

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)