

- Measures for dioxin generated at waste incinerators
- Harmonization with landscape
- Reducing the usage of herbicides
- Utilizing spring water in tunnels

JR East takes measures to create better environment along railway lines

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

Protecting and creating the environment along railway lines

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

In accordance with the Japanese government's Environmental Quality Standards for Shinkansen Railway Noise, JR East takes a variety of steps to reduce this noise, such as the installation of soundproof walls and sound-absorbent materials, rail grinding *1 and the modification of our railcars to operate more quietly. Although we have already completed the implementation of measures to reduce noise levels to 75 dB or lower in densely populated residential areas along our railway lines, we plan to take further steps by expanding the scope of areas where noise levels need to be reduced to 75 dB or lower. Based on the results obtained in the test runs of a prototype high-speed Shinkansen train, FASTECH, we are committed to establish a high-speed, eco-friendly Shinkansen technology that could reduce noise and micropressure wave in tunnels. *2



Test train "FASTECH" uses a low-noise single arm pantograph.

***1 Rail grinding**

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

***2 Micro-pressure wave in tunnels**

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

Measures to reduce noise along conventional lines

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

***3 Installing long rails**

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

***4 Wheel truing**

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

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

Measures to reduce noise during maintenance work

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

Commitment to railway trees

Protecting railway trees

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

Planting new railway trees

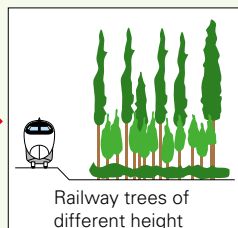
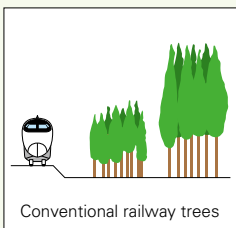
A ceremony of planting new railway trees between Sekine and Yonezawa on the Ou Main Line was held on July 4, 2007. The railway trees had been red pine trees to protect railway tracks from snowstorm but were damaged by pine weevil. To restore the functions, several varieties of native trees were planted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



Tree planting ceremony by professional engineers, including President Seino.

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

Column ● (Railway trees)



From single to multi-variety trees

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