JR-EAST GROUP

Sustainability Report 2019

JR East Group Sustainability Report

Four pillars of JR East Group's Sustainability Report 2019

JR East Group Sustainability Report 2019 presents various initiatives performed by JR East Group in the following four pillars: Safety, Society, Environment, and Governance.

【Safety】
Based on the Group Safety Plan 2023, in this Safety section, we report on our efforts to achieve "ultimate safety levels."

【Society】
This section describes initiatives for improving the quality of transport services and others, supporting a diverse range of customers, contributing to communities through tourism promotion, childcare support, and diversity, etc.

【Environment】
This section describes initiatives for reducing our environmental impact and reaching our goals for FY2021 and FY2031, including environmental efforts undertaken at our work sites, technological innovations, and the deployment of new energy-saving measures.

【Governance】
This section describes our corporate governance initiatives for realizing sustainable business growth and enhancing our corporate value, and our compliance actions for developing a good close relationship with society.

Contents

The GRI comparison table, explanation of JR East Group's materiality and stakeholders are presented on our corporate website.

For the website version of our sustainability report, please go to:
http://www.jreast.co.jp/e/environment/

Note: As for the Environmental performance data with regard to guaranteed scope of the Environmental performance data presented on this report, KPMG AZSA Sustainability Co., Ltd. has provided a limited guarantee so that the reliability of the data is ensured. Data which are subject to be guaranteed are marked with a ☆.

Top message

Solving social issues through business activities

Ever since its establishment, JR East Group has been striving to rehabilitate and revitalize its railway services. As a result, the number of railway accidents has halved and the railway network including Shinkansen lines has expanded. While striving to enhance our service quality, we have continued to expand our businesses to include lifestyle, IT and Suica services. This expansion has been made possible by the support from our customers, people in communities and all the people associated with JR East Group, and we now feel that we have acquired solid capabilities.
However, due to the drastic changes in our business environment such as the declining population and the practical application of autonomous driving, we can no longer continue to address these changes without adopting new ways of thinking and taking action. Under the JR East Group Management Vision "Move Up" 2027, to stay ahead of these changes we will boldly implement new growth strategies by shifting from services focused on railways to services focused more on people.

Unshakable trust and affluent lives created through JR East Group Management Vision "Move Up" 2027

We will continue to focus on safety as our top management priority while pursuing ultimate safety levels, based on the Group Safety Plan 2023. Through these efforts, we will further deepen the trust that our customers and people in communities have in us, which is the foundation of JR East Group's businesses.
Our strength lies in a multi-layered "real" network that supports social infrastructures, which are places where people interact. We are committed to helping our customers and people in communities to realize affluent lives, by further strengthening our coalitions with outside sources.
For instance, we are working on technological innovations utilizing the latest ICT. We have started trial runs of our test vehicle for the next-generation Shinkansen (ALFA-X). The four development concepts for the ALFA-X are "Pursuing Further Safety and Stability", "Improving Ride Quality", "Improving Environmental Performance", and "Innovating Maintainability". Additionally, by frequently acquiring status data on rolling stock and facilities, we are promoting the introduction of CBM (condition-based maintenance). This will enable us to predict degradation and detect signs of failure so that we can conduct maintenance at the optimal time. Furthermore, in spring 2020, Takanawa Gateway Station will open. Focusing on this station as a core, and on Shinagawa as a global gateway, we have incorporated advanced environmental and energy-related technologies and will promote the town's development as a new international exchange hub where leading companies and people from around the world can gather and continue to grow.

ESG management in consideration of SDGs

To achieve sustainable development over the long term, it is important that while improving profitability JR East Group takes on an even more proactive role as a member of society and heightens the trust of our customers. As part of the JR East Group Management Vision "Move Up" 2027, in consideration of the SDGs (sustainable development goals) adopted by the UN Sustainable Development Summit for achievement by 2030, we announced our strong commitment to achieving the sustainable development of regional society by tackling and solving social issues through our businesses. At the core of our endeavors lies the implementation of ESG management to address issues related to the environment, society, and governance.
As regards governance, we will further strive to achieve ultimate safety levels through the concerted efforts of the whole JR East Group, strengthening compliance and improving risk management. Moreover, as regards the environment, aiming to realize a low-carbon, and ultimately, zero carbon society, we will utilize hydrogen energy for our railways and town developments, and promote the introduction of renewable energy. As regards society, we will also strengthen our service quality reforms, assistance for child-rearing initiatives, services for a wide range of customers, development of global railway personnel, and support for regional cultural activities. Through these measures, we will focus on the realization of the targets contained within the SDGs.
By looking ahead to the new era, we will treat the changes we face as opportunities, continue to meet and overcome our challenges, and achieve the sustainable growth of JR East Group, while exceeding the expectations of our customers and people in local communities and contributing to the development of regional society as a whole group.

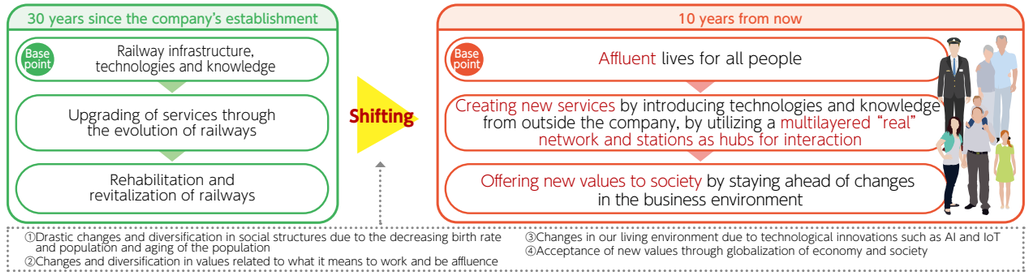
East Japan Railway Company
Yuji Fukasawa
President and CEO

JR East Group Management Vision “Move Up” 2027

In July 2018, in consideration of changes in management environment up to the year 2027, to challenge new growth strategies as JR East Group, we announced the JR East Group Management Vision “Move Up” 2027. Under the Management Vision, we will shift from services focused on railways to services focused more on people and create values of “Trust” and “Affluence” in cities, regional areas, and around the world.

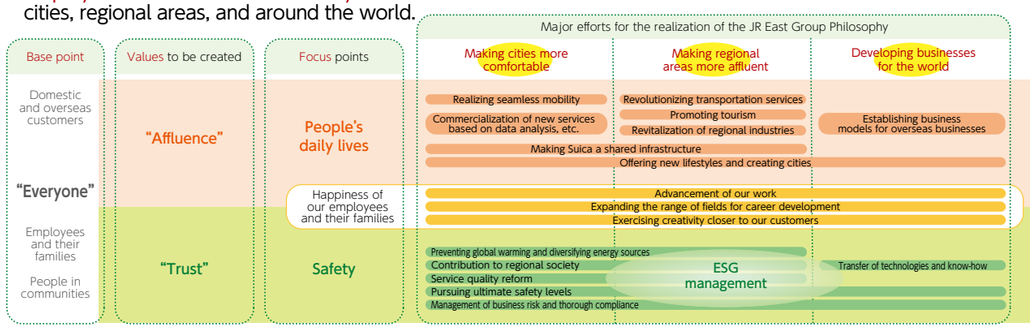
Basic Policies of “Move Up” 2027

■Stories to create values: From the provision of services with railway infrastructure as our basis to the introduction of new values to society, focusing on the affluence of everyone in their daily lives.



Overview of “Move Up” 2027

■With people (“everyone”) as our base point, and with “Safety,” “People's daily lives,” and “Happiness of our employees and their families” as keywords, we will continue to create values of “Trust” and “Affluence” in cities, regional areas, and around the world.

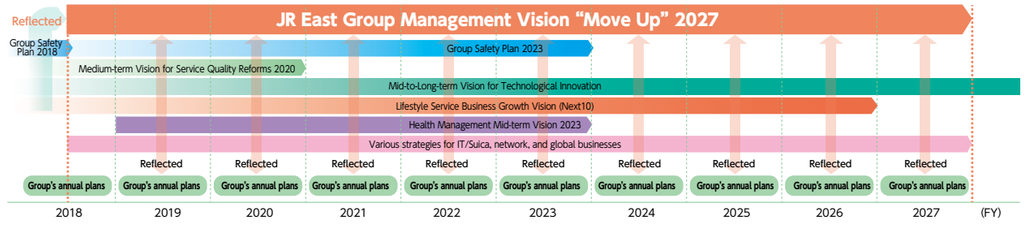


ESG stands for Environment, Social and Governance, important elements for the sustainable growth of a company.

Toward Achievement of the JR East Group Management Vision “Move Up” 2027

To achieve the Management Vision, in accordance with the mid-term visions in each business and field, we set targets, clarify targets and measures for each year, and also monitor and announce achievement levels every year so that we can take specific actions.

Business plans to achieve the Management Vision



Toward Achievement of the SDGs

JR East Group commits itself to the sustainable development of regional society through the solving of social issues in consideration of the SDGs by 2030.

JR East Group offers railway services as one of the essential infrastructures for society and communities, and is involved in the many aspects of the daily lives of customers.
As a company with a mission to offer services in the public interest, we will contribute to the development of regional society by practicing ESG management and solving social issues through our businesses. Specifically, while deepening the trust of stakeholders in all our businesses and continuing to meet our daily challenges by introducing new values to society, focusing on the affluence of everyone in their daily lives, we will achieve a sustainable society and the sustainable growth of the JR East Group.
With respect to the 17 SDGs, while creating value under “Move Up” 2027, the Group will concentrate efforts on the realization of 9. Industry, innovation and infrastructure; 11. Sustainable cities and communities; 7. Affordable and clean energy; 8. Decent work and economic growth; 5. Gender equality; and 12. Responsible consumption and production.

Values to Be Created under "Move Up" 2027

Trust
We will further strengthen the trust of our customers and people in communities, which is the foundation for all JR East Group's businesses.

Affluence
We will achieve affluent living for everyone and the sustainable development of regional society through all our businesses.

Values to Be Created under "Move Up" 2027 for the SDGs

[Particularly relevant SDGs]

[Related SDGs]

Heightening the trust that customers and local communities have in JR East Group

Pursuing ultimate safety levels

Group Safety Plan 2023 formulated (Nov. 2018)
▶[Highlight]P8~P9
▶Main text P27~P31

Enhancing the Accident History Exhibition Hall (Oct. 2018)▶[Highlight]P10~P11

Practical safety education and training with simulators Safety education and training ▶Main text P34

Maintenance of safety equipment▶Main text P34~P41,P43~P50

○ Evolution and moving up of each person's "safety actions" ○ Evolution and moving up of "safety management" ○ Maintenance of safety equipment by actively utilizing new technologies

Governance for thorough ESG management

Efforts to strengthen compliance and risk management ▶Main text P115~P119

Foundation of Shinkansen General Management Dept. to further improve safety and service quality (April 2019) ▶Main text P116

Heightening awareness of ESG management among employees

Transport services for all people to be able to use with peace of mind and comfort

Service quality reform ▶Main text P53~P62

Strengthening electric equipment and systems ▶Main text P70

Provision of multi-language information in the event of a problem ▶[Highlight]P16~P17 ▶Main text P54~P55,P62

Completion of high-speed test railcar, the ALFA-X (May 2019) ▶Main text P69

Service quality chosen by everyone

Realization of a low- and ultimately no-carbon society through environmental technology innovations

Development of ecoste ▶[Highlight]P22~23 ▶Main text P96,P99

Achieving a Sustainable, Low-Carbon Society through the Use of Hydrogen ▶Main text P105

Introduction of renewable energy ▶[Highlight]P24~25 ▶Main text P99,P103

Efforts to prevent global warming and improve diversification of energy resources

Workplace reforms for a new era

[Particularly relevant SDGs]

Employees to promote innovation

Advancement of working practices

Realization of maintenance with CBM* ▶Main text P70
*CBM: Condition Based Maintenance

Area management
Creating new values in cooperation with field sites and the planning section ▶Main text P87

Expanding the fields in which employees can become actively involved Playing active roles close to customers

By reviewing the work styles of train crews, achieving the realization of new work styles for employees at field sites and in planning sections at branch offices ▶Main text P87

[Particularly relevant SDGs]

[Related SDGs]

Achieving affluent living for everyone and the sustainable development of regional society

Solving regional issues and realizing an affluent regional society

Town development with a station at its core and regional revitalization ▶[HighLight]P14~P15 ▶Main text P72,P74

Efforts to revitalize regional society with Japan Post ▶Main text P74

Verification test of MaaS for tourism (April 2019) ▶Main text P66

Development of a 2-in-1 IC card in coalition with regional society for release in spring 2021 ▶Main text P64

Revitalization of regional society through town development with a station at its core, coalition with other companies, and promotion of MaaS for tourism

Realization of affluent living and town development where all generations can live happily

Development of Global Gateway Shinagawa ▶[Highlight]P12~P13

Promoting town development of WATERS takeshiba with culture and art at its core ▶Main text P72~P73

Promoting town development for exchanges among multiple generations at COTONIOR GARDEN Shin-Kawasaki ▶Main text P78

Shared office space for businesses in ekinaka (Aug. 2019) ▶Main text P71

Verification test of an unstaffed payment store with AI ▶Main text P70~P71

Efforts to solve issues of children waiting for a place in a nursery, to realize a healthy society with longevity, and to solve the issues associated with a decreasing population and declining regional economy

Realization of seamless mobility

Efforts for MaaS ▶Main text P67

Preparing for direct through services with Sotetsu Line ▶Main text P59

Procedures for environmental assessment of Haneda Airport access line (tentative name) ▶Main text P59

Verification test for driverless driving (Dec. 2018 to April 2019) ▶[Highlight]P20

Mobility innovation to solve congestion, and to make mobility fun, comfortable and convenient

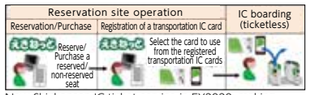
Making Suica a shared platform

Touch and Go Shinkansen, a new service for Suica (April 2018) ▶Main text P63

Suica became compatible with Google Pay*, improving convenience for users of mobile devices (May 2018) ▶Main text P64

*Google Pay is a trademark of Google LLC.

Welcome Suica for overseas tourists visiting Japan (Sept. 2019) ▶[Highlight]P17



New Shinkansen IC ticket service in FY2020, making Shinkansen boarding ticketless and speedy ▶Main text P63

Realizing stress-free living for customers by offering various one-stop services

Development of railways around the world and promotion of economic development in Asia

Consulting for high-speed rail project in India and training of executives and core members of National High Speed Rail Corporation ▶[Highlight]P18 ▶Main text P81

Development of shopping centers and stores by atré in Taiwan and LUMINE in Indonesia ▶Main text P82

JR East Technical Intern Training to foster global railway personnel (April 2019) ▶[Highlight]P19

Technical support and personnel development for the development of railways around the world

Realization of a coexistent society

Supporting the operation of Tokyo 2020 Olympic and Paralympic Games

Efforts to mitigate congestion during Tokyo 2020 ▶Main text P92

Creating a momentum for Tokyo 2020

Participation of employees in Paralympic sports events ▶Main text P93

Improving environment to welcome visitors

Improving free-Wi-Fi environment at stations and on trains ▶[Highlight]P17 ▶Main text P62

Increasing the number of stations with bilingual staff ▶[Highlight]P16~P17

Deepening understanding of the need for a barrier-free mindset for the whole of society

Highlight 1

Aiming for “Ultimate Safety Levels” Starting with the “Safety Actions” of Each Person

3 Pillars of “Group Safety Plan 2023”

Objectives

With safety as our top management priority, by pursuing “Ultimate Safety Levels” we will further deepen the trust that our customers and people in communities have in us, which is the foundation of JR East Group’s businesses.
Based on the Group Safety Plan 2023, a new 5-year safety plan formulated in November 2018, JR East will aim for “Ultimate Safety Levels” starting with the “Safety Actions” of each person.

“Safety Actions” of Each Person

Railway safety is supported by the specific actions of each employee toward safety, including “basic procedures”, “following rules”, and “learning from past accidents”. The environment surrounding JR East Group is in the midst of drastic changes which include population declines, technological innovations centered on ICT (information and communications technology), and the intensifying severity of natural disasters. With even greater environmental changes expected in the future, each person must not only execute past initiatives as they are, but must “evolve” them in response to environmental changes, such as by making exhaustive efforts to discover potential risks while understanding the “essence of work”.

* “Safety actions”: All actions taken to improve the level of safety

“Safety Actions” of Each Person

To deepen our understanding of the “essence of work”

○ 7 Guidelines

To properly respond to large environmental changes, it is important to understand the “essence of work”. Rather than merely learning the procedures and methods of work, we must be conscious of the “7 Guidelines” which include the purposes of work, the origins of rules, and the operating principles of equipment.

7 Guidelines for Understanding the “Essence of Work”

- Intentions, history, origins, and background behind the establishment of rules
- Objectives and goals of work, such as “Why is this work done?”
- Key points and important ideas for work, which must not be neglected under any circumstances
- Ingenuity and know-how being applied implicitly
- Mechanisms, structures, and operating principles of equipment and devices used
- Overview (relationships) of work and business operations
- Images of risks such as “worst-case scenarios”

○ Specific efforts

[Sakata Transportation Depot]
Focusing also on successful points

Not only through learning from failures by focusing on past accidents and events, but also recognizing things that go well by utilizing a work tip visualization sheet, we further deepen our understanding of the “essence of work”.

[Total Electric Management Service Co., Ltd.]
Fostering engineers through the ESPER Project

In order to respond to drastic changes such as the retirement of experienced employees, and technological trends, we established an engineer development system, the ESPER Project. Through this project, we foster the expertise of employees to enable them to become well acquainted with the facilities and special conditions of each region.

VOICE

Sakata Transportation Depot,
Niigata Branch Office
East Japan Railway Company
(JR East)

Sakata Transportation Depot actively takes on the challenge of “further improving safety levels”, rather than just “passively maintaining safety”. By enabling all our employees to challenge new measures, we are making the utmost effort to create a safety culture.
In this endeavor, we create work tip visualization sheets, and utilize the sheets in discussions on our Challenge Safety (CS) activities. For instance, for the purpose of addressing change points such as train timetable revisions, and the changing seasons, we gathered work tips and shared them among our employees. This led to an unprecedented amount of active exchanges of opinions in a good atmosphere.
We will continue to promote our CS activities by focusing also on successful points as stimuli, aiming to improve the safety awareness level of each one of our employees and to create a good, open-minded work culture.

Total Electric Management
Service Co., Ltd.

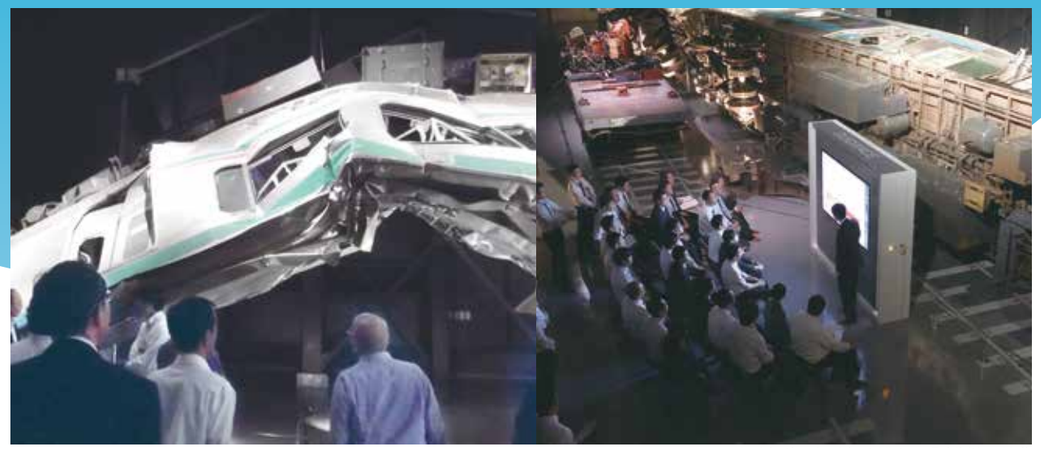
While the shifting of generations rapidly progresses, we experienced a problematic event due to the insufficient experience of a young construction director. For this reason, we are taking measures to improve the experience levels of our young construction directors.
Specifically, we have set up an engineer development system, the ESPER Project. Through this project, we foster engineers to enable them to monitor facilities by using all the senses required for facility maintenance and foresee potential issues based on their knowledge gained from experience. Through a 3-to-5-year plan, we are fostering technical experts with high technical capability who can play an active role both inside and outside the company and also technical specialists for each region who are acquainted with the facilities of the region and can be trusted by customers in the region.
Additionally, we are focusing on securing the succession of expertise by utilizing know-how succession sheets to draw out know-how from senior employees so that young employees can learn from them.
We will continue to zukuodasu together with all employees to further strengthen our organization and ensure safe and stable transport.

* Zukuodasu: To persevere in our concerted efforts

See page p.27-29 for a related article

Highlight 2

Enhancing the Accident History Exhibition Hall



Inside the Accident History Exhibition Hall

Objectives

At the JR East Group, we are pursuing training that will enable each individual employee to respond appropriately to environmental changes by putting safe behavior into practice.
We are using the Accident History Exhibition Hall to promote initiatives that allow employees to learn lessons from past accidents and provide an environment that makes it easier for employees to learn and take action independently, with the aim of achieving "Ultimate safety levels" (i.e., zero accidents involving passenger injuries or fatalities or employee fatalities).

Approach to Using the Accident History Exhibition Hall

The equipment, measures, and rules designed to ensure the safety of railway operations are not based on theory alone – they draw on our past experience of accidents and reflect the lessons we have learned.

Based on this awareness, in 2002 we established the Accident History Exhibition Hall in the JR East General Education Center.

In April 2014, we opened the Train Preservation Center, where actual railcars that were involved in accidents are displayed with the aim of teaching employees about accidents, impressing on them how terrible such accidents are, and encouraging all employees, including those of cooperating companies and group companies, to visit and take special safe-related actions.

Based on our policy of understanding and learning from accidents and taking safety to heart, we are encouraging all JR East Group employees to implement safe behavior through a combination of theoretical training and practical learning about the history of our safety systems, the process by which our operating rules were decided, our attitude toward accident prevention, the importance of protecting the lives of passengers and other people, etc.

Exhibition of actual thing at the entrance of "Accident History Exhibition Hall." Established since opening.

Pursuing More In-Depth Learning about the Essence of Work and Past Accidents

With the aim of providing more in-depth learning about past accidents and ensuring their lessons are not forgotten, in October 2018, we enhanced the Accident History Exhibition Hall with the opening of the Interactive Learning Hall, where rolling stock that was involved in a derailment at Kawasaki Station on the Keihin-Tohoku Line in 2014 is preserved. Its purpose is to encourage reflection on derailment accidents from various perspectives.

By exhibiting actual rolling stock involved in the accident along with digital signage, actual records from the time, and so forth, we are providing a deeper understanding of the nature of the job and past accidents and pursuing training that will enable personnel to put safe behavior into practice.

Education utilizing digital signage

Exhibition of materials of actual railcars involved in accidents at the time

Learning from actual railcars involved in accidents

VOICE

Training Personnel to Put Safety Actions into Practice through the Establishment of the Accident History Exhibition Hall

Oyama Track Maintenance Technology Center, Omiya Branch Office
East Japan Railway Company

I was the project supervisor for the large-scale expansion of the Accident History Exhibition Hall in October 2018.
During the long history of railways, numerous tragic accidents have occurred. Each time, our predecessors thought long and hard about how to prevent the same thing from happening again. I gained a deeper understanding of how this led to the safety rules and equipment that we have today through working on the expansion project.
In the future, through collaboration with instructors at the JR East General Education Center, we will work to provide comprehensive safety training using the Accident History Exhibition Hall, so that each employee will be able to carry out their work with a better understanding of how the rules and equipment with which we are familiar were developed and the thinking behind them.

Pursuing Ultimate Safety Levels through Safety Training

General Education Center
JR-East Personnel Service Co., Ltd.

I was involved in safety training as an instructor at the JR East General Education Center.
Many employees from the JR East Group have visited the Accident History Exhibition Hall for the purpose of learning, and whenever they do, they meet with an instructor.
Once employees feel the terror and tragedy of train accidents and the importance of saving lives, think about the meaning of safety, and resolve not to let such accidents happen again, thanks to what they have learned at the Accident History Exhibition Hall, they become more conscious of the root causes of accidents and take action to prevent accidents when they return to their workplace.
Railway operations and risk go hand in hand. Safety requires that every single person involved in railway operations takes their work seriously and strives to create a safe environment without cutting corners. As instructors, we think seriously about accidents at the Accident History Exhibition Hall and pursue Ultimate safety levels by clearly communicating how important it is that visitors and the people they work with do not cause accidents or allow them to happen.

See page p.34 for a related article

Highlight 3

Global Gateway Shinagawa

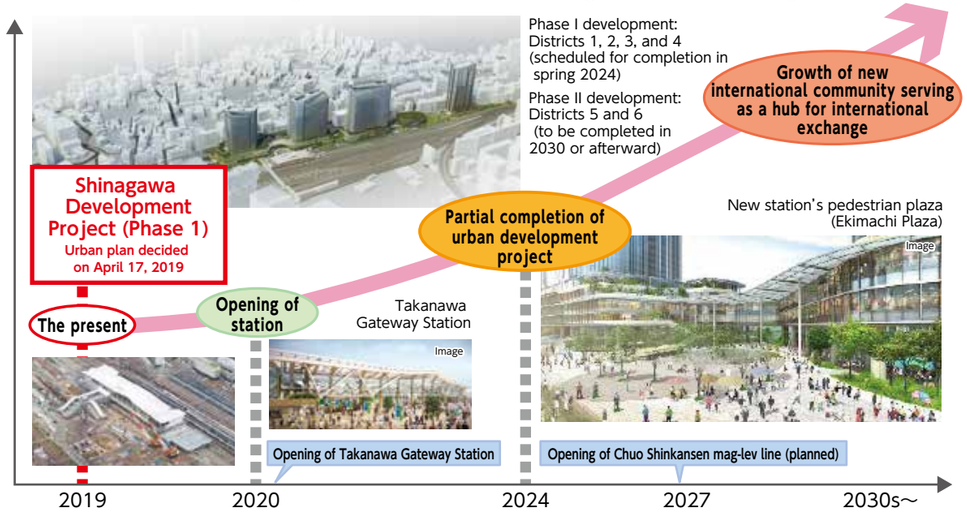
Takanawa Gateway Station

Objectives

In alignment with our “Move Up” 2027 Management Vision and “Next 10” Lifestyle Service Business Growth Vision, JR East Group has set itself a new challenge: to evolve from developing business revolving around train stations to developing living environments (communities) that will be appreciated by residents, workers, and visitors alike.
On the site of the former Shinagawa Depot Facility between Shinagawa Station and Tamachi Station, we are pursuing the development of Global Gateway Shinagawa, a hub centering on Takanawa Gateway Station that will bring together leading companies and talent from around the world and generate new business and culture by promoting various forms of exchange.

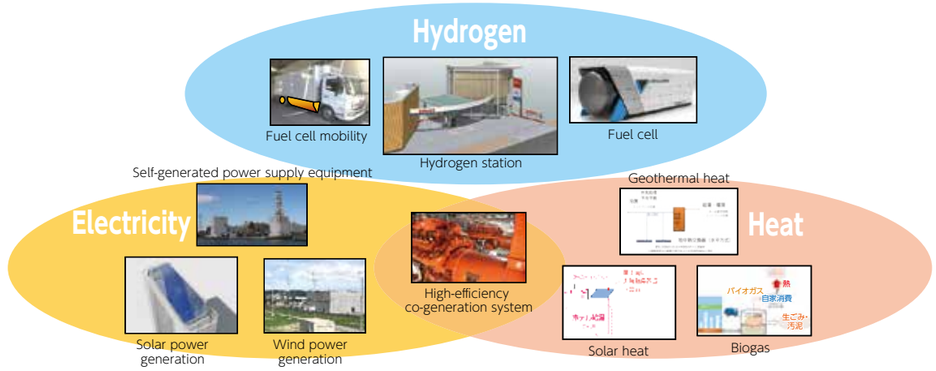
A New International Exchange Hub Creating Links Between Regions and Connecting Japan to the World

Starting with the opening of Takanawa Gateway Station in the spring of 2020 and subsequent urban development, our aim is to create a community serving as a hub for international exchange that will continue to grow.



Community Development Incorporating Cutting-Edge Environmental and Energy Solutions

We are aiming to reduce our environmental footprint by leveraging energy that has not been used effectively until now, our own power which contributes to carbon reduction, and high-efficiency co-generation systems to supply electricity and using district heating and cooling facilities to supply heat. Furthermore, we are planning to establish standalone/distributed energy networks that will ensure supply of electricity and heat in the event of a disaster.



Holding an Event in Front of Takanawa Gateway Station

In conjunction with the opening of Takanawa Gateway Station, we will make use of the approximately 30,000-m^2 site to hold an event lasting around six months. As well, part of the grounds will be used as the venue for a Tokyo 2020 Live Site during the Tokyo 2020 Olympic and Paralympic Games.
Furthermore, for the enjoyment of people visiting from both Japan and abroad, we are planning to create an exhibition space that will give visitors a taste of the future station and surrounding development, offer experiences in line with themes such as food, music and art, open shops offering Japanese food, products and experiences, and hold sports events.

Image of event space outside station

VOICE

Building Anticipation for the Future Community through Events

Shinagawa and Large-Scale Development Department
East Japan Railway Company

My role is to put on an event using the vast space in front of the station in conjunction with the opening of Takanawa Gateway Station.
We will coordinate and consider the details for putting on the event, its content, and so forth with our partners and relevant departments.
While this is a limited-time event lasting around six months after the opening of Takanawa Gateway Station, we will strive to make it a memorable occasion that will attract many visitors and build anticipation for the future community’s development.

Becoming a Model for Pioneering Environmental Urban Development

Shinagawa and Large-Scale Development Department
Corporate Planning Headquarters
East Japan Railway Company

I am involved in planning the introduction of facilities for harnessing unused energy, such as biogas utilization facilities and fuel cells, holding discussions with the authorities and ensuring compliance with laws and regulations relating to the installation and operation of such equipment, and developing efficient operation schemes.
Going forward, along with ensuring a stable supply of energy, we will continue developing plans for harnessing unused energy by implementing more cutting-edge systems with a higher level of environmental performance, in order to make the Shinagawa area a model for pioneering environmental urban development.

See page p.72 for a related article

Highlight 4

Pursuing Town Development Focused on Stations

Image of completed Bandai Plaza (Niigata Station)
*Subject to change due to future consideration and discussion

PLAYatré TSUCHIURA Main entrance

Objectives

With the goal of making regional areas more affluent, the JR East Group aims to provide services that will enrich the lifestyles of local residents by enabling more active exchange based on sustainable social infrastructure.
To address social issues faced by regional communities, such as population decline and economic stagnation, we are promoting regional revitalization by leveraging the unique capabilities of the JR East Group.

Aiming to Develop Appealing Communities: Niigata Station Continuous Grade-Separated Crossing Project and Development of Areas under Elevated Tracks

In the area around Niigata Station, land is not being used optimally due to traffic congestion caused by level crossings, north/south division of the area by the railroad tracks, and other factors. To address these problems, we are working with Niigata City on a continuous grade-separated crossing project that will elevate the tracks around Niigata Station, thereby contributing to urban and regional development.

On April 15, 2018, with the launch of Phase 1 of the project, we decommissioned two level crossings thanks to partial elevation of tracks at the station, while the establishment of an urban planning road helped to eliminate the separation of the district caused by traffic congestion near the station and railroad tracks. Furthermore, it has become possible to transfer between conventional and Shinkansen line trains on the same platforms, resulting in greater convenience for passengers.

The mixed-use commercial complex CoCoLo West N+ opened in tandem with the launch of Phase 1. We are also promoting work and food in Niigata through the Niigata Station N Project, based on the concept of urban development driven by train stations that revolves around the culture of "*shoku*" (a Japanese pun on the words for food and work).

Going forward, using the rebirth of Niigata Station resulting from redevelopment projects in the area as a starting point, our aim is to contribute to affluent living by pioneering projects that consider and create a new style of Japanese regional community in collaboration with both local residents and the international community.

Urban planning road opened as part of continuous separated-grade crossing development

Same platform used for Shinkansen and conventional lines (Niigata Station)

CoCoLo West N+ Exterior view

CoCoLo West N+ Inside shop

Regional Revitalization through Cycling: PLAYatré TSUCHIURA

Atré, which operates station buildings mainly in the Tokyo metropolitan area, opened PLAYatré on March 23 at Tsuchiura Station on the Joban Line (Ibaraki Prefecture). It is inspired by a new model for station buildings focusing on intangible consumption that prioritizes offering experiences and communicating concepts.

Conveniently located within as little as 49 minutes from Tokyo and connected directly to the station, PLAYatré TSUCHIURA is next to the entrance of Tsukuba-Kasumigaura Ring-Ring Road, Japan's longest cycling course. In the spring of 2020, we plan to open one of Japan's top cycling resorts, which will meet the needs of cyclists of all kinds.

It will serve as a base for tourism and exchange revolving around cycling, and we will contribute to regional revitalization by devoting effort to activities that promote sightseeing and enhance the area's appeal in collaboration with the local community and government.

Cycling along Lake Kasumigaura

Station Lobby, one of the largest restaurants/cafés in the area, combines dining and relaxation

Ring-Ring Square Tsuchiura, a cycling base established by Ibaraki Prefecture and operated by Atré as the designated manager

VOICE

Meeting the Expectations of Locals through Track Elevation Work

Joshinetsu Construction Office, East Japan Railway Company

In carrying out the track elevation work at Niigata Station, it is essential to consider the needs of local residents. While we have received some harsh criticism with regard to the construction, I feel that the work is very rewarding when I hear feedback from the many local residents who are looking forward to the completion of the track elevation project. Going forward, we will continue pursuing this work while prioritizing safety in order to meet their expectations, with the aim of facilitating regional transportation and promoting development of the local community.

Contributing to Expansion of the Non-Resident Population from Inside and Outside Niigata Prefecture

Marketing Department, Niigata Branch Office, East Japan Railway Company

Since its opening, as part of the Niigata Station N Project, CoCoLo West N+ has been promoting the appeal of the region by selling local specialty products and serving food and drink unique to the Niigata area as well as hosting events relating to Niigata's *shoku* (food/work) culture featuring key local players that revolve around themes such as rice, sake, and fermentation. This year, we held a hands-on "N College" class which customers were able to take part in at their leisure. Our aim is to interest more people in Niigata's culture while creating a sustainable promotion plan. Through this project, we will keep working to promote the appeal of Niigata and expand the non-resident population from inside and outside the prefecture.

Enabling Regional Revitalization and Value Creation

PLAYatré Tsuchiura Branch, Atré

Since it opened in March 2018, many cyclists and locals have visited PLAYatré Tsuchiura. At present, renovations are being carried out in stages, with the grand reopening scheduled for spring 2020. With regional revitalization and value creation as our ultimate goal, we are aiming to create social value by providing new experiences and enriching moments.
Slowly but surely, we have established a platform for Atré, tenants, customers, the local community, and governments to collaborate on creating value. By further expanding its scope and integrating various activities, we will continue contributing to the revitalization and regeneration of the station and town.

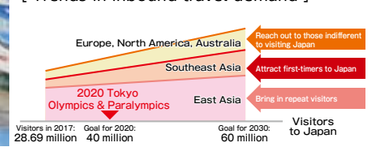
See page p.72,p.74 for a related article

Highlight 5

Enhancing convenience for customers from overseas


Tokyo Monorail offers assistance to international travelers

[Trends in inbound travel demand]



Objectives

Eastern Japan has been a popular destination for international visitors in recent years. As the 2020 Tokyo Olympics and Paralympics approach, inbound travel demand in this area is expected to grow.
To help these visitors use our services with greater peace of mind, we are carrying out various initiatives for accommodating their language and diversity needs. In so doing, we are also seeking to increase inbound travel demand centered on the Tokyo metropolitan region and to help energize other regions by attracting visitors to those destinations.

Improving multilingual provision of information

We have been providing multilingual information services designed to more attentively serve the needs of diverse customers, using solutions such as handheld translations devices, mobile apps, QR codes, and tools based on ideas from our employees in the field.
In addition, since October 2018, we have run a personalized e-learning program for boosting the English communication skills of our employees according to their current level of competency. In FY 2020 we introduced a new English course focused on communication in emergencies, as one way to deliver more practical support to customers at stations and on trains.
In response to feedback from our survey of international customers, we have started delivering learning resources that can help employees to more effectively communicate information to those customers in their everyday interactions, and dispatching language instructors to customer-facing offices.


English study session for customer-facing staff

Expansion of JR EAST Travel Service Centers & launch of Welcome Suica

We are expanding and enhancing our network of JR EAST Travel Service Centers, which offer services such as sales of railway passes, issuance of tickets pre-purchased overseas, seat reservations, and travel information. In the four years since 2015, we have increased the number of centers from six to eleven and the number of counters from 21 to 59 as part of our efforts to minimize customer waiting.
We are also responding to international customers' desire for Internet access by expanding the JR-EAST FREE Wi-Fi service, which is available at 100 stations and ten JR EAST Travel Service Centers as of June 2019.
This September we will begin marketing "Welcome Suica" at JR EAST Travel Service Centers and other outlets to provide international visitors with even greater convenience. This e-money card is valid for 28 days from purchase and does not require the 500-yen deposit normally charged, a handy benefit that saves travelers from the trouble of getting a refund before their return.


JR EAST Travel Service Center (Ikebukuro Station)

Welcome Suica

Efforts at Tokyo Monorail's stations

Over the past five years, the number of international visitors arriving at Haneda Airport has roughly tripled, rising to 4.16 million.
We have taken steps to enable inbound passengers to confidently use the Tokyo Monorail service, including by facilitating communication with the Original Point and Speak Phrasebook®* and handheld translation devices, enhancing the provision of information through monorail attendants, and displaying train information in five languages on digital signage (audio, text, and images).
Moreover, we have introduced free wi-fi to further enhance our level of service for both domestic and international customers.

*Registered trademark of Joho Center Publishing


Original Point and Speak Phrasebook®


Digital signage in five languages

VOICE

Taking on the challenge of providing information in other languages

Omiya Station, Omiya Branch Office, East Japan Railway Company

Omiya Station is striving to be a station that passengers from overseas can use with peace of mind.
For example, we use large electronic displays to provide information on any service delays or suspensions that have occurred. The panels show a big route map with the affected segments highlighted so that passengers can easily get the information they need. We also provide information on ticket refunds, train connections, and other matters in Japanese, English, Chinese, and Korean, and we post QR codes linked to our website so that users can look up railway information in those four languages.
We will continue to strengthen our multilingual support to enable diverse customers to use our services with confidence.

Endeavoring to improve convenience for diverse customers

Marketing Dept., Railway Operations Headquarters, East Japan Railway Company

I am very happy to be involved in our international visitor rail pass sales promotions and our support for inbound travel centers at a time when the world has turned its eyes to Japan and the rapidly approaching 2020 Tokyo Olympics and Paralympics.
We are stepping up our efforts to improve convenience and support for international visitors, so that we can help to bring as many as possible to the area serviced by our company and encourage them to visit Japan again in the future.

See page p.54-55,p.62 for a related article

Highlight 6

Cultivating railway human resources overseas, with a focus on Asia


Artist's depiction of high-speed railway station in India (Photo: JICA)


Technical training at Omiya General Rolling Stock Center

Objectives

We share with railway operators in other countries the extensive know-how and outstanding technologies that we have developed through our railway operations over many years. This engagement has given rise to numerous international railway projects for developing transportation infrastructure abroad, and represents a key new area of operation aimed at future growth.
In April 2019, we established the JR East Technical Intern Training program, which seeks to cultivate local railway human resources overseas, particularly in Asia. While further expanding the training curriculum and the number of partner countries, we will continue offering this program to contribute to the sustainable economic growth of Asia.

Human resource development for India's high-speed rail project

The JR East Group supports the development of human resources for India's high-speed railway project through Japan International Consultants for Transportation Co., Ltd. (JIC), which has been contracted by the Japan International Cooperation Agency (JICA) to provide diverse training programs. This training, which is being provided while the railway construction work advances toward completion, aims to equip India with local professionals who will be able to operate and maintain the high-speed rail network once it enters service.

Executives and other members of National High-Speed Rail Corporation Limited (NHSRCL), the leader of the high-speed railway's construction and operation, have visited Japan to learn about how our company has achieved safe, high-quality transportation service in our Shinkansen operations. Back in India, they have been using the insights gained to guide the construction of the high-speed railway and the preparations for service launch.

We also plan to provide training in Japan for the managers who will play key roles in overseeing the rail network's operations and maintenance.


NHSRCL executives taking part in a study session (Photo: JICA)

Launch of JR East Technical Intern Training to cultivate railway human resources abroad

Since April 2019, the JR East Technical Intern Training program has been hosting eleven interns from Vietnam Railways and Kaizen Yoshida School, a Japanese-language school in Ho Chi Minh City. This training is scheduled to run for three years, ending in March 2022, and is being provided with the collaboration of JR East Rail Car Technology & Maintenance Co., Ltd. The interns are currently receiving instruction in safety and technical fundamentals at Omiya General Rolling Stock Center, with a focus on maintenance of rolling stock air conditioning systems, as they prepare to pass the basic level of the National Trade Skills Test around November 2019. We have taken the necessary steps for ensuring that this training complies with Japanese laws governing internships, including by entering into employment contracts with the interns and providing them with employee-level wages and welfare benefits.

In addition, since September 17, 2019, we have been hosting three station service and rail maintenance personnel from Myanma Railways and training them in their respective vocations. These internships are conducted in partnership with the coordinator, JICA, and represent our first time to provide international interns with on-the-job training at stations and on tracks. The station service operations training will include training at the sites of the following collaborators: Tokyo Metro Co., Ltd., Hitachinaka Seaside Railway Co., Ltd., Tokyo Monorail Co., Ltd., JR Bus Kanto Co., Ltd., and East Japan Eco Access Co., Ltd.

Training program launch ceremony at the Railway Museum



Interns receiving training

VOICE

Making an international contribution by training local personnel

Indian High-speed Railway Project Team, International Affairs Headquarters, East Japan Railway Company

The trainees from India are very passionate learners, and initially I was overwhelmed by how they keep asking questions until everything makes sense to them. I learned that I had to construct well-reasoned explanations for them, so I am now able to engage with them more smoothly. Since they meticulously prepare for each lesson, they ask very sophisticated questions. I do everything I can to make sure that the training provides them with a firm understanding of Japan's Shinkansen technologies.

Using technologies learned in Japan to aid the growth of Vietnam Railways

Omiya General Rolling Stock Center, Omiya Branch Office, East Japan Railway Company

I serve as the leader of the interns from Vietnam. I want to achieve two goals during our three years of training. The first is to reliably perform the duties assigned to me and broadly learn about rolling stock maintenance. The second is to learn many things that I cannot learn in Vietnam.
Over the next ten years, Vietnam Railways will carry out projects for developing urban railways and high-speed rail systems. The knowledge and technologies that I gain in Japan will be vital for those projects. I am working hard every day so that I can contribute to the growth of Vietnam Railways when I return.

Nurturing railway human resources for Asia

Omiya General Rolling Stock Center, Omiya Branch Office, East Japan Railway Company

At first, we had a hard time instructing the interns in technical terms and matters, but my fellow advisors and I were inspired by their very positive attitude. We experimented with different approaches to aid their understanding, and now every day we sense the growth of their commitment to learning.
Going forward, we will continue working with JR East Rail Car Technology & Maintenance to provide solid training that will enable interns to serve as valuable human resources for railway operations in Asia.

See page p.81 for a related article

Highlight 7

Tackling the Challenge of Driverless Operation

Trial of Driverless Train Operation System with Yamanote Line.


Trial of BRT Driverless Operation with Ofunato Line.

Objectives

In recent years, remarkable progress has been made in developing driverless operation technology for automobiles. This technology has great potential with regard to addressing various social problems facing Japan as a whole, such as the declining birthrate and aging population and population decline in regional areas.
What's more, rolling stock and signalling system control technology have a close affinity with driverless operation technology, and our Group is able to leverage the safe, stable transportation technology that we have developed to date. As part of our growth strategy for a new era, we are tackling the challenge of qualitatively reforming transportation services by enabling driverless operation, while also pursuing safety.

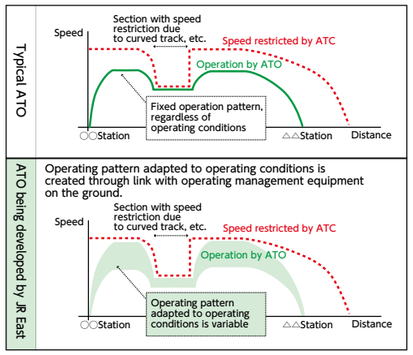
Trial of Driverless Train Operation System with Yamanote Line E235 Series

In addition to general automated operations that support operation by drivers, we are working on implementing driverless operation with personnel on board in case there is a need to deal with an emergency situation or the like.

The automatic train operation (ATO) system that we are developing on the Yamanote Line is a cutting-edge system which, in addition to the typical ATO functions already being implemented by other companies, optimizes operations in response to the operating conditions at a given time (e.g., train delays, unforeseen slowdowns).

Trials for the ATO system were conducted from December 2018 to April 2019, using Yamanote Line E235 railcars.

The trials confirmed that the system was generally able to perform at the required level with regard to verification of various operations between arrival at and departure from stations, stopping accuracy, and travel time between stations.



Looking to the Future

We are aiming to pursue qualitative reform of our transportation services by conducting multiple trials, with ensuring safety a prerequisite. Furthermore, by pursuing the mechanization and systematization of tasks for which it is possible to replace human labor by applying cutting-edge technologies, we intend to shift our limited human resources toward creative work that can only be done by people and offer our customers a safe, comfortable transportation environment that will give them greater satisfaction.

