutes wherever possible.
- 3** We ensure the appropriate processing of various types of waste generated at our offices, establishments, stations, trains, etc. We strive to recycle them and reduce the generation thereof, and to use more recycled and resource-saving products to minimize our burden upon the environment.
- 4** We respect the natural environment as a nurturer and source of life, and therefore, we endeavor to reduce noise and vibration caused by train operations, thus achieving a harmonious relationship with the communities we serve.
- 5** We work to make railways a more attractive and environment-friendly form of transportation.

Goals to be met by fiscal 2001 (based on figures from fiscal 1994)

- T A 10% reduction off CO₂ emissions^{(*)1} in general business activities
- T A 10% reduction off CO₂ emissions in proportion to the unit electric power generation by the Company-run thermoelectric power plant
- T A 10% reduction of energy consumption for train operations, in proportion to the unit transportation volume
- T A 60% reduction in large-size refrigerating machines using specific CFCs
- T A 40% reduction in NO_x emissions at the Company-run thermoelectric power plant
- T Realization of a 70% recycling rate for waste generated from construction work and in workshops
- T Realization of a 30% recycling rate for waste generated at stations and trains
- T Realization of a 95% rate for usage of recycled paper as office stock
- T Planting of 30,000 trees annually
- T Measures to limit noise to 75 dB in designated residential areas along the Tohoku and Joetsu Shinkansen lines^{(*)2}

The goals are subject to revision when it is considered necessary due to the degree of their achievement, technological development, etc. We are planning to revise them during the fiscal year 2000.

*1: The figure from fiscal 1990 was used as a basis for comparison, in accordance with the COP3.

*2: This is projected for achievement by fiscal 2002.

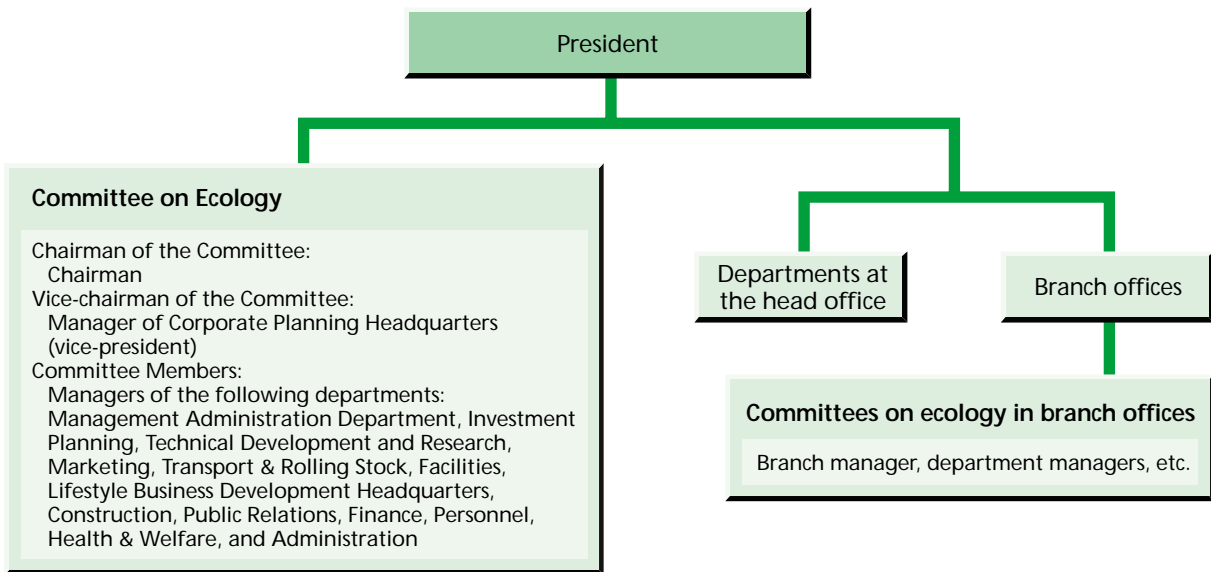


Structure for the implementation of environmental activities

JR East, with the Committee on Ecology at its center, has established a basic policy on environmental issues and is energetically moving forward with various activities. The Committee is a cross-departmental organization within the Company itself, consists of managers from each department, and as such is led by the chairman. The Committee maintains an office within the Management Administration Department, and oversees a number of subcommittees, each of which is charged with a specific issue and led by a chief supervisor from the respective business section. Through the Committee's initiative we conduct various activities,

including the examination of environmental impact through our business operations, the establishment of goals regarding our environmental activities, the implementation of conservation activities, confirmation of the degree to which goals are achieved, and checkups by the executive staff.

