## Aiming for a Sustainable Society

# Sustainability Report 2008





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#### **Group Philosophy**

The JR East Group will aim to function as a corporate group capable of 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 consider the customer perspective while supporting safe and punctual transportation and supplying convenient and high-quality products and services. Every employee will continuously take on the challenges of improving the standard of services and raising the level of technology to further gain the confidence and trust of customers.

As a "trusted Life-style Service Creating Group", JR East will aim to sustain the development of its business operations while emphasizing its responsibilities to stakeholders and society at large along with its responsibility to generate profits for shareholders.

#### **Action Policies**

#### **Putting customers first**

We will put our hearts into providing good service and living up to our customers' expectations.

#### **Ensuring safety and quality**

We will take thorough measures to provide transportation services that are safe and punctual, and products and services that are of high quality.

#### **Developing the Group**

Each of us will promote Group development based on our autonomous and cooperative efforts and our positive approach to new challenges.

### **Editorial Policy**

The JR East Group publishes this Sustainability Report 2008 to provide information on our environmental and social initiatives in an accurate and easy-to-understand manner. This year's report is based on "JR East Vision 2020 -i do mu-," published on March 31, 2008. Regarding the social responsibilities of the JR East Group, in addition to covering particularly important initiatives in the Special Topic section, we focused on Groupwide measures.

The main text details our attitude and approach in terms of safety, the environment and society. We also introduced comments from our front-line employees regarding our social and environmental activities and how they are part of their work. Furthermore, starting this year we are uploading to our website

information on various aspects of our environmental activities. The items that can be seen on our website are indicated in this report.

#### References

Environmental Reporting Guidelines(Fiscal Year 2007 Version) [Japan Ministry of the Environment]

Environmental Accounting Guidelines 2005[Japan Ministry of the Environmentl

#### Reporting period

This report basically covers our activities in fiscal 2008 (from April 1, 2007 to March 31, 2008), although some activities presented here are those before fiscal ended March 2008 or in the period between the end of fiscal Mach 2008 and September 2008, the time of the publication of this report.

#### Scope of reporting

This report covers activities of East Japan Railway Company and 82 Group companies'

\*East Japan Railway Company and 82 Group companies

This figure is as of the end of fiscal March 2008. JR East Green Partners Co., Ltd. was established in April 2008.

#### ■Corporate profile (as of March 31, 2008)

East Japan Railway Company Corporate name

Address 2-2, Yoyogi 2-chome, Shibuya-ku,

Tokyo, Japan

April 1, 1987 Established 200 billion yen Capital

Number of employees 61,900 (as of April 1, 2008) Passenger line network Shinkansen lines/1,052.9km

Conventional lines/6,473.9km

Number of stations 1.703

Total number of trains in operation per day

12,667 (timetable revised in March

2008)

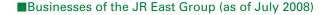
16.85 million Total number of

passengers per day

Business areas Transportation, station space operation, shopping center and

office building operation, and

other services



#### **Transportation services**

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

#### **Shopping center operations**

Tetsudo Kaikan Co., Ltd. / The EKIBIRU Development Co. Tokyo / LUMINE Co., Ltd. / Ikebukuro Terminal Building Co., Ltd. / Boxhill Co., Ltd. / Kawasaki Station Building Co., Ltd. / Tsurumi Station Building Co., Ltd. / Yokohama Station Building Co., Ltd. / SHONAN STATION BUILDING Co., Ltd. / JR East Department Store Co., Ltd. / JR Tokyo-West EKIBIRU Development Co. / Utsunomiya Station Development Co., Ltd. / Mito Station Development Co., Ltd. / Iwaki Chuo Station Building Co., Ltd. /Kinshicho Station Building Co., Ltd. / Chiba Station Building Co., Ltd. / Hirosaki Station Building Co., Ltd. / Station Building MIDORI Co., Ltd.

#### Office operations

JR East Building Co., Ltd.

#### **Hotel operations**

Nippon Hotel Co., Ltd. / Takasaki Terminal Building Co., Ltd. / Sendai Terminal Building Co., Ltd. / Morioka Terminal Building Co., Ltd. / Akita Station Building Co., Ltd. / Hotel Metropolitan Nagano Co., Ltd.

#### Retail shop and restaurant businesses

JR East Retail Net Co., Ltd. / Nippon Restaurant Enterprise Co., Ltd. / JR East Food Business Co., Ltd. / Delicious Link Co., Ltd. / JR East Station Retailing Co., Ltd. / JR East Water Business Co., Ltd.

#### **Trading and logistics businesses**

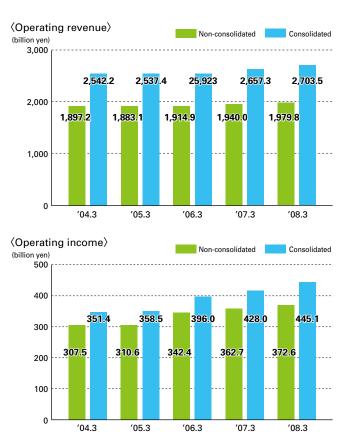
East Japan Railway Trading Co., Ltd. /JR East Japan Logistics Co., Ltd.

#### Travel agent and car rental services

JR East View Travel Service Co., Ltd. / JR East Rental Co., Ltd.

#### **Sports and leisure businesses**

JR East Sports Co., Ltd. / Gala Yuzawa Co., Ltd.



#### Real estate management

JR East Urban Development Corporation / JR East Housing Development & Realty Co., Ltd.

#### Information, financial, and personnel services

JR East Japan Information Systems Company / JR East Netstation Company / JR East Management Service Co., Ltd. / JR East Personnel Services Co., Ltd. / JR East Green Partners Co., Ltd.

#### Advertising and publishing

East Japan Marketing & Communications, Inc. / Tokyo Media Services Co., Ltd. / The Orangepage, Inc.

#### Cleaning and linen supply services

Shinkansen Cleaning Service 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 AmenitecCo., Ltd. / Akita Clean Servicing Co., Ltd. / Niigata Railway Servicing Co., Ltd. / Nagano Railway Servicing Co., Ltd. / Shinnihon Linen Co., Ltd.

#### Construction consulting 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 of our 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. / Tokky Co., Ltd. / Shinano Enterprise Co., Ltd

# The Ideal Form of the Railway Business in Ten Years Time — I do mu; Challenge — of the Future Envisioned The Cooperative Creation of a Sustainable Society

## Things that should be changed and those that should not be changed

There is an excellent reason for selecting "i do mu" as the subtitle of our recently-published JR East Vision 2020.

During the first two decades after the privatization of Japanese National Railways (JNR), we concentrated on repaying the debt the nationalized system had built up, and on developing a foundation for sound management. We have almost achieved the goal in terms of the financial aspect, but we cannot rest on our laurels. In fact, the combination of Japan's decreasing birthrate and the aging of society may continue to put pressure on transport revenues in the foreseeable future.



Against this possible background, we considered it wise to attempt to divine just how well JR East could be expected to fare in ten years time. We also considered what kind of a company we want JR East to be in another decade. In order to clarify our thoughts, we initiated exhaustive discussions throughout the Group and promulgated several key words, and thoughts about the future. In fact, we formulated JR East Vision 2020 by carefully deciding what things we should change and what things we should not change. When considering the style of management that will be necessary in ten years time, we believe that the future will be a completely different world from what we know today, and, furthermore, a future that is not simply an extension of the conditions we face today, such as the low birthrate, the aging of society, energy issues, and regional disparities. We believe that our "i do mu" philosophy allows us to proceed to the next stage, not only in terms of words but also with appropriate actions.

#### I do mu to extreme safety levels

In the dreadful Uetsu Line accident of 2005, five people lost their lives. Everyone at JR East prays for the souls of the victims of the accident and apologizes to their families. Furthermore, we sincerely hope that the families of the victims will find closure, and that those injured in the accident will regain their full health as quickly as possible. Having also faced various accidents caused by natural disasters, such as the derailment of a Shinkansen train due to the Niigata Chuetsu Earthquake, we all feel that we must constantly remember that safety is the most important issue of management, without which it would be impossible to perform our duties.

From our formation until today, we have continuously nurtured improvements in employee awareness through a host of activities, and, furthermore, have allocated more than 40% of all capital investment to the field of safety, thus striving actively for accident prevention. The search for perfect safety can never end, but we will continue to regard safety as management's most important issue and work toward a reduction of accidents that cause fatalities or injuries to our customers or fatalities to employees (including those of our Group companies and partner companies)



#### I do mu to environment issues

It has been documented that emissions of CO2 and other greenhouse gases from railways are only 10% of emissions from automobiles for transporting a person over the same distance. In other words, railways have a significantly lower level of environmental impact than road transport. What is more, JR East will continue to further strengthen this environmental advantage through corporate efforts aimed at the development of the world's leading environmental technology in the railway industry.

By the end of fiscal March 2010, JR East plans to establish the Environmental Technology Research Center (tentative name) for the advancement of environmental technology research. We will also continue to improve the diesel hybrid railcar that we introduced on the Koumi Line in 2007, increase our usage of renewable energy such as solar and wind power, and complete the development of a fuel cell hybrid railcar from which the only emission during operations will be water. Other subjects on our environmental protection agenda include measures for a reduction of the environmental load of facilities and of the full railcar life cycle (from manufacture to disposal), and technological research into new energies.

We believe that it is critical to bring new technologies to commercialization as quickly as possible. With this in mind, we plan to increase the number of lines using hybrid railcars, as well as continuing our policy of introducing new, energysaving railcars wherever possible. In regard to station buildings and offices, we plan to sequentially convert them to the use of renewable energies, while at the same time working to reduce the heat island effect through various measures including installing roof gardens.

We will also continue to increase the extent of greenery alongside our tracks and regenerate railway forests. In parallel with these green plans, we will encourage and advance eco-friendly activities such as energy saving and recycling at all stations and business premises. Through such Group-wide initiatives, we will strive to steadily reduce levels of CO<sub>2</sub> emissions from the railway business, with the goals of achieving a 32% reduction by the end of fiscal March 2018 and 50% by the end of fiscal March 2031 (from the fiscal ended March 1991 as the base year).

#### I do mu to next generation development

Railways form the most environmentally sound system of transportation, but a shift to railways and away from other forms of transport will not make much progress unless we offer customers an environment that they find easy to use. With that aim in mind, we will continue to strive to develop cities where automobiles are totally unnecessary. We will, for example, inaugurate the Tohoku Through Line, an extension of the Utsunomiya, Takasaki and Joban lines to Tokyo Station. We will, furthermore, expand our level of through operations with other railway companies, increase passenger convenience when transferring trains, work in cooperation with other transport systems with which we share station access, and develop a public transport network that is even more convenient than private automobile usage. This goal will be enhanced by yet another initiative under which we will cooperate with local community programs to enhance the convenience and comfort of stations by effectively turning them into the hearts of their communities.

The JR East Group understands and accepts the expectations placed on us and we will continue to fulfill our role and meet our responsibilities, starting with the challenge of developing the next generation.

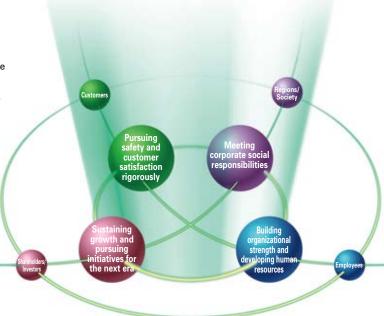
## JR East 2020 Vision - i do mu -

On March 31, 2008, JR East announced our JR East 2020 Vision - i do mu -. To keep abreast of rapidly changing business conditions and fulfil our roles and responsibilities, we have positioned the word "challenge" at the heart of those management efforts. JR East will work in unison to realize its vision.

Basic Management Policies

As a message to stakeholders, we set out the following four policies.

- ① Pursuing safety and customer satisfaction rigorously (mainly for customers)
- 2 Sustaining growth and pursuing initiatives for the next era (mainly for shareholders / investors)
- 3 Meeting corporate social responsibilities (mainly for regions / society)
- 4 Building organizational strength and developing human resources (mainly for employees)



Unflagging Commitment to "Extreme Safety Levels"

With safety as its highest management priority, JR East is tirelessly seeking the complete elimination of accidents resulting in the death or injury of customers or the death of employees (including employees of Group companies and partner companies).

- · We will eradicate accidents within the railway system that we can prevent by upgrading systems for railway operations and maintenance.
- · We will steadily and continuously reduce risks related to such external factors as natural disasters.
- · With the cooperation of the customers and society, we will implement comprehensive measures for railway level crossings and platforms, where a large proportion of operational railway accidents occur.
- We will introduce movable platform barriers on the Yamanote Line as one of our measures for platform
- · We will invest approximately ¥450 billion in transportation safety and reliability over three years, in such areas as installation of Automatic Train Stop devices (ATS-P type), earthquake resistance strengthening, and disaster countermeasures.





## Moving to a Higher Gear in Seven Areas

JR East will move to a higher gear in seven areas and their accompanying management reforms, based on a mind-set that is eager to forge ahead, that sets out unprecedentedly ambitious goals, and that takes on the challenge of reforming existing structures and systems.

#### 1 Increasing focus on investment to raise corporate value

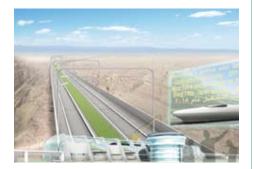
#### Shifting emphasis toward growth investment

- After increasing consolidated cash flows from operating activities (consolidated cash flows from operating activities of ¥1,800 billion over three years from fiscal 2009 to fiscal 2011), we will shift the emphasis toward using cash flows for investment in future growth.
- \*Consolidated cash flows from operating activities for fiscal 2006 to fiscal 2008: ¥1,465.1 billion
- · We will continue to reduce total long-term debt but decrease the size of reductions.
- \*At fiscal 2008 year-end: total long-term debt of ¥3,558.7 billion
- · We aim to increase dividends to shareholders in stages, with a 30% consolidated dividend payout ratio target.
- \*Fiscal 2008: 21.1% consolidated dividend payout ratio



#### ② Opening the way to new business areas

- Taking on the challenge of new business areas in which JR East can take advantage of its strengths
- · Capitalizing on overall railway technology capabilities, we will enter into tie-ups with Japanese manufacturers and examine the possibility of overseas operations. (An in-house organization for advancement of such initiatives is already established, and JR East plans to strengthen such initiatives in line with the results of our
- · We will take on the challenge of strengthening the overall competitiveness of the railway industry through tie-ups and partnership with other railway companies.
- · Through WiMAX communication services, we aim to develop new businesses that provide video advertisements or communication services inside moving trains.



## (3) Taking a positive and long-term approach to global environmental problems

■ Reducing total CO₂ emissions of railway operations 50% by fiscal 2031 compared with fiscal 1991 levels

(Fiscal 2009 target: 22% reduction (compared with fiscal 1991))

- · We will establish the Environmental Technology Research Center with a view to leading the world's environmental railway technology.
- (Begin preparation for establishment from fiscal 2009, aiming for establishment in fiscal 2010)
- · We will take steps to utilize such reusable energies as wind power and photovoltaic
- · We will begin to build a model railway station, or "eco station," that incorporates various technologies for preserving the environment.

(Plans call for the establishment of one eco station in each branch office area within 10



## JR East 2020 Vision - i do mu -

- 4 Upgrading the Tokyo metropolitan area railway network to make line-side areas more attractive and convenient
- Aiming to create a public transportation network that rivals the convenience of private cars ■We are creating attractive railway lines that will make people want to live alongside JR East railway lines
- We will extend the services of the Utsunomiya Line, the Takasaki Line, and the Joban Line to Tokyo Station by constructing the "Tohoku Through Line", which we plan to open in fiscal 2014)
- · We will enhance the "mega loop" lines of the Tokyo metropolitan area (the Musashino Line, the Keiyo Line, the Nambu Line, the Yokohama Line), by further improving the convenience and comfort of transportation services, railway station facilities, and life-style services.
- · We will make line-side areas of the Chuo Line generally more attractive and convenient by completing the construction of an elevated viaduct that will eliminate level crossings between Mitaka and Tachikawa, completing the introduction of new railcars for rapid-service, and implementing development plans for areas under elevated railway tracks.
- We will double the number of child-rearing support facilities by fiscal 2011, such as station-based nursery schools. (21 nursery schools as of April 2008)



#### ⑤ Invigorating regional railway lines and interregional communications

- · We will promote the charms of tourism in the regions of eastern Japan and collaborate with regions to develop tourism.
- $\cdot \ \text{We will work to increase the number of tourists visiting Japan by providing railways that are}\\$ easy for customers from overseas to use and by collaborating with the "Visit Japan Campaign."
- · We will cooperate with local authority projects for town development efforts centered on railway stations, such as "compact city" initiatives, by upgrading railway station facilities.
- · We will renew facilities and railcars in intercity networks.
- · We will promote increased usage of regional networks and rigorously improve the efficiency of operational management. On that basis, JR East aims to maintain and improve overall service levels for line segments that are extremely difficult to support as railway lines through such initiatives as replacing them with non-railway modes of transportation.



(6) Developing life-style businesses aggressively, increasing non-transportation operating revenues to approximately 40% of total operating revenues by fiscal 2018

(Non-transportation operating revenues as a percentage of total operating revenues for fiscal

- For the Chuo Line, where construction is progressing on elevation of the railway between Mitaka and Tachikawa, we will take steps to realize our "Chuo Line Mall" concept by developing an entire area under the elevated railway tracks, based on a unified concept for enhancing the appearance of the line-side area and for increasing earnings.
- $\cdot$  We will implement development plans for buildings at Shinjuku Station, Chiba Station, the west exit and east exit of Yokohama Station, and Shibuya Station. (We expect to open the building development at the New South Exit of Shinjuku Station in fiscal
- · We will promote new development around Shinagawa Station.