Ofunato BRT Driverless Operation Trial

We are operating a BRT (bus rapid transit) system as a sustainable transportation mode on the Kesennuma Line and Ofunato Line, which is contributing to the restoration of communities following the Great East Japan Earthquake.

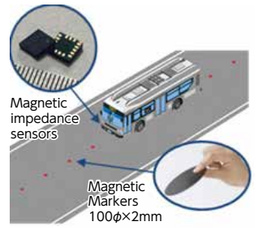
From December 2018 to March 2019, we conducted trials for driverless bus operation technology in the vicinity of BRT Takekoma Station on the Ofunato Line in collaboration with companies participating in the Mobility Innovation Consortium promoting open innovation in public transportation.

During the test, the bus achieved the target automated speed of 40 km/h, and it also reached the target values in terms of lane-keeping control and broadly met the objectives in stopping tests (precise docking control) at Takekoma Station. Furthermore, the system was able to function smoothly with regard to alternating passage of vehicles based on wireless signalling. The trial results were therefore generally favorable.

Key Technical Points Relating to Trial

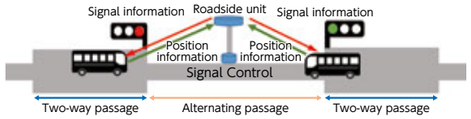
○ Operation Control by Means of Magnetic Markers

We tested whether buses could be operated smoothly on a dedicated BRT route by installing magnetic markers on the route surface and determining a driverless bus's position by reading information from these markers by means of highly sensitive magnetic sensors (magnetic impedance sensors) installed on the vehicle.



○ Testing Alternating Passage Based on Wireless Signal Control

We tested alternating passage of driverless buses and oncoming vehicles by means of exchanging vehicle position information using wireless ground-level control equipment. For this trial, we achieved improved reliability by establishing a dual-layer system using LTE (long-term evolution) and 700 MHz-band ITS (intelligent transport system) wireless technology.



Looking to the Future

The ultimate goal of driverless operation technology trials is practical application. To achieve this, many significant challenges need to be overcome besides automating train control and operation, such as service issues, related laws and regulations, and acceptance by society. With practical application in mind, we will continue working to resolve any issues and enable safe, reliable, and sustainable public transportation.

VOICE

Achieving the World's Safest and Most Comfortable Driverless Operation

Transport and Rolling Stock Dept., Railway Operations Headquarters
East Japan Railway Company

When we conducted driverless operation trials on the Yamanote Line, there was considerable reaction both inside and outside the company.
At present, in order to resolve various issues, we have formed a team comprising drivers, inspection/maintenance personnel, and traffic controllers involved in Yamanote Line operations. Through regular discussions, we are gaining more expertise in train operation and control and how to refine the capabilities of on-board ATO systems. Through incorporating the team members' knowledge, we are working to realize the safest and most comfortable driverless operation in the world.

Moving Forward with Developing a Public Transportation System Suitable for Future Generations

Technology Innovation Headquarters
East Japan Railway Company

As the birthrate falls and society ages, Japan's population is expected to decline abruptly, especially in regional areas. As a result of this population decline, transportation systems face major issues, such as labor shortages and revised revenue models. We are leveraging state-of-the-art technology to address these issues and moving forward with developing sustainable public transportation systems suited to future generations.

See page p.68 for a related article

Highlight 8

Development of ecoste


Oga Station


Niitsu Station


Musashi-Mizonokuchi Station

Objectives

As part of our support for the fight against global warming, we are enhancing several train stations to serve as models of our “ecoste” concept, which introduces energy-saving improvements, renewable energy, and various other environmentally friendly technologies at the target stations. This endeavor seeks to help make our society sustainable as we put into action our vision for ESG management. Our efforts include adopting new technologies that can mitigate global warming through energy conservation and creation, and diversifying our sources of energy.

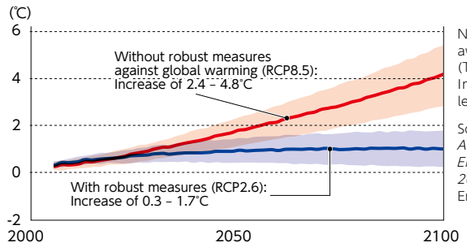
Tackling global warming

Global warming—the sustained increase in the average temperature of our planet’s atmosphere—causes a rise in the sea level and worsens the effects of natural disasters. Unless action is taken to stop global warming, it will have serious impacts on our lives, society, economy, and natural environment.

The JR East Group has laid out a set of environmental goals to be achieved by FY2031. These goals reflect the aims of the Paris Agreement, which was adopted at the 2015 UN Climate Change Conference and will serve as an international framework for global warming countermeasures from 2021 onward.

One of our initiatives is to combat global warming by developing ecoste.

[Changes in Earth’s average surface air temperature]



Note: Change versus average for 1986–2005 (To compare with pre-Industrial Revolution levels, add 0.61°C)

Source: Compiled from *Annual Report on the Environment in Japan 2019*, Ministry of the Environment of Japan

[Our FY2031 goals]

Environmental action category	Focus	Target for FY2031
Measures to prevent global warming	Energy consumption by railway operations	25% reduction (versus FY2014)
	CO_2 emissions by railway operations	40% reduction (versus FY2014)

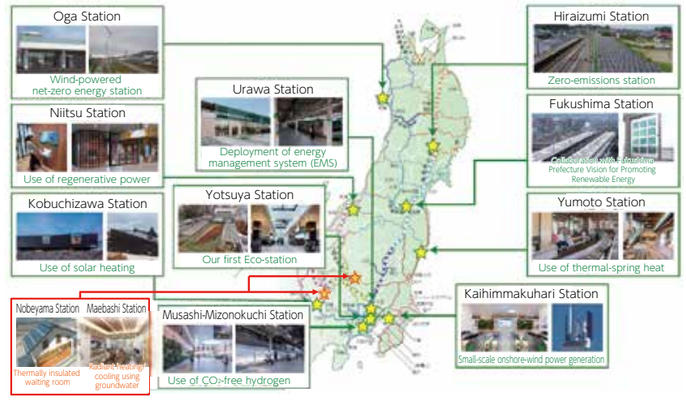
Development of ecoste promises
a 40% reduction of CO_2 emissions on average

Introducing eco-friendly technologies in ways tailored to local features

The ecoste initiative rests on four pillars—saving energy, creating energy, eco-consciousness, and environmental harmony—and tailors the concept to each station by adapting to local features. We plan to complete the development of 12 ecoste by the end of FY2020.

In December 2018, we received the 2018 Minister of Land, Infrastructure, Transport and Tourism’s Award for Enterprises Demonstrating Excellence in Environmental Protection in honor of our proactive commitment to helping protect the environment through the development of ecoste.

Following the completion of ecoste development, we will leverage the insights gained from this project to continue exploring ways to make our stations more eco-friendly so that we can further contribute to environmental protection.



Eco-station projects to be completed by end-FY2020

VOICE

Creating ecoste adored by the community

Architectural Design Headquarters, JR East Design Corporation

One of the big challenges in designing an Eco-station is selecting a set of eco-friendly measures and feasible environmental technologies suited to each location. To date, we have implemented a variety of measures that leverage local features, including the use of solar/thermal power, marine wind power, hydrogen energy, and regenerative power.

My hope is that each ecoste will become even more adored by community members when they see how it contributes to environmental protection with ecological measures that exploit local advantages.

An ecoste on a local line

Building and Facilities Center, Facilities Dept., Nagano Branch Office, East Japan Railway Company

Nobeyama Station, situated on the Koumi Line in Nagano Prefecture and at the highest elevation of all JR stations, is set to re-open as an ecoste in January 2020. Given its small size, we chose a set of eco-friendly measures deployable at other stations with the same scale of ridership, which make up around 40% of all JR East stations.

The eco-friendly measures include wall coatings that store and release heat to offset the cold of winter, and thermoelectric devices that visitors can activate with their own body heat. Also, the new station will have several features that mirror the area’s scenic beauty, such as interior walls covered in locally grown larch wood and a ceiling designed to look like a starry sky. In these ways, we are designing it to be a station that will whet tourists’ interest in this area and have them experience eco-friendly ideas in action.

Developing an ecoste with a Maebashi touch

Takasaki Structural Engineering Center, Takasaki Branch Office, East Japan Railway Company

Maebashi Station, on the Ryomo Line in Gunma Prefecture, will begin operating as an ecoste in March 2020. In addition to incorporating state-of-the-art technologies used for various Eco-stations, it will have a system that utilizes one of Maebashi City’s distinctive assets—an ample supply of groundwater. A variety of environmentally friendly materials are being used for the interior, including recycled glass. Guided by the input of local stakeholders, we are pursuing design and construction in ways that put a true Maebashi touch on this project. We are doing everything we can to create an Eco-station model station that will be cherished by everyone in the community and will be a fitting symbol of Maebashi, a town that is hailed as the “City of Water, Greenery, and Poetry” and that takes pride in its abundant groundwater and the richly natural environment of Mt. Akagi.

See page P96-P99 for a related article

Highlight 9

Providing CO_2-free transportation services

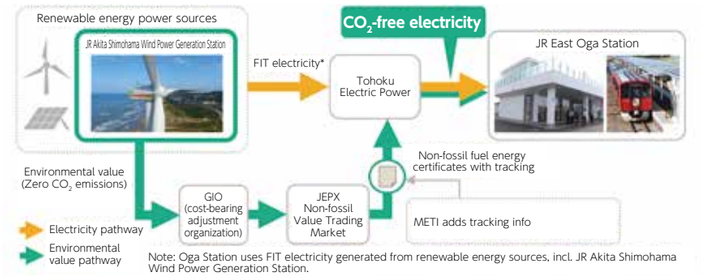
JR Akita Shimohama Wind Power Generation Station

Objectives

The JR East Group consumes 5.8 billion kWh of electricity each year, enough to power 1.6 million average homes. In response to the Paris Agreement—a new international framework for combatting global climate change and global warming from 2020 onward—we are taking action to reduce the energy needs of our business operations and thus contribute to the realization of a sustainable society.
Our efforts involve developing and utilizing renewable energy sources, particularly in the Tohoku region. Our goal is to reduce to zero the CO_2 emissions associated with our train operations in Tohoku.

CO_2-free power from JR Akita Shimohama Wind Power Generation Station

On July 1, 2019, we switched the power supply of Oga Station to CO_2-free electricity from JR Akita Shimohama Wind Power Generation Station. By utilizing the non-fossil fuel energy certificate*1 system, which certifies the environmental value (i.e., absence of CO_2 emissions) of electricity generated from renewable energy, we have effectively reduced Oga Station's carbon footprint to zero.
Specifically, Tohoku Electric Power Company, which buys the FIT electricity*2 produced by JR Akita Shimohama Wind Power Generation Station, procures non-fossil fuel energy certificates that come with that power station's tracking information (information identifying the power plant from which the environmental value originated) and bundles them with the FIT electricity supplied to Oga Station. Because we purchase this electricity, the power used by Oga Station is deemed CO_2-free electricity from JR Akita Shimohama Wind Power Generation Station.

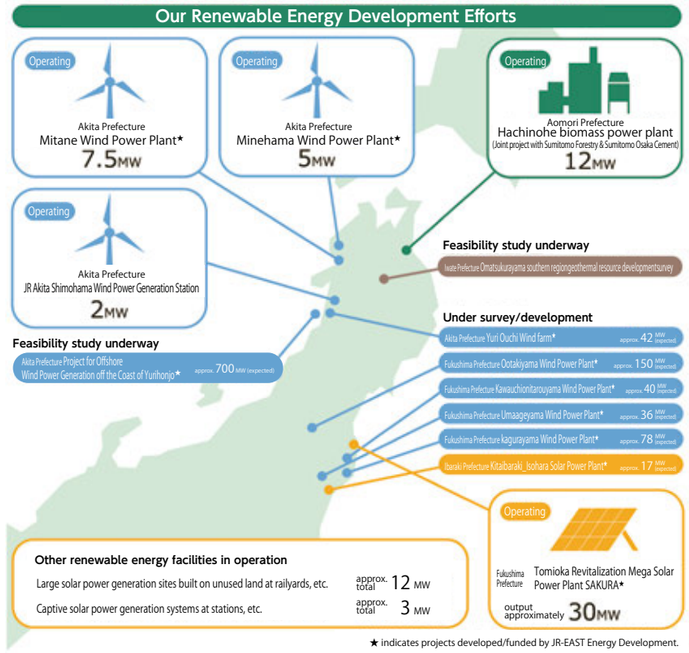


Note: Oga Station uses FIT electricity generated from renewable energy sources, incl. JR Akita Shimohama Wind Power Generation Station.

*1 Non-fossil fuel energy certificate: An instrument that determines and documents the environmental value of electricity derived from renewable energy or another non-CO_2-emitting energy source. Electricity bundled with these certificates can be treated as electricity generated without any CO_2 emissions. The customary approach is to use certificates with tracking information; these certificates include tracking information on the type of power source, the power plant's location, and so forth in order to identify the power plant that provided the environmental value.
*2 FIT electricity: Electricity generated from renewable energy covered by the Feed-in Tariff Scheme for Renewable Energy (FIT). Without a non-fossil fuel energy certificate, FIT electricity is treated the same as electricity from CO_2-emitting sources, such as thermal power plants.

Making Tohoku area train operations CO_2-free

We are proactively developing renewable energy sources—wind, solar, and geothermal—for our electricity needs in mainly Tohoku, particularly through wind power generation projects led by JR-EAST Energy Development Co., Ltd.
By supplying our trains with CO_2-free electricity backed by non-fossil fuel energy certificates that attest to the renewable energy sources we developed, we will provide our customers with eco-friendly sustainable CO_2-free transportation services. Through these efforts we will strive to reduce to zero the CO_2 emissions associated with our train operations in Tohoku.



★ indicates projects developed/funded by JR-EAST Energy Development.

VOICE

Expanding the deployment of renewable energy

Manager, JR-EAST Energy Development Co., Ltd.

Our company develops power sources and operates power plants, with a focus on expanding the use of renewable energy and revitalizing local communities.
We plan to begin operating a large-scale wind power plant in Fukushima Prefecture in 2023. We hope to make it a symbol of Fukushima's post-disaster recovery.
We are also conducting studies for establishing offshore wind power generation. In this and other ways, we seek to deploy renewable energy sources that can contribute to the further growth of the JR East Group.

Achieving CO_2-free power

Renewable Energy Promotion Project, Electrical & Signal Network System Dept., East Japan Railway Company

Most of the large-scale renewable energy power stations that we have established are connected to the nationwide power grid so that the electricity they produce can be transmitted to power companies. In exploring how we could use this system to supply our railways with environmentally friendly electricity, we came up with an arrangement that, with the support of a power company, enabled us to achieve a CO_2-free power supply. This arrangement uses non-fossil fuel energy certificates, a new mechanism created as part of Japan's electrical power reforms. Going forward, we will continue to seize new trends and changes in our world as opportunities to introduce environmentally friendly technologies and systems that help to realize a sustainable society.

See page p.99-103 for a related article

Safety

[Priority commitment goals]

[Related goals]

Contents

Our fundamental concept of safety

Since the establishment of JR East, safety has been our top management priority, and we have worked relentlessly to heighten our levels of safety. Our earnest efforts to learn from unfortunate accidents in the past have enabled JR East to further the prevention of future accidents with our continued developments in both tangible and intangible aspects. To further reduce potential risk, JR East is committed to steadily improve tangible countermeasures and also to ensure that each one of its employees takes all possible intangible measures. Pursuit of safety measures can never end. We will continue to work tirelessly to improve safety by pursuing a goal of "zero accidents involving passenger injuries or fatalities and zero accidents involving employee fatalities (including all people involved with railway-related work, including JR-East, Group companies, and partner companies)."

General principles of Safety

JR East has prescribed General Principles of Safety for the code of conduct for its safety-related employees.

1. Safety is the most important mission in transportation.
2. Ensuring safety is based on exact observance of rules and procedures, and is achieved through constant practice.
3. Enforcement of confirmation and complete contact is most important for ensuring safety.
4. For ensuring safety we should cooperate together and go beyond our official responsibility.
5. When we have questions or must choose among several options, we should remain calm, think by ourselves, and take the safest course after thorough consideration.

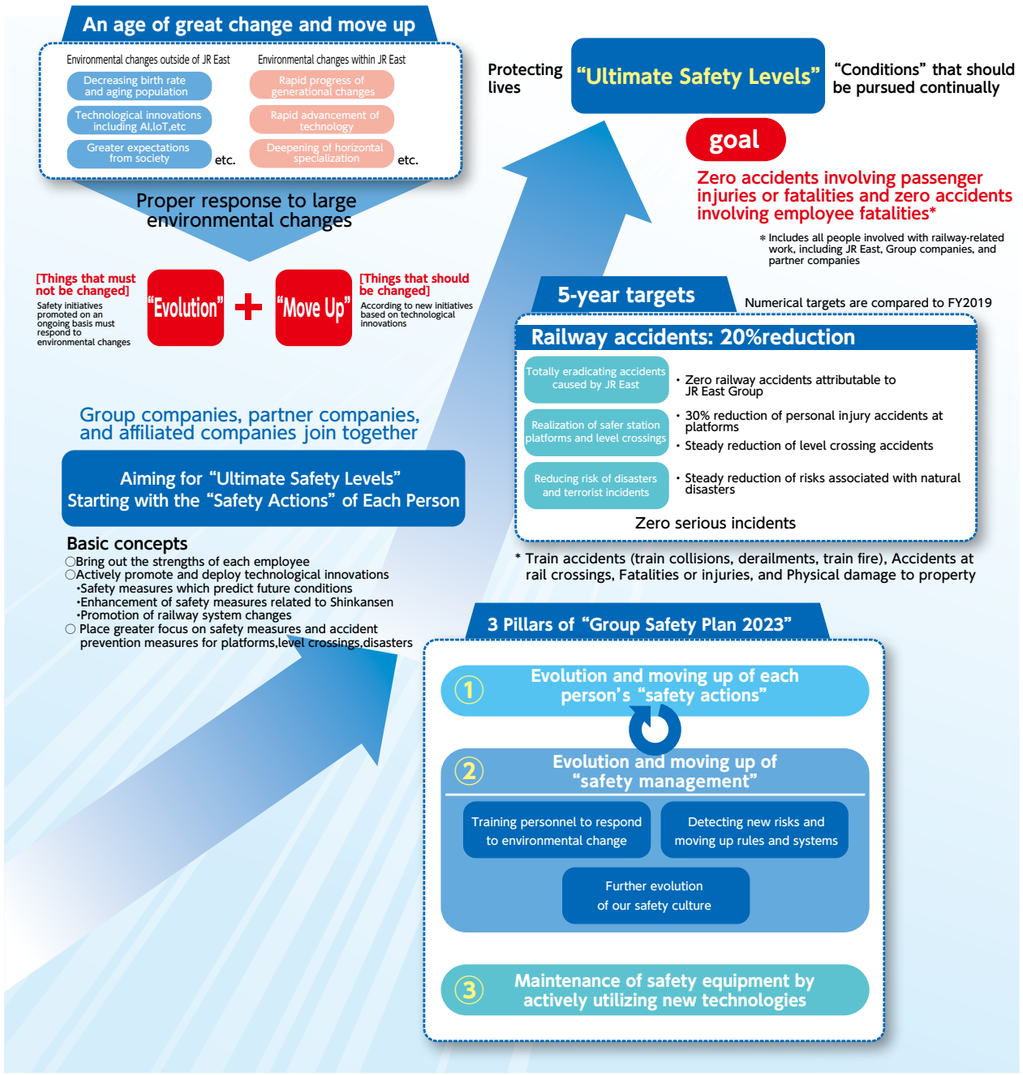
Group Safety Plan 2023

Since our establishment, JR East has been implementing a series of 5-year safety plans. In November 2018, we formulated Group Safety Plan 2023, which is the 7th plan. Together with JR East Group companies, partner companies, and affiliated companies, JR East as a whole group will aim for "Ultimate Safety Levels" starting with the "Safety Actions" of each person.

* "Safety actions": All actions taken to improve the level of safety

JR East "Group Safety Plan 2023" consists of two building blocks: "Evolution" and "Move Up", which are based on 3 Pillars: ① Evolution and moving up of each person's "safety actions", ② Evolution and moving up of "safety management", and ③ Maintenance of safety equipment by actively utilizing new technologies. In consideration of rapid environmental changes both within and outside the Group, we will take specific measures to properly respond to these environmental changes.

Overview of "Group Safety Plan 2023"



3 Pillars of “Group Safety Plan 2023”

1 Evolution and moving up of each person’s “safety actions”

Railway safety is supported by the specific actions of each employee toward safety, including “basic procedures”, “following rules”, and “learning from past accidents”. With even greater environmental changes expected in the future, each person must not only execute past initiatives as they are, but must “evolve” them in response to environmental changes, such as by making exhaustive efforts to discover potential risks while understanding the “essence of work.” They must also “move up” through new initiatives, such as re-examining familiar work environments which have deviated from actual conditions, and conducting measures for work reforms.

2 Evolution and moving up of “safety management”

To evolve and move up the “safety actions” of each person, the “safety management” of field sites, branch offices, and our head office must become unified for effective evolution and moving up. Specifically, we will focus on “further evolution of our safety culture”, “training personnel to respond to environmental change”, and “detecting new risks and moving up rules and systems.” Additionally, we will proceed with “further arrangement of systems which can allow Group companies, partner companies, and affiliated companies to work safely”, and “further safety measures related to Shinkansen”.

〈Further evolution of our safety culture〉

The safety culture which JR East Group has continually placed great value on, including the “5 Cultures”, “CS(Challenge Safety) Activity”, and “Three Actualities Principle”, is the foundation of various safety initiatives. Through the practice of each person’s “safety actions”, specifically initiatives such as “discovering risks” and “focusing also on successful points”, we will evolve our safety culture even further while responding to environmental changes.

Stop the train if we feel something is dangerous

Safe and stable transport is important for our railways. Safety means protecting lives, while stability means ensuring on-time operations of our trains. However, though stable transport is important for us, safety comes first. Trying too hard to keep to schedule sometimes results in not properly following safety confirmation procedures, which leads to risking the safety of train operations. To secure the safety of our railway operations, the whole JR East Group will always follow our firm code of conduct to “Stop the train if we feel something is dangerous.”

Train protection drills on training tracks

■Further ingraining the 5 Cultures

A culture of proper reporting

The prompt and proper reporting of accidents and incidents, and the prevention of the recurrence of accidents.

A culture of noticing

The recognition and sharing of information regarding the potential sources of accidents in order to prevent accidents and incidents.

A culture of direct confrontation and debate

The open and honest discussion and exchange of opinion in investigating the causes of accidents and incidents in order to identify the causes of accidents and to take truly effective countermeasures against their recurrence.

A culture of learning

The continuous awareness of others, learning from accidents and incidents which occur in all places of work, not just in one’s own workplace, and the implementation of appropriate countermeasures.

A culture of action

Safety can be ensured only by taking safe actions. Think and act by yourself. This is at the core of our safety.

By taking measures like these, we will practice “safety actions” as part of various initiatives such as the CS Activity and work research, to further ingrain the 5 Cultures.

■Further energization of CS Activity

Since the company's foundation, we have been continuing our Challenge Safety Activity(CS Activity) with the aim of encouraging our employees to actively take on the challenge of further improving safety levels, rather than just passively maintaining safety. The Activity aims to encourage each one of our employees to actively endeavor to improve safety levels, think and discuss specific measures with each other and act upon them.
While we will work on improvements through the efforts of all employees and without being confined to conventional methods, we will further energize CS Activity by applying various approaches such as Facilitating understanding of the “essence of work” and Exhaustive efforts to discover risks.

■Further evolution of the “Three Actualities Principle”

Accidents and incidents always occur at the Genba*. This means that the sources of accident prevention can also be found at the Genba. JR East Group continues to search for answers which cannot be found on paper, based on the "Three Actualities Principle" as its standard for action: actual locations, actual objects, and actual people.

* Genba: "Genba" means actual locations, objects, and people directly related to the safety of our operations including points of contact with our customers and fields or workplaces of transport or services.

The Three Actualities Principle

Actual locations:
Visiting actual locations to understand actual conditions

Actual objects:
Viewing actual objects (rolling stock, equipment, machinery, tools, etc.)in order to understand actual conditions

Actual people:
Meeting face to face with people involved to understand actual situations

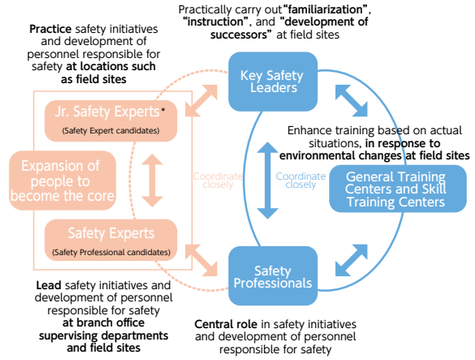
〈Training personnel to respond to environmental change〉

For each person to practice “safety actions” in proper response to environmental changes, we must aim to promote training personnel to improve the “motivation” and “skills” of each person.

■Systematic “development of personnel responsible for safety”

All employees involved with railways are responsible for railway safety. Under conditions where work methods can change significantly due to systemization or a lack of personnel, it will be critical to develop employees who have greater knowledge, leadership skills, and technical expertise related to safety. To do this, we will proceed the systematic “development of personnel responsible for safety”.

①Expand “people to become the core of safety initiatives”



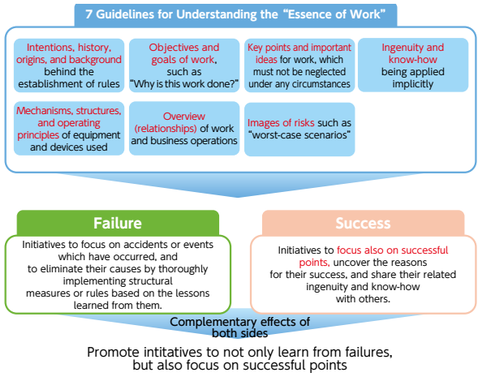
* Personnel who have completed independent development training at their individual branch offices (title will differ depending on branch office)

② Develop personnel responsible for safety, with a focus on “people to become the core of safety initiatives” (expansion of range)

By promoting initiatives to improve safety with a focus on “people to become the core of safety initiatives”, we will enlarge the number of employees with safety-related knowledge and skills.

■Facilitate understanding of the “essence of work”

To properly respond to large environmental changes, it is important to understand the “essence of work”. Rather than merely learning the procedures and methods of work, we must be conscious of the “7 Guidelines” which include the purposes of work, the origins of rules, and the operating principles of equipment, to deepen our understanding of the “essence of work.”



〈Detecting new risks and moving up rules and systems〉

By constantly responding to environmental changes and moving up our rules and systems accordingly, we will address new risks.

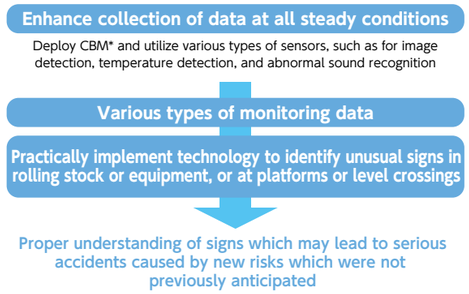
■Moving up rules and systems, starting with each person's initiatives

We must indicate, share, and discuss problem points and other such matters identified by each person through various initiatives, and connect them to moving up rules and systems together with managers.

■Promotion of safety measures which predict future conditions

①Promote safety measures which predict future conditions, utilizing big data, AI, IoT, or other resources

In order to properly identify signs which may lead to serious accidents caused by new risks which were not previously anticipated, utilize big data, AI, IoT, and other such resources to promote safety measures.



*CBM:Condition-based Maintenance, an inspection method to constantly monitor the status of facilities.

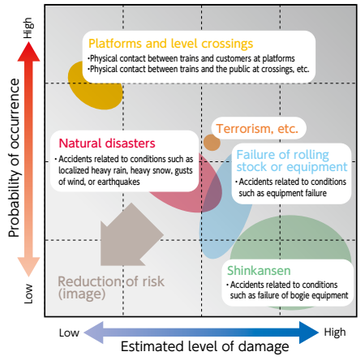
②Introduce risk assessment methods, and examine safety measures and capital investment

Results of risk analysis performed on railway accidents with a 10-year forecast

- Strengthen durability of rolling stock, equipment, etc.
- Safety measures for platforms and level crossings
- Response to natural disasters
- Safety measures related to Shinkansen
- Response to terrorism or other threats

With particular focus on these points, we will steadily reduce the level of risks.

[Risk analysis assuming a state after 10 years]

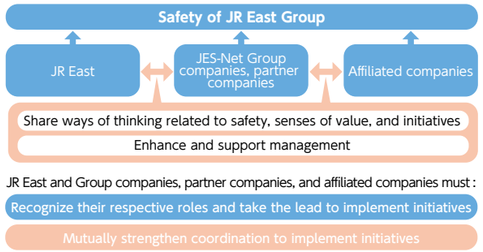


【Estimated level of damage】⇒Represents the extent (quantity) of injured customers and employees, harm and extent of damages to JR East Group

〈Further arrangement of systems which can allow Group companies, partner companies, and affiliated companies to work safely〉

■Enhancement of safety management together with Group companies, partner companies and affiliated companies

The safety of JR East Group is supported by JR East Group companies, partner companies, affiliated companies, and JR East united as one. In order for JR East Group to join together and improve safety even further, each of them must recognize its role and take the lead to promote initiatives. Furthermore, we must coordinate with each other such as to share values related to safety, and proceed with the enhancement of systems allowing safe work.



〈Further safety measures related to Shinkansen〉

If a serious accident involving Shinkansen should occur, it is predicted that the resulting damage will be enormous. While properly identifying the changes unique to Shinkansen such as the arrival of concurrent times for equipment renewal, higher speeds, and expansion of networks, we will promote initiatives to understand signs which may lead to serious accidents, and will strengthen our safety measures related to Shinkansen even more thoroughly than before.

3 Maintenance of safety equipment by actively utilizing new technologies

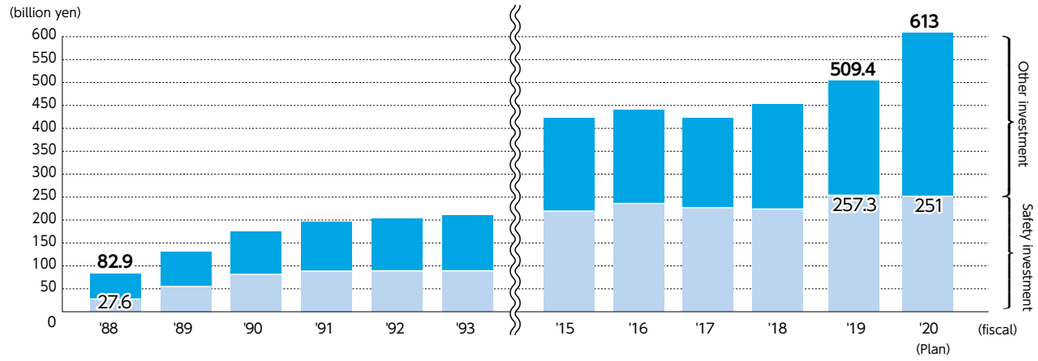
■Safety facilities investment

JR East has invested more than 4.2 trillion yen in safety since its establishment. In our Group Safety Plan 2023, JR East plans to invest approximately 1.2 trillion yen in safety measures during the five years from FY2020 to FY2024.

■ Major safety investment in FY2020

In FY2020, JR East will promote the safety equipment maintenance plan of the Group Safety Plan 2023, by steadily implementing the following measures: Strengthening the durability of key facilities; railway system changes using new technology; safety measures on platforms; measures to prevent level crossing accidents, and preparedness against natural disaster.
JR East plans to invest 613 billion yen in FY2020 in total in its facilities and 251 billion yen of that total will be invested in safety.

[Trends in safety investment]

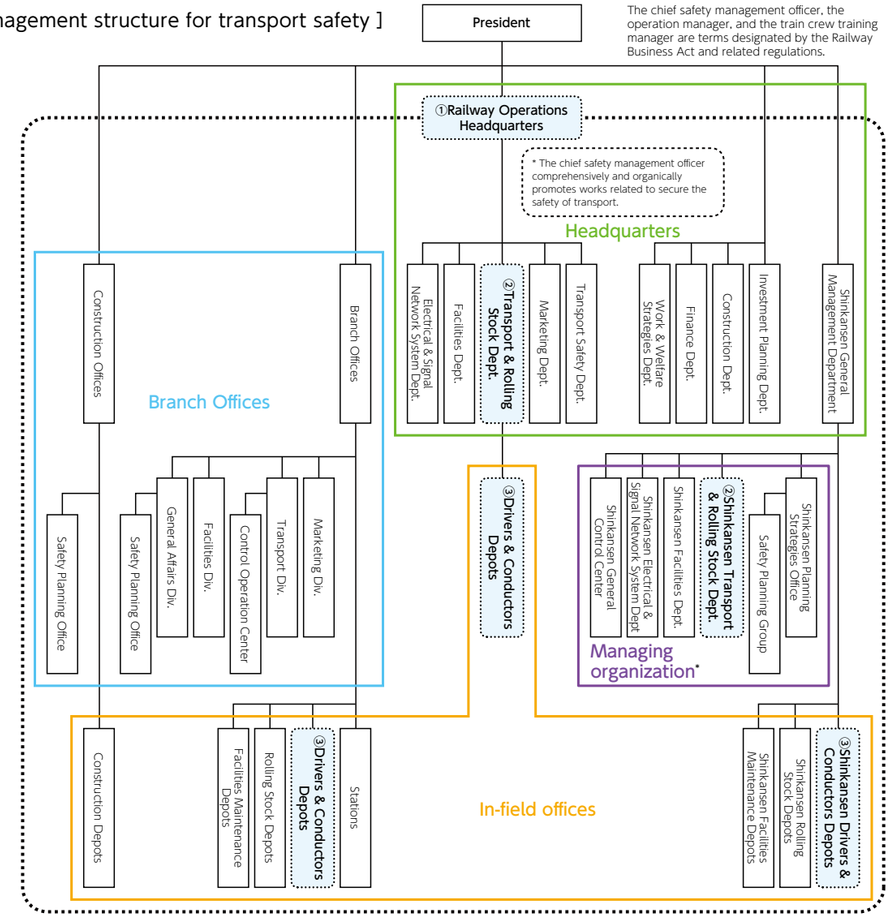


JR East's safety management organization

Safety management regulations

In response to a revision of the Railway Business Act, JR East formulated its safety management regulations in Oct. 2006. The safety management regulations make stipulations on various safety management-related matters such as the responsibilities of top management executives in ensuring the safety of operations and on organizational matters such as the selection of chief safety management officers, operation managers, and train crew training managers. The chief safety management officer* is selected from the Director General of Railway Operations Headquarters or its equivalent. The operation manager is selected from the General Manager of Transport & Rolling Stock Dept. or its equivalent. The train crew training manager is selected from the Manager of Drivers & Conductors Depots.

[Management structure for transport safety]



①Chief safety management officer
Selected from the Director General of Railway Operations Headquarters or its equivalent.

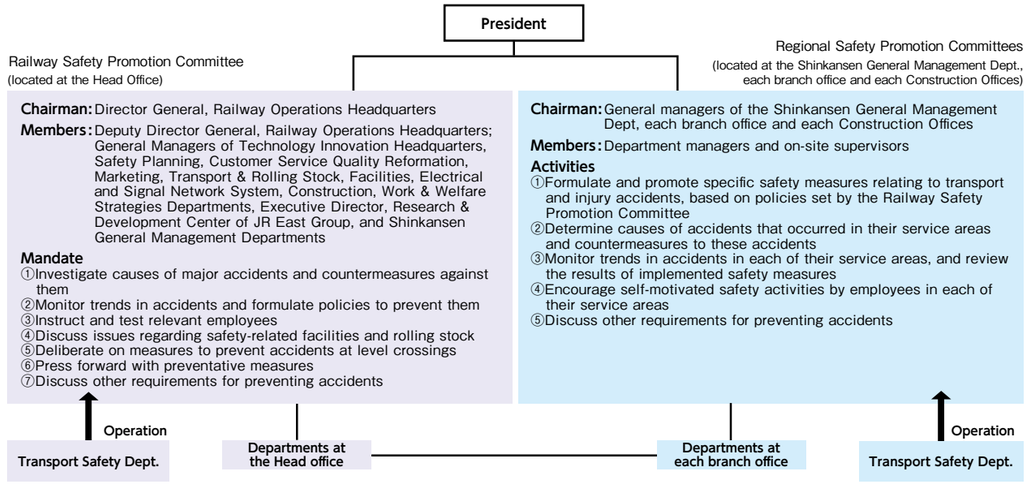
②Operations manager
Selected from the General Manager of Transport & Rolling Stock Dept., General Managers of Shinkansen Transport & Rolling Stock Dept. or their equivalent.

③Train crew training manager
Selected from the Manager of Drivers & Conductors Depots.

* As regards Shinkansen, the Shinkansen General Management Dept. was newly established in April 2019 to collectively and exclusively manage Shinkansen-related work.

Railway Safety Promotion Committee

JR East established the Railway Safety Promotion Committee at its Head Office, chaired by the Director General from Railway Operations Headquarters, as its safety promotion network in 1987 at the time of its corporate establishment. The committee aims to improve safety in railway operations and prevent accidents by investigating the causes of major accidents, formulating preventive measures to avoid reoccurrences, and implementing safety-related countermeasures for facilities and railway vehicle. 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, each Construction Offices. These committees implement specific measures in cooperation 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.



Rules for reporting accidents and events

To prevent railway accidents from occurring and from reoccurring, it is essential to properly understand accidents and events, analyze their causes, and implement countermeasures. To this end, JR East has rules for the classification and reporting of accidents with the following objectives:

①Through analysis of "possible seeds of accidents" with high risk of fatalities or injuries to customers/employees and implementation of countermeasures

②Actively uncovering "possible seeds of accidents" that could escalate into an event.

Field sites, branch offices, and Head Office fulfill their own roles to properly understand and analyze accidents and to further deepen measures to prevent occurrences and reoccurrences of accidents. Furthermore, by actively uncovering My Hiyatto, bringing them to light, and taking countermeasures to prevent accidents, we aim to achieve further improvements to safety.

Efforts to further improve safety levels

Fostering safety-oriented personnel

■Safety education and training

To heighten safety awareness among employees by placing priority on safety education and training JR East is offering educational and training opportunities to its employees at the JR East General Education Center (Shirakawa City, Fukushima Prefecture) and General Training Centers (branch offices), and on-the-job training in each workplace. The JR East General Education Center offers group training for personnel development and improvement of knowledge and skills, fostering the development of new train crews and also providing the necessary training for job transfers. The General Training Centers in each of our branch offices offer education and training to improve the skills of train crews by utilizing accident prevention simulators on a regular basis. In OJT (on-the-job training), we offer education and training to suit the situations of each workplace.

JR East General Education Center

Practical drills on training tracks

■Promoting the use of educational and training facilities

We are conducting safety-related education and training based on the following principles:

①In basic education in classrooms and in on-the-job training at each workplace, importance is placed not only on work procedures, but also on the purposes, objectives, reasons, background, structures and working principles that underlie them so that trainees can think about and learn the sense of values that underpin the reasons for each action.

②During training to improve responsiveness, trainees can touch and feel actual devices and equipment so that they can encounter situations that are as similar as possible to actual situations. By experiencing failures in training, they can learn by practice and acquire the level of responsiveness required in daily operations.

③By experiencing the most serious accidents, trainees can be ready for the worst-case scenario and take the necessary countermeasures. Engraving the importance of lives on the minds of employees will drive them to further improve their countermeasures.

To improve the levels of education and training, we are introducing simulators for crew training at all transport-related workplaces. We newly enhanced educational and training facilities at General Training Centers and Skills Training Centers at all of our branch offices. We introduced cut models of actual devices and equipment, and simulators for train crew training and construction worker training by using virtual reality. By promoting the use of these upgraded educational and training facilities, we will further increase the level of safe and stable transport.

Track facility at Skills Training Center

Cut model of rolling stock equipment

Simulator for train crew training

Simulator for construction worker training

Through utilization of yard simulators

JR Technoservice Sendai Co., Ltd. has nearly 100 yard drivers for shunting in yards. In June 2018, we introduced yard simulators. With these simulators, we can conduct practical training on expected problems and further improve the capabilities of yard drivers to respond to emergencies. To further utilize the yard simulators, we introduced eye-tracking functions. This allows the visualization of the allocation of attention and the movement of sight lines of experienced drivers, which had previously been difficult to share in a visual way. By comparing the differences between these drivers and less-experienced drivers, we can facilitate an improvement in driving skills.
By fully utilizing educational and training facilities, we will contribute to improving the safe and stable transport of the JR East Group.

JR Technoservice Sendai Co., Ltd.

■Education and training to understand the "essence of work"

For higher quality operations, it is necessary to truly understand the "essence of work". For these reasons, in our education and training, trainees learn not only procedures including manuals, but also undertake practical training so that they can understand the "essence of work" including the reasons, structures, and working principles behind them.

■Development of personnel responsible for safety

In this time of rapid change in generations, since it is of the utmost importance to enable our employees to play major roles in securing safety in our operations, we are taking various measures as indicated below.

Key Safety Leaders

We are fostering three capabilities in Key Safety Leaders in field organizations: "familiarization" "instruction" "development of successors" in each workplace. Key Safety Leaders have a thorough understanding of the safety rules, details of past accidents and safety weaknesses in their own workplace, offer guidance to other employees on a regular basis in the workplace, and contribute to the betterment of safety levels in field organizations.

Key Safety Leaders' meeting

Safety Professionals

We have selected Safety Professionals from each branch office and construction work office to train them as Safety Professionals. They are expected to be professionals capable of guiding other employees through their long experience in railways and abundance of knowledge of safety rules and details of past accidents as well as their countermeasures.

Safety Professional certification ceremony

Chroniclers of Safety (Narrators of Oral History)

JR East is currently experiencing a rapid change in the generations of its employees, including frontline staff and therefore needs to steadily instill successors with safety-related knowledge, leadership, and technical capabilities. We assigned ex-employees of JR who possess an abundance of knowledge and applied skills in railway safety to act as our "Chroniclers of Safety" (Narrators of Oral History).

Assignment of ex-employees of JR East who possess an abundance of knowledge and applied skills in railway safety to act as our "Chroniclers of Safety" (Narrators of Oral History)

Further evolution of our safety culture

At JR East, each and every one of our employees acts on his/her own initiative as a main player when discussing what to do with other members of staff to improve our levels of safety.

The Challenge Safety Activity

We have continued the Challenge Safety Activity (i.e. Proactive Safety Activity)with the aim of encouraging our employees to actively take on the challenge of further improving safety levels, rather than just passively maintaining safety, with each one of our employees thinking about safety and autonomously taking actions. With initiatives of field staffs, in a consorted campaign with all employees JR East is working to create a corporate climate in which its employees actively engage in pursuing higher safety levels in our operations. In the campaign, each one of our employees finds their own safety issues and takes actions to solve these safety issues with support from branch offices and the Head Office.

Development of safety-related discussions in each workplace

Examples of CS Activity

Challenge Safety Aoshingo

Since April 1989, we have been publishing a monthly safety information magazine, Challenge Safety Aoshingo, to comprehensively distribute safety information to our employees. The magazine offers useful information for CS Activities in each workplace such as specific efforts of the Activities in each workplace and details of past accidents.

Challenge Safety Aoshingo
(August 2019 issue)

The Railway Safety Symposium

With objectives to improve the safety awareness of each one of our employees and to further vitalize various safety improvement activities including Challenge Safety Activities, JR East started Railway Safety Symposiums in 1990. Symposiums are attended by approximately 700 people including employees of group companies. We invite key figures from outside of the company to host panel discussions and introduce detailed safety examples of other companies. Participants bring back what they learn at symposiums to their workplaces and share safety awareness with other employees.

The Railway Safety Symposium

Round table discussions between front-line employees and executive officers

We are increasing the frequency of opportunities for the exchange of opinions between front-line employees and executive officers to further deepen mutual understanding. Through direct discussions between front-line employees and Head Office executive officers, we have mutually confirmed efforts to solve safety-related issues in order to take specific measures to further improve the safety levels of our operations.


Round table discussions with front-line employees

Group-wide efforts to further improve safety

JES-Net (JR East Safety Network)

As the division of work increasingly progresses among Group and partner companies, to further improve safety levels it is inevitable that there is a sharing of common safety values and cooperation. When we started the Safety Plan, the JR East Safety Network (JES-Net) was established in FY2005 as a safety promotion network consisting of 25 JR East Group and partner companies that are engaged in work directly affecting train operations. As of March 2019, the number of companies in this network had expanded to 37. JR East Group continues to promote measures for improvement and share issues to enhance safety levels across the whole group through JES-Net Presidents' Meetings with presidents of each group and partner company and JR East's top management; through safety collaboration camps with safety-related managers of branch offices and JES-Net member companies to discuss safety issues; and through safety reviews where frontline staffs exchange various opinions on site. Additionally, through active exchanges of human resources among JES-Net members, we are working to improve safety levels and sharing safety awareness across the whole group.


Safety review

Safety efforts by JR East Group companies

【JR Bus Kanto Co., Ltd.】

In FY2019, we introduced drive recorders with two-way communications and IP radio to all of our expressway buses. Before the introduction of these recorders, we could only confirm the recorded images after the driver had returned to depot. This introduction enables us to confirm images on a real-time basis. So we can support drivers by checking recorded images as soon as a problem arises. Additionally, we can remotely conduct coaching sessions for drivers from our office. We are utilizing these approaches to prevent accidents.