Each of our branch offices established its own Committee on Ecology in fiscal 1998. These committees consist of a branch manager and department managers. Therefore, we have created a structure enabling us to deal with environmental concerns in proportion to the actual conditions present in each locality.



Subcommittees	Subcommittee chairman	Main activities
Environmental Management Systems	Manager, Management Administration Dept.	The Setting up and revision of goals and environmental measures
Energy-savings and Clean Energy	Electric Facilities manager, Facilities Dept.	Energy-savings and the reduction of CO ₂ emissions
Environmental Pollutant Management and Reduction	Planning manager, Transport & Rolling Stock Dept.	Reduction of environmental pollutants and ozone-depleting substances
Zero Emissions	Passengers Facilities manager, Facilities Dept.	Recycling and reduction of waste and use of recycled products
Green Rail	Environmental Planning manager, Facilities Dept.	Environmental conservation along railway lines and noise problems
Ecology Technology	Manager, Technical Development and Research Dept.	Development of environmental technologies
Intermodal Transportation	Manager, Marketing Dept.	Reduction of environmental burden throughout society by uniting railways into a general transportation infrastructure
Environmental Business	Manager, Lifestyle Business Development Headquarters	Environmental contributions through business operations

ISO 14001

In February 1999, our Niitsu Rolling Stock Plant, which manufactures energy-saving cars (notably the E231 series for the Sobu and other lines) obtained certification under ISO 14001, the international standard for environmental management in business and industry. It was the first such achievement for the production section of a railway company in Japan. The Company-run Kawasaki thermoelectric power plant, Oi Workshop (a facility for the maintenance of railway cars), and Niigata Mechanical Technology Center—each representing a significant environmental burden—are currently conducting operations intended to ensure ISO 14001 certification as a means of systematically promoting environmental conservation.



Niitsu Rolling Stock Manufacturing Factory



ISO 14001 registration certificate for our Niitsu Rolling Stock Plant

Environmental education

The promotion of our environmental efforts as a company requires that our employees have the right awareness and values with regard to environmental issues. We therefore provide education on ecology to all our new recruits and new management staff (on-site supervisors, including stationmasters). Occasionally we give out information concerning environmental issues, as well as our efforts to grapple with them, via the publication of *JR Higashi*, our in-company information magazine.

Training programs that contained education on ecology during 1999

- T Training for new on-site supervisors
- T Training for new management staff
- T Training for senior leaders
- T Training for new recruits (university graduates)
- T Training for new recruits (junior college, vocational school and high school graduates)
- T Training for new recruits (medical care)
- T Training on the estimation and evaluation of environmental impact



JR Higashi in-house magazine



Environmental accounting

Summary table of environmental conservation activities (environmental conservation costs, effects, and chief

Environmental conservation activity category	Environmental conservation costs			Benefits of environmental	
	Main costs of environmental conservation activities (unit: ¥ billion)		Details of main costs	Reduction of environmental	
	Investment	Expenses		Item	Targeted value ^(*)
1 Environmental conservation activities along railway lines (costs associated with pollution prevention)	2.76	7.33	TMeasurement and monitoring of air and water quality TMeasures regarding noise generated by Shinkansen and conventional lines TMeasures regarding radio disturbance TMeasures regarding dioxin emitted by incinerators, etc.	T75 dB measures in "residential areas" along the Tohoku and Joetsu Shinkansen lines TReduction of NO _x emitted by the Company-run thermoelectric power plant	100% (to be completed in 2002) A 40% reduction
2 Global environmental conservation activities (costs associated with global environmental conservation)	58.17	—	TIntroduction of energy-saving cars TRenovation of the Company-run thermoelectric power plant TMeasures regarding CFCs, etc.	TTotal CO ₂ emissions from business operations TVolume of CO ₂ emissions in proportion to the unit electric power generation by the Company-run thermoelectric power plant TEnergy consumption for train operations, in proportion to unit transportation volume TNumber of large-size refrigerating machines using CFCs	A 10% reduction ^(**) A 10% reduction A 10% reduction A 60% reduction
3 Resource-recycling activities (resource-recycling costs)	—	4.99	TProcessing and recycling of waste generated at stations and trains TProcessing, recycling, etc. of waste generated at rolling-stock workshops and through construction work, etc.	TRecycling rate for waste generated at stations and trains TRecycling rate for waste generated at rolling-stock workshop and through construction work TUsage rate for paper recycled as office stock	30% 70% 95%
4 Environmental management (management operation costs)	—	0.17	TPersonnel expenses for the Committee on Ecology, etc.		
5 Research and development of environment-related technologies (R&D costs)	0.07	0.40	TDevelopment of energy-saving cars TDevelopment of noise-mitigation technologies, etc.		
6 Social activities (costs associated with social activity)	0.09	0.24	TAfforestation activities TEnvironmental reports, environmental advertisements, etc.	TAfforestation activities	30,000 trees annually

How environmental conservation costs are determined

† The data covered is that of JR East itself, on a non-consolidated basis.

