

Social and Environmental Report  
2002

**EAST JAPAN RAILWAY COMPANY**







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- We referred to the Environmental Report Guidelines (edition of fiscal 2000) issued by Ministry of the Environment of Japan and the Global Reporting Initiative (GRI) Guidelines to prepare this report.
- A certain amount of information concerning our group companies is also contained in this report, but this edition of the JR East Social and Environmental Report presents data and environmental accounting for the East Japan Railway Company itself, on a non-consolidated basis.
- The report covers the fiscal 2001 term (April 1, 2001 through March 31, 2002). Initiatives prior to fiscal 2000 and activities up until August 2002 are also referred to in some sections of this report.

# Message from the Management

It is necessary to meet your expectations as stakeholders and obtain your confidence so that this company can contribute to the development of a sustainable society in the 21st century, a new era that will bring about significant change throughout society.

In 2002, the Johannesburg Summit, or “Rio + 10” conference, was held in Johannesburg, in the Republic of South Africa. With the prospect of enforcement of the Kyoto Protocol in 2002, efforts to step up environmental conservation activities on a global basis are spreading to more and more regions. Our company also, mainly through our Committee on Ecology (established in 1992), is promoting the adoption of environmental conservation activities more widely and deeply. For instance, JR East consumes enormous amounts of energy to provide services for 16 million customers per day, which partly contributes to global warming. In comparison with the CO<sub>2</sub> levels in 1990, we cut the volume of CO<sub>2</sub> generated from this energy consumption by 17% by the end of the last fiscal year. We continue to implement our environmental conservation activities and aim at reducing greenhouse gas emissions by an additional 3% by fiscal 2005.

Harmonious coexistence between companies and those living and working in the vicinity of railway lines as well as between domestic and international social communities is essential for sustained social and corporate development. To achieve this, we will try not only to improve service quality for customers but also to implement social action programs such as cultural development of local communities and international cooperation. In addition, JR East has been committed to ensuring safety as its top priority since its establishment. We continue to improve a variety of measures designed to ensure safe and stable transportation such as platform security measures.

All stocks held by the Japan Railway Construction Public Corporation were sold by June 2002. This enabled us to achieve full privatization, one of the main objectives after the establishment of JR East, both in name and reality. However, this was just first step in our reform process. We will address the more serious social expectations, and promote greater independence of management to improve corporate value.

It is not easy to formulate a management structure and process that can harmonize the initiatives being taken in the areas of the environment, safety, social, and economic activities, but we are committed to the ongoing development of JR East, while making a positive contribution to 21st century society. This is our mission.

The “Annual Environmental Report” went into its sixth edition last year. This edition has been newly issued as the “Social and Environmental Report” to provide extensive information on the relationship between society and JR East in an easily accessible format. We will make efforts to improve the contents of this report in the future. We welcome your honest opinions regarding the activities outlined in our Social and Environmental Report.

September 2002



大塚 陸毅

Mutsutake Otsuka  
President and CEO  
East Japan Railway Company



## Group Visions

In the early years of the 21st century, the JR East Group will make company operations more open, and further enhance its reputation among customers by becoming a “Trusted Life-style Service Creating Group.”

The JR East Group, with railway businesses and station operations at its core, is founded on railway networks where customers can really travel. To be a “Trusted Life-style Service Creating Group” in this field, we think it is necessary to try to provide services which always meet customer requirements and also to become a valuable corporate group for all stakeholders.

### Group policies

The JR East Group will aim to function as a corporate group providing high quality and advanced services with railway businesses at its core, while achieving sound management. For this purpose, every individual employee of the group will endeavor to support safe and punctual transportation and supply convenient and high quality products. Every employee will take on the challenge of improving the standard of services and raising the level of technology in order to further gain the confidence and trust of our customers.

As a “Trusted Life-style Services Creating Group,” we will go forward with our customers to contribute to the achievement of a better living, the cultural development of local communities and the protection of the global environment.

### Action guidelines

1. Customer Comes First  
We will provide heartfelt and refreshing services.
2. Ensuring Safety and Quality  
We will commit ourselves to providing safe and punctual transportation and high quality products.
3. Group Development  
In the spirit of self-discipline and partnership and in the spirit of challenge, with the participation of all employees, we will work towards creating a corporate group worthy of the confidence and trust of the public.

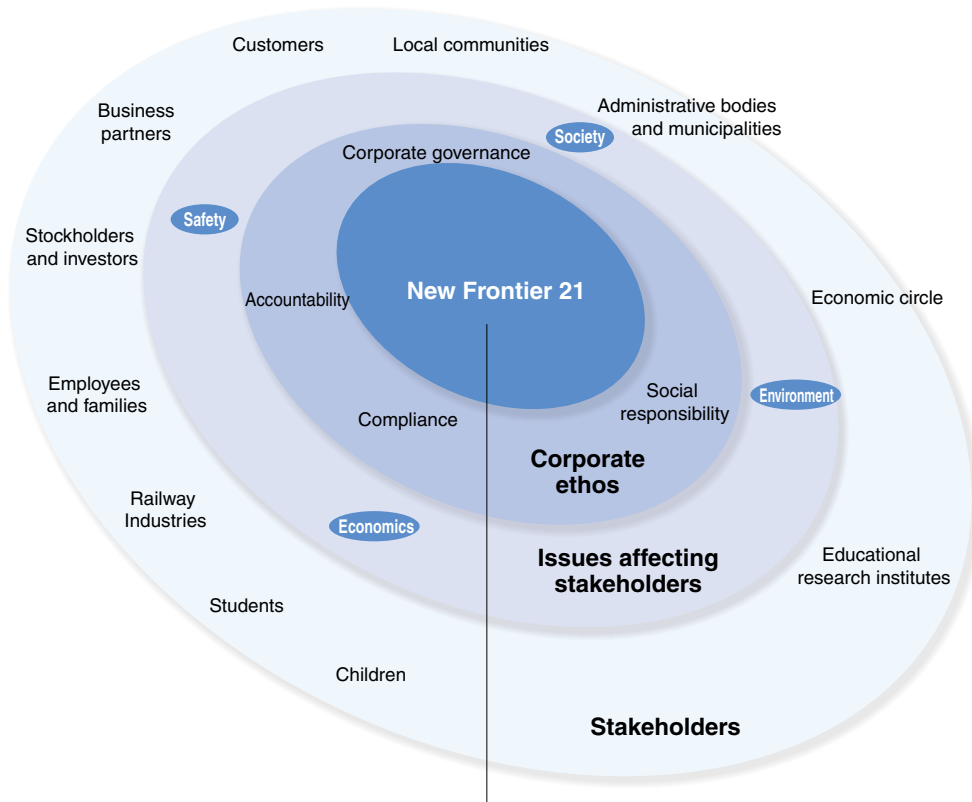
### New Frontier 21

The JR East Group released New Frontier 21, the mid-term business plan that will take the company up until fiscal 2005, in November 2000. With the aim of being a “Trusted Life-style Service Creating Group,” the Group defined four roles and five specific directions in the policy. One of the key directions is the undertaking to embody “Harmony with Society and Coexistence with the Environment.” By adhering to this affirmation, we are confident of steadily accomplishing the social missions we have set for the company; for instance, promotion of a barrier free environment, vitalization of local communities and the encouragement of environmental management as an “Environment-Leading Corporate Group.”

### Relationship with stakeholders

The business activities of JR East extend across a wide area encompassing the Kanto, Koshin'etsu and Tohoku regions where about 16 million customers per day use its services, and where its relationship with the company's many stakeholders assumes a multitude of forms. We firmly believe it is important to become a valuable corporate group for the sake of all stakeholders.

For this reason, we are committed to the full disclosure and the principles of responsibility for explanation (Accountability), conformity with laws and regulations (Compliance), realization of a transparent corporate system (Corporate governance) and fulfillment of various social responsibilities as a corporate citizen (Social responsibility).



● **The four vital roles**

We believe that the JR East Group should perform the following four major roles in the 21st century.

1. Providing Safe, Comfortable and Convenient Transportation Services, and the Creation of New Services (Spatial and Temporal Designs)
2. Achieving Steady Growth and Returns
3. Driving Force in Technological Innovation, and Integration of Advanced Technologies
4. Social Responsibility and Partnership with Local Communities

● **Five specific directions**

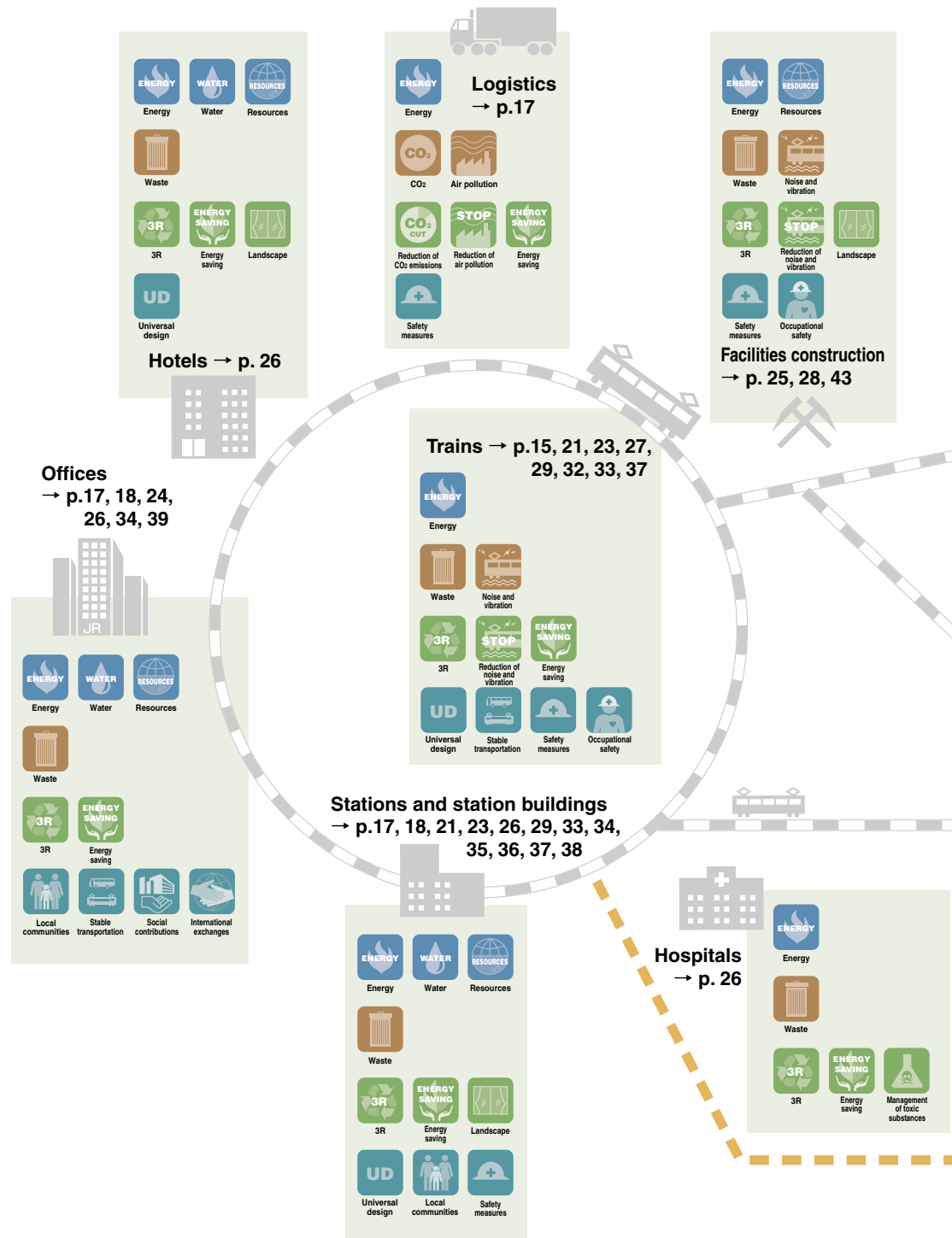
We are committed to the realization of a group vision, based on five specific directions.

1. Creating Customer Value and Pursuing Customer Satisfaction
  - Building a corporate group for providing customers with “trust,” “comfort,” and “excitement.”
2. Innovation of Business through the Creation of Technologies
  - Building a corporate group for the integration of advanced technologies.
3. Harmony with Society and Coexistence with the Environment
  - Building a corporate group which harmonizes with society and gains the respect of global community.
4. Creating Motivation and Vitality
  - Building a corporate group offering a working motivation and a sense of accomplishment through a free and liberal approach to work.
5. Raising Shareholder Values
  - Building a corporate group meeting shareholder expectations through the improvement of consolidated performance.

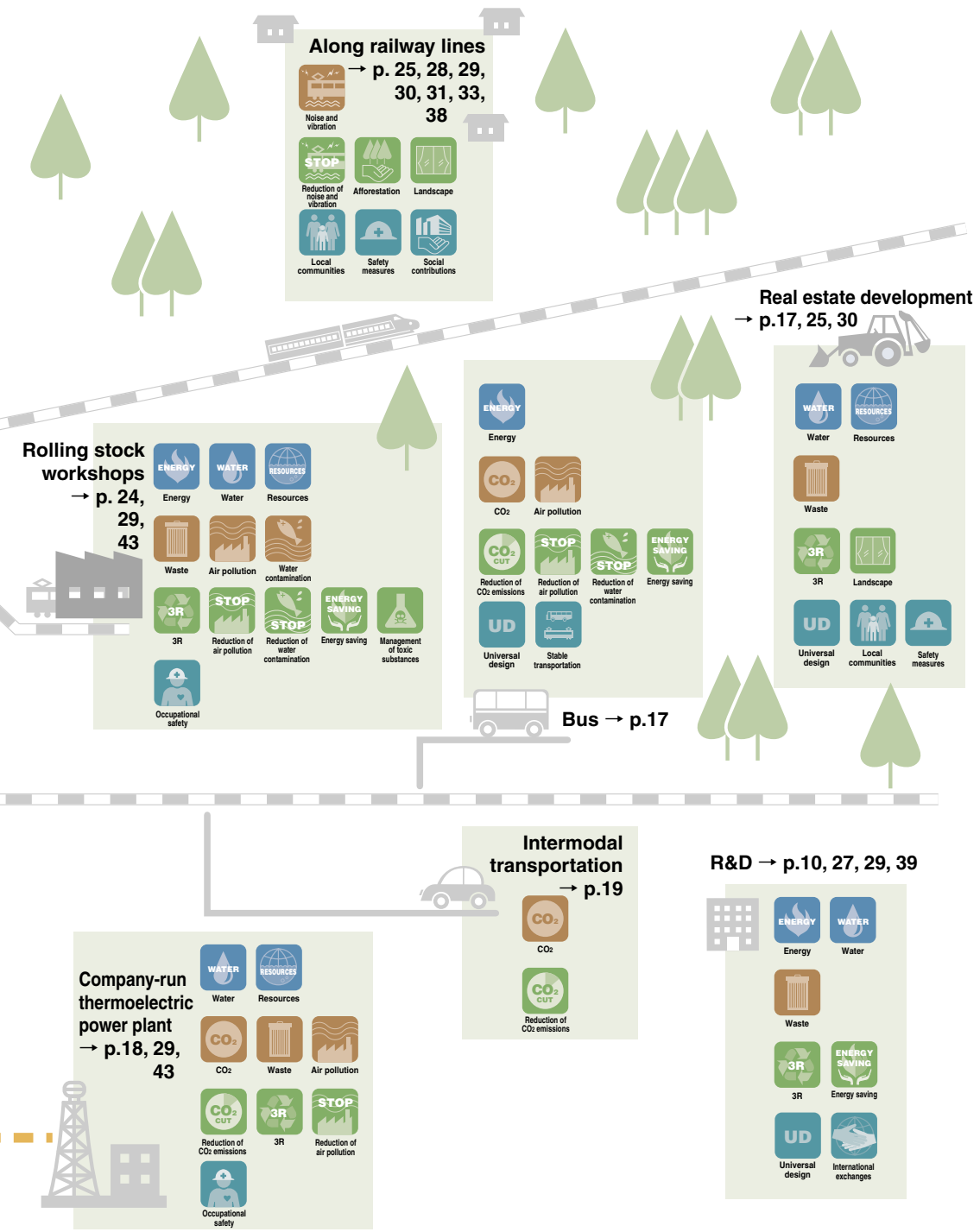
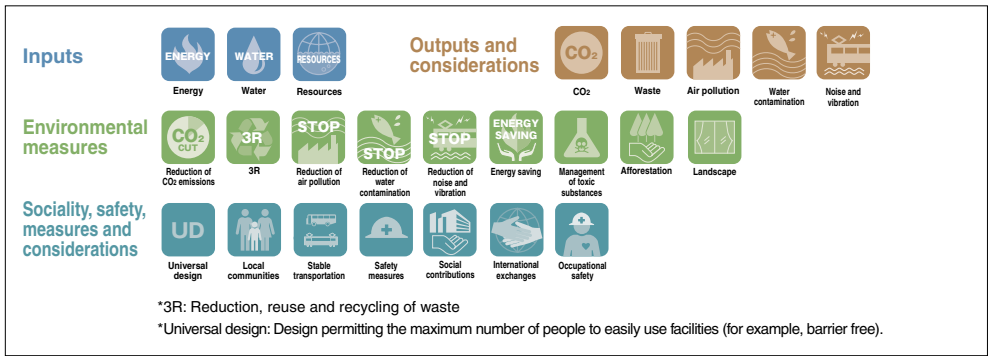


# Relationship between JR East's Business Operations and Environment/Society

JR East operates in the eastern half of Japan's main island, Honshu, which includes the Tokyo metropolitan area. We are responsible for approximately 7,500 km of railway lines, 1,700 stations, and 12,000 units of rolling stock. The provision of these services has an impact on the environment including the emission of CO<sub>2</sub> and the generation of waste. We are committed to the implementation of environmental conservation activities in order to diminish the environmental impact of our operations. JR East is also embarking on a variety of activities to ensure safe and reliable transportation through its core business of railway traffic and seeks to fulfill its corporate responsibilities in terms of contributions to local communities and society at large.







## Environmental Management

“Harmony with Society and Coexistence with the Environment” is one of the group visions that form part of the JR East Group’s “New Frontier 21” mid-term management plan. JR East launched the environmental management system before the announcement of the “New Frontier 21” plan. Currently, we are improving the existing system to create an effective mechanism for achieving this group vision.

In 1992, the “United Nations Conference on Environment and Development” (Earth Summit) was held in Rio de Janeiro, leading to the launch of a raft of global environmental conservation activities. In the same year, JR East established the “Committee on Ecology” and started systematic environmental conservation activities, while setting forth our Basic Philosophy and Policy on the Promotion of Ecological Activities. In 1996, we established guidelines and ecological goals, and have from that point been gradually introducing and promoting more specific initiatives. We revised the environmental targets to be achieved by fiscal 2005. These revised targets are set to coincide in 2005 with the culmination of New Frontier 21 as conceived in 2000.

### Basic philosophy and basic policy

#### Basic philosophy (established in May 1992)

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

#### Basic policy (established in May 1992)

**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

### Activity guidelines (established in March 1996)

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1. We work to prevent the waste of precious energy and to reduce CO<sub>2</sub> 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 compliance with laws and regulations. Moreover, we do our best to reduce the usage and generation of these substances, and to adopt environmentally responsible substitutes when they are available.
3. We ensure the appropriate processing of various types of waste generated at our offices, establishments, stations, trains, etc. We strive to recycle waste 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 2005 (based on figures in fiscal 1990)

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(established in March 1996; partially revised in February 1998 and revised in November 2000)

- A 20% reduction of CO<sub>2</sub> emissions in general business activities
- Realization of an energy-saving railcar ratio of 80%
- A 30% reduction of CO<sub>2</sub> emissions in proportion to unit electric power generation at company-run thermoelectric power plant
- A 15% reduction in energy consumption for train operations in proportion to unit transportation volume
- An 85% reduction in the number of large-size refrigerating machines using specific chlorofluorocarbons (CFCs)
- Realization of a 36% recycling rate for waste generated at stations and on trains
- Realization of a 75% recycling rate for waste generated in rolling stock workshops
- Realization of an 85% recycling rate for waste generated in construction projects
- Realization of a 100% rate for usage of recycled paper as office stock
- Reduction of noise to less than 75dB in designated residential areas along the Tohoku and Joetsu Shinkansen Lines\*
- A 60% reduction of NO<sub>x</sub> emissions at company-run thermoelectric power plant
- Implementation of specific environmental protection activities on an annual basis

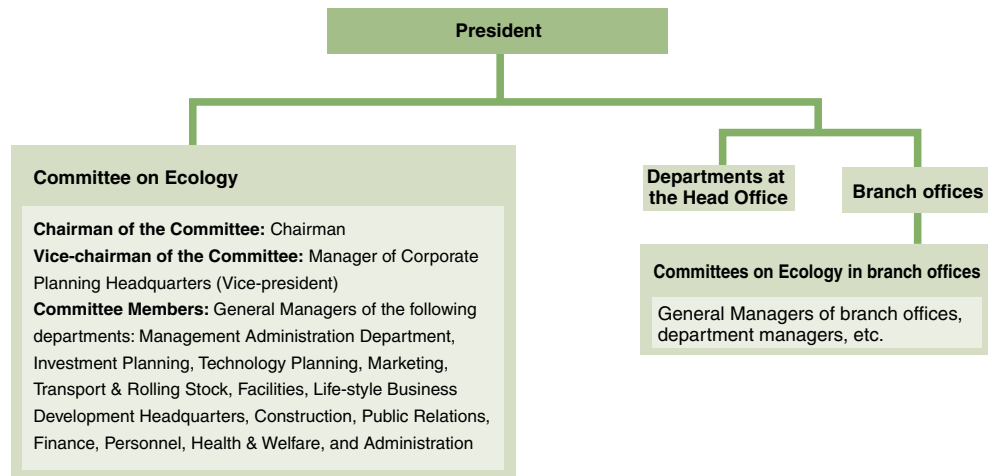
\*Projected for achievement by fiscal 2002



## System for the implementation of ecological activities

A cross-departmental organization within JR East itself, the Committee on Ecology consists of general managers from each department, and is chaired by the Chairman of JR East. The Committee maintains an office within the Management Administration Department and a number of subcommittees, each of which is responsible for one of eight issues and is led by a chief supervisor from the respective business section. The Committee is involved in various activities, including the examination of the environmental impact of our business operations, the establishment of goals regarding our environmental activities, the implementation of conservation initiatives, confirmation of the degree to which goals are achieved, and executive oversight.