【Mito Railway Servicing Co., Ltd.】

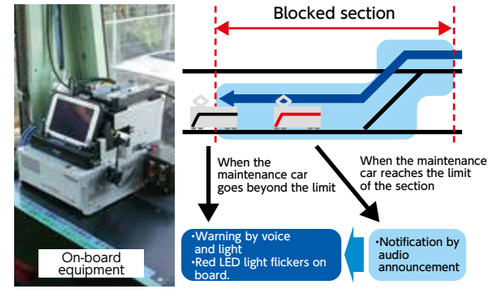
To improve the safety and skills of staff driving in yards, we installed a yard driving simulator at our general training center to train our staff about driving in our yard premises. The training is provided on a one-to-one basis. This enables us to address the weak points of each member of staff. The result of the training is summarized in a report that is shared among staff at Head Office and other relevant offices so that it can inform the further education and training provided to our staff.

Safety-related research and development

JR East Group conducts various safety-related research and development activities with the Research & Development Center of JR East Group as its core.
Research themes at these organizations include those related to major accidents such as derailments, the development of the maintenance car location detection system, evaluations of JR East Group's safety conditions by utilizing human factors such as safety management and safety cultures, and safety evaluations of natural disasters such as strong winds, earthquakes, and heavy rain.

Development of the maintenance car location detection system

As a countermeasure in light of the derailment accident at Kawasaki Station in Feb. 2014, we developed the maintenance car location detection system. The system activates an alarm when it detects an unauthorized maintenance car (including a road railcar) in an unblocked section, where train operations are not yet blocked for maintenance work. We developed a rotary encoder method to detect a train location by the number of axle revolutions. As a method to support the prevention of train collisions with maintenance cars, we introduced the system to the Saikyo Line between Ikebukuro and Omiya in Nov. 2017. We will also introduce the system to other lines.



Maintenance car location detection system (rotary encoder system)

Maintenance car location detection system (rotary encoder system)

Development of a system to detect abnormality in the wheel load balance
We developed a warning system to detect wheel load unbalance by using a strain gage attached on the side of a rail. A wheel load unbalance could lead to a derailment accident. We started test operations in Mar. 2018 and are currently conducting verification tests on the system.


Wheel load unbalance detection system
Strain gage

Research on human factors

To promote safety management by looking ahead in order to take preemptive measures, we developed a system to constantly monitor the status of the functions of a system that is used to maintain and improve the safety levels of JR East Group. The assessment is conducted from 36 perspectives, including the elements that make up our safety cultures.

Elements to support safety at field sites [25 items]
Knowledge and skills of field site employees, continuous improvements at workplaces, etc.

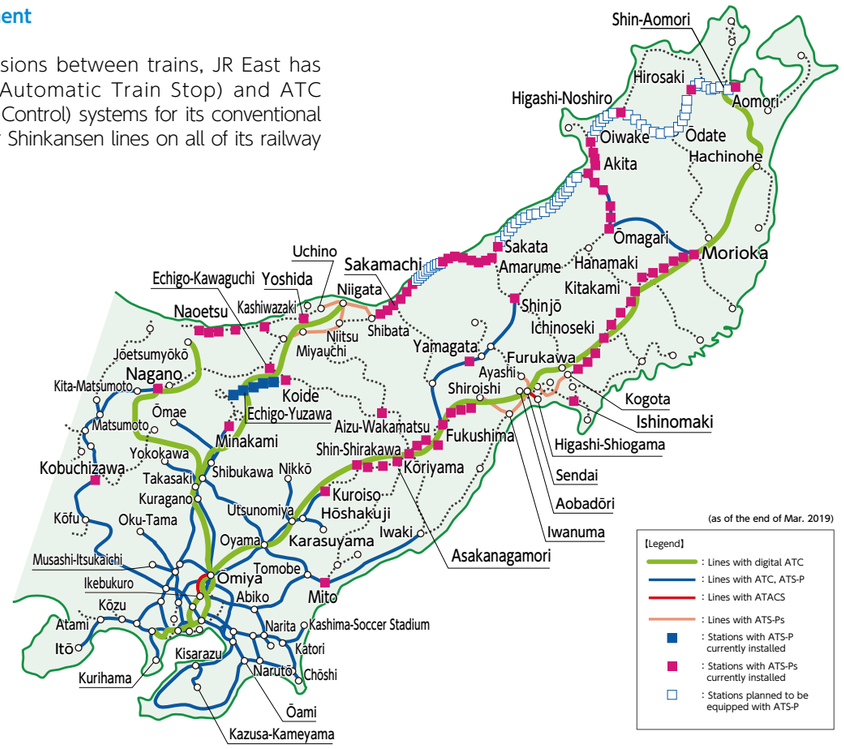
Management elements from managerial perspectives [11 items]
Management of safety investment, proper management of business resources, etc.

Measures to prevent train collisions

■Safety equipment

○ATS and ATC

To prevent collisions between trains, JR East has installed ATS (Automatic Train Stop) and ATC (Automatic Train Control) systems for its conventional lines and ATC for Shinkansen lines on all of its railway lines.



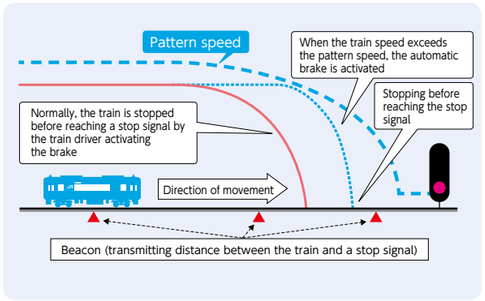
[Installation plan for ATS-P and ATS-Ps systems]

	Areas for planned installation	Installation status as of the end of FY2019
ATS-P system	Mainly for railway sections with frequent train operations in the Tokyo metropolitan area	Completed installation in 5 major stations and railway sections for 2,405.8km (service km)
ATS-Ps system	Provincial city areas and major railway sections excluding the Tokyo metropolitan area	Completed installation in 72 major stations and railway sections for 210.8km

○ATS (Automatic Train Stop)

With ATS-P and ATS-Ps, based on information from ground equipment, on-board equipment calculates the allowed train speed to stop at a stop signal. When the train exceeds the speed pattern, the system automatically activates its automatic brake to stop the train. The system also responds to speed limits for curves and turnouts.

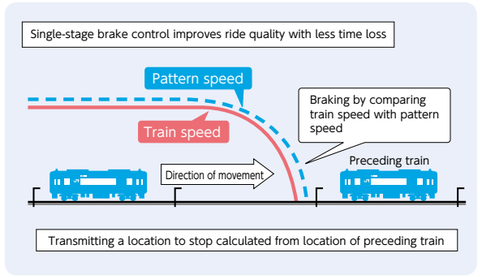
[Overview of ATS-P system]



ATC (Automatic Train Control)

In this system, ground equipment continuously transmits signals to trains via the rails. The transmitted signals are indicated in the driver's cab and the system automatically activates the emergency brake if the train exceeds its permitted speed. On the Shinkansen and the Yamanote, Keihin Tohoku and Negishi Lines, we have replaced the systems with digital ATC. This system transmits the location information of the preceding trains to the following train so that on-board equipment can control the train speed based on a speed pattern calculated from the information.

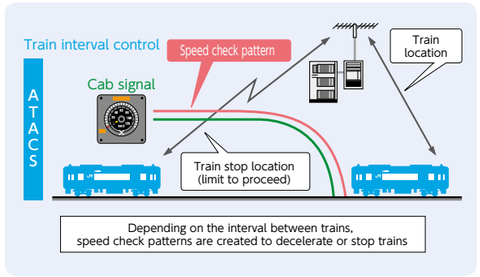
[Digital ATC]



ATACS (Advanced Train Administration and Communications System)

This is a totally new system for trains to detect their own locations instead of using traditional methods of train location detection with track circuits. By using radio communications for the transmission of train location information between ground and on-board facilities, we can control train operations. JR East began using ATACS on the Senseki Line between Aobadōri and Higashi Shiogama in October 2011 and on the Saikyo Line between Ikebukuro and Omiya in Nov. 2017.

[ATACS]

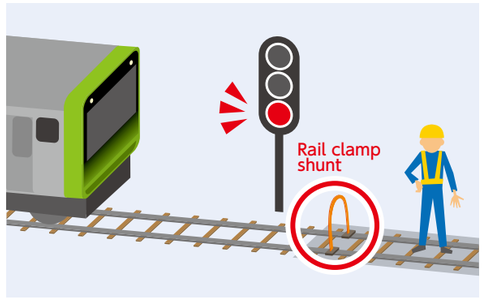


■Others

Dual safety measures

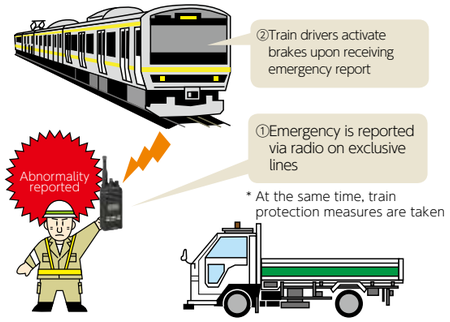
When conducting track construction, maintenance, or inspection, we close tracks so that other trains cannot enter these particular railway sections. However, in the case of a failure of a track closure as a result of human error, it could result in a train mistakenly entering a closed section during construction, maintenance or inspection. To prevent this from happening, we undertake dual safety measures. In addition to the above-mentioned track closure procedure, by installing rail clamp shunts on the closed section, signals will change to a stop signal to prevent trains from proceeding to that closed section.

[Dual safety measures]



Collision prevention support radio system

Learning lessons from the derailment accident in the Kawasaki Station premises of the Keihin Tohoku Line in Feb. 2014, JR East introduced a collision prevention support radio system to help maintenance workers stop trains in case of an emergency during maintenance work. The collision prevention support radio system alerts neighboring trains of an emergency by operating exclusive radio terminals in the case of an abnormality to immediately stop trains. The system is installed on all conventional line trains and when the emergency signal is transmitted, drivers receiving the signal promptly stop their trains. However, depending on radio and line availability, the signal might not reach all neighboring trains. For this reason, the collision prevention support radio system is used as a supplementary method for train protection.

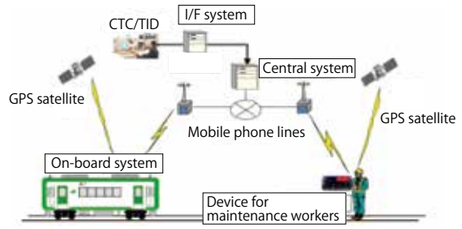


Train approach alarm system

JR East utilizes alarm systems to warn maintenance workers on tracks of approaching trains. For railway sections with track circuits* installed, we use a TC-type wireless train approach alarm system to warn workers of approaching trains by track circuit. For railway sections without track circuits, we developed a GPS train approach alarm system to inform workers of train locations by locating the positions of trains and workers on GPS. We implemented these systems in 25 railway sections including the Iiyama Line and the Hachikō Line from April 2016.

* Track circuit: A section of rail is used as a part of the electric circuit. By short-circuiting the rail using the wheels of the train, the position of the train can be detected.

[GPS train approach alarm system]



Preparedness against natural disaster

■Our measures against earthquakes

Learning from earthquakes in the past, JR East has employed the following three anti-earthquake measures:

①Preventing structural damage (seismic reinforcement measures)
②Stopping trains immediately (emergency train stop measures)
③Minimizing secondary accidents following derailment (preventive measures against derailed trains leaving the track area)

Seismic reinforcement measures

In order to be prepared for the expected earthquake whose epicenter is anticipated to be located directly beneath the Tokyo metropolitan area, since FY2013 we have been working on the seismic reinforcement of embankments, cuttings, brick arch viaducts, power poles, and the prevention of the collapse of ceilings and walls on platforms and in other parts of stations. Additionally, we have proceeded with the seismic reinforcement of bridge pillars and elevated bridge columns ahead of schedule. Moreover, due to the Great East Japan Earthquake in 2011, we are pressing forward with the seismic reinforcement of station buildings that have daily passenger traffic of 3,000 persons or more and also of Shinkansen power poles that were greatly damaged by the earthquake at the time. Based on changes in the expected intensity of the possible earthquake whose epicenter would be directly beneath the Tokyo metropolitan area and information on active faults, from FY2018, we started to work on the expansion of the reinforcement areas and also the implementation of new measures in order to manage the potential damage to each facility and the effects of the earthquake on our railway lines.

Seismic reinforcement of embankment

[Seismic reinforcement measures taken after the Great East Japan Earthquake and progress made (as of the end of March 2019)]

Major measures		Total completed / Planned total	Completed ratio
Elevated bridge columns	Shinkansen	Approx. 8,640 units / Approx. 8,640 units	Completed
	Conventional Lines	Approx. 6,470 units / Approx. 6,600 units	98%
Bridge columns	Shinkansen	Approx. 640 units / Approx. 680 units	94%
	Conventional Lines	Approx. 1,720 units / Approx. 1,910 units	90%
Embankments	Near Ochanomizu (embankment on the river side)	Approx. 1.2 km / Approx. 1.2 km	Completed
	Height of 8m and over	Approx. 8 km / Approx. 8 km	Completed
	Height of 6m and over, and below 8m	Approx. 10.0 km / Approx. 11 km	96%
Cutting (Including near Ochanomizu)		Approx. 18 km / Approx. 23 km	77%
Embankments and anti-derailing guards before and after bridges		Approx. 74km / Approx. 74km	Completed
Station buildings		64 buildings / Approx. 85 buildings	75%
Ceiling of station buildings and platforms		Approx. 450 stations / Approx. 560 stations	80%
Walls of station buildings and platforms		56 stations / 56 stations	Completed

○% Completion ratio of 80% and over　Completed Completed

Seismic reinforcement

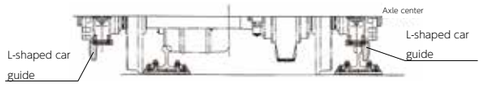
Emergency train stopping measures

For Shinkansen lines, JR East utilizes the Shinkansen Early Earthquake Detection System to stop trains as quickly as possible before the principal shock (S-waves) hits the Shinkansen lines. The system estimates the location of the epicenter and the scale of the earthquake from information from seismometers, which can detect primary tremors (P-waves) along the lines and along the shores in the Tokyo metropolitan area and inland areas, and from information produced by the Earthquake Early Warning system of the Japan Meteorological Agency.

Furthermore, by improving the functions of seismometers for Shinkansen lines, we are continuing our efforts to shorten the time required from the detection of an earthquake to the emergency stopping of trains on both for Shinkansen and conventional lines. Additionally, we utilize information from ocean-bottom seismographs of S-net* of the National Research Institute for Earth Science and Disaster Resilience (NIED) so that we can further shorten the time required for the detection of an earthquake. “S-net” stands for Seafloor Observation Network for Earthquakes and Tsunamis along the Japan Trench.

Prevention of secondary accidents after derailmen

During the Niigata Chuetsu Earthquake in Oct. 2004, one of our Joetsu Shinkansen trains derailed. Fortunately, passengers and crew were uninjured. However, by learning lessons from the earthquake, JR East has taken preventive measures for Shinkansen trains and tracks. For Shinkansen trains, we have installed L-shaped car guides on bogies. By guiding the derailed trains along the rail, the L-shaped car guides prevent Shinkansen trains from completely leaving the track in a derailment. We have also improved glued insulated joints to reduce the impact of wheels and bogie parts in the event of a derailment. Additionally, we completed the installation of rail rollover prevention devices to guide the wheels along the rails following a derailment, thereby preventing a rail rollover and the rails from completely deviating from the track even after a train derails and the rail fasteners are broken.



L-shaped car guide

Before improving glued insulated joints

After improving glued insulated joints

Rail rollover prevention devices

Topics

Strengthening traffic control functions for times of disaster

In FY2019, to strengthen our preparedness for times of disaster, we renewed the conference room we have been using as the disaster countermeasures headquarters at Head Office.
For this renewal, we reviewed the layout of the room, installed a 12-screen multiple display and a large sub-display. This will enable us to comprehensively display a variety of information by switching the screens. Additionally, we introduced an electronic whiteboard. The information written on the whiteboard at headquarters can be shared via video-conferencing on a real-time basis. Furthermore, we introduced the latest ICT devices such as desktop displays.

Renewed conference room for headquarters and a real-life image of the previous headquarters in action

General emergency drills

JR East conducts general emergency drills to prepare for an earthquake during disaster preparedness week around Sep. 1st, every year. The drills include the following: Drills to operate an on-site disaster countermeasure headquarters at Head Office and each branch office, and drills for rescuing, life-saving, guiding passengers during an evacuation, and for initial firefighting in each district. Additionally, we participate in disaster drills run by local municipalities.

Drill to rescue passengers with firefighters

Preparing rescue kits and first aid kits

In the case of an earthquake with an epicenter directly beneath the Tokyo metropolitan area, many passengers might be injured and we might need to save the lives of passengers with the help of a limited number of our employees before the arrival of rescuers. For a major earthquake, placing top priority on saving the lives of the injured, JR East has prepared the following first aid kits and is also conducting drills to give personnel necessary first aid skills.

●Rescue kits to save injured persons

We installed rescue kits (crowbars, jacks etc.) at each station of the five branch offices in the Tokyo metropolitan area.

Rescue kits

●First aid kits to provide first aid to injured persons

We installed first aid kits (triangular bandages, etc.) at each station within 30 km of Tokyo.

First aid kits

●Drill for styptic treatment (external injuries) and transporting the injured

We continue to work on training all our employees. We also formulated the JR East rescue and lifesaving training text book.

Training text book

■Measures against tsunamis

Before the Great East Japan Earthquake, we had set operational restriction methods and tsunami danger zones for each location, prepared manuals, and were holding study sessions and conducting drills on guiding passengers to deboard trains for evacuation. We believe that these efforts led to the prompt evacuation of passengers away from tsunami danger zones at the time of the earthquake.

Tsunami evacuation manual

Drill to guide passengers to alight from a train for evacuation

Formulating action guidelines for evacuation to avoid tsunamis

To prepare for a case when there is no time before the arrival of a tsunami, JR East formulated action guidelines for evacuation during tsunamis for each one of its employees to follow in January 2012.

■Action guidelines for evacuation to avoid tsunamis

1. At a time of a large earthquake, be prepared for tsunamis. Gather information by yourselves and if communication lines are disconnected, make your own decisions for evacuation. (Do not be afraid to make a mistake.)
2. Once decided to evacuate, by judging the conditions of customers, promptly guide customers to evacuate.
3. In alighting from trains, evacuating and gathering information, ask customers and local people to cooperate.
4. Even after evacuation, go to a higher place without being satisfied and thinking this would be high enough.
5. Stay evacuated with customers and do not return to field offices or trains while tsunami warnings are still issued.

Tsunami evacuation navigation system

We developed the Tsunami Evacuation Navigation System to assist train crews in evacuating passengers from unfamiliar places along railway lines through the use of their tablet devices.

Tsunami evacuation navigation system

Improvement of evacuation signs and routes and conducting drills for evacuation during tsunamis

For railway lines such as the Hachinohe Line, which resumed operations following damage caused by tsunamis, we have improved the signs and routes for evacuation from tsunamis. We will also improve evacuation signs and routes for other railway sections.

We have identified tsunami warning sections which could be submerged by tsunamis. We are working to increase the number of signs to indicate where these tsunami warning sections start and finish, as well as the number of tsunami evacuation signs.
Furthermore, in FY2019, we conducted drills on guiding passengers to alight from trains and escape from a tsunami at tsunami-prone locations, assuming that there was no time before the arrival of the tsunami. We will continue these drills every year at the same time of year.

Tsunami evacuation sign

Flags to indicate the start of a tsunami warning section

Drill to guide passengers to alight from a train during a tsunami

■Measures for rainfall

Measures for rainfall

To protect tracks from landslides due to rainfall, JR East takes disaster prevention measures for wayside embankments in all railway sections in accordance with its plans. Especially in the Tokyo metropolitan area and for all Shinkansen routes, we take thorough measures to secure safe and stable transport.

[Countermeasures for rainfall]

Cutting slope protection (spray frame work)

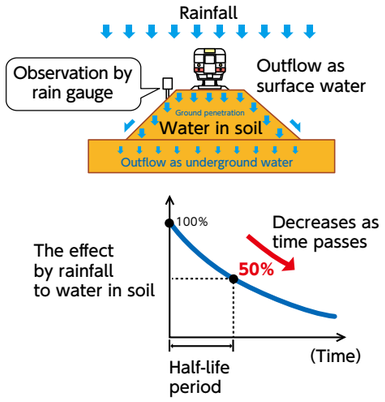
Embankment slope protection (spray frame work)

Natural slope protection (spray frame work)

Operation control for rainfall

For heavy rainfall, JR East ensures the safety of train operations by introducing operation control such as limiting train speeds and suspending operations. Since June 2008, we have been using effective rainfall values which are highly related to landslide disasters due to rainfall. Effective rainfall is the amount of underground water remaining after changes over time in ground penetration and outflow. Since many of the disasters due to rainfall result from rainwater seeping into the ground, the effective rainfall index is more appropriate as an operation control index for railways. With this indicator, we can more precisely predict the possible occurrence of landslide disasters, thereby improving the safety and reliability of our train operations.

[The concept of the effective rainfall]



■Efforts against wind

Uetsu Main Line train derailment accident

On December 25th, 2005, a derailment of the limited express train Inaho No.14 on the Uetsu Main Line between the Sagoshi and Kita-Amarume Stations caused the death of five passengers and injured 31 passengers.

State of derailment accident.

We would like to report on the measures we have taken since this accident.

Increased number of anemometers (wind meters)

JR East has increased the number of anemometers at the accident site between Sagoshi and Kita-Amarume Stations. In addition, for sections with operation control for strong winds, we have installed multiple anemometers as standard. We have also increased the number of anemometers at places with windbreak fences.

	As of Dec. 25th, 2005: A	As of Mar. 31, 2019: B	Increase (B-A)
Conventional lines	228 units	964 units	+736 units
Shinkansen lines	89 units	163 units	+74 units
Total	317 units	1,127 units	+810 units

Issuing early restrictions for all lines

For all railway sections of conventional lines with operation control for wind, after the resumption of operations of the Uetsu Main Line on January 19th, 2006 we reviewed the criteria for operation control as indicated below. For locations with windbreak fences, we use prior general restrictions.

Restriction type	Wind speed (meters/sec.)	
	General restrictions	Early restrictions
Speed restriction (max. 25 km/h)	25 - 30	20 - 25
Operation halted	30 -	25 -

Installation of windbreak fences

Since 1991, in order to reduce wind force on trains, we have installed windbreak fences at 29 locations as of the end of March 2019.

Uetsu Main Line, between Sagoshi and Kita-Amarume

Keiyō Line, between Shiomi and Shin-Kiba

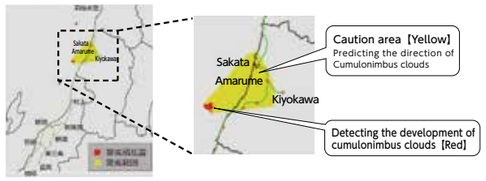
Expanded introduction of the gale warning system

JR East has been using gale warning systems on the Keiyō Line since Aug. 2005 and has installed the systems in all 292 locations on its conventional lines with a gale operation control, including the accident location between Sagoshi and Kita-Amarume of the Uetsu Main Line.
The gale warning system restricts or suspends operations not only when the actual wind speed measured by anemometers exceeds control thresholds, but also when the projected maximum wind speed exceeds these limits.

Utilizing meteorological information for operation control

Local gusts are meteorological phenomena, and are difficult to observe with conventional observation equipment such as anemometers. Through meteorological information such as the intensity of rainfall obtained from the Japan Meteorological Agency's radars and Nowcast that supports detection of tornados, and by detecting the development of cumulonimbus clouds, we introduced a method to forecast the occurrence of local gusts and to apply that information to our operation control. Every year between November and the following March, we use the system in six sections of railway lines along the Sea of Japan including the Uetsu Main Line between Niitsu and Ugo Honjo.

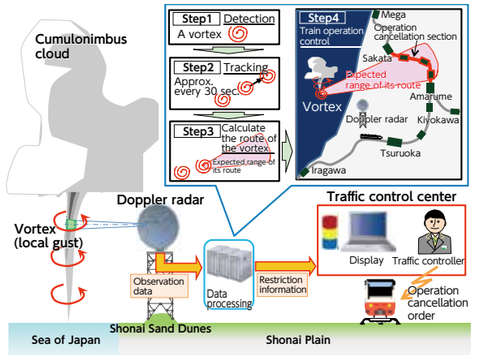
[Display of operation control area by utilizing meteorological information (image)]



Operation control method against wind gust using Doppler radar

Doppler radar is an observation system that can be used to ascertain wind conditions by detecting the movement of raindrops and rain clouds. Since 2007, jointly with the Meteorological Research Institute of the Japan Meteorological Agency, we have been developing a system that can detect a vortex of wind gust in the air from the movement of raindrops and emit an alarm when a vortex heads close to railway lines. In Dec. 2017, we installed a high-performance Doppler radar on a hill of the Shonai Plain which is suitable for observations in and around the Sea of Japan, where local wind gusts are generated. Since then, every year between November and the following March, we have used the system for part of the Uetsu Main Line and Riku-u West Line for train operation control.

Doppler radar installed at Kuromori, Sakata



Doppler radar observation method

Introduction of operational restriction methods by evaluating wind force on trains

The wind force on trains constantly changes. We have been researching the following methods to properly evaluate the wind force on our trains and to further improve our operation control to enhance the safety levels of our operations, while incorporating opinions from external experts.

1) Further improved wind observation methods by anemometers
2) Calculation methods for rolling stock windproof stress taking account of track conditions and railcar shapes

These two methods have been utilized on railway lines including the Uetsu Main since Dec. 2011.

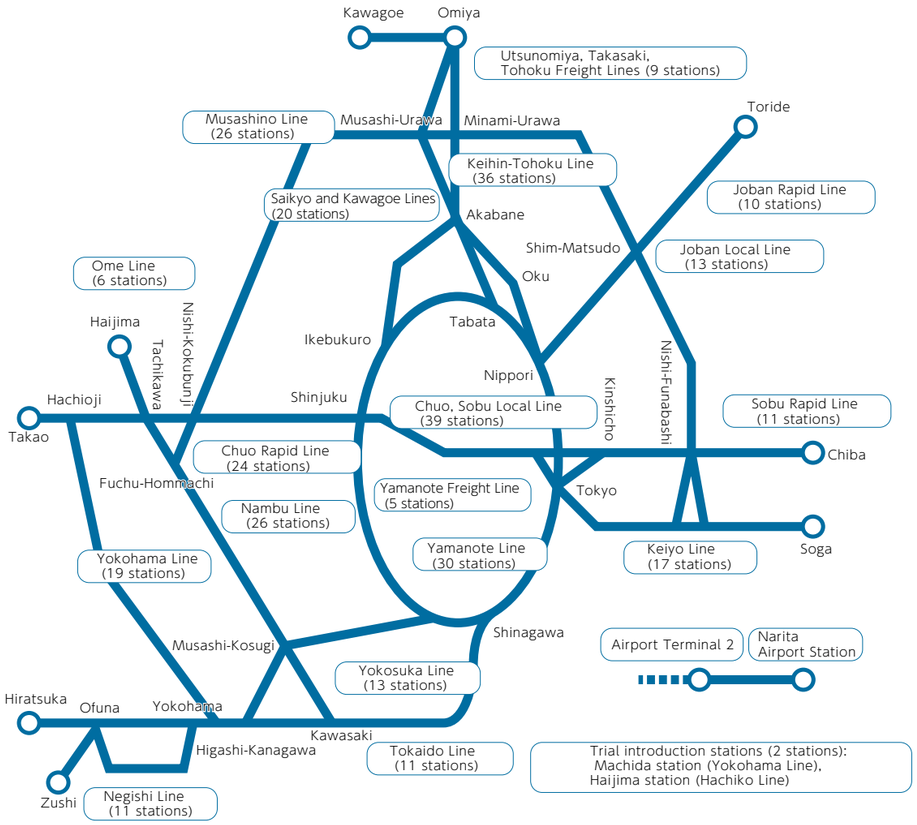
Safety measures at platforms

To prevent accidents involving customers falling from platforms or coming into contact with trains, we are installing platform doors. By the end of FY2019, we completed the installation of platform doors at 36 stations mainly on the Yamanote and Keihin Tohoku Lines (a total of 41 stations* by line).

We plan to accelerate the speed of installation, and by around the end of FY2033 we plan to have installed platform doors at all the stations on the major conventional lines in the Tokyo metropolitan area (330 stations by line, including the 243 stations where we have completed the installation to date).

* No. of stations is counted by line, e.g., Yurakucho Station is counted as 2 stations, one for the Yamanote Line and one for the Keihin Tohoku Line.

[Platform door installations to be completed by around the end of FY2033 (330 stations)]



Promoting the installation of platform doors

In March 2018, JR East announced that the company will complete the installation of platform doors at all stations on major conventional lines in the Tokyo metropolitan area by around the end of FY2033. This announcement of such a challenging target to those both inside and outside of the company truly reflects JR East's attitude toward safety. The installation of platform doors involves enormous cost, long construction periods, differences in the positions of train doors, to name a few. However, with a shared wish that our customers should be able to use our station platforms safely and with peace of mind, overcoming the boundaries of company divisions, we actively exchanged opinions and deeply considered the best way forward. I used to work in the Transport Safety Dept., formulating policies for the installation of platform doors, assessing new platform doors, and coordinating the related departments. Now that I am in the Transport & Rolling Stock Dept., I will continue my efforts to promote the installation of platform doors from the standpoint of operations.

Deputy Manager Transport & Rolling Stock Dept.

Furthermore, JR East is currently working to install an increased number of emergency stop buttons on platforms and dot-Braille blocks that indicate which direction is away from the edge of the platform. Moreover, to ask customers for their cooperation in preventing accidents, we are promoting platform zero accident campaigns.

Emergency stop buttons on platforms

By pushing an emergency stop button installed on platform pillars, people on platforms can notify drivers, conductors, and station staffs of danger.

Installation of high-resolution ITVs

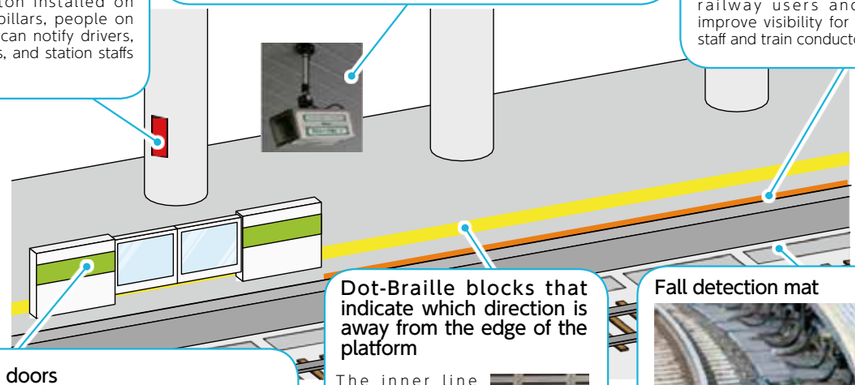
Conventional ITV

High-resolution ITV

To ensure the safety of station employees and conductors, we utilize ITVs on platforms and are increasing the number of high-resolution ITVs for more vivid and clear monitor images.

CP (color psychology) lines

By painting the ends of platforms red or orange, we promote awareness among railway users and also improve visibility for station staff and train conductors.



Platform doors

To improve visibility, glass is used for platform doors.

Dot-Braille blocks that indicate which direction is away from the edge of the platform

The inner line of the blocks is trimmed with lined bumps so that visually challenged customers can tell which side is away from the edge of the platform.

Fall detection mat

A mat placed on the tracks along the platform detects whether a person has fallen onto the tracks and notifies incoming trains to stop.

○ Introduction of new-type platform doors

To accelerate the speed of installation, we are actively introducing smart platform doors® at lower cost and in a shorter construction period.

Smart platform doors®

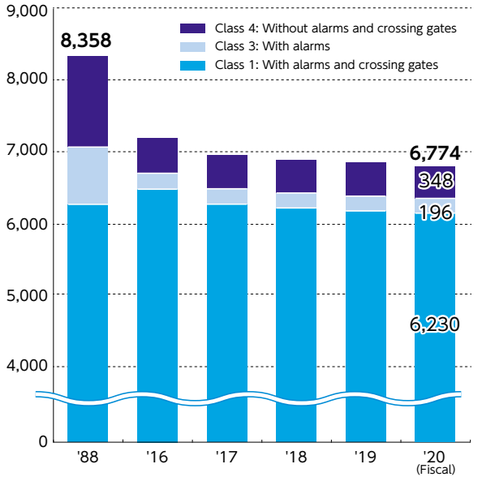
Improvement of functions to detect persons or objects stuck between railcar doors

For some of our railcars, we are increasing the detection functions by increasing the number of sensors. For the E235, a new-type railcar for the Yamanote Line, we have employed a system that enables a stuck object to be pulled out immediately after train departure. We plan to install this system in railcars to be newly introduced.

Measures to prevent level crossing accidents

The elimination of level crossings is our most fundamental measure for preventing accidents at level crossings. In cooperation with our customers in local communities, JR East is working on the elimination of level crossings by introducing grade-separated crossings, as well as by integrating or reducing the number of level crossings.
For those level crossings that cannot be eliminated, we will upgrade the crossings to Class 1 with alarms and gates. We are also further increasing the installation of obstacle detectors and level crossing alarm systems. Additionally, as a measure to improve visibility, we are installing crossing warning devices in a higher position for better visibility.
Furthermore, based on the Act on Promotion of Railway Crossings revised in April 2016, for level crossings requiring improvement, depending on the situation at each level crossing, we will take measures such as introducing overhead crossings instead of level crossings, and increasing the width of crossings. Where necessary, we will also apply colored paint to level crossings and overhead pedestrian bridges. Moreover, we are promoting level crossing zero accident campaigns to ask for the cooperation of pedestrians and automobile drivers in accident prevention at level crossings.

[Changes to the number of level crossings (as of April 1st every year)]



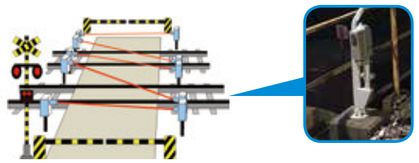
Our efforts to eliminate level crossings

[No. of eliminated level crossings by measures such as the introduction of overhead crossings (excluding those transferred to third sectors)]

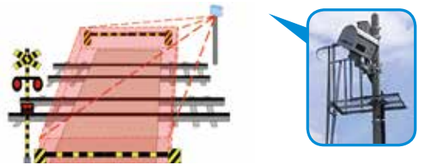
FY	2015	2016	2017	2018	2019
No. eliminated	37	18	42	20	17

Obstacle detectors

The detectors notify trains of danger by detecting an obstacle such as a stalled automobile on a level crossing. To monitor the whole area of a level crossing, we utilize laser-type detectors that cover multiple optical axes as well as three-dimensional laser radar obstacle detectors.
Currently, we are developing a highly functional three-dimensional laser radar obstacle detector to further improve functionality so that even a person who has fallen over on the level crossing can be detected.

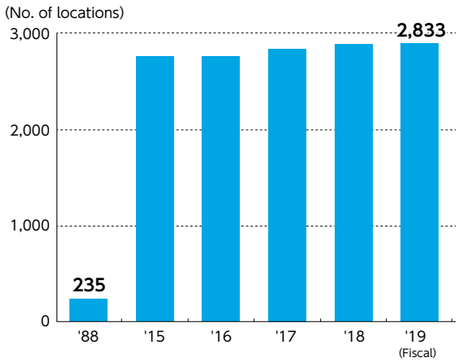


Laser-type obstacle detector



Three-dimensional laser radar obstacle detector

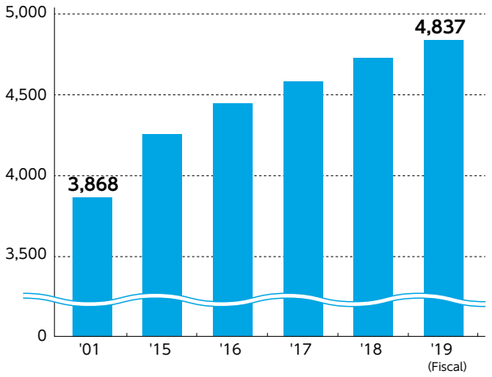
[No. of locations with obstacle detectors (as of the end of Mar. every year)]



Level crossing alarm system

Automobile drivers or pedestrians can notify trains of dangers by using the system when they are stuck on level crossings.

[No. of locations with level crossing alarm systems (as of the end of Mar. every year)]



Level crossing alarm system

Increasing visibility of level crossing alarm system and standardization of display

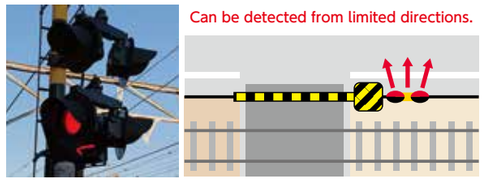
We are improving the visibility of all level crossing emergency buttons so that pedestrians and drivers can immediately push the emergency button in case of an emergency on a level crossing. By using high-luminance reflective panels, furigana for Chinese characters, an English-language sign, and a pictograph, we will make it easier for children and people from abroad to use the emergency buttons.

Before → After

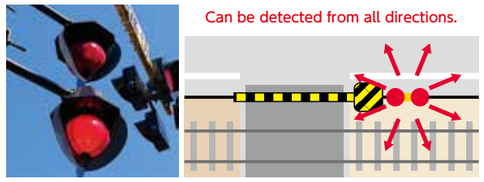
Measures to improve visibility at level crossings

Regarding level crossing warning lights to notify the approaching of a train, we are replacing conventional warning lights with omnidirectional warning lights so that they can be easily detected by the elderly with lower sight lines and automobile drivers who enter level crossings from roads.

[Conventional warning light]



[Omnidirectional warning light]



Separating level crossings for pedestrians and for automobiles

In cooperation with road administrators, we are increasing the width of level crossings and separating crossings for pedestrians from those for automobiles by changing the colors of the roads and walkways.

Efforts in snowfall areas

We utilize road heating for level crossings with heavy traffic in snowfall areas.

Measures to prevent accidents at Class 4 level crossings without crossing gates and alarms
For Class 4 level crossings that do not have crossing gates or alarms, in cooperation with neighboring communities, we are either closing them or upgrading them to Class 1 crossings by installing crossing gates and alarms. Additionally, to prevent accidents at level crossings, we are taking measures such as installing solar-powered illuminated signs or whistling signs to alert pedestrians to approaching trains.

Class 4 level crossing

Current safety record of JR East

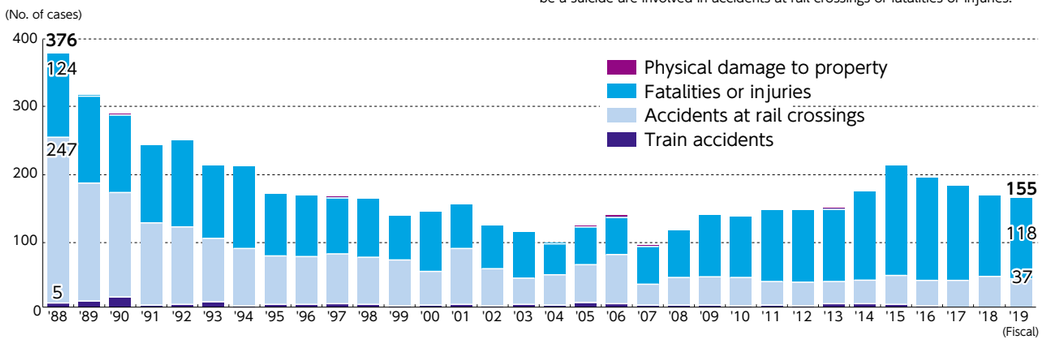
Railway accidents

In FY2019, JR East recorded 155 railway accidents, a reduction to nearly 40% of the level at the company's foundation. "Fatalities or injuries"account for approximately 70 percent of the total number of "Railway accidents" .

Train accidents	Train collisions, derailments, and train fire
Accidents at rail crossings	People or automobiles being hit by trains
Fatalities or injuries	People killed or injured by train operation excluding suicide
Physical damage to property	Accidents causing more than 5 million yen damage to property by train operation

[Occurrences of railway accidents]

* From the third quarter of FY2014, incidents which could not be determined to be a suicide are involved in accidents at rail crossings or fatalities or injuries.



■Train accidents
JR East recorded zero train accidents.

■Accidents at rail crossings
JR East recorded 37 accidents at road crossings. The accidents were caused by automobiles stalling on the tracks (11 cases), pedestrians/automobiles crossing the track immediately prior to the passing of trains (21 cases), side impact (3 cases), and others (2 cases).

■Fatalities or injuries
JR East recorded 118 railway accidents of "Fatalities or injuries". A total of 65 of these accidents related to customers on platforms or trespassers on tracks coming into contact with trains, and customers falling onto the tracks from platforms. Approximately 50% of these involved intoxicated customers.

■Physical damage to property
JR East recorded zero accidents.

Incidents

JR East recorded 1 incident (railcar failure).

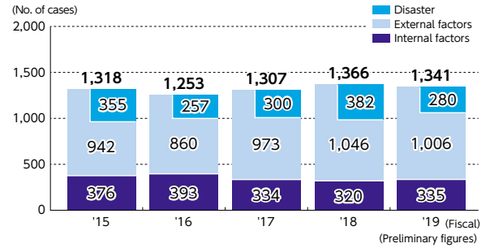
*Incidents	"Incidents" mean situations that could lead to a railway accident. The definitions of incidents are stipulated by the rules and regulations for railway accidents that require reporting.

Transport disorders

JR East recorded 1,341 cases of transport disorder.

Transport disorders	In addition to railway accidents, there are transport disorders, which encompass train service cancellations due to failures of trains or facilities, mishandling by employees, or disasters, or delays to passenger trains for over 30 min. or other trains for over 1 hour.
Disaster	Natural phenomena such as powerful storms, heavy rainfall, heavy snowfall, flooding, high tides, earthquakes, tsunamis, etc.
External factors	External factors such as trespassing or suicide
Internal factors	Internal factors such as those related to crews, trains, or facilities

[No. of transport disorders]



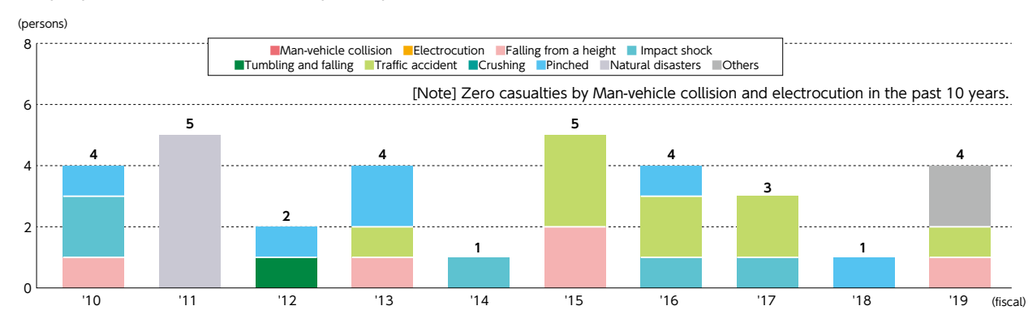
*No. reported to each District Transport Bureau

Current state of employee accidents

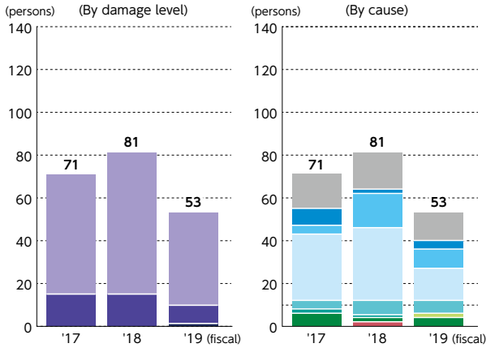
In FY2019, 4 lives were lost due to fatal accidents, and 150 accidents resulted in lost work time. Accordingly, as set out in Group Safety Plan 2023, we will continue our efforts to ensure that safety systems and rules are clearly defined and complied with across the entire JR East Group in our aim to achieve zero passenger accidents involving injury or fatality, and zero employee fatalities for both Group and Partner companies.

* Employees of Group companies, etc. include those of consolidated subsidiaries and partner companies with close relationships with JR East.

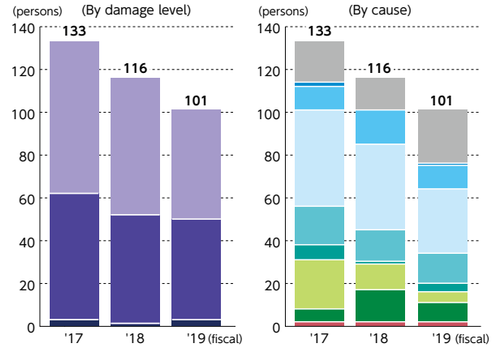
[Status of accident fatalities
(*Employees of JR East and Group companies, etc.)]

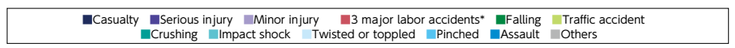


[Accidents with lost work time and fatality
(JR East employees)]



[Accidents with lost work time and fatality
(employees of Group companies, etc.)]





* 3 major labor accidents are man-vehicle collisions, electrocution, and falling.

Cooperation with customers and communities to ensure safety

To ensure the safe use of stations and trains, we are implementing various measures so that our customers and people in communities can press emergency stop buttons when they sense danger.

Platform zero accident campaign

27 railway companies are jointly conducting platform zero accident campaigns to alert customers to avoid coming into contact with trains or falling on to tracks at platforms. Additionally, the campaigns aim to ask customers to push emergency stop buttons when they sense danger.

Platform zero accident campaign

Campaign to prevent dashing onto a departing train

27 railway companies are jointly implementing a campaign to prevent dashing on to a departing train to raise awareness among passengers that it is dangerous, and asking them to push an emergency train stop button when they notice danger.

Campaign to prevent dashing onto a departing train

Level crossing zero accident campaigns

We ask our customers and neighboring communities for cooperation in the safe use of level crossings, through awareness increase activities with local police stations and by posting campaign posters at stations and showing TV and radio commercials.

