Four pillars of JR East Group’s Sustainability Report 2019

Top message

- JR East Group Management Vision “Move Up” 2027
- Toward Implementation User “Next” 2027
- Toward Achievement of the SDGs
- Values to Be Created under “Move Up” 2027 for the SDGs

Our understanding of our materiality

- [Environment] [Governance] [Society] [Safety]

FY2021 and FY2031, including impact and reaching our goals for corporate governance initiatives

Evaluating the effectiveness of our management activities

- Measures to prevent level crossing accidents
- Measures to prevent train collisions
- Rules for reporting accidents and events
- Measures to prevent railway personnel accidents

Data reliability and transparency

- Further development of our safety culture
- Group-wide efforts to further improve safety
- Safety-related research and development
- Measures to prevent level crossing accidents
- Measures to prevent train collisions
- Precautions against natural disasters
- Safety measures at platforms

Environmental Communication

- Enhancing the power of human resources
- Promotion of Diversity Management
- Measures to prevent level crossing accidents
- Measures to prevent train collisions
- Precautions against natural disasters
- Safety measures at platforms

Corporate Governance

- Corporate Governance
- Compliance Risk Management
- Corporate Info
- Management Information
- Organization
- Personnel-related data
- Independent Assurance Report
- Closing

Report on Environmental Performance

- 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 strengthens 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 goals in the business 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 use 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 the regional society as a whole group.
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 create new values of “Trust” and “Affluence” in cities, regional areas, and around the world.

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.

Practicing ESG management: Shifting to help resolve social issues through our businesses.
Values to Be Created under “Move Up” 2027 for the SDGs

- Heightening the trust that customers and local communities have in JR East Group
- Realization of a low- and ultimately no-carbon society through environmental technology innovations
- Achieving affluent living for everyone and the sustainable development of regional society
- Solving regional issues and realizing an affluent regional society
- Achieving a sustainable, low-risk level crossing
- Registration of a transportation IC card
- Service quality chosen by everyone
- Efforts to prevent global warming and improve diversification of energy resources
- Realization of stress-free living for customers by offering various one-stop services
- wagon safety equipment by actively utilizing new technologies
- Service quality reform of the ticket reservation system
- Enhancement of Accident History Exhibition Hall (Oct. 2018)
- Enhancing the Accident History Exhibition
- Practical safety education and training with simulators
- Video: ALFA-X (May 2019)
- Introduction of renewable energy
- Realization of a low- and ultimately no-carbon society through environmental technology innovations
- Enhancing the Accident History Exhibition

(Sustainability Report 2019)
Aiming for “Ultimate Safety Levels”
Starting with the “Safety Actions” of Each Person

**Group Safety Plan 2023**
“Evolution” and “Move Up”

**“Ultimate Safety Levels”**

**Objectives**
- 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

3 Pillars of “Group Safety Plan 2023”

**“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, and the intensifying severity of natural disasters. With even greater environmental changes expected in the future, each person must not only execute past actions 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

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”**

- **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”.

[Sakata Transportation Depot, Niigata Branch Office East Japan Railway Company (JR East)]
We further deepen our understanding of the “essence of work”, which must not be neglected for any reason.

[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.

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 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 zukudau together with all employees to further strengthen our organization and ensure safe and stable transport.

* Zukudau: To persevere in our concerted efforts

See page p.27-29 for a related article.

**“Evolution” and “Move Up”**

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

[7 Guidelines for Understanding the “Essence of Work”]

* Sakata Transportation Depot

**“Safety Actions” of Each Person**

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.

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 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.

**“Sakata Transportation Depot”**

By effectively utilizing new technologies, we are promoting “Maintenance of safety equipment”.

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”.

**“Evolution” and “Move Up”**

We will further deepen our understanding of the “essence of work”, which must not be neglected for any reason.

**“Evolution and moving up of “safety management”**

**“Ultimate Safety Levels”**

We will formulate a new 5-year safety plan focusing on “Evolution and Moving up” of safety management based on the Group Safety Plan 2023.

**“Ultimate Safety Levels”**

Starting with the “Safety Actions” of each person, 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.

基于JR东集团的安全计划2023，我们制定了一个新5年安全计划，以“最终安全水平”为目标，从每个人的“安全行动”开始。

**“Safety Actions” of Each Person**

为了提高安全性，我们不仅要学习工作的步骤和方法，而且要了解“7条准则”，包括工作目的、规则的起源和设备的操作原理。

**7 Guidelines for Understanding the “Essence of Work”**

* 7条准则：理解“工作的本质”

要提高对环境变化的反应，必须理解“工作的本质”。不仅仅是通过学习过去的失败，利用工作提示可视化，我们进一步加深了对“工作的本质”的理解，这在任何情况下都不可忽视。

**Specific efforts**

[Sakata Transportation Depot]

通过7条准则来理解“工作的本质”

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

我们进一步加深了对“工作的本质”的理解，这在任何情况下都不可忽视。

[Total Electric Management Service Co., Ltd.]

通过ESPER项目培养工程师

为了应对急剧变化，如退休的资深员工和科技趋势，我们设立了工程师发展系统，即ESPER项目。通过此项目，我们培养了具有高技术能力的技术专家，他们可以在内外为公司发挥积极的作用，以及每个地区的技术专家，他们都熟悉设施和特殊条件。

具体来说，我们已经建立了一个工程师培养体系，即ESPER项目。通过这个项目，我们培养了能够利用专家的知识和经验，通过经验传播知识和技能，使年青一代员工能够从前辈那里学习。

我们继续与所有员工一起努力，进一步加强我们的组织，确保安全和稳定的运输。

* Zukudau：坚持不懈的共同努力

See page p.27-29 for a related article.
Enhancing 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.

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 the thinking behind them, 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.

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.
Global Gateway Shinagawa

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.

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-m² 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.

Building Anticipation for the Future Community through Events

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.

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.

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.