In fiscal 1998, each of our branch offices established its own Committee on Ecology, consisting of a branch manager and all department managers. Currently, each committee implements environmental conservation activities that focus on local circumstances and business. After fiscal 2000, these branch offices began publishing their own environmental reports (site reports) to track the progress of their environmental activities.



Subcommittees	Departments in charge of subcommittees	Main activities
Environmental Management System	Management Administration Dept.	Establishment and revision of goals and environmental measures
Energy Savings and Clean Energy	Electric Facilities Section, Facilities Dept.	Energy savings and the reduction of CO <sub>2</sub> emissions
Environmental Pollutant Management and Reduction	Planning Section, Transport & Rolling Stock Dept.	Reduction of environmental pollutants and ozone-layer depleting substances
Zero Emissions	Passengers Facilities Section, Facilities Dept.	Reduction of waste volume and promotion of use of recycled products
Green Rail	Environmental Planning Section, Facilities Dept.	Environmental conservation along railway lines and noise reduction
Ecology Technology	Technology Planning Dept.	Development of environmental technologies
Intermodal Transportation	Marketing Dept.	Reduction of environmental burden by enhanced integration of railways into the general transportation infrastructure
Environmental Business	Lifestyle Business Development Headquarters	Environmental contributions through business operations

## ISO 14001

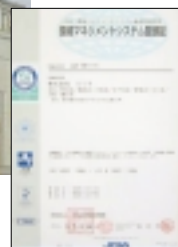
In fiscal 1998, our Niitsu Rolling Stock Manufacturing Factory obtained certification under ISO 14001, the international standard for environmental management systems in business and industry, for the first time in operating divisions of railway companies in Japan. In fiscal 2000, our Kawasaki Thermoelectric Power Plant, the Oi Rolling Stock Workshop, and Niigata Mechanical Technology Center obtained certification. The Omiya Plant also obtained ISO 14001 certification in fiscal 2001. Now, our Sendai General Rolling Stock workshop is working toward the acquisition of this certification. We will continue our efforts to obtain certification, primarily at our rolling stock workshops - each of which is engaged in operations with the potential to generate a significant environmental burden. Among our group companies, East Japan Eco Access Co., Ltd. obtained certification in 1999. It was followed by all eight Lumine Co., Ltd. buildings and the corporate headquarters through 2000 to 2001. Currently, the Production Operation Division for box lunches and other goods in Nippon Restaurant Enterprise Co., Ltd. is promoting activities in order to obtain certification.



Omiya Plant and certificate



Lumine and certificate



## Internal environmental audits

JR East is in the process of implementing environmental management based on the PDCA (Plan-Do-Check-Action) cycle, primarily through the Committee on Ecology. At our rolling stock workshops, for example, we send some employees to outside workshops, who then conduct regular

audits for his/her own plants and other in-house plants concerning specific environmental activities.

## Environmental risk management

We have compiled emergency response manuals for current operations that handle chemical and hazardous substances such as our thermoelectric power plant and rolling stock workshops. These manuals are used in study groups and are intended to thoroughly familiarize workers with risk control procedures. We also conduct on-site training exercises on how to handle these substances.



## Environment-related accidents, etc.

In fiscal 2001, we did not experience a single instance of an environment-related accident and no fines were levied as a result.



## Environmental education

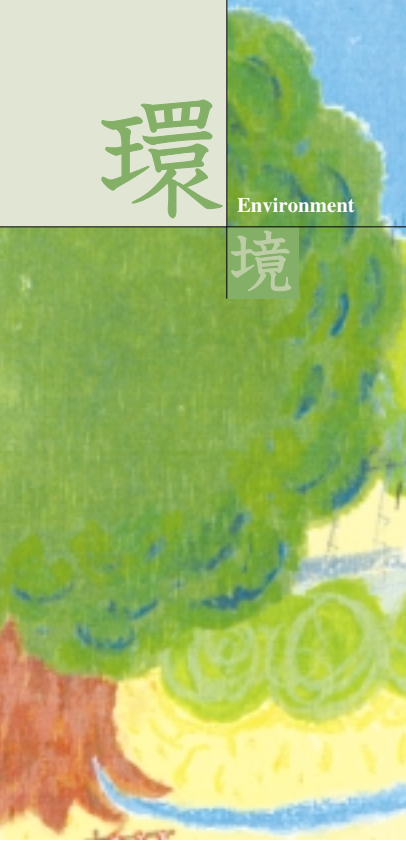
Because JR East is now implementing environmental conservation activities, it has become very important that all our employees have an appropriate level of awareness with regard to environmental issues. We therefore provide environmental education for all our new recruits and new management staff, while organizing environment-related seminars and lectures for a wide range of staff. We incorporated ten courses, for instance, "Earth-friendly Environmental Seminar" and "Introduction to ISO 14001," into our correspondence training in order to increase staff awareness concerning these issues. In addition, our monthly in-house magazine "JR Higashi" also covers environmental topics in every issue, and carried a feature of JR East's environmental activities over a six-month period in fiscal 2001. Also, each of our branch offices provides information on environmental issues through its own public relations magazine and in-branch office LAN (information network).



"JR Higashi"

Training for new on-site supervisors	12 times	230 people
Training for new management staff	3 times	90 people
Training for implementation managers	Once	200 people
Training for new recruits	Once	1,390 people
Follow-up training for new recruits	Once	50 people
Environmental seminars	15 times	980 people

Ecological education programs implemented during fiscal 2001



JR East's ecology activities  
 URL: <http://www.jreast.co.jp/eco/>

## Environmental publicity

JR East conducts a campaign on ecology issues every year. This is to highlight the importance of these issues to customers and people working and living along railway lines and to inform them of our environmental conservation activities. In fiscal 1999 and 2000, we operated trains displaying artwork to promote environmental issues along the Keihin-Tohoku and Yamanote Lines. In March 2002, we held an event in the event space referred to as "Break," at Tokyo Station, where families could enjoy handicraft activities. About 10,000 people visited this event site over a four-day period.

In addition to the above campaign, we are conducting public relations activities through various media such as newspapers and magazines to help the public gain a better understanding of how we are addressing environmental issues and also to increase society-wide environmental awareness. JR East has a page for ecological issues on its website to make information on our environmental conservation activities available and it also provides the full text of our Social and Environmental Report through PDF file format. Also, you can comment on this page through e-mail, while your opinions and views can be sent by fax or by mail through a questionnaire attached to this report.



Press advertising

## Research and development

### Research and Development Center of JR East Group

To quickly and precisely identify customer needs, which will become increasingly sophisticated and diversified in the future, and to contribute to social communities through the realization of the best railway system in the world (= e@train) in terms of safety, convenience, technological innovation, comfort and efficiency, we established a "JR East Research and Development Center" in Saitama City in December 2001. The three research and development organizations, previously situated in different places, were integrated into this new center. The Research and Development Center of JR East Group consists of the "Frontier Service Development Laboratory," "Advanced Railway System Development Center," "Safety Research Laboratory" and "Technical Center," each of which fulfills its own mission efficiently and functionally in the quest toward the realization of e@train.



Research and Development Center of JR East Group

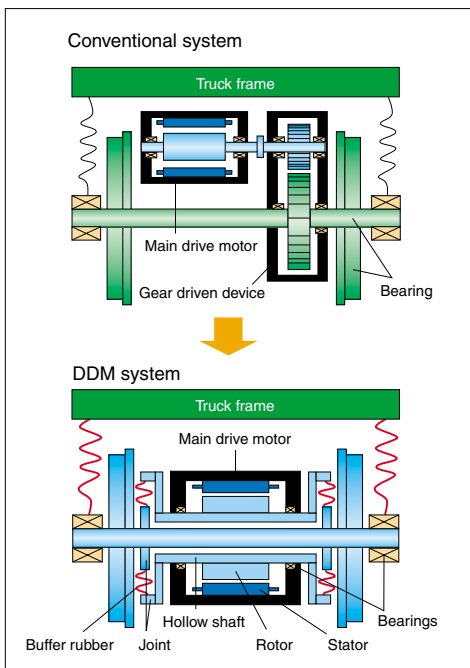
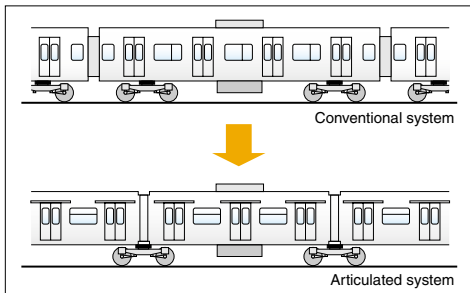
### AC Train

A variety of objectives such as "improved passenger services," "enhanced transportation stability," "reduced costs for system change," "ecology awareness" and "barrier free" are being pursued to realize a train appropriate for the 21st century. We have therefore developed a test car for the AC Train (Advanced Commuter Train) and carried out various evaluation tests on the car. The latest information technologies have been introduced into this test train to help improve passenger information services and increase transportation stability. These technologies will also assist our efforts to save energy by reducing the number of trucks, main circuit equipment and other devices, thus reducing overall train weight. The employment of a Direct Drive Motor (DDM) with high-energy efficiency will also help us to meet these objectives. In addition, the test train includes various new

technologies such as selection and application of recyclable materials that will help achieve our target of zero emissions. It will also include safety measures such as covering the gap between the platform and car entrance, and eliminating rails in the doorway to make access for handicapped passengers far easier. The introduction of a door open/shut audio announcement and door open/shut indicator light guide will greatly assist vision- and/or hearing-impaired customers.



AC train



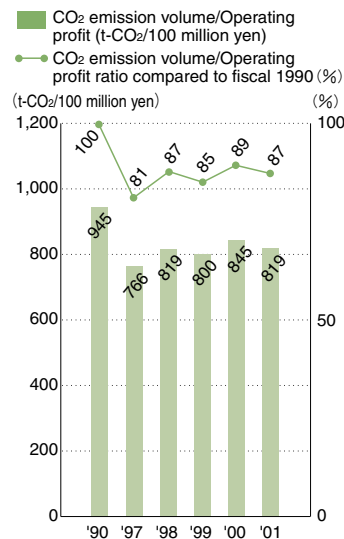
## Environmental management index

JR East formulated an environmental management index and used it to elucidate the relationship between our social environment and economic activities and then applied the relation clarified in this way to making business assessments and decisions.

$$\text{Environmental management index} = \frac{\text{Environmental burden}}{\text{Economic value added}} = \frac{\text{CO}_2 \text{ emission volume (t-CO}_2\text{)}}{\text{Operating profit (100 million yen)}}$$

Concerning our environmental management index, we treated the volume of CO<sub>2</sub> emissions, the reduction of which is one of our top priority issues, as an environmental burden, while selecting operating profits as an added economic value. Accordingly, a smaller value indicates less stress on the environment, while creating added economic value. By continuously monitoring the indicator, we can verify whether environmental conservation activities are consistent with economic ones. Because of our efforts over the last decade, the value of 945 (t-CO<sub>2</sub>/100 million yen) recorded in fiscal 1990 had been reduced to 819 in fiscal 2001.

### ● Environmental management index



## Environmental accounting

JR East has performed environmental accounting since fiscal 1999 to identify environmental conservation costs and effects.

We have included economic effects associated with environmental conservation activities since fiscal 2000.

### How environmental conservation costs and effects are determined

- Data refer to East Japan Railway Company itself, on a nonconsolidated basis.
- "Environmental conservation costs" covers only those that can be identified through our current system of management.
- Categorization of activities is based on the guidelines (edition of fiscal 2002) set forth by Ministry of the Environment of Japan.
- For activities that are multipurpose and have a significant environmental effect, the stated amount refers to total costs spent on behalf of those specific activities. (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 railcars.)
- Expenses do not include depreciation costs.
- Expenses 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, the 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 facilities (under the category of resource-recycling costs) is calculated by multiplying the waste volume in fiscal 2001 by the standard unit price in each waste category and location.

	Category	Environmental conservation costs (unit: ¥billion)	
		Investment	Expenses
<b>1</b> Environmental conservation activities along railway lines (pollution prevention)	<ul style="list-style-type: none"> <li>Noise reduction measures along Shinkansen and conventional lines (construction of sound barriers, introduction of PC sleepers and continuous-welded rails, etc.)</li> <li>Reduction of environmental pollutants from company-run Kawasaki Thermoelectric Power Plant</li> <li>Renovation of large-size incinerators; elimination of small-size incinerators</li> <li>Appropriate management and treatment of organic solvents etc., based on PRTR regulations</li> </ul>	3.63	6.32
<b>2</b> Global environmental conservation activities	<ul style="list-style-type: none"> <li>Introduction of energy-saving railcars</li> <li>Energy conservation at stations and office buildings (introduction of co-generation)</li> <li>Promotion of intermodal transportation (Park &amp; Ride, Rail &amp; Rent-a-Car, etc.)</li> </ul>	55.09	—
<b>3</b> Resource-recycling activities (zero emissions program)	<ul style="list-style-type: none"> <li>Reduction and recycling of waste generated at stations and on trains (categorized collection, establishment of recycling centers, etc.)</li> <li>Recycling of train tickets and passes</li> <li>Recycling of waste generated at rolling stock workshops and in construction projects</li> <li>Recycling of newspaper collected at stations, and introduction of recycled office paper, etc.</li> </ul>	—	5.71
<b>4</b> Environmental management	<ul style="list-style-type: none"> <li>Implementation of environmental management by Committees on Ecology at JR East Head Office and branch offices</li> <li>Activities for obtaining ISO 14001 certificate at the Omiya Plant</li> <li>Afforestation along railway lines</li> <li>Publication of the Environmental Report, environmental publicity, etc.</li> </ul>	0.14	0.53
<b>5</b> Research and development of environment-related technologies	<ul style="list-style-type: none"> <li>Development of next-generation commuter trains (AC Train); energy savings and recycling</li> <li>Development of technologies for noise reduction</li> <li>Development of measures to eliminate engine idling for diesel railcars</li> </ul>	0.01	0.86
<b>6</b> Social activities	<ul style="list-style-type: none"> <li>Support for environmental conservation-related organizations</li> </ul>	—	0.03

**Reference** Amount of facilities investment for the period ¥227.0 billion  
 Total amount of research and development costs for the period ¥ 13.5 billion\*

\* Includes research contracted (¥5.9 billion) to the Railway General Research Institute based on the Agreement on Research Activities, etc., concerning research and development in fundamental fields.



Targets		Environmental conservation effects			Economic effects (¥billion)	Reference pages
Item	Reference value (fiscal 1990)	Target value	Actual achievements in 2001			
<ul style="list-style-type: none"> <li>●Reduction of noise to less than 75dB in designated residential areas along the Tohoku and Joetsu Shinkansen Lines</li> <li>●NOx emissions at company-run thermoelectric power plant</li> </ul>	—	100% (to be completed in 2002)	75% improvement	—	—	Environmental conservation along railway lines <b>p.27 to p.31</b>
<ul style="list-style-type: none"> <li>●CO<sub>2</sub> emissions in general business activities</li> <li>●CO<sub>2</sub> emissions in proportion to unit electric power generation at company-run thermoelectric power plant</li> <li>●Ratio of energy-saving railcars</li> <li>●Energy consumption for train operations in proportion to unit transportation volume</li> <li>●Number of large-size refrigerating machines using specific CFCs</li> </ul>	2.76 million t-CO <sub>2</sub> 726 g-CO <sub>2</sub> /kWh	▲ 20% ▲ 30%	▲ 17% ▲ 26%	2.29 million t-CO <sub>2</sub> 539 g-CO <sub>2</sub> /kWh	34.60* <sup>2</sup>	Prevention of global warming <b>p.14 to p.20</b>
	—	80%	63%	—		Reducing ozone layer-depleting substances <b>p.21</b>
<ul style="list-style-type: none"> <li>●Energy consumption for train operations in proportion to unit transportation volume</li> <li>●Number of large-size refrigerating machines using specific CFCs</li> </ul>	20.6 MJ/ car-km	▲ 15%	▲ 9%	18.8 MJ/ car-km		
<ul style="list-style-type: none"> <li>●Number of large-size refrigerating machines using specific CFCs</li> </ul>	82 units	▲ 85%	▲ 72%	23 units		
<ul style="list-style-type: none"> <li>●Recycling rate for waste generated at stations and on trains</li> <li>●Recycling rate for waste generated at rolling stock workshops</li> <li>●Recycling rate for waste generated by construction projects</li> <li>●Usage rate of recycled paper as office stock</li> </ul>	—	36% → 40%* <sup>1</sup>	36%	—	0.26* <sup>3</sup>	Zero emissions programs <b>p.22 to p.26</b>
	—	75%	71%	—		
	—	85%	76%	—		
	—	100%	97%	—		
<ul style="list-style-type: none"> <li>●Specific environmental preservation activities</li> </ul>	—	—	—	12 locations 20,000 trees planted 2,000 people participated	—	Environmental management system <b>p.6 to p.13</b>
					—	<b>p.10 to p.11, p.27, p.29</b>
					—	<b>p.10, p.31</b>

\*1. JR East has achieved a recycling rate of 36% and set its new goal at 40%.

\*2. After determining the annual reduction of electricity and maintenance costs generated from the introduction of energy-saving railcars, the economic effect is calculated by multiplying the reduction amount with the legally accepted depreciation life-span. The reduction in consumed electricity translates into a cut of 580,000 tons of CO<sub>2</sub> over the legally accepted life-span.

\*3. For waste generated through construction work and by rolling stock facilities, an economic benefit can be represented by revenue gained from the sale of some types of waste (valuable resources) that have a market value.

## Prevention of Global Warming

Due to the fact that the level of CO<sub>2</sub> emissions from railways is low in comparison to cars and other means of transportation and that electric trains do not directly emit any CO<sub>2</sub> during operation since their power source is electricity, railways are considered a relatively environmentally friendly means of getting from one point to the next. The whole of the JR East organization, however, consumed 56.4 billion MJ of energy (equivalent to 1.46 million kL of crude oil) in fiscal 2001 in the course of providing services to about 5.9 billion customers on an annual basis. Accompanying this enormous consumption of energy, we emitted 2.29 million tons of CO<sub>2</sub>, an amount equivalent to 0.2% of Japan's total emissions. For this reason, by stepping up our efforts to reduce energy consumption and CO<sub>2</sub> emissions, JR East is contributing to the prevention of global warming.

Item	Target value (to be met by fiscal 2005)	Fiscal 2001		Reference value (figure from fiscal 1990)
		Actual achievement	Value achieved	
CO <sub>2</sub> emissions in general business activities	▲20%	▲17%	2.29 million t-CO <sub>2</sub>	2.76 million t-CO <sub>2</sub>
CO <sub>2</sub> emissions in proportion to unit electric power generation at company-run thermoelectric power plant	▲30%	▲26%	539 g-CO <sub>2</sub> /kWh	726 g-CO <sub>2</sub> /kWh
Ratio of energy-saving railcars	80%	63%	—	—
Energy consumption for train operations in proportion to unit transportation volume	▲15%	▲ 9%	18.8 MJ/car-km	20.6 MJ/car-km

### Energy supply and consumption by JR East

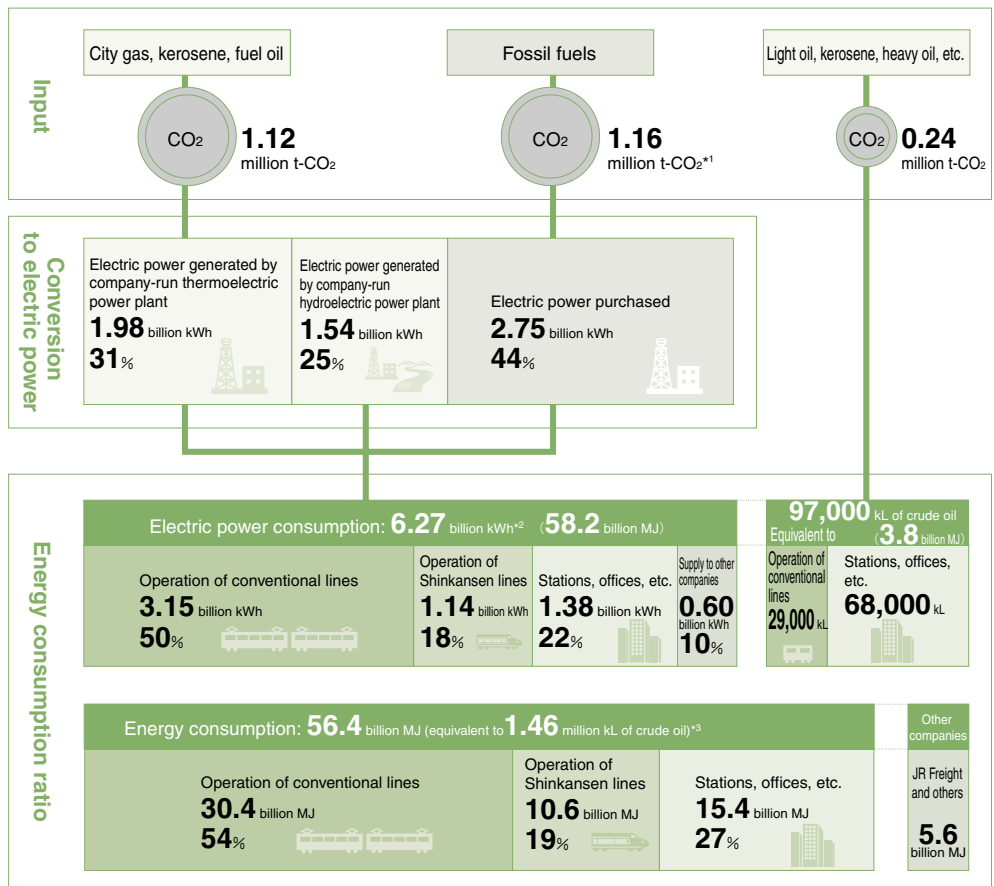
JR East's energy supply consists of electric power and other energy such as light oil. The electricity is generated by company-run thermoelectric power plants and hydroelectric power plants, along with electric power

purchased from power companies with energy requirements augmented by other types of fuel. The former energy is used for the operation of electric trains and the lighting and air conditioning of stations and offices, while other forms of energy such as light oil and kerosene are consumed in the operation of diesel cars and air conditioning of stations and offices.