#### (7) Establishing Suica operations as a third pillar of operations

- Developing the mutual-use railway network for Suica nationwide and aiming to spread Suica nationwide as the number one electronic money
- · We aim to reach a 90% usage rate for Suica and PASMO in the Tokyo metropolitan area in fiscal 2011. (approximately 70% as of December 2007)
- · We aim to enable the use of Suica throughout the JR East network.
- We aim to have eight million electronic money transactions daily in fiscal 2011. (The highest number of daily transactions for transportation-related electronic money (total of Suica / PASMO / ICOCA) was approximately 970,000, as of March 31, 2008)





## **Ongoing Efforts**

JR East will continue existing initiatives and raise their level.

- 1 Heightening customer satisfaction even further
- 1) Improving the reliability of transportation
- 2) Creating railway stations that customers can use comfortably and without anxiety
- 3) Providing railway stations that enable customers to buy tickets without waiting
- ② Developing human resources
- Advancing research and development aggressively
- 4 Expanding the Shinkansen high-speed railway network and increasing earnings from railway operations
- 1) Expanding the network
- 2) Introducing faster Shinkansen services
- 3) Introducing higher-grade first-class cars, tentatively named "super green cars"



### (5) Expanding life-style businesses

- 1) Developing a 500 NEWDAYS convenience store network
- 2) Expanding office buildings operations by developing office buildings near to railway stations
- 3) Completing the Tokyo Station City project (fiscal 2014)



<sup>\*</sup>The graphic images and illustrations in this report represent the Company's future direction.



JR East's safety measures ensure that its customers can use its railway services with a high level of assurance.

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#### Measures taken since the accident on the Uetsu Line

On December 25, 2005, the limited express train Inaho No.14 derailed between Sagoshi and Kita-Amarume Stations near the No.2 Mogami-gawa Bridge. We would like to report on the measures we have taken since this accoident.

#### **Increased number of anemometers (wind meters)** and the introduction of a gale warning system

In order to increase the effectiveness of our wind observation systems, we have increased the number of anemometers. We have also added the same gale warning system which we introduced on the Keiyo Line in August 2005 to additional locations, allowing us to observe a total of 69 locations on 18 railway lines, including the Keiyo Line. The gale warning system restricts operations not only when the actual wind speed measured by anemometers exceeds restriction thresholds, but also when the projected maximum wind speed exceeds these limits.

#### Provisional "early restriction" for all lines

After resumption of the operations of the Uetsu Line on January 19, 2006, the operating restrictions for wind speed for conventional lines were revised as shown in the following table.

	Wind speed (meters/sec.)		
Restriction type	Before revision (general restrictions)	Revised (early restrictions)	
Speed restricted to 25 km/h maximum	25 m/s – 30 m/s	20 m/s – 25 m/s	
Operation stopped	Exceeding 30 m/s	Exceeding 25 m/s	

#### Installation of windbreak fences

In order to reduce the wind force on trains, we have installed windbreak fences at 11 locations, including at the site of the Uetsu Line accident between Sagoshi and Kita-Amarume Stations (the No.2 Mogami-gawa Bridge), and on the Musashino Line between Misato and Minami-Nagareyama Stations.

For locations where windbreak fences were installed, we changed the operation restrictions due to wind to the general restrictions shown in the preceding table. These changes take the reduction in wind forces into account.

#### Verification of operation restriction zones

Until recently, the operation restriction zones due to heavy wind have been identified based on field investigations and the experience of local employees. Our current operation restriction zones were established through careful construction of gale maps created with information that included upper level wind conditions and area topography, along with information accumulated by our field staff. As a result of these efforts, we have set up 75 additional operation restriction zones. By March 2008, operating restrictions had been initiated in 7 of these zones.

#### Investigation of measures against local gusts

Local gusts are extremely strong winds that occur over small areas for short periods of time. They are difficult to observe with conventional observation equipment such as anemometers. Taking these situations in consideration, we have been investigating the occurrence of local gusts.

One of our aims is to establish a system to forecast the occurrence of local gusts using meteorological information. We have been investigating how to forecast the occurrence of local gusts using weather charts and weather radars, and to apply that information to our operations. Between January and March 2008, this system was tested on the Uetsu Line between Niitsu and Sakata, and on the Hakushin Line between Niigata and Shibata.

We have also begun using a Doppler radar to observe local gusts. Doppler radar can determine wind conditions by detecting the movements of raindrops and rain clouds and is used at some airports for detecting local gusts. We installed a Doppler radar at Amarume Station on the Uetsu Line in January 2007 and started test observations from March 2007.

Together with data collection and analysis, we are investigating the possibility of using the system for operation restrictions, working in cooperation with a research institution.





Doppler radar installed on the roof of Amarume Station on Doppler radar body the Uetsu Line



#### Disaster prevention measures against rainfall

To minimize temporary suspensions in train operations, reductions in train speed or other such effects of heavy rain, JR East employs disaster prevention measures against rainfall. In the Tokyo metropolitan area and for Shinkansen routes, we are taking particularly intensive steps to secure safe and stable transport. From April 2004, for routes mainly in the Tokyo metropolitan area and for those with especially high customer traffic, JR East conducted reinforcement work for disaster prevention against rainfall along its lines.

For the prevention of landslides, we constructed concrete lattice frames for banking and cutting, and fences for natural slopes. The construction was completed in June 2008, approximately a year ahead of schedule.

#### Anti-earthquake measures

#### Seismic reinforcement of elevated bridges

In response to the Great Hanshin-Awaji Earthquake of 1995, JR East employed a number of emergency seismic-reinforcement measures. We completed seismic-reinforcement in Southern Kanto and Sendai regions in 1998 for the Shinkansen lines and in 2000 for our conventional lines. Additionally, after the Sanriku-Minami Earthquake in 2003, we began seismic-reinforcement work in all regions other than Southern Kanto and Sendai. For elevated Shinkansen viaduct support columns, we completed the reinforcement of approximately 18,500 columns by the end of fiscal March 2008. For Shinkansen bridge columns, we began reinforcement in

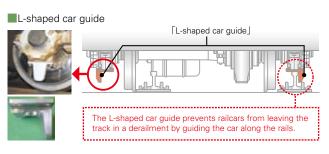


Reinforcement of elevated Shinkansen viaduct support

fiscal ended March 2006 and completed the work on approximately 2,340 columns by the end of fiscal March 2008. For conventional lines, we plan to complete the reinforcement of approximately 12,600 viaduct support columns and 550 bridge columns by the end of fiscal March 2009.

#### Prevention of secondary accidents after derailment

When the Joetsu Shinkansen Toki 325 derailed during the Niigata Chuetsu Earthquake in October 2004, the track rails guided the cars until they came to a complete stop. We used this experience to help us introduce a number of additional safety measures to our trains. We have developed and installed an L-shaped car guide to prevent trains from completely leaving the track in case of a derailment, a system to prevent derailed wheels from hitting the connecting bolts of rail joints, and equipment to further shorten emergency braking distance.



Glued insulated joint [Before improvement] [After improvement]

Joint shape improved to prevent wheels or other parts of railcars from directly contacting the joints in a derailment.

In addition, we are currently developing a rail rollover prevention device. This innovation will prevent both rollovers and the extensive sideways movement of rails, even if rail fastenings are fractured during a derailment. With this device, L-shaped car guides will function more efficiently and prevent significant sideways movements of railcars, even in the case of a derailment.

#### **Early Earthquake Alert System for conventional** lines in the Tokyo metropolitan area

For our Shinkansen lines, JR East has installed seismographs at 90 locations along our railway lines and along coastal lines for the detection of primary tremors (P-waves). Our present system allows us to stop trains as soon as primary tremors are detected. For conventional lines in the Tokyo metropolitan area, our Early Earthquake Alert System enables trains in any section of track to be stopped in the case of an earthquake. The system, which has been in use since December 2007, utilizes information obtained from our Shinkansen seismographs, and from any advanced announcements given by the Japan Meteorological Agency.

## **Environmental Actions Taken** by Group Companies

All JR East Group companies are implementing a variety of environmental protection activities that are appropriate for their type of business.

#### **Biodiesel Bus Services**

#### JR Bus Kanto Co., Ltd.

Jointly with JR East Consultants Company, JR Bus Kanto conducted demonstration experiments on circular bus routes in Shirakawa City, Fukushima Prefecture, using biodiesel made from waste edible oil collected from JR East Group hotels.

Biodiesel fuel, one of the next-generation fuels, is generally comprised of rapeseed oil, waste edible oil and other fats and oils that are chemically processed to make biodiesel. Compared with traditional fossil fuels, biodiesel is a relatively clean energy source with the following expected environmental effects: 1) reduction of CO2; 2 reduction of black lead to one-third; 3 reduction of sulfur oxide (SO<sub>x</sub>) to near zero; (4) operational performance on a par with diesel fuel; and ⑤ reduction in engine noise when idling. JR East will continue to further promote Group-wide measures for global environmental protection.



Biodiesel test vehicle

#### 50% Reduction in Fluorescent Tubes in Bright Displays

#### JR East Retail Net Co., Ltd.

JR East Retail Net succeeded in reducing its use of fluorescent tubes by half while at the same time improving the brightness of displays by installing reflecting plates inside electrically-lit advertising displays at NEWDAYS and Kiosk stores. The number of fluorescent tubes used in fiscal ended March 2008 was reduced by 2,700, and through this measure JR East Retail Net was able to reduce its annual CO<sub>2</sub> emissions by approximately 176t. The company will continue to implement such installations and is aiming for a reduction of approximately 5,310 fluorescent tubes providing a CO<sub>2</sub> reduction of 345t by the end of fiscal March 2009. Furthermore, NEWDAYS has continued with its Suica Eco-Bag Campaign and has proceeded with eco bag use promotion and other active environment preservation measures.





CO2 emissions reduction at NEWDAYS, Shinagawa. Before installation: Used 50 40-watt and 12 20-watt fluorescent tubes, with electricity usage of 2,240W

After installation: Equal lighting was provided using reflecting plates with 31 40-watt and 4 20-watt fluorescent tubes, with electricity use reduced to

#### Numerical Targets of Major Group Companies (Fiscal ending March 2009)

#### **LUMINE Co., Ltd.**

- ·0.71% reduction in electricity for lighting (from fiscal ended March 2006 levels) •1.01% reduction in electricity for air conditioning (from fiscal ended March 2006 levels)
- ·0.96% reduction in general waste (from fiscal ended March 2006 levels)
- •4.11% reduction in gas usage (from fiscal ended March2006 levels)
- 102 environmental improvement activities

#### JR East Food Business Co., Ltd.

- Increase in food recycling rate to 24% by fiscal ending March 2011
- •113t approximate reduction in annual CO<sub>2</sub> emissions through the replacement of disposable chopsticks (annual use is approximately 12.5 million chopsticks) with eco chopsticks (from fiscal ended March 2008)

#### Morioka Terminal Building Co., Ltd.

- •40% reduction in CO<sub>2</sub> emissions from automobiles (from fiscal ended March 2008 levels)
- •10% reduction in general waste (from fiscal ended March 2008 levels)
- ·Recycling rate exceeding 25% for general waste

#### Tokky Co., Ltd.

- •24.4% reduction in energy consumption (electricity, gas, etc.) and 27% reduction in CO<sub>2</sub> emissions at CoCoLo Nagaoka (from the average of fiscal ended March 2002 to fiscal ended March 2004)
- ·43% companywide recycling rate for general waste by fiscal ending March 2011

<sup>\*</sup>Figures are targets set by individual Group companies.

<sup>\*</sup>Targets set by each Group company are targets to be achieved by fiscal ending March 2009, but there are some companies which set targets with fiscal years later than fiscal ending March 2010 as the year for target achievement.

<sup>\*</sup>Numerical targets for all Group companies are published on our website.



#### **Composite Waste Processor That Does Not Require Waste Separation**

#### JR East Urban Development Corporation

JR East Urban Development Corporation conducted tests at Ichikawa Shopping Center using a bio-composite waste processor for two years beginning in 2004. Based on the results, improvements were made and commercial operations com commenced in April 2008 at Akabane Shopping Center.

The bio-composite waste processor can simultaneously process food waste, plastic, vinyl, paper and disposable wooden chopsticks, and has thus reduced the volume after disposal by 85%. In addition, the processor has many other advantages over conventional processors, including producing almost no odor, providing improved safety due to low temperature processing, and saving space.

Processed materials are converted to fuel and thus contribute greatly to increasing the general waste recycling rate and solving global environmental problems such as CO2 emissions.

#### ■Bio-composite waste processor work flow



#### **Total Building Energy Savings**

#### JR East Facility Management Co., Ltd.

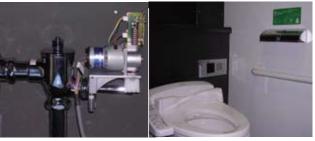
JR East Facility Management is currently promoting two energy conservation businesses. One is Energy Management Company, which diagnoses the energy usage of specific buildings and proposes energy conservation measures. The other is Energy Service Company (ESCO), which does the full range of construction and thereby guarantees energy saving results. Energy conservation and reduction of utilities costs can be achieved in many ways, such as ground water usage, heat source improvements and the change of lighting and equipment to energy-saving models.

In fiscal ended March 2008, ESCO reduced CO2 emissions in stations, station buildings and hospitals by 4,326t, the equivalent of the annual CO2 absorption volume of a forest 165 times the area of the Tokyo dome, and reduced the usage of clean water by 326,700m<sup>3</sup>, the equivalent of the annual consumption of 1,400 average households.

JR East Facility Management will continue to promote energy conservation-related activities, constructions and technology developments to nurture global environmental protection.



Development of LED light (BT-OWL) — electricity-saving (50% less consumption than fluorescent tubes), long life (7 times longer than fluorescent tubes), no pollution (no mercury)



Automatic water flow controller for toilets (BT-Crab)-reduces toilet water consumption by 50%

## Improved Station and Railcar Comfort by Reflecting Customer Comments

Marking the 20th anniversary since JR East's foundation, from 2007 we have been promoting further facility amenity improvements and beautification activities as our expression of gratitude to our customers and community residents.



Platform waiting room (left top). Renovated station toilet (left below). Station benches (right)

Since its foundation in 1987, JR East has continuously striven to create a system to collect as many customer comments as possible, consider them and promptly act on them. Based on customer comments we are always improving our stations and railcar facilities

#### **Easier to Use Stations**

In addition to our regular measures already being taken in response to the aging of society, such as the provision of barrier-free stations, we are currently focusing on improvements for which there have been many customer requests.

#### Bench installation

We have already considerably increased the number of benches available for passengers on metropolitan Tokyo station platforms, and will now target approximately 1,500 other stations in which we will install comfortable benches for the use of passengers.

#### Waiting room construction

After taking into account the layout and level of congestion of individual station platforms, we plan to increase the number of waiting rooms. We will construct new waiting rooms in approximately 300 stations, mainly within the Tokyo metropolitan area and also at other stations where express trains stop and those which are heavily utilized by tourists.

#### Improved toilets

We will renovate toilets in approximately 150 stations to increase customer comfort and satisfaction.

#### Improved station neighborhood maps

Neighborhood maps around 320 stations will be upgraded. They will be enlarged and made easier to read, and will contain content designed for local needs

#### **More Comfortable Onboard Space**

Based on our stakeholders' comments, we are also working to improve the onboard environment for our passengers.

#### Changing support straps for standing passengers in priority seat areas

Along with lowering the support straps for standing passengers in priority seat areas in order to make them easier to use for women and the elderly, we have also changed the color to yellow in order to more clearly delineate priority areas. (Completed the end of fiscal March 2008)



#### Limited door opening

By closing three out of the four doors in each car when trains are stopped for long periods, such as at stations where trains turn back, we have increased air-conditioning efficiency while maintaining comfortable railcar temperature levels. This system is being introduced in E231 and E531 series railcars.

#### **Automatic on-board announcements**

Automatic announcement devices capable of making announcements in English are being installed in 1,305 railcars on trains that serve airports, mainly on the Sobu express and Yokosuka lines.



## The Future of Railway Technology and Culture Interactive Railway Museum

The Railway Museum in Saitama City, Saitama Prefecture was opened on October 14, 2007, with the express aim of providing a place where future generations of children will be able to voluntarily learn, think and act.



It was opened by East Japan Railway Foundation as a part of JR East's 20th anniversary celebrations, and has the objective of encouraging visitors to learn, think and act by themselves. In addition to exhibits showing our railway culture heritage, various interactive exhibits have attracted considerable public attention with the result that the museum is always busy with visitors both families and individuals.

The Railway Museum's three concepts:

The Railway Museum, in addition to exhibiting aspects of Japanese and global railway-related heritage and reference materials, also contains specific reference materials on the Japanese National Railways (JNR) reform and JR East. These materials are systematically stored, and surveys and research are constantly conducted.

2The History Museum shows the story of the transformation of the railway system as part of Japan's industrial history, focusing on actual railcar exhibits that physically demonstrate the background of each era.

3The Education Museum encourages children to gain hands-on experience and thus learn about railway principles, systems and cutting edge technologies (including future concepts) utilizing models, simulation and play equipment.

#### **Connecting Seeds of Intellectual Interest for the Future**

The Museum consists of six specifically themed zones.

#### The History Zone

The History Zone contains 35 railcars, including six cars that were reserved for the imperial family, and accurate scale models, as well as scenery reproduction panels. Visitors are told, in an easy-



to-understand way, about railway technology, and the trends and history of the railway system from the early Meiji era to today.

#### The Entrance Zone

The Entrance Zone contains Shinkansen 200 Series driving cabin simulators and a D51 type steam locomotive (see photo), as well as Japan's largest model railway diorama.



#### **The Collection Zone**

The Collection Zone contains a library where visitors can read valuable transport-related reference materials and a gallery where special exhibitions are held.

#### The Learning Zone

The Learning Zone allows visitors to experience interactive exhibits, such as three laboratories where the duties of station staff, railcar inspectors and railcar designers can be studied, along with a section where railway mechanisms can be experienced.

#### The Park Zone

The Park Zone is an exterior space where a miniature train is operated; visitors can operate its signal safety system, which is the same as on real lines. The zone also displays a still operable historic railcar.



#### **North Wing**

The North Wing contains the 180-seat capacity Railway Hall.

