

Environmental Initiatives

Basic Policy on Environmental Conservation Activities

Our basic principles and policies on environmental conservation activities were established by our Ecology Committee, which we established in 1999. After implementing various environmental conservation activities, we revised our basic principles and policies in 2008 to account for changes in the state of environmental issues.

Our railway business is the cornerstone of JR Kyushu. Trains are an energy-efficient, environmentally friendly way to travel and we have worked to make them even more so by adopting energy-saving train cars to achieve more efficient energy usage and reducing CO₂ emissions to combat global warming.

Pollutants that place a burden on the environment are properly managed and treated and we are working to recycle resources and reduce waste to further reduce our environmental footprint.

Basic Principle

The JR Kyushu Group will make concerted efforts to implement environmental conservation and thereby contribute to the creation of a sustainable society.

Basic Policies

1. By introducing environmental conservation technologies and using originality and ingenuity in relation to these, we will promote efficient energy use and strive to reduce CO₂ emissions, which are a cause of global warming.
2. We will not only promote waste reduction and recycling and strive for efficient use of resources but also manage and dispose of environmental pollutants appropriately.
3. We will strive to provide safe and comfortable transportation so that even more customers can use environmentally friendly railways.

Environmental Management System

The JR Kyushu Group has constructed an environmental management system for the implementation of environmental conservation activities.

In March 1999, in order to continuously implement environmental conservation measures, we established the Ecology Committee, which is chaired by the president, as a body to deliberate and decide on necessary matters including the basic policies. In the committee, four special sub-committees have been established as bodies for planning, mainly implementation programs, target setting, results reporting, and activity promotion for various environmental issues.

In addition, in April 2019 we revised the system, changing the membership of the committee and starting participation by JR Kyushu Group companies in the sub-committees. Moving forward, we will announce group-wide themes regarding environmental conversation and work to further strengthen collaboration.

Ecology Committee Organizational Chart



ISO14001 Certification

The Kokura Rolling Stock Center has obtained ISO14001, an international certification for environmental management systems.

Three companies in the JR Kyushu Group have also obtained this certification (one as an affiliate of the Kokura Rolling Stock Center).



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Environmental Initiatives

Setting Numerical Targets to Combat Global Warming

In September 2015, we formulated the JR Kyushu Low-Carbon Society Action Plan as a set of new voluntary targets to combat global warming.

JR Kyushu Low-Carbon Society Action Plan

In the railway division, we intend to achieve the following two targets by the fiscal year ending March 2031

- 1) Increase the rate of introduction of energy-saving train cars to 83%.
- 2) Reduce unit energy consumption to 2.5% below the level in the fiscal year ended March 2012.

Please note that, in accordance with such factors as future changes in the transportation system, we will revise these targets as necessary.

Introduction of energy-saving train cars

The introduction of energy-saving train cars is an initiative that JR Kyushu has been constantly implementing since its establishment. For our electric trains, we have been introducing cars that incorporate lightweight car bodies made of stainless steel and aluminum as well as VVVF inverters and regeneration brakes that use electricity efficiently. Meanwhile, for our diesel trains, we have been introducing cars equipped with high-efficiency engines that require less fuel consumption, and we have also been replacing the engines in our existing diesel trains with high-efficiency engines. Noteworthy is the fact that all Kyushu Shinkansen cars are energy-saving train cars.

In the fiscal year ended March 2020, we produced 12 new energy-saving train cars: six in the new YC1 series diesel-electric rolling stock equipped with a storage battery and 6 in the 821series AC suburban-type rolling stock. Energy-saving train cars accounted for 79.2% of our total rolling stock as of the fiscal year ended March 2020.

821 series AC suburban-type rolling stock

This series includes a main circuit system that utilizes full SiC technologies in order to reduce the environmental burden. In comparison with the existing 415 series rolling stock, electricity consumption has been reduced by about 70%.