Putting up posters and distributing campaign items with information at stations

Utilization of simulators for platforms and level crossings

We are offering opportunities for our customers to try pushing emergency stop buttons that can be found on platforms and at level crossings. Platform simulators are located at stations and local events, while level crossing simulators are located at driving license centers, etc. so that people can try pushing the button and see how it works.

Simulator for the general public

Our efforts for safety at level crossings in coalition with local communities

TICKET TO TOMORROW

At Sendai District Center, on May 10, starting with the opening ceremony at Sendai station, in cooperation with local law enforcement, local municipalities and JR East Group companies, we implemented the spring level-crossings accident prevention campaign. We conducted promotion activities by distributing leaflets and campaign goods, simulations on how to escape from a level-crossing by using a mock level-crossing, and lessons on how to properly cross a level-crossing for kindergarteners. In the Sendai District, we had zero level-crossing accidents in the previous fiscal year. By calling out "stop at a level-crossing", "do not cross once a warning device starts beeping", "press an emergency button when you notice an abnormality on a level-crossing" to as many people as possible, we will continue our efforts to maintain a zero level-crossing accident record in Sendai District.

Sales Chief　Sendai District Center, Sendai Branch Office

Society

[Main commitment goals]

[Related goals]

Contents

Relationship with Passengers

Medium-term Vision for Service Quality Reforms 2020

Since designating 2011 as the baseline year for service quality reforms, we have been working to improve our service quality by implementing a variety of measures. "Medium-term Vision for Service Quality Reforms 2020," which was formulated in FY2019, outlines our vision for accelerating and further developing the initiatives we have implemented to date, with the aim of being number one for passenger satisfaction in the Japanese railway industry. "Medium-term Vision for Service Quality Reforms 2020." This document outlines our vision for accelerating and further developing the initiatives we have implemented to date, with the aim of being number one for passenger satisfaction in the Japanese railway industry.

Preventing transport disruption

We will resolutely strive to prevent transport disruptions from every aspect.

Minimizing effects of disruptions on passengers

We will respond flexibly through actions such as turning trains back and promptly resuming train operations.

Provision of information during emergencies

In order to help passengers decide on their next step, we will communicate information without delay during emergencies.

Realizing railway services passengers can use comfortably

We will provide stations, railcars, and services that live up to passenger expectations of JR East.

Providing impressive passenger service

We will offer services that inspire passengers to use our group again.

Confirm understanding of issues and effects of measures implemented through service quality diagnosis

We conducted service quality diagnosis to enable us to gain a quantitative understanding of how passengers evaluate our services. We received responses from approximately 10,000 passengers about their satisfaction with our services through an online survey and conducted the same survey for approximately 1,200 employees in charge of service promotion to visualize the gaps between how passengers and employees evaluated passenger service, etc., which had not been grasped by past “customer satisfaction surveys.” We will improve our services for passengers based on these results.

Provide reliable transportation services

We are implementing various measures to improve transport quality by striving to prevent transport disruptions and by stepping up early resumption of operations after transport disruptions, as well as preventing disruptions impacting on connecting lines, in order to minimize the impact on passengers.

■Preventing transport disruptions

We are trying to prevent similar transport disruptions focusing on the causes of transport disruptions that occurred in the past.
For railcars, we have duplicated the main equipment and are proceeding with introduction of new railcars such as the E235 and E353 series with improved reliability as well as renewing the equipment of conventional railcars.
As for facilities, we are continuing, for example, the countermeasures against strong wind and snowfall by integrating overhead wiring and arranging windbreak fences, snow-melting apparatuses, etc., simplification and integration of electric facilities, etc.
In addition, we are conducting station call activities by employees and station patrol by ex-employees of JR East as activities to prevent suicide as well as repellent spraying and introduction of repelling apparatuses using laser light and sound as countermeasures against animal collisions.

■Prompt resumption of train operations after transport disruptions and minimization of the effects of disruptions to other sections

In addition, for early resume of operations, we try to turn trains back before they enter the disrupted section or operate other routes wherever possible in an effort to minimize the impact on passengers.

Furthermore, we maintain efforts to enhance our post-disruption response abilities by such measures as drills to deal with accidents resulting in casualties and exit guide. Notably, concerning accidents resulting in casualties, cooperation with police and fire services is important and we thus implement drills, etc. for employees jointly with them on a regular basis.

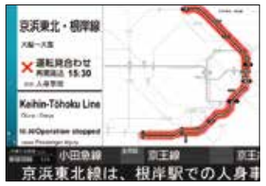

Exit guide drill

When a disruption has occurred, each worksite involved reflects on how it was dealt with, learns the lessons from this, and uses the knowledge to study and implement measures to prevent recurrences, which are then widely disseminated in-house to raise the level of each and every employee.

Enhance information provision during transportation service disruptions

■Information Enhancement

As tools for providing transport information, we have installed “service disruption information displays” at 318 stations as of the end of March 2019. We also provide information through various media, such as onboard liquid-crystal displays and the content for cellular devices. (All of them support Japanese, English, Chinese, and Korean)
In addition, on our website, we provide information on train operations and service suspensions of conventional line limited express trains, etc. and distribute delay certificates on major lines in the Tokyo metropolitan area. Such information is provided in Japanese, English, Chinese, and Korean while expanding provision of information to foreign customers by posting and distributing information at stations using QR codes.



Information display during transport disruptions

We also utilize SNS to provide information on train operations through Twitter.
In an emergency, we create voice data for guide announcements in Japanese, English, Chinese, and Korean and deliver it to station staff and train crew. In addition to announcements using fixed phrases, we broadcast announcements in accordance with various situations in stations and trains.

Twitter

■Announcement of train service resumption times during disruptions

When a disruption has occurred, we aim to announce the anticipated time at which operations should resume within about 30 minutes from occurrence of transport disruptions (within 15 minutes in the case of accidents resulting in casualties) and the announcement rate was 95% in FY2019. We will endeavor to enhance early provision of more accurate information going forward.

■Timely Information Provision through Smartphones

In April 2019, we updated the design of “JR EAST APP” and “JR-EAST Train Info,” which provides information on our train operations, for further convenience of use by passengers.
The new “JR EAST APP” features “route search” as the basic function to enable smoother confirmation of information on train operations and train position information. “JR-EAST Train Info” is now available not only in English but also Korean and Chinese (simplified/traditional) and provides simple “route search” and “route map” functions used frequently by foreign passengers.
In addition, the train operations information service “Doko-Train” enables passengers to confirm the operating status of individual trains on their own in a timely manner through the provision of information on delayed trains, train position, etc. mainly for regional train lines.

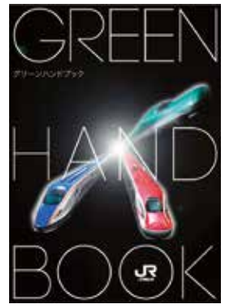
JR EAST APP


JR-EAST Train Info

Passenger services tailored to passengers’ situation

■Efforts to improve passenger service

We prepared a "Green Handbook," establishing the basics of passenger service, and distributed it to all employees. We have been utilizing the handbook while updating it accordingly to suit the changes of the times for improving our passenger service. We distribute a web version periodically to use it in study meetings at workplaces for further improvements in services.



Cover and contents example of Green Handbook

Words of hospitality for expressing hospitality to derive the needs of each passenger

■Assistance Campaign and Support

We have a campaign in which we personally greet all passengers in need, including those passengers with disabilities and elderly passengers, to make sure that they can use our stations and other facilities safely and with a sense of security.
In order to foster the momentum for supporting one another and to create a society where all people can live safely and comfortably with peace of mind, we are promoting the campaign by asking not only our own employees but also employees of other group companies and, even passengers using our services to greet others.
We are currently aiming to expand the campaign by working with transportation operators and organizations around Japan and developing activities in collaboration with the Tokyo Chamber of Commerce and Industry.

"Assistance Campaign and Support" poster

■Acquisition of Service Assistance certification

We encourage our employees to qualify themselves for Care-Fitter certification with an aim to acquire hospitality mindset and assistance skills, and approximately 14,000 employees (as of the end of FY2019) in total from all job category groups were certified. Since FY2020, all new employees have taken qualification acquisition courses. The qualified employees wear a "Care-Fitter" name tag so that passengers will be able to recognize them easily.

"Care-Fitter" name tag

"Assistance and Support" for security of all passengers

In the Yamagata section, we held a study meeting inviting people from Japan Guide Dog Association and users of guide dogs to simulate experience of visually-impaired people and how to provide services to passengers who use a walking stick or are accompanied by guide dogs in order to deploy the "Assistance and Support" campaign getting close to physically-impaired people and elderly people. We received an opinion from guide dog users that they do not always need support but feel a sense of security when spoken to by us; we felt that speaking to them is the starting point of support and got deeper awareness of Assistance and Support of the whole workplace.
We will improve our service quality such as provision of services close to passengers aiming to create an environment where all passengers can use trains with a sense of security.

Conductor, Yamagata Section, Sendai Branch

Realizing railway services that passengers can use confidently and comfortably

■Barrier-free Stations

JR East has been working with local governments and other entities to install elevators at stations in accordance with the "new barrier-free law (Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc.)". As of the end of March 2019 we had completed the installation of elevators in 551 stations.

■Barrier-free Railcars

We have introduced the universal design E233 series railcars, in which the height of luggage racks and hand straps at the ends of railcars was changed, location of priority seats was clarified and information indicators for displaying operation information in texts were installed, sequentially to the Chuo Rapid, Saikyo, Yokohama, Nambu and other Lines. Furthermore, E235 series trains, which started operation on the Yamanote Line in 2015 and are planned to be introduced on the Yokosuka/Sobu Rapid Line, now have priority seats in each railcar as well as feature free space in all railcars that can be used more safely by wheelchair users and baby stroller users (whereas there used to be a space for wheelchair users only in the front railcar).
Spacious toilet rooms capable of accommodating advanced electric wheelchairs with improved handles have been introduced on new Narita Express railcars (E259 series and after) and new Shinkansen train railcars (E5 series and after).


Free space on E235 series

■Escalator Safety Measures

To prevent injuries to passengers on escalators, we are carrying out safety enhancements, including measures that will prevent sandals from getting caught, prevent falls during emergency stops, and prevent steps from descending when escalators stop. In addition, we are also working together with other railway companies, retailers and other facilities to carry out campaigns in an effort to draw the attention of passengers through such means as posters that call for the safe and proper use of escalators.

"Escalator Safety" campaign poster

■Activities to enable passengers with baby strollers to use our services safely

To increase safety for passengers with baby strollers who use our stations and trains, we have been working to improve the response of railcar doors in the event that baby stroller frames and other devices are caught by the doors as well as posted baby stroller signs in the spaces for wheelchair users on local trains.
In addition, we carried out a campaign organized by the "Council for Use of Baby Strollers on Public Transportation, etc.," which was formed by the Ministry of Land, Infrastructure, Transport and Tourism, transport operators including our company, baby stroller manufacturers and others, to urge passengers with baby strollers to be careful, as well as asking passengers with baby strollers and other passengers to give way to each other when boarding trains. In FY2015, we posted baby stroller signs, which were selected by the council, in the spaces for wheelchair users on local trains, to create an environment where baby stroller users can safely use our services. In addition, we have baby rooms are also installed at 49 stations as of the end of March 2019.

Baby stroller sign

■Activities to enable passengers using a help mark to use our services safely

A help mark (JIS standard) is used by those who use artificial legs or prosthetic joints, have an internal impediment or intractable disease, or are in early pregnancy to easily get assistance by making the need for considerations to surrounding people. This mark was developed by the Tokyo metropolitan government and municipalities which adopt it have been increasing.
We are proceeding with posting of help mark stickers around priority seats of conventional railway lines after June 2019 to enable passengers using a help mark to use priority seats smoothly.

Help mark sticker

■Anti-crime measures/Anti-terrorism measures

In preparation for the Tokyo 2020 Olympic and Paralympic Games, improvement of railway security is a major issue of our Company to ensure that passengers feel safe and confident when using our services. As one of the measures, we are installing security cameras in key facilities, including stations (wicket areas, escalators, stairs, platforms, etc.) and onboard trains (in cars and deck areas). As for the trains, we expect that installation of security cameras will have been completed for all Shinkansen trains and conventional lines in the Tokyo metropolitan area, with the exception of certain railcars scheduled for retirement. Furthermore, we will endeavor to ensure a rapid response to any event through centralized management of information necessary for security including footage of security cameras installed in railway facilities and in close collaboration with police and other related parties.
In addition, SOS buttons that passengers can use to alert train crews when they sense danger are installed in cars as a measure against thugs on trains. We will also install protective items including shields on Shinkansen trains while enhancing installment of first aid kits. We are also implementing scenario-based training with the help of the police and other parties to deal with suspicious individuals in order to improve response capabilities of train crews.
In addition, we are also implementing drills as measures against terrorists, explosive ordnance disposals, helping injured persons (triage, etc.) on an ongoing basis in cooperation with police, fire services, etc.

■Measures against Female Molestation

In addition to adding women-only cars during certain hours in various railway sections in Tokyo metropolitan area, and with the aim of enabling female passengers to travel stress-free, we have been continuously installing SOS buttons on all railcars that women can use to alert train crews if they are improperly touched or otherwise molested. Furthermore, in cooperation with police and other railway operators we are actively conducting a campaign to eliminate on-train molestation and have significantly increased security surveillance on trains and in stations.

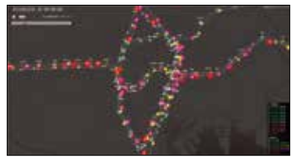
■Addressing measures to reduce congestions at the morning commuter rush hours

With regard to reducing congestion during the morning commuter rush hour, we have thus far taken measures such as increasing train services and adopting railcars with widened passenger space. In conjunction with this, we are also working on measures aimed at dispersing passengers to different trains and promoting the shift of commuting outside of peak hours. As congestion is a major cause of delayed trains during the morning commuter rush hour, we will continue seeking to reduce congestion by informing passengers about which trains become crowded in certain sections of the line and which railcars tend to become especially congested via posters at stations and the JR East app.

■Real-time visualization of the status of conventional railway lines

We have developed a system that visualizes overall train conditions, including congestion, by indicating data for each train pertaining to its location, delays and number of passengers and overlapping the data on the map of regional railway lines. It was introduced in April 2017. This would lead to achieving higher quality in transportation services as more accurate planning will be enabled from the perspective of passengers as they will be able to consider the impact from congestion in trains and delays.

As an additional function for this system, we are currently researching the visualization of congestion conditions within stations.



Visualization system for congestion on conventional railroad lines (an image)

■Improvements in Station Toilets

In order to dispel the image of station toilets as dark, dirty, and malodorous and to enable passengers to be able to use them comfortably, since its establishment JR East has been steadily upgrading its toilet facilities.

Measures taken include changes to western-style toilets, improved ventilation and the use of larger floor tiles. The upgrading also includes water-saving type toilets and automatic faucets in the washbasins to reduce water consumption.

During the fiscal year ended March 2019, we renovated the toilets in 19 more stations, as a way to increase passenger comfort and satisfaction.

Toilet in Tachikawa Station

■System to respond to inquires

JR East Center for Inquiries receives questions from passengers through telephone.

In order to quickly and correctly respond to the passengers' inquiries, the Center is addressing measures to introduce the work supporting system utilizing AI and to improve the function of the system for controlling lost and found objects as well as to enhance the quality of responses by regularly implementing the monitoring evaluation of calls and responses.

We also have a service to answer inquiries about use and services of JR East through chat to improve convenience.

■System for handling lost property

JR East collects about 2.3 million lost items annually, and the number is growing every year. With the aim of promptly returning lost property to the original owner, we are striving to facilitate searching for and providing information about missing items by managing this information using a centralized, searchable database and setting up a dedicated lost and found support center.

We also started the full-scale operation of "Lost Property Automatic Notification Service," which is provided by MAMORIO, (service to automatically notify the location information of belongings with a loss prevention tag detected by the dedicated antenna to the smartphone in which the dedicated app is downloaded) at 51 stations where lost properties are consolidated, in February 2019. This service enables passengers to go to the station where lost properties are delivered, etc. without inquiring us.

■Elimination of cell phone service gaps

We are striving to eliminate sections in tunnels where cellular device services are unreachable in order to enable customers to use railroads confidently and comfortably at ease. For the Tohoku, Joetsu, and Hokuriku Shinkansen, we are proceeding with countermeasures to be completed in 2020, while taking countermeasures for the Yamagata and Akita Shinkansen, the Chuo Line, etc.

■Development of rolling stock manufacturing business

The JR East Group will manufacture high-quality railcars not only for our group companies but also domestic and overseas customers through the opening of the Niitsu Rolling Stock Plant in October 1994, and the launch of Japan Transport Engineering Company in April 2012, etc.

Japan Transport Engineering Company is focusing on the "sustina" brand for commuting railcars which realizes high quality and low costs, using the advanced stainless steel railcar technology as the pioneer of stainless steel railcars. "Sustina" boasts characteristics such as high recyclability and beautiful railcars unique to stainless steel and railcar design incorporating barrier-free and universal designs, etc., and realizes comfort and safety of customers by adopting handrail structures resistant against collisions.

In addition, it makes use of a wide range of technologies for manufacturing of Hokuriku Shinkansen E7-series trains, Chuo Line E353-series limited express trains, TRAIN SUITE SHIKI-SHIMA, and purple line railcars for Bangkok in Thailand, etc.

sustina stainless-steel railcars

Topics

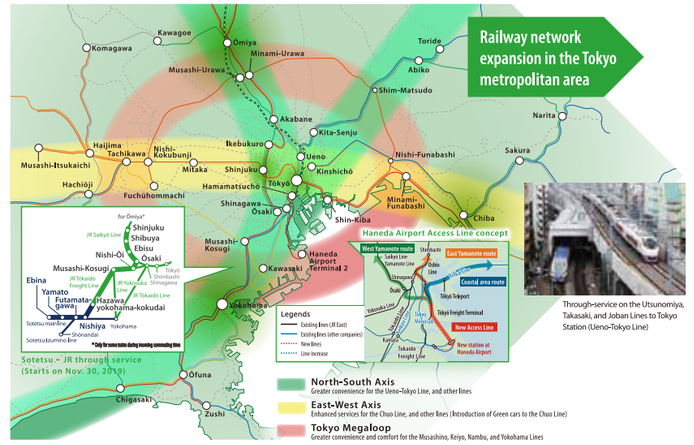
Expansion of the railway network

■Conventional railway line network

We have been engaged in improvement of value along our rail lines by enhancing the railway network so that passengers can use railroads more smoothly and comfortably, for example, by starting operation of the Shonan Shinjuku Line and Ueno Tokyo Line, etc.

Currently, together with Sagami Railway Co., Ltd., we are proceeding with preparations to start operation of direct trains from the Sotetsu Line to Shinjuku with plans to run a connecting line through from Nishiya Station on the Sagami Railway to Hazawa yokohama-kokudai Station and Yokohama-Hazawa Station on the Tokaido Freight Line as a business with Japan Railway Construction, Transport and Technology Agency (JRTT) to improve customer convenience. The Sotetsu/JR direct line is planned to be opened on November 30, 2019.

Through projects such as the Haneda Airport Access Line, we will continue to contribute to improvements in the convenience of customers, further development of local communities, economic effects, etc.



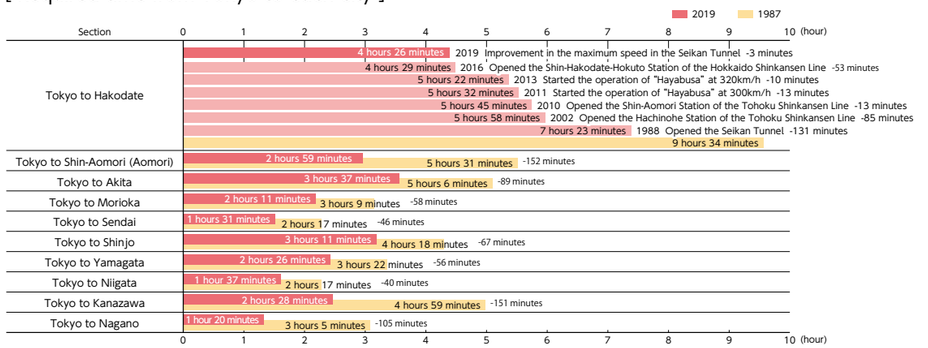
■Shinkansen network

Compared with 1987 when the company was founded, the required time for Tokyo to Hakodate has been shortened from 9 hours 34 minutes to 4 hours 26 minutes thanks to the opening of the Tohoku/Hokkaido Shinkansen, etc., and the required time for Tokyo to Sendai has been shortened from 2 hours 17 minutes to 1 hour 31 minutes thanks to improvements in railcar performance, etc. which has created valuable time for customers and greatly improved our service.

We will shorten the distance between Tokyo and local regions by shortening the required time through facility improvements and introduction of new railcars to more greatly impact the regional economy.

*Comparison based on the fastest outbound train in the schedule, revised August 2019

[Required time from Tokyo to each city]



Increase mutual communication with passenger feedback as the starting point

■Constant attention to passenger comments

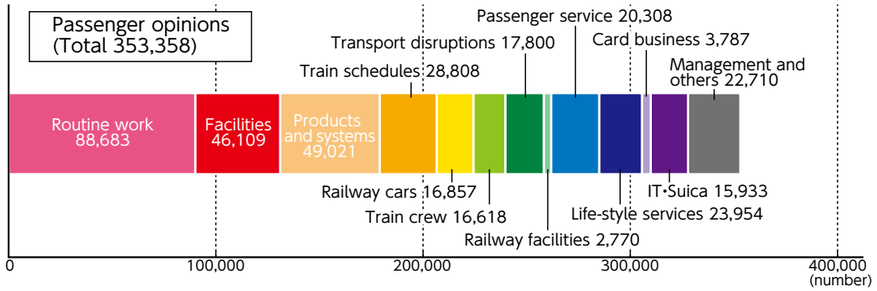
The starting point of enhancing the service quality at JR East is the passenger comments. To constantly improve our services, it is most important for us to listen carefully to passenger comments, including their interests and complaints, and then promptly respond to their requests through service improvements.

We are endeavoring to collect passenger comments on a daily basis including those which are received by each of our employees directly from passengers but also those posted on the internet, those given over the telephone, and those which can be collected by utilizing other various types of tools. Such passenger comments amount to approximately 350,000 cases annually and all of these comments are quickly shared and analyzed via a companywide database New Green Information System, and form the core of our improvements. We believe that each and every individual passenger comment contributes to the core of improved passenger satisfaction.

Passenger comments are considered at various levels within the company. While actions of improvement are taken as much as possible for the passenger comments received, if action is difficult to take at that level, then the comments are passed on to the Passenger Comments Committee comprised of concerned executive officers, which considers the possible implementation of improvement measures based on collected passenger comments. Through this system, we are constantly striving for the attainment of improved passenger services.

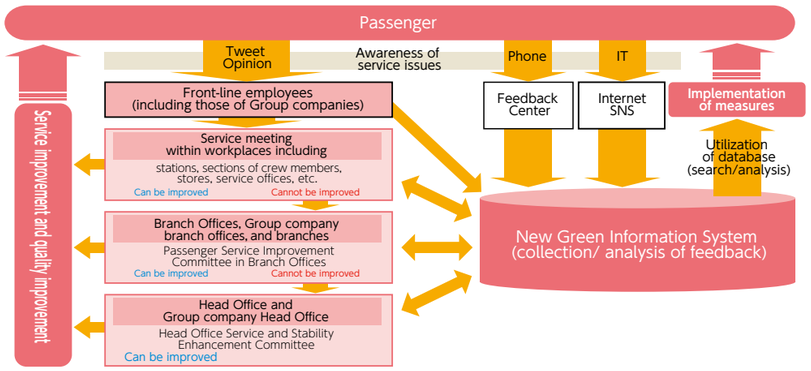
Case of improvement based on passenger comments

Itemized breakdown of the Passenger comments in FY2019



*The chart shows the number of comments on each subject. Some passengers commented on more than one subject.

Systematic improvements based on passenger comments



■Utilization of SNS

In order to ascertain our passengers' needs, we consider it necessary not simply to receive feedback directly from passengers but also to actively and widely collect and analyze passenger comments. Therefore, we are also striving to comprehend their potential opinions that are transmitted through social media.

Through the JR East Official Facebook page launched in May 2012 and JR East Official Twitter account launched in April 2015, we proactively provide information to the public, including details about various measures we have implemented and publicity campaign-related notifications, with the aim of engaging in two-way communication with passengers.


JR EAST Official Facebook


JR East Official Twitter account

■Projects for Improving Service Quality

We provide customers with information and employee insights on our policies and actions to improve the quality of our services. In addition to group-wide communication of service improvements via posters, videos, and other media, our local sites use posters, etc. to highlight improvements they have made in response to customer feedback.


Projects for Improving Service Quality (Power Plant Version)

Poster of example cases of improvement at each workplace

Improvement of service quality pursued by the entire group working as a single team (SQ Network)

To rapidly promote improvements in the quality of our services by reflecting passenger comments deemed as the starting point as the JR East Group, our Company and group companies closely involved in railway transport service such as passenger services and cleaning in stations and trains, business in stations, and maintenance and management of service equipment established the SQ (Service Quality) Network. As of July 2019, there are 34 members of the SQ Network to share passengers' comments and devise solutions and improvements through teamwork, which goes beyond individual departments or group companies. In this way, the JR East Group as a whole can dedicate itself to enhancing passengers' satisfaction.

Responses to inquiries from passengers in the event of transport disruptions

In the event of transport disruptions at Morioka Station, we receive many inquiries about information on train operations, etc. from passengers. In such cases, we will collaborate with the Morioka Branch of JR East and Morioka Station to make an announcement in the station building "Fesan," which we manage, and immediately provide information to the tablet terminals allocated in each shop for announcement to passengers.

In addition, we are reinforcing the expansion of services to inbound passengers, the provision of information during emergencies, and collaboration with regional communities by exchanging information such as holding meetings and exchanging opinions with the Morioka Branch of JR East and the other groups in the branch. We will continue to improve services so that passengers can use the building safely with satisfaction.

The Sales Division, Stations Building "Fesan," Morioka Terminal Building Co., Ltd.

Service improvement for inbound tourists

We have been actively working on measures such as proposing attractive products and carrying out promotional activities in collaboration with local communities with the aim of expanding demand from overseas visitors to Japan, whose numbers are rapidly growing in recent years, and vitalizing communities by transporting passengers to regional areas. Furthermore, we are working to reinforce our capability to accept overseas visitors so that they can use the railway network safely and comfortably.

■Products that Appeal to Overseas Visitors

In order to encourage inbound tourists to take enjoyable trips using railways, we offer convenient, reasonable products that they can choose from according to their travel plans.

[Key Products]

JR EAST PASS	Pass providing unlimited travel within the applicable area (two products available: Tohoku area, Nagano/ Niigata area)
JR TOKYO Wide Pass	Pass providing unlimited travel within the Kanto area
N'EX TOKYO Round Trip Ticket	Ticket providing access to the Tokyo area from Narita Airport
JR East-South Hokkaido Rail Pass	Available for the Kanto, Tohoku, and South Hokkaido areas
JR Tohoku-South Hokkaido Rail Pass	Available for the Tohoku and South Hokkaido areas
Tokyo-Osaka Hokuriku Arch Pass	Pass providing traveling on the Hokuriku Shinkansen

■Seat reservation system allowing reservations from overseas

We have introduced "JR-EAST Train Reservation," a seat reservation website allowing reservations from overseas for Shinkansen and major limited express trains of JR East. Starting from February 2016, real-time reservations became possible online, and reservation service in Chinese (traditional Chinese and simplified Chinese) and Korean in addition to English was made available, further enhancing convenience for overseas passengers.
Furthermore, we have expanded in February 2017 the areas for which reservations can be made in cooperation with JR Hokkaido and JR-West, and as a result, "all areas" of JR Hokkaido and "Hokuriku Shinkansen (up to Kanazawa Station)" are now covered by the system.
Moreover, many kinds of "Trains for enjoying riding," which is also popular overseas, were added to the lineup in September 2018 and have been used by many passengers.

Online seat reservation site
"JREAST Train Reservation"

■Free Public Wireless LAN Service for Overseas Visitors

To meet more closely the needs of inbound tourists, we offer a free public wireless LAN service "JR-EAST FREE Wi-Fi" at 100 stations, mainly all the stations of the Yamanote Line and stations frequented by inbound overseas tourists, as well as at JR EAST Travel Service Centers, as of the end of April 2019. We also offer a free public wireless LAN service at the stations where Shinkansen stops via "JR-EAST FREE Wi-Fi" or services provided by municipalities or telecom companies.
We are expanding the services in railcars of Narita Express, Shinkansen, and the limited express trains on the Chuo Line (E353-series).

JR-EAST FREE Wi-Fi

■Strengthening service of multilingual business interpreters

In order to smoothly provide information service in stations and railcars, we have changed the service hours for multilingual business interpretation through telephone from the former 10:00 – 18:00 hrs. to 24 hours a day, starting from April 2017. For passengers to whom it is difficult to provide information in Japanese, our employees at stations and crew members call up the Interpreter Center, and information is provided over the phone through operators.
We also transmit information in multiple languages during both normal operations and emergencies using a tool which can broadcast announcements in Japanese, English, Chinese, and Korean by combining fixed phrases.

IT and Suica Business

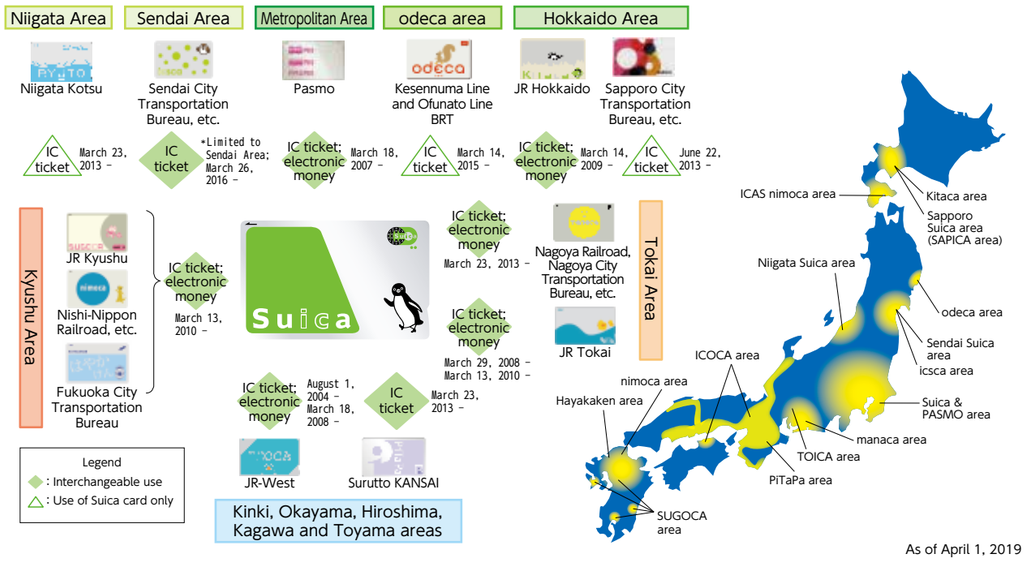
■Suica as an IC ticket

The Suica service was launched at 424 stations in the Tokyo metropolitan area in November 2001. In March 2013, ten public transportation IC cards, including Suica, were made interchangeable. Usage of Suica was expanded further in March 2016, when it was made interchangeable in the Sendai region with the "icsca" IC card issued by the Sendai City Transportation Bureau. A new service, Touch and Go Shinkansen, was launched in April 2018 that makes it possible to use Suica and other public transport IC cards for certain standard non-reserved Shinkansen seats within the JR East network. This provides passengers with rapid, ticketless access to Shinkansen trains.
The number of stations where Suica can be used, including stations of railway companies accepting interchangeable use, is approximately 5,000 across the nation as of April 1, 2019.

[Number of Suica cards issued] Approx. 75.87 million
[Number of Mobile Suica users] Approx. 7.15 million
[Suica & other transit e-money use]
Number of shops accepting Suica Approx. 616,410
Number of locations accepting Suica (number of terminals) Approx. 1,110,820
Number of uses in March 2019 Approx. 202.53 million
Number of uses per day (record-high) Approx. 9.089 million (recorded on August 3, 2019)

(As of the end of March 2019 unless otherwise specified)

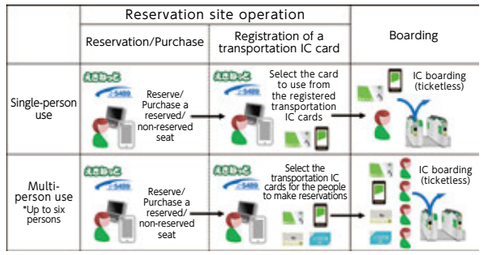
Interchangeable Use of IC Cards Area



As of April 1, 2019

■Introduction of a new Shinkansen IC boarding service

We will introduce a new Shinkansen IC boarding service that will enable passengers to reserve a reserved or non-reserved seat for the Tohoku/ Hokkaido, Joetsu, Hokuriku, Yamagata, or Akita Shinkansen Line via the reservation site "Eki-net" (JR East/JR Hokkaido) or "e5489" (JR West) and pass through an automatic ticket checker for Shinkansen using a transportation IC card (Suica, etc.) by the end of FY2020.
After the service is started, passengers can use the services speedily without buying a ticket or visiting the service counter or ticket-vending machine of a station.



■Suica as Electronic Money

The electronic money service enabling Suica to be used for shopping was launched in March 2004. Thanks to the speed of the payment process and the convenience of not requiring small change, it has been adopted by many passengers, and the number of places where Suica can be used as electronic money has been increased to include shops not just inside but also outside stations. In 2018, Suica electronic money was introduced at large-scale chains such as Yoshinoya, taxies, and Nikko Toshogu.

■Mobile Device Usage/Information Usage

The Mobile Suica service was launched in January 2006, followed by launch of services such as Suica for Apple Pay*1 in October 2016, Suica for Google Pay*2 in May 2018. We are also proceeding with coordination with other companies by launching “Mizuho Suica” in August 2018.

Example of Suica for Apple Pay*1 advertisement

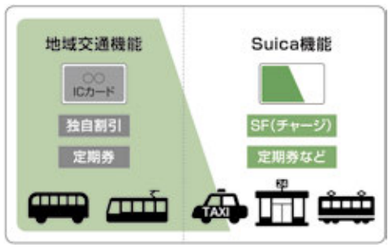
Example of Suica for Google Pay*2 advertisement

Example of Mizuho Suica advertisement

*1 Apple Pay® is a trademark of Apple Inc., registered in the U.S. and other countries.
*2 Google Pay is a trademark of Google LLC.

■Regional Collaboration IC Card

In the spring of 2021, we plan to start provision of a Regional Collaboration IC Card,” which can consolidate the functions of Suica with other functions, such as a commuter bus pass, to realize services unique to each regional area.
“Regional Collaboration IC Card” enables passengers to use services unique to each regional area, such as commuter bus passes of regional transportation operators and discounts, as well as the services of Suica such as tickets and electronic money usable in Suica areas, etc.



Regional Collaboration IC Card Image

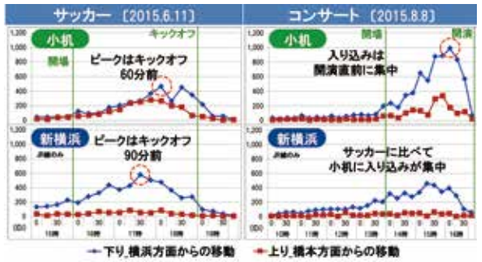
■Utilization of information of Suica, VIEW CARD, etc.

The JR East Group established the information business center in FY2014 and is proceeding with activities to use statistical information about Suica.

Statistical information provision business

We are aiming at improvements in the service quality and activation of regional areas, stations, and areas along the lines by using the analysis results of statistical information for arrangements of services and facilities, business development, etc.

[Usage condition at the time when an event is held at NISSAN STADIUM]



Travel expense reimbursement business

We started a corporate service to provide companies with data on the usage history of Suica held by employees for business transportation. The service works in coordination with the expense reimbursement system of companies and contributes to work style reforms in society such as streamlining of work for the expense reimbursement office.

[Cooperation with Nissin Foods Holdings Co., Ltd.]

■JRE POINT

In order to build a service system that is attractive to both passengers and member stores by bringing together the multiple number of point systems existing within the Group, in February 2016 we launched the "JRE POINT" program centering on station building points.
Suica points were integrated in December 2017, followed by View-thanks points in June 2018 to expand the services, and collection of JRE POINTs through use of railroads through registered a Suica is began from October 2019.

■JRE CARD

In July 2018, we issued the new JRE CARD credit card, making it easier than ever to earn JRE POINTs when shopping at JRE MALL and premium member stores.

JRE POINT logo

JRE CARD

■JRE MALL

In March 2018, we opened JRE MALL, a new shopping website, with the purpose of creating closer connections with customers revolving around our JR East Group-wide point program, JRE POINT. Users can enjoy shopping with JRE POINTs while earning points on purchases they make.
We also intend to further promote an omnichannel approach across the Group by deploying online in-station services which enable to make advance purchases at eCute stores and the like online, then pick them up in person.

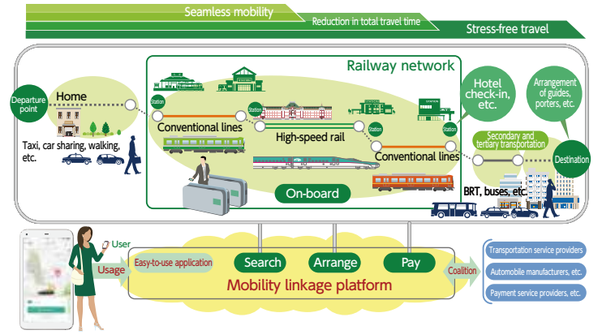
https://www.jreastmall.com

Product Category	Key Products
Railway-related products	Railway goods, items used in railways, etc.
Regional specialty products/souvenirs	Famous sweets and local specialties from various regions, Tokyo souvenirs, etc.
Other	Suica penguin goods

Realization of Seamless Mobility (MaaS)

■Work for MaaS

The JR East Group is working on realizing seamless mobility (MaaS: Mobility as a Service). We specifically develop a "mobility linkage platform" that provide an all-in-one service offering the necessary transportation information as well as purchasing and payment options to customers, enabling stress-free travel and a reduction in total travel time.



■Tourism MaaS

We plan to contribute to the promotion of tourism and increase in interactions among tourists and residents by offering a system which enables seamless search for necessary information, reservation, and payment, as well as improving the attractiveness of tourist spots and services. As the first trial of tourism MaaS, we have implemented a demonstration test of a tourism MaaS app, called "Izuko", as a member of "Tourism MaaS Demonstration Test Committee of Izu", since April 2019. We will plan a tourism MaaS in the Sendai area, collaborating with Miyagi Prefecture and Sendai City, as well as a demonstration test of tourism MaaS in Niigata.

MaaS experiment of Niigata (top screen)

Tourism loop bus ticket purchase screen

Introduction of a Tourism MaaS App

TICKET TO TOMORROW

Izuko enables users for search, reservation, and payment with a single device and realize seamless mobility. "Digital free pass," which is available in Izuko, is JR East's first case of a reasonable ticket shown on the screen of a smartphone. Toward the launch of this service, we have tried to keep close communication with in-house and outside relevant sections. We are proud to be engaged in the operations for MaaS, which is expected to solve regional issues by providing access/egress transportation services and facilitating the cashless payment. In order to improve the convenience for tourists and vitalize the region, we will keep making efforts so that many users make use of Phase 2 that will begin from December 1, 2019.

Marketing Department, Yokohama Branch Office, East Japan Railway Company

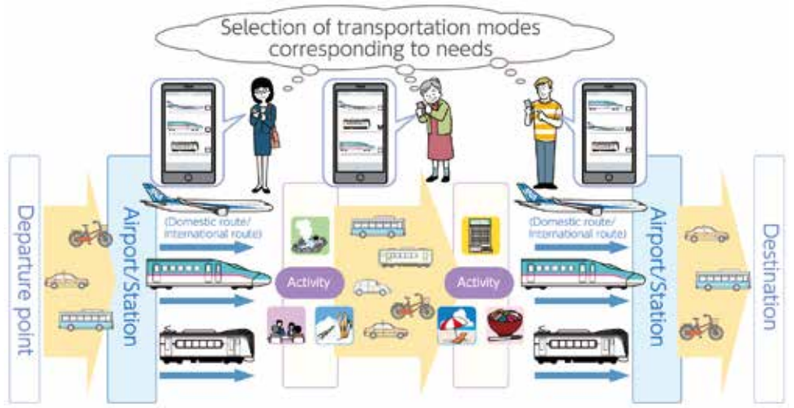
Japan's first tourism MaaS" Izuko"

TICKET TO TOMORROW

Collaborating with TOKYU CORPORATION, we have started the Shizuoka Destination Campaign with a demonstration test of Japan's first "tourism MaaS". We are in charge of the secretariat of the committee implementing this test and have developed an app for the demonstration test and named it "Izuko." In the Izu area which has had problems of the introducing cashless payment systems and new transportation services, Izuko users can ride on railways and buses "only by showing the screen of their smartphone" and experience seamless travel to destinations and sightseeing tours with admissions to tourism facilities and on-demand AI rideshare vehicles.
Phase 1 was completed at the end of June 2019, and the second demonstration test will be started from December 1. We will continue contributing to attract passengers to the Izu area.

East Japan Marketing & Communications, Inc.

■Collaborations with Business Partners



To realize a society with seamless mobility, JR East and Odakyu Electric Railway Co., Ltd. have considered jointly providing services; for example, we are planning to provide real-time and convenient services such as the proposal of alternative routes based on information on congestion and delays. Moreover, with All Nippon Airways Co., Ltd., we look to joint services of "ground and air transportation" by utilizing digital technologies including mobile terminals. The examples are "Seamless reception of information on railways and airlines" and "easier purchase of railway and airline tickets." We are going to expand cooperation with various mobility providers in addition to public transit operators in the future.
In addition, from September 2019 to March 2020, "JR EAST Train Info (foreign language version)" app will be preinstalled in all "handy" smartphones available in some hotels in Japan as a trial of the service for foreign tourists. The app provides route navigation and real-time information on JR East's train operations. We will keep planning services necessary for foreign passengers.

■JR EAST APP

In April 2019, we updated the services of "JR EAST APP (in Japanese)" and "JR-East Train Info (in foreign languages)" app to make it easier for passengers to search routes and obtain information on train operations and delays. We are planning to expand services in the apps to cover not only mobility but also useful information for travel and daily lives. These apps will play an important role in our MaaS.

JR EAST APP

JR-EAST Train Info

■Ringo Pass

Ringo Pass is a demonstration test app, which facilitates a one-stop service of multiple transportation modes while requires registering Suica ID number and credit card information. As of now, about 200 test users use bicycle sharing of DOCOMO BIKE SHARE, INC. and taxies of Kokusai Motorcars Co., Ltd. To realize the "seamless mobility", we plan to expand transportation modes, services for usual customers, information provision methods such as JR EAST APP, and electronic money payment systems such as mobile Suica.

Ringo Pass

Logo

App Screen

Demonstration Test with Docomo bicycle share

Demonstration Test with Kokusai Motorcars taxi

Technical Innovation

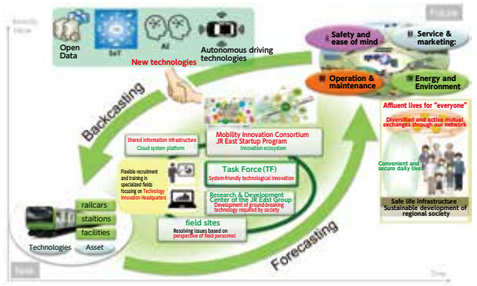
As stated in our Medium- to Long-term Vision for Technical Innovation established in November 2016, we will leverage IoT, big data, AI, and other technologies to thoroughly review the services provided by the JR East Group from the viewpoint of passengers, with the aim of going beyond conventional thinking to achieve a "mobility revolution."
To be concrete, we aim to create by means of AI and other technologies new values out of the data obtained through our Group's all business activities, in the four fields, namely, "Safety and Security," "Service and Marketing," "Operation and Maintenance," and "Energy and Environment." To that end, we will strive to promote further open innovations to incorporate the world's most advanced technologies, and thereby build the "Innovation Ecosystem*" which continues to provide innovative services in the area of mobility.

* Industrial cooperation among corporations to promote innovations

"Mobility Revolution" by the four fields

■Establishing task forces to promote the Medium- to Long-term Vision for Technical Innovation

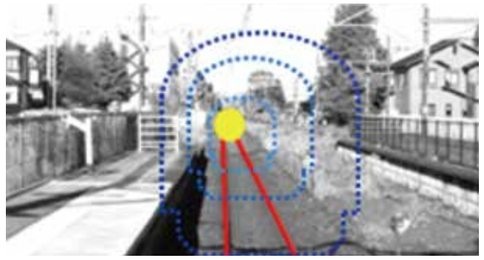
We have established task forces to strongly promote the Medium- to Long-term Vision for Technical Innovation in order to carry out missions by formulating road maps and developing internal and external promotion systems while clarifying achievement targets for in-house cross-organizational measures. We will achieve innovation in the railway operation business by actively incorporating new technologies into our society, such as AI, IoT, and big data, while aiming to provide new value for passengers and enhance the safety and stability of transportation services.



Establishment of task forces to promote the Medium- to Long-term Vision

Details of task forces

"Smart maintenance (collect and analyze huge amounts of data concerning the status of facilities and consider optimum timing and methods of maintenance)," "driverless operation (expansion of one-man train operation and consider matters related to the introduction of automation technology for driving and controlling trains)," "next-generation Shinkansen (production of test trains for realizing next-generation Shinkansen and implementation of test drives)," etc. We will set up new task forces as needed.