## Pursuing "extreme safety levels"

JR East management has made safety its top priority and has been making efforts both in software and hardware. Along with the concerted efforts of our group companies, we are committed to continuing our pursuit for "extreme safety levels"



#### Our concept of safety

#### Four aspects of safety

is the top management priority for JR East as a railway operator. Through investigations of past accidents, JR East continues its efforts to remove the 'buds' of accidents before they develop. We believe that safety is ensured through



management systems that synergistically link employees, rules, and safety equipment. We therefore are constantly reviewing and improving our management programs in order to ensure that these elements are properly linked.

#### Safety initiatives in our medium term management plan

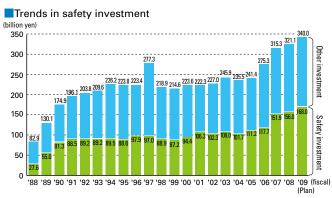
In the JR East 2020 Vision - i do mu -, we have set 2 goals to represent our unflagging commitment to "extreme safety levels": we will continue implementing our priority improvement plan for safety equipment, reinforce safety weak points, and reduce risk; we will expand and improve education and training on safety and prevent accidents by correctly understanding and analyzing previous accidents and incidents. In fiscal ended March 2008, we invested 156 billion yen in measures against natural disasters and train collisions. To further reinforce these safety measures, in fiscal ending March 2009 we plan to invest an additional 168 billion yen, an increase of 12 billion yen from fiscal ended March 2008.

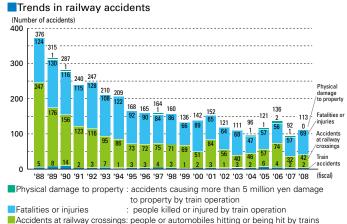
#### Fourth five-year safety plan: Safety Plan 2008

Since our establishment, JR East has continued to create and implement medium term safety plans, installing and improving upon equipment with a relentless commitment to safety. With ever improving safety equipment and companywide advancements in safety awareness and skills, we have succeeded in reducing the frequency of railway accidents drastically from twenty years ago.

Safety Plan 2008 was adopted in fiscal ended March 2005 as our fourth five-year safety plan. It sets the target of "reducing accidents causing fatalities or injuries to customers and causing fatalities to employees (including those of our Group companies) to zero". In order to accomplish this goal, we are continually revising our safety programs, each time going back to the beginning to ensure that no detail is overlooked.

This goal is inherited to our new medium term management plan, JR East 2020 Vision - i do mu -, from fiscal ending March 2009.





: train collisions, derailments, and train fires

Train accidents

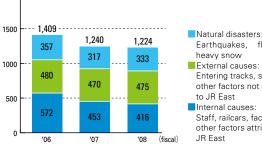
#### Trends in railway accidents

In fiscal ended March 2008, JR East recorded 113 railway accidents. The majority of these accidents were attributed to trains colliding with automobiles or people at railway crossings, customers on platforms coming into contact with trains, and customers falling onto the tracks from platforms.

#### Occurrences of transport disruptions

Transport disruptions refer to suspensions in operations or to delays of 30 minutes or more. They can result from natural disasters or from faults in railcars or facilities. In fiscal ended March 2008, JR East recorded a total of 1,224 transport disruptions. While the number of disruptions due to natural disasters and other external causes increased, disruptions related to internal causes such as railcars and facilities, or to train crews, decreased.

#### Trends in Transport Disruptions 2000



- Earthquakes, floods and
- Entering tracks, suicides and other factors not attributable
- Staff, railcars, facilities and other factors attributable to

#### Creation of a culture of safety

#### Uniting employee awareness

Railway safety is best maintained through close links between trains, equipment, facilities, services and the people that operate them. Safety can be assured only when all employees correctly understand and abide by the safety systems in place on a daily basis. Employees must also be willing to work to uncover the 'buds' of accidents and take appropriate preventive measures.

To promote a culture of safety, JR East sponsors the Challenge Safety Campaign, the Head Office Safety Campaign, and various programs for safety education and training.

#### The Challenge Safety Campaign

In 1988, we started the Challenge Safety Campaign with the aim of encouraging our employees to actively take on the

challenge of further improving safety levels, rather than just passively maintaining safety. By uncovering hidden 'buds' of accidents, JR East is creating an office environment in which employees keep challenging to act positively to improve safety levels.



Discussions were held on safety in the workplace through the Challenge Safety

#### Railway Safety Symposium

Since 1990, we have held the Railway Safety Symposium for the purpose of improving each employee's awareness of safety. In fiscal ended March 2008, JR East held its 16th symposium. The symposium was titled "Safety in the past 7,000 days - thinking back over the past 20 years to ensure safety in the future".

#### **Head Office Safety Campaign**

JR East runs a Head Office Safety Campaign once a year. The campaign allows executive officers from the Head Office and

front-line employees a chance to hold direct discussions. In fiscal ended March 2008, JR East held discussions on the theme: "Proper understanding of accidents and the 'buds' of accidents; thorough execution of basic procedures; and the uncovering of near-misses and other incidents of concern".



Head Office Safety Campaign where executive officers from the Head Office, including the President, hold direct discussions on safety with front-line employees

#### Safety education and training

To improve the skills of train crews, accident prevention simulator training is conducted regularly in the General Training Centers at each branch office. At the JR East General Education Center in Shirakawa City, Fukushima Prefecture, we train both drivers and conductors, and provide human resource development in the form of knowledge and technical proficiency. In addition, the Accident History Exhibition Hall was established in the Center to emphasize the importance of learning from past accidents.

#### VOICE ● From field staff protecting safety



#### Learning from past accidents

Morioka Branch Office Morioka Signalling and Communications Technology Center Morioka Maintenance Center Chief, Electric technolog

#### Manabu Oikawa

As the person in charge of the maintenance and inspection of ground signalling equipment for the Shinkansen, my job entails working with many younger, less experienced staff members. As such, I have the duty of passing on to them safety skills and responsibilities for their generation of workers

To assist them, we regularly hold group discussions on transport disruptions and prior accidents. In these discussions, we, as middle management, talk about our own past experiences and encourage the younger generation to work together with us to uncover any hidden 'buds' of accidents.

We also keep always in mind the importance of customer safety in our daily operations, meticulously implementing our basic rules for safety. We consistently perform detailed inspections, particularly after protective and change-over work. If there are any areas of concern in the field,

no matter how minor they may appear, we stop work at once and direct everyone's attention to the problem.

#### Understanding the essence of rules

Yokohama Branch Office Kawasaki Track Maintenance Technology Center Chief facilities engineer Yutaka Waki



For track maintenance and inspection, our most important duty is to protect the lives of our customers. Even a minor mistake cannot be overlooked. For this reason, we not only rigidly maintain the track conditions set by the company, but we also set strict rules for each process we perform.

Information sharing between members of the entire staff is vital. We reexamine accident cases, reaffirm rules and make them clearly and thoroughly known to all staff through regular cross-departmental meetings and study sessions. One of our efforts to eliminate the 'buds' of accidents is to hold an accident prevention meeting after long vacations in order to re-focus the thoughts and feelings of our employees.



#### Searching for safety hints in everyday conversation

Hachioji Branch Office Toyota Transport Depot Chief conductor

#### Takanobu Kasuga

A conductor's job is to deliver customers to their destinations safely and with peace of mind. To ensure that this is done without fail, it is important that each staff understand the meaning of each of the basic safety procedures long fostered by our seniors, such as finger-pointing and calling signals

Furthermore, our employees are continually collecting information from company meetings and daily conversations to use for image training so that they are prepared to take appropriate action when called upon.

We are also attempting to improve customer convenience by providing on-time and real-time announcements by our staff for train transfers, despite the trend toward automated recorded announcements







With advancements in IT and safety equipment, drivers are being supported more and more. Nevertheless, we cannot forget that it will be the employees that will hold the final responsibility for ensuring safety. Even when meters and signalling appear to be normal at first glance, for safety reasons, I consciously avoid accepting them at face value. I continually remind myself of all the possible factors that may lead to an accident, never letting my attention waver.

It is the duty of us drivers to be responsible for the lives of our customers and to carry out stable transport with safety as our top priority.

#### Safety management

#### Eliminating the 'buds' of accidents

In order to accurately determine the causes of accidents, and to implement preventive measures in a timely fashion, JR East is developing an integrated management structure.

#### **Railway Safety Promotion Committee**

JR East has established a Railway Safety Promotion Committee at its Head Office, chaired by the Director General from Railway Operations Headquarters. The committee reviews the organization's basic policies to respond to and prevent accidents, and promotes safety measures within the railway business. There are also Regional Safety Promotion Committees at each branch office and the Shinkansen Transport Dept., chaired by the general managers of the branch offices and the department. These committees implement specific measures in collaboration with the Railway Safety Promotion Committee, and investigate the causes of accidents, implement concrete preventive measures, and promote activities to enhance safety in their service areas.

#### Collaboration with group companies

JR East Safety Network 25 (JES-Net25) was established in fiscal ended March 2005. This network is comprised of 25 Group companies and other entities engaged in activities related to train operation or construction projects for promoting safety.

JES-Net25 promotes activities based on three core principles:

developing and utilizing information networks; supporting frontline safety efforts; and monitoring and improving safety regulations and each company's level of safety. JR East is committed to improving the safety level throughout the JR East Group through the united effort of each company in JES-Net25.

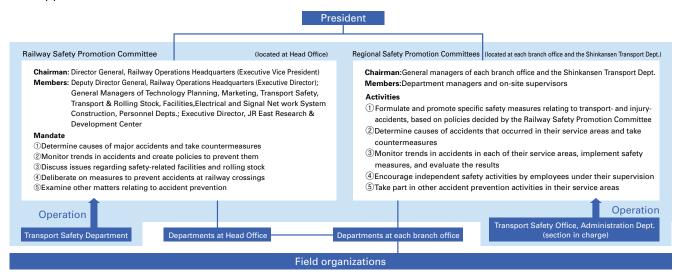
#### Safety research system

The JR East Group is researching and developing a wide range of safety-related technologies and systems at the JR East Research & Development Center in Saitama City, Saitama Prefecture.

Five organizations have now been established at the Center: the Frontier Service Development Laboratory, the Advanced Railway System Development Center, the Safety Research Laboratory, the Disaster Prevention Research Laboratory, and the Technical Center. These organizations have formed an unyielding coalition to conduct research and development with the key objective of pursuing "extreme safety levels". The Center's activities additionally include research into the human factors in accidents by developing a greater understanding of the characteristics of human behavior.

The Research and Development Center also conducts analytical investigations into Shinkansen and other train derailments, seeking to apply their findings to improve on preventive safety measures. In addition, research is being carried out for the development of seismic-resistance techniques for bridges and other construction.

#### Safety promotion network (as of the end of March 2008)



#### Improvement of safety equipment

#### Investment in safety equipment for "extreme safety levels"

To achieve a more assured level of safety in railway operations, weak points in the current systems must be identified and reviewed from a safety standpoint. Furthermore, safety equipment must undergo intensive and effective assessments in order to prevent the occurrence of accidents in the future. The Safety Plan 2008 campaign has earmarked a total of 530 billion yen in safety investments for the four-year period spanning 2004 and 2007. In fiscal ending March 2009, we plan to spend approximately 168 billion yen on safety measures.

#### **Installing safety equipment**

To prevent collisions between trains, JR East has installed ATS (automatic train stop) and ATC (automatic train control) systems on all of its railway lines. To heighten the current safety level of train operations even further, we are installing ATS-P and ATS-Ps systems, which employ continuous speed monitoring functions. At the end of fiscal March 2008, the ATS-P system had been installed on 1,728.9 km of railway line. We are presently increasing the number of systems with most of the new systems being installed in the Tokyo metropolitan area. The ATS-Ps system is currently installed on 227.7 km of line in the Sendai and Niigata regions and at 5 stations. In addition, in response to revisions to the Ministry Ordinance for technological standards for railways in July 2006, we are working on measures to prevent excessive train speeds at curves, turnouts, line terminals, and descending grades.

#### Measures to prevent excessive train speeds

	-	-	
	Target locations	Installations as of the end of fiscal March 2008	Planned completion
Curves	1,470 locations	1,086 locations	Fiscal ending March 2010
Turnouts	825 stations	409 stations	Fiscal ending March 2016
Line terminals	63 stations	44 stations	Fiscal ending March 2016
Descending grades	1,528 locations	0 location	Fiscal ending March 2016

<sup>\*</sup> Including locations improved prior to July 2006

#### Introduction of automatic platform gates to the Yamanote Line

In response to increasing customer expectations for higher levels of safety on platforms, JR East plans to install automatic platform gates on many of its platforms. The gates will initially be installed in Ebisu and Meguro Stations of the Yamanote Line in fiscal ending March 2011. We plan to complete installation of the gates to all stations of the Yamanote Line in approximately 10 years from this initial introduction.

#### Railway lines and stations with ATC, ATS-P and ATS-Ps systems



#### Systemization of maintenance work

Safety during maintenance work has been improved with the use of TC-type wireless alarm systems. The systems warn employees working on railway tracks when a train is approaching. JR East has also introduced a safety system that enables workers performing maintenance to turn signals red from a handheld device, ensuring that trains are stopped whenever necessary. The system is already in use on all major lines in the Tokyo metropolitan area and is presently being introduced to other railway divisions.

#### **Disaster preparedness**

JR East has installed rain gauges, water level meters, seismographs, anemometers, and other weather observation systems for disaster prevention along its railway lines, for immediate collection of essential information for safe train operations. Data obtained through the weather observation systems is monitored by our command and technical centers and other facilities via an online system using telecommunication lines. If a monitored value on any of the observation systems exceeds the set regulation or alert threshold, an alarm sounds to ensure that operation restrictions are set in place and inspections are performed quickly and without fail.

JR East is also reinforcing the seismic-resistance capabilities of elevated tracks and other structures as a measure against earthquakes. For its Shinkansen lines, JR East completed seismic retrofitting of approximately 18,500 elevated Shinkansen viaduct support columns and 2,340 bridge columns by the end of fiscal March 2008. For conventional lines in the southern Kanto and Sendai regions, we plan to complete seismic retrofitting of 12,600 viaduct support columns and 550 bridge columns by the end of fiscal March 2009.

#### **Developing safety technologies**

JR East is committed to improving safety through its continued research and development. In fiscal ended March 2008, we developed a system to automatically transmit train protection radio signals to stop trains in nearby sections in the event of an accident to prevent secondary accidents. Additionally, we have developed a safety portal site in order to share information and know-how in the prevention of human error.

#### Measures for reducing transport disruptions in the Tokyo metropolitan area

JR East established the "Tokyo Metropolitan Area Transport Disruption Prevention Project" in May 2006 to investigate and promote measures for the reduction of transport disruptions.

#### Improvement of transport reliability

To improve transport reliability, JR East is preparing for the

introduction of the Autonomous Decentralized Transport Operation System (ATOS) to achieve more precision with traffic control. We are also promoting measures to reduce transport disruptions by duplicating the major equipment for our railcars and by strengthening signalling cables and tracks for our ground facilities.

#### Column

#### Measures to prevent railway crossing accidents

Twenty years ago when the company was established, there were 247 accidents during the year at railway crossings. In fiscal ended March 2008, the number had been drastically reduced to 42. Approximately 70% of all railway crossing accidents involve automobiles. We have installed devices such as obstacle detectors, which are capable of detecting an obstacle such as an automobile stalled on a crossing and stopping trains, and we have put crossing warning devices in a higher position for better visibility. More red and white large crossing gates have been installed; the barrier arms are thicker than usual and have red and white reflective plates that cover the whole bar. These are expected to provide better visibility day and night. Studies are currently being carried out on the effectiveness of these bars. In

addition, we are presently promoting a wide range of public relations activities for the prevention of railway crossing accidents, appealing to drivers for their cooperation and understanding.



A red and white large crossing gate, to improve visibility and deter careless crossing of railway tracks

Furthermore, we are trying to increase the number of overhead crossings to eliminate

level crossings with roads, and are doing this with the cooperation of local governments, neighboring residents, and the police.

#### Station platform safety

In fiscal ended March 2008, there were 47 accidents in which customers fell from platforms onto tracks or came into contact with trains. JR East has put a wide range of protection-related devices into place at our platforms to ensure the safety of its customers. These devices include emergency train-stopping systems and image processing device to detect fallen persons. In addition, our "Platform Safety Campaign" encourages customer awareness and cooperation, both vital for safety on our platforms.

#### Safety for baby strollers

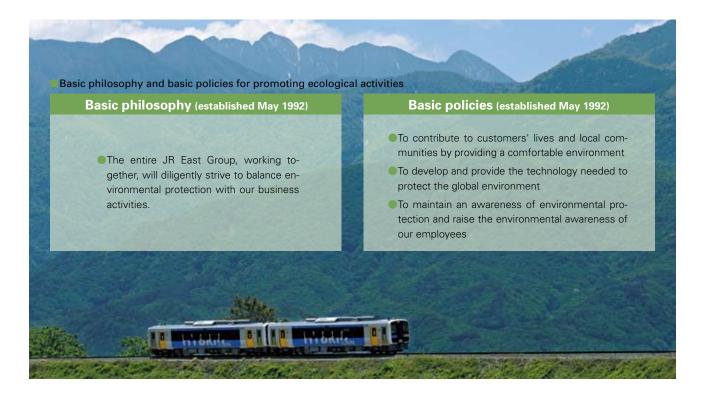


A campaign poster

As we have facilitated barrier-free establishments, the number of customers with baby strollers at stations and on trains has been increasing. JR East has been working on improvements to railcar door sensor capabilities and, in cooperation with baby stroller-related associations and with other railway companies, on announcements to its customers urging for the safety of

## "Balancing Environmental Protection with Business Activities" is Our Basic Philosophy that Underlies All Our Activities

In 1992, the JR East Group adopted its Basic Philosophy of balancing environmental protection with its business activities. Based on this philosophy, we are carrying out specific environmental protection measures by establishing activity guidelines and numerical targets.