Community Development Incorporating Cutting-Edge Environmental and Energy Solutions

Becoming a Model for Pioneering Environmental Urban Development

Shinagawa and Large-Scale Development Department
Corporate Planning Headquarters

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
Pursuing Town Development Focused on Stations

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

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 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.

Enabling Regional Revitalization and Value Creation

PLAYatré TSUCHIURA, 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 revitalisation 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 revitalisation and regeneration of the station and town.

See page p.72,p.74 for a related article
Enhancing convenience for customers from overseas

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 translation 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.

Objectives

- Enhancing convenience for international customers
- 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.

Taking on the challenge of providing information in other languages

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
Cultivating railway human resources overseas, with a focus on Asia

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.

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 Yoshihisa 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 Myanmar 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.

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.

Making an international contribution by training local personnel

The trainers 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

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

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.
Tackling the Challenge of Driverless Operation

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.

Objectives

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.

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).

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Ofunato BRT Driverless Operation Trial

We are operating a BRT (bus rapid transit) system as a sustainable transportation mode on the Kenesuma 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

1. 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 (i.e., magnetic impedance sensors) installed on the vehicle.

2. 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.

Achieving the World’s Safest and Most Comfortable Driverless Operation

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

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.

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.
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 ]

<table>
<thead>
<tr>
<th>Without robust measures</th>
<th>With robust measures (CD3.6)</th>
<th>Note: Change versus average for 1986-2005 (To compare with pre-Industrial Revolution levels, add 0.6°C)</th>
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<tr>
<td>6°C</td>
<td>4°C</td>
<td>Source: Compiled from Annual Report on the Environment in Japan 2019, Ministry of the Environment of Japan</td>
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Our FY2031 goals

<table>
<thead>
<tr>
<th>Environmental action category</th>
<th>Focus</th>
<th>Target to be achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measures to prevent global warming</td>
<td>Energy consumption by railway operations</td>
<td>25% reduction (versus FY2014)</td>
</tr>
<tr>
<td></td>
<td>CO₂ emissions by railway operations</td>
<td>40% reduction (versus FY2014)</td>
</tr>
</tbody>
</table>

Development of ecoste promises a 40% reduction of CO₂ emissions on average

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

Nobeyama Station, situated on the Kouni 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 unique 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 of culture, as the “City of Water, Greenery, and Poetry” and that takes pride in its abundant groundwater and the rich natural environment of Mt. Akagi.

Eco-station projects to be completed by end-FY2020

See page P96-P99 for a related article

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.

Increasing the net-zero energy station

Our first Eco-station will be the Mito Line’s Fukui Station, on the Mito Line in Ibaraki Prefecture, which will begin operation in March 2021.

To meet the goal of being a net-zero energy station, we have taken a number of measures, including installing solar panels on the roof, ground-source heat pumps that utilize groundwater for heating and cooling, and an energy management system that reduces standby power consumption. In addition, we are taking steps to reduce energy consumption even further by improving the train’s aerodynamics and switching to low-energy lights in railway stations.

Eco-station projects to be completed by end-FY2020

See page P96-P99 for a related article
Providing CO₂-free transportation services

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 combating 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 CO₂ emissions associated with our train operations in Tohoku.

CO₂-free power from JR Akita Shimohama Wind Power Generation Station

On July 1, 2019, we switched the power supply of Oga Station to CO₂-free electricity from JR Akita Shimohama Wind Power Generation Station. By utilizing the non-fossil fuel energy certificate* system, which certifies the environmental value (i.e., absence of CO₂ 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* produced by JR Akita Shimohama Wind Power Generation Station, procures non-fossil fuel energy certificates that come with that power station’s tracking 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 CO₂-free electricity from JR Akita Shimohama Wind Power Generation Station.

Making Tohoku area train operations CO₂-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 CO₂-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 CO₂-free transportation services. Through these efforts we will strive to reduce to zero the CO₂ emissions associated with our train operations in Tohoku.

Our Renewable Energy Development Efforts

Expanding the deployment of renewable energy

achieving CO₂-free power

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.

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 CO₂-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.
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 level 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

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.

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

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.

Overview of “Group Safety Plan 2023”

An age of great change and move up

* 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.

Protecting lives

“Ultimate Safety Levels” goal

Zero accidents involving passenger injuries or fatalities and zero accidents involving employee fatalities* ① Includes all people involved with railway-related work, including JR East, Group companies, and partner companies.

Proper response to large environmental changes

3 Pillars of “Group Safety Plan 2023”

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

5-year targets

Railway accidents: 20% reduction

30% reduction of personal injury accidents at platforms

30% reduction of level crossing accidents

40% reduction of injuries associated with natural disasters

50% reduction of injuries associated with terrorism

Zero serious incidents

* Train accidents (train collisions, derailments, train fires), Accidents at road crossings, Fatalities or Injuries, and Physical damage to property

Environmental changes outside of JR East

Environmental changes within JR East

An age of great change and move up

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.
Three Actualities Principle

1. "Three Actualities Principle" is the foundation of "5 Cultures", "CS(Challenge Safety) Activity", and "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".

3. 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.

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."

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 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

Expand "people to become the core of safety initiatives"

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 the examination of new technologies.

Promotion of safety measures which predict future conditions
① Promote 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.

② Introduce 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 lever crossings
• 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.

(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 ]

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 recurrences, 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.

Railway Safety Promotion Committee

Chairman: Director General, Railway Operations Headquarters
Members: Deputy Director General, Railway Operations Headquarters; General Managers of Technology Innovation Headquarters, Safety Planning, Customer Service Quality Reform, Communication, Operation, Network Systems, Construction, Work & Welfare Strategies Departments; Executive Director, Research & Development Center of JR East Group, and Shinkansen General Management Departments

Mandate
- Investigate causes of major accidents and countermeasures against them
- Monitor trends in accidents and formulate policies to prevent them
- Ensure that transport-related facilities and rolling stock are safe
- Press forward with preventative measures
- Discuss other requirements for preventing accidents

Field organizations

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:
- To actively uncover “possible seeds of accidents” with high risk of fatalities or injuries to customers/employees and implement countermeasures
- To prevent railway accidents from occurring and from reoccurring

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 recurrences 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.