\*1 As figures represent a historical comparison, the Federation of Electric Power Companies Japan CO<sub>2</sub> emission coefficient for fiscal 1990 is used; substitution of the fiscal 2000 coefficient would result in a figure of 1.02 million tons.

\*2 Equivalent to the annual electric power consumption of 1.73 million households. ("Electric Power Annual" issued by the Federation of Electric Power Companies Japan)

\*3 Equivalent to 1.18 times the estimated capacity of the Tokyo Dome stadium.



Energy map for JR East

## Achieving efficient use of energy

### Volume of energy consumption and CO<sub>2</sub> emissions

Mainly because of the reduction of energy consumed through train operations and the increase in efficiency of our company-run thermoelectric power, energy consumption in fiscal 2001 was 56.4 billion MJ, while CO<sub>2</sub> emissions amounted to 2.29 million tons, a 6% reduction from fiscal 2000. The percentage reduction in CO<sub>2</sub> emissions from fiscal 1990 was 17%, a 5-point increase from fiscal 2000.

### Reduction of energy for train operations

In order to reduce energy for train operations, which accounts for 73% of the total energy consumed by JR East, we actively employ energy saving trains. As a result, in fiscal 2001, the number of energy-saving railcars (7,842) as a percentage of the total railcars (12,369) was 63%, while the energy required to move one railcar one kilometer (energy consumed in proportion to unit transportation) declined to 18.8 MJ.

Currently, our conventional railcars include three models, a rheostatic control model, a regenerative brake model and a VVVF model. On a regenerative brake model, by reducing

weight and using regenerative brakes\*<sup>1</sup>, the regenerative brake cars reduce operating power consumption to 66% of older models such as the rheostatic control model (103 series, etc.). VVVF cars likewise reduce operating power consumption to just 47% of older models through the use of VVVF inverter control\*<sup>2</sup>. Regenerative brake cars include the 205 series operated on the Saikyo and Keiyo Lines. In addition, VVVF cars include the 209 and E231 series that have already been operating on the Keihin-Tohoku, Sobu, Utsunomiya, Takasaki, and Joban Lines. We started to introduce this series into the Yamanote Line in fiscal 2002. We also have introduced new types of VVVF cars into express cars. In fiscal 2001, we employed the E257 series for "Kaiji" and "Azusa" railcars operated on the Chuo Line.

On our conventional rail lines, we have introduced new types of diesel railcars such as the Kiha 110 series, featuring lighter bodies and clean, fuel-efficient new engines. We also refitted older railcars with new engines.

- \*1 Regenerative brake: A brake that uses a motor to generate electric power that is sent back to overhead wires for subsequent use.
- \*2 VVVF inverter control: VVVF stands for "variable voltage variable frequency," an inverter that can efficiently control motor revolutions without electrical resistance.



E231 series

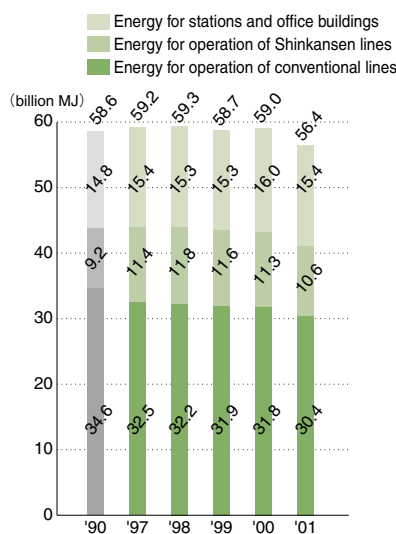


E257 series



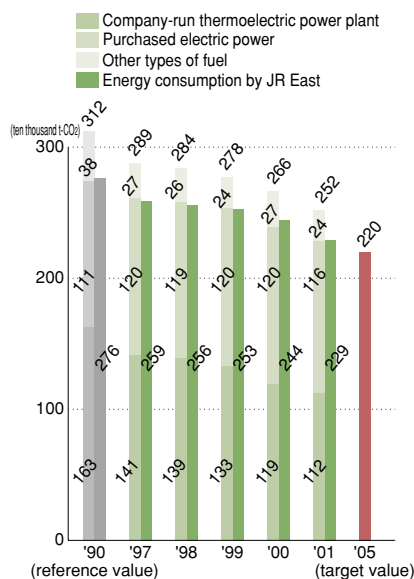
E2 series

### ● Energy consumption volume



\*Purchased electric power and electric power generated by the company-run hydroelectric plant were calculated based on 9.42 MJ/kWh. The electric power generated by the company-run thermoelectric power plant and other fuel types were calculated based on the figures for actual consumption of fuel.

### ● Total CO<sub>2</sub> emission volume



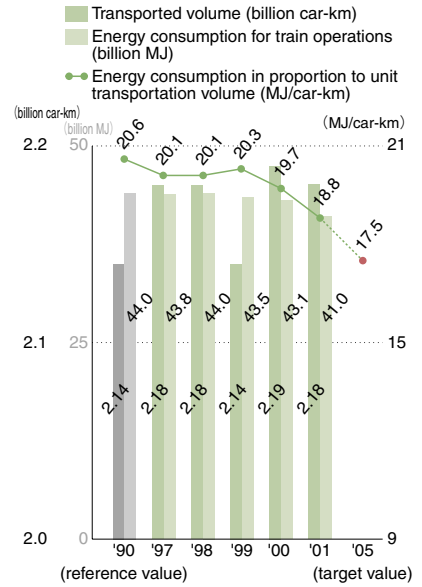
\*Calculation of CO<sub>2</sub> emission factor from fuel and purchased electric power was based on the emission factor set forth in the Voluntary Action Plan established by Japan Business Federation and by the Federation of Electric Power Companies Japan.

We also have introduced lighter bodies, regenerative brakes and VVVF inverter control into new types of railcars for Shinkansen lines, and have enhanced energy-saving effects; for instance, the realization of flat, smooth bodies to reduce air resistance generated during high speed travel.

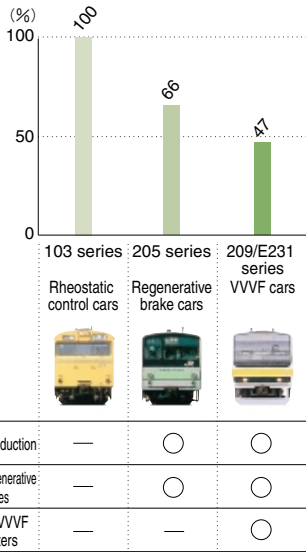
In addition, we have been trying to improve the efficiency of air conditioning systems. In some railway sections, by introducing an open/shut system for several of the doors or a semi-automatic door system (where customers open and close only those doors required to board or alight from the train by pushing a door button), we are endeavoring to prevent unnecessary temperature fluctuations in railcars.

Tokyo Monorail Co., Ltd., which joined the JR East Group in fiscal 2001, has introduced a new type of VVVF inverter control-based energy-saving car (2000 series) into monorail services for the first time in fiscal 1997. At the end of fiscal 2001, 18 out of a total of 114 cars were the 2000 series. Like JR East's VVVF cars, the 2000 series uses regenerative brakes and also reduces weight.

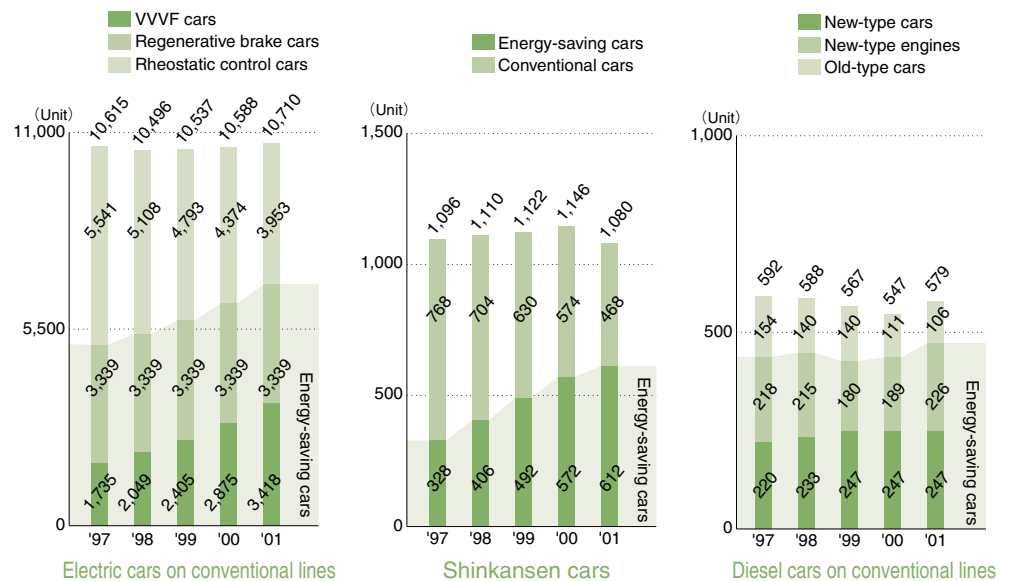
### ● Energy consumption during train operations and unit transportation volume



### ● Comparison by car type of energy consumption during train operations



### ● Introduction of energy-saving cars



Door open/shut button



Tokyo Monorail 2000 series

## Energy saving in motor vehicle operations

JR East uses 3,300 service vehicles to maintain facilities and transport equipment and materials. We have started to introduce low-pollution vehicles such as fuel-efficient automobiles and hybrid cars, and owned 5 hybrid cars at the end of fiscal 2001.

JR Bus Kanto Co., Ltd. and JR Bus Tohoku Co., Ltd., which operate the buses, are implementing eco-driving practices such as the introduction of one hybrid vehicle and 32 idling stop cars, strict observance of fuel-saving speeds and enforcement of idling stop. JR East Logistics Co., Ltd., which operates transportation and home delivery businesses, started to introduce motor trucks powered by natural gas in fiscal 2001, and 11 out of a total of 213 vehicles used natural gas at the end of this fiscal term. We will continue to actively introduce more natural gas vehicles in the future. In addition, by equipping all vehicles with digital tachographs, we are promoting detailed eco-driving practices based on the data collected by the tachographs. JR East Rental & Lease Co., Ltd. also introduced hybrid vehicles for use as station rental cars and had 13 hybrid cars at the end of fiscal 2001. Moreover, East Japan Eco Access Co., Ltd., which operates cleaning and maintenance businesses, is replacing older types of engines in their road sweepers (automatic floor cleaner) with battery-powered ones, and has so far converted 238 out of 248 units.



Battery-powered road sweeper

## Energy savings at stations and office buildings

We are working to reduce energy consumption at JR East's stations and station buildings. We have already installed cogeneration systems - using power generation and exhaust heat for hot-water supply and heating/cooling - at Sendai Station, Machida Station Building, and the General Training Center (Shirakawa City, Fukushima Prefecture), and started to operate similar systems at Morioka Station in June 2002. Furthermore, we have introduced 102 gas heat pump air-conditioners mainly at stations and offices in the Tohoku district in order to provide efficient air-conditioning.

## Energy saving in houses built for sale

The JR East Group has introduced double-glazed windows and total heat exchange ventilation systems into some condominiums of the View Parc series to help customers save energy after purchasing their condominium.



Hybrid bus



Natural gas truck



## Efficient supply of energy

### Utilization of networks

JR's demand for electric power fluctuates throughout the day, reaching a peak during the rush hour. For this reason, we control electricity production and the network of transmission lines and transformers to efficiently incorporate thermoelectric, hydroelectric and purchased power based on demand variation. We do this through a central load-dispatching command facility.



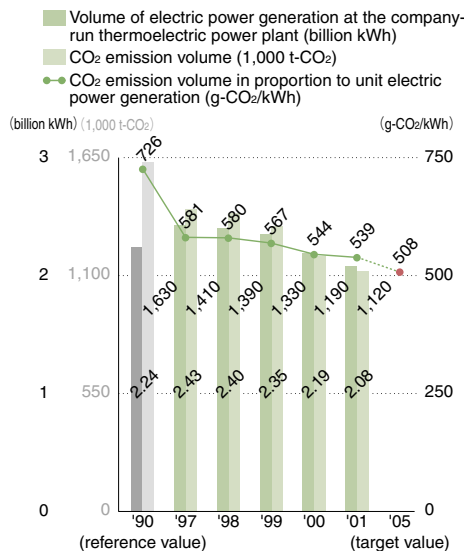
Load-dispatching command facility

### Achieving greater energy efficiency at our thermoelectric power plant

Our Kawasaki Thermoelectric Power Plant, located in the Keihin industrial belt, has four power-generating units on a 6.6 ha site with a total power output of 655,000 kW. Currently three of these generating units operate as an efficient combined-cycle power-generating unit\*. By optimizing the operation of these power-generating units and operating them efficiently, CO<sub>2</sub> emissions generated from the Kawasaki Power Plant in fiscal 2001 totaled 1.12 million tons while the ratio of emission volume to unit electric power generation was 539 g-CO<sub>2</sub>/kWh.

\*Combined-cycle power-generating unit: A power-generating unit that combines gas turbines (turbines are rotated by gas combustion) and steam turbines (heated steam is used to rotate turbines).

#### Electric power generation and CO<sub>2</sub> emission volume at the company-run thermoelectric power plant



### Effective use of hydropower generation

Hydropower generation can produce clean energy without emitting greenhouse gases and toxic substances. JR East's Shinano River Power Plant consists of the Sente Power Plant (Kawanishi-cho, Niigata Prefecture), Ojiya Power Plant and Shinojiya Power Plant (Ojiya City, Niigata Prefecture), and has a maximum power output of 449,000 kW while annually generating 1.5-1.6 billion kWh, depending on annual rainfall. All these power plants have regulating reservoirs since they focus on generating power during the morning and evening rush hours. We have been cooperating with the Shinano River Construction Office of Ministry of Land, Infrastructure and Transport to improve water environments in the middle reaches of the government-controlled Shinano River since fiscal 2001, and have increased the discharge volume from a dam on a trial basis during the summer, the period in which water temperature rises, and during the fall, the salmon-running period.



Shinano River Power Plant

### Use of natural energy

In addition to these power sources, we use new forms of natural energy. Photovoltaic generators have been installed on the roof of the Shinkansen platform at Tokyo Station, on the roof of the training building at the General Training Center and on the roof of the Shinkansen platform at Takasaki Station. A photovoltaic generator has been integrated into the material of the roofs over the Shinkansen platforms, particularly at Takasaki Station.



Photovoltaic generators in Takasaki Station

## Reduction of CO<sub>2</sub> emissions through the transportation system

### Railway environmental priority

Considering energy consumption per unit transportation volume and CO<sub>2</sub> emission volume per unit transportation volume, there is clear evidence showing that railways impose less burden on the environment than other modes of transportation in Japan. JR East has consistently implemented measures to reduce stress on the environment. It has exceeded the average for the total railway system throughout Japan in this regard.

### Railway access

In order to utilize railways' greater environmental advantages, we are working to improve railway systems by which customers can travel directly to their destinations without automobiles. For example, utilizing the Shinkansen we provide direct access to the Gala-Yuzawa ski resort (Yuzawa-cho, Niigata Prefecture), allowing customers to start skiing without having to transfer to other modes of transportation after alighting from the train.

In addition, we have been operating the Narita Express that starts from various points in the Tokyo metropolitan area since 1991. By using this train, customers can reach Narita International Airport without having to change trains.



Gala-Yuzawa ski resort

### Intermodal transportation

Since customer travel is restricted to fixed routes on railways, we have to make further efforts to completely satisfy the requirements of individual users. JR East is therefore promoting intermodal transportation that integrates other transport modes such as automobiles before and after using rail services.

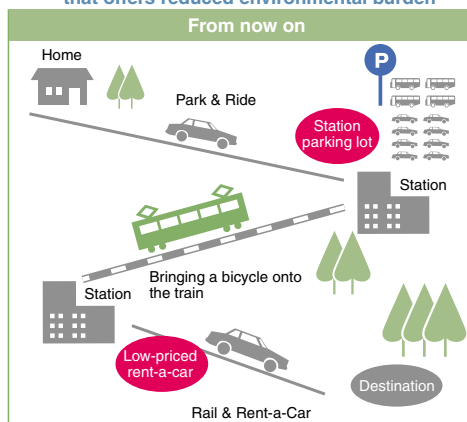
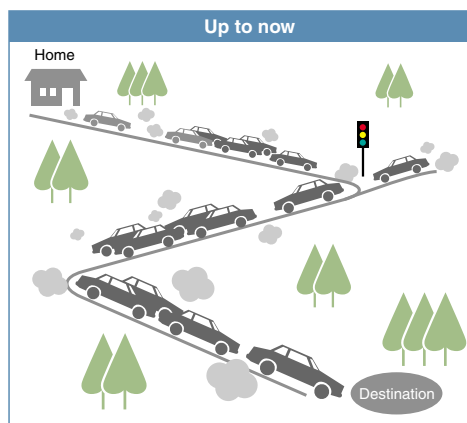


Image of intermodal transportation

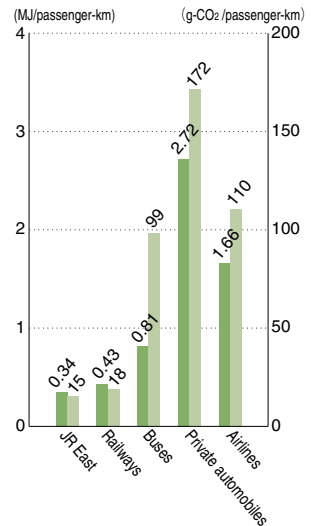
#### <Automobiles>

##### ● Park & Ride

JR East is promoting the Park & Ride concept of having users drive to their local rail stations in their own automobiles, park, then ride trains to their final destinations. Park & Ride parking lots are available for use free of charge, or at a discount, by customers with express tickets. In fiscal 2001, 760 parking spaces for ten stations were established by JR East and municipalities along rail lines, bringing the total to 59,000 parking spaces for 520 stations.

### ● Energy consumption and CO<sub>2</sub> emissions by transportation mode

■ Consumed energy (MJ/passenger-km)  
■ CO<sub>2</sub> emission volume (g-CO<sub>2</sub>/passenger-km)



National transportation volume and energy consumption in fiscal 2000, CO<sub>2</sub> emission volume in fiscal 1999

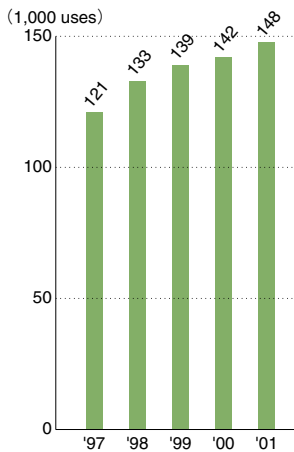
Passenger-km: The number of passengers transported multiplied by distance traveled.

Note: Based on "The Survey on Transport Energy 2001-2002" except for the data of JR East

### ● Rail & Rent-a-Car

JR East is promoting a Rail & Rent-a-Car program in which customers can rent cars at their arrival stations and travel everywhere. Customers who buy JR tickets and rent-a-car tickets at the same time, and who satisfy certain distance requirements, are offered discounts on both the rail and car rental portions. In 1995, JR East began offering its Torenta-Kun discount car rental service that was priced at roughly half the typical market price. Thereafter, the level of usage for this program, about 51,000 in fiscal 1994, was significantly increased. In addition, we are promoting relocation and renewal of the offices so that customers can change to rent-a-cars more easily and swiftly.

### ● Use of Rail & Rent-a-Car



Rent-a-car office entrance



Hybrid-type rent-a-car

### ● Switching from bus to train tours

In fiscal 2000, JR East began to organize bus tours starting from the Tokyo metropolitan area avoiding traffic jams in the area by partly using Shinkansen or express trains in the first 100 to 150 km from central Tokyo. This reduces CO<sub>2</sub> emissions from vehicles that would otherwise be stuck in traffic jams and ensures tour punctuality.

### <Bicycles>

JR East is also promoting train trips with the use of bicycles. In 1998, we developed the Traincle bicycle that is the lightest in the world among collapsible bicycles. Furthermore, we revised our business regulations concerning the charge for carrying bicycles onto trains. This means our customers can fold or disassemble bicycles in bags to bring them onto the trains for free.

In addition, we offer bicycle rentals, mainly at stations at tourist spots. In 2001, we operated a special train with a bicycle-only car as a new program for bringing bicycles onto the train. This was done in conjunction with a cycling event held along the Koumi Line.



Traincle



Bicycle rental

### Eliminating traffic jams

JR East contributes to reduction of CO<sub>2</sub> emissions generated from traffic jams by replacing grade crossings with overpasses, with the cooperation of municipalities. We are currently constructing continuous overhead crossings to allow removal of grade crossings at 3 points. Based on the ongoing construction project of continuous overhead crossings between Mitaka and Tachikawa on the Chuo Line, we plan to remove 18 grade crossings on a 13.1 km section of track.



Continuous overhead crossing



# Reducing Ozone Layer-depleting Substances

With the advance of global warming, ozone layer-depleting substances exert an adverse effect on the global environment. Specific CFCs and halon gases destroy the ozone layer, which results in an increasing intensity of UV radiation reaching the surface and generating a number of problems, such as a rise in skin cancer rates. JR East is actively working to reduce these specific CFCs and halon gases.