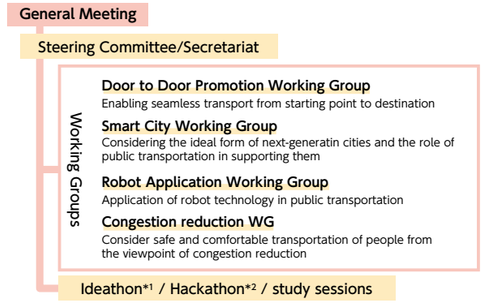


Task force (driverless operation)
Build an advanced monitoring system against intruders from areas around tracks and obstacles on tracks by using high-speed and highly accurate image-recognition technology, camera sensing technology that go beyond far places and other technologies, and consider ways to achieve driverless operation.

■Launch of the Mobility Innovation Consortium to solve social issues

In September 2017, we launched the Mobility Innovation Consortium as a venue for creating and strengthening "links" between our Group companies, external companies, universities, research institutions, etc. and driving innovation in the field of public transportation (154 members as of July 2019). Now, four working groups are in operation.
The purpose of this Consortium is to work on resolving social issues that are challenging for a single company to tackle alone by collaborating and combining the respective strengths of various transportation operators (including JR East), domestic and international manufacturers, universities, research institutions, and other stakeholders with the aim of developing an innovation ecosystem.

[Image of the Mobility Innovation Consortium's Structure]



*1 Neologism formed from "idea" and "marathon." An ideathon is an event where ideas for resolving a specific issue are intensively brainstormed and collected during a set period of time.
*2 Neologism formed from "hack" and "marathon." A hackathon is an event where programs and apps for resolving a specific issue are intensively developed during a set period of time.

■Research and development of service robots

For the purpose of supporting passengers who are not accustomed to railways and passengers with physical disabilities as well as performing tasks for which labor shortages are becoming an issue (cleaning, security, baggage transportation, etc.), we are considering expanding the usage of service robots in station premises to expand. Accordingly, we are pursuing research and development of a cloud system that will monitor station conditions (congestion, etc.) in real time and autonomous mobile robots that can operate in pedestrian areas via a link to this system.
In FY2019, needs and issues were identified, technical and development partners recruited, consideration for the introduction of robots to handle tasks such as providing information (including information for overseas visitors) commenced and passenger transfer assisted.

Information robot (an image)

Transfer-assisting robot (under joint development)

■Development of next-generation Shinkansen

We are promoting the development based on the four concepts: "pursuit of further safety and stability," "improvements in comfort," "improvements in the environmental performance," and "innovation of maintenance."
A test railcar (E956 type, public nickname "ALFA-X") was completed as a test platform to proceed with the development of next-generation Shinkansen in May 2019.
Now we are conducting test drives between Sendai and Shin-Aomori of the Tohoku Shinkansen Line for verification of the current development.

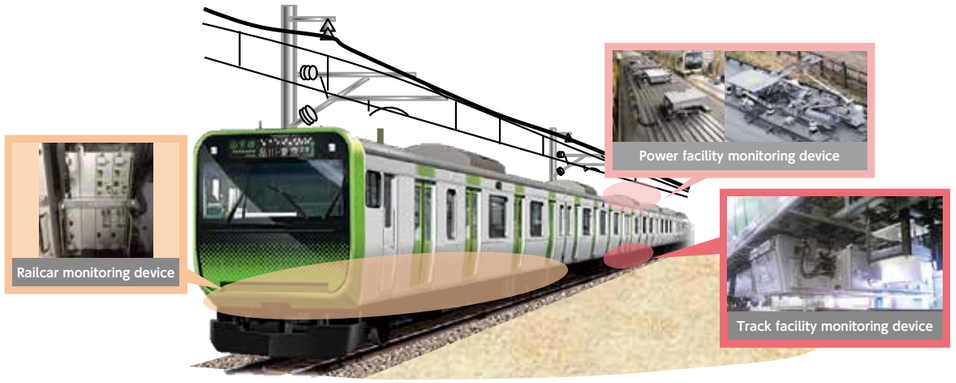
■Realization of smart maintenance

By loading devices for monitoring not only equipment on railcars but also tracks and power facilities while train is running, it becomes possible to grasp the condition of railcars and facilities with high frequency.
In obtaining data with high frequency, we aim to realize maintenance at optimum timing by means of CBM*.
At present, we have established a method for data analysis and evaluation for the track facility monitoring device, and introduced it mainly in railway sections in the Tokyo metropolitan area including the Keihin Tohoku Line, Chuo Line and Yamanote Line. We will continue to introduce it in other sections in a sequential manner.
As for railcars, we established a monitoring maintenance system, which is a new maintenance method using condition monitoring data, in E235-series, which had implemented the condition monitoring function for railcar equipment, and have replaced a part of the periodic inspection with "function confirmation by data during operation" since June 2018. In addition, we will consider analysis of data of railcar equipment for future maintenance such as grasping of degradation and life prediction of equipment in railcars (E7-series, E353-series, GV-E400-series, etc.) which can accumulate condition monitoring data.

* CBM: Condition Based Maintenance

[Examples of CBM]

Railcar -------	Currently, the condition of major equipment is being monitored from both devices on board and those on the ground, and we plan to utilize the system for grasping signs of failure and reviewing inspection methods.
Track -------	We will collect data on track displacement (slight distortion and/or gap of track width), track materials (rail fastening devices), etc. and use it for prediction of track displacement, confirmation of the material condition, planning support, etc.
Electricity --	We collect data on abrasion of trolley wires (wearing of wires caused by friction), etc. and use the data for wear prediction and factor analysis.



■Collaboration with venture companies to solve social issues

In order to swiftly create new businesses and services as passengers' needs and the management environment change rapidly, we require expertise in unknown technologies and business fields where we lack experience. Therefore, the JR East Group will actively utilize the technologies and know-how of venture companies, etc. through collaboration.
As part of these efforts, in February 2018, we established JR East Startup Co., Ltd. for the purpose of speeding up the promotion of open innovation. By creating new businesses and services through the provision of funding for venture companies and promotion of collaboration, we will contribute to further vitalizing regional communities and improving the standard of living.

■JR East Startup Program

In FY2018, we launched the JR East Startup Program to solicit, refine, and implement proposals for businesses and services making use of stations, railways, and the JR East Group's management and information resources from venture companies, etc.
We received 237 proposals in FY2018 of which 19 were accepted, and in FY2019 we received 182 proposals of which 23 were accepted. We've conducted demonstration experiments for many adopted proposals.
In addition, we have been promoting commercialization of various proposals; for example, we founded a company for commercialization of unmanned AI settlement stores and opened a fresh fish retailer (sakana bacca) using a seafood distribution platform based on IT in eCute Shinagawa. "JR East Startup Program" received praise for its contribution to activation of regional areas and new industries and was awarded the METI Minister Award in "First Japan Open Innovation Prize" of the Cabinet Office.
The third JR East Startup Program in FY2020 was held in collaboration with JR West, JR Kyushu, and the City of Niigata, and together with the demonstration experiment at the Takanawa Gateway Station. We received 262 proposals. We will continue collaboration with venture companies and commercialization while taking in internal and external evaluations as feedback.

JR East Startup Program logo


Unmanned AI settlement store


sakana bacca


Japan Open Innovation Prize

■In-house new business creation program "ON1000"

We started the "ON1000" program in October 2018 for the purpose of creation of "non-continuous" business which is not an extension of the existing business. We solicited ideas from employees of the JR East Group based on the values of individuals and consumers away from the existing business and received 1,051 ideas.
We conducted mentoring for eight ideas together with external partners through reviews. We reviewed commercialization with the President as the review chairperson in March 2019 and are now proceeding with consideration of commercialization of four ideas.

[Sales copy]

湧き上がれ、熱意。
つくり出せ、未来。

For realization of ON1000

TICKET TO TOMORROW

I was interested in the purpose of ON1000 to embody ideas and goals of each individual and the examination of business opportunities as extensions of trouble in daily life, so I submitted an idea together with my colleagues and it was adopted; now we are conducting a demonstration experiment for commercialization. The process to commercialize an idea is different from the usual driver operations, but I can learn a wide range of viewpoints and knowledge and am stimulated by communicating with in-house and outside people. Although we have a long way to go toward commercialization, we will keep moving toward realization.

Driver, Soga section, Chiba Branch

■Office sharing business "STATION WORK"

As an approach to work-style reform, which is a social issue, and to provide a new service at stations, we started "STATION WORK," an in-station office sharing service, on August 1, 2019.
We will provide space where people can work safely in a highly secure environment in a station, which has the least movement loss. We have deployed four booth-type sites of "STATION BOOTH" mainly in major stations of the Yamanote Line such as the Tokyo Station, Shinjuku Station, and Ikebukuro Station (as of September 2019). Going forward, we will increase the number of sites.


STATION WORK

Relationship with Society

Strengthening Collaboration with Communities

The very existence of the JR East Group depends on the health of the communities and of Japan as a whole. As a company responsible for a form of social infrastructure (i.e., railways), and as a member of the community, we work together with communities in order to take actions aimed at achieving their desired future. The following shows representative examples of businesses JR East runs, aiming at reinforcement of collaboration with the regional community. Based on Transformation 2027 and NEXT10, we are actively implementing community vitalization and tourism promotion measures that leverage the unique capabilities of the JR East Group, as well as pushing forward with the creation of appealing urban areas centering on train stations confirming and evaluating the progress in each branch, etc.

■Development of large-scale terminal station

At Shinjuku Station, we will widen the passage inside the ticket gate between the east exit ticket gate and the west exit ticket gate and change the position of ticket gates along with the arrangement of the east-west free passage in order to improve the circulation of passengers in the entire station and contribute to construction of an attractive area and forming a passenger network around the station.
At Shibuya Station, with the move of part of Tokyu Toyoko Line to underground tracks as a turning point, we are proceeding with rearrangement and expansion of surrounding infrastructure and construction of jointly developed buildings as well as the renewal and reorganization of the function of the station such as parallelization of the platforms of the Yamanote Line and the Saikyo Line, in cooperation with related business operators.
At Yokohama Station, with increasing momentum in the surrounding community for performing urban redevelopment, we are proceeding with construction of JR Yokohama Tower under the theme of enhancing the attractiveness of the station and town, strengthening disaster-prevention capabilities, addressing environmental issues, and reinforcing accessibility, etc., in cooperation with the local government.

East-west free passage of the Shinjuku station

JR Yokohama Tower

■Phase 1 of Shibuya Scramble Square (East building)

Phase 1 of Shibuya Scramble Square (East building) opened on November 1, 2019, is a large-scale complex composed of the observation facility "SHIBUYA SKY," the industrial exchange facility "SHIBUYA QWS," commercial facilities, and offices with 47 stories above ground and a height of 230 meters, making it the tallest building in the Shibuya area. The project will transmit new values from the newly created landmark directly connected to/immediately above Shibuya Station to improve the attractiveness and values of the city together with the area.

Phase 1 of Shibuya Scramble Square (East building)
SHIBUYA SKY Plane-view image

■WATERS takeshiba

WATERS takeshiba is an urban joint development composed of a luxury hotel, offices, commercial facilities, and theatre. We are promoting a new method of town development, making the maximum use of the waterside location and environment near Hamarikyu Gardens and based on the functions of the transmission base of culture and art cultivated by Shiki Theatre Company with the vision of "city to bring forth next-generation richness." We are planning the advanced opening of an office, the commercial I period, and a hotel in April 2020, the opening of the commercial II period and the grand opening of the fall theatre in July, and the opening of the spring theatre in September.

Image of the exterior appearance of side facing Hamarikyu Gardens

Image of the square and terrace

New method of town development from the waterside of Tokyo

TICKET TO TOMORROW

"WATERS takeshiba" is an urban joint development located a 6-minute walk from JR Hamamatsucho Station. In this development, we are considering the possibilities of "vitalization of ship transportation," "environmental regeneration and creation of places for learning," etc. in order to make the maximum use of the characteristics of the waterside location adjacent to Hamarikyu Gardens. At present, we are engaged in social experiments and environmental surveys with MIZBERING Takeshiba, course collaboration with Shiba Commercial High School, participation in and support for local events, etc. We are proceeding toward the opening of the city in 2020 and receiving support from the government, related business operators, educational institutions, local residents, etc. aiming to realize the vision "city to bring forth next-generation richness."

Center For Life-Style Development, Tokyo Branch

■Establishment of a lineside brand that will be chosen by passengers

Across the metropolitan Tokyo network, we are working on "creation of preferred lineside brands" that will make people want to visit or live in those areas by promoting development and renewal of not only the areas around stations but also locations under elevated tracks between stations through projects such as the Chuo Line Mall Project (Chuo Line), Kurasu Class (Nambu Line), Keiyo Bayside Line Project (Keiyo Line), FUN TOKYO! (Yamanote Line), and Saikyo Line Lineside Branding, as well as providing information about areas along the lines.

Chuo Line Mall Project: Musako Garden

Kurasu Class

■Lieto Garden Mitaka

We are promoting the housing business for mainly rental housing in order to create areas along the lines "where people can live happily" as one of the diverse "life creation (town development)" menus and also deploying not only newly built properties but also renovated properties following the trend of utilizing building stock.
"Lieto Garden Mitaka" was opened in July 2019. In the center of Lieto Garden Mitaka are rental houses and shared rental houses for families constructed by renovating former company housing and dormitories. Squares and farms for rent were constructed adjacent to the housing to offer new lifestyles.

Lieto Garden Mitaka

Life with plants in Mitaka

TICKET TO TOMORROW

We renovated former company housing and dormitories of JR East in Mitaka into rental housing for families (R Lieto Mitaka/24 houses) and a share house for members of society (Share Place Mitaka/112 rooms) as our first large-scale housing development (Lieto Garden Mitaka) with shared fields where 200 people can live.
The premises have abundant shared space. Meals, etc. are provided to those who live in adjacent areas in the Food Square at the time of a market or harvest festival. The Forest Square has space surrounded by trees which are rare in an overcrowded area and children can race around.
We will make efforts to become the core of the regional community to "improve the train line values and create a town where people want to live."

Office/Housing Business Division, JR East Urban Development Corporation

■Town development focused on stations in core regional cities

JR East is promoting town development focusing on central stations in conjunction with central urban district revitalization projects, urban planning projects, and so forth being undertaken by local governments in the vicinity of Akita Station, Niigata Station, Matsumoto Station, and others. In addition, we have concluded collaboration agreements related to town development with municipalities, business operators, etc. in each area of Aomori, Tono, Hirosaki, Aizu-wakamatsu, and Senboku to promote reconstruction of the functions of the sites around the station to contribute to activation of regional urban centers in coordination with town development in each region.

Event marking signature of agreement of cooperation between Aomori Prefecture, Aomori City, the Aomori Chamber of Commerce and Industry, and JR East

Akita Northern Gate

■Signing of agreement with Japan Post on revitalization of community and society

In June 2018, JR East signed an agreement with Japan Post Co., Ltd. in an aim to reinforce our efforts on revitalizing community and society.
Based on this agreement, as for urban areas, we opened the area to realize life development for one-stop services “JJ+T” at Tachikawa Station (in Ecute Tachikawa) in May 2019 in coordination with Tully’s Coffee and Japan Post as an activity of “functional coordination between post offices and stations.” As for regional areas, we are planning to construct a new post office building connected with Emi Station of the Uchibo Line and provide station services at the post office from August 2020.
We are also promoting a wide range of activities for regional activation measures by tourism promotion such as co-hosting of events to introduce the Tohoku/Sinetsu area in “KITTE Nagoya” in addition to the coordination in terms of logistics to sell regional agricultural products at the farm fresh market in the Tokyo Station on the day of harvesting using the transport network of Japan Post and Shinkansen Lines.

Exterior appearance of Emi Station
*This is image as of present and may be changed depending on future considerations.

■Contribution to community medicine

In response to an increase in chronic diseases of elderly people due to the aging of society, we opened a regional comprehensive care hospital ward in JR Sendai Hospital in 2015 and JR Tokyo General Hospital in 2018, and established an orthopedic trauma unit and lymph trauma unit as distinctive characteristics of JR hospitals. We provide safe and high-quality medical services that meet the needs of local patients.
We are also reinforcing hospital functions in terms of both environment and skill by arranging environments and conducting periodic training to enable continuous provision of medical services in the event of natural disasters like an earthquake in the metropolitan area, infectious diseases, etc., in an aim to become a “selected hospital” in response to trust from local people.

Sendai Hospital

JR Tokyo General Hospital

■Restoration of railway sections devastated in the Great East Japan Earthquake

We have been steadily proceeding with restoration work and resumption of operations in railway sections on the Pacific Coast that suffered extensive damage due to the tsunami, beginning with sections where safety can be ensured.
In areas within 20 km of Fukushima Daiichi Power Station where evacuation orders have been lifted along the Joban Line, we are progressively resuming operations with the support and collaboration of the national and local government regarding necessary environmental measures, such as decontaminating areas along lines and making preparations for the return of residents. At present, we are proceeding with restoration work aimed at resuming operations, etc. of the remaining section between Tomioka and Namie by the end of FY2020.
For the section between Yanaizu and Kesennuma on the Kesennuma Line and the section between Kesennuma and Sakari on the Ofunato Line, in order for communities to achieve further development as full-scale urban recovery efforts progress in disaster-hit areas, we proposed that operation of our BRT service continue as a sustainable transport mode that will contribute to restoration. The proposal has been approved by all lineside municipalities. Based on the requests of lineside municipalities in both sections, we are proceeding with other initiatives such as the establishment of new stations, relocation of stations, and further development of exclusive lines.
As for the section between Miyako and Kamaishi of the Yamada Line, resumption of operations and the migration procedure to Sanriku Railway Company were completed and operation as the Sanriku Railway Riasu Line commenced on March 23, 2019.
As of April, 2019, the total length of the sections where operations were suspended had been reduced from approximately 400km immediately after the earthquake to approximately 21km, with resumption of services for approximately 279km by railway and for approximately 99km by BRT.
With regard to the section of the Tadami Line between Aizu-Kawaguchi and Tadami (damaged by heavy rains in Niigata and Fukushima in July 2011), there was strong demand to restore the railway from Fukushima Prefecture and lineside municipalities. Based on this, we reached an agreement with Fukushima Prefecture in June 2017 to resume service by means of separating infrastructure and operation. At present, we are carrying out restoration work aimed at resuming operations on the entire line.

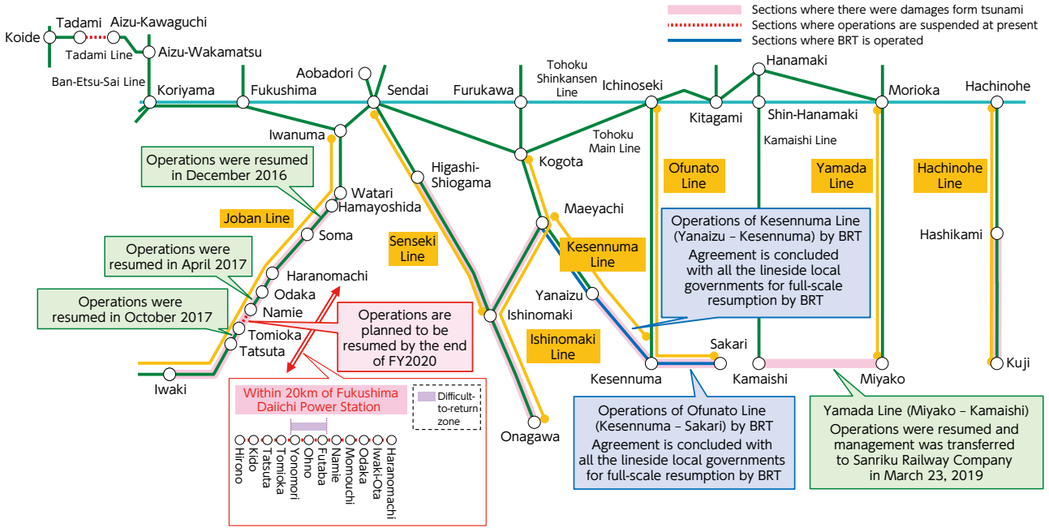
Resumption of operations between Tatsuta and Tomioka on the Joban Line

Kesennuma Line BRT on exclusive lines

Opening of Sanriku Railway Riasu Line

Groundbreaking ceremony, Tadami Line

[Sections where operations were suspended as of April 1, 2019]



Regional reconstruction and restoration of all lines of the Joban Line

TICKET TO TOMORROW

The railway facilities were significantly damaged by the Great East Japan Earthquake, which occurred on March 11, 2011. The resumption of operations of the only suspended section with a length of about 20 km between Tomioka and Namie has reached the final stage is near completion.
At present, JR East and partner companies are together proceeding with work to resume operations. The work of groups belonging to the facility and electricity departments competes with the other and adjustments are made based on the elaborately planned construction schedule at the process meeting held every week. I have also been confirming the conditions of the facilities, visiting the site many times and constructing the optimal facilities for each location through communication with the partner construction companies.
We will continue construction to contribute to the reconstruction of the area along the line through resume of the operations of the railway.

Mito Electricity Technology Center, Mito Branch

Rediscover the Region Project

■Development of the Rediscover the Region Project

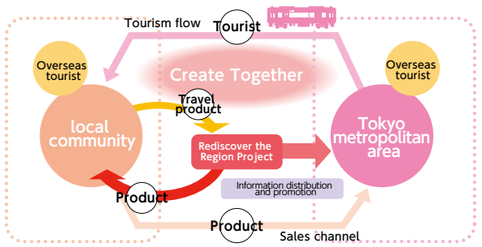
Under the "Create Together" strategy, which specifies enhanced cooperation between JR East and local communities, we are promoting the Rediscover the Region Project. The aim of the project is to create new potential markets that bring increased circulation of people and goods between the Tokyo metropolitan area and other regions and also attract overseas visitors to Japan. The JR East Group has railway networks, stations that serve as centers of local communities, business know-how, sales channels and advertising power that all radiate out from the Tokyo metropolitan area and more. The strategy utilizes JR's such unique abilities to discover traditional cultures, local produce and other tangible and intangible tourist resources as well as to promote the interactive exchange of information and to expand sales channels between the Tokyo metropolitan area and local communities.

In the Tokyo metropolitan area, in collaboration with destination campaigns and other marketing tools, we are hosting a "Farm Fresh Market" at Ueno Station and opened permanent NOMONO shops where producers present their products and the appeal of their regions at Tokyo Station and other locations.

Farm fresh market at Ueno Station


NOMONO Gransta Marunouchi branch, Tokyo Station

Conceptual diagram of "Rediscover the Region Project"



■Participation in primary industry

In order to find solutions to issues in primary industries and to enhance the appeal of food through agricultural produce, we entered the agribusiness field in collaboration with local farmers in the spring of 2016. The JR Tomato Land Iwaki Farm in Iwaki City, Fukushima Prefecture, produces high-quality tomatoes at its sunlight-based plant factory, which are used as ingredients for food served by Group companies. "JR Niigata Farm" in Niigata City is an agricultural corporation established by taking advantage of the status of Niigata as a National Strategic Special Zone. It is bearing a part in developing Niigata's sake culture through production of rice suitable as an ingredient of sake. In addition, JR Agri-Sendai in Sendai City produces goods suited to market needs through integrated management covering everything from production to sales activities. Sendai Terminal Building. Co., Ltd. has been arranging a large-scale experience-type fruit garden for tourists where visitors can enjoy fruit picking throughout the year in Arahama, Sendai (vacant lot of collective relocation) together with the City of Sendai. Through this business, we will aim at reconstruction of the eastern maritime area (increase in the number of visitors/collaboration with surrounding farmers) and agriculture (challenge for fruit production), and new promotion of tourism (including inbound tourists). We will continue seeking to increase the non-resident population and revitalize regional communities by enhancing their appeal through the stable production of safe, secure agricultural produce.


JR Tomato Land Iwaki Farm


JR Niigata Farm


JR Agri-Sendai


Fruit garden for tourists in Arahama, Sendai

■Transport of regional specialties

We are also arranging a mechanism to provide fresh regional specialties to passengers such as activities of events at Tokyo Station to transport and sell regional vegetables and fruits harvested in the morning by Shinkansen and transport tomatoes produced at "JR TOMATO LAND IWAKI FARM" in the luggage room of an expressway bus to Hotel Metropolitan Marunouchi at Tokyo Station.

Addressing measures to promote tourism

■Destination campaign (DC)

Destination campaign (hereafter, DC) means a large-scale tourism promotion campaign implemented by local governments, tourism-related people, JR Group and other related organizations and persons working together for the purpose of developing local sightseeing resources and implementing nation-wide advertisement, to attract visitors and promote uses of JR. We make it a target to receive feedback from related parties based on results and make preparations to receive additional visitors that will lead to the continuous creation of new superb tourist resorts and promotion of tourism in the communities by holding "Pre-DC" one year in advance of the DC period, as well as "After-DC" one year after the DC without it ending as a one-time event.

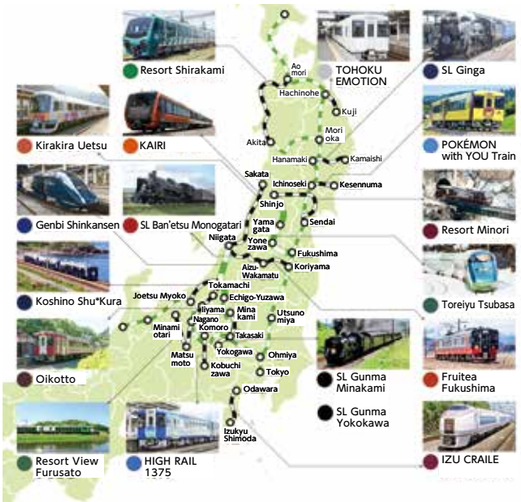
We held "Shizuoka Destination Campaign" from April to June 2019. Going forward, we will continue to strengthen the cooperation with local communities and local governments in an aim to revitalize local tourism and establish a strong tourist base.


Shizuoka Destination Campaign ceremony

■Trains for enjoying riding

We operate various "Trains for enjoying riding" which provide passengers enjoyment in riding the trains. Those include Shinkansen, limited express, SL and other trains each of which has its own theme and is so elaborately and uniquely designed that reminds us of something like a running theme park. The trains offer travels with such new feeling that passengers fully enjoy meals, sweets, arts, music, and even "foot bath" on board, and upon alighting from the train, they feel excited to wonder which train they should select for their next trips.

In support of the aim of "POKÉMON with YOU," an activity by The Pokémon Company to support disaster-affected areas, JR East operates POKÉMON with YOU trains with the cooperation of the company.



Major trains for enjoying riding and efforts made in cooperation with local community

Train names	Characteristics of train name and efforts made in cooperation with local community
Resort Shirakami	Live performances of Tsugarujamisen music, talks by a "storyteller" in the Tsugaru dialect, Tsugaru Traditional Kinta Mamejo puppet plays, and other shows are offered on board. In addition, Fureai Hanbai is held which local residents board the train during a stop at a station and sell fresh light meals.
TOHOKU EMOTION	People of "Hirono-cho" across which JR Hachinohe Line runs have been continuing to gather and wave their colorful "tairyobata" fisherman's banners and their hands with their whole hearts to passing trains, which has coined a new phrase, "HIRONO EMOTION."
Fruitea-Fukushima	Original sweets which are made sumptuously using fruits grown in Fukushima Prefecture are offered on board. As the menu is changed in accordance with the season, passengers can enjoy seasonal fruits grown in Fruit Kingdom Fukushima.
Koshino Shu* Kura	Through collaborations with local sake breweries, musicians, universities, and others, events are held at which passengers may sample local sake, hear stories about sake, and enjoy live music, especially jazz.
HIGH RAIL 1375	Along with a brunch featuring vegetables that are cultivated in areas along lines without the use of agri-chemicals and sweets from Saku, renowned as one of Japan's top three towns for cake, passengers on the HIGH RAIL Hoshizora train that runs at night may enjoy stargazing sessions at Nobeyama Station, with explanations provided by a local expert.
IZU CRAILE	Aboard this stylish, elegant resort train, passengers can partake in casual conversation while enjoying original dishes made with Izu ingredients and drinks as they travel through spectacular natural scenery.

■Trains to go into service in the future

"Kairi"

Start of operation
October 2019
Section
Niigata Station to Sakata Station

"Food of Niigata," "Foods of Shonai," and "Landscape of the Sea of Japan" serve as the theme of the train, and meals that invoke the attractiveness of the concept for passengers are provided on the train.

Izu tourism limited express "SAPHIR ODORIKO"

Start of operation
Spring of 2020
Section
Shinjuku, Tokyo to Shimoda of Izukyu

We will transmit the "real attractiveness" of Izu to passengers and said "attractiveness" to the world with the branding of the Izu area in cooperation with the local community.

Childcare Support Services HAPPY CHILD PROJECT

■Childcare Support Facilities — Support for Working Parents

JR East has opened childcare support facilities such as "nursery schools near stations" located in easily accessible areas usually within a five-minute walk from stations in order to support the combination of childcare and work. A total of 138 childcare support facilities were opened from 1996 through April 2019, and JR East aims to increase the number of these facilities to 150 by the end of FY2023. These nursery schools near stations provide added convenience as they allow parents to drop off and pick up their children on the way to and from work. As evidenced by children who are accompanied to nurseries by their fathers, our childcare support encourages paternal participation in childcare as well.
As childcare support facilities, we have not only nursery schools but also various other facilities such as an "after-school care program near stations" and "exchange community square," etc.

View of a "nursery school near station" (Sakuraso Nursery School in front of Toda Station)

"Exchange community square" (E'site Kagohara)

■Childcare Support Events

Each year, we hold an exhibition of craftworks produced by children who attend our nursery schools near stations at the Railway Museum in Saitama City, Saitama Prefecture.
With "trains" as its theme, original, creative and fantastic works created by children are enjoyed by many visitors. It also provides a space for displaying the daily activities of nursery schools and observing child development.

Ninth Children's Train Craftwork Exhibition

Development of COTONIOR

We have opened complexes for childcare support and eldercare themed with multigenerational interaction, "COTONIOR."
"COTONIOR" is a coined word composed of "child (codomo) + to + senior." There are a total of seven facilities: six COTONIOR facilities in Kichijoji, Akabane, Nishifunabashi, Kunitachi, and Koshigaya Laketown, as well as COTONIOR Garden in Shin-Kawasaki. Under the concept of "multi-generation exchange town development," COTONIOR Garden has rental housing, a commercial building, etc. in addition to a nursery school and an elder care facility.
With a well-thought-out facility layout, seasonal events and such, COTONIOR has created a heartwarming place where children and senior generations interact that brings together a wide range of generations.

COTONIOR Kichijoji

Cotonior Garden Shin-Kawasaki

Opening of the first licensed nursery school at Fukushima Station

In April 2019, we opened the first licensed nursery school at Fukushima Station, "Sakuranbo Chuo Nursery School." It is a three-minute walk from the station and features a spacious garden and a playroom with a capacity of 300 people. It is used for holding concerts for preschoolers in the city, etc. to promote exchange in the local community.
Given that I am from Fukushima and have just become a father, I have strong motivation to make this business successful and am actively working to establish a foundation and make adjustments of the building construction. Though the construction period was limited, the nursery school was opened successfully thanks to support of related people.
This is the tenth nursery school near a station under the control of the Sendai Branch Office. We will proceed with arrangements of convenient nursery schools near stations in order to support families whose parents work while raising children.

Business Division, Sendai Branch Office, East Japan Railway Company

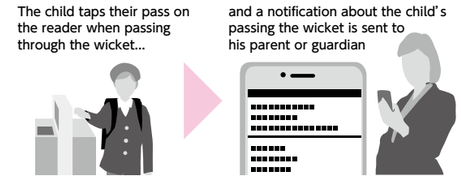
Launch of Mamorail: JR East's Child Watching-Over Service

In October 2017, we launched a new addition to our childcare support lineup: Mamorail, a child monitoring service developed as a joint venture with Central Security Patrols Co., Ltd. The company's slogan is "Notifications from stations for your peace of mind." In April 2018, the number of stations in the metropolitan area subject to the service was expanded to 244. The service is planned to be expanded in spring 2020 to the Bureau of Transportation of the Tokyo Metropolitan Government and Tokyo Metro Co., Ltd.

Service Overview

■**Usage fee:**500 yen per month (plus tax)
■**Persons eligible for service:**
elementary, junior high, and high school students
■**Applicable cards:**Suica, PASMO
■**Notification method:**Email or JR East app

Image of message notification



Cultural Activities

■East Japan Railway Culture Foundation

In order to continuously utilize management resources for social contribution, in 1992 we established the East Japan Railway Culture Foundation, which became a public interest incorporated foundation in April 2010. This organization has successfully promoted local culture through our railway business, studies and research on railways, and taken part in driving international cultural exchange related to railways. The Foundation's major activities include operating the Railway Museum, Tokyo Station Gallery, the Old Shimbashi Station building, Old Manseibashi Station and Ome Railway Park, sponsoring local cultural activities and accepting trainees from railway operators in Asian countries.

The Railway Museum

On October 14, 2007, Railway Day, the Railway Museum based on three major concepts was opened in Saitama City, Saitama Prefecture. It was designed to be a museum that systematically conducts surveys and research using railway-related heritage and reference materials, a history museum that depicts the history of railways focusing on exhibits of locomotives and cars, and an educational museum where visitors can learn about railway principles, systems and technologies through hands-on experience. The Railway Museum has attracted a huge number of visitors, with the total number exceeding 11 million people in April 2019.
On July 5, 2018, it evolved into a museum that showcases an overview of railways as well as its significance, and makes appeals based on the concept of conveying the "Job" of railways, unfolding its "History" and creating railways of the "Future." At the Job Station in the new building, visitors are enabled to experience various tasks in the business with the purpose of helping them recognize the depth and elaborateness of the railway business. As such, the museum enhanced its hands-on exhibit and technological exhibit in addition to the rolling stock exhibit it had offered from before.

Work station on the first floor of the south building

E5 simulator

Tokyo Station Gallery

In the spring of 1988, a year after our foundation, Tokyo Station Gallery opened in Tokyo Station Marunouchi Building out of the desire to offer everyone a place for fragrant culture rather than simply being a passing point through the station.
We continue to be active while deeply recognizing the significance of carrying out our activities as a gallery in the important cultural property of Tokyo Station Marunouchi Building that is located at the geographical and historical heart of modern Japan.
In January 2019, we held "Exhibition of Imperial Family and Railway" in commemoration of the 30th Anniversary of His Majesty the Emperor's Accession to the Throne.

Tokyo Station Gallery

Exhibition of Imperial Family and Railway

Supporting local cultural activities

Starting in FY1994, we have been supporting regional cultural activities in the form of providing financial support for the purpose of conserving and succeeding precious cultural heritage and folk art in our areas where our company is present and development of the community, aiming at promotion of regional culture. By the end of FY2019, we had supported a total of 198 activities, and in FY2020, we plan to provide support for 19 new activities in addition to supporting 7 ongoing projects for which we have provided support twice or more.

Repair projects of ritual implements, etc. of Hachinohe Sansha Taisai, etc.

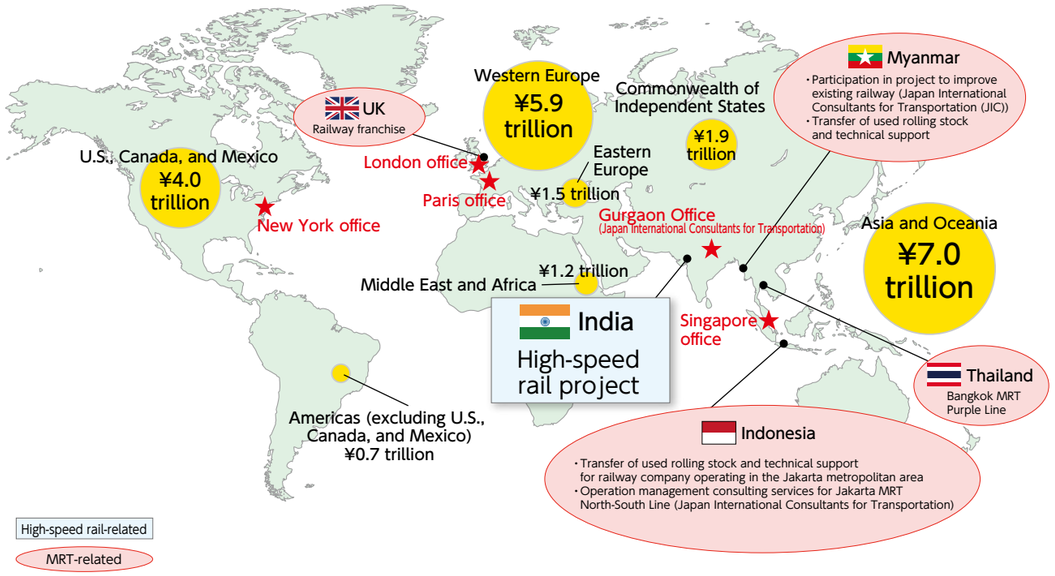
Developing Our Business on the World Stage

■Global Development

Given the current increase in awareness of global environmental issues and the economic growth of emerging nations, there is growing interest around the world in railways as an environmentally friendly form of public transportation. The global railway market is expected to grow by an average of 2.6% a year through 2021, expanding in size to an annual average of approximately 24 trillion yen from 2019 to 2021.

In November 2011, we launched Japan International Consultants for Transportation Co., Ltd. (JIC) in partnership with domestic railway companies with a variety of track records and expertise relating to high-speed, MRT, and freight railways to provide railway consulting services overseas. At present, JIC is actively developing our overseas railway consulting business, focusing on areas of operations and maintenance. In addition, we established an International Affairs Headquarters at our head office in June 2017 that leverages our experience, technology, and expertise to explore new business areas with the aim of driving future growth. Through our overseas projects, the JR East Group will develop human resources and incorporate the knowledge and technical skills acquired in the process into our domestic operations. Furthermore, while working to promote Japan's railway standards, we are establishing a business model for international projects that will enable us to develop high-quality, high-efficiency railway infrastructure systems of JR East Group using the JR East Group's combined strengths—including both our railway business and lifestyle business. Regardless of the project, we will continue to strive to achieve sustainable operations aimed at long-term profitability by controlling the risks and returns.

[Locations of International Railway Projects and Overseas Offices]



*Based on UNIFE World Rail Market Study Forecast 2016 to 2021

■Participation in Indian High-Speed Rail Project

For the Mumbai-Ahmedabad Line among the seven high-speed railway lines announced by the Indian government, the "Memorandum of Cooperation between the Government of Japan and the Government of the Republic of India on High Speed Railways" was entered into in December 2015, and it was decided that Japan's Shinkansen method is adopted for the Ahmedabad-Mumbai high speed railway plan.

At present, consultations about the high-speed railway plan of India including concrete business scheme are underway, and at the consultation between the two governments held in November 2016, a progress report for the high-speed railway plan was announced, indicating the schedule for the work to be commenced in 2018 and operations to be commenced in 2023. Through a public-private partnership arrangement, JR East is providing technical support for these discussions, based on our extensive experience as a Shinkansen operator.

In addition, in March 2016, one of the companies in our group, Japan International Consultants for Transportation (JIC), received an order from JICA for the Indian High-Speed Railway-Related System Development Support Project, which is to provide consulting services relating to the formulation of high-speed rail technical standards. We have also enhanced our internal organization through measures such as appointing executives with responsibility for the Indian high-speed rail project.

In December 2016, a joint venture (JV) formed by three companies, namely Japan International Consultants for Transportation Co., Ltd., Nippon Koei Co., Ltd. and Oriental Consultants Global Co., Ltd., received an order from JICA for a "Detailed Design Study on the High Speed Railway Construction Project in India" for the purpose of formulating a design and tender documents (draft) for the Mumbai-Ahmedabad High Speed Railway Construction Project as well as supporting bidding, and the JV is now implementing the work.

In September 2017, we held a ground-breaking ceremony for this high-speed railway project in Ahmedabad (Sabarmati) in conjunction with the 2017 Japan-India Summit Meeting. It is planned to proceed with the full-scale construction toward the opening in 2023. We will also focus on support for operation preparation such as cultivation of local human resources.

■Participation in Thailand's Purple Line Project

We are also involved, along with Marubeni Corporation and Toshiba Corporation in a project to provide maintenance for rolling stock and ground installations for the MRT Purple Line in Bangkok, Thailand. The Purple Line is a railway line in Thailand's capital of Bangkok intended to link the Bang Sue district in the northern part of the city to the Bang Yai district in the northwestern suburbs, and it began operation in August 2016. In December 2013, through a joint investment with Marubeni and Toshiba, we established the maintenance company Japan Transportation Technology (Thailand) Co., Ltd. (JTT) in Bangkok. It is providing maintenance services for a ten-year period. In addition, Japan Transport Engineering Company (J-TREC) has manufactured stainless-steel rolling stock for use on the Purple Line, and delivered a total of 21 train-sets (63 cars).


A running Purple Line train


Maintenance of track for vehicle

■Participation in Management of U.K. Railway Operation Project

With regard to railways in the UK, the "Scheme of Separating Infrastructure and Operation" has been incorporated, under which the railway operation sector and infrastructure sector are separated, and currently, the country's railway service for passenger transportation is divided and provided by about 20 train operating companies. It is a system under which each train operating company's right to operate trains is selected by performing bidding, and the right to operate trains, effective for 7 to 10 years, is granted by the Ministry of Transport or relevant government authorities of the country.

In 2017, our company obtained the right to operate the West Midlands project in collaboration with Mitsui & Co., Ltd. and Abellio UK, a Dutch Railways-affiliated company, and has been participating in the management since December 2017. This is JR East's first project involving operation of an overseas railway. Services include commuter lines to London, a long-distance line connecting London and Liverpool, which is located in the northwestern region of England, and transportation in the metropolitan area of Birmingham, the country's second-largest city and located in the central Midlands region.


Image of a train in operation after commencement of services for this project


Birmingham New Street Station, a major station

■Providing Technical Support to Overseas Railway Operators

In Jakarta, the capital of the Republic of Indonesia, there is extreme traffic congestion, and public transportation infrastructure is being developed to address this issue. Since the carrying capacity of existing railways also needs to be rapidly increased, over a period of three years starting in 2013, we transferred 476 205-series railcars formerly used on the Saikyo Line and other lines to the railway company that operates Jakarta's commuting trains, and during the three-year period starting in 2018, we are planning to transfer another 336 205-series railcars, formerly used on the Musashino Line. At the same time, to ensure stable operation of the transferred railcars in Indonesia, we have been providing support for rolling stock maintenance as well as providing various cooperation such as inspection and maintenance of rolling stock by crew members and service improvements.

In the Republic of the Union of Myanmar, since 2007 we have also been transferring rolling stock to Myanmar Railways, which operates passenger trains and transports freight in Myanmar. In 2015, we transferred 19 diesel railcars (Kiha 40 series/Kiha 48 series) that had been used in the Tohoku and Niigata areas, in addition to providing technical support for rolling stock maintenance.

205-series train in service in Jakarta following transfer to commuting train company in Indonesia

Service improvement seminar

Diesel train transferred to Myanmar

■Developing Lifestyle Business Overseas

By placing "NOBIRU" ("Grow") in our Life-Style Service Business Growth Vision (NEXT 10), we are leveraging the JR East Group's track record and experience in the domestic market to promote our lifestyle business even overseas.

The latest development case is the opening of a second overseas store by our group company LUMINE CO., LTD. "LUMINE JAKARTA" was opened in the Indonesian capital of Jakarta (December 2018) following "LUMINE SINGAPORE" (November 2017).

In addition, Atre Co. Ltd. opened "Atre" (January 2019) in the "Breeze Nanshan" complex in Xinyi, Taipei, in cooperation with a major developer in Taiwan, etc. In this "Atre," "JAPAN RAILCAFE" was also opened, which is a site for transmission of information for inbound tourists to Japan. It is the second store following Singapore.

Moreover, a drinking and eating/product sales combined store "JW360°" managed by a joint venture company formed by the local entity of JR East, "JR East Business Development SEA Pte. Ltd. (founded in November 2018)," and a local entity of Mitsui & Co., Ltd. was opened in Singapore in April 2019 inside of a large commercial facility adjacent to Changi Airport. The store globally transmits the attractiveness of products of various regions of Japan and natural "Japanese styles" selected from all kinds of viewpoints, mainly "food." We also opened the co-working space "One&Co" (August 2019) as an exchange platform for companies in the central business area of Singapore.

In addition to Singapore, we have established a wholly owned local corporation in Taiwan, "JRE Business Development Taiwan, Inc. (March 2018)," as a base for overseas life service business deployment and will quickly expand business making use of our experience in business in and around stations owned by the JR East Group.

Opening ceremony of JR East Business Development SEA Pte. Ltd.

Atre in Breeze Nanshan (Taiwan)

JW360° in Changi Airport (Singapore)

One&Co (Singapore)

Transmission of Japanese food culture in Singapore

TICKET TO TOMORROW

We opened a product sales store, "Nomono," in the combined store "JW360°" in the commercial facility "JEWEL" in Singapore Changi International Airport to transmit Japanese food culture. There were numerous obstacles prior to opening as there were several items that had to be prepared in a short time, including product selection, price setting, establishment of the trade logistics system, construction of store management in accordance with the local culture, and instructions to the local staff, but we finally opened the store successfully thanks to support from people in Japan.

Now we are striving to maximize sales through revision or abolition of products and promotion based on past sales data as well as become able to transmit Japanese products through the "Nomono" brand.

EJRT ASIA SINGAPORE PTE. LTD.

■International Cooperation

Our company also offers railway-related professionals from overseas the opportunity to observe our operations; in FY2019, we hosted some 750 observers from around 60 countries worldwide. These observers included government- and railway-related persons from various nations as well as researchers from overseas research institutes. Their visits play a valuable role in promoting mutual understanding.