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

Promoting the use of educational and training facilities
We are conducting safety-related education and training based on the following principles:

1) Conduct 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.
2) During 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.
3) By 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.

Through utilization of yard simulators
JR Technoservice Sendai Co., Ltd. has nearly 100 yard simulators. 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.

Safety 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.

Chroniclers of Safety (Narrators of Oral History)
JR East is currently experiencing a rapid change in the generation 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).

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.

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.

Simulator for construction worker training

Safety Professional certification ceremony

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)

Develoment of safety-related discussions in each workplace
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.

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 a 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.

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-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.

Examples of CS Activity

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.

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 Symposia in 1990. Symposia 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 of other companies. Participants bring back what they learn at symposiums to their workplaces and share safety awareness with other employees.

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When the train speed exceeds speed limits for curves and turnouts, the ATS-P system automatically activates its automatic brake to stop at a stop signal. For this purpose, 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.

### 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.

### Measures to prevent train collisions

#### 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

### Others

#### Dual safety measures

When conducting track construction, maintenance, or inspection, we close tracks so that other trains cannot enter these particular railway sections. 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 shutts on the closed section, signals will change to a stop signal to prevent trains from proceeding to that closed section.

### ATCS (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 in October 2011 and on the Saikyo Line between Ikebukuro and Omiya in Nov. 2017.

#### 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.
**Preparedness against natural disaster**

**Our measures against earthquakes**

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

1. **Preventing structural damage (seismic reinforcement measures)**
2. **Stopping trains immediately (emergency train stop measures)**
3. **Minimizing 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.

**Emergency train stopping measures**

For Shinkansen lines, JR East utilizes the Seismic 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 derailment**

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 derail and the rail fasteners are broken.

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* 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.

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### Strengthening traffic control functions for times of disaster

In FY2019, to strengthen our preparedness for times of disaster, we reviewed 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.

#### 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.

#### 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.

#### 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.

### 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.

1. At the time of a large earthquake, be prepared for tsunamis. Gather information by yourselves and if communication lines are discontinuous, 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 guiding 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 office 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 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
- Embankment slope protection
- Natural slope protection

### 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 tsunami, we have improved the signs and routes for evacuation from tsunamis. We will also improve evacuation signs and routes for other railway sections.
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 ]

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.

<table>
<thead>
<tr>
<th>Section Type</th>
<th>As of Dec. 2008</th>
<th>As of Mar. 2019</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional lines</td>
<td>224 units</td>
<td>964 units</td>
<td>+740 units</td>
</tr>
<tr>
<td>suburban lines</td>
<td>89 units</td>
<td>163 units</td>
<td>+74 units</td>
</tr>
<tr>
<td>Total</td>
<td>317 units</td>
<td>1,127 units</td>
<td>+810 units</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Restriction type</th>
<th>Wind speed (meters/sec.)</th>
<th>General restrictions</th>
<th>Early restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed restriction (max. 25 km/h)</td>
<td>25 - 30</td>
<td>20 - 25</td>
<td></td>
</tr>
<tr>
<td>Operation halted</td>
<td>30 -</td>
<td>25 -</td>
<td></td>
</tr>
</tbody>
</table>

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.

Expanded introduction of the gale warning system

JR East has been using gale warning systems on the Kiyô Line since Aug. 2005 and has installed the systems in all 292 locations on its conventional lines with a gale operation control, including the 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.

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.
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).

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

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).

In March 2018, JR East announced that the company will complete the installation of platform doors at all the stations on major conventional lines in the Tokyo metropolitan area (330 stations by line, including the 243 stations where we have completed the installation to date).

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.

**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 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 view 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.**

**Safety at platforms**

To improve visibility, glass is used for platform doors. 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**

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.

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

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.

**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.

**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**

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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.

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)]

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. eliminated</td>
<td>37</td>
<td>18</td>
<td>42</td>
<td>20</td>
<td>17</td>
</tr>
</tbody>
</table>

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.

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.

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 and automobiles. We are also separating level crossings for pedestrians and drivers who enter level crossings from roads.

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.

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". [Occurrences of railway accidents]

- Train accidents: 47
- Accidents at rail crossings: 105
- Fatalities or injuries: 105
- Physical damage to property: 5

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.

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).

- Train accidents
JR East recorded zero train accidents.

Incidents

JR East recorded 1 incident (railcar failure).

Transport disorders

JR East recorded 1,341 cases of transport disorder.

- Nature of railway accidents
JR East recorded zero train accidents.

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

[Status of accident fatalities]

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

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.

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

Campaign to prevent dashing onto a departing train

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

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.

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.

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

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”, and “do not cross until a train stops” 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

Providing impressive passenger service

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

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

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.
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.

We are implementing various measures to improve transport quality by striving to prevent transport disruptions and by speeding 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.

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 electric facilities, etc. In addition, we are conducting station call activities by employees and station patrol by ex-

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. 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.

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 electric facilities, etc. In addition, we are conducting station call activities by employees and station patrol by ex-

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Adoption 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.

"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.

Realizing railway services that passengers can use confidently and comfortably
■ Barrier-free Stations
JR East has been working with local governments and others 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 of E233 series railcars, in which the space of luggage racks and hand staps 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, Sainoku, 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 handling have been introduced on new Hachioji Express railcars (E259 series and after) and new Shinkansen train railcars (E5 series and after).

■ 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.

■ 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 which are also installed at 49 stations as of the end of March 2019.

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.
■ Real-time visualization of the status of conventional railway lines
We have developed a system that visualizes overall train conditions, including congestion, by using data for each train pertaining to its location, delays, and numbers 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.

■ 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.

■ System to respond to inquiries
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 problems by introducing the 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 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 unavailable in order to enable customers to use railroads conveniently 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 Nittsu 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 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.

■ 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.