Item	Target year (fiscal 2005)	Fiscal 2001		Reference value (fiscal 1990)
		Performance	Performance value (remaining number)	
Specific CFC-based refrigeration machines	▲85%	▲72%	23 units	82 units

## CFCs released from buildings and facilities

Certain types of CFCs are used as coolants in the air-conditioning systems of large buildings. For this reason, JR East is replacing its old facilities with ones that use no specific CFCs. From fiscal 1990 until fiscal 2001, by eliminating 59 specific CFC-based pieces of cooling equipment using a total of 28 tons of CFC, the number of specific CFC-based air-conditioning systems dropped to 23 units, and CFC were reduced to 10 tons. Since alternative CFCs have the same effect on global warming as greenhouse gases like CO<sub>2</sub>, we began to introduce non-CFC water cooling and heating appliances and had installed 22 units by the end of fiscal 2001.

Alternative CFCs are also used as coolants in the rectifiers of transformer stations to prevent them from overheating. In fiscal 2001, JR East prepared a pure water boiling and natural cooling silicon rectifier in the Ueno Transformer Station and will introduce only non-CFC rectifiers when replacing old rectifiers with new ones. Furthermore, since SF<sub>6</sub> (sulfur hexafluoride), a greenhouse gas, is used to fill substation breakers, we take great care to prevent any gas leakage and also recover this gas carefully when removing it.

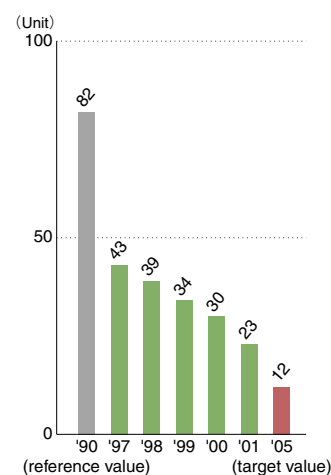
## CFCs released from railcars

For the air-conditioning systems of our railcars, some diesel cars and passenger cars are equipped with specific CFC (R12)-based or alternative CFCs (R22, R134a and R407C) substitute-based air-conditioning systems. In the latest model of the E231 series, CFC R407C, which has no harmful effect on the ozone layer, is used. We endeavor to prevent these gases from leaking and periodically check for gas leakage. We recover CFCs during car scrapping in accordance with the Fluorocarbons Recovery and Destruction Law and process the discarded cars in the appropriate manner. At the end of 2001, 2 tons of specific CFCs and 96 tons of alternative CFCs were used.



CFC recovery system

● Number of large-size, specific CFC-based refrigeration machines



## Halon gas

51 tons of halon gas in gas containers (used as a fire-extinguishing agent for buildings and facilities) is recovered and reused in coordination with the Halon Bank Promoting Committee when dismantling halon-using facilities. We are promoting the introduction of other fire extinguishing agents when renewing and newly installing fire extinguishing systems. For instance, fire extinguishing systems using powders and CO<sub>2</sub> have been introduced into Sendai Station and into snow pipes on the Joetsu Shinkansen Line, respectively.

## Recycling-oriented Society

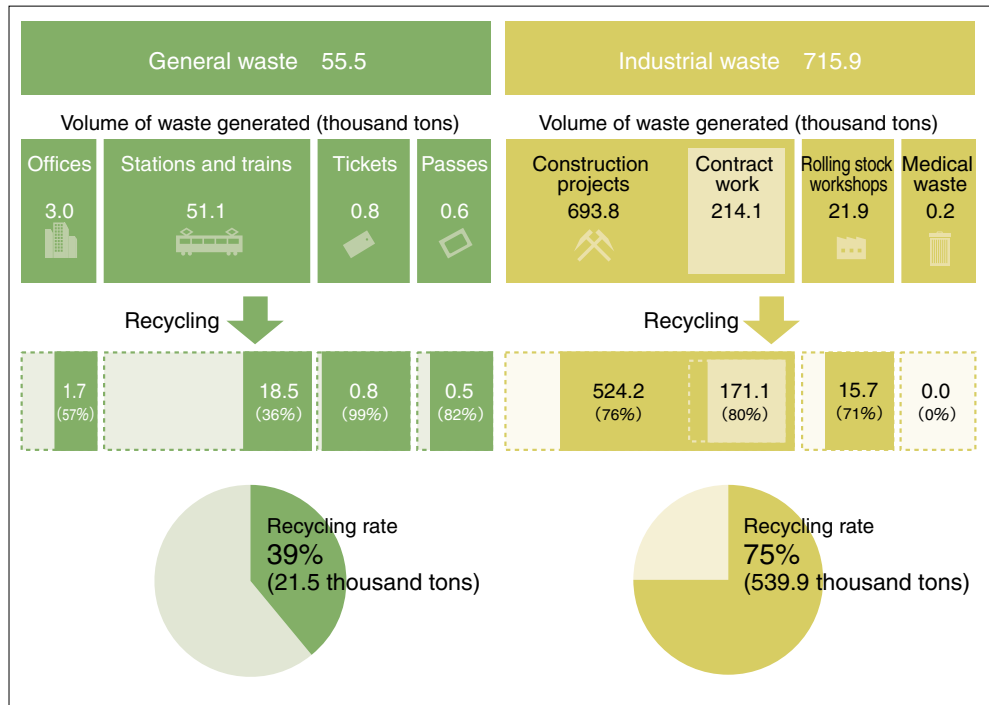
The transformation from a society of mass-production and mass-consumption that typified the 20th century into a recycling-oriented society in the 21st century has already begun. In the course of its business operations, JR East generates massive amounts of waste, including waste discarded at stations and on trains by passengers, and waste generated in the maintenance of rolling stock. For this reason, not only do we treat these discharged wastes appropriately in compliance with laws and regulations, but we are also working to reduce, reuse and recycle them wherever possible.

Item	Target value (to be met by fiscal 2005)	Actual achievement in fiscal 2001
Recycling rate of waste generated at stations and on trains	36%→40%*	36%
Recycling rate of waste generated at rolling stock workshops	75%	71%
Recycling rate of waste generated through construction projects	85%	76%
Usage rate of recycled paper as office stock	100%	97%

\* Since we have already achieved a recycling rate of 36%, we are now aiming at a new target of 40%.

### Recycling of waste materials

The volume of waste generated by JR East amounted to 771,000 tons in fiscal 2001. Since 561,000 tons of that amount were recycled (reuse is included), the recycling rate became 73%.



Flow chart for waste in JR East

## General waste

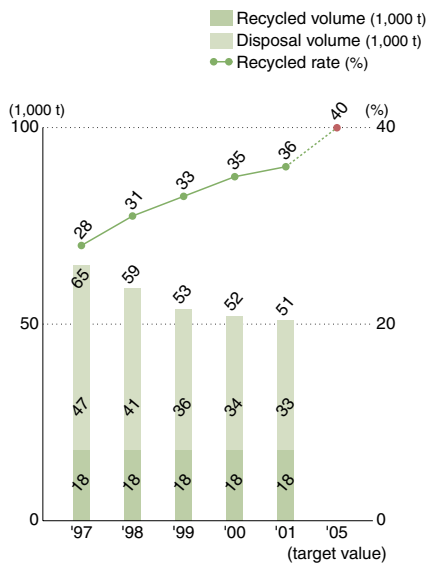
### Refuse at stations and on trains

JR East carries approximately 16 million passengers on average a day, and the volume of refuse they generate at stations and on trains reaches approximately 51,000 tons a year. This is equivalent to the volume of household waste generated by 130,000 people annually. Because most of this massive amount of waste is recyclable newspaper, magazines, steel and aluminum cans and PET bottles, we are striving to recycle as much as possible through the use of efficient sorting systems. First of all, we install labeled refuse bins at stations and on trains, and together with passengers being asked to follow the separation instructions, we have installed a facility (the recycling center) which thoroughly compresses this waste in the next stage of the separation process that occurs after collection.



Refuse bins are labeled for five types of waste.

### ● Reuse generated at stations and on trains



## Recycling centers

In the Tokyo metropolitan area where the largest volume of refuse is generated, recycling centers operated by East Japan Eco Access Co., Ltd. have been built at Ueno Station, Omiya and Shinkiba in order to collect and process the refuse. The recycling centers at Ueno and Omiya collect 5,700 tons of cans and bottles and 120 tons of PET bottles in Tokyo and Saitama Prefecture, and after sorting and compressing, this waste is sent to recycling contractors. In fiscal 2001, we established a facility to convert PET bottles handled at the Ueno Station recycling center into flakes in Minato-ku, Tokyo. The Shinkiba recycling center collects discarded newspapers and magazines from each station in the Tokyo area, and they are then sent to paper manufacturers as 4,000 tons of used paper. This used paper is born again as copier paper, which is being used at the office of JR East. Recyclable substances are conveyed into the proper recycling routes after separating and processing waste from trains by utilizing recycling equipment in such locations as Nagano Shinkansen Operations Center, Minami Akita Operations Center, and the Niigata Shinkansen First Operations Center. Steps which were taken made it possible to achieve a 36% recycling rate at the end of fiscal 2001 compared to 14% in 1994 when the Ueno recycling center was established. Thus, we have already achieved the target value for fiscal 2005. We have revised the target value to 40% and are striving to further raise recycling levels.



PET bottle recycling center



Recycled copier paper made of newsprint collected at stations

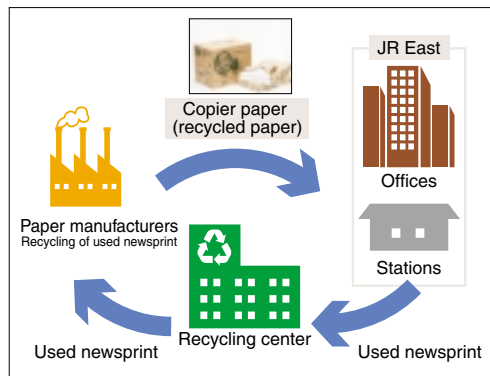


Image drawing of paper resources in circulation



## Train tickets and passes

Although most train tickets are covered with a magnetic coating on the back so that they can be used in automated ticket gate machines, they can still be recycled because the technology to separate steel powder from paper fiber already exists. JR East is supplying the tickets discarded at stations to paper manufacturing factories. In fiscal 2001, 99% of approximately 800 tons of used tickets were recycled into toilet paper used in Yamanote Line stations and in offices, cardboard, and employee business cards for staff. Also, 82% of the approximately 600 tons of used passes collected are being used as a reducing agent in steel plant blast furnaces.

Further, we are also moving ahead with ticketless technologies to reduce the volume of tickets and rail passes discarded. A new type of IC card called "Suica," which began use in November 2001, has a rewritable function for the printed data on the face, meaning that these rewritable cards can be renewed and used repeatedly in purchasing train passes. This has allowed us to reduce greatly the volume of discarded train passes.



Labeled refuse bins in branch offices

Location	Type of water
Head Office building	Rainwater and used water
Tokyo Branch Office building	Rainwater
Hachioji Branch Office building	Rainwater
Yokohama Branch Office building	Rainwater
Oimachi Station building	Rainwater
Ebisu Station building	Rainwater
Tachikawa Station building (Granduo)	Rainwater and used water
Tokyo Station	Rainwater
Akabane Station	Rainwater
Shinagawa Station	Rainwater
Saitama-Shintoshin Station	Rainwater

Examples of water reuse

order to utilize these water resources effectively, we are aggressively promoting water reuse at our Head Office, branch offices, and station buildings. For example, rainwater collected from rooftops of buildings and platforms and wastewater from washbasins are purified and reused as toilet flushing water. In the head office building, 14,000 tons out of 42,000 tons of water used in fiscal 2001 was reused water.

## Industrial waste

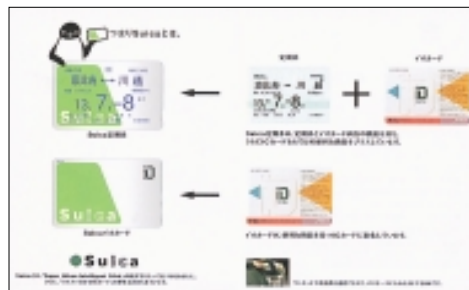
### Rolling stock workshops

JR East maintains and repairs railcars in seven rolling stock workshops in addition to manufacturing commuter type electric railcars in the Niitsu rolling stock manufacturing factory. Since these work processes generate waste such as metals, waste plastics, glass, cloth, wood chips, wastepaper and waste oil, we are promoting recycling while minimizing the levels of such waste.

In another initiative to reduce waste, we are working to change packaging materials used in delivery of members, from cardboard boxes to returnable boxes.

As part of our recycling activities, we are endeavoring to recover resource materials by separating as many as 20-30 categories of waste products from a diverse range of materials. Collected resource materials are delivered to waste materials vendors, or in some cases, recycled in our own operations. For example, we are casting brake parts from molten metal scrap at the Nagano general rolling stock facility. Also, in fiscal 2001, we started to reuse, without modification or processing, the fittings of conical axis springs which absorb axle shaft vibration. In addition, we are preparing a device which returns the washing water used in coating processes back into circulation as rolling stock workshops use a relatively large amount of water.

It is important to review components in the design phase in order to promote the reduction of waste and recycling. As an example, we have been taking action to replace the urethane resin used for seats with materials such as polyester resin, as these offer a greater degree of recyclability. Aluminum has been substituted for fiber reinforced plastic (FRP) in window frames wherever feasible.



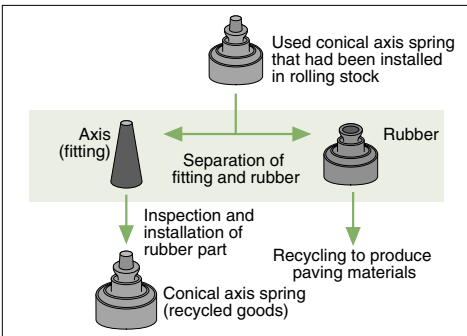
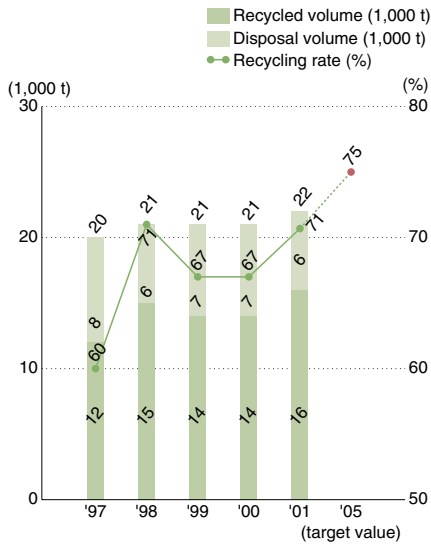
Suica IC card-based rewritable ticket/train pass

### Office refuse

JR East offices are promoting conversion to a paperless environment by making use of LANs. If conventional printing on paper is unavoidable, we are endeavoring to conserve paper resources by making aggressive use of double-faced printing and printing multiple pages on one sheet. In addition, we place recyclable waste paper into the appropriate recycling routes after sorting and collecting it to facilitate recycling. In fiscal 2001, waste generated amounted to approximately 3,000 tons out of which approximately 1,700 tons were recycled through these approaches.

JR East is using 12.6 million tons of water in offices, stations and rolling stock workshops. In

●Waste disposal and recycling at rolling stock workshops



Reuse of conical axis spring fittings

**Construction of facilities**

Waste is generated in the construction of new facilities and in the renovation and repair of stations and other structures. In fiscal 2001, 694 thousand tons of such waste was generated, but of that, 214 thousand tons was generated in the course of contract work (work that municipalities contract to JR East to ensure the safe operations of trains). Because construction contractors undertake all kinds of work under the contract agreement, the waste generated is the responsibility of contractors under the waste disposal law. However, at JR East, we have launched a comprehensive company-wide campaign mandating at the design stage the adoption of construction methods that minimize waste and facilitate the reuse of such waste that is generated. To assist the easy and appropriate disposal of construction by-products, waste issues need to be addressed at the design phase applying the civil engineering works

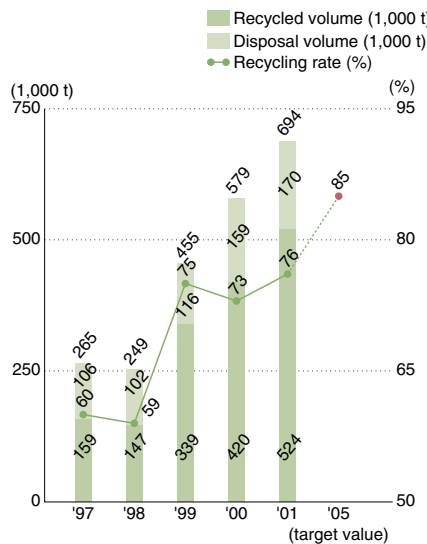
standard specifications. For example, in the construction of road tunnels under rail tracks, we are backfilling fluidized soil (which is a mixture of surplus soil generated by excavation, water and cement) into gaps between the structure and temporary retaining earth.

Totetsukogyo Co., Ltd. is operating a facility in Shinagawa-ku, Tokyo, to crush ballast (gravel) and waste concrete generated during construction to a certain size so that it can be resold as construction material (aggregate). By adopting this process it was possible to recycle approximately 14,000 tons in fiscal 2001. In JR East, in addition to using recycled aggregate, we are using paving tiles produced from recycled glass bottles in station passages and on platforms as part of our green procurement activities. JR East is also promoting recycling in land development projects in residential areas, and is using wood chips as dustproof process materials. These are made by chipping the trees felled within the zone at the site in View Verger Annaka Haruna (Annaka City, Gunma Prefecture, 49ha in total area, approximately 700 houses planned).

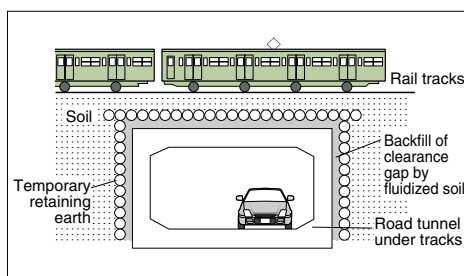


Sorting and collection at rolling stock workshops

●Waste disposal and recycling for construction projects



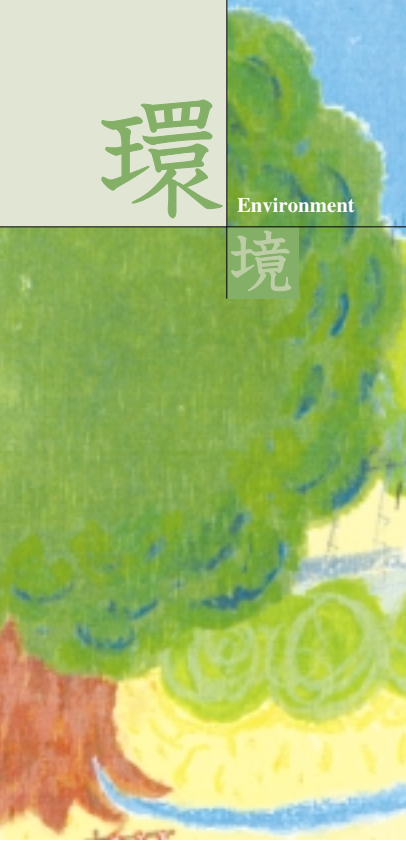
Turning felled trees into wood chips



Use of fluidized soil



Construction wastes recycling center



## Inside stations, station buildings and hotels

Higashinihon Kiosk Co., Ltd. and Nippon Restaurant Enterprises Co., Ltd. are providing retail shopping services and meals & beverage services in JR East stations and on trains. Here we are also aggressively working to reduce and recycle waste. The staff of Higashinihon Kiosk Co., Ltd. will confirm whether customers wish to use bags (to cut down on plastic use) after purchasing a few items at “New Days” convenience stores. Packaging materials are being reduced by changing from cardboard cartons to collapsible containers for some of the incoming merchandise. Nippon Restaurant Enterprises Co., Ltd. produces and sells boxed lunch with simplified packaging, and is working to recycle foodstuff leftovers. In 1998 we started to convert food waste from a boxed lunch factory (Toda City, Saitama Prefecture) to compost, then set up a foodstuff recycling center in Shinagawa-ku, Tokyo in fiscal 2001. Nippon Restaurant Enterprises Co., Ltd. expanded its recycling activities to cover food waste generated by the eating-establishments it operates.



Foodstuff recycling center

A variety of waste materials are also generated by tenant businesses in station buildings. Tenants are working to assist in the recycling of these materials by sorting and collecting them in each building. As an example, in Granduo (Tachikawa), composting facilities are actually installed within the building, and processed compost is being sold. In addition, we hold regular flea markets on the roof of several station buildings in order to support the recycling activities of community residents.



Flea market

The Metropolitan hotel is changing shampoo, body soap, etc. from individual packs to dispensers that can be refilled to reduce waste. Also, In Folkloro and Familio long-stay type hotels, we only exchange linen such as bed

sheets for multi-night guests at their request.



Shampoo and body soap provided in dispensers

## Medical waste

In JR Tokyo General Hospital and JR Sendai Hospital, JR East provides medical services to members of the community and employees as well as conducting medical check-ups for staff in the central health management office and at railway medical examination centers in each branch office. 213 tons of medical wastes were generated in these facilities in fiscal 2001, but it is stored and disposed of in compliance with strict guidelines as specially controlled industrial waste.

## Green procurement

In compliance with the “Green procurement guidelines” established in 1999, JR East encourages its business partners to use recycled materials and to reduce waste by improving environmental management systems as well as strives to procure products with the lowest possible impact on the environment. It does this by prioritizing its purchase of materials to favor those that are environmentally friendly. In addition to having introduced green procurement, since fiscal 2000, we have adopted uniforms which incorporate material produced through the recycling of PET bottles, and has expanded the use of record paper used in the MARS terminal (a ticket dispenser used for reserved tickets and other items) and of recycled paper in mail order brochures called “NRE Train Shop” distributed in trains in fiscal 2001. Further, 97% of all paper used in fiscal 2001 was recycled paper.