Inspection of maintenance of Shinkansen railcars

Inspection of coupling of Yamagata Shinkansen train

■Global Contribution through International Institutions

JR East actively collects and provides information through international conferences organized by the International Union of Railways (UIC), International Association of Public Transport (UITP), Community of European Railway and Infrastructure Companies (CER), Association of American Railroads (AAR), American Public Transportation Association (APTA), and other international railway organizations to which it belongs. In UIC, our Chairman Tomita has attended the board meeting of the UIC headquarters as a director of the Asia Pacific region since April 2018. In UITP, our Vice-Chairman Ogata served as the Chairman from June 2015 to May 2017 and the Chairman of the Asia Pacific region from May 2017 to June 2019, and is now serving as an honorary chairman. We will continue to work toward the global development of railways and public transportation and the resolution of various related issues. In order to showcase features of Japanese railway systems to overseas railway-related parties, we have been actively participating in overseas trade shows, seminars and so on as well as extending invitations for international conferences.

June 2019 (Stockholm) UITP Global Public Transport Summit

March 2018 (Taiwan) UITP Asia-Pacific regional assembly

November 2017 UITP Asia-Pacific regional assembly (Tokyo)

Relationship with Employees

In order to enhance the power of human resources

Our work is "to be conscious of our social duty and to act up to it" so that we can support the daily life of passengers and contribute to progress in the community. In order for JR East Group to continue its sustainable growth, it is indispensable to foster professionals from each area who think and act by themselves and are trusted by passengers and people in the community.

Therefore, in fostering human resources, we aim to enhance the power of human resources of the entire JR East Group by addressing measures to strengthen the controlling power of management, to succeed technologies and to foster human resources together with the Group companies while responding to the motivation of employees.

We formulate a recruitment plan for each fiscal year and secure the planned number of human resources as well as aim to recruit and educate competent human resources assuming and tracing the number of employees considering the future business deployment.

■Focused items to be implemented for improving the capabilities of human resources

	Target	Focused items to be implemented
Development of human resources	General employees	Expansion of activities to satisfy the motivation of employees
	Manager	Education of managers to promote transformation
	Group companies	Human resource education with the entire JR East Group working as one
Succeeding technologies	Employees of all generations	Realization of "ultimate safety" and steady succession of technologies

■Realization of “ultimate safety” and steady succession of technologies

We are facing rapid alternation of generations and succession of technologies is a big issue, so we are striving to realize ultimate safety in terms of both environment and skill.
Therefore, we are promoting activities and expanding education and training facilities to enable each employee to understand the nature of their work and perform their daily operations.
Specifically, in terms of skills, we are improving educators by specifying “skill specialists” who have high motivation and skill for human resource education and employees rehired after retirement as “advisors”/”masters” and performing opinion exchange for these employees, etc.
In terms of environment, we have been expanding and renewing education and training facilities in the general training center, the general training center of each branch, skill training rooms, etc. We will continue the renewal actively using new technologies, etc.

For education of young track maintenance workers

TICKET TO TOMORROW

I have been pursuing various technologies and educating juniors as track maintenance workers for 40 years. I feel that the problems with current young employees are their lack of consideration for efficient operations, lack of active learning of new technologies, etc. It seems to be partly attributable to the environment in which they are taught everything after joining the company. It is our important task to secure safety and stability of the transportation of Shinkansen and provide high-quality comfort from now on. It must be realized by young employees, so I grasp the capabilities and motivations of each of them and educate them based on their level. I will continue to educate employees who can find and solve issues by themselves in order to find the “raison d’etre (existence value) of track maintenance workers” in what little time I have left to work at JR.

Utsunomiya Shinkansen Rail Maintenance Technology Center, Shinkansen General Management Department, East Japan Railway Company

■Expansion of activities to satisfy the motivations of employees

With the aim of responding to the motivation of employees and drawing out their potential abilities, we have improved our “application-based training” in addition to the conventional hierarchy-specific training, etc. In our “training for fostering practicing managers,” which is the core of this training, we are developing foreman-class employees to become “managers who lead the next generation” by holding training camps lasting around two months at the General Training Center. In FY2019, about 320 employees took the training.
The technology academy established in March 2009 for the purpose of cultivation of human resources who comprise the central core of railroad technologies has produced about 420 graduates, who are now active in each workplace. In addition, we are providing opportunities for younger employees to take external seminars, as well as opportunities to receive training from external instructors, including “Global,” “Cutting-edge Technology,” and “SDGs” editions.
In addition, we are striving to improve the quality of training through measures such as measuring the effects of seminars by implementing questionnaires to attending employees and considering the content of the training of the following year based on the results of the questionnaires and actual voices of employees.
Moreover, as a system for responding to employees’ diverse motivations, we are transferring employees based on open recruitment, including employees aiming to become professionals in jobs that require specialized skills (e.g., finance, public relations) and employees who wish to pursue activities in strategic growth areas such as international business or tourism strategy.

Training for fostering practicing managers

On-site experience education at technology academy

■Education of managers to promote transformation

since the essence of promotion of “Transformation 2027” is with managers at workplaces, we provide “Newly appointed deputy section manager training” and “Newly appointed section manager training” for newly appointed managers for learning of specific management skills. We are also striving to enhance training opportunities for managers at workplaces such as “Transformation promotion program,” “Cross-industrial exchange training,” and “Management seminars.”
The transformation promotion program will strongly promote transformation by individuals and workplaces by selecting managers and forepersons of the same workplace.

■Human resource education with the entire JR East Group working as one

The JR East Group aims at realization of integrated Group management and enhancement of Group value, promoting positive human resource exchange in terms of fostering human resources.

Education of next-generation managers of group companies

We conduct “JR East Group seminar for fostering management personnel (General Manager course and Section Manager course)” for the purpose of fostering management for Group companies. The past trainees of this seminar include employees who have become management personnel such as directors of their companies. We also make employees of group companies take “training for fostering practicing managers” and “technology academy” for the purpose of educating employees who will lead our future.

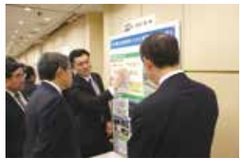
Training for the purpose of inter-group exchange

We hold “JR East Group exchange training” as training for exchange among our employees and employees of group companies for the purpose of creating sense of unity and widening their views. We have established and are enhancing courses for exchange among new employees and managers in addition to young and mid-level employees.

Setting of a place to share improvement activities of group companies

The JR East Group holds “JR East Group improvement activity debrief meeting” for group and partner companies once a year for sharing of improvement cases of each company and exchange of employees. The debrief meeting has an opportunity to present improvement cases and exchange based on reported cases for the purpose of promotion of communication among employees of group and partner companies.
In addition, we also exhibit the presented cases as tips for improvement activities and for exchange among our employees and employees of group companies at “My Project exchange” where the activities of our employees are shared.

Presentation of improvement cases



Exchange based on improvement cases

Feedback about the JR East Group management executive training seminar

TICKET TO TOMORROW

I attended the JR East Group management executive candidate training seminar in FY2019.
Through the seminar, I recognized the importance of “Management analysis not just for the purpose of analysis based on mathematical formulas, but to understand how people think and act.” After the seminar, I came to value “mentality” and “words” more in business scenes which require logical thinking. Moreover, the peers I met at the seminar are excellent and valuable assets.
I retired from my former company to raise a child, resumed my career as a part-timer after the burden of child rearing became lighter, and later joined this company; this opportunity was a great turning point for my career.
I will use the experience obtained through the seminar to exercise the power of management of the Group as a whole going forward.

JR East Building Co., Ltd.

Promotion of Diversity Management

We recognize that the strength of JR East Group lies with the diversified viewpoints and differences in values that reflect various attributes, experience and skills possessed by employees and others working at the JR East Group.
While all generations from young persons to veteran employees work together in mutual cooperation, we promote "diversity management" with an aim to create a company group where such diversified personnel can exert their capabilities to the fullest.

■Promotion of "Renovation of way of working"

We are promoting work-style reform beneficial for the employees, the company, and society by helping diverse human resources find their jobs meaningful and improve the productivity of their jobs, which will lead to not only the growth of each employee but also that of the company and the creation of new values in the society.

- Aim at "advancement of our work" by improving productivity through work reform and making employees focus on "creative roles that only humans can do."
- Achieve sustained growth for both employees and the JR East Group through fostering an open corporate culture and creating rewarding work for all employees in the Group by "expanding the range of fields for career development."
- Achieve happiness of the Group's employees and their families through making them have "a sense of achievement and satisfaction in their work" and "improving their working conditions".

Specifically, we are promoting the following activities for work style reform according to these policies.

Introduction of telework
We introduced telework as a flexible way of working without limitation on the workplace in March 2019. We consider that enhancement of life such as increasing input using the time generated by shortening of the travel time including the commuting time will improve the output of work and improve work-life balance.

Revision of the flex time system
The flex time system was introduced in 1997 for the purpose of supporting the work-life balance of employees and improving the ease of working; in March 2019, we abolished core time together with the introduction of telework to enable more flexible ways of working.

Transfer to outside the area by open application
Basically, the areas in which employees work had not been changed greatly from the areas where they were hired, but it is now possible to transfer employees to another area, if they desire, for such reasons as child rearing, care, and transfer of their spouses, etc.
We will enhance work-life balance through flexible transfers.

Opening of childcare centers in offices
We have introduced not only "shorter working hours" but also "fewer working days" in response to irregular working schedules of employees engaged in child rearing. From 2010, we have been establishing childcare centers in offices where childcare can be provided 24 hours a day. Twelve centers are available as of April 2019. We are planning to open more centers.

Childcare centers in offices

Topics

Create job satisfaction with each employee playing the leading role

Revision of the work system of crews
Employees who selected shorter working hours for child rearing or care had been engaged in short-time crew duties in daytime. Since March 2019, a wide variety of crew duties in the early morning and evening have become possible by enabling more flexible selection of working hours. Moreover, employees engaged in the operations of the planning department, etc. have come to be able to work in diverse manners such as by experiencing crew duties as part of their working hours as a form of feedback for daily operations.

Create new values across the boundary between the front line and the planning department -Area management-
Toward the realization of "Transformation 2027," we have been proceeding with multiple "cross-organizational projects" since 2018 Its purpose is to review the operation structures of the planning departments of the branches, etc. and the facilities in the field to make front-line employees participate in mitigation of congestion of routes, improvements in the service quality in the area, and displaying their originality closer to customers so that the employees can get feelings of accomplishment and fulfillment through work to grow sustainably and create new values utilizing the power of ideas at the front line.

Enhancement of the system to support the balance between child rearing/childcare and work
We are promoting enhancement of the balance support system assuming that the realization of work-life balance has synergy. In 2018, we improved the "banked leave system" for accumulating paid leave that ends up expiring by increasing the number of reasons for which it can be applied and the number of days that may be accumulated. The system has been revised so that leave may be taken for reasons such as childcare, nursing care, medical examinations, etc. Also, in order to dispel gender role stereotypes by encouraging male employees' involvement in childcare, we have newly introduced "spousal childbirth leave." These initiatives have widened the options for ways of working.
More than 100 male employees took childcare leave during FY2019, and approximately 20% of all employees taking childcare leave were men. Additionally, we support employees to take childcare leave through balance support seminars, etc.

More flexible job rotation
We will conduct more flexible job rotation through which employees can set up their career steps autonomously and experience various jobs, which will improve the safety and service levels and motivate employees.

Balance between work and child-rearing

TICKET TO TOMORROW

Now I am working as a driver using the short-time work system for child-rearing. To be honest, when the system was changed, I had anxiety about whether I could be engaged in crew duties in the morning and evening, but I found many merits after actually using the system. In the past, I used paid holidays and nurturing leave even when I wanted to leave only for the morning or afternoon for affairs of the nursery or elementary school, etc., but now I can make a request for work in advance and work in a planned manner by working in the morning and evening. Some sections operate from 7:00 in the morning to around 21:00 at night, so support from family members is a must depending on the family environment and commuting distance. I will continue to maintain work-life balance and remain grateful to my family, people in the workplace, and surrounding people.

Narashino Transportation Depot, Chiba Branch Office, East Japan Railway Company

Activate regions across job category groups

TICKET TO TOMORROW

I have been working keeping safe and stable transportation in mind as a conductor of a train, but I am also engaged in regional activation work in the Yamanashi area several times a month. This is a cross-organizational project launched to achieve the goal "Create new values across the boundary between the front line and the planning department" in the management vision "Transformation 2027."
Specifically, I am engaged in operations such as discovery and transmission of attractiveness, resolution of problems, etc. in cooperation with municipalities, etc. to attract passengers in and around the Yamanashi area. I feel challenged and grow in the operations for which I am engaged in planning, which is difficult to experience at the front line, and can utilize the power of ideas at the front line.
The planning and front line departments will together continue to contribute to regional activation and create railways to be selected by passengers.

Hachioji Transportation Depot, Hachioji Branch Office, East Japan Railway Company

■Efforts on globalization

In addition to the overseas study program for obtaining MBA, etc. (about 10 persons travel overseas every year) which we have been offering for some time, "overseas experience program", in which employees are dispatched to various cities in the world (including non-English speaking countries) for three months to experience local culture through mainly learning the language while in homestay or at other facilities, is conducted. In FY2019, we dispatched 165 employees. About 200 employees are planned to be dispatched in FY2020.
There is also "overseas railway consulting OJT training program" (for around 40 people), in which employees participate in an overseas railway consulting project centering on Japan International Consultants for Transportation Co., Ltd., a group company, for about three months. Other programs include overseas training (for about 500 people) taking place mostly in Southeast Asia, and altogether more than 650 employees are provided with opportunities to experience overseas every year. Many front-line employees participate in these overseas studies and trainings, which widens their view and improves their motivation. As an endeavor to improve the language skills of our employees, we encourage employees to take the TOEIC® test. Each year, a little less than 5,000 employees take the test.
In addition, we are striving to recruit global personnel irrespective of their nationality. At present, we have roughly 60 or more employees whose nationality is not Japanese.


OJT trainees (Myanmar)

Deepened understanding of different cultures leads to communication

TICKET TO TOMORROW

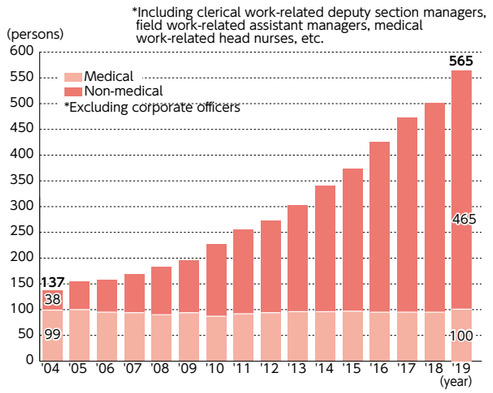
Shinagawa Station is crowded with inbound foreign tourists. I strive to enable passengers from various countries to use Shinagawa Station comfortably while being aware of the roles the company seeks in its global human resources. Therein, I focus on "understanding the culture of the countries of passengers by employees." At first, there were some employees who were confused upon seeing differences in behavior from Japanese culture because of the language barrier. However, they have deepened their understanding of the cultures of foreign countries, etc. through study sessions, etc. and now can support passengers smoothly. We will continue to create an environment where inbound foreign tourists can use our services safely.

Shinagawa Station, Tokyo Branch

■Promoting Involvement of Female Employees

As a result of various measures centering on expanding the positions available to women in order to realize gender equality since our establishment, all positions now have working female employees. Moreover, the number of female employees occupying important responsibilities such as general managers at the head office and branch offices, supervisors of facilities in the field (station managers, etc.), and directors of group companies is on the rise. As of the end of June 2019, we have appointed one outside directors and two corporate officers.

[Changes in Number of Female Managers Over Time]



JR East was certified as an "Eruboshi" company (the highest rank, Grade 3) from the Ministry of Health, Labour and Welfare based on the Act of Promotion of Women's Participation and Advancement in the Workplace.

Next-generation certified logo ("Kurumin")

In November 2008, August 2012 and in January 2018, we were certified by the Minister of Health, Labour and Welfare as a company supporting the upbringing of the next-generation of children.

[Eruboshi certification conditions of group companies]

Company name	Eruboshi
JR East Information Systems Company	★★
JR East Personnel Service Co., Ltd.	★★★
JR East Marketing & Communications,Inc.	★★★

[Kurumin certification conditions of group companies]

Platinum Kurumin
Viewcard Co.,Ltd

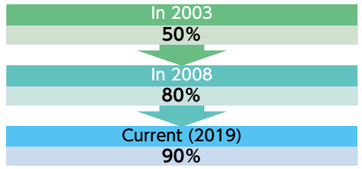
Kurumin
Tokyo Monorail Co., Ltd.
LUMINE Co., Ltd
Sendai Terminal Building. Co., Ltd.
JR East Retail Net Co., Ltd.
Nippon Restaurant Enterprise Co.,Ltd
East Japan Railway Trading Co., Ltd.
JR East Personnel Service Co., Ltd.
JR East Facility Management Co.,Ltd
JR EAST MECHATRONICS CO., LTD

■General Business Operator Action Plan

So far, we have been promoting activities with awareness of each stage of "hiring," "education/establishment" and "promotion" of female employees. Thanks to the activity, the ratio of female employees reached 14.8% (as of April 1, 2019) and the ratio of female managers reached the target of 5% in January 2019.
To support more diverse ways of working and expand the positions, we formulated the general business operator action plan on April 1, 2019, and have been promoting the activities for supporting female employees and balance support activities.

(Specific targets)
(1) Make the female ratio in new graduates 30% or more.
(2) Promote arrangements of facilities for female employees at workplaces to arrange an environment where female employees can work actively in all workplaces.
(3) Improve the convenience of childcare centers in offices to enhance balance support for employees.
(4) Develop an environment where diversified working styles are accepted and all employees can continue working with enthusiasm.
(5) Make the female manager ratio 10% or more (about 5.5% as of April 1, 2019).

[Female employee retention rate 10 years after joining JR East]



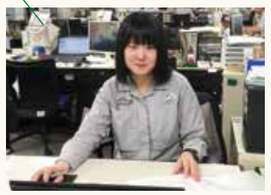
	Target by the end of FY 2024	Result (as of April 1, 2019)
Female new graduate employment rate	Over 30%	30.8% (570 persons)
Female manager rate	10%	5.5% (565 persons)

Rate of female employees out of all employees	14.8% (7,857 persons)
Rate of female executives in directors/corporate officers	Approx. 7% (4 persons)

Environment where female employees can work actively

TICKET TO TOMORROW

In FY2019, I was a lecturer at a study meeting about child care leave, maternity leave, and nursing care systems to promote diversity and work-life balance in the Akita Branch Office.
I conveyed that the leave systems related to childbirth and child-rearing and the environment after returning to work are arranged well and female employees can continue to work actively with a sense of security.
Female employees are on the increase. I will also contribute to maintenance of safe and comfortable tracks as a member of track maintenance employees.



Ugohonjo Track Maintenance Technology Center, Akita Branch Office, East Japan Railway Company

■Initiatives to Promote Understanding of LGBT Employees

For understanding of LGBT employees, etc., we are performing activities of
(1) Understanding sexual minorities,
(2) Changing systems and conventional standards, and
(3) Raising awareness and transforming perceptions.

work with Pride Gold 2018

Specifically, through various training courses and seminars aimed at executives, employees, Group companies, etc., we are conducting educational activities to provide a deeper understanding of sexual minorities (LGBT). Moreover, in October 2017, we included a section on LGBT in the Compliance Action Plan Handbook and educated all employees about it. We are also enhancing our systems. In April 2018, our HR system and benefits program were updated to recognize same-sex partners of LGBT employees.
Thanks to these activities, we've received the highest evaluation of "Gold" in the "PRIDE Indicator" evaluation indicator for activities for sexual minorities such as LGBT for two consecutive years.

■Diversity promotion with the entire JR East Group working as one

We are addressing measures to establish corporate culture in which all people working in the JR East Group will mutually recognize the diversity, under the theme, "Creating sense of unity" in the entire JR East Group. In addition, we have provided information for the purpose of deepening each company's endeavors in future, by holding in December 2018 the "JR East Diversity Forum," through which successful examples of each Group company were shared by all companies, and other events.
Moreover, since 2010, we have also been implementing networking activities in the respective organizations in which we discuss issues such as "diversity" and "work-life balance" via cross-organizational connections that transcend individual workplaces and job categories.

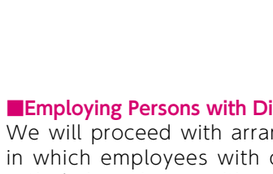
■Employing Persons with Disabilities

We will proceed with arrangement of a system in which employees with disabilities can work actively in various positions in addition to active recruitment. We have about 800 employees with disabilities, but the employment rate is 2.56% as of June 2019, which is 2.2% higher than the legal employment rate. We will continue to fulfill our social responsibility through enhancement of environments where employees with disabilities can work comfortably.

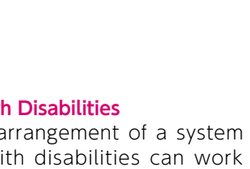
JR East Green Partners Co., Ltd.

JR East Green Partners, a special JR East subsidiary, was started in April 2009 and charged with the task of overall management of uniforms used in JR East. Since then, we have been striving to expand the places where the disabled can be active such as the newly started printing business, crop maintenance business, collection and delivery/sorting business for business goods, and inventory management business of amenity goods of "TRAIN SUITE Shiki-Shima."

In addition to employing people with disabilities, JR East Green Partners now cooperates with support organizations and special support schools and provides work training opportunities for disabled persons wishing to secure corporate positions. By carrying out a broad range of activities, the company supports the entire JR East Group in the fulfillment of its social responsibilities.



Uniform sorting



Plant maintenance in collaboration with local communities

■Elder Employee System

As a means of enabling retired employees to enjoy a more stable life-planning until they reach the age when they start receiving their full pension and to promote HR development and technology succession by leveraging these employees' individual knowledge and skills at Group companies, we established an Elder Employee System in FY2009.

During this time of major upheaval in the environment surrounding our company, in order for the JR East Group to achieve sustained growth, it is essential that we ensure that the younger generation inherits fundamental technical skills and expertise from our veteran employees.

Beginning in FY2019, with the aim of applying the expertise possessed by retired employees not just at our Group companies but also in areas such as business operations, HR development, and further technology succession at JR East, we have expanded the scope of the work done by elder employees and also partially revised their working conditions from the standpoint of making their work more rewarding.

■Revision of the reemployment support system

We support reemployment in the JR East Group for those who have been employed by JR East (for three years or longer). In this reemployment support system, those who desire reemployment register and periodically receive job information on the JR East Group.

■Consultation Desk for Diversity

In February 2017, we opened the "Consultation Desk for Diversity" as a system for providing individual consultations including those about carrier support and support for the achievement of balanced work and childcare and nursing to employees in need including those with disabilities, those having foreign nationalities and sexual minority (LGBT).

To Improve Working Environment

■Health Management Mid-term Vision 2023

In order to promote health management from mid- and long-term viewpoints, our group launched "Health Management Mid-term Vision 2023" that defines specific target figures starting from FY2020.

Health Management Declaration

The health and vitality of each employee is paramount for the JR East Group to realize "Our Ideal Future" set forth in the management vision "Transformation 2027" as employees assume the leading role in realizing this vision.

We aim to become a company group that takes the lead for the health and longevity of Japanese society by realizing a spiritually rich life for all people through practice of health management.

[Numerical target for the end of FY2024]

■Health management promotion system

The system to promote health management consists of dedicated departments at the head office and branch offices, the JR East Health Promotion Center, JR Sendai Hospital Health Management Center, and seven other railway staff health checkup centers.

In addition, if an employee requires a medical examination at a health care facility, we support their health needs in collaboration with two hospitals under our management, the JR Tokyo General Hospital and JR Sendai Hospital.

■Health management activities

Disease Prevention

- Comprehensive medical examinations (for employees and spouses aged 35 or over)
- Breast and uterine cancer examinations (for female employees under 35)
- Influenza vaccination (for all employees)

Mental Health Care

- Stress checks (for all employees)
- Distribution of "Kokorono Self-care" booklet (to all employees)
- Conducting mental health-related training (for onsite supervisors)

Health promotion activities

- Walking event using an app (twice a year)

Improvement in health literacy

- Providing training materials such as health-related e-learning
- Conducting education and training for new employees and others of the young generation
- Providing health information via our internal magazine and intranet

■Human Rights Enlightenment

In order to clarify our system that we educate our employees on the necessity for enhanced human rights, we have established a human rights enlightenment promotion committee at the head office, which is working to improve awareness of human rights by holding seminars on this topic and training for employees who are in charge of human rights promotion. In addition, we are striving to establish an inclusive corporate culture for everyone.

Furthermore, we are undertaking initiatives that encourage employees and their families to think about human rights, such as articles on everyday human rights issues in our internal magazine and calling for human rights promotion slogans.

We have also joined the Industrial Federation for Human Rights, Tokyo, and are actively involved in external activities as well, such as information exchange and mutual education initiatives with other member companies, and apply the information we obtain to our internal activities.

Human Rights Seminar

■Company Sports Initiatives

Company sports teams such as the JR East Baseball Club (Tokyo), JR East Tohoku Baseball Club (Miyagi), JR East Running Team (Tokyo), JR East Women's Judo Club (Tokyo), and JR East Basketball Club (Akita) are active while based in their respective regions and actively contributing to their communities by organizing initiatives such as sports classes for local elementary schools.

Baseball class by the hardball baseball club

Judo class given by Women's Judo Club

Passion for company sports

TICKET TO TOMORROW

The JR East Akita Peckers aim to be "a team that can win with absolute strength and is loved by the local community and employees." Completion of "Akita Northern Gate Square" is planned for this December and will be our practice base. We will practice more than now and actively contribute to the local community through activities such as clinics for elementary and junior high school students.

The source of our power is our supporters. We hope that winning with a feeling of gratitude will lead to a sense of unity for the company. Thank you for supporting the JR East Akita Peckers.

Transport Department, Akita Branch

Activities toward Olympic and Paralympic Games Tokyo 2020

Tokyo 2020 Olympic and Paralympic Games (hereinafter called "Tokyo 2020 Games") approaching next year. We are proceeding with the activities for preparation for successful management of the Games and cultivation of the momentum to the holding of the Games.

[Pillar of the activities I] For support for management of the Tokyo 2020 Games

[For mitigation of congestion during the period of the Games]

A big issue is an increase in the congestion rate during the Tokyo 2020 Games period due to mixture of audience and commuters.
Since it is difficult to increase trains in the commuting hours of weekdays, it is necessary to ask commuters to support us by staggering their commuting hours, telework, etc. and TDM (transportation demand management). Here are two summer activities implemented last year.

●Setting of extra trains for promotion of staggered business

We set extra trains for two routes operated in the TDM priority sections (16 sections) on trial during the challenge week* of smooth business promotion period (July 22 to 26).

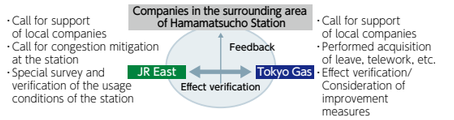
Route		Operating sections and operating hours of the extra trains
Yamanote Line	Inner loop	From Osaki (5:52)→ From Shinjuku (6:43)→To Osaki (6:58)
	Outer loop	From Osaki (6:15)→From Ueno (6:57)→To Osaki (7:19)
Stop at all stations of the Chuo/ Sobu Line	To Mitaka	From Nishifunabashi (6:24)→From Akihabara (6:51)→To Mitaka (7:30) The extra section is between Nishifunabashi and Nakano
	To Chiba	From Nakano (6:27)→From Shinjuku (6:33)→To Chiba (7:41) The extra section is between Nakano and Tsudanuma

*Challenge week and core days: Period to adjust the peaks of the activities of companies, etc. with each other

●Activities to mitigate congestion in cooperation with Tokyo Gas Co. Ltd.

We performed activities to mitigate congestion in cooperation with Tokyo Gas Co. and companies in the surrounding areas because JR Hamamatsucho Station, which will be the transfer to the Oi Hockey Stadium, is expected to be congested more than now during the Games period.

Activities to mitigate congestion in cooperation with companies in the surrounding areas using JR Hamamatsucho Station



Activities of Hamamatsucho Station
・In-station announcement ・Poster
・Distribution of announcement tissues
⇨Achieved -12% compared with the preceding year (between 8:00 and 9:00 on July 24, 2019)

[For safe use of our services during Tokyo 2020 Games]

- We set up inquiry contacts using video phones for sick passengers as well as tested such activities as allocation of nurses during congested time of the station nearest to the venue of the event used by many passengers in cooperation with local medical institutions.
- We are also accelerating the response toward realization of seamless services such as multi-language support for smooth and comfortable use by foreign passengers, whose numbers are rapidly increasing.

●Cooperation with medical institutions [As a part of heat countermeasures]

Set up hot lines of inquiry contacts dedicated to employees (video phones using tablet terminals, etc.)

Period	Station	Affiliated medical institutions
7/22~8/2 8/19~8/30 9:00 to 17:00 on weekdays	Yoyogi Station	JR Tokyo General Hospital
	Shinagawa Station	Tokyo Takanawa Hospital

Dispatch of nurses to the station (during Jingu Gaien Fireworks Festival)

Period	Station	Affiliated medical institutions
8/10 17:00 to 21:50	Sendagaya Station Shinanomachi Station	JR Tokyo General Hospital

●Enhance provision of information to foreign passengers

- We have enhanced provision of information to foreign passengers such as signs in multiple languages and distribution of useful apps for provision of information in multiple languages.
- Activities to improve the foreign language skills of employees (e-learning education materials, online English conversation, etc.)
- Implementation of activities in cooperation with the Group of Kanda University of International Studies

[Pillar of the activities II] For encouragement of momentum up to the holding of the Tokyo 2020 Games

We are also focusing on the promotion of diversity and the realization of a coexistence society regarding FY2020 as the "concentrated activity period" to support Paralympic sports. Since we are a railroad company used by many customers, we consider it to be very important to cooperate with customers to realize a coexistence society where people can be active no matter whether they have handicap, so we will continue to actively promote these activities.

●Paralympic athlete lecture sessions and various experience/observation sessions

We periodically hold Paralympic athlete lecture sessions, observation sessions of outside facilities, etc. for the purpose of provision of opportunities to raise awareness toward further promotion of diversity and realization of an inclusive society in our company.

●Hold experience sessions and competitions of the Paralympic sport "boccia"

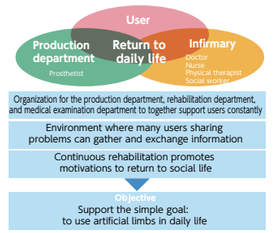
An experience session of the Paralympic sport "boccia" is held at the head office about twice a month. In addition, experience sessions, etc. are also held in branches and other places to promote the understanding of Paralympic sports and widen the network of support.

*JR East is a Tokyo 2020 official partner (passenger rail transport service).

Activities in cooperation with the Artificial Limb Support Center of Tetsudou Kousaikai

We hold the "observation session for Parasport support and realization of a coexistence society" for employees of the JR East Group on a regular basis about once a month as well as lecture sessions by related persons (athletes, etc.) of the Artificial Limb Support Center. We also hold many external events such as artificial leg experience sessions.

The Artificial Limb Support Center of Tetsudou Kousaikai runs the only private total rehabilitation facility which provides comprehensive services from manufacturing of artificial limbs to training of wearing of artificial limbs in Japan.



Environment

[Priority commitment goals]

[Related goals]

Contents

Basic Concept for Ecology Promotional Activities

■Basic philosophy and basic policies for promoting ecological activities (established May 1992, partially revised in September 2012)

The JR East Group formalized its basic philosophy and policies in 1992 and established activity guidelines in 1996.
Our specific environmental protection measures are based on these.

Basic philosophy

The entire JR East Group, as a member of society, will diligently strive to balance global environmental protection with our business activities.

Basic policies

To contribute to creating a global environment for the future through our business activities for our customers and local communities.

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

To maintain our concern for the global environment and raise global environmental awareness of our employees.

■Activity guidelines for the promotion of ecological activities (established March 1996 and partially revised in February 1998 and September 2012)

1. While working to reduce total energy consumption by enhancing energy efficiency and introducing cleaner forms of energy, we endeavor to reduce CO_2 emissions, a contributor to global warming.
2. We ensure the proper management and processing of environmental pollutants and ozone-depleting substances, in compliance with laws and regulations. Moreover, we do our best to reduce generation of such substances and adopt environmentally responsible substitutes as much as possible.
3. We ensure the appropriate processing of various types of waste generated at our offices, establishments, stations, trains, and other locations. We strive to recycle waste and to reduce its generation, and to use more recycled and resource-saving products to minimize the burden we place on the environment.
4. We respect the natural environment, which nurtures diversified life, and endeavor to reduce noise and vibrations caused by train operations, thus achieving harmony with the environment along railway lines.
5. We are looking carefully at the impact of railways on the environment once again, in order to enhance the environmental superiority of railways and to spread that awareness throughout the world.

■Committee on Ecology

JR East established our Committee on Ecology Promotion, which is chaired by the executive vice president, as a management organization to promote environmental activities. It sets environment-related targets, implements environmental conservation activities, surveys the environmental impact of business activities, monitors progress toward target achievements, and so forth.
Furthermore, the Management Planning Dept. serves as the secretariat overseeing environmental management for the entire JR East Group.

■Compliance with environmental laws and regulations

There were no major violations of environment-related laws and regulations resulting in penalties in FY2019.

[Organizational structure to promote environmental management (as of July 2019)]

Executive Vice President (in charge of Corporate Planning Headquarters)

Committee on Ecology

Chair: Executive Vice President (in charge of Corporate Planning Headquarters)
Vice-Chair: Executive Vice President (except for the person to be chair), Director-General of Corporate Planning Headquarters
Members: Director-General of Technology Innovation Headquarters, Director-General of International Affairs Headquarters, Director-General of Railway Operations Headquarters, Director-General of Lifestyle Business Development Headquarters, Director-General of IT & Suica Business Development Headquarters, General Manager of Management Planning Dept., General Manager of Investment Planning Dept., Director-General of Technology Innovation Headquarters (Technology Planning Department), Director of Research & Development Center of the JR East Group Environmental Engineering Research Laboratory, Director-General of Shinkansen General Management Department
Secretariat: Management Planning Dept.

Departments at Head Office / **Branch Offices, etc.**

Committee on Ecology at Branch Offices

General managers and department managers of Branch Offices

Main activities

Environmental management	Promotion of environment conservation activities at each work place, promotion of environment management as a whole group, management of environmental targets and publication of environmental activities, etc.
Measures to prevent global warming	Reduction of CO_2 emissions through reduced electricity use and new energy technologies, reduction of CO_2 emission volume throughout the entire transport system, etc.
Measures for resource circulation	Recycling of wastes from stations and trains, reduction and recycling of industrial waste, eco-friendly procurement, etc.
Chemical substance management	Management of ozone depleting substances, chemical substances, PCB, etc.
Environmental activities along railway lines	Measures against noise, utilization of spring water in tunnels, conservation and utilization of railway trees, proper use of herbicide, etc.

Environmental Management

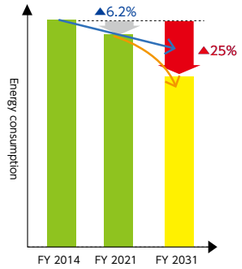
Management of Environmental Goals

■FY2031 goals

With the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) held in December 2015 adopting the Paris Agreement which will be a new international framework for global warming countermeasure after 2020, JR East has set environmental goals which plan to be achieved in FY2031.

Category of environmental conservation activities	Performance indicators	Targets to be met by FY2031
Measures to prevent global warming	Energy consumption from railway business activities	25% reduction (compared to FY2014)
	CO_2 emission volume from railway operations	40% reduction (compared to FY2014)

Reduce energy consumption and CO_2 emissions in railway operations



Towards realizing the FY2031 goals, we pursue achieving reduction of energy consumptions by 25% and reduction of CO_2 emission volume by 40% in railway operations (compared with FY2014) by accelerating the pace of reduction through FY2021 through activities such as installation of power storage facilities, self-consumption of renewable energy, and expanded introduction of E235 series trains. In addition, we aim to achieve further system innovation such as enabling energy-saving automated operation.
As for the reduction of CO_2 emission volume, based on the assumption that power company emission factors will be 0.37 kg-CO_2/kWh in FY2031, we have set goals on CO_2 emission volume, or reducing energy consumption by 25%.

■State of progress toward FY2021 goals

FY2021 Goals

Since 1996, JR East has been conducting environmental conservation activities with a focus on specific goals.

Note: External Assurance on environmental performance and environmental accounting data

KPMG AZSA Sustainability Co., Ltd. has been engaged in providing external assurance on a set of selected environmental performance and environmental accounting indicators so that the reliability of the data in this report is ensured. The particular indicators that are assured are marked with a ☆ for clarity.

Figures in parentheses are in comparison to FY2014

Category of environmental conservation activities	Performance indicators	Unit	Reference value (FY2014)	FY2021 goal	FY2019 result
Measures to prevent global warming	Energy consumption from railway business activities	Billions of MJ	51.7	48.5 (6.2% reduction)	49.5☆ (4.3% reduction)
	Electricity consumption for train operation (Shinkansen lines)	kWh/car-km	2.49	2.36 (5.1% reduction)	2.41☆ (3.2% reduction)
	Electricity consumption for train operation (conventional lines)	kWh/car-km	1.59	1.46 (8.3% reduction)	1.50☆ (5.6% reduction)
	Energy consumption at branch offices, etc.	kL/m²	0.0407	0.0366 (10.0% reduction)	0.0359☆ (11.8% reduction)

Progress of Environmental Measures

Category of environmental conservation activities	Performance indicators	FY2021 goal	FY2019 result
Measures to prevent global warming	Implementation of more ecoste Model Stations	Total of 12 Stations	Total of 10 Stations
	Switching Platform and Concourse Lighting to LEDs	Total of 62 thousand units (reduction of 129 million MJ)	Total of 52 thousand units (reduction of 110 million MJ)
	Improving Efficiency of Large-scale Air-conditioning Systems	Total of 10 Locations (reduction of 82 million MJ)	Total of 8 Locations (reduction of 76 million MJ)

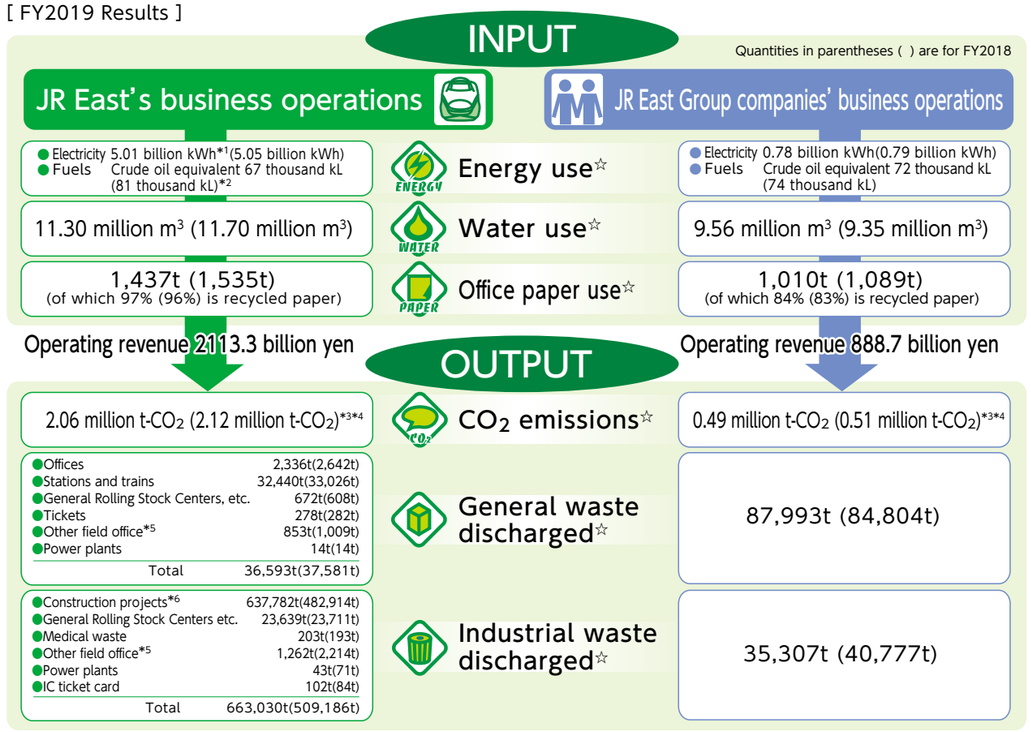
Annual Targets through FY2021

Category of environmental conservation activities	Performance indicators	Goal	FY2019 result
Measures to prevent global warming	Reduction Rate of Energy Consumption Intensity of Each JR East Group Company	Every year 1% reduction in each group company	1% reduction by all group companies
Measures for resource circulation	Recycling rate for waste generated at stations and on trains	94%	93%☆
	Recycling rate for waste generated at General Rolling Stock Centers, etc.	96%	96%☆
	Recycling rate for waste generated in facility construction projects.	96%	94%☆
	Implementation Rate of Recycling by Group companies	100%	100%
Environmental management	Setting of numeric targets by Each JR East Group Company	Targets to be revised continually	Established

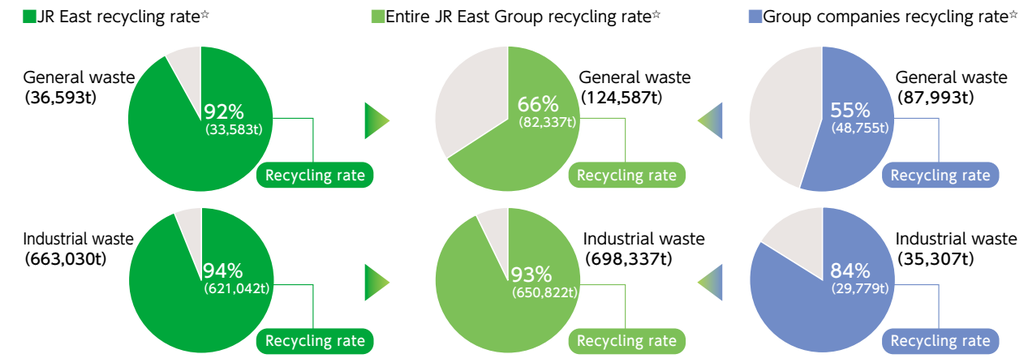
Targets for Group companies

■JR East Group's environmental impact

[FY2019 Results]



*1 Electricity: Both electricity generated in JR East's power plants and used internally and electricity purchased from electric companies are included. Please refer to the "JR East Energy flow map" on page 100 for details about electricity generation and use.
*2 Fuels: Natural gas and other fuels used for generating electricity in JR East's thermal power plants are not included.
*3 CO_2 emissions by Scope: Scope 1 emissions of the entire Group is 1.33 million tons CO_2 and Scope 2 emissions 1.56 million tons CO_2. (please see page 101)
*4 CO_2 emissions attributable to electricity purchased from external suppliers are calculated based on the adjusted emissions coefficient.
*5 Other field office: Technical centers, equipment maintenance centers, and other locations such as train crew depots.
*6 Construction projects: Waste generated by our construction projects, but for which contractors legally become the waste-discharging entities, is included in industrial waste.



Definition of waste disposal

- Waste includes salable waste.
- Recycling includes thermal recycling* where general waste is treated at incineration plants etc. and industrial waste is incinerated as intermediate treatment for heat recovery.

*Thermal recycling is a recycling method in which the heat arising from the incineration of waste is used to create steam and hot water, which in turn are used to generate electricity and for hot-water supply.

Environmental Accounting and Environmental Management Indicators

In FY2019, our environmental conservation costs amounted to approximately 22.5 billion yen in investments and 19.6 billion yen in expenses. By introducing new type of cars, we estimate we will reduce CO_2 emissions by about 12 thousand tons per year.
JR East has its own Environmental Management Indicator to assess the relation between our business activities and environmental impacts. These are calculated by dividing CO_2 emissions, which are a major factor in our environmental impacts, by operating profits, which represent our economic value added. A smaller value of the indicator means that we are making a smaller impact on the environment to create the same economic value added. For FY2019 the value of the indicator was 5.27t- CO_2 /million yen, compared to 9.45t- CO_2 /million yen for FY1991.

[Environmental accounting for fiscal year ended March 2019☆]

( ):FY2018

Category	Environmental conservation costs (billion yen)		Environmental conservation benefits in relation to environmental targets		Economic benefit of environmental conservation activities (billion yen)
	Investments	Expenses			
Environmental conservation (pollution prevention) activities along railway lines	5.19(5.31)	10.35 (12.07)	—		—
Global environmental conservation activities	17.33 (8.16)	—	Energy consumption from railway business activities	49.5 billion MJ	9.60(10.24)
			Electricity used for railway operations per unit of transport volume	Shinkansen 2.41 kWh/car-km	
				Conventional Lines 1.50 kWh/car-km	
			Energy consumption per unit of floor area at branch offices, etc.	0.0359 kL/m²	
Resource circulation activities	—	7.10(6.46)	Recycling rate for waste generated at stations and on trains	93%	5.60(1.78)
			Recycling rate for waste generated at General Rolling Stock Centers, etc.	96%	
			Recycling rate for waste generated in construction projects	94%	
Environmental management	—	0.36(0.36)	—		—
Environmental research & development	—	1.78(1.70)	—		—
Social activities	—	0.03(0.03)	—		—
Total	22.51 (13.47)	19.61 (20.62)			15.20(12.02)

Notes
Capital investment for the period: 509.4 billion yen
Total R&D costs for the period: 20.7 billion yen (Consolidated)

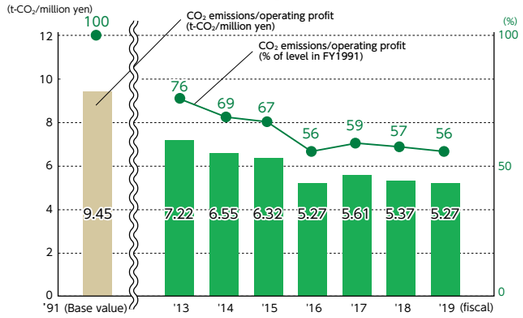
The above table's relations with the table for Targets and Results are as follows:
"Environmental conservation activities along railway lines" = "Environmental activities along railway lines" and "Chemical substance management"
"Global environmental conservation activities" = "Measures to prevent global warming" and "Chemical substance management"
"Resource circulation activities" = "Measures for resource circulation"
"Environmental management" = "Environmental management" and "Environmental communication"
"Environmental research & development" = "Research & development"
"Social activities" = "Environmental communication"

〈Notes on calculation of environmental conservation costs and benefits〉
Environmental conservation costs
○Data are for East Japan Railway Company only (i.e., non-consolidated data).
○Environmental conservation costs are mainly based on data available in the current management system.
○To date, we have declared the total amount of investments in energy-saving rolling stock, but starting from FY2016, we will not declare amounts corresponding to upgrades of aging rolling stock.
○Expenses do not include depreciation charges.
○In the costs for resource recycling activities, expenses for treating waste generated at stations and by trains are calculated by multiplying the allocations by the expenses for cleaning stations and train cars, based on a model for cleaning stations and trains.
○In the costs for resource recycling activities, the expenses for treating waste generated through construction projects are calculated by multiplying waste volume for FY2019 by standard unit costs for the type of waste in that region.
Environmental conservation benefit
○Environmental conservation benefits are calculated based on figures set as our environmental targets.
Economic benefit of environmental conservation activities
○Economic benefit of global environmental conservation activities is calculated by multiplying annual savings (estimates are used in some cases) in electricity and repair costs resulting from the introduction of energy-efficient trains by the expected useful life, to determine useful-life economic benefit.
○Income from the sales of waste generated at General Rolling Stock Centers and through construction projects is included in economic benefit of resource circulation activities.