[Required time from Tokyo to each city]

![Image of railway network](image-url)
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 carefully listen first 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 various other 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

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger service</td>
<td>20,308</td>
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<tr>
<td>Card business</td>
<td>3,787</td>
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<tr>
<td>Management and other</td>
<td>22,710</td>
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<tr>
<td>Facilities</td>
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<tr>
<td>Products</td>
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<tr>
<td>Railway cars</td>
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<tr>
<td>Train crew</td>
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<td>Railway facilities</td>
<td>2,770</td>
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<tr>
<td>IT-Suka</td>
<td>15,933</td>
</tr>
<tr>
<td>Ubi-city</td>
<td>23,954</td>
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</tbody>
</table>

*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.

- 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.

- 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.*
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 revitalizing 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 (three products: Tohoku area, Nagano/Gifu area, Nagoya area)

- **JR TOKYO Wide Pass**
  - Pass providing unlimited travel within the Kantō area

- **Next TOYOKO Round Trip Ticket**
  - Ticket providing access to the Tokyo area from Narita Airport

- **JR East-South Hokkaido Rail Pass**
  - Available for the Tohoku, Tohoku, and South Hokkaido areas

- **JR Tokyo-South Hokkaido Rail Pass**
  - Available for the Tohoku and South Hokkaido areas

- **Tokyo-Chita Hokuriku Area 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 Kanzawa 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.

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 region 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 “iccaca” 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.

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).

Interchangeable Use of IC Cards Area

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<th>Area</th>
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IC Card Usage Area

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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, Toetsu, Hokuriku, Yamagata, or Aita 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 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.

■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.

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 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 instation services which enable to make advance purchases at eCute stores and the like online, then pick them up in person.

https://www.jreastmall.com

*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.
Topics

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.

Introduction of a Tourism MaaS App
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/gress 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”
Collaborating with TOKYO CORPORATION, we have started the Shibukawa 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 hails problems of the introducing cashless payment systems and new transportation services, Izu users can ride on railways and buses "only by showing the screen of their smartphones" and experience seamless travel to destinations and sightseeing tours with admissions to tourism facilities and on-demand AI ride share 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 realtime 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.

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 taxis 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.
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.

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.

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.

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.

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 IoT 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 Takanawabashi Gateway Station. We received 262 proposals. We will continue collaboration with venture companies and commercialization while taking in internal and external evaluations as feedback.

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.

For realization of ON1000

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.

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.
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 Toyo 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 Saityo 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.

### 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 QV1,” 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.

### 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.

### 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 Mali Project (Chuo Line), Kurasu Class (Nambu Line), Keio Bayside Line Project (Keio Line), FUN TOKYOI (Yamanote Line), and Saityo Line Lineside Branding, as well as providing information about areas along the lines.

### Life with plants in Mitaka

We renovated former company housing and dormitories of JR East in Mitaka into rental housing for families (Lieto Garden 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.”
■ 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 Akiya Station, Niigata Station, Matsumoto Station, and others. In addition, we have continued collaboration agreements related to town development with municipalities, business operators, etc. in each area of Aomori, Tono, Hiraizumi, Aizu-wakamatsu, and Sendai 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.

■ 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.

■ 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, 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 Yanazuma and Kesennnuma on the Kesennnuma Line and the section between Kesennnuma 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 Kamishi 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 Tadamis (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.

Regional reconstruction and restoration of all lines of the Joban Line
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 in 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, companies 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 site. 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, companies 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 site.
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 products 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 sales of their regions at Tokyo Station and other locations.

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 specialties and the use of auto-harvesting 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 enhanced cooperation 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 “Shizuku Deshita! 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.

Trains for enjoying riding

We operate various “Trains for enjoying riding” which provide passengers enjoyment in riding the trains. Those include Shinkansen, limited express, S, 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 trip.

In support of the aim of “POKEMON with VOL,” an activity by The Pokemon Company to support disaster-affected areas, JR East operates “POKEMON with VOL” with the cooperation of the COTTA Foundation. ©1995-2018 Nintendo/Creatures Inc. /GAME FREAK inc. Robinson is a registered trademark of Nintendo, Creatures Inc. and GAME FREAK inc.
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.

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 playground with a capacity of 100 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 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.

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.

■ 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

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, Nishinodai, Kunitachi, and Kosuge, and 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, COTONIOR has created a heartwarming place where children and senior generations interact that brings together a wide range of generations.

Development of COTONIOR

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 Shinbashi 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, 2018, the 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 the significance of railways as well as its independence, 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.

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 everyonе 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.

Supporting local cultural activities

Starting in FY1994, we have been supporting regional cultural activities in the form of providing financial support to ensure 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.

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: students in junior high and high school students
■ Applicable card: Suica, PASMO
■ Notification method: Email or JR East app

Image of message notification

The child calls that pass on the reader when passing through the ticket... and a notification about the child’s passing the ticket is sent to his parent or guardian.

To the station on the first floor of the south building

Family and Railway Exhibition of Imperial Family and Railway

Repair projects of ritual implements, etc. of Hachinohe samshu Taisa, 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 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]

Joining the 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 and Agreement between 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 railway 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, and 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 Management of U.K. Railway Operation Project

With regard to railways in the U.K., 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 Mitsu & 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.

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).
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.

Overseas Railway Operators

In Jakarta, the capital of the Republic of Indonesia, 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. Moreover, a diesel train transferred in 2007 to 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.

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Relationship with Employees

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 competitive human resources assuming and tracing the number of employees considering the future business deployment.

In order to enhance the power of human resources

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

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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 employees by specifying "skill specialists" who have high motivation and skill for human resource education and employees retired 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
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.

Ushunomiya 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 former-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 resources who comprise the central core of our 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.

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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.

Feedback about the JR East Group management executive training seminar
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 "mentally" 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-time 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.

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.
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.

With all generations, from young persons to veteran employees, working 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 working promote-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 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.

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 the past. 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 with the aim 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.

Create job satisfaction with each employee playing the leading role

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.