NRE train shop



Compost made of recycled garbage

# Environmental Conservation along Railway Lines

Some environmental impacts may occur in the vicinity of railway lines in the course of JR East business operations. These include noise and radio disturbances due to the passing of trains, discharge of air pollutants from thermal power plants, the use of chemical substances in maintaining facilities and rolling stock, etc. For this reason, JR East is working to lessen these impacts to the greatest extent possible.

Item	Target value (to be met by fiscal 2005)	Results in fiscal 2001		Reference value (figure from fiscal 1990)
		Actual	Achievement	
NOx emissions at company-run thermoelectric power plant	▲60%*	▲62%	376t	994t
Reduction of noise to less than 75dB in designated residential areas along the Tohoku and Joetsu Shinkansen Lines	100% (to be completed fiscal 2002)	75%	—	—

\* NOx emissions have been reduced by 60%. We are making ongoing efforts to monitor the target so that we can clear it continuously in the future.

## Noise reduction along Shinkansen lines

Ministry of the Environment of Japan (former Environment Agency) formulated the “Environmental Quality Standards for Shinkansen Superexpress Railway Noise” in 1975. The peak noise level generated by the Shinkansen is kept within certain limits (L max) during operation according to these criteria, which represent some of the world’s strictest environmental standards. For the purpose of noise abatement, JR East defines areas along railway lines as “heavily built-up areas,” “densely populated areas,” “areas comparable to densely populated areas” and “residential areas” depending on their particular characteristics. Measures were implemented up to 1996 for areas classified as “heavily built-up areas” and “areas comparable to densely populated areas,” to restrict noise levels below 75dB. At present, we are working toward establishing targets for “residential areas” during fiscal 2002, and we had progressed 75% toward this goal by the end of 2001.

The measures comprise the following; in above ground facilities, height extension of soundproof walls supporting transparent plates in consideration of the view from railcar windows, installation of triangle-peaked soundproofing device walls, installation of sound-absorbent materials, performing rail-smoothing\*, etc. For rolling stock, we are in the process of mounting a



A new single-arm pantograph and insulator

new type of low-noise pantograph. In particular, we verified the effects of a new type of single-armed pantograph and insulator in a test run and have begun installing it into commercial railcars.



Rail-smoothing railcars

## Noise reduction along conventional lines

Although the environmental standards specified by the Japanese government are not applicable to existing conventional lines, JR East is considering how to prevent significant noise levels so as not to disturb residents living along railway lines. Further, since Ministry of the Environment (former Environment Agency) promulgated its “Policy on noise measures for construction of new conventional railways or large-scale remodeling” in 1995, we are implementing the plans and execution of work in compliance with this policy in the case of large-scale remodeling.

We attempt to reduce noise through continuous welded rails\*\* and PC sleepers\*\* in the above ground facilities, and through flattening smoothing in railcars\*\*.



Soundproof walls of transparent plates

\*1 Rail-smoothing: To smooth uneven rails caused by train operations.

\*\*2 Continuous welded rails: To make rails over 200 meters in length in one piece by welding the joints of rails.

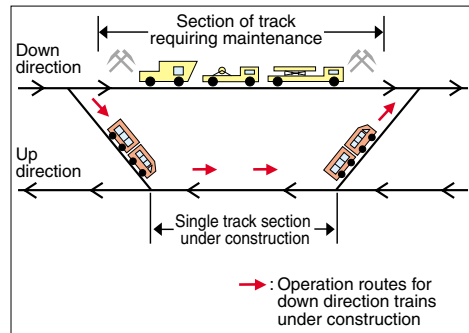
\*\*3 PC sleepers: To replace wooden sleepers with sleepers made of PC concrete (Stronger than reinforced concrete).

\*\*4 Flattening smoothing in railcars: To return a flat part generated by non-rotation of wheels into the original forms by trimming.

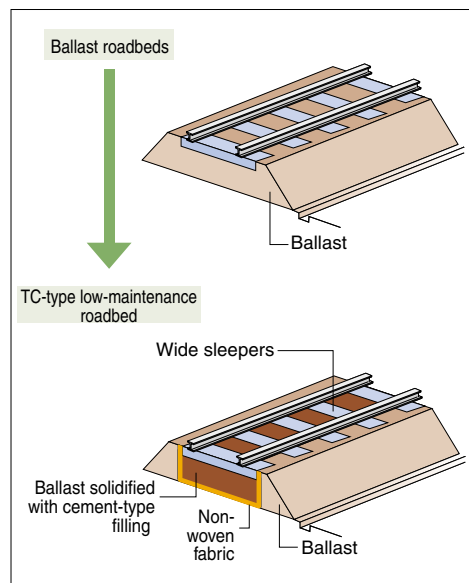


## Noise during maintenance work

Maintenance work on roadbeds is conducted during nighttime hours when trains basically do not operate; however, local residents are always informed in advance when such night work is scheduled. When performing the work we make every effort to reduce noise generated by machines. We will also conduct such maintenance work during the daytime employing modified operational methods. This includes the implementation of "Renovation works" where maintenance work is carried out intensively, thereby reducing maintenance work during nighttime hours. Further, in order to reduce such maintenance work itself, we are replacing conventional ballast roadbeds with highly stable TC-type low-maintenance roadbeds. These keep roadbed deformation to a minimum, especially in the Tokyo metropolitan area where tracks are exposed to a high volume of rail traffic.



Renovations works



TC-type low-maintenance roadbeds

## Radio disturbance

Along Shinkansen lines, television interference is sometimes caused when pantographs momentarily bounce over overhead wires. We are in the process of implementing measures to establish common television receiving facilities for such affected households.

## Harmony with existing scenery

In many cases, relatively large structures such as railway viaducts and bridges, or buildings such as stations and station buildings, are built along and around railway lines. Thus the impact on regional scenery produced by these structures is not insignificant. Within the construction departments which plan and design these structure and buildings, we have organized design committees. The committee checks how the planned structure may affect the existing scenery, and awards are bestowed for excellent designs. Such initiative may also receive awards from outside organizations. In fiscal 2001, we received the highest award for a viaduct (commissioned in 1995) built near Tokyo Station on the Chuo Line in the category "Landscape and Design Award" from the Japan Society of Civil Engineers (evaluation is based on maintaining harmony with the existing scenery over several years after completion of construction).



Viaducts in the vicinity of Tokyo Station on the Chuo Line



## Environmental pollutants

### Thermal power plants

The company-run Kawasaki power plant uses city gas, kerosene, and low sulfur heavy oil, which are fuels that impose a lower environmental burden than other conventional fuels. However, nitrogen oxides (NOx), sulfur oxides (SOx), soot and dust are emitted as a result of using these fuels. Thus, we are striving to reduce emissions by using NOx removal equipment, dust collectors, etc. In fiscal 2001, NOx emissions fell to 376 tons, thus achieving a 60% reduction from fiscal 1990. This was actually the target value for fiscal 2005, thus we were able to achieve our goal well ahead of schedule. We will continue monitoring these emissions so that all targets can be achieved in the future.

### Incinerators

Refuse incinerators may generate dioxin under certain conditions. JR East has been burning a portion of the refuse discarded at stations and on trains using the company's own incinerators; however, we are gradually eliminating our incinerators and consigning disposal to the municipality in consideration of the "Law concerning Special Measures against Dioxins." All compact incinerators with less than 50 kg/h burning capacity have been decommissioned, but as of the end of fiscal 2001 we were still using 18 incinerators with capacity exceeding 50 kg/h. We are in the process of reducing this number in fiscal 2002. It is planned to discontinue the use of company-owned incinerators except for two large incinerators (over 200 kg/h), which were upgraded to comply with the emission standards effective until December 2002.

### Diesel railcars

Since diesel railcars, which use light oil, generate soot and dust while running, JR East is moving ahead to replace existing engines with new engines that emit a lower volume of hazardous substances. Also, we are undertaking a study into a hybrid diesel railcar with an eye to future use.

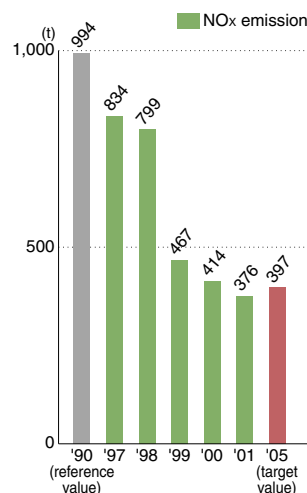
## Chemical substances

JR East uses chemical substances in the painting and repair of railcars at our main rolling stock workshops. These chemicals are strictly managed to prevent spills and leakage. Further, in accordance with the "Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (PRTR Laws)," enterprises handling specific chemical substances over a certain volume must notify the volume released and/or transferred to the prefectural governments. We therefore employ an accepted method to calculate the amount of such substances released and/or transferred and participate in a PRTR regulation examination meeting, which all JR companies take part in. Thirteen facilities notified the government on these matters in June 2002. We are in the process of introducing stainless steel rolling stock, which require no coating, in order to reduce the amount of these chemical substances used. Stainless steel railcars now account for 49% of the company's 10,710 conventional electric railcars. The Company also uses organic paint solvents in the maintenance of railway facilities such as bridges. These uses do not require notification under PRTR regulations, with 320 tons being used in fiscal 2001. We use detergents in our cleaning operations at stations and station buildings, but East Japan Eco Access Co., Ltd., is reducing the amount of detergents used by employing the "Ozohiter" (movable ozone water generator) developed in collaboration with another company.

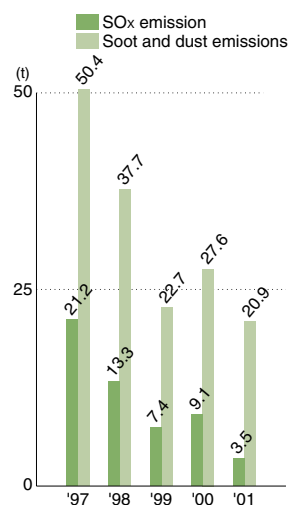
Name of chemicals	Unit	Level of emissions into the air	Level of discharge into public water bodies	Amount transferred to sewers	Amount transferred to outside facilities
Bisphenol A type epoxy resin	kg	24,000	0	0	2,000
Ethylene glycol	kg	0	8,400	320	4,800
Xylene	kg	24,000	0	2,800	1,100
Chromium and Chromium (III) Compounds	kg	0	0	0	150
Dioxins	mg-TEQ	869	0	2	3,193
Toluene	kg	28,170	0	6,807	19,356

Note) There is no discharge to soil and landfill disposal.  
Notified volume released and transferred in 13 places

● Volume of NOx emission from company-run thermoelectric power plant



● Volume of SOx, soot and dust emissions from company-run thermoelectric power plant





\* This is calculated based on the "Assessment of public benefit of forest lands" (Press release of Forestry Agency dated September 6, 2000).

## Herbicides

The overgrowth of weeds on or around railway tracks leads to low visibility that compromises the safe operation of trains as well as being annoying to adjacent residents. For this reason, in addition to mowing weeds, we also spray with herbicides. We only use herbicides in minimal amounts and with the lowest possible ratings for both mammalian and aquatic toxicity to reduce the environmental impact of weed control. The areas where herbicides are applied are also limited. Because of these controls, we restricted use to 336 tons in fiscal 2001.

## Polychlorinated biphenyl (PCB)

JR East has been using transformers, condensers, fluorescent light ballasts, etc. containing PCB as insulation. We are taking aggressive steps to replace this equipment with PCB-free equipment. The obsolete PCB-contaminated equipment (approximately 2,000 tons in total) is being strictly stored in special warehouses. In accordance with the "Law Concerning Special Measure against PCB waste," we notify the prefectural governors (mayors in some cities). We are currently examining disposal methods with safety being the paramount consideration so these hazardous materials can be rendered harmless as soon as possible.

## Utilization of water issuing from tunnels

In some of JR East's underground tunnels the amount of water issuing is increasing due to rising water tables. This does not interfere with train operations as the water is discharged from the tunnels by pumps; however, we are working on a new project whereby this water can be made use of. With the cooperation of municipalities, from fiscal 2001, we have been discharging spring water taken from within the Kokubunji tunnel on Musashino Line (between Shin-Kodaira and Nishi-Kokubunji) into the Nogawa River via Sugataminoike (all located in Kokubunji City, Tokyo). In this way we are able to improve the environment by increasing the river's water volume. In a similar fashion sump water sourced from the Sobu tunnel on the Sobu Line (between Tokyo and Ryogoku) is being supplied to the Tachiaigawa River (Shinagawa-ku, Tokyo). This began in July 2002.



Sugataminoike where water volume was restored

## Protection of railway trees

Forests have been protecting lines from various natural threats since the inception of Japanese railways. In 1893, trees to prevent snow drifting on to the rails were planted along the section between Mizusawa and Aomori on the Tohoku Honsen Line at 41 locations. Later, protective trees were planted in a number of regions to stabilize hillsides and prevent mudslides. At present, JR East has approximately 6 million trees on an area of land covering 4,400 ha in total. Because these trees not only absorb 17,000 tons\* of CO<sub>2</sub> equivalent to 0.7% of CO<sub>2</sub> discharged by JR East annually, but also create a rich natural environment that is appreciated by local communities, we conserve them with care.



Railway trees

## Environmental consciousness in residential plot development

We are implementing land use and development plans taking the conservation of the natural environment in residential areas into consideration. In "Fiore Kitsuregawa" (located at Kitsuregawa-cho, Tochigi Prefecture, total area of 82 ha, 1,115 houses), we have a land utilization plan making use of existing natural topographic features and trees, and we preserve natural trees when selling land lots. Another way of preserving an unspoiled environment for future generations is through new building agreements. In a current development called "View Verger Annaka Haruna" (Annaka City, Gunma Prefecture, 49ha in total area, approximately 700 houses planned), we are planting indigenous trees in accordance with the "Potential nature vegetation guiding method."



Arbor Day in "View Verger Annaka Haruna"

## Afforestation

We have been planting trees on an annual basis at all branches as part of the "Afforestation along railway lines" program, beginning in 1992 with tree-planting conducted at 11 locations including Yotsuya Station on the Chuo Line. This is a volunteer activity by JR East group employees, and we also encourage the participation of local residents in this activity. Twenty-three thousand people took part in these activities over a ten-year period up until fiscal 2001, planting 210 thousand trees. Each year, JR East group employees conduct fund-raising activities to coincide with the planting period and some of the money raised goes toward covering the expenses of the afforestation program. We have been involved in the "Onuma home town afforestation" program in Onuma (in southern Hokkaido) from fiscal 2000. Through the "Onuma home town afforestation committee," established by JR East and JR Hokkaido, volunteers from inside and outside the Company are asked to participate. The trees are grown in pots at nurseries from acorns, and they are planted at many places within Hokkaido under the guidance of Dr. Akira Miyawaki (Emeritus Professor of Yokohama National University), an international forestry expert. In October 2001, approximately 750 participants potted 55,000 seedlings. Similar events are also scheduled to be held in October 2002.



"Afforestation along railway lines"



"Afforestation of Onuma home town"

## Eco-tourism

Under the theme "Communing with wonderful nature," JR East provides services that allow people to visit and experience nature in many places. In fiscal 2001, approximately ten thousand tourists took part in 15 tours, including "Shirakami mountain range trekking," "Visit to a clear stream," and "Studying Fukushima away from home." By establishing long-stay type hotels (Folkloro and Familio) and using them as a base, we were able to provide the "LO-CO club" plan, which is a sociable trip designed to bring people into contact with nature and the culture of the land. Approximately 15,000 have enjoyed the plan.

Using many different stations as starting points, "Hiking from the station" is an activity whereby tourists can enjoy themselves by taking a nature walk within an easy distance from the station and see numerous scenic spots that change with the seasons. There are both "Event courses," which must be reserved in advance and "Recommended courses," which tourists can enjoy whenever they like without a reservation. The event courses were held approximately 200 times in fiscal 2001, and were attended by about 100,000 people.



Familio



"Hiking from stations"

## Pursuit of Safety

The management of JR East has given “safety” the highest priority since the inauguration of the Company. We have invested in many kinds of safety equipment with a total investment of approximately ¥1300 billion and supported the individual initiatives of company employees through two five-year plans. Because of these initiatives, safety levels have steadily improved. In the “New Frontier 21” campaign, we are aiming to become “the safest railway in the world.” We are also promoting an initiative based on the “Safety Plan 21,” which is the third in a series of safety plans, with the goal of zero deaths and injuries due to accidents for passengers, and of zero deaths for our employees and the employees of cooperating companies.

### Safety Plan 21

Being fully aware of the value of our passengers, progress in technology, and changes in employee composition of the Company in the “Safety Plan 21,” we are committed to infusing a spirit of self-reliance throughout every corner of the organization. We are working to raise the safety of our railway systems to even higher levels throughout the JR East group, including the planned upgrading of safety equipment that will cost close to ¥400 billion over five years, thus responding to the social mission and expectations of our passengers.

### Securing the safety of railcar operations

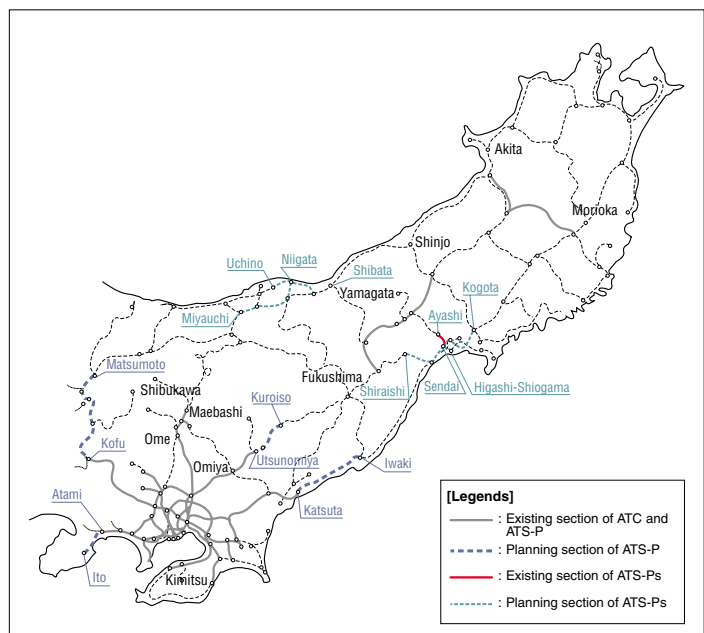
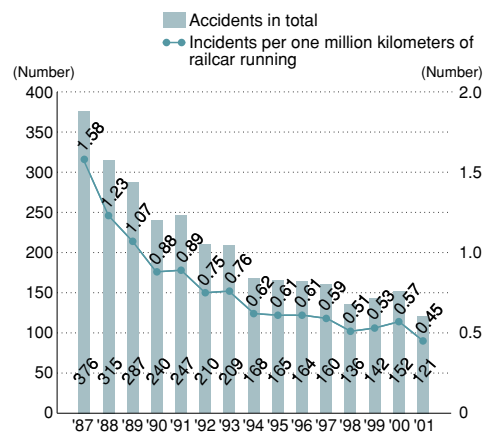
#### Providing ATS-P and ATS-Ps

JR East has provided the automatically controlled ATC system (Automated railcar control system), which checks the speed of railcars and the ATS system (Automated railcar stop system), which stops railcars automatically when a stop signal is activated. Further, we are introducing a new type ATS (ATS-P type and ATS-Ps type) that has more highly developed safety features and will be employed in the main line section centering on the Tokyo metropolitan area. These systems have already been completed in preparation for a new type ATS along approximately 1,580 km of railway lines, including the commutation line section of the Tokyo metropolitan area.

### Number of railway accidents

Three hundred and seventy three accidents occurred in 1987 when the Company was inaugurated. In fiscal 2001, the number was 121, representing a decrease to less than 40% in comparison with 1987.

● Number of railway accidents



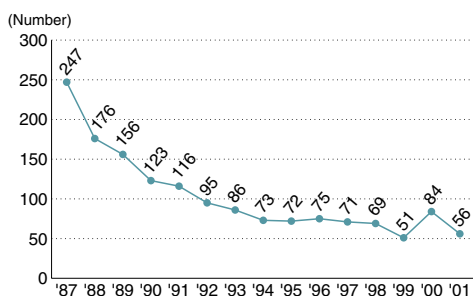
Plan for ATS-P and ATS-Ps

## Safety measures to prevent accidents at crossings

Crossing accidents have decreased to less than 30% of the figure for 1987 (when the Company was inaugurated). In the future, we intend to set up “crossing obstruction detectors” at those crossings with heavy traffic volumes, and make an all-out effort to eliminate crossing accidents through the introduction of other measures, including installing “two stage type crossing gates” and “gate type crossings.”

### Number of accidents at crossings

#### ● Number of accidents at crossings



Two stage type crossing gates



Gate type crossing

## Safety measures for passengers on platforms

In order to protect the safety of passengers on platforms, we are installing and expanding safety facilities on platforms. In terms of railway operation accidents, accidents causing injury or death have decreased to almost half of what they were when the Company was inaugurated.

### Mat to detect falls

If a passenger falls down into the gap between the platform and the carriage at a station having large curbs, this mat detects the fall and informs the operator who can then take immediate action.



Mat to detect falls

### Emergency stop alarm system for railcars

This system informs operators of danger when someone presses the “Emergency stop button” installed on platform pillars.



Emergency stop alarm system for railcars

### Raised tiles for guiding visually impaired persons

These raised tiles are set into the outside edge of platforms to prevent visually impaired persons from falling off the platform.



Raised tiles for guiding visually impaired persons

### Platform steps

Steps are being installed to allow passengers who have fallen off a platform to climb back up quickly and easily. These are being installed at all stations with a heavy volume of rail traffic.



Platform steps

### Platform campaign

As a campaign to improve the safety of passengers on platforms, we are carrying out a “Platform campaign.” As well as warning passengers not to indulge in such dangerous actions as rushing to get on a train, we call upon passengers to give us their cooperation, including pushing emergency buttons in the event a passenger observes a dangerous situation on the platform.