Environmental Management Indicator

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

[JR East's Environmental Management Indicator☆]



Overview of JR East Group's energy initiatives

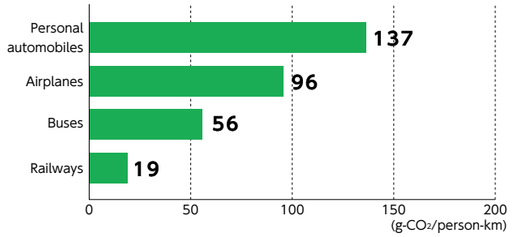
At JR East Group, we aim to optimize energy at various stages in "Creation, Send, and Utilize." Moreover, approximately 25% of energy consumed during train operations, etc., is renewable energy such as hydroelectric, solar, and wind power which produce zero CO_2 emissions.

Measures to Prevent Global Warming

■Energy conservation and CO_2 reduction

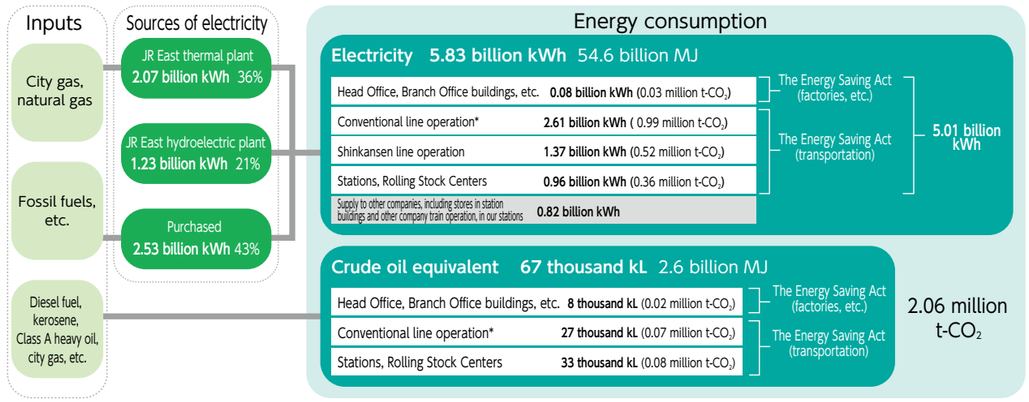
Railways are an environmentally friendly mode of transportation that accounts for a low share of the total CO_2 emissions produced by the transportation sector relative to their share of transportation volume.
However, JR East consumes around 5 billion kWh of power each year, which is a massive amount corresponding to approximately 1.4 million households.
We will therefore strive to save energy for train operation, which accounts for about 80% of our total energy consumption, and furthermore, it will be necessary to conduct energy-saving activities even in offices and others.
The energy flow map shows the flow of energy from input through consumption. Power supplied by our own power plants and power companies is used for train operation and for station and office lighting and air-conditioning. Diesel fuel and kerosene are also used to operate diesel trains and stations and office air-conditioning.

[CO_2 emissions per transportation amount (FY2018 passengers)]



Source: Ministry of Land, Infrastructure, Transport and Tourism website

[JR East Energy flow map]☆



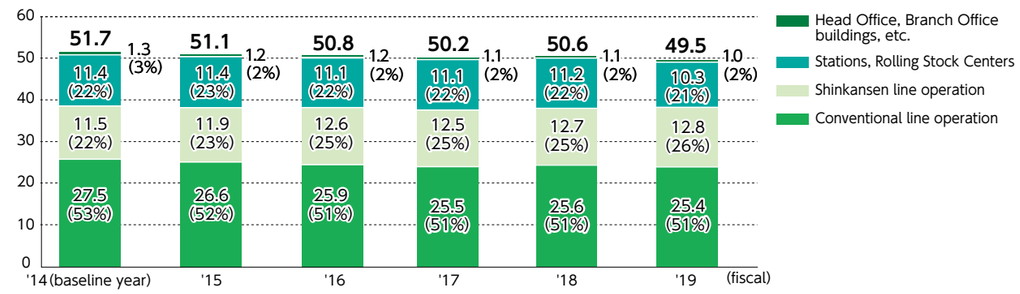
*Including BRT (Bus Rapid Transit)　(CO_2 emissions are the amount calculated with 'adjusted' emission coefficients)

●Boundary
Though, in principle, the boundary for energy consumption is only JR East, it nonetheless includes energy consumption for the applicable operations of the companies with whom we entrust station operations. On the other hand, the energy consumption of shops on station premise which are operated by group companies is not included in the boundary. Thus, we match the boundary for the entire JR East business with that of transportation, plants and others defined by the Act on the Rational Use of Energy (The Energy Saving Act)

●Calculation method
Energy consumption was calculated by the method defined by the Energy Saving Act.

●Hydraulic power generated by JR East
The foregoing energy consumption is calculated by the idea of the Energy Saving Act, but hydraulic power generated by JR East is calculated by multiplying by 9.76MJ/kWh. As for hydraulic power generated by JR East, reports required by the Energy Saving Act are reported by the 0MJ.

[Composition of energy consumption by JR East]☆



■Adapting to climate change

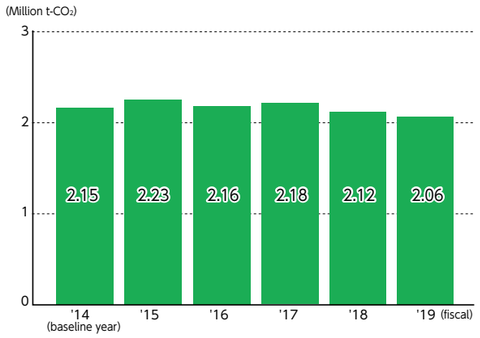
Along with global warming countermeasures, we are also seeking to respond in an appropriate manner to natural disasters, increased heat stroke risk, and other issues caused by climate change, based on the Climate Change Adaptation Act enacted in December 2018.

■Trends in CO_2 Emissions of JR East☆

Our CO_2 emissions in FY2019 totaled 2.06 million tons, a decrease of 90 thousand tons compared to FY2014 (the reference year). This is due to an improvement of the CO_2 emission coefficients of JR East's electric power due to efficient operation of its Kawasaki Thermal Power Plant and other factors. In this report, we are also reporting CO_2 emissions in Scopes 1 and 2 in accordance with the definition of the GHG Protocol*.
We are moving forward with activities to reduce all CO_2 emissions resulting from our business activities by calculating CO_2 emissions* in Scope 3 and identifying supply chain emissions.

*GHG protocol
The standard for calculation and reporting of greenhouse gas emission which was formulated by the organization which was established mainly by the WRI (World Resources Institute) and WBCSD (World Business Council for Sustainable Development)
*Supply chain CO_2 emission
Sum of Scope 1, 2 and 3 which is the CO_2 emissions resulting from the whole organization activities of business operations such as raw material procurement, production, capital investment goods, business trips, commuting and others.

[Trends in JR East's total CO_2 emissions]



●Boundary
The boundary of CO_2 emissions is the same as that for the energy consumption described in p. 100.
●Calculation Method
CO_2 emissions have been calculated based on the method specified in the Act on Promotion of Global Warming Countermeasures. However, the CO_2 emissions attributable to the purchased electricity are calculated, including those from the electricity used for rail transport, by using adjusted emission coefficients for each electric power company. The CO_2 emissions in the FY2019 calculated by using actual emission coefficient is 2.09 million tons CO_2, down 60 thousand tons CO_2 compared to the previous fiscal year.

Item	Scope 1	Scope 2
FY2019 Emission Volume	1.2 million tons CO_2	1.26 million tons CO_2

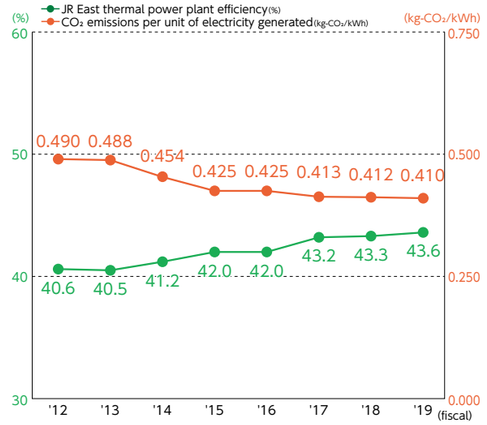
Scope 1…All CO_2 emissions directly attributable to fuel consumed in the operation of diesel railcars, operation of JR East thermal electric power plant, etc.
Scope 2…CO_2 emissions indirectly emitted from the use of electricity purchased from electric power companies.
Scope 3…CO_2 discharged by the other companies which are related to our business activities.
*The sum of the Scope 1 and Scope 2 emissions and the total CO_2 emissions do not match, since the former includes emissions associated with the production of electricity supplied to other companies.

■Thermal Power Plant of JR East

JR East operates a thermal power plant in Kawasaki City, Kanagawa Prefecture, with a total capacity of 741 thousand kW. The plant uses combined-cycle power generation units* with improved efficiency and switched fuel from oil to natural gas when the plant was renovated to reduce CO_2 emissions. Unit 1 is currently undergoing construction that will update it from kerosene to natural gas, targeting operation in 2021.

*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.

[CO_2 emission factor and power generation efficiency at thermal power plant of JR East]☆



●Calculation method
CO_2 emissions from the thermal power plant of JR East are calculated based on the method stipulated in Act on Promotion of Global Warming Countermeasures, and power generation efficiency is based on the method stipulated in the Energy Saving Act.
●CO_2 emission factor of all power generated by JR East (thermal power and hydraulic power)
Emission factor adjusted in FY2019 was 0.290 (kg-CO_2/kWh)

■Reducing energy consumed for train operations☆

We are putting into service more new-generation energy efficient 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. By the end of March 2019, JR East had 12,280 energy-efficient railcars in operation. This accounts for 98.2% of our railcar fleet.

E235 series:
The Yamanote line was equipped with a state-of-the-art train information management system

E7 series:
The Hokuriku Shinkansen that incorporates the highest level of cutting-edge technology

E233 series:
VVVF inverter cars for commuter and suburban transportation

■Diesel-powered, electric-motor-driven hybrid railcars and the accumulator railcar trai

The Kiha E200 cars, which entered into service on the Koumi Line in July 2007, are the world's first diesel-powered, electric-motor-driven hybrid railcars. Compared with the previous trains, the fuel consumption rate has been reduced by about 10% and the noise level of the trains idling at stations and accelerating on departure has been lowered by 20–30 dB. Moreover, starting from October to December 2010, we began operating the HB-E300 Series, a new type of resort train equipped with a hybrid system similar to the Kiha E200, in the Nagano, Aomori and Akita areas, and in May 2015, we began operating HB-E210 Series on the Senseki-Tohoku Connecting Line. Additionally, as a new measure toward reduction of the environmental burden in non-electric zones, we are proceeding with the development of an accumulator system, which debuted in March 2014 with the EV-E301 ACCUM railcar train, put into service on the Karasuyama Line. The introduction of the EV-E301 has enabled an elimination of emissions, as well as a reduction in CO_2 emissions and noise associated with diesel engines. On top of that, in March 2017 we started operation of the accumulator railcar train of the "EV-E801 series" which is aimed for usage on the alternating current (AC) section between Akita Station and Oga Station.

EV-E801 series
Accumulator railcar train for use on alternating current (AC) section

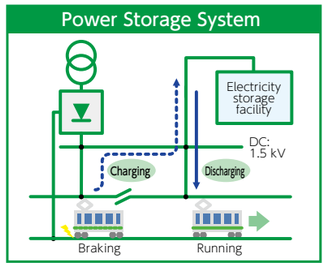
■Promotion of proactively adopting LED lighting for all new cars

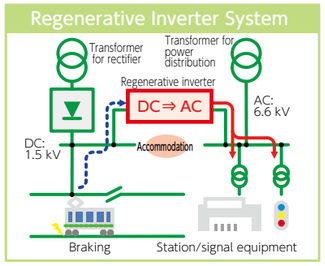
On our conventional lines, LED lighting has been introduced on new rolling stock manufactured since 2013.
For Shinkansen cars, LED lighting has been introduced on newly produced E5-series trains and E7-series trains.
At the end of March 2019, about a little over 25% of cars owned by JR East, including newly manufactured cars and renovated cars, have LED lighting. We are determined to continue making efforts for further saving of energy in railway operations.

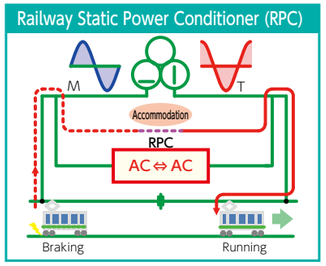
LED railcar lighting

■Effective Use of Regenerative Power

As a measure to reduce energy consumed from ground installations for train operation, we are proceeding with efforts to make more efficient use of regenerative power generated by trains when stopping.
On direct current sections, we are working to introduce power storage systems that temporarily store regenerative power and use it when needed. We have introduced these systems starting with the Ome Line Haijima substation (lithium-ion battery) that entered use in 2013, which was followed by the Takasaki Line Okegawa substation (lithium-ion battery), the Tohoku Main Line Kuki substation (nickel-metal hydride battery), and the Joban Line Kita-Senju substation (lithium-ion battery), and are evaluating their introduction at other locations. In addition, we are developing a superconductivity flywheel electricity storage system as a new medium to store electricity.
Moreover, we have introduced regenerative inverter systems, which convert direct current regenerative power generated by rolling stock into alternating current power for use by station facilities, signal equipment, etc., at the Takasaki Line Fukiage substation and Keiyo Line Kajibashi substation.
Meanwhile, with regard to alternating current sections, we introduced a railway static power conditioner (RPC) that makes it possible to alternately accommodate regenerative power generated on feeding sections, which previously could not be used, at the Joban Line Ushiku sectioning post. It has been in use since 2015.







■Progress of introducing renewable energy

We have installed solar and wind power generators at stations and rolling stock centers, furthering our self-consumption (utilizing generated energy at our own facilities) initiatives. At some stations such as Tokyo Station, we have installed solar panels on top of platforms and on the roofs of stations, utilizing them for the station's facilities, etc. In addition, the electricity generated at the solar power generator installed inside the Keiyo Rolling Stock Center is used not only at the rolling stock center, but also in the operation of railways via our own distribution lines. In July 2018, we installed 9 small-scale wind power generators at Oga Station, which are covering the station's power consumption needs. Some of the electricity is also being used to operate the ACCUM alternating current accumulator railcar train. With these initiatives, we self-consumed approximately 2.15 million kWh in FY2019.

For initiatives using the feed-in tariff (FIT) scheme for renewable energy, we have gradually started operating solar power generators known as mega solar power plants and large-scale wind power generators, and have generated approximately 18.4 million kWh of electricity in FY2019. Moreover, we began the operation of the joint venture Hachinohe Biomass Power Plant (output approximately 12 MW: Hachinohe City, Aomori Prefecture) in April 2018. For geothermal power generation, we are conducting a development study on geothermal resources in Shizukuishi-cho, Iwate Prefecture. In addition, in May 2019, Group company JR-East Energy Development Co., Ltd. started operating two joint ventures, the Mitane Wind Power Generation Station (output: approximately 7.5 MW) and the Minehama Wind Power Generation Station (output: approximately 5 MW). Going forward, we will continue to actively introduce and use renewable energy.

Wind

Minehama Wind Power Generation Station
Power generation output approx. 5 MW
(Began use in May 2019)

Wind

Mitane Wind Power Generation Station
Power generation output: approx. 7.5 MW
(Began use in May 2019)

Solar light

Tomioka Revitalization Mega Solar Power Plant SAKURA
Power generation output
Approx. 30 MW
(Began use in November 2017)

Woody biomass

Hachinohe biomass power plant
Power generation output
Approx. 12 MW
(Use scheduled to begin in April 2018)

Geothermal

Omatsukurayama southern region geothermal resource development survey
Surface study currently underway

■Saving energy at stations

As we have done for office buildings, we have promoted energy conserving initiatives at stations, such as revision of air conditioning systems in line with the upgrading of facilities and replacing platform lighting into LED lighting.

In FY2019 we replaced a total of about 7.7 thousand platform lights with LED lighting and through this replacement we were able to reduce annual power consumption by about 1.6 million kWh.

Furthermore, along with upgrading of facilities such as the air-conditioning and ventilation systems used to cool underground platforms and concourses at Tokyo Station and Ueno Station, we have introduced BEMS.* We are managing energy using this system, which is designed to improve energy conservation by changing how air-conditioning systems are used based on data analysis.

Specifically, we are analyzing daily operating data for facilities collected with BEMS and implementing initiatives to revise the method of operation so that use of the pumps that distribute cooling water for air-conditioning and platform ventilation airflow will be more efficient.

As a result, in FY2019, we reduced annual energy consumption by 1.15 million kWh compared with FY2016.

Revision of how these systems are used is an ongoing process: we will cross-check and analyze the impact of changes in station usage conditions and the air environment and the aging of facilities on the operating data and continue working to make adjustments accordingly in order to optimize performance.

*BEMS (Building Energy Management System): system that plays a role in saving energy by capturing building energy use and indoor environment conditions.

Equipment monitoring center screen

Example of BEMS screen

■Environmentally friendly and energy efficient office buildings

We have pursued energy-saving initiatives through hard measures such as introducing LED lighting and high-efficiency devices into office buildings and also by soft measures such as implementation of "cool-biz" initiatives, thermal control of air conditioners and scrupulous shutting off of lights by employees.

JR Shinjuku Miraina Tower, which opened in 2016, has acquired a class S rating as an environmentally friendly and energy-efficient office building, which is the highest rating under the CASBEE environmental labeling system, an initiative of the Ministry of Land, Infrastructure, Transport and Tourism.

Thanks to their superior performance as office buildings in reducing CO_2 emissions, seven offices—including GranTokyo South Tower, GranTokyo North Tower, JR Shinagawa East Building, and Sapia Tower—earned recognition as Offices Taking Excellent Specific Global Warming Countermeasures (top-level office building) under the Tokyo Metropolitan Ordinance on Environmental Preservation. During the first planning period under the ordinance (FY2011 to FY2015), we were able to reduce CO_2 in the amount largely exceeding the obligatory amount. We will use the exceeded amount of reduction for emission trading within the Group and others as stipulated in the ordinance.

Top-Level Offices	Semi-Top-Level Offices
Sapia Tower, JR Shinagawa East Building, GranTokyo South Tower, GranTokyo North Tower, JP Tower, JR Minami-Shinjuku Building	JR Tokyo Meguro Building

JR Shinjuku Miraina Tower, ranked "S" in the CASBEE

JR Minami Shinjuku Building recognized as a top-level workplace

Top-level establishment certification presentation ceremony (July 2018)

Topics

Achieving a Sustainable, Low-Carbon Society through the Use of Hydrogen

At JR East, we are working to diversify our energy, such as utilizing hydrogen, as part of "Move Up" 2027. We are accelerating the shift toward a low-carbon society by promoting initiatives involving the use of hydrogen.

■Collaboration with Toyota Motor Corporation

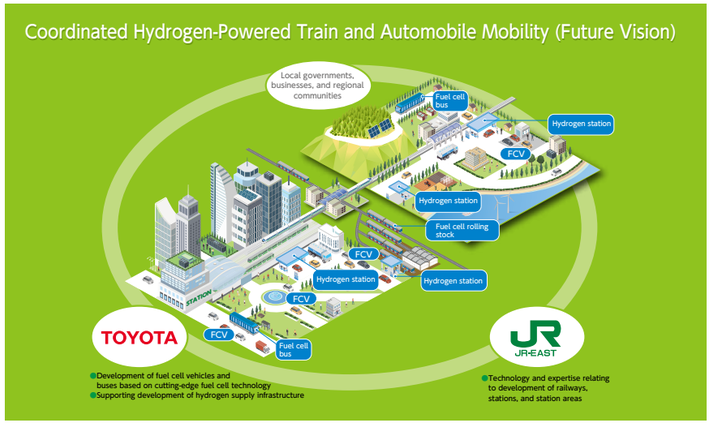
With the aim of addressing global warming, the diversification of energy, and other issues by supporting the achievement of a sustainable, low-carbon society, JR East signed a basic agreement with Toyota Motor Corporation in September 2018 to partner on a comprehensive project revolving around coordinated hydrogen-powered trains and automobile mobility.

Vision for the Future

Contributing to the creation of appealing low-carbon communities by cooperating with various stakeholders, such as local governments, businesses, and regional communities, to establish a hydrogen supply chain with train stations serving as hubs.

Specific Forthcoming Initiatives

1. **Promoting the spread of hydrogen energy by developing and expanding hydrogen stations**
   1. Establishing hydrogen stations as part of the Shinagawa Development Project being carried out by JR East
   2. Introducing fuel cell vehicles and buses in regional transportation networks that link to railways
   3. Supporting the development and expansion of hydrogen stations in the eastern Japan area by using land owned by JR East
2. **Introduction of fuel cell technology for rolling stock**
   1. Technological research relating to safe transportation methods for vehicles with large quantities of hydrogen on board
   2. Resolving various issues relating to the development and introduction of fuel cell rolling stock



■Manufacturing fuel cell hybrid test train and Implementing Field Trials

We are aiming to manufacture trial rolling stock equipped with a hybrid system that uses hydrogen-powered fuel cells and batteries as power sources and to conduct field trials on operational railway lines in FY2021.

The benefits of using hydrogen as a fuel source include reducing CO_2 emissions and enabling the diversification of energy, which will help ensure a stable supply of energy in the future.

Furthermore, these railcars will be the world's first-ever fuel cell rolling stock capable of using high-pressure hydrogen (70 MPa), which will make it possible to extend their travel distance.

We are planning to conduct field trials on the Tsurumi Line, the Nambu Line's Shitte Branch Line, and the Nambu Line (between Shitte and Musashi-Nakahara) and will work with Kanagawa Prefecture, Yokohama City, and Kawasaki City to develop the environment required for the trials.

Through the field trials, we will collect data that will help with the practical implementation of fuel cell railcars in the future – e.g., by optimizing fuel cell control technology and identifying technological development items relating to ground installations.

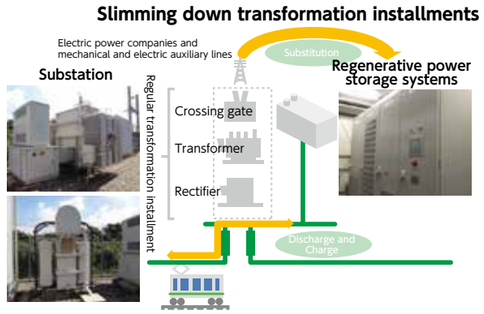
FV-E991 series fuel cell hybrid test train

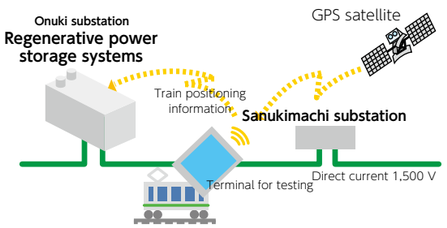
■Slimming Down Transformer Substations Utilizing Regenerative Power Storage Systems

By replacing the equipment located at substations with regenerative power storage system, we are aiming to economize maintenance manpower by slimming down substation facilities. At the Onuki substation on the Uchibo Line, we tested whether regenerative power storage systems could supply the electric power needed by trains instead of a substation between October 2017 and September 2018.

Specifically, we conducted running tests based on the premise of a power failure at nearby substations during the peak morning period and confirmed that it was possible to operate trains without any problems. We also conducted tests based on the premise of a large-scale power failure, during which no power transmission at all would be possible, and confirmed that it was possible to run trains stopped between stations to the nearest station using only power from regenerative power storage systems. Moreover, we discovered that as a result of controlling charge and discharge amounts by using GPS-based train positioning information to determine appropriate values, it is possible to reduce battery capacity by approximately 30%.

In the future we hope to coordinate train energy conservation operation patterns with above ground facilities control, aiming for energy conservation of railways.

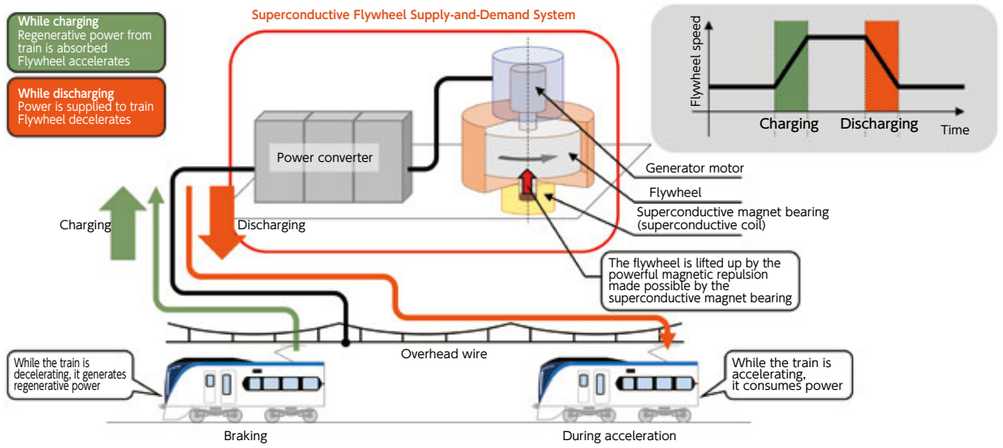




■Superconductive Flywheel Electricity Storage System for Railways

The superconductive flywheel electricity storage system stores (charges) regenerative power as kinetic energy by rotating a large disc (flywheel) lifted up by means of superconductive technology and converts (discharges) this kinetic energy into electrical power again as needed.

Compared to lead and lithium-ion batteries, the benefits of this technology include the fact that there is less deterioration from repeated charging and discharging and there is no need for maintenance due to friction, since the flywheel is lifted up and rotated. At present, we are planning to conduct field trials at the Anayama substation on the Chuo Line (Nirasaki City, Yamanashi Prefecture) and forecast that it will be possible to use around 470 kWh/day of regenerative energy and reduce CO_2 emissions by 79 tonnes per year.



New Electricity Storage System

TICKET TO TOMORROW

As part of our energy and environment strategy, we will begin field trials of the superconductive flywheel electricity storage system for railway use in FY2020. Based on measurement data and simulations, we have selected the Anayama Substation on the Chuo Line for installation, where we will be able to make continuous effective use of regenerative energy generated on the down-sloping section.

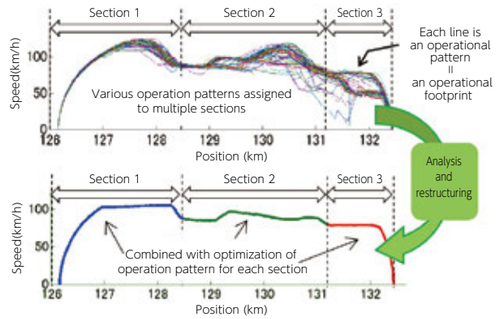
This system, which applies superconductive maglev technology to a conventional railway line, will mark the world's first-ever demonstrative introduction of an electricity storage medium using superconductive technology. As we move forward with this project, it will therefore be necessary to consider it from multiple perspectives. Those involved are working together closely to steadily resolve issues and validate the effectiveness of the system with the aim to support its future implementation in the railway sector.

Environmental Engineering Research Laboratory, Research and Development Center of JR East Group, East Japan Railway Company

■Energy-saving operation patterns

Approximately 80% of the energy consumed by JR East is energy required for operating trains (operational energy). In order to reduce this operational energy, we have begun using operation patterns that minimize operational energy as much as possible (energy-saving operation patterns) along with optimizing various operation patterns used to run trains in service.

Because we were able to validate the effects through operation trials, we are proceeding with research and development of methods to utilize the effects in actual train operation.



Progress of Environmental Conservation Activities at Each Workplace

■Creating an environment-conscious culture

JR East believes it is important to promote environmental activities with clear goals established for the entire JR East Group, and to have every employee actively involved. We are expanding the scale of our environmental activities by promoting "JR East Eco Activities" at each work place, developing leaders through environmental education, and sharing recognition of outstanding environmental efforts through the presentation of awards.

Grass-Roots Eco Activities

TICKET TO TOMORROW

In FY2019, I took part in an overseas training course in Singapore that focused on the topic of the environment. I observed their local eco activities in practice and realized the importance of steadily continuing to pursue small-scale actions, such as water and electricity conservation when it comes to preserving our planet.

Today, I am promoting eco activities in the workplace as part of the Ichinoseki Transportation Depot Eco-Friendly Promotion Committee. Going forward, drawing on what I learned during my overseas training, and through activities that raise each employees' awareness of environmental issues, I am working to implement eco activities at the grass-roots level.

Ichinoseki Transportation Depot, Morioka Branch Office

■Environmental education & training system

For effective environmental management, it is essential that all employees have appropriate knowledge on environmental issues. We provide environmental education lectures to our employees in training in order to develop environmental personnel who can play a central role in the local organization of JR East and group companies.

Training of those responsible for environment
●**Persons trained:** those responsible for environment at local organizations, etc. ●**Objective:** improvement of ability in environment-related matters as trainers to field offices, etc. ●**Number of participants:** 22
Shinkansen Environmental Measures Training
●**Persons trained:** those responsible for environment at each Branch Office ●**Objectives:** learning of basic knowledge about relevant rules and regulations for noise and vibration ●**Number of participants:** 14
JR East Group Environmental Management Promotion Conference
●**Persons participating:** those responsible for environment at all group companies (twice a year) ●**Objective:** promotion of environmental management for the entire JR East Group
Implementation of training and lectures on environment in Branch Offices

■Internal environmental audits

At our General Rolling Stock Centers and others which obtained ISO 14001 certification, in-house auditors are trained through external training programs, and conduct routine audits at the centers in order to evaluate environmental activities.

[ISO14001-certified facilities]

Certified facilities	Year and month of certification
〈JR East〉	
Kawasaki Thermal Power Plant	Mar-01
Tokyo General Rolling Stock Center	Mar-01
Omiya General Rolling Stock Center	Feb-02
Shinkansen General Rolling Stock Center	Nov-02
Koriyama General Rolling Stock Center	Dec-03
Nagano General Rolling Stock Center	Feb-05
Akita General Rolling Stock Center	Jul-05

Certified facilities	Year and month of certification
〈Group companies〉	
East Japan Eco Access Co., Ltd.	Nov-99
Nippon Restaurant Enterprise Co., Ltd. (CK headquarters)	Sep-02
JR East Mechatronics Co., Ltd.	Mar-08
East Japan Marketing & Communications, Inc.	Aug-08
Japan Transport Engineering Company	Oct-14

Environmental Communication

■Development of Environmental Education by Delivering Lectures on Request

To contribute to the development of a sustainable society, JR East initiated environmental education programs in FY2010 for children to understand environmental issues and their relationship to society. JR East employees working in each area visit neighboring schools for the programs. In FY2019, the program was implemented at around 80 schools, primarily elementary schools, in the JR East area. These types of initiatives have been held by all of our branch offices across the East Japan area. As these initiatives were well-received, we received an Excellence Award at the Career Education Awards sponsored by the Ministry of Economy, Trade and Industry in FY2018.

Delivering Lectures

■Initiatives for: environmental activities of the Shinanogawa Power plant

In July 2016, we opened the "Citizen house; Ojiya Shinanogawa Hydroelectric Plant House" as a part of popularization activities for the Shinanogawa Hydraulic Power Plant to give the opportunity to learn about the mechanism of hydraulic power generation which is a source of clean energy. We have been popular among the people of the local community, and in December 2017, the number of visitors reached 100,000.
On top of that, we release juvenile salmon as a part of initiatives to harmonize water usage and the river environment of the Shinanogawa River with the people of the local community.

Ojiya Shinanogawa Hydroelectric Plant Citizen House

Measures for resource circulation

■Waste reduction and recycling

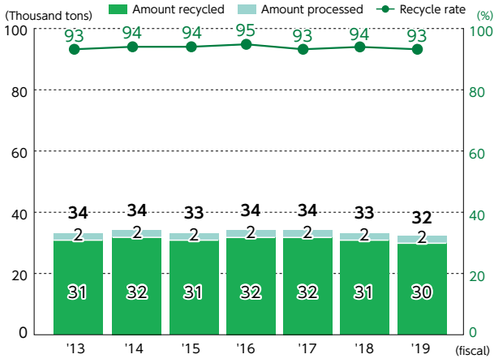
JR East generates many kinds of waste through its railway operations, including daily general trash removed from trains and stations and industrial waste from our General Rolling Stock Centers. Restaurants and retail stores in our lifestyle businesses also produce garbage and general waste. In order to reduce all these various forms of waste, JR East actively supports the approach known as "reduce, reuse, and recycle." For recycling in particular, goals are set for each type of waste.
Moreover, JR East Group will work as one to tackle the plastics issue, which is an important topic both socially and internationally.

■Recycling waste collected from stations and trains☆

Since trash from stations and trains contains recyclable materials, we placed separation bins in stations to have customers cooperate in separating trash. In October 2010, to further improve recycling rates by implementing thorough separation of trash, we built the JR East Tokyo Materials Recycling Center (operated by East Japan Eco Access Co., Ltd.) and started its operation.

JR East Tokyo Materials Recycling Center

[Waste from stations and trains]



Recycling trash generated at stations within the company

Magazines, newspapers and similar paper items collected from our segregated trash boxes at stations and trains are being recycled into coated paper and stationery and used in our offices.

Newspapers and other papers collected in stations and elsewhere are recycled into office paper used by our company.

■Reducing and recycling tickets

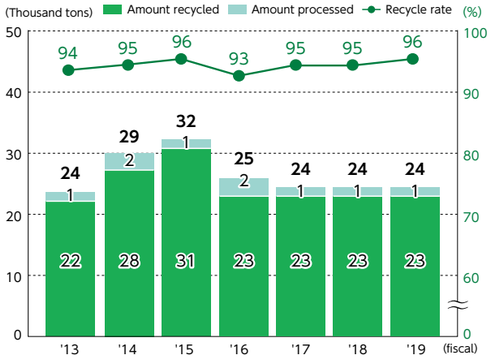
Collected used tickets are sent to a paper mill, which removes iron powder from the ticket backs then recycles all the paper as toilet paper, corrugated cardboard, etc. (recycling rate of 100%)

Used tickets collected at stations are recycled into toilet paper.

■Recycling at General Rolling Stock Centers☆

JR East Group is recycling waste generated during the manufacture and maintenance of rolling stock. At our regional General Rolling Stock Centers, waste is sorted into 20 to 30 categories to reduce waste generation and promote recycling. Starting in FY2006, we have been collecting data on the volume of retired railcars that are sold as scrap to be recycled so as to monitor the progress.

[Waste from General Rolling Stock Centers]

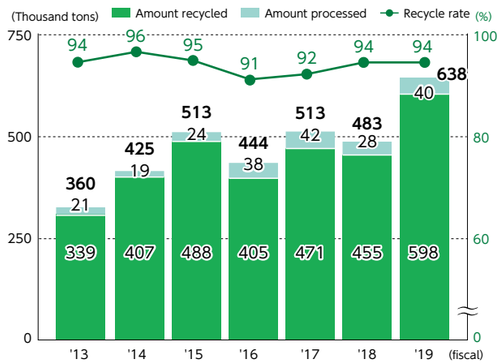


■Reducing construction waste☆

JR East endeavors to reduce waste from construction by standardizing design and construction methods that help to properly dispose of construction byproducts and to minimize waste. JR East reduced waste from construction and maintenance works at stations and other structures, including approximately 55 thousand tons of waste from work entrusted to JR East*.

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

[Waste from construction projects]



■Reducing waste at offices☆

In departments at the Head Office and Branch Offices, we strive to reduce waste by promoting elimination of paper and by recycling, including the use of creative, employee designed trash cans. In FY2019, we recycled 1,977 tons out of a total of 2,336 tons of waste (85%).

■Efficient use of water resources☆

As a consumer of 11.30 million m³ of water annually, JR East actively promotes the use of recycled waste water*, using, for example, rainwater and water already used for washing hands to flush toilets. At the Head Office building, 25 thousand m³ out of 38 thousand m³ of water was reused in FY2019.

*Recycled waste water
Defined as water of a quality level between clean water and sewage water. It is used for limited purposes as a recycled resource.

■Food Recycling/Biogas Power Generation Project

The JR East Japan Group has undertaken a food recycling and biogas power generation project through J Bio Food Recycle Co., Ltd., established as a joint venture with the JFE Group. JR East Environment Access Co., Ltd. handles collection and transportation of food waste generated by station buildings, Ekinaka station shopping complexes, bento box production facilities, etc.
The Yokohama Factory completed in August 2018 receives up to 80 t of food waste a day from the JR East Japan Group and various food companies and generates power using biogas produced by means of methane fermentation treatment. It will generate power that may be used as renewable energy by a maximum of approximately 3,000 typical households, and in addition, a part of the waste heat will be effectively utilized inside the factory.
Since much of the food waste generated at station buildings and the like contains high amounts of fat and salt and often has packaging mixed in with it, it was difficult to recycle this waste by converting it into livestock feed, fertilizer and such. However, since the Yokohama Factory processes it using methane treatment, it is able to accept this kind of food waste. Furthermore, it makes food recycling by means of simple separation possible by mechanically crushing the received waste, then removing inappropriate material such as containers and packaging from organic matter suitable for fermentation.
The Food Recycling Business aims to improve the food recycling rate of the JR East Group and generate environmentally friendly renewable energy, contributing to the prevention of global warming.

Improving the Efficiency of the JR East Group's Food Recycling

TICKET TO TOMORROW

Thanks to the start of operations at the J Bio Food Recycle Yokohama Factory, which enables recycling while reducing the burden on customers to separate their waste, it has been possible to improve recycling efficiency for food waste generated by the lifestyle services business, including station buildings and Ekinaka shopping complexes in the Tokyo metropolitan area, of which approximately 40% was recycled previously. Through the collection and transportation of food waste and operation of the factory, we have become involved in the developing sector of creating renewable energy from useful raw materials like food waste. In keeping with the "Environment" in our company's name, we will continue devoting our efforts to further improving recycling efficiency, with the aim of achieving zero emissions.

Resource Recycling Division, JR East Environment Access Co., Ltd.

Topics

Food Waste Reduction Initiatives at Hotels

To address the issue of food being thrown out even though it could have been eaten, it is essential to reduce the incidence of food waste. Despite one in nine people worldwide (approximately 800 million people) suffering from chronic nutritional deficiency, Japan discards the equivalent of one rice bowl of food per citizen each day.
In 2018, Nippon Hotel Co., Ltd. launched a food waste reduction project. It held seminars at four hotels in the Tokyo area, including the Hotel Metropolitan, to explain issues relating to food waste and is engaged in identifying the points where food waste occurs in various processes and developing solutions. For example, the Mottainai Menu was developed with an aim to reduce food waste, which effectively utilizes food items that are often wasted even though they can be utilized, and various menu items were invented for the menu, including a confit that uses entire bananas including peels.

JR-East Hotels is also implementing the 3010 Movement, which encourages guests to eat all the food at banquets during the first 30 minutes and the last 10 minutes of the event. In the future, the JR East Group is planning to implement the 3010 Movement as well. In keeping with one of the SDGs, "responsible consumption and production," we will continue to preserve the environment in a sustainable manner.

A wasteful food item (banana confit using peel)

■CSR Procurement

We have published the Code of Conduct Regarding Material Procurement of JR East on our website, which indicates a procurement policy that focuses on the fulfillment of our corporate social responsibilities, taking into consideration factors such as legal compliance and environmental preservation. In addition, we also request that all our suppliers comply with the relevant laws and regulations and seek to reduce their environmental footprint.
Furthermore, we seek to understand the current status of all material-related suppliers by conducting a survey of their CSR initiatives once a year, which indicates whether they implement initiatives relating to environmental footprint reduction, initiatives that consider employees' human rights, and other compliance initiatives that have an impact on society. The results of these surveys are used as one of our decision-making criteria when selecting suppliers.

■Revision of Green Procurement Guidelines

Green procurement refers to an initiative that aims to consider the environment through procurement, considering even the supplier providing products.
Since 1999, JR East has based the procurement activities on the company's Green Procurement Guidelines, which were revised in August 2019 to reflect changes in policy and to win greater confidence from our customers as well as the communities we serve. We are implementing ESG (Environmental, Social, Governance) Management as pursued by the JR East Group's Management Vision "Move Up 2027," rising up to smarter procurement as our duty to the environment. We have posted our requests to our suppliers in our Code of Conduct Regarding Material Procurement of JR East on our website.
As for the material procurement of JR East, we will select suppliers upon considering the situation of their environmental management system and product assessment, in line with the JR East Green Procurement Guidelines.

■Promoting green procurement

Green procurement is an initiative that seeks to realize a sustainable society by prioritizing the procurement of products with as low an environmental impact as possible.
At JR East, we primarily promote the procurement of environmentally friendly office supplies, and have prepared a structure where relevant products can be purchased through our in-house goods procurement system.

Reference: Code of Conduct Regarding Material Procurement of JR East
http://www.jreast.co.jp/e/data/procurement/code_of_conduct.html

Chemical substance management

■Compliance with laws and regulations and reduction of chemical substances

When using chemical substances, the effects on human health and ecological systems must be fully considered. JR East not only rigidly adheres to established standard values, but restrict the use of such substances and adopt substitutes that have less impact on the environment.

■Under the Act for Rational Use and Proper Management of Fluorocarbon

We endeavor to reduce the use of substances specified as controlled substances under the Ozone Layer Protection Law and adopt substitutes that have less impact on the environment. Under the Act for Rational Use and Proper Management of Fluorocarbon, we reported a leakage amount of around 3 thousand t-CO_2e☆ for FY2019.

- **Cooling units(large refrigerators)**—We are steadily replacing air conditioning units using specified chlorofluorocarbons (CFCs) with systems that do not use them and completed the removal of such units from buildings.
- **Rolling stock**—Except for some diesel railcars, all of our cars use HCFC or CFC substitutes. As of the end of March 2019 we were using 0.6 tons☆ of CFCs and 87 tons☆ of CFC substitutes. We routinely check for gas leaks, and collect the refrigerants when scrapping retired railcars in accordance with applicable laws and regulations.
- **Fire-extinguishing agent**—Although 65 tons☆ of halon gas was still in use as a fire-extinguishing agent as of the end of March 2019, we have it under proper control and are replacing it with non-halon agents (such as powder agents and CO_2) when building new facilities or renovating existing ones.

■Chemical substance management☆

As JR East uses chemical substances primarily for painting and repairing our railcars, we take rigorous steps for their use and management in order to prevent spills. We are a company that handles a certain amount of specified chemical substances, and 12 JR East facilities submitted the data regarding the release and transfer of these substances to relevant authorities in FY2019, pursuant to the PRTR System*.

We have also been introducing stainless steel railcars that do not require painting. At the end of March 2019, as many as 88.5% of the 9,360 cars operated on our conventional lines were stainless steel railcars. Beside their use for railcars, we used 347 tons of organic solvents for painting railway facilities and stabilizing track beds in FY2019.

*PRTR system
A system where companies notify their releases and transfers of chemical substances as required by Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (Law concerning Pollutant Release and Transfer Register / PRTR). It encourages the monitoring and control of toxic chemical substances emitted into the environment and measures to prevent negative impact on the environment.

[Amount handled, released and transferred from 12 reporting-required facilities (kg)]

Chemical substance	Handled	Released into air	Transferred into sewerage	Transferred to other facilities
1,2,4-Trimethylbenzene	69133.3	12374.9	0.0	166.1
Ethyl benzene	1056.3	1100.0	0.0	0.0
Xylene	56114.7	6394.3	0.0	126.0
Toluene	14050.1	5310.0	0.0	85.1
Nickel	4699.5	0.0	0.0	0.0
n-Hexane	2641.0	290.0	0.0	0.0
Methylnaphthalene	44545.9	222.7	0.0	0.0
1,3,5-trimethylbenzene	2895.0	2900.0	0.0	0.0
Chrome and trivalent chrome compounds	1247.9	0.0	0.0	25.0
Molybdenum and its compounds	1400.1	5.2	0.0	0.0
Total	197783.8	28597.1	0.0	402.2

■Management of PCBs (polychlorinated biphenyls)

Equipment containing PCBs is securely stored in exclusive storage locations and reports on it are filed as required by the Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes. We render this equipment harmless to the extent that can be done by PCB waste treatment facilities. In FY2019, we had equipment such as stabilizers, transformers and capacitors treated for PCB waste.