Balance between work and child-rearing

Now I am working as a driver using the short-time work system for childrearing. 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 it was reassuring to actually do the work. In the past, I used to take holidays and nursing leave even when I wanted to use only the morning or afternoon for affairs like family relationship, but now I can make a request for work in a planned manner by working in the morning and evening. Some sections operate from 7:00 to 21:00 after work, and nurseries can help with a fee depending on the family’s financial conditions.

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

Activate regions across job category groups

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 continue to contribute to regional activation and create railways to be selected by passengers.

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

Promotion of Diversity Management

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.

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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.
Efforts on globalization
In addition to the overseas study program for obtaining an MBA (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 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 training, 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.

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.

Deepened understanding of different cultures leads to communication
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.

Environment where female employees can work actively
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 Akiha 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.

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 women in careers 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.

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

Promoting Involvement of Female Employees

Promotion of diversity 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.

<table>
<thead>
<tr>
<th>Year</th>
<th>Target by the end of FY 2024</th>
<th>Result (as of April 1, 2019)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female new graduate employment rate</td>
<td>Over 30%</td>
<td>30.8% (570 persons)</td>
</tr>
<tr>
<td>Female manager rate</td>
<td>10%</td>
<td>5.5% (565 persons)</td>
</tr>
<tr>
<td>Rate of female employees out of all employees</td>
<td>14.8% (1,767 persons)</td>
<td></td>
</tr>
<tr>
<td>Rate of female executives in directors/corporate officials</td>
<td>Approx. 7% (4 persons)</td>
<td></td>
</tr>
</tbody>
</table>

Current (2019)
95%
80%
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.

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 expanding the work done by elder employees and also partially revising 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 shared values such as a commitment to health 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.

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.

Passion for company sports
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.

Human Rights Seminar

Baseball class by the hardball baseball club

Judo class given by Women’s Judo Club

JR East Akita Peckers
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

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).

- 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 2nd Hockey Stadium, is expected to be congested more than now during the Games period.

[ 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 multilanguage support for smooth and comfortable use by foreign passengers, whose numbers are rapidly increasing.

- Cooperation with medical institutions [As a part of heat countermeasures]
  - Dispatch of nurses to the station during JR Hamamatsucho Station (between 8:00 and 9:00 on July 24, 2019)
  - The extra section is between Sendagaya and Shibuya.

[ 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.

Activities in cooperation with the Artificial Limb Support Center of Tetsudou Kousai Kai

We hold the “observation session for Para sport 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 Kousai Kai 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.
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Environmental Management

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.

Management of Environmental Goals

Reduce energy consumption and CO₂ emissions in railway operations
Towards realizing the FY2031 goals, we pursue achieving reduction of energy consumptions by 25% and reduction of CO₂ 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 CO₂ emission volume, based on the assumption that power company emission factors will be 0.37 kg-CO₂/kWh in FY2031, we have set goals on CO₂ emission volume, or reducing energy consumption by 25%.
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 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.

Progress of Environmental Measures

<table>
<thead>
<tr>
<th>Category of environmental conservation activities</th>
<th>Performance indicators</th>
<th>FY2021 goal</th>
<th>FY2019 result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy consumption from railway business activities</td>
<td>Billions of MJ</td>
<td>51.7</td>
<td>48.5 (6.2% reduction)</td>
</tr>
<tr>
<td>Energy consumption for train operation (Shinkansen lines)</td>
<td>kW/h</td>
<td>2.49</td>
<td>2.36 (5.1% reduction)</td>
</tr>
<tr>
<td>Energy consumption for train operation (conventional lines)</td>
<td>kW/h</td>
<td>1.59</td>
<td>1.46 (8.5% reduction)</td>
</tr>
<tr>
<td>Energy consumption at branch offices, etc.</td>
<td>kl/m³</td>
<td>1.046</td>
<td>0.0366 (10.0% reduction)</td>
</tr>
</tbody>
</table>

Progress of Environmental Management by Entire Group

- **General waste discharged**: 35,307t (40,777t)
- **CO₂ emissions**: 0.49 million tCO₂ (0.51 million tCO₂)
- **Operating revenue**: 688.7 billion yen

Annual Targets through FY2021

<table>
<thead>
<tr>
<th>Category of environmental conservation activities</th>
<th>Performance indicators</th>
<th>Goal</th>
<th>FY2019 result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measures to prevent global warming</td>
<td>Reduction Rate of Energy Consumption Intensity of Each JR East Group Company</td>
<td>Each year 1% reduction in each group company</td>
<td>1% reduction by all group companies</td>
</tr>
<tr>
<td>Measures for resource circulation</td>
<td>Recycling rate for waste generated at stations and on trains</td>
<td>94%</td>
<td>93%*</td>
</tr>
<tr>
<td>Measures for resource circulation</td>
<td>Recycling rate for waste generated at General Rolling Stock Centers, etc.</td>
<td>96%</td>
<td>96%*</td>
</tr>
<tr>
<td>Measures for resource circulation</td>
<td>Recycling rate for waste generated in facility construction projects</td>
<td>96%</td>
<td>94%*</td>
</tr>
<tr>
<td>Environmental management</td>
<td>Implementation Rate of Recycling by Group companies</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

- ☆ Targets for Group companies

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

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

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

**Governance**: Since 1996, JR East has been conducting environmental conservation activities with a focus on specific goals.
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 CO₂ emissions by about 12 thousand tons per year.

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 CO₂ emissions.