#### Activity guidelines and targets for the promotion of ecological activities

#### Activity quidelines (established March 1996)

- We work to prevent the waste of precious energy resources and to reduce CO2 emissions —a known source of global warming- by enhancing our energy efficiency and introducing cleaner forms of energy.
- 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 such substances, and to adopt environmentally responsible substitutes when they are available.
- 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 placed 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 environmentally friendly form of transportation.

#### See our website for the following information URL http://www.jreast.co.jp/eco/ Operation of recycling centers ●Initiatives at offices ●Initiatives in the life-style business ●Efficient use of water resources ●Joint efforts with customers to reduce load on environment ●Reducing and recycling train tickets ●Green procurement Use of waste collected in stations and recycled ●Reducing chemical substances Reducing and replacing ozone depleting substances ●Chemical substance management ●Efforts at JR East's thermal power plant ●Management of PCBs ●Measures for dioxin generated at waste incinerators ●Harmonization with landscape ●Reducing the usage of herbicides Utilizing spring water in tunnels ●Promotion of environmental activities at each work place ●Environmental education now underway ●Award for environmental activities •ISO14001 certification

#### Revision of Environmental Targets

Toward the end of March this year we announced the "JR East 2020 Vision - i do mu -."In this document we expressed our commitment to deal with global environmental problems actively and on a long-term basis. In light of this announcement we are revising the environmental targets that have been set to be achieved by fiscal ending March 2009.

In the "i do mu" document we announced our long-term target of reducing CO2 emissions of railway operations. In order to achieve this, we are now setting new numerical targets for power usage for train operations, power usage for train operation per unit volume of transportation, and energy saving at stations and offices.

In our recycling program, we will set higher numerical targets for the recycle ratios of waste generated at stations and on trains, waste from general rolling stock centers, and waste generated from construction work.

#### Measures to prevent global warming by JR East non-consolidated Recycling of Resources

Item	Target for fiscal ending March 2009	New target
emissions compared of railway ended Ma	22% reduction, compared to fiscal	50% reduction from fiscal ended March 1991 by fiscal ending March 2031 2.76 million t-CO2 ⇒1.38 million t-CO2 [1.38 million t-CO2 reduction]
	way ended March 1991,	32% reduction from fiscal ended March 1991 by fiscal ending March 2018 2.76 million t-CO <sub>2</sub> ⇒1.88 million t-CO <sub>2</sub> [0.88 million t-CO <sub>2</sub> reduction]

Note: Already announced in "JR East 2020 Vision - i do mu -."

Item	Target for fiscal ending March 2009	Fiscal ending March 2011 target
Ratio of energy- saving rolling stock	82%	86%
(new) Total electric power used for train operation	_	2% reduction from fiscal ended March 2007 4.17 b. kWh⇒4.09 b. kWh [Reduction of 80 million kWh]
(new) Power used for train operation per unit volume of transportation	_	2% reduction from fiscal ended March 2007 1.85kWh/car km⇒1.81kWh/car km [Reduction of 0.04 kWh/car km]
(new) Energy use at stations and offices	_	4.5% reduction from fiscal ended March 2007 15.3 b. MJ⇒14.6 b. MJ [Reduction of 0.7 b. MJ]

Item	Target for fiscal ending March 2009	Fiscal ending March 2011 target
Ratio of recycling of waste from stations and trains	45%	70%
Ratio of recycling of waste from general rolling stock centers	85% *1	95%
Ratio of recycling of waste generated at construction work	92%*1	92%

<sup>\*1</sup> Average from fiscal ended March 2006 to fiscal ending March 2009

#### Other environmental targets

(Noise reduction)

·Tohoku and Joetsu Shinkansen noise to be reduced to below 75 dB -- 100% (target to be achieved in fiscal ending March 2010) in areas targeted for noise reduction

(Group companies)

·All group companies will set their respective, specific numerical targets (new).

(Common targets for JR East group companies)

·Ratio of recycled paper for office use .

100% (to be achieved by fiscal ending March 2011)

Involvement in some specific environmental protection activities every year (participate in reforestation, etc.)

#### Column • Eco-activities in different regions

#### Hachioji Branch Office, Uenohara Station

#### Locally-made posters asking customers' cooperation for sorted trash collection

In April 2006, in order to be sure to collect, sort and recycle a large amount of discarded newspapers and magazines as well as ordinary trash, posters made by our own employees and exclusive collection boxes were placed in stations. With customers' cooperation, the collected newspapers and magazines were contributed to the regional promotion societies. The proceeds from the sale of these materials to recyclers help to fund the promotion societies. The segregation and recycling of these waste materials reduced the total amount of trash generated



from stations and resulted in about 10% reduction in the cost of trash treatment.

#### Akita Branch Office, Akita General Rolling Stock Center

The medium-term targets set to be met by fiscal ending March 2009 called for reduction of electricity usage by 5%, water usage by 15% and waste generation by 51% (compared to fiscal ended March 2004). The progress of these efforts is posted on the bulletin board to encourage employees within the center, resulting in steady achievements. Also every month employees take part in environmental improvement activities in the neighborhood, in eco-festivals, and in forestation activities. In addition, a pamphlet is published to report more familiar eco-activities which our employees and those of our affiliated companies carry out at home as well as in their workplaces.





## Measures Taken by JR East to Prevent Global Warming

In our efforts to reduce CO2 emissions, the JR East Group pursues the efficient use of energy and the effective use of renewable energy. We also promote intermodal transportation with the aim of reducing CO2 emissions from all forms of transportation.

#### Measures to prevent global warming

#### Current state of energy supply and demand

The electricity consumed by JR East for train operations as well as lighting and air conditioning at stations and in offices is supplied by JR East's own power plants and electric power

Besides electricity, we also use diesel fuel and kerosene for diesel train operation and air conditioning at stations and in offices.

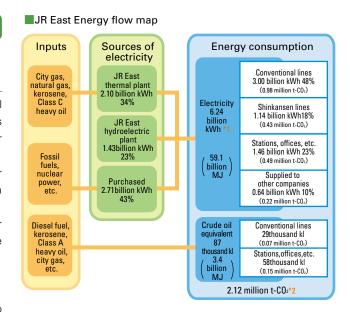
Although our transportation volume is on the rise year after year, our energy consumption has remained at about the same level

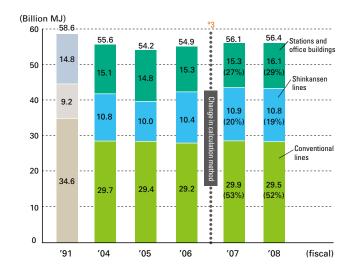
#### CO<sub>2</sub> emissions and reduction measures

Our CO2 emissions in fiscal ended March 2008 amounted to 2.12 million tons, about the same level as that of in fiscal ended March 2007.

During fiscal ended March 2008 water volume in rivers was less than in fiscal ended March 2007 and our hydroelectric plants generated less electricity. To compensate for it we increased the operating rate of our thermal plants, which led to increased emissions of CO2. However, as commercial power plants improved their coefficient of CO2 emissions, our total emissions turned out to be about the same as last year.

We are determined to continue to reduce energy used for train operation, which accounts for 70% of the total energy we consume. We will also undertake a range of measures to reduce CO2 emissions, including energy saving actions for which new targets are set for stations and offices.





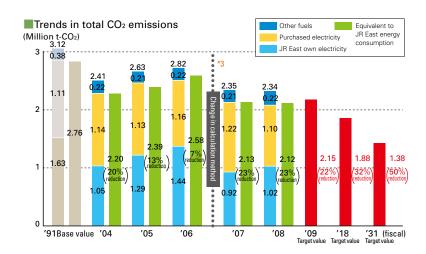
After subtracting electricity that we supplied to other companies, JR East consumed 5.6 billion kWh, which is equivalent to power consumed by 1.49 million ordinary homes over a period of 1 year.

#### \*2 2.12 million t-CO2

Excluding supply to other companies

#### \*3 Change in calculation methods

Up until fiscal ended March 2006 CO2 emissions from use of power and fuels and energy consumption were calculated with reference to the "Voluntary Action Plan on the Environment" by the Japan Federation of Economic Organizations. Beginning in fiscal ended March 2007, we have adopted a new method based on the law concerning the rationalization of the energy use (Energy Conservation Law) and the law concerning the promotion of the measures to cope with global warming (Global Warming Measures Law). Using the former coefficients, emissions for fiscal ended March 2008 were 2.09 million t-CO2 (reduction of 24% compared to fiscal ended March 1991). Also, CO2 emissions as a specified transportation operator designated by the Energy Conservation Law(the emissions generated only by railway operation, excluding offices and hospitals) will be shown to be 2.00 million t-CO2 in the fiscal ended March 2008 report



#### Reducing energy consumed for train operations

As of the end of fiscal March 2008, JR East had 10,428 energy-efficient railcars in operation. This accounts for 85% of our railcar fleet.

We are putting into service more new-generation energyefficient railcars, with features such as regenerative brakes, which can convert kinetic energy during deceleration into electric energy, and variable voltage variable frequency (VVVF) inverters, which control motors without wasting electricity.

Energy consumption per unit of transportation volume during fiscal ended March 2008 was reduced by 14%\*1 compared with fiscal ended March 1991.

This was calculated using revised coefficients in accordance with the amended Energy Conservation Law.



E233 series: State-of-theart cars introduced on the Chuo Line in December 2006.

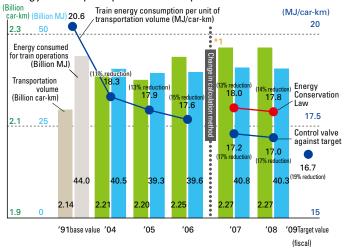


E2 series: VVVF inverter railcars used for Shinkansen "Asama" and "Hayate" trains.



E231 series: VVVF inverter cars for commuter and suburban transportation.

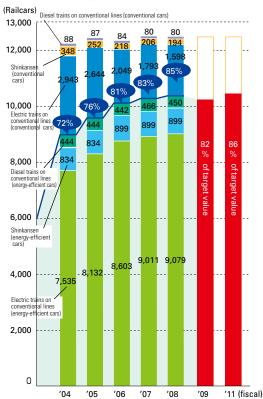
#### Trends in energy consumed for train operations and train energy consumption per unit of transportation volume



#### \*1 Change in calculation method

Through fiscal ended March 2006 energy consumption was calculated with reference to the "Voluntary Environmental Action Program" of the Japan Federation of Economic Organizations. Beginning in fiscal ended March 2007, we have adopted a new method based on the law concerning the rationalization of the energy use (Energy Conservation Law). Under the former method, energy consumption for train operation for fiscal ended March 2008 was 38.5 billion MJ and the energy consumption per unit of transportation volume was 17.0 MJ per car-kilometer or a reduction of 17% from the level of fiscal ended March 1991.

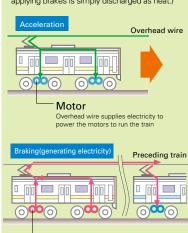
#### ■Trends in energy-efficient railcars



#### Regenerative brake mechanism

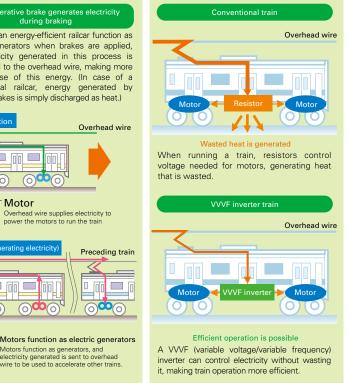
## A regenerative brake generates electricity during braking

Motors of an energy-efficient railcar function as electric generators when brakes are applied, and electricity generated in this process is transmitted to the overhead wire, making more efficient use of this energy. (In case of a conventional railcar, energy generated by applying brakes is simply discharged as heat.)



Motors function as generators, and electricity generated is sent to overhead wire to be used to accelerate other trains

#### Mechanism of VVVF inverter control



#### **Optimization of Power Supply**

#### Reducing CO<sub>2</sub> emissions through increased efficiency in power generation and supply

Electric power is indispensable for reliable train operation. At JR East we are making power generation more efficient and utilizing more renewable energy, by replacement of facilities in our own power plants, with a view to reducing CO2 emissions. We adjust the balance of electricity generated at our thermal and hydroelectric plants in accordance with fluctuating demand. Our load dispatch command monitors and controls our operations to ensure most efficient power generation.

#### Making our own thermal power generation more efficient

JR East operates a thermal power plant in Kawasaki City, Kanagawa Prefecture, with a total output of 655 thousand kW. We replaced three of its four generation units with more efficient combined-cycle power generation units\*1, and In June 2006 we replaced kerosene with natural gas as fuel for the No.3 generation unit. As a result of these efforts, we have reduced

CO<sub>2</sub> emissions per unit of electricity generated at the plant by 37%\*2 compared to fiscal ended March 1991. We will continue to work on reduction of CO<sub>2</sub> emissions and the one remaining older generation unit is scheduled to be replaced with combined-cycle power generation units in 2013.



station kerosene was replaced with natural gas to run No. 3 generation unit in June 2006.

'09Taget value (fiscal)

#### \*1 A combined-cycle power generation unit

A combined-cycle power generation unit is a power generation unit that combines gas turbines propelled by combustion of gas with steam turbines driven by steam from the exhaust heat.

#### \*2 Change in calculation method

Up until fiscal ended March 2006 CO2 emissions were calculated with reference to the "Voluntary Environmental Action Program" by the Japan Federation of Economic Organizations. Beginning in fiscal ended March 2007, we adopted a new method based on the law concerning the promotion of the measures to cope with global warming.(Global Warming Measures Law) Under the former method, CO2 emissions per unit amount of generation are 433 g-CO<sub>2</sub>/kWh, reduction of 40% from the level of

#### Power generation (Billion kWh) CO2 emissions (Million t-CO2) CO2 emissions per unit of electricity generated (g-CO2/kWh) ■Power generation and CO₂ emissions at JR East's thermal power plant (g-CO<sub>2</sub>/kWh) 750 3 1.65 726 ures Law Global Warming Meas 456 37% Control valve 453 against target 1.63

#### JR East's own hydropower plants that do not emit CO<sub>2</sub>

JR East has 3 hydroelectric power plants in Ojiya City and Tokamachi City, Niigata Prefecture, and since these do not emit greenhouse gases, such as CO2 or exhaust gases such as

nitrogen oxides, they provide us with clean sources of energy. They started operation in 1939, 1951, and 1990. With a combined output of 449 thousand kW, the plants generate 1.4 to 1.8 billion kWh yearly and contribute to reduction of 0.43 million to 0.55 million tons of CO2 emissions.



Shinanogawa Hydropower station producing clean without emitting energy

#### **Utilization of Natural Energy**

JR East also utilizes natural energy. Solar panels are installed at Tokyo station, Takasaki station, General Education Center, and

R&D Center. Takasaki station doubled its solar panels in March 2004.

In addition, solar panels were installed at Tokyo station above Tokaido line platforms (Platforms No. 9 and 10) and are scheduled to be operational in fiscal ending March 2011.



Solar panel installed atop platform roofs at Takasaki

#### **Environmental Management at Large Underground Stations**

In conjunction with renovation of air conditioning equipment, which consumes most energy at large stations, we are undertaking measures to reduce energy usage. When we undertook renovation work at Ueno station and the underground Keiyo Line area in Tokyo stations to renew equipment and eliminate the use of CFCs, we reviewed the capacity of cooling equipment for air conditioning and installed inverter controls. We aim at reducing energy by monitoring operations through IP networks and by optimum operating controls through energy diagnosis by our Building Energy Management System (BEMS).

These efforts resulted in reduction of energy consumption by air conditioning units by as much as 40%. The work at Tokyo station was completed during the early part of fiscal ending March 2009, completely eliminating the use of CFCs by air conditioners

#### Reducing impact of the heat island phenomenon by greening of rooftops

We have been promoting green plantings on rooftops of station buildings and office buildings owned by JR East since fiscal ended March 2005. As of March 2008 we have covered an area of about 6,900 m<sup>2</sup> (equivalent to about 90% of the lawn area of the National Athletic Stadium) in 20 projects. They reduce the effect of the heat island phenomenon. The plants also absorb CO<sub>2</sub>, and they help reduce energy usage for air conditioning in the buildings because they block some of the sun's heat.

#### Intermodal system

#### Reducing CO<sub>2</sub> emissions throughout the transportation system

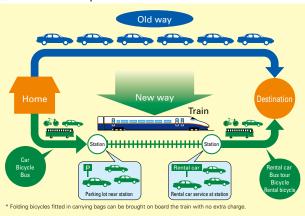
A railway is a highly energy-efficient mode of transportation with low environmental impact, but railways alone cannot completely satisfy transportation needs of customers. JR East is working to reduce CO2 emissions of the entire transportation system by promoting intermodal transportation\*1 combining the use of railways with use of other modes of transportation.

Also, to promote intermodal transportation, we are improving the convenience and riding comfort of railways. For example, we are opening new railway lines to allow passengers to go to their destinations smoothly; we are adding services that operate through on JR East and other companies; we are expanding the area in which one Suica is valid for travel on JR East and on other lines as well; we are making our stations and cars barrier-

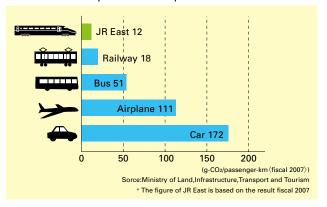
#### \*1 Intermodal transportation

Intermodal transportation means a transportation system that allows a person to get from a given point to a final destination by connecting different modes of transporta-

#### Intermodal transportation



#### ■CO₂ emissions by mode of transportation



#### Park-and-ride schemes

In order to promote park-and-ride schemes, so that our customers can drive their cars from home to nearby stations and use our trains from there, we are adding parking spaces in front of the stations. By the end of March 2008, 123 JR East stations had prepared parking spaces for eleven thousand cars.\*2

#### \*2 Parking spaces for eleven thousand cars at 123 stations

Parking spaces for eleven thousand cars at 123 stations represent the total number of parking spaces near our stations, including those owned by JR East, operated by our Group companies, and run in collaboration with local municipalities



At 10 stations between Tomobe and Iwaki on Joban Line, parking charges are free for express train customers going farther than a specified distance.