Environmental Conservation Activities

Biodiversity

■Hometown Forestation Program

In 2004, in order to protect biodiversity and contribute to a sustainable society, while cherishing our sense of gratitude for nature, we began the Hometown Forestation Programs to plant trees native to each region and revitalize the forests. We undertook these programs with the cooperation of Fukushima Prefecture from 2004 to 2009 and with the cooperation of Niigata Prefecture, the town of Tsunanmachi and Tokamachi and Ojiya Cities in the prefecture from 2010 to 2014, and in Osaki City, Miyagi Prefecture, from 2016 to 2018. In FY2020, we will start the Shima Hometown Forestation Program in Nakanojo City, Gunma Prefecture.

Naruko Hometown Forestation Program hosted in 2018

■Forest development along railway lines☆

Beginning in 1992, we have been organizing tree planting activities along JR East railway lines. By FY2019 a total of approximately 51 thousand people had participated in planting about 352 thousand trees*. Today, planting has gone beyond the trackside and is done in cooperation with local communities.

*The number of trees includes flower seedlings

■Development of railway trees

Along some railways, we have planted railway trees to shield the tracks from blowing snow and wind.

The first railway trees were created in 1893 for disaster prevention. As living disaster prevention facilities, railway forests are playing their role. JR East now owns approximately 5.8 million railway trees on a total of about 3,900 hectares along our lines at approximately 1,080 locations. The trees absorb 15,000 tons of CO_2, equivalent to 0.7% of the CO_2 that JR East emits (this is the actual amount in FY2019). In this way, they also contribute to preserving the environment.

In 2008, after fundamentally reviewing the role of railway trees from the viewpoints of both disaster prevention and environmental preservation, we launched a new project to plant trees to replace those that will require replacement over the coming 20 years.

Sashimaki No.1 railway forest on the Tazawako Line (forest to protect against blizzards)

Planting new railway trees

Ceremonies for the planting of new railway trees have been held in various locations, as shown in the table below, starting with the Kakizaki No. 1 railway forest in September 2008. During these ceremonies, native tree species were planted, with many local residents participating.

[Past Tree Planting Ceremonies]

Date	Location
September 2008	Shin-etsu Main Line, Kakizaki No. 1 railway forest
July 2009	Okitama No. 2 railway forest
May 2010	Ōu Main Line, Jinguji No. 2 railway forest
September 2012	Tazawako Line, Ōkama No. 1 railway forest
September 2013	Ōu Main Line, Sekine No. 1 railway forest
September 2014	Uetsu Main Line, Hirakida No. 3 railway forest
September 2015	Ōu Main Line, Kado No. 6 railway forest
September 2016	Tazawako Line, Akabuchi No. 1 railway forest
September 2017	Banestsu-Sai Line, Nakayamajuku No. 6 railway forest
September 2018	Uetsu Main Line, Hirakida No. 1 railway forest

Tree planting ceremony for Hirakida No. 1 railway forest on the Uetsu Main Line (September 2018)

Basic thoughts on noise reduction

In the operation of trains, noise is created by the train cars moving through the air, by the wheels travelling on the rails, by the motors, and by other sources. In order to reduce noise, we are working in various ways to improve both the trains and our ground equipment.
JR East also endeavors to reduce noise during maintenance work on track and structures to further improve the lineside environment.

■Measures for the Shinkansen

In accordance with the Japanese government's Environmental Quality Standards for Shinkansen Superexpress Railway Noise, JR East has taken many steps to reduce this noise, such as with the installation of soundproof walls and sound-absorbent materials, rail grinding*1 and the modification of our railcars to operate more quietly. We have already completed the implementation of measures to reduce noise levels to 75dB or lower in densely populated residential areas along our railway lines. At present, we plan countermeasure construction for the other areas in incremental steps. Also, based on the knowledge gained from running tests using the Shinkansen "FASTECH" test train, JR East is working to improve the environment even as we increase train speed, including further reduction of noise and micro-pressure waves in tunnels*2.

*1 Rail grinding
A measure to smooth out uneven places in rails caused by wheel movement. This reduces noise by controlling car vibration.
*2 Micro-pressure waves in tunnels
An explosive sound caused by forced air compression.

E5 Series trains have low-noise pantographs

■Measures for conventional lines

We have implemented measures for conventional lines to minimize noise, such as installation of long rails*1, rail-grinding and wheel-truing*2. We also comply with the Japanese government's Policy on Noise Measures for Construction of New Conventional Railways or Large-Scale Remodeling when we engage in this kind of construction or modification of our conventional lines.

*1 Installing long rails
Rail joints are welded such that the length of a single rail becomes more than 200 meters. With fewer rail joints, these rails reduce noise produced at joints when trains pass.
*2 Wheel truing
A measure to grind the unevenness of wheels caused by wear, to restore their circular shape.

■Measures for maintenance work

As maintenance work is usually done during the night, we give advance notice to residents in surrounding areas about the schedule and details of the work. We also make utmost efforts to minimize noise by using modified equipment that produces lower noise. Furthermore, by using a track that is designed to resist deformation, JR East is reducing the volume of required maintenance work.

Governance

[Priority commitment goals]

[Related goals]

Contents

Corporate Governance

■Basic Corporate Governance Philosophy of JR East

To achieve the sustained business growth and to improve its medium-to long-term corporate value, JR East pursues achievement of the ultimate in safety to enhance reliability for customers and to create a spiritually affluent life for people as our business so that the expectations of all our stakeholders including shareholders, customers and local communities will be met by making transparent, fair, firm and timely decisions.
JR East has set "the Guidelines of Corporate Governance" which were developed by the Board of Directors as the material which shows the basic concept of our corporate governance and its concrete activities and presents it on our corporate website.

■The Reasons Why JR East Adopted the Present Corporate Governance System

In the railway portion of our main business, since a variety of knowledge and experiments for security and decision-making based on mid-and long-term perspectives are necessary we, JR East, therefore, set up a board of auditors which is composed of auditors who are independent from the board of directors.

■JR East governance system

Our Board of Directors consists of 13 members including three outside directors (as of June 21, 2019), and it generally meets monthly to decide statutory requirements and other key operational matters and to supervise overall operations. The Board of Directors has established an Executive Committee consisting of 10 directors and 12 senior executive officers. This Executive Committee generally meets once a week and deliberates on matters to be decided by the Board of Directors and other important management issues. In addition, the Group Strategy Formulation Committee consisting of 10 directors, 12 senior executive officers and 4 executive officers was formed with the aim of the development of all JR East groups, and meets as required to discuss important group issues such as management strategies for each business field.

■Audits by Corporate Auditors, Internal Audits and Status of Accounting Audits

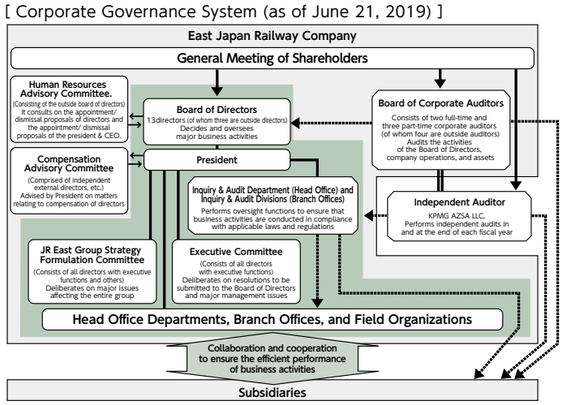
With respect to the Board of Corporate Auditors, in accordance with their rules, audits are conducted for the following activities, that is, full-time and other auditors attend important meetings such as the Board of Directors and the Executive Committee to check the contents of the meeting, in addition, they audit the execution of the directors' assignments or duties through the survey of business assignments and status of resources and others. As a rule, the Board of Corporate Auditors meets monthly to conduct information exchange between auditors. In addition, regular liaison conferences are held with auditors of group companies to exchange information about audits. The audit by Corporate Auditors is supported by approximately 10 specialized staff members.

JR East has established the Inquiry & Audit Department (at the corporate headquarters) and Inquiry & Audit Division (in branch offices) involving approximately 100 full-time specialized employees so as to organize the audit system to ensure the lawful and effective corporate operation. In addition, the Inquiry & Audit Department audits the Group companies.

JR East financial statements are audited by an independent auditor under contract (accounting auditor), KPMG AZSA, in and at the end of each fiscal year.

Incidentally, there were no major violations of laws or regulations and the matters relating to the products and service in FY 2019.

[Corporate Governance System (as of June 21, 2019)]



Topics

Amendment of the guidelines of corporate governance

In accordance with the amendment of the corporate governance code of the Tokyo Stock Exchange, Inc. in June 2018, we amended our "East Japan Railway Company Corporate Governance Guidelines" in November 2018 so as to achieve sustained growth and to improve the corporate value in medium to long-term. We remain compliant with all general rules of the revised corporate governance code.

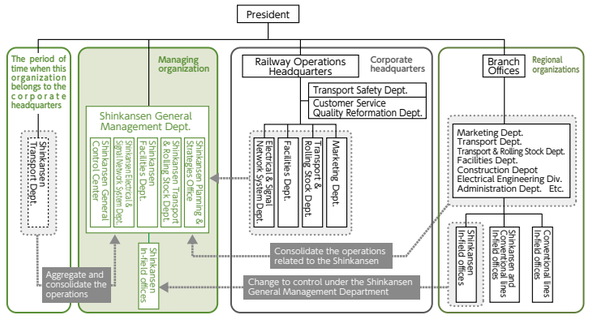
The main amendment is a new rule requiring the formation of the a personnel deliberation committee whose chairperson is an independent outside director and which consists of three independent outside directors and two other directors. The committee deliberates proposals for the appointment and dismissal of directors and the appointment and dismissal of the president & CEO from the point of view of ensuring objectivity, timeliness and transparency for the proposals.

From here on out, we will continue to enhance corporate governance and respond sincerely to the requirements of investors and all other stakeholders.

Revision of the organization – Installation of the Shinkansen General Management Department

On April 1, 2019, JR East consolidated the Shinkansen related operations performed by the corporate headquarters and the branch companies and the operations performed by the Shinkansen operation head-office in the past to create the "Shinkansen General Management Department" as a new division which manages Shinkansen operations in an integrated and professional fashion. While ensuring safe and stable transportation, as well as improving transportation quality and service level, we will pursue to create the ultimate Shinkansen for which we can be proud in the world through the activities such as the cooperation across the corporate headquarters, branch and affiliated companies, rapid decision-making, the maintenance and improvement of Shinkansen-specific technologies, and continuous human resource development.

Outline of the Shinkansen General Management Department



Compliance: Risk management

To enhance the governance and the reliability for the local community and society

Corporate & Legal Strategies Dept. (Head Office)

JR East Group has determined compliance as the foundation of the corporate management so that we will build a better relationship of trust with local communities and society. Through various initiatives for compliance including education for all employees, fortunately there have been no incidents which have hurt the foundation of management.

Looking over the Japanese society as a whole, misconducts have often occurred which damage the foundation of corporate management resulting from the fact that priority is given to immediate profit and betraying the trust of the community and society such as personal data leaks, data fabrication and tampering, and creative accounting. In the past, JR East also conducted the improper event at Shinanogawa Power Station. As a result of this scandal, we received severe administrative punishments and stopped generating electricity for our own power in the Tokyo metropolitan area. In addition, we lost the trust from communities and society which caused employees and their families hard experiences.

To prevent such serious misconducts, JR East Group has conducted the risk management initiative so as to identify, avoid and reduce individual business risks. In this year's compliance education for all employees, with setting the theme of "identifying risks before creating a serious situation", we will ensure that we all work together, instead of one person struggling to solve a problem alone while any scandals are still small to mitigate compliance risks.

In the "Vision 2027", we have established ESG management policies that focus on the environment (E), society (S) and governance (G) which affect the sustainable growth of companies. This is because of the fact that in the past, companies have placed priority only on immediate profits and have caused many compliance violations that shake the foundation of corporate management, such as with environmental destruction, human rights violations, and organizational fraud.

Now, in order to raise the governance and trust of the community and society, it is necessary for each employee to recognize various changes and undertake compliance activities while actively discussing with supervisors, subordinates and colleagues instead of only an introspective mindset.

■Basic Concept of Compliance

JR East adopts "Compliance" as a basic policy of the corporate management to build a better relationship of trust with society.

We adopted "the Policy on Legal and Regulatory Compliance and Corporate Ethics" as the group's corporate activity guidelines, and we comply with all related laws including the railway business law in various business fields such as the transportation services, lifestyle services and IT/ Suica business, and we thus conduct business in accordance with corporate ethics. In addition to providing training to JR East group employees, we are promoting compliance initiatives such as setting up a "Compliance Hotline" both inside and outside the company.

■"Policy on Legal and Regulatory Compliance and Corporate Ethics" and the "Compliance Action Plan"

This policy stipulates our approach to regulatory compliance and corporate ethics in accordance with the group's philosophy and activities principles. To improve the efficacy of "The Policy on Legal and Regulatory Compliance and Corporate Ethics", we have distributed the "Compliance Action Plan Handbook" to the entire group which outlines the "expected actions" which every employee is expected to deal with so as to notify them. This handbook was revised in FY 2017 to reflect the recent changes in laws and the social environment so that the actions expected of the employees maybe more concrete.

Furthermore, in conjunction with the development of overseas business, we formulated and announced the “Basic Policy for the Prevention of Bribery Relating to Foreign Public Officials”.

■Promotion of Compliance

To enhance the understanding of the importance of compliance and the intent of “the Policy on Legal and Regulatory Compliance and Corporate Ethics” by each employee, JR East have been providing “Compliance education for all group employees” annually. Taking into account recent corporate scandals, we have been reconsidering our own mission and the pride we should have, while also recognizing the importance of “good workplace communication”. In addition, we will nurture a culture of “compliance by thinking for yourself” through such means as constructing curricula incorporating cases suited to each workplace.

Furthermore, we compiled the basic compliance issues which should be periodically confirmed by each applicable chief of the working field into the “Confirmation Support Sheet of Basic Issues” and we continuously undertake inspection and confirmation using this sheet. To ensure more effective utilization of this arrangement we have made it possible to monitor the use of this sheet in the field through the Intranet.

Additionally, in order to thoroughly impress the significance that rules should be followed, we have selected representative cases of violations for use as teaching materials and we post them as “historical examples of compliance violation” on the Intranet.

■Compliance Hotline

"When an employee wonders how to conduct themselves regarding compliance and corporate ethics" and "when an employee recognizes activity which is against compliance or corporate ethics or which may be against compliance or corporate ethics", in order for the employee to report and consult, we established "Compliance Hotlines", both inside and outside the company. We accept consultations and reports from business partners and retirees and publish how we accept them on our website.

In FY 2019, we received 230 consultations and messages on a wide range of issues such as the handling of laws and regulations, and problems in human relations and harassment, and responded to them properly and respectfully.

■Risk Management

JR East established the Crisis Management Headquarters to centrally collect and manage information, and to promptly respond in the event of major crises affecting business operations of JR East Group, etc. On top of this, we established the Crisis Management Office as a full-time bureau in the Corporate&Strategies Legal Strategies Department at the Head Office that takes responsibility for Headquarters’ secretarial work. We are striving to be prepared for any potential risks JR East Group may face. We have established a system enabling us to promote compliance and to respond to various incidents, accidents and emergencies from overseas such as terrorist threats, pandemic infection, and other possibilities.

With respect to the preventive measures against serious risks endangering the business operation of JR East Group, we identify, analyze and evaluate risks inherent in all our business operations, and we identify the serious risks and have undertaken actions to reduce these risks annually in accordance with their priority. In doing so, in collaboration with the internal audit division we have positively conducted risk reducing activities.

Impropriety at Shinanogawa Power Station

In March, 2009 JR East received an administrative sanction because the company’s water intake had exceeded the maximum allowed at our hydroelectric plant, Shinanogawa Power Station (the collective name for the Senju, Ojiya and Ojiya Daini power plants in Ojiya and Tokamachi Cities, Niigata Prefecture).

The sanction was issued in accordance with the River Act and included the revocation of a permit to draw water from the Shinano River.Subsequent to receipt of this sanction, we have taken corrective actions in accordance with the directions in the sanction and have endeavored to implement measures to prevent recurrence and to cultivate close cooperation with the local communities.

In June 2010, having obtained a permit from the Director of the Hokuriku Regional Development Bureau of the Ministry of Land, Infrastructure, Transport and Tourism to again take water from the Shinano River through to June 2015, we resumed operation of the Shinanogawa Power Station.

Following resumption, we conducted a trial sluice for coordinating river environment and water use.

With the results of the investigation and opinions collected from local residents, we filed a renewal application in May 2015 and received approval in June 2015.

We are sincerely committed to fostering harmony with the river environment and enhancing coprosperity with communities.

Furthermore we are promoting compliance management to prevent occurrence of similar incidents.

■Ensuring Information Security

In recent years, on the internet, cyber-attacks have increased in sophistication worldwide, and even in public organizations and private companies in Japan, a large scale of information leakage has continuously occurred. Furthermore, the threat of cyber terrorism through computer viruses and other infections is increasing, which causes dysfunction in information systems related to the social infrastructure.

JR East, as a corporate group which supports the social infrastructure of railways, has designed and introduced an information security management system based on the “JR East Group’s Basic Policy for Information Security”, and regularly carries out security measures including upgraded information system functions. Furthermore, in cooperation with the external organizations, we have minimized the security risks by regularly monitoring and responding to fraudulent incidents and communications.

In addition, we will actively develop human resources specializing in security in cooperation with external organizations and we will improve cyber security-related knowledge by sharing information with other companies. At the same time, we will conduct problem response drills aimed at minimizing effects in the event of a problem, by promptly constructing an initial framework and taking measures through departmental cooperation.

All employees are kept constantly up to date on the importance of information security and the strict handling of information through our rule book on information system use and our internal magazine. All Group employees also receive the training for targeted intrusion mail and information security education with the aim of raising awareness about how they should guarantee workplace information security.

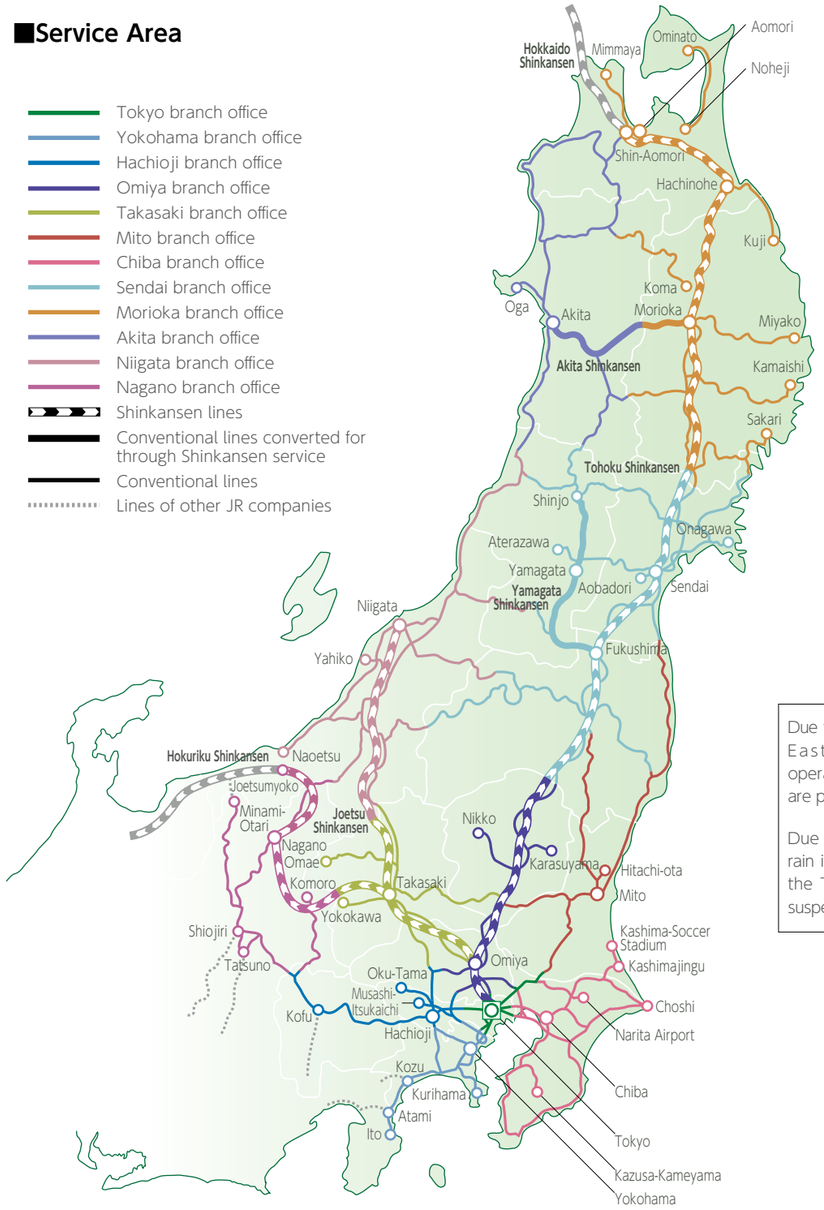
■Personal Data Protection

Pursuant to applicable laws and regulations including the “Act on the Protection of Personal Information”, JR East Group published its “Basic Policy for Personal Information Handling”, formulated the “Regulations for the Management of Personal Information” and appointed Chief Privacy Officers who have the responsibility of strictly protecting personal data. Furthermore, as one of several measures responding to the EU General Data Protection Regulation (GDPR), which came into force in May 2018, we have now published an English-language version of our privacy policy and others on our website.

Through leaflets for raising employee awareness, articles in our internal magazines and compliance education, we are also working to ensure that all employees remain fully aware of the necessity of the strict handling and management of personal data. Furthermore, in order to ensure proper control of personal data, the Group conducts periodical internal workplace audits.

Corporate Info

■Service Area



Passenger line network	Shinkansen lines: 1,194.2km Conventional lines: 6,207.5km
Number of stations	1,655 (as of April 1, 2019)
Total number of trains in operation per day	12,209 (Timetable revised in March 2019)
Total number of passengers per day	approx. 17.90 million (as of March 31, 2019)

Due to the effects of the Great East Japan Earthquake, operations of the Joban Lines are partially suspended.

Due to damage by torrential rain in July 2011, operations of the Tadami Line are partially suspended.

As of September 2019

Businesses Outline of the JR East Group (as of September, 2019)

Our company and our affiliated companies are engaged in transportation business, distribution and services business, real estate and hotel business, and other businesses. In each business our company's position in relation to each of our affiliated companies is described below:

■Transportation Business

In addition to passenger transportation business centered around railway operation, we provide travel services, cleaning and maintenance services, station operation services, facilities maintenance services and rolling stock manufacturing and maintenance work.

■Distribution and Services Business

We are providing life services business, such as retail and restaurant business, wholesale business, truck transportation business and advertising agency.

■Real estate･Hotel Business

We are providing life services business, such as shopping center operations, leases and rentals of office buildings, and hotel operations.

■Others

In addition, we are providing credit card business such as IT･Suica, and information processing business.

Following is a schematic of JR East businesses

In relation to the supply chain, it can be divided into two parts, the railway business and non-railway businesses.
For the railway business, JR East generates electricity at its own power stations or directly purchases electricity from electrical companies. Electricity is provided to trains through substations and overhead contact lines. Additionally, we operate railways and offer transport services to our customers through the provision of continuous comprehensive services, while also maintaining station staff members, conductors and other various facilities.
With regard to non-railway businesses, while pursuing synergetic effects with the railway business itself, each business operates its own specific supply chain, as it provides various services to customers.

Businesses of the JR East Group (as of September 1, 2019)

■ Transportation services

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

■ Shopping center operations

Tetsudo Kaikan Co., Ltd. / atre Co., Ltd. / LUMINE Co., Ltd. / Yokohama Station Building Co., Ltd. / Shonan Station Building Co.,Ltd. / JR Chuo Line Mall Co., Ltd. / JR East Department Store Co., Ltd. / JR Tokyo West Development Co., Ltd. / Kinshicho Station Building Co., Ltd. / Chiba Station Building Co., Ltd. / JR East Aomori Business-Development Company Co., Ltd./ Tokky Co., Ltd. / Station Building MIDORI Co., Ltd.

■ Office operations

JR East Building Co., Ltd.

■ Hotel operations

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

■ Retail shop and restaurant businesses

JR East Retail Net Co., Ltd. / Nippon Restaurant Enterprise Co., Ltd. / JR East Food Business Co., Ltd. / JR East Water Business Co., Ltd. / Kinokuniya Co., Ltd. / JR East Tohoku Sogo Service Co., Ltd.

■ Trading and logistics businesses

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

■ Travel agent and car rental services

JR EAST VIEW Travel Service Co.,Ltd. / JR East Rental & Lease Co., Ltd.

■ Sports and leisure businesses

JR East Sports Co., Ltd. / GALA YUZAWA Co., Ltd.

■ Real estate management

JR East Urban Development Corporation

■ Information, financial, and personnel services

JR East Information Systems Company / JR East Net Station Co., Ltd. / JR East Management Service Co., Ltd. / JR East Personnel Service Co., Ltd. / JR East Green Partners Co.,Ltd.

■ Credit card business

Viewcard Co., Ltd.

■ Advertising and publishing

JR East Marketing & Communications,Inc. / JR East Media Co., Ltd. / The Orangepage, Inc.

■ Station/on-train services, cleaning, linen supply

JR East TESSEI Co., Ltd. / JR East Transportation Services Co., Ltd. / East Japan Eco Access Co., Ltd. / JR East Station Service Co., Ltd. /JR Takasaki Railway Services Co., Ltd. / JR Mito Railway Services Co., Ltd. / JR Chiba Railway Services Co., Ltd. / JR Technoservice Sendai Co., Ltd. / Morioka Railway Servicing Co., Ltd. / JR Akita Railway Services Co., Ltd. / JR Niigata Railway Services Co., Ltd. / JR Nagano Railway Services Co., Ltd. / JR Higashinihon Linen Co., Ltd. / JR East Service Creation 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. / Japan Railway Track Technology Consultants Co., Ltd.

■ Rolling stock manufacturing and maintenance

Japan Transport Engineering Company /JR East Rail Car Technology & Maintenance Co., Ltd.

■ Overseas railway consulting

Japan International Consultants for Transportation Co., Ltd.

■ Global development of Lifestyle Service Business

JRE Business Development Taiwan, Inc. / JR East Business Development SEA Pte. Ltd.

■ Generation and district heating and cooling

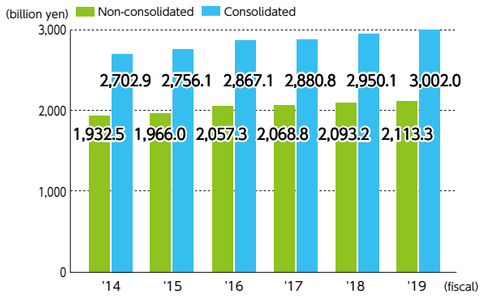
JR East Energy Development Co., Ltd. / Shinjuku South Energy Service Co., Ltd.

■ Corporate Venture Capital

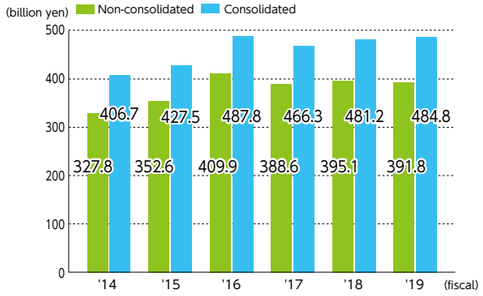
JR East startup Co., Ltd.

Management Information

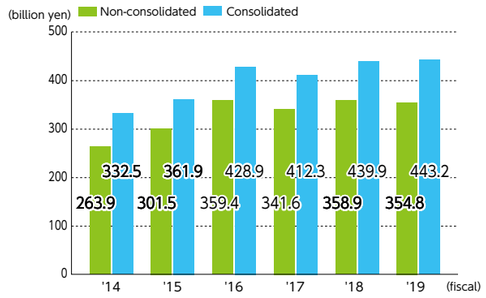
[Operating Revenues]



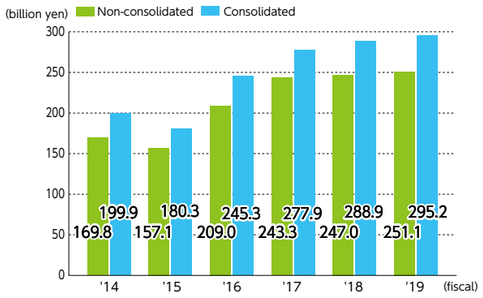
[Operating Income]



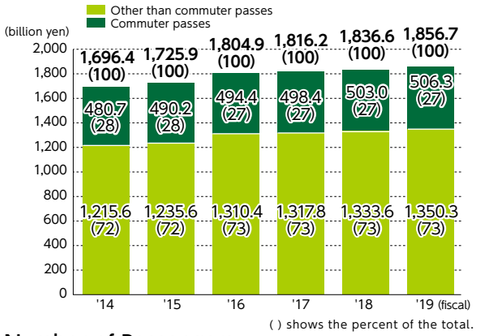
[Ordinary Income]



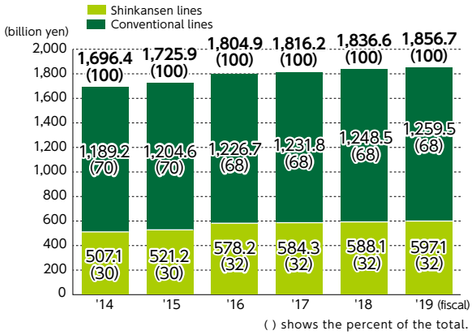
[Net Income (Non-consolidated) and Profit attributable to owners of parent (Consolidated)]



Revenues from Passenger Tickets

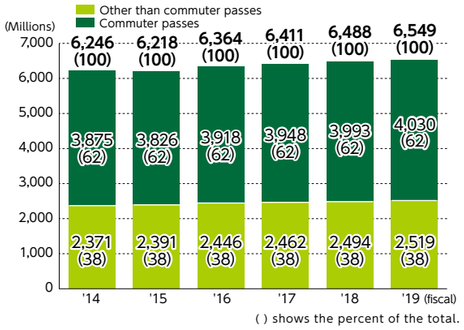


( ) shows the percent of the total.

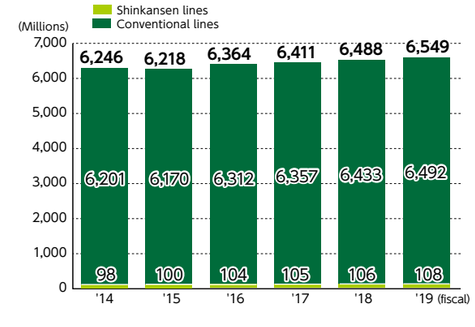


( ) shows the percent of the total.

Number of Passengers



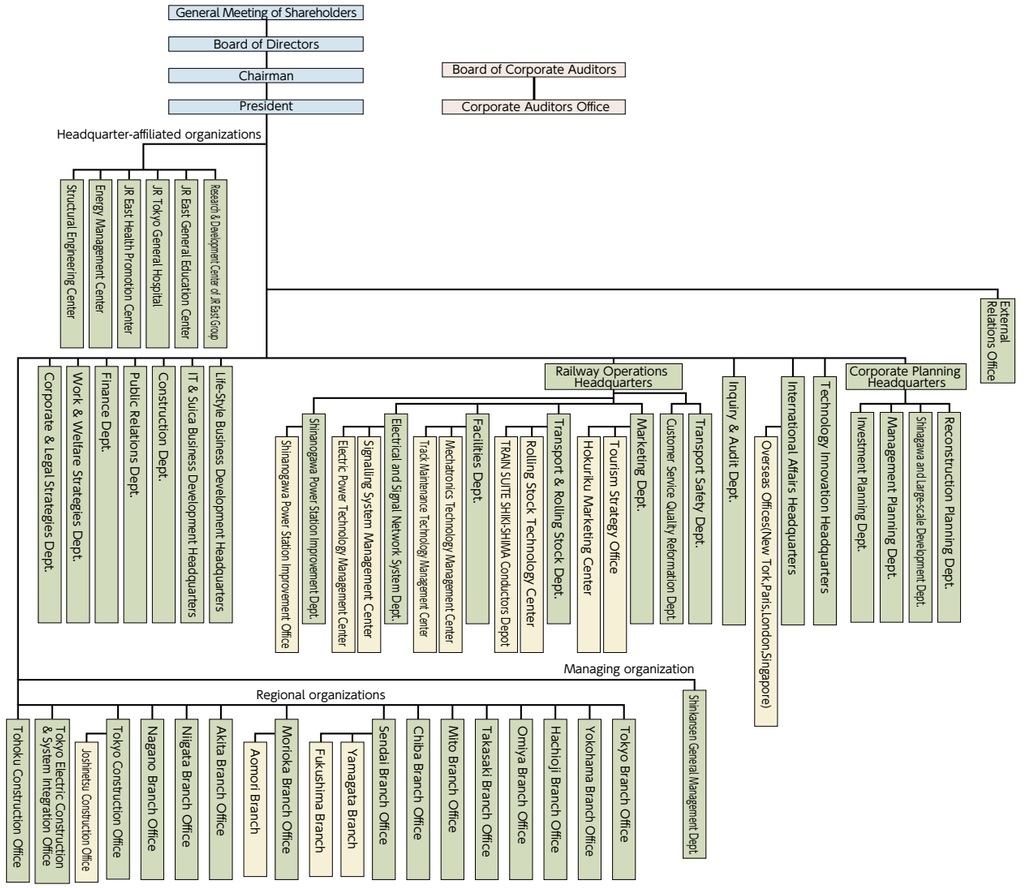
( ) shows the percent of the total.



Note 1) Fractions of 100 million yen have been omitted.
Note 2) Fractions of 1 million passengers have been omitted.
Note 3) The sum of the numbers of passengers on the Shinkansen and conventional lines is greater than the passenger total because some individual passenger trips include both.

Organization

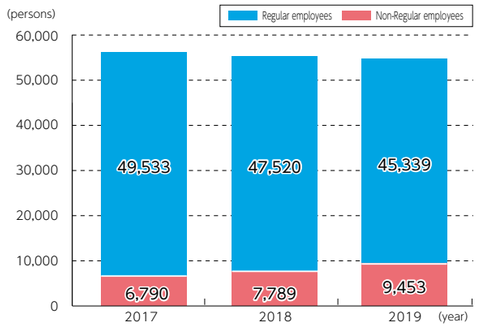
As of June, 21, 2019



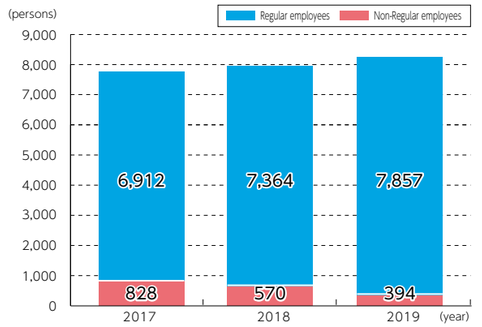
Personnel-related data

[Total number of employees by employment type and gender (As of April 1, 2019)]

〈Male〉



〈Female〉



* No. of employees in this report includes those seconded.

[Total number of new employees and resignees(New employees are those employed within the fiscal year (Regular employees only))]

(persons)

	New employees			Resignees		
	FY2017	FY2018	FY2019	FY2017	FY2018	FY2019
Male	1,320	1,292	1,302	2,873	3,340	3,627
Female	579	572	592	130	130	133

(persons)

	New employees			Resignees		
	FY2017	FY2018	FY2019	FY2017	FY2018	FY2019
Under 30 years of age	1,498	1,563	1,576	79	103	158
30 to 50 years of age	386	296	316	158	164	186
51 years of age and over	15	4	2	2,766	3,203	3,416

(persons)

	New employees			Resignees		
	FY2017	FY2018	FY2019	FY2017	FY2018	FY2019
Headquarters	153	153	139	156	184	167
Tokyo Branch Office	438	470	480	476	464	563
Yokohama Branch Office	196	158	165	184	204	280
Hachioji Branch Office	127	139	140	137	147	229
Omiya Branch Office	151	154	150	201	191	253
Takasaki Branch Office	76	84	86	184	215	196
Mito Branch Office	48	59	62	167	171	144
Chiba Branch Office	180	177	185	199	268	277
Sendai Branch Office	148	153	163	477	542	525
Morioka Branch Office	76	79	68	242	305	357
Akita Branch Office	62	40	41	163	241	239
Niigata Branch Office	88	73	70	209	294	299
Nagano Branch Office	57	42	42	129	160	155
Tokyo Construction Office	27	32	40	40	39	29
Tokyo Electric Construction & System Integration Office	40	35	42	15	24	29
Tohoku Construction Office	32	16	21	24	21	18

Figures for the Shinkansen Transport Dept. (FY2017–2019) are included in the Headquarters totals.

[Average annual training time per employee]

(Time, person)

	FY2017	FY2018	FY2019
Total annual training hours	2,039,400	1,809,560	1,756,288
Number of employees	57,576	56,445	54,884
Average annual training hours per employee	35	32	32

[Number of employees by area and gender (As of April 1, 2019)]

(persons)

	Male			Female		
	2017	2018	2019	2017	2018	2019
Headquarters	3,666	3,691	5,651	964	982	1,149
Tokyo Branch Office	9,222	9,019	8,500	1,570	1,654	1,740
Yokohama Branch Office	4,043	3,932	3,756	628	681	718
Hachioji Branch Office	3,257	3,196	3,051	434	485	514
Omiya Branch Office	3,778	3,688	3,410	461	504	522
Takasaki Branch Office	2,245	2,106	1,935	288	304	326
Mito Branch Office	2,147	2,027	1,938	220	240	256
Chiba Branch Office	3,816	3,694	3,528	607	640	689
Sendai Branch Office	4,876	4,507	3,456	578	615	634
Morioka Branch Office	3,013	2,777	2,155	257	286	289
Akita Branch Office	2,198	1,995	1,808	184	198	211
Niigata Branch Office	3,118	2,886	2,387	273	294	297
Nagano Branch Office	2,242	2,129	1,911	215	225	245
Tokyo Construction Office	672	646	623	87	107	109
Tokyo Electric Construction & System Integration Office	833	836	843	101	104	111
Tohoku Construction Office	407	391	387	45	45	47
Total	49,533	47,520	45,339	6,912	7,364	7,857

Figures for the Shinkansen Transport Dept. (FY2017–2019) and the Shinkansen General Management Dept. (FY2020) are included in the Headquarters totals.

[Ratio of employees eligible for collective bargaining agreements (as of April 1, 2019)]

(persons)

	2017	2018	2019
Number of union members	49,467	20,857	14,343
Number of employees	56,445	54,884	53,196
Ratio	87.6%	38.0%	27.0%

Independent Assurance Report

Independent Assurance Report

To the President and CEO of East Japan Railway Company

We were engaged by East Japan Railway Company (the "Company") to undertake a limited assurance engagement of the environmental performance indicators and environmental accounting indicators marked with ☆ for the period from April 1, 2018 to March 31, 2019 included in its Sustainability Report 2019 (the "Report") for the fiscal year ended March 31, 2019, and the Company's self-declaration that the Report is prepared in accordance with the Global Sustainability Standards Board's GRI Sustainability Reporting Standards 2016 ("GRI Standards") at a core level.

The Company's Responsibility

The Company is responsible for the preparation of the Indicators in accordance with its own reporting criteria (the "Company's reporting criteria"), as described in the Report, and for self-declaring that the Report is prepared in accordance with the criteria stipulated in the GRI Standards.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Indicators based on the procedures we have performed. We conducted our engagement in accordance with the 'International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information' and the 'ISAE 3410, Assurance Engagements on Greenhouse Gas Statements' issued by the International Auditing and Assurance Standards Board. The limited assurance engagement consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Report, and applying analytical and other procedures, and the procedures performed vary in nature from, and are less in extent than for, a reasonable assurance engagement. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviewing the Company's responsible personnel to obtain an understanding of its policy for preparing the Report and reviewing the Company's reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical procedures on the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company's reporting criteria, and recalculating the Indicators.
- Visiting two of the domestic business sites of the Company selected on the basis of a risk analysis.
- Evaluating the Company's self-declaration that the Report is prepared in accordance with the GRI Standards at a core level against the criteria stipulated in the GRI Standards.
- Evaluating the overall presentation of the Indicators.

Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Report are not prepared, in all material respects, in accordance with the Company's reporting criteria as described in the Report, and the Company's self-declaration that the Report is prepared in accordance with the GRI Standards at a core level does not conform to the criteria stipulated in the GRI Standards.

Our Independence and Quality Control

We have complied with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In accordance with International Standard on Quality Control 1, we maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

KPMG AZSA Sustainability Co., Ltd.

KPMG AZSA Sustainability Co., Ltd.
Tokyo, Japan
December 13, 2019

Closing

Thank you for taking the time to read JR East Group's Sustainability Report 2019. This Report was prepared to provide an overview of JR East Group's current business activities to all stakeholders. This Report included quantitative data on the governance activities relating to safety, society and the environment that are being undertaken by our Group. All the data presented in an easy-to-understand manner through the use of photographs and diagrams. Additionally, the major events that have occurred since the last Report were introduced as "Highlights" in the first part of the Report, while our specific efforts were presented as "Topics" in the main part of the Report. We also newly included explanations of the relationships between these efforts and SDGs. Also, in the main part of this year's Report, we included numerous articles to describe the specific efforts made by some of our employees, such as "TICKET TO TOMORROW", in order to demonstrate the understanding and shared awareness that each employee has of JR East Group's various policies and measures. We hope that this Report will be of assistance to all stakeholders in further deepening understanding of JR East Group. Moreover, in consideration of SDGs, JR East is committed to practicing ESG management as described in the JR East Group Management Vision "Move Up" 2027 and to solving social issues through its businesses. At the same time, we will strengthen communication with all stakeholders and respond to the trust placed in us by all our customers as a whole Group by reporting on the progress of the Management Vision on a timely basis. We sincerely ask for your continued understanding in regard to JR East Group's business operations, and your honest opinions are always welcome. Thank you.

Hideki Nemoto

Executive Officer & General Manager of
Management Planning Department
Corporate Planning Headquarters
East Japan Railway Company

JR East Group Philosophy

We will earn the trust of our customers as a whole group by aiming for ultimate safety levels as our top priority. We will strengthen our network capabilities focusing on technologies and information, and we are committed to helping our customers and people in communities to realize affluent lives.

Basic Principles

Pursuing safety : By pursuing ultimate safety levels, we will offer a peace of mind to our customers.

Customer-oriented : We will offer quality services to rise to the expectations of our customers.

Close to regional society : By utilizing our network capabilities, we will contribute to the development of regional society.

Autonomous and self-standing : With a broad perspective and willingness to confront challenges, we will think and act on our own initiative.

JR East Group's development : By fulfilling our social responsibility, we will aim to achieve sustainable growth by JR East Group.

Corporate Profile

Corporate name	East Japan Railway Company
Address	2-2, Yoyogi 2-chome, Shibuya-ku, Tokyo, Japan
Established	April 1, 1987
Capital	200 billion yen
Number of employees	53,200 (as of April 1, 2019)

Editorial Policy

The Sustainability Report 2019 sets forth various initiatives being taken in the JR East Japan Group. It is published for the purpose of providing an accurate and simple description of these initiatives as well as promoting communication with our diverse stakeholders.
While our desire remains to offer as much information as possible related to safety, society, environment and governance, the report itself focuses in particular on areas where there have been notable changes. For more information on the overall activities of the JR East Group, please go to our website.
Furthermore, this report serves as a safety report required to be publicly announced by the Railway Business Act.

■ Compliant Standard

This report has been written in accordance with the coreoption of GRI Sustainability Reporting Standards 2016(GRI Standards).

■ References

Environmental Reporting Guidelines 2018
[Japan Ministry of the Environment]
Environmental Accounting Guidelines 2005
[Japan Ministry of the Environment]

■ Reporting period

This report basically covers our activities from April 1, 2018 to March 31, 2019, although some events presented here happened earlier or in the period between the end of March 2018 and the publication of this report in October 2018.

■ Boundary of reporting

East Japan Railway Company
JR East Group (consolidated subsidiaries (71 companies))
Economic report: JR East, consolidated subsidiaries, equity
method affiliates (5 companies)
Environment report: JR East, consolidated Japanese subsidiaries
Social report: JR East, consolidated subsidiaries

Subsidiaries are listed on p.121.

■ Figures in this report

Totals may not match the sum of individual figures due to rounding.

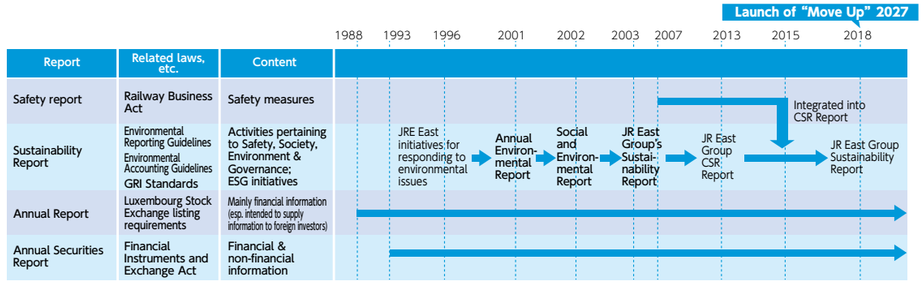
Information disclosure diagram

●ESG information

- ●JR East Group Sustainability Report
- ●JR East official website
  Offers detailed information supplementary to the Sustainability Report, and updates.
- ●Corporate Governance Report, etc.
- ●Annual Securities Report

●Financial Information

- ●Annual Securities Report
- ●JR East official website (IR information, etc.)
- ●Annual Report etc.



JR East Group Sustainability Report 2019

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