Posters used in “Platform campaign”

# Service Improvement

Placing “customers first” is one of the central pillars of management’s philosophy, and JR East makes every effort to provide a comfortable and convenient service. We always endeavor to provide services and goods that meet the needs of customers by collecting a wide variety of customer opinions and comments through “site front-line employees” and the “Customer Help Desk” or the Internet. In addition, we provide services that allow customers to make reservations for both domestic and foreign tours by making aggressive use of IT (Information technology). Shinkansen tickets can also be reserved by cellular phone.

## Improvements to services based on customer feedback

In order to improve services, we are inviting customer feedback through Site front-line employees, the “Customer Help Desk” and the Company’s website. We registered 86,177 opinions or comments provided by customers in fiscal 2001, an almost three-fold increase over the previous year when 29,948 were registered. JR East is committed to making improvements to services that reflect opinions gathered from customers.

### “Customer Help Desk” and website

We have set up a “Customer Help Desk” as a contact window that allows customers to relay their opinions and requests back to the Company (16 stations as of the end of March 2002). In May 2001, we established a column on the JR East website through which customers can register their opinions and requests. It is our intention to collect both more and a wider variety of customer opinions than we do at present.

Opinions and requests to JR East  
URL: <https://voice.jreast.co.jp/>



Customer Help Desk



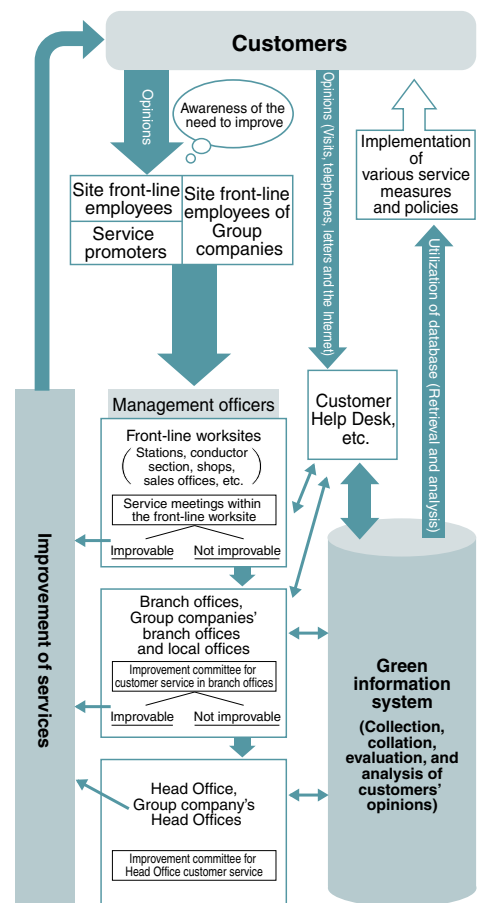
Website input screen

### Site front-line employees

In order to gain a better understanding of the opinions of not only those customers who have direct contact with the “Customer Help Desk,” but also a wider range of customers, we created a mechanism for collecting “customer opinions,” “complaints that are hard to say out loud,” “awareness of the need for improvements to employee services,” etc. through our site front-line employees. The Company is formulating a variety of ingenious plans with each branch distributing a portable memo pad to employees and utilizing e-mail.

## Green information system

This “green information system” is a computer network to collate customer opinions and information collected by site front-line employees and the “Customer Help Desk” and share them in-house. The system then converts this information into a database. The customer service department of the Head Office and each branch, along with the “Customer Help Desk” and operations organizations are connected online. This means that information can be retrieved freely. We use this system in the formulation of a variety of service measures and policies as it makes possible the accurate analysis of the needs of customers. It allows us to come to an understanding of their opinions and attitudes more swiftly, with this knowledge then reflected in policy and initiatives.



Green information system-ready flow

## Approaches to improving services

### Providing information to customers

We are proactively working to create a system which effectively responds to customers' inquiries (both domestic and overseas) by phone and the Internet on questions regarding fares and the operational status of trains.

#### <Inquiries by phone>

We provide information on fares, fees, the operational status of trains, vacant seats, lost articles, etc. by phone at the telephone center. Through "JR East InfoLine" the same kinds of information are made available via phone in English, Korean and Chinese.

The latest updates on the operational status of trains are available as text messages through cellular phones. In addition, we can inform customers automatically by e-mail and cellular phone when there are delays or other mishaps which occur in the section of line where the passenger has registered.



Text information services using cellular phones

#### <Inquiries by the Internet>

We are providing passengers with operational status and station information on the website of JR East.

Using "eki-net," passengers can obtain vacant seat information, information of the time of day and transit, fares and fees.



Web screen of "eki-net"

#### < Establishing information centers >

We are establishing "Information Centers" at stations where passengers board or alight (12 stations as of the end of August 2002). We started an English train schedule information service and we are answering a wide range of inquiries.



Information center

JR East: Various inquiries  
URL: <http://www.jreast.co.jp/e-info/>

JR East website  
URL: <http://www.jreast.co.jp/>



## Appointment of service managers

We are expanding our services by appointing “service managers” who have been trained to provide meticulous and practical services covering the provision of information and guidance in emergencies and helping elderly passengers and those who are not familiar with travel or train schedules (19 stations as of the end of March 2002). We also provide a variety of guidance services by having these managers circulating in and around the station. They wear green uniforms allowing passengers to spot them at a glance.



A service manager

## General website for travel “eki-net Travel”

We have created a convenient website called “eki-net Travel” in tie-up with JAL (Japan Airlines) and JTB Corp. The website can inform customers of just about everything they need to know as far as travel is concerned. The website provides information on nation-wide JR reserved tickets, air tickets, Japanese inns, hotels, tours at home and abroad, as well as timetable information, information on JR fares and fees, information on JR East commuting fares, and tour spot information for both home and abroad. We also started a reserved seat reservation service in English in January 2002, enabling customers to make reservations for the Shinkansen and the Narita Express from overseas.

## Reserving seats from cellular phones

“Eki-net” members are able to reserve seats by cellular phone. Thus, seats can easily be reserved on the Shinkansen nationwide. The same convenient service became available for the “Chuo Liner” from August 2002.

## Expansion of the range of usable credit cards

We are expanding the number of credit cards that will be accepted at the “Midori-no-madoguchi” (reserved-seat ticket office) of JR East, the View Plaza and by reserved ticket automated dispenser from fiscal 2001 to improve convenience of passengers in using station windows and the View Plaza.

Credit cards accepted as of the end of May 2002

- View Cards
- Internationally accepted credit cards (JCB, VISA, Master, AMEX and Diners)

“eki-net Travel”  
URL: <http://www.world.eki-net.com/>



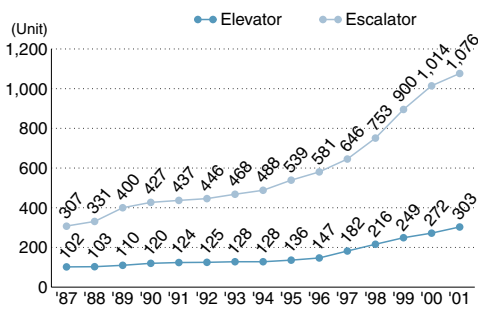
# Railways More Accessible for All

JR East is improving stations and the interior facilities of railcars so that senior citizens and physically disabled passengers, and passengers with their younger children, can use them safely in accordance with our maxim “railways more accessible for all.” Among other things, we are in the process of installing elevators and escalators in accordance with the “Traffic Barrier Free Law” enacted in 2000.

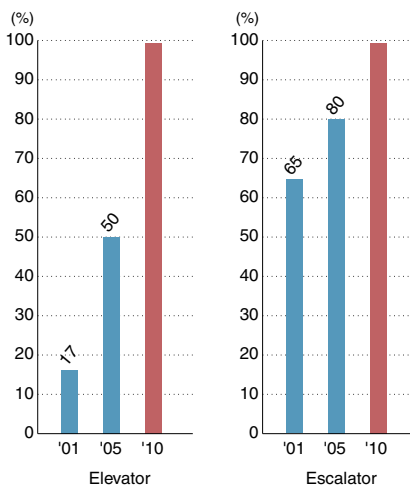
## Installing elevators and escalators

In compliance with the “Traffic Barrier Free Law,” we are in the process of installing hoist facilities in cooperation with municipalities. To be more specific, we now regard elevators as basic facilities and we have set ourselves the goal of installing these facilities in all stations subject to the Barrier Free Law\*. We are also committed to installing escalators in stations with a high volume of passenger traffic.

● Number of elevators and escalators installed



● Percentage of planned elevators and escalators installed



## Upgrading of nursing rooms and baby beds

At Ueno Station (where renovations were completed in February 2002) JR East, for the first time, has built a “Baby break room” (first floor: close to the Shinkansen wickets) where infants can be nursed and their diapers changed. We are also installing baby rooms and multi-purpose rooms for passengers with infants and children in special carriages. In addition, we provide “Women only toilets” and “Ladies powder rooms” for female passengers.

\* Approximately 390 stations used by 5,000 or more passengers a day, and where there is over a 5-meter height difference between levels.

## Introduction of special carriages for women only

To allow all passengers to travel in greater safety and comfort, we have introduced women’s only carriages on the Saikyo Line.



Railcars reserved for use by female passengers only

## Introduction and expansion of the “Suica” IC card

In November 2001, the debut of the “IC card wicket gate system” allows passengers to pass through the gate by lightly touching the automated wicket gate machines using the “Suica commutation ticket” or the “Suica IO card.” This eliminates the inconvenience of having to visit a ticket vending machine, prepare small change or remove the card from commutation ticket holders. From April 2002 this system came into common use at Tokyo Monorail Co., Ltd. At present, the “Suica” system can be used at 461 JR East stations throughout the Tokyo metropolitan area and nine Tokyo Monorail Co., Ltd. stations. The number of passengers taking advantage of this system exceeded 4 million in May 2002.



IC card wicket gate system

## Expanding Communications with Local Communities and International Society

JR East will endeavor to strengthen communications with local communities and global society as an integral member of the local communities and society at large. Moreover, by establishing various administration facilities, nursery schools and other facilities at stations, we are promoting a policy that makes a station a community center and a base for the transmission of information. JR East also intends to make social contributions in a variety of fields through welfare, culture, sports promotion, and international cooperation.

### Activities for local revitalization

JR East sees a station as not only an “Arrival and departure point for travel,” but also as a “Base for the transmission of information and culture” where a broad range of people are able to gather. Accordingly, in conjunction with construction plans advanced by local governments for areas close to stations, we are in the process of building improved bridge-structure stations (stations built on a bridge over the railway line) in these areas, and establishing a station plaza system in a number of venues. These projects play a significant role in the revitalization of local communities, and can also contribute to the creation of communication spaces in stations in the form of such public facilities as public halls or libraries.



Ugo Iwatani Station (Uetsu Line) with a community hall

### Gift of travel

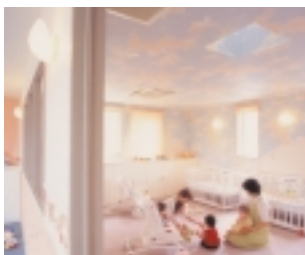
JR East supports people with handicaps or disabilities, who rarely have the opportunity to travel, by offering the “Gift of travel” that enables them to enjoy a trip to Hokkaido. This excursion to Hokkaido has been sponsored through the actions of the Executive Committee of the “Gift of travel” every year since 1994, though, unfortunately, it was prevented in 2000 due to the eruption of Mt. Usu. This event was made available so that physically disabled people could enjoy sightseeing in Hokkaido by utilizing purpose-built Blue Trains (sleepers) and others, and has been able to proceed thanks to the help of volunteers. So far, as many as 5,000 people including accompanying family members have participated in these excursions.

### Sponsorship of sports events

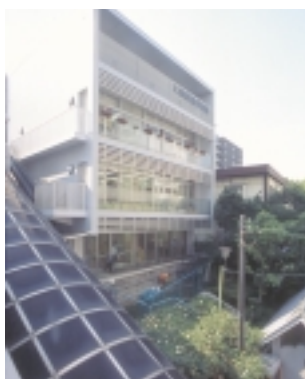
JR East has been sponsoring the “JR East Junior Kendo (Japanese fencing) Competition” intended for young fencers living in JR East areas. The event allows the fencers to demonstrate in performance what they have achieved in their routine training and provides an occasion for friendly interaction with other fencers. It also supports the general principle of maintaining wholesome health and environment through participation in sport. The Kendo Competition held in August 2002 marked the 13th time this event had been held. In addition to kendo, we support ski competitions held at Gala Yuzawa and Tazawako ski resorts, the Kanto university soccer league, and other sporting groups and events.



JR East Junior Kendo (Japanese fencing) Competition



Poppins Nursery School at JR Kozukue Station



Nursery school at JR Omori Station

### Childcare support at station nursery schools

Utilizing the convenient location of stations, we are offering a variety of childcare services by opening nursery schools that respond to the changing and evolving needs in the childcare environment. The first such in-station type facility was the “Kokubunji J Kids Station” nursery school at Kokubunji Station, opened in 1996. Successively, in cooperation with the local governments, JR East supported the opening of nursery schools at Tsurumi and Kozukue Stations in Yokohama City, and at Kita-Senju, Nishi-Hachioji, and Omori Stations in Tokyo. In order to ensure “Reliability” and “Safety” that are our top priorities, we have formulated comprehensive disaster prevention measures and ways of dealing with suspicious persons. In addition, we are offering high quality childcare services in partnership with reliable childcare specialist companies.

## Railway Children Association

The "Railway Children Association" is managed by the Traffic Manner Association to improve the traffic manners of the young people who carry the next generation. This Association group has become established all over Japan since 1960. The group is playing an important role in a variety of activities, including "Station cleaning activities," "Practical activities in trains," "Participation in nationwide camping," "Visits to various railroad facilities," and "Participation in events on Railway Day."

By setting up the secretariats supporting "Railway Children Association" at branch offices, and other offices, JR East assists in planning activities, preparing procedures for activities, passing information to members and leading/guiding groups of members. Moreover, by providing places for activities, including stations, trains, and driving simulators, JR East is extensively and positively supporting children's activities.



"Railway Children Association" foundation ceremony at JR East branch office

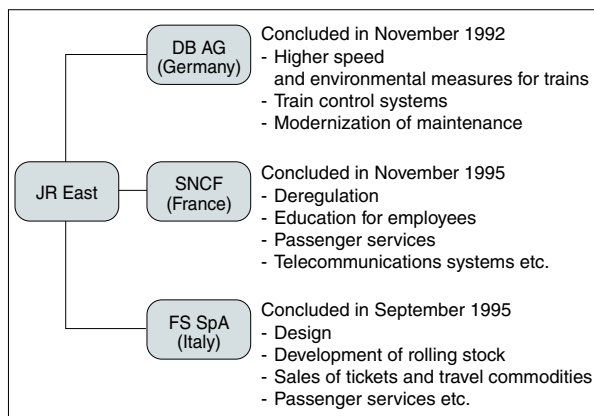
## International cooperation

As part of our contribution to the global community, JR East is positively engaged in international cooperation, mainly through providing lectures on rail-related topics, carrying out inspections, and by offering practical advice. It does this by dispatching employees to foreign countries, and by accepting trainees from developing countries upon the request of the Japan International Cooperation Agency (JICA) and other bodies. Moreover, we participate in projects organized by the group Japan Overseas Cooperation Volunteers (JOCV).

Dispatch	Long period (one year or more)	One employee to Philippines
	Short period (less than one year)	Seven employees to two countries
Acceptance	Trainees via Japan International Cooperation Agency (JICA)	163 trainees from 35 countries

International cooperation in fiscal 2001

JR East concluded a Cooperative Agreement with German Railways (DB AG) in November 1992, Italian National Railways (FS SpA) in September 1995, and French National Railways (SNCF) in November 1995. The Agreement aims at cooperation across a wide range of areas, such as information exchanges on technology development and management, design development in the area of stations and rolling stock, personnel training, passenger services, and travel industries.



Overseas railway corporations under Cooperative Agreement



East Japan Railway Culture Foundation  
TEL: +81-3-5334-0623  
URL: <http://www.ejrct.or.jp/>

Tokyo Station Gallery  
TEL: +81-3-3212-2485  
URL: <http://www.ejrct.or.jp/gallery/>

## East Japan Railway Culture Foundation

In March 1992, the East Japan Railway Culture Foundation was established to contribute to creating a railway and transportation culture invested with rich human qualities. The activities cover three themes: "Promotion of Regional Culture through the Railway Network," "Promotion of Survey and Research on Railways," and "Promotion of International Exchange Related to Railways."

### Promotion of regional culture through the railway network

The Foundation introduces and supports art and culture, utilizing the network represented by its stations and railways. Thus, we are always involved in a variety of activities, such as exhibitions at Tokyo Station Gallery, "Support of local cultural projects" that support traditional local cultures that still persist in various districts of eastern Japan and are handed on for the benefit of future generations, and restoration of the "Old Shimbashi Station" at Shiodome (located near Shimbashi Station in Tokyo), where the first Japanese railway was born.

### <Tokyo Station Gallery>

In 1988, the Gallery at Tokyo Station (a classical red-brick structure) was opened to promote and display magnificent cultural and artistic achievements for the benefit for all, and not to remain merely a place that people passed through. Under the motto of "Even if it is small, it is a real museum," the Gallery has held a

Title of exhibitions held in fiscal 2002	Period
Fukuoji Horin and Kazuhiko Exhibition	April 6 – May 12
39 Figurative Arts of "East Japan - Sculptures"	May 25 – July 7
Mongolian Modern Painting Exhibition	July 20 – September 8
Scandinavia Landscape Exhibition	September 21 – November 10
Toshio Arimoto Exhibition	November 23 – January 13
Tsunetomi Kitano Exhibition	February 1 – March 23

Examples of exhibitions being held in fiscal 2002



Tokyo Station Gallery

succession of exhibitions featuring a range of genres; not only paintings, but also sculptures, constructions, and design works among others.

### <Support for local cultural projects>

In order to revive local culture, we strive to support traditional cultures, which still persist in some parts of eastern Japan, in order to preserve them for future generations. We have asked our JR East branch offices to suggest projects, and have been granting subsidies since 1993. (In fiscal 2001, 12 projects were subsidized at a total cost of 51 million yen.)



Support for local cultural projects  
"Ayako Mai (dance) in Kashiwazaki City, Niigata Pref."

### <Old Shimbashi Station preserved and restored>

On the site of the Old Shimbashi Station, we will construct a building (to be opened in spring 2003) having the same external appearance as the old station, which opened in 1872. This site has been designated as a historic site as it is the birthplace of Japan's rail system. We intend to restore, as accurately as possible, the external appearance of the Old Shimbashi Station on the same spot where the real station existed long ago. Reconstruction will be based on excellent contemporary photographs and the foundations of the station. We intend to restore part of the platform and track, as well as setting up windows to allow observation of historic sites.

Furthermore, there is an ingenious plan that will allow visitors to view the original foundation stones of the former station, and learn about the history of the railway and Shiodome through the exhibition of windows and railway relics discovered at the Shiodome site. All this will be available through the "Exhibition Room of



Old Shimbashi Station Building seen from the platform  
(1/100 scale model)

Railway History”; and can be followed by a visit to the European-style restaurant, “Grand Cafe Shimbashi Mikuni” where they can be served by the Chef, Seizo Mikuni.

### **Promotion of investigation and research into railways**

In order to promote the revitalization of investigation and research related to transportation, as well as to provide special encouragement and training for young researchers, we support original academic investigation and research into railways based on the theme “Search for a railway culture and evolution of a new transportation society.” (In fiscal 2001, 13 research projects were subsidized at a total cost of 21.59 million yen.)

### **Promotion of international rail-related exchanges**

To deepen mutual understanding with overseas nations, we promote International Cultural Exchanges in areas related to railways. In particular, JR East continues in its activities of sending information for the benefit of the international community.

### **Acceptance of overseas railway trainees**

As part of its policy to accept overseas railway trainees, JR East has invited young executives from railway companies in Asian nations (Thailand, Malaysia, Vietnam, Mongolia, and Indonesia) to Japan. For about four months, these executives undergo business training (JR East Fellowship) in which railway management, railway technology, and other subjects are studied; and we provide opportunities for the trainees to communicate with JR East employees and to have some firsthand experience of Japanese culture. These exchanges have included railway trainees from Ministry of Railways in China. In this manner, JR East is engaged in cultural exchanges with overseas railway companies that transcend national boundaries.

Fiscal year	JR East Fellowship	Trainees from Chinese Railway Dept.
1998	7 trainees from 4 countries	34 trainees
1999	8 trainees from 4 countries	13 trainees
2000	8 trainees from 4 countries	35 trainees
2001	10 trainees from 5 countries	22 trainees

Trainees accepted

### **Magazine, “Japan Railway & Transport Review (JRTR),” in English**

JR East publishes the magazine “Japan Railway & Transport Review” in English (JRTR), and releases it simultaneously to the public on the Internet. The magazine makes information on transportation in Japan, concentrating on railways, available to overseas countries, as well as creating a forum for international discussion where specialists in transportation problems from every country in the world can exchange their opinions.

JRTR website  
URL : <http://www.jrtr.net/>



“JRTR”

## Workplace that Motivates Employees

JR East is striving to create a “Workplace that motivates employees” so that each one of the Company’s 74,000 employees can bring his or her own abilities into full play. We have implemented a series of training programs matched to the employee age distribution and the type of job, and have a well-organized system to promote “Personnel training suitable for the 21st century.” In addition, we are in the process of creating an independent and lively workplace by supporting “small group activities” and “activities suggested by employees” for work improvement.

### Training system

JR East has established a variety of training systems to assist employees in the development of their abilities. In particular, the “JR East General Education Center” (opened in April 2000) can accommodate 1,200 persons per day, and provides employees with a variety of opportunities for training, including training for crew staff.