#### Rail and car rental

To suggest to our customers travel plans that use a combination of railways and automobiles, JR East has been offering a car rental service called "Train-ta-kun" since 1995, with discounted rental charges. Furthermore, we are facilitating intermodal transportation by introducing new classes of automobiles, such as light cars, by offering attractive rates, and by installing car navigation systems as standard equipment in rental cars.

#### **Development of Travel packages**

JR East is energetically promoting travel packages that use trains as a means of transportation with lower environmental impact, while capitalizing on rich natural and tourist resources in various regions. Examples include plans for sightseeing by taxi in cooperation with local businesses, and car rental plans that allow travelers to enjoy a train journey while benefiting from the mobility of rental cars.

## Creating a system for recycling and reusing waste materials as resources

[See our website for the following information]

URL http://www.jreast.co.jp/eco/

- ■Operation of recycling centers ●Initiatives at offices
- ●Initiatives in the life-style business ●Efficient use of water resources Joint efforts with customers to reduce load on environment
- ■Reducing and recycling train tickets ■Green procurement
- Reuse of waste collected at our stations after its recycling

In order to reduce the amount of waste that is produced from railway and life-style business, JR East is reducing waste, reusing resources and recycling waste into resources.

#### Reducing waste and recycling

#### Recycling goals are set for each type of waste

JR East generates many kinds of waste through our railway operations, such as daily trash removed from trains and stations and industrial waste from our General Rolling Stock Centers. In addition, restaurants and retail stores in our life-style business produce garbage and general waste. In fiscal ended March 2008, the JR East Group generated 647 thousand tons of waste, 79% of which was reused or recycled.

The amount of waste from construction projects, which are the largest source of waste, varies from year to year with changes in the extent and type of construction. Accordingly, JR East does not set a target for the amount of waste, but sets a target recycle rate for each waste category, and strives to achieve it.

For general waste, the JR East Group had been aiming for a recycle rate of 43% by fiscal ending March 2009, and this rate had already reached 48% in fiscal ended March 2008.

#### Recycling waste collected from stations and trains

In fiscal ended March 2008, waste collected from our stations and trains amounted to 44 thousand tons, which is equivalent to the amount of household waste generated by 110 thousand people per year in Japan. Since waste collected from our stations and trains includes recyclable materials such as newspapers, magazines and cans, we endeavor to properly sort it and recycle it. JR East has installed separate refuse bins for different types of waste at stations, and established our own recycling centers in the Tokyo metropolitan area to ensure thorough sorting of waste after it has been collected. We set the recycling target at 45% to be met by fiscal ending March 2009. In fact, we have already achieved the target, which was 64% in fiscal ended March 2008. Since fiscal ended March 2008, thermal recycling has been also taken into account.

#### Recycling initiatives at General Rolling Stock Centers, etc.

JR East Group is recycling waste generated during the manufacture and maintenance of rolling stock. At Niitsu Rolling Stock Manufacturing Factory where commuter and suburban trains are manufactured, we promote waste reduction and recycling by taking into account the railcars' entire life cycle from designing to disposal.

Also, to reduce waste and improve recycling, regional General Rolling Stock Centers, where rolling stock is maintained and repaired, sort waste into 20 to 30 categories and send it to specialized waste disposal contractors. We are thus making efforts to improve the recycle ratio by thorough sorting. Starting in fiscal ended March 2006, we have included our retired railcars



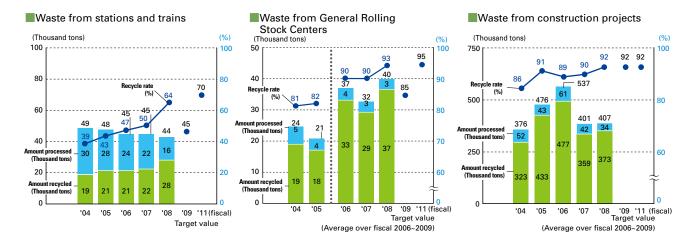
At Nagano General Rolling Stock Center, retired wheels are recycled into brake disk parts

that were sold to outside parties and later scrapped as part of the quantities recycled by the JR East Group when calculating our recycle rates.

#### Reducing construction waste

Although Japan's Waste Disposal and Public Cleansing Law treats subcontractors as the generators of waste from subcontracted work, we, as an organization that orders this work, strive to reduce the amount of waste that they generate by preparing civil engineering specifications that require subcontractors to properly dispose of construction byproducts, and use designs and construction methods to minimize waste. In fiscal ended March 2008, JR East generated 407 thousand tons of waste through construction and maintenance projects at our stations and other structures, including 85 thousand tons of waste through work entrusted to JR East. \*1

Constructive work contracted to JR East by local governments etc., to be done at non-JR East facilities, for purposes such as to ensure safe train operations



Outilizing spring water in tunnels

environment along railway lines

JR East takes measures to create better

For the co-existence between train operations and environment along railway lines, JR East endears to improve the environment along railway through noise and pollution control.

#### Protecting and creating the environment along railway lines

#### By both technology development and inventive approach Measures to reduce noise from Shinkansen

In accordance with the Japanese government's Environmental Quality Standards for Shinkansen Railway Noise, JR East takes a variety of steps to reduce this noise, such as the installation of soundproof walls and sound-absorbent materials, rail grinding \*1 and the modification of our railcars to operate more quietly. Although we have already completed the implementation of measures to reduce noise levels to 75 dB or lower in densely

populated residential areas along our railway lines, we plan to take further steps by expanding the scope of areas where noise levels need to be reduced to 75 dB or lower. Based on the results obtained in the test runs of a prototype high-speed single arm pantograph.



Test train "FASTECH " uses a low-noise

Shinkansen train, FASTECH, we are committed to establish a high-speed, eco-friendly Shinkansen technology that could reduce noise and micropressure wave in tunnels. \*2

A measure to smooth out the unevenness of rails caused by wheels traveling over them. The measure allows trains to run more quietly because wheels are in close contact

An explosive sound caused by compressed air being forced out of a tunnel when a Shinkansen train enters it at a high speed. The sound is produced at the end of thetunnel.

#### Measuxduce noise along conventional lines

We have implemented voluntary measures to minimize noise by installing long rails \*3 and performing wheel truing \*4. We also comply with the Japanese government's Policy on Noise Measures for Construction of New Conventional Railways or

#### \*3 Installing long rails

Rails that are made more than 200 meters long by welding rail joints. With fewer railjoints, these rails reduce noise produced at joints when trains pass.

A measure to grind the unevenness of wheels caused by wear, to restore their circular shape.

Large-Scale Remodeling when we carry out such construction or modification of our conventional lines.

#### Measures to reduce noise during maintenance work

As the maintenance work is usually done during night, we give advance notice about the schedule and details of the work to residents in surrounding areas. We also make utmost efforts to minimize noise by using modified equipment producing lower noise. On double-track lines, we carry out maintenance work on one track during daytime while trains in both directions use the other track. We also endeavor to lessen the need for maintenance itself by increasing the use of labor-saving tracks with wear-resistant rails.

#### Commitment to railway trees

#### **Protecting railway trees**

Railway trees are planted to protect railway tracks from natural disasters such as snowdrifts and landslides. JR East owns approximately six million railway trees on a total of about 4,200 hectares of land along our railway lines. These trees help preserve the environment by absorbing 17 thousand tons of CO2 per year, an amount equivalent to 0.8% of the annual CO2 emissions by JR East. We are determined to preserve the trees along our railway lines as a means to ensure safe railway operation and to protect the natural environment.

#### Planting new railway trees

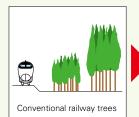
A ceremony of planting new railway trees between Sekine and Yonezawa on the Ou Main Line was held on July 4, 2007. The railway trees had been red pine trees to protect railway tracks from snowstorm but were damaged by pine weevil. To restore the functions, several varieties of native trees were planted as new

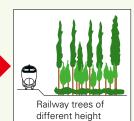


Tree planting ceremony by professional engineers,including President Seino

railway trees, with proper care given to landscaping. selecting the varieties of trees, we were given kind advice from Yamagata-ken Midorino-Suishinkikou.

## Column ● (Railway trees)





#### From single to multi-variety trees

In 2008 a project to review the role of railway trees and re-plant them in coming 20 years was launched with a view to prevent disasters and preserve the environment. Conventional railway trees were of a single variety such as cedar. The project plans to make the railway trees more sustainable and ecologically strong, by mixing short, medium and tall trees and the varieties of native trees.

Safety

## Activities in partnership with local communities and cooperation with the society through a variety of media

The JR East Group is making contacts with our stakeholders, communities and the society surrounding them, through a variety of activities, media and events

#### Forestation in partnership with communities

#### Forest development along railway lines

Since 1992, each of our branch offices has planted trees with the participation of local community members in the Railway Line Forestation Program. As of fiscal ended March 2008, we have planted 0.26 million trees with the involvement of about 38 thousand people. To attract broad participation, innovative approaches have been used. For example, the JR East Hachioji Branch Office held the event in cooperation with the city of Hanno and planted trees with the residents of Saitama Prefecture, including many children.

#### **Adatara Hometown Forestation Program**

We have conducted a forestation program on national forest land in the Adatara district of Fukushima Prefecture since 2004. The 4th year of this program will begin in 2007 and over the next three years 50 thousand saplings of 17 different varieties will be planted in the city of Nihonmatsu in Fukushima Prefecture. Our plan is to plant various kinds of trees close together in a state similar to nature and to have a "hometown

forest" develop through natural selection.

In 2008 a total of 1,200 people, including JR East Group employees and local residents, participated and planted 17 thousand saplings.



Adatara hometown forestation program

#### **Akita Shimohama Coast Forestation Program**

JR East owns railway trees along the Uetsu Line on the Shimohama Coast in Akita city. Over the past few years, however, damage from pine weevils has caused damages such as blight.

Since 2005, the JR East Akita Branch Office co-organized the Akita Shimohama Coast Forestation Program with the AEON Environmental Foundation. In 2008, with the participation of 1,100 volunteers recruited from major stations and AEON Group stores throughout Akita Prefecture, we planted 10 thousand saplings consisting of Japanese

black pine and Daimyo oak.

Akita Shimohama Coast Forestation Program co-sponsored with AEON Environmental Foundation

#### Communicating environmental information

#### Partnership with society through media

We have published an environmental report each year since 1996 (in 2002, the name of the report was changed to JR East Group Sustainability Report) to provide stakeholders with accurate and easy-to-understand information about JR East activities for the environment and society. Among our group companies, JR East Department Store Co., Ltd. has issued an environmental report annually since 2004.

A children's illustrated booklet "Thinking more about the Environment." has been published, and since fiscal ended March 2006, abstracts of our Sustainability Report have been placed in Tranvert, an information magazine for Shinkansen passengers. We have received a great deal of reader feedback about these publications. We have also provided environmental information via the Internet, train posters, and other media.

#### **Providing information at events**

In 2007, we participated in the Eco-Products 2007 Exhibition to present the environmental conservation activities of the JR East Group. We demonstrated the power-generating floor and displayed a model of the regenerative brakes and the world's first hybrid railway train. About 2,800 people visited the event.

In addition, every year we introduced our commitments in the

environment issues at the public events organized by Rolling Stock Centers and Rolling Stock Manufacturing Factories. We also participated in various local events in cooperation with local governments.



"Eco-Products 2007" introducing the world's first hybrid railway car through a simulator

#### Promoting ecotourism

Ecotourism cultivates deeper understanding and affection for Japan's nature and culture through tourism. We held a Shirakami Mountains Beech School special class, which allows its members to experience the attraction of Shirakami Mountains. In the Shirakami Mountains Beech School ordinary class, more than 500 people participated. We continue to offer our "Hiking from Stations" program, in which participants can enjoy nature near our stations. In fiscal ended March 2008, we held 446 tours with about 180 thousand participants.

# Safety

## Latest cases of new energy systems

JR East is committed to contributing to further environmental conservation through research and development in railcars and station facilities.

#### Research and development contributing to environmental conservation

JR East has set "Contribution to the Global Environment" as one of the four fundamentals of our R&D initiatives and is committed to the research and development for creating environmentally friendly stations. Specifically, our main R&D initiatives are related to environment assessment using Life Cycle Assessment (LCA), the promotion of resource circulation efforts by considering 3R (reduce, reuse, and recycle) in designing, and "Applications of new energy systems" such as fuel cells and the power generating floor.

#### Operation of the world's first diesel hybrid railcars

The Kiha E200 Type cars, which entered service on the Koumi Line in July 2007, are the world's first diesel-powered, electric

motor-driven hybrid railcars.

These cars use electricity generated by a diesel engine equipped with the latest emission control equipment and by a motor that charges a battery during train braking.

Efficiency in tests was approximately 20% better than a standard diesel railcar \*1 The diesel hybrid railcars are quiet when



The world's first diesel hybrid railcars operating on the

idling at a station (approx. 30dB reduction). Hazardous substances in the exhaust, such as NOx and graphite, are reduced by approximately 60%.

2007 Environment Minister's Award for Global Warming Prevention Activities in the category of technological development and commercialization (organized by the Ministry of the Environment)

1 Approx.20% improvement

Results are based on test runs on level ground. On the Koumi Line, which has steep grades, efficiency improved by approximately 10%

#### Fuel-cell hybrid railcar experiments continue

Fuel cells are electricity-generation technology with low environmental impact. They feature high electricity-generation efficiency, and the only byproduct generated through their reactions is water.

JR East is currently proceeding with research and development of fuel cell systems for railway applications.

We began test runs of the world's first fuel-cell hybrid railcar in

2006, and started test runs on operational lines in spring 2007. The fuel-cell railcar is currently being tested at around 100km/h.

We continue to develop control, safety, and other technologies, and are advancing to meet future challenges.

There are still many challenges to overcome with fuel cell technology, but we are committed to the development of this technology with an eye on the day when it is commercially available in the future.

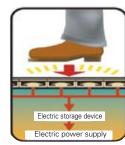


#### Experiment with a power-generating floor at the Yaesu-exit of Tokyo Station

Demonstration experiment of the power-generating floor which generates electricity from the pressure of people walking on it was conducted on the passageway at the Tokyo Station Yaesu North Exit ticket gate from January to March 2008. It generates electricity from the vibration caused by the deformation of piezoelectric elements under the floor when people walk on it. We will continue our research and development for further improvement of power generation efficiency and endurance.







Mechanism of the power generating floor

## A management system to promote environmental conservation activities

See our website for the following information

URL http://www.jreast.co.jp/eco/

- Promotion of environmental activities at work place
- Environmental education now underway

●Award for environmental activities ●ISO14001 certification

We at JR East promote environmental conservation activities across our departments by setting clear targets and promoting individual employee's awareness.

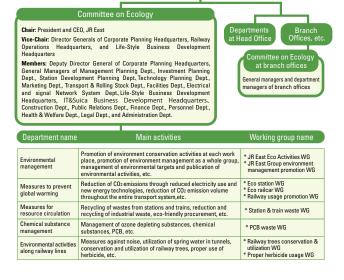
#### Creating an environment-conscious climate

#### Concerted effort by the entire JR East Group

JR East believes that it is important to promote environmental activities in which every JR East Group employee can voluntarily and actively engage for the goals set for these activities and implement effective measures. We are trying to expand the scale of our environmental activities across the company through the development of the "JR East Eco Activities", measures to promote environmental activities at each work place, the education of leaders through environmental education, and sharing of exceptional environment measures through the presentation of awards.

The Committee on Ecology surveys environmental impact caused by business activities, sets environment-related targets, implements environment conservation activities, and performs checks and examinations by the management on the degree of achievement of targets. The committee was set up in 1992 and has its headquarters in the Management Planning Department, and functions as a cross-departmental body, with its chair served by the President and CEO of JR East and its members consisting of the General Managers from each department. The JR East Group Environment Management Promotion Conference, in which those responsible for environment of group companies participate, takes place every year. In fiscal ended March 2008, challenges and outstanding cases of achievement were shared across the Group.

Organizational structure to promote environmental management (as of June 30, 2008)



#### Implementation of Environmental Education

For effective environmental management, it is essential that all employees have appropriate knowledge on environmental issues. We provide environmental education lectures to a large number of our employees, ranging from new employees to people who promote environmental activities in JR East and group companies. Through these lectures, we aim to expand the scale of our environmental activities. In fiscal ended March 2007, to enhance environmental activities at each group company, we began an "Environmental management training" program for people in charge of environmental matters in those companies.

#### ISO14001 certification

JR East has been striving to acquire ISO14001 certification. The certification is an international standard for environmental management systems. At JR East we are working to acquire the certification mainly at facilities that have relatively large environmental impacts.

All of our General Rolling Stock Centers, which are responsible for train maintenance, are certified under ISO14001.

#### Internal environmental audits

At our General Rolling Stock Centers, for example, in-house auditors are trained through external training programs, and conduct routine audits at the centers in order to evaluate environmental activities. On one occasion, internal environmental auditors pointed out that environment education had not been given to temporary workers, and this was subsequently corrected.

#### **Environment risk management**

JR East is working to establish a system to prevent environmental accidents by more rigidly managing chemical substances. We prepared emergency response manuals for on-site locations such as our thermal power plant and General Rolling Stock Centers that handle chemical and hazardous substances.