[ Environmental accounting for fiscal year ended March 2019 ]

<table>
<thead>
<tr>
<th>Category</th>
<th>FY2018</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental conservation costs (billion yen)</td>
<td>5.19 (5.31)</td>
<td>-</td>
</tr>
<tr>
<td>Expenses</td>
<td>10.25 (11.22)</td>
<td>-</td>
</tr>
<tr>
<td>Environmental conservation benefits (billion yen)</td>
<td>49.5 billion</td>
<td>-</td>
</tr>
<tr>
<td>Economic benefit of environmental conservation activities (billion yen)</td>
<td>960 (10.24)</td>
<td>-</td>
</tr>
<tr>
<td>Global environmental conservation activities</td>
<td>17.5 (6.16)</td>
<td>-</td>
</tr>
<tr>
<td>Energy consumption from railway business activities</td>
<td>49.5 billion</td>
<td>-</td>
</tr>
<tr>
<td>Electricity used for railway operations per unit of transport volume</td>
<td>960 (10.24)</td>
<td>-</td>
</tr>
<tr>
<td>Energy consumption per unit of floor area at branch offices, etc.</td>
<td>0.0339 kWh/m²</td>
<td>-</td>
</tr>
<tr>
<td>Recycling rate for waste generated at stations and on trains</td>
<td>93%</td>
<td>-</td>
</tr>
<tr>
<td>Recycling rate for waste generated at General Rolling Stock Centers, etc.</td>
<td>96%</td>
<td>-</td>
</tr>
<tr>
<td>Recycling rate for waste generated in construction projects</td>
<td>94%</td>
<td>-</td>
</tr>
<tr>
<td>Environmental management</td>
<td>0 (0.03)</td>
<td>-</td>
</tr>
<tr>
<td>Environmental research &amp; development</td>
<td>1.78 (1.70)</td>
<td>-</td>
</tr>
<tr>
<td>Social activities</td>
<td>0.030 (0.03)</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>20.51 (13.47)</td>
<td>15.20 (12.02)</td>
</tr>
</tbody>
</table>

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"
  "Environmental research & development = Research & development"
  "Environmental management = Environmental management"
  "Environmental communication = Environmental communication"

[ Environmental Accounting and Environmental Management Indicators ]

<table>
<thead>
<tr>
<th>Environmental Impact</th>
<th>Economic Value Added (EV)</th>
<th>Environmental Management Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO₂ emissions (t/CO₂)</td>
<td>5.27</td>
<td>CO₂ emissions (t/CO₂)</td>
</tr>
<tr>
<td>Operating profit (million yen)</td>
<td>985 (79,674)</td>
<td>Operating profit (million yen)</td>
</tr>
</tbody>
</table>

[ JR East’s Environmental Management Indicators ]

<table>
<thead>
<tr>
<th>YR (Base year)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013 (base year)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

[ JR East Group’s renewable energy initiatives ]

- Implementing and enhancing hydrogen stations
- Developing trial fuel cell railcars
- Introducing fuel cell buses and vehicles
- High-efficiency equipment
- Eco-station model stations
- Energy-saving rolling stock
- Storing (Energy storage, power storage, fuel storage)
Measures to Prevent Global Warming

Energy conservation and CO2 reduction

Railways are an environmentally friendly mode of transportation that accounts for a low share of the total CO2 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.

[CO2 emissions per transportation amount (FY2018 passengers)]

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 CO2 Emissions of JR East

Our CO2 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 CO2 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 CO2 emissions in Scope 1 and 2 in accordance with the definition of the GHG Protocol. We are moving forward with activities to reduce all CO2 emissions resulting from our business activities by calculating CO2 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 CO2 emission

Sath of Scope 1, 2, and 3 which is the CO2 emissions resulting from the whole organization activities of business operations such as raw material procurement, production, capital investment goods, business trips, commuting and others.

Emission Volume

<table>
<thead>
<tr>
<th>FY2019 Emission Volume</th>
<th>CO2 discharged by the other companies which are related to our business activities</th>
<th>4.59 million tons CO2</th>
<th>12.6 million tons CO2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 1</td>
<td>1.2 million tons CO2 per million passengers</td>
<td>0.3497 million t-CO2</td>
<td>0.0486 million t-CO2</td>
</tr>
<tr>
<td>Scope 2</td>
<td>1.0 million tons CO2 per million passengers</td>
<td>0.4250 million t-CO2</td>
<td>0.0413 million t-CO2</td>
</tr>
<tr>
<td>FY2019 CO2 emission factor (kg-CO2/kWh)</td>
<td>0.2926 (kg-CO2/kWh)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

[Composition of energy consumption by JR East]

[Energy conservation]

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

[Hydraulic power generated by JR East]

The energy consumption is calculated by the method specified in the Act on Promotion of Global Warming Countermeasures. However, the CO2 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 CO2 emissions in the FY2019 calculation were based on actual emission coefficients of 2.10 kg CO2/3.05 GWh.

Calculating method

CO2 emissions from the thermal power plant of JR East are calculated based on the method stipulated in the Energy Saving Act. CO2 emissions from the electricity purchased by JR East are calculated based on the method stipulated in the GHG Protocol.

Emission factor adjusted in FY2019 was 0.2926 (kg-CO2/kWh).

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 CO2 emissions. Unit 1 is currently undergoing construction that will update its fuel from kerosene to natural gas, targeting operation in 2021.

*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.
Diesel-powered, electric-motor-driven hybrid railcars and the accumulator railcar train

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 CO₂ 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.

Promotion of proactively adopting LED lighting for all new cars

On our conventional lines, LED lighting has been introduced on newly 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.

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 Hajima 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 Kasa-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 Fukujiga 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 Shizukuishicho, 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 Minehana Wind Power Generation Station (output: approximately 5 MW). Going forward, we will continue to actively introduce and use renewable energy.

![Diagram of power storage system, regenerative inverter system, and railway static power conditioner (RPC)](image-url)

![Diagram of renewable energy sources and power generation stations](image-url)
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.

We are aiming to reduce CO₂ emissions by approximately 1.6 million tons in the fiscal year 2018/19, and through the implementation of energy conservation measures at all our facilities, we aim to achieve a 2% reduction in FY2023.

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 CO₂ 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 CO₂ 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.