### Group training

JR East has introduced various training courses at the group’s facilities. These venues include the JR East General Education Center, each branch office’s training facilities, general training centers, and business training centers. We conduct safety and accident prevention training that is the base of rail operations, as well as training to enhance the standard of services and management.



JR East General Education Center

### Correspondence training

As part of education for personal growth, we have started providing outside correspondence courses, so that employees can acquire general culture and qualifications, and in-house correspondence programs that covers railway businesses and services.

### Training outside the company

To assist staff to gain a broad perspective and cultivate a rich sensibility, which are essential attributes of any successful business person, JR East strongly encourages employee participation in training outside the company, such as management school, various open seminars, training on the ocean, training overseas, and assignment to domestic universities.

Training Categories	Fiscal 2000	Fiscal 2001
<b>Training for Human Resource Development</b> Outline of main training - Seminar for new directors and auditors of group company - Marketing seminar - Training for new supervisors (on-site supervisors and assistant supervisors) - Training for new recruits and junior staff - Training for successful applicants of promotion examination - Training for those who support small group activities - Training for instructors of small group activities and administrative staff	28,600 people	27,400 people
<b>Training for Upgrading Knowledge and Technologies</b> Outline of main training - Training for train drivers and conductors - Training in training centers and business training centers - Training to strengthen business knowledge and technology	56,700 people	60,500 people
<b>Training Outside the Company</b> Outline of main training - Training for management and communication exchanges between different industries - Training for acquisition of various qualifications - Training overseas and training on the ocean	4,200 people	3,500 people
<b>Total</b>	<b>89,500 people</b>	<b>91,400 people</b>

Training conducted in fiscal 2001

## Small group activities and proposal activities

JR East endeavors to support and popularize small group activities and activities suggested by employees that lead to the revitalization of the workplace, ability development, and work improvement. In fiscal 2001, about 6,400 circles and about 33,900 employees participated in such activities. These autonomous activities and positive activities suggested by employees inject vitality into JR East's corporate culture.



Presentation of small group activities

## Expansion of women's work opportunities

Pursuant to the revised "Equal Employment Opportunity Law" that came into force in April 1999, JR East has taken steps to address the equal treatment of men and women workers in its operations. This covers the areas of employment, assignment, and promotion. In particular, after the regulations for late night were annulled with the revision of the "Labor Standards Law," the areas in which women are able to work have expanded steadily. For example, some women now work in the "Midori-no-madoguchi" (reserved-seat ticket office) where everyone is obliged to work under rigid conditions including an all-day-night shift system (formerly, it was difficult for women to work in such a shift), and they can now also work as train drivers and conductors.

As a result, in April 2002, the number of women employees was about 1.3 times higher that it was before the enactment of the revised Law (in March 1999).

## Internships

JR East advertises for "Interns" to be selected from among university juniors, first year graduate students, and fourth year students at technical colleges. We accept applicants who are interested in the business and technology of JR East or who want to gain some practical experience in a major field in a school setting or test their own skill. We arranged an educational schedule covering the last ten days of August 2002 so that they could receive training in business practices in 12 fields, including financial, legal affairs, marketing, and rolling

stock. (Some new programs will be introduced in September 2002.)

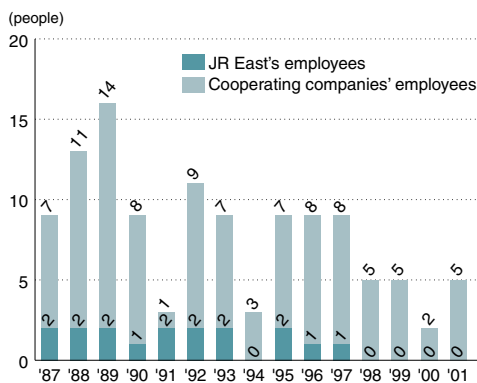
Note: This program is not related to the hiring of new graduates.

## Industrial accidents

### Trends in the number of accidents at work

Based on the "Safety Plan 21," JR East has worked continuously to prevent accidents at work by promoting a policy, the "Challenge to Greater Safety." To our regret, in fiscal 2001, five employees of cooperating companies were victims of fatal accidents. We make unceasing efforts to prevent industrial accidents.

### ● Trends in the number of fatal accidents among JR East's employees and cooperating companies' employees



### Acquisition of OHSAS 18001 Certification

In March 2002, JR's Oi Workshop obtained a "first" for any railway company, OHSAS 18001 Certification,\* which means the company has met internationally recognized standards for its occupational health and safety management system. We aim to enhance health and safety standards even further by continuously improving this system.



JR East Oi Workshop



OHSAS 18001 Certificate obtained by Oi Workshop

\*OHSAS18001 :  
O (Occupational),  
H (Health),  
S (Safety),  
A (Assessment),  
S (Series),

The OHSAS 18001 requires compliance with 58 items, including having an acceptable "Policy for occupational health and safety" and "Systems and responsibility" that are essential for the management of occupational health and safety.

## Economic Highlights

Strong points of JR East are its ability to create a strong cash flow generated by its safe and reliable railway operation coupled with its life-style services operations that make effective use of its resources. We allocate cash flows exceeding 600 billion yen from EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortization) to fund our business investments, pay principal/interest to creditors, and pay dividends to shareholders. JR East will continue to improve profit levels while exercising its responsibilities as a good corporate citizen by returning something to economic society.

### IR (Investor Relations)

"IR" includes general activities whereby a company provides its investors accurate information on its business results and future outlook. JR East believes that it is the top management itself that must deal with "IR" activities.

To address this issue, in 1993, when the Company listed its stock, JR East set up a specialized "IR" division, and since then has been engaged in setting up a comprehensive disclosure system aimed at maintaining the

confidence of investment markets. There has also been open disclosure of legal matters, meetings of various types are held regularly including explanatory seminars to disclose financial results at the close of the fiscal term, "IR" tools are prepared (including the Annual Report), and information is openly provided on the company website. Moreover, briefings for investors are held in Europe, the U.S.A. and other countries every year due to the large number of overseas shareholders.

### Evaluation of JR East's social and environmental activities

JR East is highly regarded by research agencies and institutional investors for its social and environmental activities. For example, after the Dow-Jones Sustainability World Index (DJSI World)\*<sup>1</sup> was set up in 1999, JR East has been

repeatedly identified as a stock that conforms with the DJSI world, and has been incorporated into the portfolios of various Eco-funds\*<sup>2</sup> and SRI funds\*<sup>3</sup>.

\*1 DJSI World: 300 companies (31 from Japan) in 25 countries have been chosen as global entities of excellence from three perspectives (economy, environment and society). (As of June 2002)



\*2 Eco-funds: Investment trust that places considerable emphasis on the environmental soundness of an investment option, in addition to the standard investment criteria based on traditional financial analyses made when stocks are being selected for incorporation into the portfolio.

\*3 SRI funds: Investment trust that carefully considers the social and ethical aspects of an investment, whereas environmental views are evaluated in Eco-funds.

Note 1): Yen figures have been converted into U.S. dollars at the rate of ¥133 to U.S. \$1 (effective rate at the end of March 2002), solely as a convenience for readers.

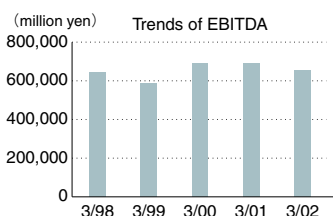
Note 2): EBITDA= current net income + interest payable (after deducting interest receivable and dividends)+ corporate income taxes etc. + depreciation expenses

Note 3): Interest coverage ratio = (Current net income before adjustment for taxes etc + interest payable)/interest payable

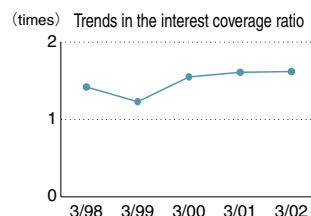
### Financial highlights JR East and its consolidated subsidiaries for years ended March 31, 2001 and 2002

	Million yen		Percent change	Million U.S. dollars
	2001	2002	2002/2001	2002
<b>For the year</b>				
Operating revenue	¥2,546,041	¥2,543,378	▲0.1%	US\$19,123
Operating income	323,751	316,339	▲2.3%	2,378
Current net income	69,173	47,551	▲31.3%	358
EBITDA	688,717	655,371	▲4.8%	4,928
<b>At year-end</b>				
Total assets	¥7,247,088	¥7,022,271	▲3.1%	US\$52,799
Total long-term debt	4,699,723	4,379,834	▲6.8%	32,931
Total shareholders' equity	923,568	930,746	+0.8%	6,998
<b>Ratio</b>				
Net income as a percentage of revenues	2.7%	1.9%		
Return on average equity (ROE)	7.8%	5.1%		
Ratio of operating income to average assets (ROA)	4.4%	4.4%		
Interest coverage ratio	1.61	1.62		

### Large and stable cash flow

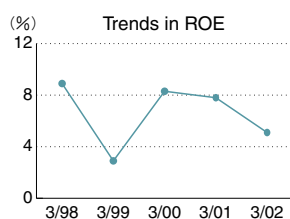


### Improved interest coverage ratio

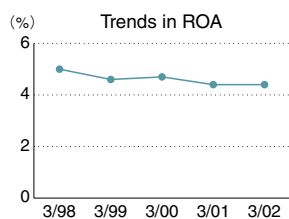




## Target figures for consolidated ROE: "10%" (2006 fiscal year)

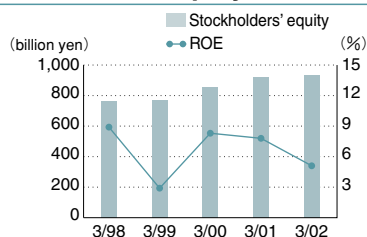


## Target figures for consolidated ROA: "5.5%" (2006 fiscal year)

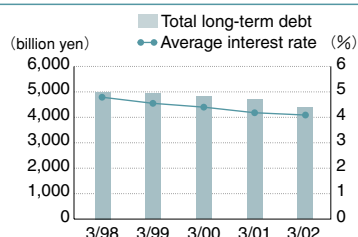


Note): The current net profit for the year ended March 1999 decreased because additional contributions for welfare annuity transfer were charged as a lump sum.

## Stockholders' equity and ROE



## Total long-term debt and average interest rate



## Bond ratings (as of the end of July 2002)

Moody's: Aa2

Standard & Poor's: AA-

Bond Rating Investment Information Center: AA+

## Target figures for the New Frontier 21 (group medium-term business plan)

**Consolidated cash flow:** 200 billion yen (March 2006)

**Consolidated ROE:** 10% (March 2006)

**Consolidated ROA:** 5.5% (March 2006)

**Long-term debt of JR East only:** 500 billion yen reduction (over three years until March 2004)

750 billion yen reduction (over five years until March 2006)

**Number of employees (JR East only):** 10,000 employees reduction (over five years until March 2006)

## Financial Statements

### Consolidated income statement (April 1, 2001 to March 31, 2002)

(unit: hundred million yen)	
● Operating revenue	25,433
● Operating expenses	22,270
Operating income	3,163
● Non-operating income	410
● Non-operating expenses	2,216
Ordinary profit	1,357
● Extraordinary gain	1,686
● Extraordinary loss	1,880
Current net income; before-adjustment for taxes etc	1,164
Corporate taxes, residence taxes, and business taxes	1,084
Amount adjusted for corporation taxes etc.	△ 419
Earnings of minority shareholders	24
Current net income	475

### Consolidated balance sheet (Year ended March 31, 2002)

(unit: hundred million yen)	
● Current assets	4,933
● Fixed assets	65,285
● Deferred assets	3
Total assets	70,222
● Current liabilities	12,970
● Fixed liabilities	47,597
Total liabilities	60,567
● Minority equity	347
Total Shareholders' Equity	9,307
Liabilities, minority equity, and total shareholders' equity	70,222

### Consolidated cash flow statement (April 1, 2001 to March 31, 2002)

(unit: hundred million yen)	
Cash flow by operating activities	4,550
Cash flow by investment activities	△ 1,056
Cash flow by financial activities	△ 4,335
Increased amount of cash and cash equivalents	△ 841
Initial balance of cash and cash equivalents	2,838
Increased amount accrued due to additional cost for new consolidated subsidiaries, etc.	3
Balance at the term-end of cash and cash equivalents	2,000

# Outline of Company (As of March 31, 2002)

<b>Corporate name</b>	East Japan Railway Company
<b>Address</b>	2-2 Yoyogi 2-chome, Shibuya-ku, Tokyo, Japan
<b>Established</b>	April 1, 1987
<b>Capital</b>	¥200.0 billion

<b>Number of employees</b>	72,645 people
<b>Passenger line network</b>	7,538.1km · Shinkansen lines 956.3km · Conventional lines 6,581.8km

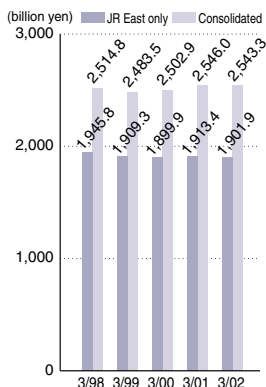
<b>Number of stations</b>	1,712 stations
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<b>Average daily train runs</b>	12,496 (based on the schedule set in December 2001)
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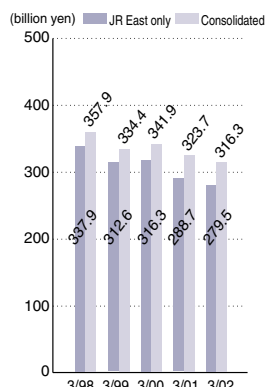
<b>Passengers served daily</b>	16.02 million passengers
--------------------------------	--------------------------

<b>Business description</b>	Transport, businesses utilizing station space, shopping center/office services, and other businesses
-----------------------------	--

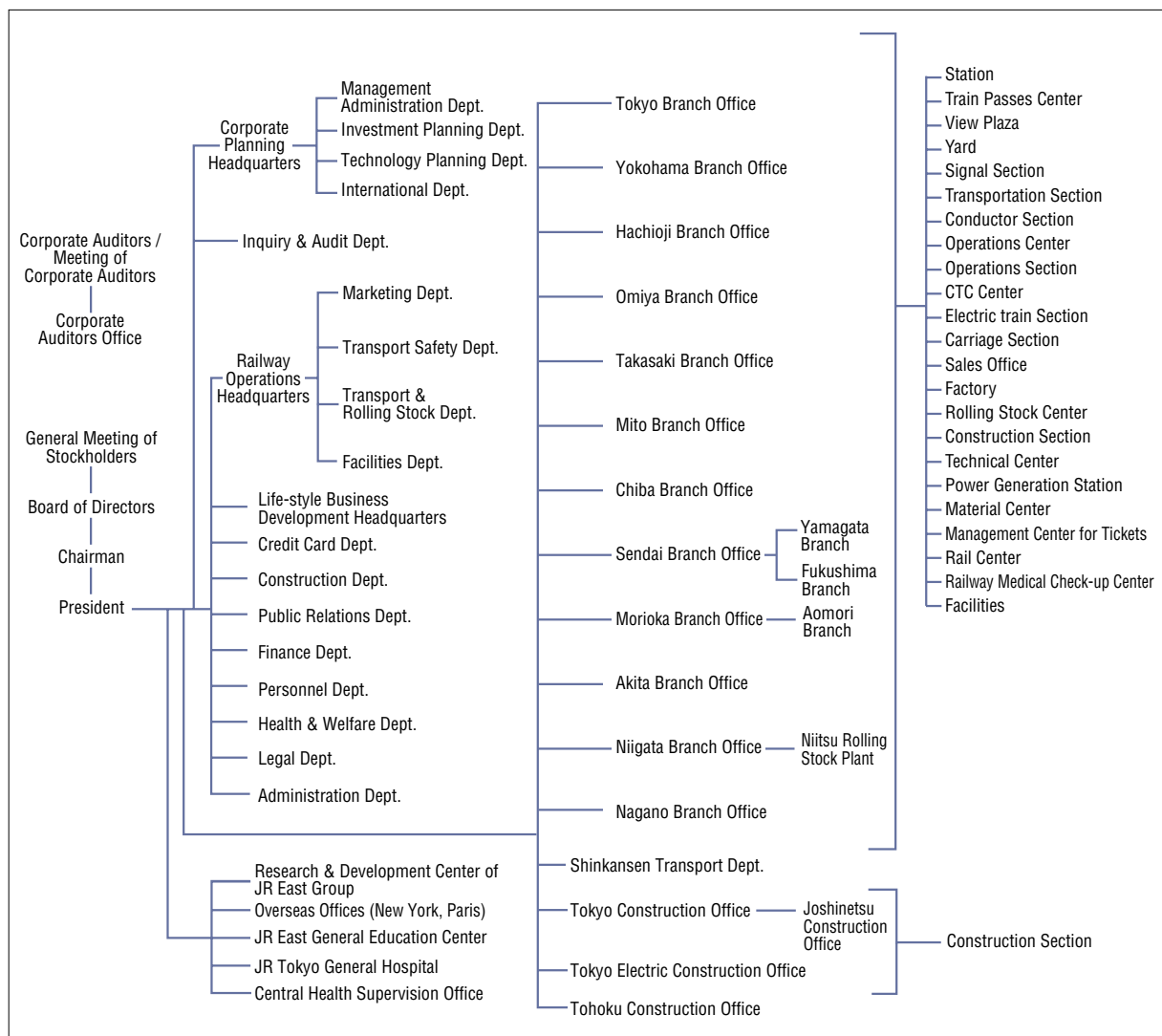
**Trends in operating revenue**



**Trends in operating profit**



## Organization



# Companies in the JR East Group (99 companies, as of August, 2002)

## ■ Transportation services

JR Bus Kanto Co., Ltd.  
JR Bus Tohoku Co., Ltd.  
Tokyo Monorail Co., Ltd.

## ■ Station building and shopping centers

Tetsudo Kaikan Co., Ltd.  
Tokyo-eki Meitengai, Åge  
Omori Primo Co., Ltd.  
Primo  
Kamata Station Building Co., Ltd.  
Palio, Sunkamata  
Meguro Station Building Co., Ltd.  
Hilltop Garden Meguro  
The EKIBIRU Development Co. TOKYO  
Atré (Ueno, Meguro, Yotsuya, Shin-Urayasu, Oimachi, Ebisu)  
Lumine Co., Ltd.  
Lumine (Omiya, Kita-Senju, Shinjuku, Tachikawa, Machida, Yokohama, Shinagawa, Fujisawa)  
Shinjuku Station Building Co., Ltd.  
Mycity  
Lumine Ogikubo Co., Ltd.  
Ogikubo Lumine  
Akihabara Co.  
Akihabara Department Store  
Box Hill Co., Ltd.  
Box Hill (Matsudo, Toride)  
Kawasaki Station Building Co., Ltd.  
Kawasaki Be  
Tsurumi Station Building Co., Ltd.  
Tsurumi Comin  
Yokohama Station Building Co., Ltd.  
Cial  
Lumine Chigasaki Co., Ltd.  
Chigasaki Lumine  
Hiratsuka Station Building Co., Ltd.  
Luska  
Abonde Co., Ltd.  
Atami Station Department Store  
Kichijoji Lonlon Co., Ltd.  
Lonlon (Mitaka, Kichijoji, Nishi-Hachioji)  
Kokubunji Terminal Building Co., Ltd.  
L, Hotel Mets (Kumegawa, Musashi-Sakai, Kokubunji, Urawa)  
JR East Department Store Co., Ltd.  
Granduo  
Hachioji Terminal Building Co., Ltd.  
Now (Hachioji, Sagami-hara)  
Kofu Station Building Co., Ltd.  
Eclan  
Oyama Station Development Co., Ltd.  
Val (Furukawa, Oyama)  
Utsunomiya Station Development Co., Ltd.  
Paseo  
Kumagaya Station Development Co., Ltd.  
Az  
Tsuchiura Station Development Co., Ltd.  
Wing  
Mito Station Development Co., Ltd.  
Excel  
Iwaki Chuo Station Building Co., Ltd.  
Yan-Yan  
Kinshicho Station Building Co., Ltd.  
Termina, La Gare  
Kameido Station Building Co., Ltd.  
Elnard

Chiba Station Building Co., Ltd.  
Perie  
Merina (Inage, Nishi-Chiba)  
Koriyama Station Building Co., Ltd.  
SunCity  
Fukushima Station Development Co., Ltd.  
Fukushima Lumine  
Aomori Station Development Co., Ltd.  
Lovina  
Hirosaki Station Building Co., Ltd.  
Applese  
Akita Station Department Store Co., Ltd.  
Tópico  
Echigo Station Development Co., Ltd.  
Saison de Nagaoka, Saison de Niigata,  
Plateau Yuzawa  
Nagano Station Building Co., Ltd.  
Midori Nagano  
Matsumoto Station Building Co., Ltd.  
Midori Matsumoto

## ■ Hotel operations

Nippon Hotel Co., Ltd.  
Tokyo Station Hotel, Hotel Mets (Tsudanuma, Kamakura-Ofuna)  
Hotel Edmont Co., Ltd.  
Hotel Edmont  
Ikebukuro Terminal Building Co., Ltd.  
Hotel Metropolitan, Metropolitan Plaza,  
Hotel Mets (Mizonokuchi, Shibuya)  
Takasaki Terminal Building Co., Ltd.  
Hotel Metropolitan Takasaki Monterey  
Sendai Terminal Building Co., Ltd.  
Hotel Metropolitan Sendai, S-Pal  
Yamagata Terminal Building Co., Ltd.  
Hotel Metropolitan Yamagata Metroplaza  
Morioka Terminal Building Co., Ltd.  
Hotel Metropolitan Morioka, Fesan  
Akita Terminal Building Co., Ltd.  
Hotel Metropolitan Akita, Als  
Hotel Metropolitan Nagano Co., Ltd.  
Hotel Metropolitan Nagano

## ■ Retail sales, food and beverage operations

East Japan Kiosk Co., Ltd.  
Kiosk, Newdays, Muji comKiosk, etc.  
Nippon Restaurant Enterprise Co., Ltd.  
A-mojiya, Ajisai, Sandenu, etc.  
JR East Food Business Co., Ltd.  
Bravo, Uzushio, Soup Station, etc.