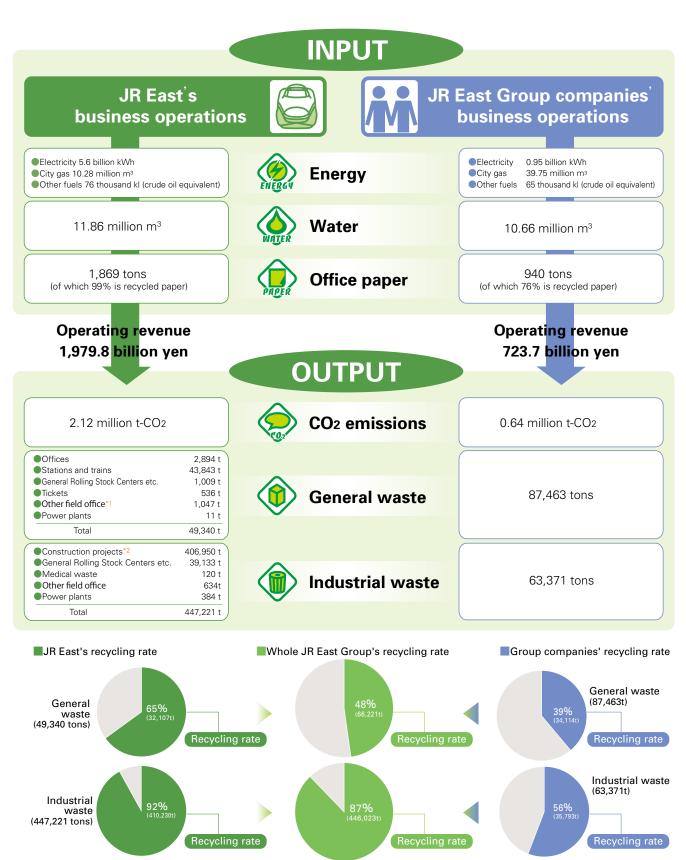
We are also preparing ourselves to properly respond to any contingencies by holding workshops and training sessions on how to handle such substances, and ensuring that related information reaches all related personnel.

#### **Environment-related accidents**

In fiscal ended March 2008, there were no environment related accidents and no cases of violation of any environmental law or and regulation in the JR East Group.

## **Environmental impact** by business activities across the Group

The JR East Group consumes a large amount of resources through its operations and consequently emits a number of substances into the environment. The JR East Group keeps track of the quantities of these inputs and outputs in an effort to reduce our impact on the environment.



- \*1 Other field office Technical center and conductor's depots, etc., engaged in the maintenance of equipment.
- \*2 Construction projects Legally, industrial waste generated by contractors through our construction projects

## Accomplishments in fiscal ended March 2008 in relation to targets to be met by fiscal ending March 2009 and new targets to be met by fiscal ending March 2011

JR East has set environmental targets, with which we quantitatively and qualitatively review our performance in order to identify the causes of issues, and uses this information for improvement in the following fiscal year.

#### Accomplishments of environmental targets to be met by fiscal ending March 2009 and new targets to be met by fiscal ending March 2011

Category of environmental conservation activities	Main activities	Target to be met by fiscal 2009	Base value (base year: fiscal 1991)
	Total CO2 emissions from railway business activities	22% reduction (as compared with fiscal 1991) (2.15 million t-CO <sub>2</sub> )	2.76 million t-CO2
	CO2 emissions per unit electricity generated at JR East's thermal power plant	40% reduction	726g-CO2/kWh
Measures to prevent	Energy-efficient railcar utilization rate	82%	_
global warming	Electricity used for train operation	_	-
	Train energy consumption per unit transport volume	19% reduction	20.6MJ/car-km
	Train electricity used per unit transport volume	_	-
	Energy saving at stations and offices	_	_
	Large refrigerators using specified chlorofluorocarbons (CFCs)	100% reduction	82
	Recycling rate for waste generated at stations and on trains	45%	_
	Recycling rate for waste generated at General Rolling Stock Centers, etc.	85% (Average for 4 years of plan) *1	_
Measures for resource circulation	Recycling rate for waste generated in construction projects	92% (Average for 4 years of plan) *1	_
on outdoor	Recycling rate for general waste	43%	-
	Recycled office paper utilization rate	100%	-
Chemical substance management	NOx emissions from JR East's thermal power plant	63% reduction	994t
Environmental activities along railway lines	Reduction of noise to 75dB or less along the Tohoku and Joestsu Shinkansen lines (in designated noise control area) *2	100% (Target to be met by fiscal 2010)	-
Environmental communication	Participation in specific environmental protection activities every year	Participation in tree planting, etc.	-
Environmental management	Setting of numeric targets by all group companies	-	

Targets for the JR East Group

we are now working on the targets to be achieved by fiscal 2010.

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<sup>\*1</sup> average for 4 years of plan Fiscal 2006-2009 average.

<sup>\*2</sup> Measures to reduce noise along the Tohoku and Joetsu Shinkansen lines As we have expanded the coverage of noise reduction measures along Shinkansen lines since fiscal 2007,

			Described on
Results for fiscal 2008	Evaluation	Targets to be met by fiscal 2011	Described on psges
23% reduction (2.12 million t-CO <sub>2</sub> ) - Law Concerning the Promotion of the Measures to Cope with Global Warming 24% reduction (2.09 million	Achieved (	50% reduction by fiscal 2031 (relative to fiscal 1991) 2.76 million t-CO <sub>2</sub> →1.38 million t-CO <sub>2</sub> (reduction by 1.38 million t-CO <sub>2</sub> ) 32% reduction by fiscal 2018 (relative	
t-CO <sub>2</sub> ) - relative to target management values *3		to fiscal 1991) 2.76 million t-CO <sub>2</sub> →1.88 million t-CO <sub>2</sub> (reduction by 0.88 million t-CO <sub>2</sub> )	
37% reduction (456g-C02/kWh) - Law Concerning the Promotion of the Measures to Cope with Global Warming 40% reduction (433g-C02/kWh) - relative to target management values *3	Achieved (E)	Not target is established because CO <sub>2</sub> emissions are controlled in the total CO <sub>2</sub> emissions from railway business activities.	
85%	Achieved (	86%	
4.14 billion kWh	_	2% reduction (relative to fiscal 2007) 4.17 billion kWh →4.09 billion kWh (reduction by 80 million kWh)	P24~P27 ·Web
14% reduction (17.8MJ/car-km) - Law Concerning the Rational- ization of the Energy use. 17% reduction (17.0MJ/car-km) - relative to target management values *3		No target has been established because the basic unit is managed by newly adopted "Train electricity per unit transport volume	
1.83kWh/car-km	_	2% reduction (relative to fiscal 2007) 1.85 kWh/car-km →1.81 kWh/car-km (reduction by 0.04kWh/car-km)	
16.1 billion MJ	_	4.5% reduction (relative to fiscal 2007 value) 15.3 billion MJ →14.6 billion MJ (reduction by 0.7 billion MJ)	
100% reduction	Achieved (E)	Has been achieved in fiscal 2008	
64%	Achieved (	70%	
93%	ØØ	95%	
92%		92%	P28·Web
48%	Achieved (E)	No target has been established because all group companies set their own numerical target.	
92%*4	Ø	100%	
67% reduction (330t)	Achieved (E)	There is no target because all available measures with the current technology have been taken.	Web
63%		100% (Fiscal 2010 targets have been achieved)	P29·Web
37 thousand trees planted at 15 locations by 3,500 participants		Participation in tree planting, etc.	P30
-		All group companies set their own numerical targets	P12·Web

#### **Results for Fiscal ended** March 2008

In fiscal ended March 2008, we achieved our targets in 7 activities. For three of our performance indicators among the measures to prevent global warming, the coefficients based on laws and the values calculated using the coefficients when the fiscal ending March 2009 target were set are used to clearly represent the changes of our measures on a year-to-year basis.

CO<sub>2</sub> emissions were similar to those in fiscal ended March 2007. Our own hydroelectric power plant produced less electricity in fiscal ended March 2008 than fiscal ended March 2007 due to less volume of river water in fiscal ended March 2008. We therefore, increased the rate of operation of our thermal power plant, and led to a higher volume of CO2 emissions from the thermal power plant. On the other hand, as a result of the improvement of CO2 emissions coefficients, the CO2 emissions in fiscal ended March 2008 ended at the level of fiscal ended March 2007.

At the end of March 2008, "JR East 2020 Vision - i do mu - " was presented. And based on it, the environment targets set to be achieved by fiscal ending March 2009 were revised in June 2008. We will set new targets and strive even harder to reduce the CO2 emissions, and make more effort to achieve higher numerical targets for waste recycling which we have been long committed.

#### Progress toward fiscal 2009 targets Achieved .....Achieved Satisfactory .....Behind schedule

<sup>\*3</sup> relative to target management values

The values calculated using the coefficienths when the fiscal ending March 2009 target were set are used to clearly represent the changes of our measures on a year-to-year basis.

<sup>\*4</sup> Recycled office paper utilization rate Papers sold as recycled paper by manufacturers are calculated as recycled paper.

## **Providing Prompt Responses to Customer Comments**

With the goal of improved customer satisfaction, as described in "Group Management Vision 2020 - i do mu -," JR East is determined to work for further improvements in station and transport services and human resources development.



#### Learning from customer comments

#### Toward improved customer satisfaction

We are constantly implementing Group-wide efforts to develop a system that will promptly organize and share customer comments made to station staff and collected from customer service desks, as well as via the Internet, and which will ultimately lead to improvements in all aspects of our services.

#### **Customer Service Department Role**

JR East is steadily making improvements toward meeting the expectations of our service users and local communities, thereby alleviating their grievances and offering services that will meet their future needs. There are needs for improvement in many areas: customer service; train operations, sales systems and train scheduling; train operation information; and service infrastructure such as barrier-free facilities and comfortable and clean toilet facilities. The achievement of these comprehensive improvements require cooperation that goes beyond all our stations, branch offices, Head Office, and other departments.

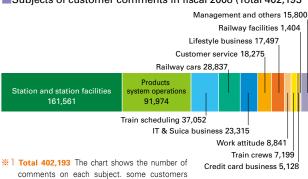
In October 2000, we established Customer Service Committees as forums for the discussion of issues in a cross-organizational manner. In July 2005, we opened our Customer Service Deparment, so that we could strategically and swiftly enhance the quality of our services. Our process of making improvements in a wide range of fields is enhanced by developing systems that allow all our departments to actively cooperate with each other.

#### **New Green Information System**

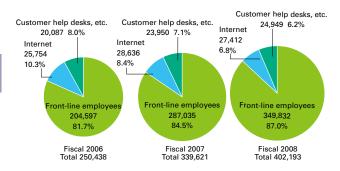
In order to more efficiently share and use customer feedback, JR East has constructed a new internal database named the New Green Information System. Comments collected by front-line employees and from customer help desks in major stations as well as via the Internet are entered into this database, and the valuable information thus gathered is available 24/7 to employees at Head Office, branch offices and front-line workplaces to help them implement service improvements.

In fiscal ended March 2008, we received 402,193 comments from our customers, an increase of 18% over the previous fiscal year. Of these, the vast majority, approximately 87%, was received by front-line employees. We also conduct annual customer satisfaction surveys in order to provide ourselves with a comprehensive evaluation of our services that could not be

#### Subjects of customer comments in fiscal 2008 (Total 402,193\*1)



#### Trends in the number of customer comments by channel



commented on more than one subject.

adequately determined from customer feedback alone, and we quantitatively measure the levels of customer satisfaction. We make full use of the results of these surveys in the variety of measures we take

#### **Customer Satisfaction Through Teamwork**

In order to guarantee customer satisfaction, we have designated service promoters operating at many frontline workplaces. Furthermore, with a clear awareness that all efforts eventually lead to improved customer satisfaction, we hold regular customer service training sessions and symposiums that involve all Group employees, from top management to frontline employees. We are continually working to create a corporate culture where each employee aims to enhance customer satisfaction, by targeting not only frontline employees, but also those in sections that do not have direct contact with customers.

### **Implementing Customer Comments**

#### Toward a more comfortable usage environment

Projects to enable us to promptly implement customer requests are achieving much in many fields.

#### **Transport services improvements**

We are continuously striving to reduce morning rush-hour congestion on major lines serving the Tokyo metropolitan area. On such lines, in fiscal ended March 2008, the average in-train congestion rate during morning commuting hours had declined by 53 percentage points to 185% compared to fiscal ended March 1988 as a result of our many efforts, including increasing the number of trains in operation, adding cars to existing trains, introducing wider-bodied cars, and opening the Shonan Shinjuku Line and other new lines.

#### **Enhancement information provision**

To enable prompt and accurate information provision during transport disruptions, we are proceeding with the installation of transport disruption information displays in 90 stations, with completion targeted for fiscal ending March 2009, in addition to our current information provision via train monitors, the Internet and mobile phones.

#### Women-only cars

In order to enhance the comfort and sense of safety for both our female and male passengers, we introduced "Women-only" cars during late night operations. This system started in July 2001 on the Saikyo Line, and in April 2005 it was expanded to include the morning rush hours. In September 2005, such cars were introduced during morning rush hours on the Chuo Rapid Line, followed in May 2006 by the Joban Local Line that becomes the Tokyo Metro Chiyoda Line in central Tokyo, and on the Sobu Local Line in November 2006.

### Smoking and non-smoking areas

At the request of many customers, and in line with current social trends, as well as to provide an improved environment for both our non-smoking and smoking customers, we have promoted the setting up of clearly delineated smoking and non-smoking areas in stations and on trains. From March 2007, all cars of Shinkansen and limited express trains operating in our service area have become entirely non-smoking. In consideration for customers who wish to smoke, however, we have installed more smoking rooms on platforms of major stations serving Shinkansen and limited express trains.

#### **General Information Desks**

We are shifting the focus of staffed ticket gates from the verification and settlement of tickets and fares to desks that provide information, and are continuing to install general information desks capable of providing comprehensive customer guidance and information.

#### **Service Managers**

JR East is increasing the number of service managers who make rounds of stations and are in position to assist elderly customers and those not used to traveling. These service managers provide relevant and timely information and guidance and other fine-tuned services in times of emergency as well as during regular operations. As of April 1, 2008, service managers are located at 43 stations.

#### **Service Assistance**

Since fiscal ended March 2006, we have encouraged our employees to qualify for Service Assistance certification, with the aim of helping them acquire the skills necessary to assist disabled customers, and instilling in them a spirit of hospitality. By fiscal ended March 2008, approximately 2,000 employees had received level 2 certification.

#### **Development of New View Plaza**

We are continuing with the development of information centers that can respond to the varied needs of our customers, including both those who want to receive detailed travel advice in a relaxed and unrushed manner, and those who are in a hurry and, therefore, want to receive information as quickly as possible. As of end of fiscal March 2008, 30 new View Plazas are in service.

#### More comfortable on-board air conditioning

JR East is working on railcar air conditioning (cooling and heating) to make railway travel more comfortable. On new railcars (E233 and E231 series) fully-automatic air-conditioners are installed. On other cars, continuous efforts are made to provide comfortable environments by conductors making frequent temperature checks, thermostat changes and other detailed responses. In June 2006, for example, responding to a trend of increasing comments stating that the air-conditioning on the Yamanote Line was too strong and cold, thermostat settings were raised to 25°C, which is 1°C higher than the traditional setting.

## **Placement of Automated External Defibrillators** (AEDs)

AEDs are medical electroshock devices for the treatment of ventricular fibrillation caused by cardiac arrest. The devices have been widely used in the United States and Europe since around 2000. JR East has been working on placing AEDs near ticket gates at stations with many customers, and as of April 2008, 165 stations have been equipped with them.

#### **COLUMN**

#### **Increased convenience of Suica**

The convenience of Suica has gained favor with many customers and the number of cardholders exceeded 25 million as of the end of June 2008.

Recently, Suica usage has expanded in the following ways. In addition to its introduction in the Tokyo metropolitan, Sendai and Niigata areas, in March 2007 Suica became interchangeable in use with the new PASMO card in the Tokyo metropolitan area. With this introduction virtually all train and bus services throughout the operational area can now be boarded with a single Suica card. Furthermore, interchangeable use with JR West's ICOCA and JR Central's TOICA have also been introduced, thereby expanding the usage area to almost all the nation's major cities. Further expansions of interchangeable usage will occur when we join with JR Hokkaido's Kitaca in spring 2009, and with Nishi-Nippon Railroad's nimoca, JR Kyushu's SUGOCA and Fukuoka City Transportation Bureau's Hayakaken in spring 2010. When all of these plans are implemented, Suica will be recognized almost everywhere throughout the nation.

In addition to the areas where it can be used for convenient fare payment, the usage area of Suica's e-money is also expanding. Suica e-money use has been increasing steadily since its introduction, in line with the increase in the number of stores accepting payment by Suica. The current total of Suica and Pasmo transactions exceeds 1.15 million per day. In addition to stores in or near railway station, Suica is now accepted by FamilyMart and other convenience stores, as well as Aeon and other shopping centers. As in the railway business, Suica usage is expanding through the introduction of interchangeable use with cards from other companies.

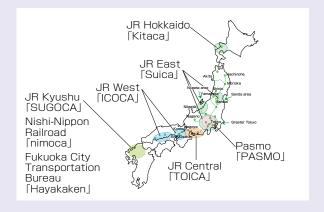
In the Tokyo metropolitan area interchangeable e-money services started with PASMO, and expanded through joint services with ICOCA commencing on March 18, 2008. In the future, along with the interchangeable use of IC tickets, interchangeable IC card use services are scheduled with JR Hokkaido's Kitaca, Nishi-Nippon Railroad's nimoca, JR Kyushu's SUGOCA, and Fukuoka City Transportation Bureau's Hayakaken. Furthermore, from March 15, 2008, there will be a

step-by-step introduction of Suica e-money for settlement of on-board purchases on JR East's Shinkansen, as well as on limited express trains on conventional lines.

A further function expansion is Mobile Suica, with which mobile phone and Suica functions are integrated. This allows Suica recharging, the purchasing of Suica commuter passes, and the confirmation of purchase history, all without customers having to stand in line at ticket vending machines or ticket offices. Mobile Suica is now being used by approximately 1.11 million customers.

On March 15, 2008, the Mobile Suica Limited Express Ticket service was launched. This service allows ticket purchases to be made for all JR East Shinkansen services, as well as allowing passengers to board trains without the need for a paper ticket. The service can also be used throughout the year to reserve seats at prices below the cost of using our magnetic-backed paper tickets for non-reserved seat travel. From March 29, in cooperation with JR Central's EX-IC (Express IC) service, it has been possible to use Mobile Suica on services between Tokyo and Osaka on the Tokaido Shinkansen. For this service, an Express Reserve annual membership fee is required.