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

Example of BEMS screen

TOP LEVEL OFFICES
Sapia Tower, JR Shinagawa East Building, GranTokyo South Tower, GranTokyo North Tower, JR Tower, JR Minato Shinjuku Building, JR Tokyo Meguro Building

TOP LEVEL OFFICES
Sapia Tower, JR Shinagawa East Building, GranTokyo South Tower, GranTokyo North Tower, JR Tower, JR Minato Shinjuku Building, JR Tokyo Meguro Building

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 CO₂ 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 Shitite Branch Line, and the Nambu Line (between Shitite 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.

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

Coordinated Hydrogen-Powered Train and Automobile Mobility (Future Vision)

■Collaboration with Toyota Motor Corporation

Introducing hydrogen vehicular systems to develop the environment required for the trials.

Fuel cell control technology and identifying technological development items relating to ground installations.
Sustainability Report 2019

Safety
Society
Environment
Governance

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 from the system with the aim to support its future implementation in the railway sector.

Slimming Down Transformer Substations Utilizing Regenerative Power Storage Systems

By replacing the equipment located at substations with regenerative power storage systems, we are aiming to economize maintenance manpower by slimming down substations 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.

Progress of Environmental Conservation Activities at Each Workplace

As part of our energy and environmental 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 downsloping 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.

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.

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 workplace, developing leaders through environmental education, and sharing recognition of outstanding environmental efforts through the presentation of awards.

Grass-Roots Eco Activities

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 employee’s awareness of environmental issues, I am working to implement eco activities at the grass-roots level.
Environmental & Training System

For effective environmental management, it is essential that all employees have appropriate knowledge on environmental issues. We provide environmental education 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 head 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

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.

Internal Environmental Audits

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

<table>
<thead>
<tr>
<th>[ISO14001-certified facilities]</th>
<th>Year and month of certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaminokawa Thermal Power Plant</td>
<td>Mar-01</td>
</tr>
<tr>
<td>Tokyo General Rolling Stock Center</td>
<td>Mar-01</td>
</tr>
<tr>
<td>Oita General Rolling Stock Center</td>
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<td>Shinkansen Center</td>
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<td>Komatsuna General Rolling Stock Center</td>
<td>Dec-03</td>
</tr>
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<td>Nagoya General Rolling Stock Center</td>
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<td>Akita General Rolling Stock Center</td>
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</table>

<table>
<thead>
<tr>
<th>[Certified facilities]</th>
<th>[Year and month of certification]</th>
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<tbody>
<tr>
<td>East Japan Eco Access Co., Ltd., CK headquarters</td>
<td>Nov-99</td>
</tr>
<tr>
<td>Nippon Restaurant Enterprise Co., Ltd. (K. headquarters)</td>
<td>Sep-02</td>
</tr>
<tr>
<td>JR East Machinery Co., Ltd.</td>
<td>Mar-08</td>
</tr>
<tr>
<td>East Japan Marketing &amp; Communications, Inc.</td>
<td>Aug-08</td>
</tr>
<tr>
<td>Japan Transport Engineering Company</td>
<td>Oct-14</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>[Waste from stations and trains]</th>
<th>[Amount recycled]</th>
<th>[Amount processed]</th>
<th>[Recycle rate (%)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
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<tr>
<td>2019</td>
<td>34</td>
<td>33</td>
<td>100%</td>
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</table>

Recycling waste 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 stationary and used in our offices.

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%)”

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.

<table>
<thead>
<tr>
<th>[Waste from General Rolling Stock Centers]</th>
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<th>[Amount processed]</th>
<th>[Recycle rate (%)]</th>
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Environmental Communication

Delivering lectures on request 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.
■ 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.*1
*Work entrusted to JR East: Construction work contracted to JR East by local governments etc., to be done at nonJR 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.

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 every 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 conflict that uses entire bananas including peels.

■ 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, Ekinake 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 conventional 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

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 Park waste, it has been possible to improve recycling efficiency for food waste generated by the lifestyle services business, including station buildings and Ekinake shopping complexes in the Tokyo metropolitan area. The recycling rate 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 dedicating our efforts to further improving recycling efficiency, with the aim of achieving zero emissions.

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

■ 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 responsibility, considering 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

■ Food Waste Reduction Initiatives at Hotels

JR-East Hotels is also implementing the 3010 Movement, which encourages guests to eat all the food at balconies 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.
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-CO₂e 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 halogen-free or CFC substitutes. As of the end of March 2019, we were using 0.6 tons3 of CFCs and 67 tons3 of CFC substitutes. We routinely check for gas leaks, and collect the refrigerants when scraping retired railcars in accordance with applicable laws and regulations.

Fire-extinguishing agent—Although 65 tons3 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 CO₂) 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 FTR System.4

We have also been introducing stainless steel railcars that do not require painting. At the end of March 2019, as many as 86.5% 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.

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 Tsuchinami and Tomakami and Ojya 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 Nakanono City, Gunma Prefecture.

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.4 Today, planting has gone beyond the trackside and is done in cooperation with local communities.

Forest planting ceremony in Hiraoka No. 1 railway forest (October 2018)

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 5.6 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 CO₂ equivalent to 0.7% of the CO₂ that JR East emits (this is the actual amount in FY2019). In this way, they also contribute to preserving the environment.

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Forest planting ceremony in Hiraoka No. 1 railway forest (October 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-absorbing 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.

Measures for conventional lines

We have implemented measures for conventional lines to minimize noise, such as installation of long rails*, 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.

- 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.

- 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.

*1 Rail grinding
  A measure to smooth out uneven places in rails caused by wheel movement. This reduces noise by controlling rail vibration.

*2 Micro-pressure waves in tunnels
  An explosive sound caused by forced air compression.

E5 Series trains have low-noise pantographs.
**Audits by Corporate Auditors, Internal Audits and Status of Accounting Audits**

With respect to the role 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 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.

**Audits by Corporate Auditors**

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)**

To enhance the governance and the reliability for the local community and society

Corporate & Legal Strategies Dept. (Head Office)

- **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.