† "Environmental conservation costs" covers only those that can be grasped through our current system of management, etc.

† Categorization of activities is based on the guidelines set forth by the Environmental Agency of Japan.

† For an activity that is multipurpose and has a significant environmental effect, the stated amount refers to total costs spent on behalf of that activity. (The cost for pollution prevention includes all the expenses for the introduction of continuous welded rails and PC sleepers, as long as they are considered to have contributed to enhanced functionality. The cost for global environmental conservation includes the total amount invested in energy-saving cars.)

† Expenses do not include depreciation costs.

† The expense amount for the processing of waste generated at stations and trains (within the category of resource-recycling costs) is calculated in the following manner: First, a model is set up for the cleaning of stations and trains. Second, a percentage occupied by waste recycling and processing is calculated, in proportion to the content of the entire model. By multiplying the cleaning expenses for stations and trains by this percentage, the amount of the said expenses is obtained.

† The amount of expenses for the processing of waste generated through construction work and by rolling-stock maintenance facilities (under the category of resource-recycling costs) is calculated by multiplying the waste volume in fiscal 1999 by the standard unit price in each waste category and location.

activities)

conservation			Content of main activities	Reference page of Environmental Report
burden indicator				
Actual achievement in fiscal 1999		Reference value		
▲ 47% ^(*3)	A 22% improvement 467 t	— 873 t	TNoise-mitigation measures for Shinkansen and conventional lines (soundproof walls, introduction of PC sleepers and continuous welded rails, etc.) TReduction of environmental pollutants from the Company-run Kawasaki Thermoelectric Power Plant TImprovement of large incinerators and the abolition of small incinerators TAppropriate management of organic solvents, etc., based on PRTR TAppropriate management of industrial waste subject to special control, including PCBs	Efforts regarding environmental conservation along railway lines pp. 26–29
▲ 8%	2.53 million t-CO ₂	2.76 million t-CO ₂	TIntroduction of energy-saving cars TEnergy-saving measures applied to stations and office buildings TEfficiency enhancement at the Company-run thermoelectric power plant TPromotion of intermodal transportation (Park & Ride, Rail & Rent-a-Car, etc.)	Efforts regarding global environmental conservation pp. 10–17
▲ 2%	567 g-CO ₂ /kWh	581 g-CO ₂ /kWh		
▲ 1%	0.345 MJ/passenger-km	0.347 MJ/passenger-km		
▲ 53%	34 units	73 units		
33% ^(*3)	—	—	TReduction and recycling of refuse generated at stations and trains (separated collection, establishment of recycling centers, etc.) TRecycling of train tickets and passes TRecycling of waste generated through construction work and by plants TIntroduction of recycled copier paper made of old newspaper collected from the stations	Efforts regarding zero emissions pp. 18–25
74% ^(*3)	—	—		
91%	—	—		
			TEnvironmental management on the initiative of the committees on ecology at the head office and branches TAcquisition of the ISO 14001 certification by the Niitsu Rolling Stock Manufacturing Factory TActivities for acquisition of the ISO 14001 certification conducted at the Kawasaki Thermoelectric Power Plant and rolling-stock maintenance workshops	Environmental management system pp. 4–9
			TDevelopment of next-generation commuter trains (AC trains) (energy savings and recycling) TDevelopment of recycling ticket machines TDevelopment of technologies for noise reduction	pp. 13, 22, 23, 27
12 locations 20,000 trees planted 3,000 people participated	—	—	TImplementation of the “Afforestation Alongside Railway Tracks” program TImplementation of ecology campaigns Tissuance of environmental reports TEnvironmental advertisements	Environmental efforts in society pp. 30–32

(*1) The targeted values were set up in March 1996 and are to be achieved by the year 2001 (based on the figures from fiscal 1994).

(*2) Figures from fiscal 1990 are used for purposes of comparison, in accordance with the COP3.

(*3) Refers to the achievements by fiscal 1999

Reference

Amount of facilities investment for the period ¥223.6 billion
Total amount of research and development costs for the period ¥12.9 billion^(*4)

(*4) Includes the amount of research contracted (¥5.82 billion) to the Railway General Research Institute based on the “Agreement on Research Activities, etc.,” concerning research and development in more fundamental fields.





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