JR East will continue to improve and expand Suica and e-money services, and ensure that they are even easier to use and more convenient than ever before.



## Making our facilities barrier-free

#### **Barrier-free stations**

JR East has been working with local governments and other entities to install elevators at approximately 490 stations in accordance with the Barrier-Free Transportation Law. As of the end of fiscal ended March 2008, we had completed installations in more than 60% of target stations. We expect to provide alternatives to steps at all the target stations by fiscal ending March 2011. We are also installing escalators at approximately 300 stations with daily throughput of 10,000 or more passen-

gers and which have an elevation difference between levels of five meters or more. Pamphlets describing barrier-free facilities are available at major stations, and we show information on our website (http://www.jreast. co.jp/equipment/index.html) regarding the main barrier-free facilities of our stations and trains. In order to enable our customers to use stations smoothly and without stress, we are installing anti-slip flooring and improving and expanding infor-



Overcoming differences in levels by installing elevators



Up and down escalators

## mation displays, including the use of pictograms, multilingual guidance signs, and large-text messages.

#### **Barrier-free railcars**

Starting in December 2006, the new universal design E233 series railcars have been introduced on the Chuo Rapid, Ome and Itsukaichi lines. We also started gradual introduction on the Keihin Tohoku Line in December 2007. These modern railcars reflect customer requests provided through questionnaires and on-board surveys. To improve accessibility for persons with vision impairments, in fiscal ended March 2006 we installed Braille maps and stickers indicating the passenger's current location and the locations of various facilities on all Shinkansen trains. On conventional lines we also are placing Braille stickers identifying car numbers and door locations.



Easily identified priority-seat areas

## VOICE ● From Service Frontlines



**Customers Are Our Family** 

Yoko Maki (Service Manager), Senior Passenger Station Clerk, Shinjuku Station,

My work involves providing guidance and information to customers, as well as assisting senior citizens and people with disabilities while making my rounds inside the station. I believe that there are two main points that are vital when I provide services. The first is, through my customer service duties, to listen to customer comments and promptly feed them back to the company, and the second is to identify "potential demand" that is not expressed in customer comments, and thereby provide levels of service that exceed customer expectations. My goal is to provide services that go beyond the manual; in other words, to find out how we can make our customers happy and impressed in addition to responding to their expectations. To provide a level of warmth equal to family hospitality is our ultimate objective.

## **Understand Customer Perspectives at All Times**

Kazuhiro Hayashi (Service Assistant), Senior Passenger Station Clerk. Ochanomizu Station, Tokyo Branch Office



As a qualified service assistant, I am committed to the provision of services that clearly demonstrate our safety and from which we can gain the trust of our passengers. As well as trying to daily improve the level of my own service skills, I believe it is even more important to put myself in the place of our customers, and from that level of understanding provide the best service possible.

By ensuring that employees themselves experience what it is like to be an actual passenger, I believe we can foster a corporate climate in which employees think and act from the standpoint of customers. Ultimately, I want to see our users smile with satisfaction, and with this goal in mind, I will continue to work on customer-oriented services.

## **Promoting partnership** with communities

JR East plans to continue to contribute to people, communities and society by fully utilizing railways and stations. Activities springing from this desire are now taking hold in a variety of fields.

### With local communities

#### Nursery schools and nursing care facilities

With the goal of making our railway services helpful for those raising children, the JR East Group is developing a number of nursery schools in or near stations in cooperation with local governments and childcare business operators. There were 21 facilities as of April 2008. Ten of our facilities are located along the Saikyo Line and the Saitama New Urban Transit Company's New Shuttle, with the aim of making these areas attractive to those nurturing babies and infants.

Our nursing facilities are currently centered on four sites, including the Ohisama Day Service Center, which is attached to a station nursery school near Yonohonmachi Station. We will



Chacha suzuva nursery (Minami vono)

continue to focus on these businesses as activities that contribute to a nation meeting the twin demands of a declining birth rate and an aging society.

## Stations as centers of information and culture

JR East is working on the revitalization of communities through station and neighborhood renewal schemes, with the intention of developing stations from being merely facilities to board or leave trains, to true community centers that are full of information and rich in culture

Since our foundation, we have always carried out a wide range of development programs in cooperation with the city planning departments of local governments, including the construction of new stations, the creation and renovation of free passages and station squares, the elevation of stations, and the joint development of community halls and libraries. Currently, programs such as the creation of public areas in Arcade Akabane and other shopping centers, and various station renewal projects aimed at harmonizing our facilities with neighboring districts, are also high on our agenda.

#### Tourism development in cooperation with communities

In recent years, there has been a growing demand for balanced tourism development that considers different aspects, such as the maintenance and improvement of the society and the life infrastructure in local communities.

In the belief that tourism development ultimately leads to local community development, JR East has launched several long-term initiatives for the creation of tourist destinations in schemes that generally start with the drawing up of concepts in unison with local citizens. In both the Chiba Destination campaign and Northern Tohoku Destination campaign, for example, we have united with local residents in order to promote the attractiveness of areas along our railway lines. Furthermore, we see the propagation of such information throughout the entire JR East service area as simply another role that we can play in our efforts to aid society.

## COLUMN





#### Renewal of the Gateway to Tokyo

JR East is actively promoting Tokyo Station City, a large-scale development project aimed at the total revitalization of the Tokyo Station area, a plan that perceives the station district as a complete city. In this respect, Sapia Tower, which was completed in March 2007 as the first element of the project on the Nihonbashi side, serves as an information transmission hub, drawing tenants mainly from the research and development and education fields. The scheme was further developed with the October 2007 opening of Phase I of the GranTokyo North Tower and GranTokyo South Tower on the station's Yaesu side. Furthermore, Phase II of the North Tower will be completed in 2012 and a central deck connecting the North and South Towers is to be opened in 2013. These developments are further complemented by GranSta, an in-station underground commercial zone which is already in operation.

With these development and integration of structures, the depth of the station-front plaza on the Yaesu side will increase and the transport node function will be improved. The redevelopment will also secure a "wind road" along which sea breezes from Tokyo Bay will flow unhindered into the city center, thus mitigating the heat island effect.

On the other side of the station complex, work is currently underway to totally restore the Marunouchi station building to the original grandeur of its opening in 1914. This project will be completed in 2011.

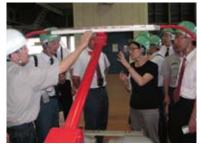
## With international communities

#### International cooperation on technology and know-how

JR East shares its technologies and the expertise it has nurtured with people and organizations throughout the world.

In fiscal ended March 2008, for example, 617 people visited us. Information provision and on-site inspections and seminars covering a wide variety of subjects were provided, including an introduction of the issues and methods concerning privatization of a national railway, such cutting-edge technologies and knowhow as Shinkansen trains and the Suica IC fare-card, conservation of the global environment, and our lifestyle services businesses.

In addition, based on requests from such organizations as the Ministry of Land, Infrastructure and Transport, we are actively involved in international cooperation through the dispatch of our



Inspection of the Shinkansen General Rolling Stock Center

railway experts to Asian and other neighboring countries to provide on-site advice.

## Interaction with foreign operators

JR East has concluded cooperative agreements with German, Italian, and French national railway companies in order to better exchange information on R&D and management. We dispatch and receive each other's personnel, with the long-term goal of promoting mutual communication. We also exchange information on railway-related technologies, management, and other matters with our counterparts in China, South Korea, and other Asian countries. These interactions with foreign railway companies are examples of our efforts for the promotion and development of the railway industry throughout the world.

#### **Signing of the Sustainable Development Charter**

In October 2007, at a meeting of the International Association of Public Transport (UITP), of which JR East is a proud member, we



signed the Sustainable Development Charter in the belief that

public transport will play a critical role in the achievement of sustainable development.

## East Japan Railway Culture Foundation

JR East established the East Japan Railway Culture Foundation in 1992 and has promoted local cultures, studied and researched railways, and taken part in international cultural exchanges through our railway business. The achievements of these initiatives are published on the Foundation's website (http://www.ejrcf.or.jp/) together with information on its business activities. The same information are also provided in CD-ROM and DVD form. The foundation also has published the Japan Railway & Transport Review (JRTR) and other railwayrelated English publications, to provide an international discussion forum among specialists.

In addition, the foundation has invited young managers from Asian railway companies to visit for railway management and technology training. In fiscal ended March 2008, a total of 47 managers were invited from China, Indonesia and seven other Asian countries. The foundation has sponsored activities at various locations in eastern Japan in order to preserve and pass on Japan's precious cultural heritage and traditional arts, as part of its initiatives to promote local culture. In fiscal ended March 2008, the foundation provided a total of approximately 60 million yen in grants to 18 projects, including Kamakura City, Kanagawa Prefecture's project to preserve and hand down its folkloric performing arts.

### With the next generation

In addition to the Railway Museum (see P. 15), JR East provides numerous venues for contributing to local communities, the nurturing of children, and the passing on of railway culture.

#### **Children's Railway Association**

The Children's Railway Association is managed by the Traffic Manners Association, with the aim of raising children's awareness of proper manners on public transportation. In our service area, there are approximately 500 active members in 12 branches. JR East has established related facilities in each of our branch offices and actively supports the association so as to contribute to an improvement of manners on public transportation by the next generation, and provides opportunities for such activities as clean-up work in train stations and field trips to railway facilities and branch offices.

# Creating a favorable work environment

JR East will continue to strive to achieve a corporate system that respects the varied lifestyles of all our employees with the goal of providing a working environment in which all employees can enjoy their work and constantly strive to attain higher goals.

## Human resources recruitment and employment

## **Human resources recruitment Basic concept of personnel affairs**

In "JR East Vision 2020 - i do mu -," JR East advocated the upholding of our efforts to foster motivated young employees, nurture the development of management-level employees, encourage veteran employees to pass on their knowledge of technologies and their skills to the next generation of employees who will shoulder the burdens of the 21st century, utilize and foster diverse human resources and instigate a strategic reform of our personnel system.

#### Recruitment

For several years, JR East annually hired an average of 1,400 new recruits. In fiscal ending March 2009, however, due to the large number of employees reaching retirement age and taking into consideration the necessity of passing on knowledge and technologies, we recruited 1,910 new employees.

#### **Employing persons with disabilities**

Believing the employment of people with disabilities to be an important social responsibility, JR East has actively recruited them, and as of June 2008, they accounted for 2.18% of our workforce. In April 2008, we established JR East Green Partners Co., Ltd., a special subsidiary charged with the goal of promoting the employment of handicapped people, and we will continue to strive to ensure their employment in a broad range of fields.

## **Human resources development**

#### Turning human resources into human assets

In order to nurture independently minded employees who can not only perform their designated duties but also take on challenges at their own initiative, JR East is actively developing human resources based on the principles of improving technological and management capabilities, providing better services from customer perspectives, furthering the pursuance of safety and security, and developing the next generation of management

## Small groups and proposal activities

JR East encourages employees to voluntarily raise issues, form small groups to find solutions, and thereby make improvements. In fiscal ended March 2008, for example, approximately 35,000 employees belonging to approximately 5,200 small groups participated in such activities.

Proposal activities which solicit ideas and opinions on improvements concerning employee tasks are also very actively carried out. In fiscal ended March 2008, approximately 570,000 proposals, around 11 proposals per employee, were made.

#### Skills development

Besides offering a wide range of training programs relating to safety, service, and management at the JR East General Education Center and branch office training facilities, we also provide external correspondence courses to support employees learning of general knowledge and to enable them to earn specific qualifications. We also offer internal correspondence programs on railway business subjects as part of our effort to develop our personnel.

In order to assist our employees in broadening their perspectives, we also provide many opportunities for them to voluntarily take part in programs designed to develop their capabili-



Driver training using a simulator

ties, including public seminars, ship-board training, and courses at domestic colleges or universities. In fiscal ended March 2008, a total of 92,800 employees participated in such training programs.

Furthermore, in 2000, our corporate venture system was renamed J-Tomorrow and is now working to revitalize various fields, such as finding and fostering human resources and expanding our lifestyle services businesses.

## Favorable work environment

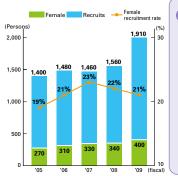
#### Beyond the barrier of age and sex

Since the amendment of the Equal Employment Opportunity Law in 1999, JR East has actively implemented measures to employ more females and expand their scope of employment. In April 2004, the F Program was inaugurated to develop an environment where female employees can fully demonstrate their abilities. Under the auspices of the F Program, efforts are also being made to improve systems that support a balance between work and childcare, and to improve our corporate culture for female employees. In October 2007, furthermore, the Gender Equality Group was set up within the Personnel Department with the goal of improving gender equality, and various measures, including the holding of a number of forums, are now being taken with the goal of opening up more positions for female employees.

#### The F Program

The percentage of females among total new hires has constantly exceeded the target level of 20% since fiscal ended March 2006, and in fiscal ending March 2009, we hired 400 women. Furthermore, the range of positions they can choose from is expanding steadily, and as of April 2008, our 3,330 female employees included 90 train drivers, 390 train conductors, several Group company managers, and others in equally important positions.

#### Number of new recruits and the female recruitment rate



#### Five pillars of the F Program

- 1 Expand the number of female recruits and their work opportunities to play an active role
- 2 Enhance systems for supporting a balance between work and childcare 3 Increase the number of women
- in management positions 4 Improve workplace culture and
- atmosphere
- 5 Improve the self-esteem of female employees

### Childcare and nursing care leave

At JR East, 155 employees took childcare leave in fiscal ended March 2008; 11 of them were male employees. Since the introduction of the system, a total of over 70 male employees have benefited from this system. For nursing care, a system is

now in place where up to one year of leave can be taken; this far exceeds the legal requirement of 93 days. In fiscal ended March 2008, 32 people benefited from this system.

#### Mental healthcare

In order to maintain and improve the mental health of our employees, we distributed pamphlets promoting self-care to all employees. Training programs for on-site supervisors were also launched and 785 supervisors participated in fiscal ended March 2008.

## Cafeteria flexible benefits plan

The Cafeteria Plan offers a variety of low cost "menus" including life support, gourmet and childcare support. Following its launch in October 2005, it was expanded to include Group company employees in July 2007.

#### Senior citizen employment

JR East has introduced the Elder Employee System under which the individual capabilities and skills of retired employees may be utilized in Group companies.

#### Raising employee awareness of human rights

JR East is constantly striving to raise awareness of human rights among all employees by establishing Human Rights Committees, providing training programs and publishing newsletters.

## VOICE ● From the frontlines of gender equality



Achieving a good balance between being a mother and an assistant manager

Yasue Kubo Assistant Manager, View Plaza, Takasaki Station,

Even though I have a seven-year-old child, I am still able to work vigorously every day as an assistant manager with the goal of creating a center that does not keep customers waiting and that can be used comfortably. I feel that the concept of childcare leave and other aspects concerning female employees are being accepted companywide, and that awareness and acceptance of JR East's F Program is steadily increasing.

What I always keep in mind as a manager is the necessity of always actively communicating with my staff at work. If we do so, a climate that allows us to call on and support each other can be established, and that in turn leads to teamwork throughout the entire workplace. It is difficult to achieve a balance between childcare and work on one's own, and that is why we should not forget to feel gratitude for people around us and do our best in any given environment. With this as my philosophy, I would like to continue to face the challenges of the job.

## **Actually feeling** the support of people around you





Because I have twins who, at eight months, still demand a lot of care, I chose to take childcare leave in order to support my wife who went back to work. Although I am constantly busy with my childcare duties and housework, I am also spending a fruitful time which I probably will not often be able to experience. Because of my superior who talked with me when I was hesitating about taking childcare leave, a senior colleague whose advice eased my anxiety about taking a leave of absence from work, and my colleagues who were considerate of my position and keep me informed of what is happening in the workplace, I realize that I am being supported by all the people around me and I feel deeply grateful. I sense that an environment that supports employees who are trying to achieve a balance between work and childcare is growing in the workplace. I believe that to achieve a good balance between work and childcare, thorough management of one's own schedule and the building up relationships of trust with those around us are important.

# Fulfilling our social responsibilities and connecting with our stakeholders with trust

The JR East Group aims to fulfill its social responsibilities while generating profit and to push forward responsive and transparent CSR management, in accordance with its Group Philosophy of providing high quality and advanced services, with railway businesses at the core.

### **CSR Basic Concept**

Because the railway businesses at the heart of the JR East Group are intimately related with society, local communities and people's lives, we foster an awareness of the importance of contributing to society and fulfilling our social responsibilities through engaging in our business activities of ensuring railway safety and providing stable transport services.

Regarding its social mission, our Group Philosophy states, "As a 'trusted Life-style Service Creating Group', JR East aims to sustain the development of its business operations while emphasizing its responsibilities to stakeholders and society at large along with its responsibility to generate profits for shareholders "

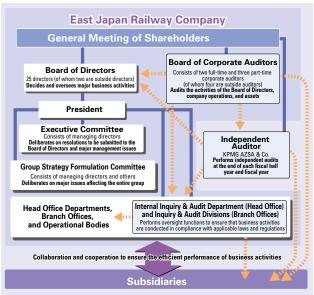
By pursuing our business activities in accordance with our Group Philosophy and Action Policies, we are determined to remain a corporate group capable of meeting social expectations and maintaining stakeholders' trust.

## Corporate governance

## Securing transparency and objectivity of management

JR East views "corporate governance from a long-term perspective" as one of its most critical management tasks because of the characteristics of the railway business, its core activity, and its goal of continuing to be a trusted corporate group.

## Corporate governance system (as of March 31, 2008)



#### Corporate governance system

Our Board of Directors, meeting every month in principle, decides on key operational issues relating to statutory requirements and other matters and supervises overall operations. Under the Board of Directors is the Executive Committee, which includes all directors with executive functions. Meeting every week in principle, the committee deliberates matters to be decided by the Board of Directors and other important management issues.

