

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 restricts the use of such substances and adopts 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 HCFC or CFC substitutes. As of the end of March 2019 we were using 0.6 tons* of CFCs and 87 tons* of CFC substitutes. We routinely check for gas leaks, and collect the refrigerants when scrapping retired railcars in accordance with applicable laws and regulations.
- **Fire-extinguishing agent**—Although 65 tons* of halon gas was still in use as a fire-extinguishing agent as of the end of March 2019, we have it under proper control and are replacing it with non-halon agents (such as powder agents and 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 PRTR System*.

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

*PRTR system

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

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

Chemical substance	Handled	Released into air	Transferred into sewerage	Transferred to other facilities
1,2,4-Trimethylbenzene	69133.3	12374.9	0.0	166.1
Ethyl benzene	1056.3	1100.0	0.0	0.0
Xylene	56114.7	6394.3	0.0	126.0
Toluene	14050.1	5310.0	0.0	85.1
Nickel	4699.5	0.0	0.0	0.0
n-Hexane	2641.0	290.0	0.0	0.0
Methylnaphthalene	44545.9	222.7	0.0	0.0
1,3,5-trimethylbenzene	2895.0	2900.0	0.0	0.0
Chrome and trivalent chrome compounds	1247.9	0.0	0.0	25.0
Molybdenum and its compounds	1400.1	5.2	0.0	0.0
Total	197783.8	28597.1	0.0	402.2

Management of PCBs (polychlorinated biphenyls)

Equipment containing PCBs is securely stored in exclusive storage locations and reports on it are filed as required by the Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes. We render this equipment harmless to the extent that can be done by PCB waste treatment facilities. In FY2019, we had equipment such as stabilizers, transformers and capacitors treated for PCB waste.

Environmental Conservation Activities

Biodiversity

Hometown Forestation Program

In 2004, in order to protect biodiversity and contribute to a sustainable society, while cherishing our sense of gratitude for nature, we began the Hometown Forestation Programs to plant trees native to each region and revitalize the forests. We undertook these programs with the cooperation of Fukushima Prefecture from 2004 to 2009 and with the cooperation of Niigata Prefecture, the town of Tsunanmachi and Tokamachi and Ojiya Cities in the prefecture from 2010 to 2014, and in Osaki City, Miyagi Prefecture, from 2016 to 2018. In FY2020, we will start the Shima Hometown Forestation Program in Nakanojo City, Gunma Prefecture.



Naruko Hometown Forestation Program hosted in 2018

Forest development along railway lines*

Beginning in 1992, we have been organizing tree planting activities along JR East railway lines. By FY2019 a total of approximately 51 thousand people had participated in planting about 352 thousand trees*. Today, planting has gone beyond the trackside and is done in cooperation with local communities.

*The number of trees includes flower seedlings

Development of railway trees

Along some railways, we have planted railway trees to shield the tracks from blowing snow and wind. The first railway trees were created in 1893 for disaster prevention. As living disaster prevention facilities, railway forests are playing their role. JR East now owns approximately 5.8 million railway trees on a total of about 3,900 hectares along our lines at approximately 1,080 locations. The trees absorb 15,000 tons of 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.

In 2008, after fundamentally reviewing the role of railway trees from the viewpoints of both disaster prevention and environmental preservation, we launched a new project to plant trees to replace those that will require replacement over the coming 20 years.



Sashimaki No.1 railway forest on the Tazawako Line (forest to protect against blizzards)

Planting new railway trees

Ceremonies for the planting of new railway trees have been held in various locations, as shown in the table below, starting with the Kakizaki No. 1 railway forest in September 2008. During these ceremonies, native tree species were planted, with many local residents participating.