## ■ Trading and distribution services

East Japan Railway Trading Co., Ltd.  
JR East Logistics Co., Ltd.

## ■ Travel agency and rent-a-car

View World Co., Ltd.  
JR East Rental & Lease Co., Ltd.

## ■ Sports and leisure services

JR East Sports Co., Ltd.  
Jexer (Toda-Koen, Oimachi, Yotsuya, Osaki)  
Gala Yuzawa Co., Ltd.  
Gala Yuzawa (ski resort)

## ■ Real estate management

JR East Urban Development Corporation  
Shapo, Alcard, Beans, etc.

JR East Housing Development & Realty Co., Ltd.  
Urban, etc.

## ■ Information services

JR East Japan Information Systems Company  
JR East Netstation Company  
JR East Management Service Co., Ltd.

## ■ Advertising and publicity

East Japan Marketing & Communications, Inc.  
Tokyo Media Services Co., Ltd.  
The Orange Page Co.

## ■ Cleaning services

Railway Servicing Co., Ltd.  
Kanto Railway Servicing Co., Ltd.  
East Japan Railway Servicing Co., Ltd.  
East Japan Eco Access Co., Ltd.  
Takasaki Railway Servicing Co., Ltd.  
Mito Railway Servicing Co., Ltd.  
Chiba Railway Servicing Co., Ltd.  
JR Technoservice Sendai Co., Ltd.  
East Japan Amenitec Co., Ltd.  
Akita Clean Servicing Co., Ltd.  
Niigata Railway Servicing Co., Ltd.  
Nagano Railway Servicing Co., Ltd.

## ■ Construction and maintenance services

JR East Consultants Company  
JR East Design Corporation  
JR East Facility Management Co., Ltd.  
JR East Mechatronics Co., Ltd.  
Union Construction Co., Ltd.  
East Japan Transport Technology Co., Ltd.  
Tohoku Kotsu Kikai Co., Ltd.  
Niigata Rolling Stock Machinery Co., Ltd.

## ■ Group companies under branch offices

JR Tokyo Planning & Development Co., Ltd.  
JR Kanagawa Planning & Development Co., Ltd.  
JR Kaiji Planning & Development Co., Ltd.  
JR Utsunomiya Planning & Development Co., Ltd.  
JR Takasaki Trading Co., Ltd.  
Mito Service Development Co., Ltd.  
Keiyo Planning & Development Co., Ltd.  
Tohoku Sogo Service Co., Ltd.  
Juster Co., Ltd.  
JR Atlis Co., Ltd.  
Tokki Co., Ltd.  
Shinano Enterprise Co., Ltd.

\* In addition, two companies (Central Security Patrols Co., Ltd. and JTB Corp.) are affiliated companies for which the equity method is applied.

# History of JR East's Social and Environmental Activities

## A history of JR East's initiatives

1987	April	Japanese National Railways divided, East Japan Railway Company begins. First Railway Safety Promotion Committee meeting.
	June	Green Campaign begins, for heartfelt service; Green Counter opened for receiving customer opinions.
1988	September	Challenge Safety Campaign implemented throughout the company.
1989	April	Founding date of Safety Research Laboratory, General Training Center.
	May	ATS-P, a train-protection system with improved safety, introduced between Ueno and Ogu on the Tohoku Line.
	October	Inauguration of JR East InfoLine English language telephone guide service.
1990	September	First Railway Safety Symposium held.
	October	Management plan for the 21st century, "Future 21," released. "Lady's Car" sleeping cars, for women only, introduced on night trains.
1991	December	JR East Telephone Center founded.
1992	March	East Japan Railway Culture Foundation established.
	April	Foundation of JR East Committee on Ecology.
	May	Commemorative tree planting conducted for the 5th anniversary of JR East (conducted each year since then as the Afforestation Alongside Railway Tracks program).
	August	Trial collection of three-category refuse started in Sugamo Station on the Yamanote Line.
1993	October	Service Symposium 1992 opened (opened annually since this year).
	March	Smoking prohibited at all times on Tokyo suburban trains and, except for "smoking corners," also in major stations in the area.
	May	Recycling of used train tickets started at the Chiba Branch Office.
1994	November	Asia Railway Safety Seminar opened.
	February	Recycling Center opened at Ueno Station (for automated sorting of cans and bottles). Three-category refuse collection started in 36 stations (Yamanote Line and others).
	March	Basic Safety Plan announced.
	September	First R&D Symposium opened.
	February	Recycling of used train tickets started in the Tokyo metropolitan area.
1995	March	First antinoise measure initiative for Shinkansen lines completed.
	April	Ecology education instituted for all new recruits. Torenta-Kun discount rent-a-car program introduced as part of Park & Ride program.
	March	JR East website set up.
1996	March	Quantitative environmental goals established with regard to reductions in CO <sub>2</sub> emissions and others.
	March	First <i>Annual Environmental Report</i> published. (published annually since this year)
	December	Autonomous Decentralized Transport Operation Control System (ATOS) begins service.
	March	Recycling equipment introduced at Minami-Akita Operations Center. Smoking Corners established in all stations; smoking prohibited on all local trains.
1997	September	First attendance at the International Union of Railways (UIC) Environment Coordinators Meeting (subsequent annual attendance).
	October	Recycling facilities went into operation at Nagano-Shinkansen Rolling Stock Center and Tokyo Station.
	December	Participation in the COP3 together with the UIC.
	January	Website, E@station opened.
1998	March	Second antinoise measure initiative for Shinkansen lines completed.
	September	Production and sales of polyethylene refuse bags with used-paper content initiated.
	November	The Shinkiba Recycling Center opened for collection and sorting of used newspapers and magazines.
	November	Ranked 27th among the "most respectable enterprises in the world" by the Financial Times Paper.
	February	Safety Plan 21 announced. Niitsu Rolling Stock Manufacturing Factory obtained ISO 14001 certification.
1999	March	The Omiya Recycling Center opened (for automated sorting of cans and bottles).
	April	Service Managers introduced at some stations.
	May	Introduction of recycled copier paper, made of old newspaper collected from stations.
	September	Train operation information became available through mobile-phone character information service.
	December	Ecology campaign (eco-train operation on Keihin Tohoku Line and others).
	April	"JR East General Education Center" opened.
2000	April	Uniforms made from used PET bottles introduced. The "eki-net Travel" integrated travel website opened.
	September	Environmental accounting figures included in <i>Annual Environmental Report</i> .
	November	Ecology targets expanded in accordance with announcement of the "New Frontier 21" medium-term business plan for the Group.
	December	Lumine Co., Ltd. obtained ISO 14001 certification for corporate headquarters, Yokohama Store, and Machida Store.
2001	March	Ecology campaign (eco-train operation on Yamanote Line and others).
	March	Oi Workshop, Kawasaki Thermoelectric Power Plant, and Niigata Mechanical Technology Center obtained ISO 14001 certification.
	April	Green Counters renamed Customer Help Desks.
	May	Started providing a forum for the "voice of the customer" through the website.
	July	Special cars for women passengers introduced on the Saikyo Line on a trial basis.

## History of social/environmental honors

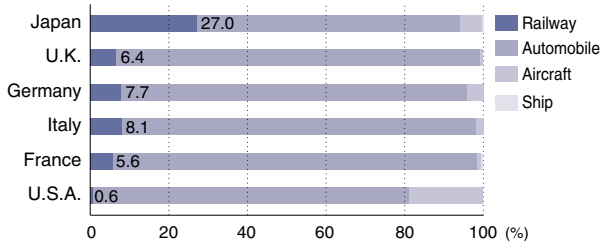
1992	September	The Highest Award, the Eighteenth Kanto General Meeting for Promotion on Energy Conservation, organized by the Energy Conservation Center.
1994	October	The Minister of Transportation's Award for Distinguished Service in Recycling Promotion, organized by the Recycling Promotion Council, given to the Tokyo Regional Head Office.
1995	October	Poster category of the Fifth Awards for Environmental Advertisements and the Director of Environmental Agency's Awards, organized by the Japan Eco-Life Center and sponsored by the Environmental Agency.
1997	April	Environment-Friendly Companies and Social Contributions category, organized by Ibaraki Prefecture, given to the Mito Branch Office.
	April	The Sixth Global Environment Award, organized by the Japan Industrial Journal with special assistance from WWF Japan.
	June	The First Environmental Action Plan Award, the Director of the Environmental Agency's Award, organized by the National Association of Environmental Conservation and sponsored by the Environmental Agency.
	November	Special Award by the Director of the Cleaning Department of the Tokyo Metropolitan Government, given to the Tokyo Regional Head Office.
1998	November	Poster category, the Seventh Awards for Environmental Advertisements and the Director of Environmental Agency's Awards, organized by the Japan Eco-Life Center and sponsored by the Environmental Agency.
	April	The First Green Reporting Award for Excellent Environmental Report, organized by Toyo Keizai, Inc. and the Green Reporting Forum.
	May	Improvement and Rationalization category, the Shimoji Prize, Awards for Superior MH Equipments and Systems, organized by the Japan Material Handling Society, given to East Japan Eco Access Co., Ltd.
2001	May	The Fourth Green Reporting Award for Excellent Environmental Report, organized by Toyo Keizai, Inc. and the Green Reporting Forum.

# Transportation by Railway

## International comparison

### Passenger transport share by transport mode in major countries

#### ● Passenger transport share by transportation mode in main countries



The share indicated is based on: as of year ended March 2000 for Japan and U.K.; year ended December 1997 for U.S.A.; and year ended December 1999 for other countries.

Sources:

Japan: "Domestic Transportation Statistics Handbook: fiscal 2000" issued by Ministry of Land, Infrastructure and Transport

Britain: Annual Abstract of Statistics 2001

Germany: Verkehr in Zahlen 2000

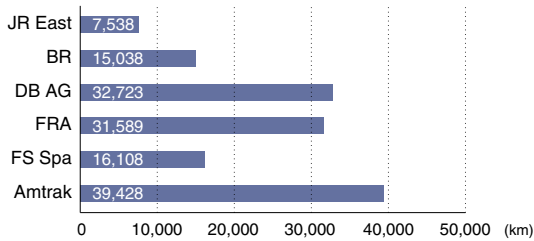
France: Mémento de statistiques and website of Ministry of Transport of France

Italy: Conto Nazionale dei Trasporti Anno

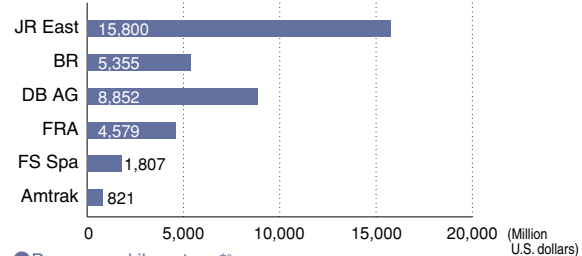
U.S.A.: Railroad Facts 2000 and Statistical Abstract of the United States 2000

### International railway comparison (JR East and major countries' railway)

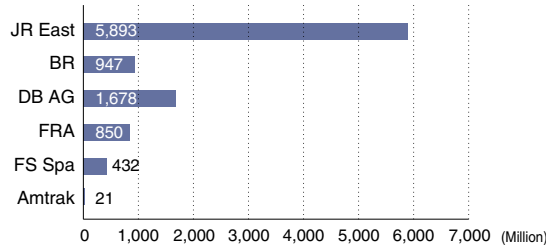
#### ● Passenger line network \*1



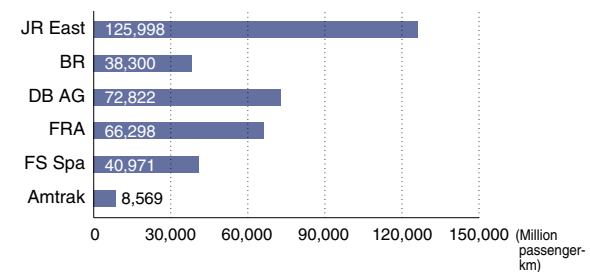
#### ● Revenues from passenger transport



#### ● Number of passengers \*2



#### ● Passenger-kilometers \*3



The figures indicated are based on: as of year ended December 31, 1999 (year ended March 31, 2000 for Japan and Britain).

Note 1) BR: Rail Track, and Passenger Train Operating Company (TOCs) in U.K.

DB AG: German Railways

FRA: French Rail Network (REF), French National Railways (SNCF)

FS SpA: Italian National Railways

Amtrak: National Rail Passenger Corporation in U.S.A.

Note 2) The "passenger line network (km)" does not include any cargo special-purpose lines.

Note 3) The revenues from passenger transport do not include any revenues accrued from cargoes or others.

Note 4) The revenues have been converted into U.S. dollars at the effective rate at the end of March 2000, solely as a convenience for readers as follows:

US dollar 1 = 106 yen = 1.59 pound sterling = 2.03 Germany mark = 6.82 France franc = 2,014 Italy lira.

Source: "International Railway Statistics" issued by the International Union of Railways in fiscal 1999.

\*1: Passenger line network: total length of tracks in service; this has been identified as the figures used for passenger transportation businesses and it shall be used as basis for calculation of traffic volume or fares.

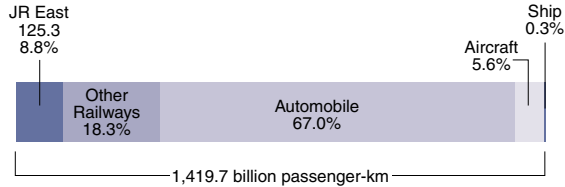
\*2: Number of passengers: total number of passengers carried

\*3: Passenger-kilometers: the figure obtained through multiplying each passenger carried by the distance that passenger traveled, and totaling the figures.

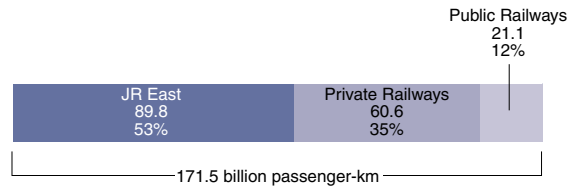
# Japan's railway operation

## Passenger transport share

● Passenger transport share by transport mode in Japan



● Passenger transport share in Metropolitan Tokyo area's railway operation

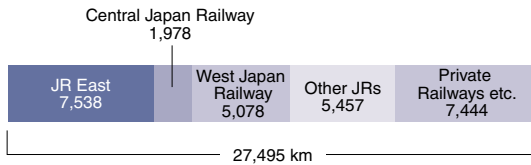


As of year ended March 2001  
Source: "Domestic Transportation Statistics Handbook: fiscal 2001" issued by Ministry of Land, Infrastructure and Transport

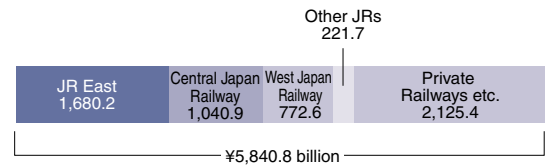
Source: "Annual Report on Urban Transportation 2000" issued by Ministry of Land, Infrastructure and Transport

## JR East's position in railway operations of Japan

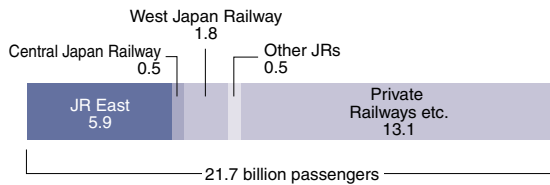
● Passenger line network (km)



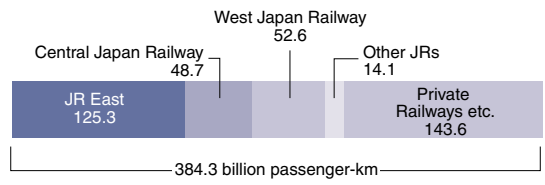
● Revenues from passenger transport



● Number of passengers



● Passenger-kilometers



As of year ended March 2001 or March 31, 2001

Note 1) The "passenger line network (km)" does not include any cargo special-purpose lines

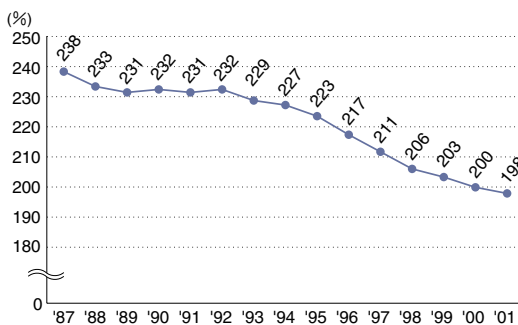
Note 2) The revenues from passenger transport do not include those accrued from cargoes.

Source: "Statistics of Railways 1999" issued by Ministry of Land, Infrastructure and Transport

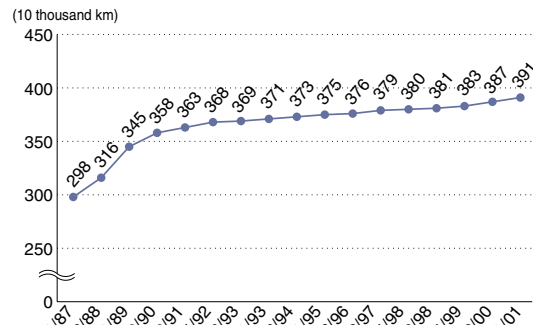
## Trends in congestion rate

JR East has worked continuously to relieve congestion by introducing new rolling stock and bolstering traffic capacity, as various customers use railways. As a result, the level of congestion for trains has demonstrated a decreasing tendency.

● Graph showing congestion trends at the peak commuting hour in the morning in metropolitan Tokyo areas



● Trends in traffic capacity in the Kanto region



Note 3) Average of the congestion rate as a percentage of rated passenger capacity on main lines in metropolitan Tokyo areas

Note 4) Average number of car-km per day when the timetable was revised  
Note 5) The traffic capacity is the total for Tokyo, Yokohama, Hachioji, Omiya, Chiba, Takasaki, and Mito Branch Offices of JR East.

# Independent Review Report

Asahi & Co

Independent Review Report on  
"Social and Environmental Report 2002"

To the Board of Directors of East Japan Railway Company

1. Purpose and Scope of our Review

We have reviewed the "Social and Environmental Report 2002" (the "Social and Environmental Report") of East Japan Railway Company (the "Company") for the year ended March 31, 2002. The review consisted of performing certain procedures as described below in relation to the collection, compilation and calculation of the information included in the Social and Environmental Report. As this is the third year of our review, any indicators for years prior to the year ended March 31, 2000 were not subject to these procedures.

Our work does not constitute an audit or examination. We therefore do not express an opinion on the accuracy or completeness of the indicators or databases used to compile the information or the representations made by the Company in the Social and Environmental Report.

2. Procedures Performed

We have performed the following review procedures agreed to by the Company's management:

- 1) Obtained the environmental information supporting the environmental performance indicators and the environmental accounting indicators for the purpose of understanding the processes and the procedures of the Company for collecting the data information used to compile the Social and Environmental Report.
- 2) With respect to the environmental performance indicators and the environmental accounting indicators in the Social and Environmental Report, tested mathematical accuracy of the indicators on a sample basis and compared them on a sample basis with the supporting data compiled from the information collected by the Company.
- 3) With respect to the descriptive information in the Social and Environmental Report other than the indicators referred to in the above procedures, interviewed the Company's responsible personnel, made on-site inspections of their factories, and compared such descriptive information with the data collected by the Company or the data found in certain published materials.

3. Results of the Procedures Performed

As a result of the procedures performed;

- 1) We are not aware of any material modifications that should be made to the environmental performance indicators, or the environmental accounting indicators in the Social and Environmental Report in order for them to comply with the Company's policies and procedures for gathering and reporting such information.
- 2) We are not aware of any material modifications that should be made to the descriptive information other than the indicators in the Social and Environmental Report to be consistent with the information the Company collected and other information we obtained.

*Asahi & Co*

Tokyo, Japan  
July 23, 2002

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Asahi & Co., acting in co-operation with member firms of KPMG International

## Afterword

The question of sustainability has been frequently brought up in Japan, and here it is interpreted to mean the sustainable development of our society. Recognizing that many customers use our social and community-based services every day, JR East is fully aware of its great responsibilities.

This fiscal year, we have prepared the Social and Environmental Report as a way of reviewing business activities in terms of sustainability and also to provide more detailed information on those activities. In the course of developing this report, we began by focusing on those activities that would enhance the satisfaction of the various stakeholders (our customers, local communities, stockholders and employees, etc.) who are related to the company in some way; however, we also felt that there were many things that needed to be improved or addressed and thus the activities covered need to be expanded. We would like to promote these activities more effectively in collaboration with our group companies in the future.

We have compiled this report on the environment in order to make available more information on non-railway business fields than has formerly been included in the Annual Environment Report, and to provide more information on the steady efforts of group companies.

Information on data and environmental accounting contained in this report is, however, still confined to the East Japan Railway Company, on a non-consolidated basis. Therefore, after the next fiscal year, in this report, our intention is to gradually increase the amount of data and environmental accounting information concerning our group companies.

In the preparation of this report, we have attempted to organize the content and page design in such a way that more stakeholders will be able to understand our activities easily when they read it. We'd like to improve the activities outline in the Social Environmental Report, referring to the opinions of people of various ages as well as people living in other countries and regions. We invite your opinions concerning this report by e-mail, fax or mail through the questionnaire attached to this report.

September 2002



冨田 哲郎

Tetsuro Tomita  
Director and General Manager  
Management Administration Department  
East Japan Railway Company



## **Social and Environmental Report 2002**

Published September 2002

East Japan Railway Company  
Committee on Ecology

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Publication of next edition planned for Summer 2003



\* The illustration on the first pages of the brochure, including the front cover represents an image of JR East, a company coexisting harmoniously with society and the environment. The Hachinohe Sansha Taisai Grand Festival, which the East Japan Railway Culture Foundation supported in fiscal 2001, is depicted on the center of the illustration.



This brochure is printed with aroma-free soy ink on 100% recycled paper.