**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 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**

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**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.
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 all employees, JR East have provided "Compliance education for all group employees" annually. Taking into account recent complex situations, 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 to 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' external 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 Danai power plants in Ojiya and Tokamachi Cities, Niigata Prefecture). The sanction was issued in accordance with the River Act and 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 co-existence 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

- Tokyo branch office
- Yokohama branch office
- Hitachi branch office
- Omiya branch office
- Takasaki branch office
- Mito branch office
- Chiba branch office
- Sendai branch office
- Morioka branch office
- Aizuwakamatsu branch office
- Niigata branch office
- Nagano branch office
- Tochigi branch office
- Shinagawa branch office
- Conventional lines converted through Shinkansen service
- Lines of other JR companies

As of September 2019

Passenger line network
- Shinkansen: 1,194.3 km
- Conventional lines: 6,207.5 km
- 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)

Businesses of the JR East Group (as of September 1, 2019)

- Transportation services
  - JR East Company Limited / JR East Kanto Co., Ltd. / JR East Tohoku Co., Ltd. / JR East Chubu Central Co., Ltd.
  - JR East Transportation Services Co., Ltd. / JR East TESSEI Co., Ltd. / JR East Transportation Services Co., Ltd. / JR East Transportation Services Co., Ltd. / JR East Transportation Services Co., Ltd. / JR East Transportation Services Co., Ltd.

- Real estate-business hotel operations
  - JR East Building Co., Ltd.

- Office operations
  - JR East Building Co., Ltd.

- Hotel operations
  - JR East Building Co., Ltd.

- Retail shop and restaurant businesses
  - JR East Food Co., Ltd. / JR East Tohoku Food Co., Ltd. / JR East Tohoku Services Co., Ltd. / JR East Tohoku Service Co., Ltd. / JR East Tohoku 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 Travel Service Co., Ltd. / JR East Travel Service Co., Ltd.

- Sports and leisure businesses
  - JR East Sports Co., Ltd. / GANA YURAWA Co., Ltd.

- Real estate management
  - JR East Urban Development Corporation

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-Suga, and information processing business.

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.
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 (GSSB) GRI Sustainability Reporting Standards 2019 (*G2031 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 concluded 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 TSEAS 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, 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.
- Inspecting 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 reconciling 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 conflict with 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 prescribed on fundamental principles of independence, 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 Asia Sustainability Co., Ltd.
Tokyo, Japan
December 13, 2019

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### Total number of new employees and resignees (Regular employees only)

<table>
<thead>
<tr>
<th>Year</th>
<th>New Employees</th>
<th>Resignees</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2017</td>
<td>1,420</td>
<td>3,392</td>
</tr>
<tr>
<td>FY2018</td>
<td>1,292</td>
<td>3,342</td>
</tr>
<tr>
<td>FY2019</td>
<td>1,302</td>
<td>3,762</td>
</tr>
</tbody>
</table>

### Year by year age group

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2017</td>
<td>1,108</td>
<td>1,156</td>
</tr>
<tr>
<td>FY2018</td>
<td>1,137</td>
<td>1,168</td>
</tr>
<tr>
<td>FY2019</td>
<td>1,150</td>
<td>1,168</td>
</tr>
</tbody>
</table>

### Average annual training time per employee

<table>
<thead>
<tr>
<th>Time</th>
<th>FY2017</th>
<th>FY2018</th>
<th>FY2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours</td>
<td>57.75</td>
<td>56.45</td>
<td>54.45</td>
</tr>
</tbody>
</table>

### Number of employees by area and gender (As of April 1, 2019)

<table>
<thead>
<tr>
<th>Area</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headquarters</td>
<td>115</td>
<td>115</td>
</tr>
<tr>
<td>Tokyo Branch Office</td>
<td>438</td>
<td>490</td>
</tr>
<tr>
<td>Osaka Branch Office</td>
<td>365</td>
<td>385</td>
</tr>
<tr>
<td>Kyushu Branch Office</td>
<td>127</td>
<td>139</td>
</tr>
<tr>
<td>Tohoku Branch Office</td>
<td>115</td>
<td>124</td>
</tr>
<tr>
<td>Fukui Branch Office</td>
<td>76</td>
<td>86</td>
</tr>
<tr>
<td>Okayama Branch Office</td>
<td>36</td>
<td>59</td>
</tr>
<tr>
<td>Nagoya Branch Office</td>
<td>76</td>
<td>97</td>
</tr>
<tr>
<td>Kansai Region Headquarters</td>
<td>75</td>
<td>92</td>
</tr>
<tr>
<td>Tokyo Construction Office</td>
<td>62</td>
<td>69</td>
</tr>
<tr>
<td>Nippon Express Holdings</td>
<td>833</td>
<td>938</td>
</tr>
<tr>
<td>Nippon Branch Office</td>
<td>17</td>
<td>42</td>
</tr>
<tr>
<td>Tokyo Construction Office</td>
<td>77</td>
<td>32</td>
</tr>
</tbody>
</table>

### Ratio of employees eligible for collective bargaining agreements (as of April 1, 2019)

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of female employees</th>
<th>Number of employees</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>44,454</td>
<td>124,424</td>
<td>0.35%</td>
</tr>
<tr>
<td>2018</td>
<td>44,854</td>
<td>124,244</td>
<td>0.36%</td>
</tr>
<tr>
<td>2019</td>
<td>43,196</td>
<td>124,111</td>
<td>0.35%</td>
</tr>
</tbody>
</table>
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.

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

Customer-oriented

Close to regional society

Autonomous and self-standing

JR East Group’s development

- By pursuing ultimate safety levels, we will offer a peace of mind to our customers.
- We will offer quality services to rise to the expectations of our customers.
- By utilizing our network capabilities, we will contribute to the development of regional society.
- With a broad perspective and willingness to confront challenges, we will think and act on our own initiative.
- 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
3-2, Youngi 2-chome,
Shibuya-ku, Tokyo, Japan
Established
April 1, 1987
Capital
200 billion yen
Number of employees
5,320 (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.

The report includes 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.

Information disclosure diagram

- ESG information
- Financial Information