#### Supervision and auditing systems

We have two outside directors and four of our five corporate auditors are selected from outside the Group in order to guarantee the enhancement of our supervision of auditing functions. For internal audits, JR East has established an internal auditing system involving approximately 100 full-time employees in the Inquiry & Audit Department at its Head Office and Inquiry & Audit divisions at branch offices, and these units work to ensure that corporate operations are executed appropriately and efficiently. The audits of corporate auditors are supported by approximately 10 specialized staff. The system for the oversight of directors' implementation of operations, carried out in accordance with rules established by the Board of Corporate Auditors, centers on full-time corporate auditors who attend meetings of the Board of Directors, the Executive Committee, and other important in-house meetings and also investigate financial situations and other items. The corporate auditors also exchange auditing information with corporate auditors of Group companies at liaison meetings held at regular intervals.

Regarding financial audits, the financial statements of JR East are audited under contract by an independent auditor (accounting auditor), KPMG AZSA & Co., at the end of each fiscal half year and fiscal year. Note that in May 2006, we established a "regime for ensuring administrative appropriateness" in accordance with the Company Law.

## Compliance

## Raising every employee's awareness

Recognizing that corporate activities based on strict compliance and high ethical standards are prerequisites for a company to survive and prosper, we have built a structure that ensures rapid response to legal risks and internal legal issues under the auspices of our Legal Department and the Crisis Management Office of the Administration Department. We strive to ensure total compliance with applicable laws and regulations in all our business activities with the assistance of advice from legal counsel and other professionals.

## **Internal compliance awareness**

We adopted a Policy on Legal and Regulatory Compliance and Corporate Ethics in 2005, and distributed a booklet titled "Compliance Action Plan" to all employees of Group companies in order to raise their awareness of the necessity for compliance. At the same time, we established a "Compliance Hotline" to receive both internal and external information. In addition, in March 2006, prior to the promulgation of the Whistleblower Protection Act in April of the same year, we established rules to handle information that is in the public interest with the objective of protecting whistleblowers. Furthermore, with the dual objectives of increasing employee compliance awareness and penetrating ways to seek advice from the Compliance Hotline, in March 2008, we distributed a Compliance Card.

#### **Protection of personal information**

We established Regulations for the Management of Personal Information in 2005, and appointed Chief Privacy Officers who have the task of strictly protecting personal information. We are also working to enhance the information security levels of all our Group companies by ascertaining the holding status of personal information.

#### Raising employee awareness

We regularly provide training sessions for employees of our branch offices and Group companies, in order to enhance levels of compliance and ensure the highest levels of ethical standards. In fiscal ended March 2008, we continued to offer a variety of training, including Legal Skills Training, a Management School compliance course, Basic Legal Training, and Regular Legal Seminars for employees of JR East and our Group companies. Additionally, we actively promote activities that are designed to raise awareness of compliance-related issues by holding compliance seminars and workshops, and include compliance-related articles in our internal newsletter.

#### Compliance training

Title	Number of sessions Participants		Contents and objectives	Number of participants
Management School (Compliance Course)	1	Administrative managers of Group companies	Compliance	71
Legal Skills Training	1	Legal affairs managers of branch offices	Enhancement of practical legal knowledge, legal reasoning, and decision-making/problem-solving skills	14
Basic Legal Training 2 Legal affairs personnel of Group companies		Acquisition of basic legal knowledge	62	
Regular Legal Seminar	4	Employees of JR East and Group companies	Explanation of new and revised laws, and awareness-raising about compliance	About 150 for each seminar

## Risk management

The Crisis Management Headquarters was established in 2001 to centrally collect and manage information, and to make prompt initial responses in the event of major crises affecting the business operations of Group companies. We further established the full-time Crisis Management Office in 2004, with the aim of controlling risks before crises occur, and to identify potential risks at the earliest possible stage.

JR East constantly strives to minimize losses and damage from crises through various measures such as accelerating the speed of top management decision making through facilitating its early involvement, disclosing information in an appropriate manner, and conducting compliance based management.

### Stakeholder relations

#### A more open corporate entity

#### **Promoting dialogs with stakeholdres**

JR East has a wide range of relationships with many stakeholders, including the approximately 17 million customers using our railway services each day, as well as our shareholders and investors, business partners, employees and their families, and local communities.

We actively disseminate information about Group initiatives through public and investor relations activities to these stakeholders. We also strive to disclose key corporate information on our website in a swift and appropriate manner.

Furthermore, JR East is working to create wide-ranging opportunities to listen to and learn from the views and requests of our stakeholders

#### Risk management

Transportation, including railway operations, accounts for 70% of JR East Group's business revenue, with the remaining 30% of revenue being earned from our lifestyle businesses such as the operation of shopping centers, hotels, retail outlets, and other activities. These functions, of course, create economic relationships with a large variety of stakeholders.



Independent Review Report on "JR East Group Sustainability Report 2008"

To the Board of Directors of East Japan Railway Compuny

1. Purpose and Scope of our Beview We Luce reviewed "JR East Group Sustainability Report 2008" ("the Report") of East Japan Railway Company ("the Company") for the year ended March 31, 2008. Our engagement was designed to report to the Company, based on the results of our review, whether the environmental performance indicators including the indicators specified on page 22 of the Report and disclosed on the Web and the serviceossensial accounting indicators ("the Indicators") for the period from April 1, 2007 to March 13, 2008 included in the Report are collected, compiled and reported, in all material respects, relocably and in conformance with the Company's politics and procedures. The Report, Including the identification of material states, is the responsibility of the Company's management. Our responsibility is to independently report the results of our procedures performed on the Indicators.

- tures Performed performed the following review procedures: respect to the Company's policies for compilation of the Report, interviewed the any's responsible personnel.
- Company's responsible personnel.

  Assessed the Company's procedures used fite collecting, compiling and reporting the Indicators.

  Assessed the Company's procedures used fite collecting and reporting the Indicators.

  With respect to the way of collecting the Indicators and the process flow of colculating them, interviewed the Company's responsible personnel and reviewed the systems and processes used in generate the values of the Indicators.

  Company the Indicators on a sample basis with the supporting evidences to tent the conformity in collection, compilation and reporting of the Indicators so the Company's policies and procedures, and recompanied the Indicators so the Company's policies and procedures, and recompanied the Indicators of the Indicators of the Company's Assessed whether all the nuterial environmental information defended by Japanese Association of Assastance Cognications for Scientiscability Information is included in the Report.

  Evaluated the overall statement in which the Indicators are expressed.

We combated our majorment in accordance with "Assumoce Standard for Environmental F (pilot version)" (Ministry of the Environment, March 2004) and "the Practical Guidelines of Sentendardilly Information Assumore" (Ispanese Association of Assumore Organizations for Sentendardilly Information, revised February 2008).

Based on our review, nothing has come to our attention that causes us to believe that the Indicators in the Report are not collected, compiled and reported, in all material respects, rationally and in confirmance with the Company's policies and procedures.

KPMG AZSA Quaternalility Co., Ltd.



Maho Yao KPMG AZSA Sustainability Co., Ltd.

### **Independent Review Report**

In March 2008, JR East released the JR East 2020 Vision - i do mu -. Within, JR East stated its environmental commitment "to reduce total CO2 emissions of railway operations 50% by fiscal ending March 2031 compared with fiscal ended March 1991 levels"

This is one of goals in seven areas which JR East plans to achieve by 2020. In the Vision, JR East also vows to avoid any complacency in achievements to date, uphold ever-higher goals, and work to improve on existing structures and

A 50% reduction in CO<sub>2</sub> emissions is a challenging objective. In fiscal ended March 2008, their rate of reduction, based on fiscal ended March 1991 levels, is still at 23%. I expect JR East to recognize the importance of dividing their goal into well-defined short-term action plans in order to achieve the overall reduction.

In this year's Sustainability Report, JR East is releasing the environmental targets of each Group company. In order to understand the actual achievements of each company, and to comprehend and acquire the achievement values with more efficiency, it is necessary for them to reevaluate their systems of data collection and verification.

## A third party opinion: After reading JR East Group Sustainability Report 2008

In a time when issues of energy and global warming are growing at ever-increasing rates, the public is calling upon railway businesses to offer services with less environmental burden more than ever. In response, JR East, along with its pursuit for "extreme safety levels", has continued to pursue ever-greater targets in its challenge to create a sustainable society. This stance is highly evaluated.

By fiscal ending March 2031, JR East has committed to reducing the total CO2 emissions of its railway operations by 50%, with a fiscal ended March 2008 reduction of 23% (compared with fiscal ended March 1991 levels). In addition, JR East is continuing its efforts to establish the Environmental Technology Research Center, aiming to be at the forefront of the world's environmental railway technology. Furthermore, the company is aggressively promoting the introduction of reusable energies such as solar and wind powers, in addition to current thermal and hydroelectric power generation as its energy sources. I look forward to JR East achieving their targets in the years to come. I predict that JR East will maintain its long-continued environmental preservation efforts with ever-increasing aspirations. Efforts such as the planting of trees along railways, hometown forestation programs, and their recent promotions for a recycling society do not go unnoticed. Measures such as Park & Ride and their compact city initiatives reflect JR East's strong social interest in creating comfortable living environments and communities with reduced environmental burdens. Together with its efforts to improve areas of convenience with their Ekinaka (in-station) businesses and Suica, I hope that JR East also expands to become more involved in the regeneration of regions along their railway lines with future visions for each region.



Yuko Sakita Journalist and environmental counselor



Toshiro Ichinose Director and General Manager Management Planning Department

#### **Future prospects**

In fiscal ending March 2009, we entered into the 1st commitment period of the Kyoto Protocol. At the G8 Hokkaido Toyako Summit in July, environmental issues formed the important topics for discussion, with global trends surrounding global environmental issues clearly gathering speed.

With these as background, in the JR East 2020 Vision - i do mu - released in March 2008, the JR East Group stated its commitment to "taking positive and long-term approaches to global environmental problems". In June 2008, we reviewed our environmental targets, established higher goals than ever before, and began promoting measures to achieve these goals as a Group.

JR East has been working to reduce the environmental burden of its Group through such measures as the reduction of total CO2 emissions and the establishment of a corporate climate concerned with global environmental issues. Our efforts to date include the introduction of energy-saving railcars, improvements to our thermal power plant facilities, and various ecological activities at each Group office. In the future, the JR East Group intends to increase its united efforts with regard to environmental activities and continue its work to promote social and environmental activities in the achievement of a sustainable society.

## History of JR East Group's environmental and social activities

Year	Month	Environmental and social activities		Feb.	Safety Plan 21 announced.
		Japanese National Railways divided, and East Japan Railway Company established.		Mar.	Omiya Recycling Center started operation (for automatically separating used cans from bottles).
1987	Apr.	First Railway Safety Promotion Committee meeting held.	1999	Apr.	Service managers deployed at some stations.
	Jun.	Green Campaign began. Green Counter (now renamed customer help desks) opened for receiving customer feedback.		May	Started utilizing copier paper recycled from newspapers collected at stations.
	Sep.	Company-wide "Challenge Safety Campaign" launched.		Sep.	Information service on train operations made available by cell-phone.
	Dec.	ATS-P, an improved safety train-control system, installed on the Keiyo Line.		Apr.	JR East General Education Center established. Uniforms made from recycled PET bottles introduced.
1989	Apr.	Safety Research Laboratory and General Training Center established.	2000	Sep.	Environmental accounting included in annual Environmental Report.
1990	Sep.	First Railway Safety Symposium" held.		Nov.	Environmental targets revised with the announcement of New Frontier 21, the Group medium-term management plan.
	Oct.	"Future 21," a management plan for the twenty-first century, announced. "Ladies' Car," a train car exclusively reserved for female passengers, introduced in sleeping-car limited express trains.	2001	Mar.	Oi Workshop, Kawasaki Thermal Power Plant, and Niigata Mechanical Technology Center acquired ISO14001 certification.
-	Mar.	East Japan Railway Culture Foundation established.		Jul.	"Women-Only" cars for female passengers introduced on the Saikyo Line on a trial basi
	Apr.	Committee on Ecology established.		Dec.	JR East Research & Development Center established.
1992		Trees planted to commemorate the 5th anniversary of JR East's founding		Feb.	Test runs of the AC Train, a next-generation commuter train, began.
1002	May	(later, an annual event called "Railway Lines Forestation Program" began).		Mar.	Omiya Workshop acquired ISO14001 certification.
	Aug.	Waste collection sorted into three categories began on a trial basis at Sugamo Station on the Yamanote Line.	2002	Sep.	Sustainability Report including social and economic aspects published.
1993	Mar.	All-day smoking ban extended to major stations in the Tokyo suburban areas.		Nov.	Sendai General Rolling Stock Workshop acquired ISO14001 certification.
1994		Ueno Station Recycling Center started operation (for automatically separating used	2003	Mar.	Third set of measures to reduce Shinkansen noise completed. "Guide to Barrier-Free Station Facilities" pamphlet distributed.
	Feb.	cans from bottles). Waste collection sorted into three categories started at 36 stations on the Yamanote		May	Test runs of the NE Train, world's first hybrid railcar, began.
		and other lines.		Sep.	First JR East Group Environmental Management Promotion Conference held.
	Mar.	"Basic Safety Plan" announced.		Dec.	Koriyama Workshop acquired ISO14001 certification.
1995	Feb.	Recycling of used train tickets began in the Tokyo metropolitan area.  First measure to reduce Shinkansen noise completed.  Ecology education for all new recruits initiated.  "Train-ta-kun," a discount car rental service for train passengers, launched.		Mar.	"Safety Plan 2008" announced.
	Mar.			Apr.	"F Program" launched, with the aim of creating a better working environment for female employees.
	Apr.			May	Adatara Hometown Forestation Program held.
	Mar.	JR East website set up. Quantitative environmental targets set for CO <sub>2</sub> emissions and others. First annual Environmental Report published.		Jan.	Environmental targets revised with the announcement of "New Frontier 2008", the Group's medium-term management plan.
1996				Feb.	Nagano General Rolling Stock Center acquired ISO14001 certification.
	Dec.	Autonomous Decentralized Transport Operation Control System (ATOS) became operational.	2005	Jul.	Akita General Rolling Stock Center acquired ISO14001 certification. Customer Service Department established.
1997	Mar.	Recycling facility at Minami-Akita Operations Center started operation. Separate smoking zones established at all stations.		Dec.	Office-wide JR East Eco Activities started at JR Hachioji Branch Office.
		Smoking banned on all local trains.		Feb.	Disaster Prevention Research Laboratory established.
	Oct.	Recycling facilities at Nagano Shinkansen Rolling Stock Center and Tokyo Station started operation.		Mar.	Smoking banned in all cars of Shinkansen and limited express trains.
	Dec.	Participated in COP3 with the UIC (International Union of Railways).	2007	July	World's first diesel hybrid railcar, the Kiha E200 type, commenced operations
1998	Mar.	Second set of measures to reduce Shinkansen noise completed.		Oct.	Railway Museum opened
		Shinkiba Recycling Center started operation (for separating used newspapers from magazines).  JR East ranked as 27th on the list of world's most respected enterprises by Financial Times.	2000	Mar.	"JR East Vision 2020 - i do mu - " announced
	Nov.		2008	Jun.	Environmental targets revised
		on East ranked as 27 at on the list of world's most respected efficiencies by findicial fillies.			E 16 6 10

Former names are used for some facilities

Year	Month	JR East Group: History of Awards	2005	Jan.	Grand Prize for Environmental Report in Environmental Report Category at Environmental Communication Awards 2004 (Organized by the Global Environmental Forum and sponsored by the Ministry of the Environment)
1995	Oct.	Poster category at the 5th Awards for Environmental Advertisements and the Director of Environmental Agency's Awards (Organized by Japan Eco-Life Center)	2006	Des	2006 Environment Minister's Award for Global Warming Prevention Activity in
1997	Apr.	6th Global Environment Award (Organized by Nihon Kogyo Shimbun in special cooperation with WWF Japan)			two categories: countermeasure technology introduction and dissemination, and implementation of countermeasures (organized by the Ministry of the Environment)
	Jun.	1st Environmental Action Plan Award and the Director of Environmental Agency's Awards (Organized by the National Association of Environmental Conservation and sponsored by the Environmental Agency)  Poster category at the 7th Awards for Environmental Advertisements and the Director of Environmental Agency's Awards (Organized by Japan Eco-Life Center)		Apr.	16th Global Environment Award Education, Culture, Sports, Science and Technology Minister's Award (Organized by Fuji Sankei Group in special cooperation with WWF Japan)
	Nov.				Environment Minister's Award for Global Warming Prevention Activities in the category of technological development and commercialization (organized by the Ministry of the Environment)  Eco Products Category Minister of Environment Prize in the 4th Eco Products Award
	1404.				
1998	Apr.	1st Green Reporting Award Third Prize (Co-organized by Toyo Keizai Inc. and Green Reporting Forum)		Dec.	(organized by the Eco-Products Awards Promotion Council; sponsored by the Ministry of Finance, Ministry of Health, Labour and Welfare, Ministry of Agriculture, Forestry and Fisheries, Ministry of Economy, Trade and Industry, Ministry of Land, Infrastructure, Transport and Tourism, Ministry of the Environment)
2001	May	4th Green Reporting Award Third Prize (Co-organized by Toyo Keizai Inc. and Green Reporting Forum)			

## **Editorial postscript**

In this year's report, we included as many comments as possible from employees who work in the safety and services fields, and detailed specific environmental conservation measures made by Group companies in order to best convey to our stakeholders the social and environmental activities of the JR East Group. We have also striven to make this Sustainability Report as easy to understand as possible by publishing both a booklet on our environmental activities and by making information available on our website.

Throughout the process of preparing this report, we once again keenly felt that if a company is to fulfill its social responsibilities and constantly introduce measures to solve global environmental issues, it is critical that all employees responsibly implement their own work and cooperate with each other.

To further enrich the content of future sustainability reports, we encourage you to send us your opinions and assure you that we will take note of any comments you may care to make.







www.j-sus.org

J-SUS mark indicates that the reliability of the environmental information contained in the JR East Group Sustainability Report 2008 meets the standard for environmental report screening and logo use defined by the Japanese Association of Assurance Organizations for Sustainability.





## Sustainability Report 2008

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