[Past Tree Planting Ceremonies]

Date	Location
September 2008	Shin-etsu Main Line, Kakizaki No. 1 railway forest
July 2009	Okitama No. 2 railway forest
May 2010	Ōu Main Line, Jinguji No. 2 railway forest
September 2012	Tazawako Line, Ōkama No. 1 railway forest
September 2013	Ōu Main Line, Sekine No. 1 railway forest
September 2014	Uetsu Main Line, Hirakida No. 3 railway forest
September 2015	Ōu Main Line, Kado No. 6 railway forest
September 2016	Tazawako Line, Akabuchi No. 1 railway forest
September 2017	Banestsu-Sai Line, Nakayamajuku No. 6 railway forest
September 2018	Uetsu Main Line, Hirakida No. 1 railway forest



Tree planting ceremony for Hirakida No. 1 railway forest on the Uetsu Main Line (September 2018)

Basic thoughts on noise reduction

In the operation of trains, noise is created by the train cars moving through the air, by the wheels travelling on the rails, by the motors, and by other sources. In order to reduce noise, we are working in various ways to improve both the trains and our ground equipment.

JR East also endeavors to reduce noise during maintenance work on track and structures to further improve the lineside environment.

Measures for the Shinkansen

In accordance with the Japanese government's Environmental Quality Standards for Shinkansen Superexpress Railway Noise, JR East has taken many steps to reduce this noise, such as with the installation of soundproof walls and sound-absorbent materials, rail grinding*1 and the modification of our railcars to operate more quietly. We have already completed the implementation of measures to reduce noise levels to 75dB or lower in densely populated residential areas along our railway lines. At present, we plan countermeasure construction for the other areas in incremental steps. Also, based on the knowledge gained from running tests using the Shinkansen "FASTECH" test train, JR East is working to improve the environment even as we increase train speed, including further reduction of noise and micro-pressure waves in tunnels*2.

*1 Rail grinding
A measure to smooth out uneven places in rails caused by wheel movement. This reduces noise by controlling car vibration.
*2 Micro-pressure waves in tunnels
An explosive sound caused by forced air compression.



E5 Series trains have low-noise pantographs

Measures for conventional lines

We have implemented measures for conventional lines to minimize noise, such as installation of long rails*1, rail-grinding and wheel-truing*2. We also comply with the Japanese government's Policy on Noise Measures for Construction of New Conventional Railways or Large-Scale Remodeling when we engage in this kind of construction or modification of our conventional lines.

*1 Installing long rails
Rail joints are welded such that the length of a single rail becomes more than 200 meters. With fewer rail joints, these rails reduce noise produced at joints when trains pass.
*2 Wheel truing
A measure to grind the unevenness of wheels caused by wear, to restore their circular shape.

Measures for maintenance work

As maintenance work is usually done during the night, we give advance notice to residents in surrounding areas about the schedule and details of the work. We also make utmost efforts to minimize noise by using modified equipment that produces lower noise. Furthermore, by using a track that is designed to resist deformation, JR East is reducing the volume of required maintenance work.

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Corporate Governance

Basic Corporate Governance Philosophy of JR East

To achieve the sustained business growth and to improve its medium-to long-term corporate value, JR East pursues achievement of the ultimate in safety to enhance reliability for customers and to create a spiritually affluent life for people as our business so that the expectations of all our stakeholders including shareholders, customers and local communities will be met by making transparent, fair, firm and timely decisions.

JR East has set "the Guidelines of Corporate Governance" which were developed by the Board of Directors as the material which shows the basic concept of our corporate governance and its concrete activities and presents it on our corporate website.

The Reasons Why JR East Adopted the Present Corporate Governance System

In the railway portion of our main business, since a variety of knowledge and experiments for security and decision-making based on mid-and long-term perspectives are necessary we, JR East, therefore, set up a board of auditors which is composed of auditors who are independent from the board of directors.

JR East governance system

Our Board of Directors consists of 13 members including three outside directors (as of June 21, 2019), and it generally meets monthly to decide statutory requirements and other key operational matters and to supervise overall operations. The Board of Directors has established an Executive Committee consisting of 10 directors and 12 senior executive officers. This Executive Committee generally meets once a week and deliberates on matters to be decided by the Board of Directors and other important management issues. In addition, the Group Strategy Formulation Committee consisting of 10 directors, 12 senior executive officers and 4 executive officers was formed with the aim of the development of all JR East groups, and meets as required to discuss important group issues such as management strategies for each business field.