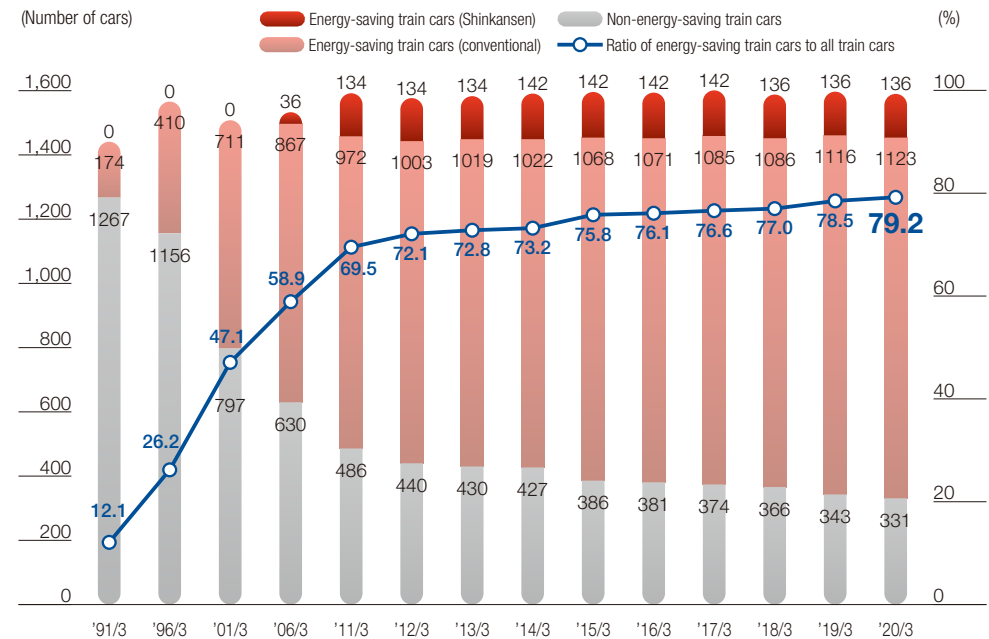


YC1 series diesel-electric rolling stock equipped with storage battery

In this series, the regenerative power created during braking is used to charge the storage battery, and then utilized during acceleration, providing the advantage of effective use of energy. In comparison with existing diesel trains (KIHA66/67 series), fuel consumption has been reduced by about 20%.

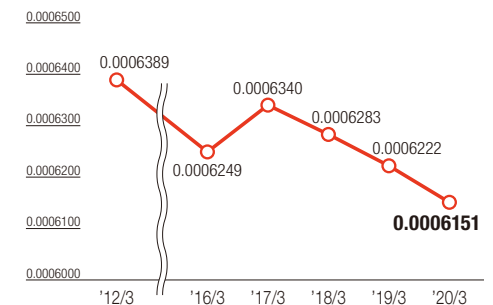


Number and Percentage of Energy-Saving Train Cars



Unit energy consumption

In the fiscal year ended March 2020, our unit energy consumption was 3.7% lower than in the fiscal year ended March 2012—meeting our numerical target—as a result of initiatives such as the introduction of energy-saving train cars and LED facilities. We will continue to improve on the efficiency of our business activities through a variety of energy-saving initiatives in future.



*Unit energy consumption = energy consumption (electricity, fuel, etc.)/car-kilometers

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Environmental Initiatives

Initiatives to Prevent Global Warming

Introduction of new power interchanging device in the Shin-Miyama feeder station

In November 2019, the first power interchanging device on our Shinkansen line was introduced in the Shin-Miyama feeder station. Introducing this device enables flexible interchanging of power. The regenerative power created when the train decelerates is used to run the train in areas where power is supplied from a different transformation station, enabling effective use of power. Introducing this device is expected to enable around 3% of the Kyushu Shinkansen's energy to be used more effectively.



Acquisition of BELS and ZEB at employee training center

Our employee training center is currently being rebuilt. To make it more environmentally friendly, we have used a ZEB Ready building that reduces energy consumption by 57% and received certification under the Building-Housing Energy-efficiency Labeling System (BELS).



Use of solar power

JR Kyushu Electric System Company is operating a megasolar power generation business to harness renewable energy by making effective use of unused land. This enables us to sell power without emitting greenhouse gases. JR Kyushu Linen Co., Ltd. generates solar power on the roof of its factory.

Company name	Power station	Power estimated to be generated over 1 year
JR Kyushu Electric System	Miyakonojo Solar Power Station	Around 2.1 million kWh
	Kusu Solar Power Station	Around 2.4 million kWh
JR Kyushu Linen	Factory roof	Around 270,000 kWh



Tree planting

JR Kyushu Trading Co., Ltd. has formed the JR Kyushu Trading Mori Yunomae forestry agreement with the municipal government of Yunomae Town in Kumamoto Prefecture, along with local companies and other organizations. In accordance with this agreement, JR Kyushu Trading employees and 90 members of the community took part in a tree planting event, where they planted cedar seedlings. Caterpillar Kyushu Ltd. has also formed the Caterpillar Forest agreement for forestry creation and maintenance with the Nichinan City government as part of the Miyazaki prefectural government's company forest system. JR Kyushu Resort Development Co., Ltd. received the Minister of the Environment Award for Excellent Contributors to the Natural Environment on Greenery Day in 2019 for initiatives such as working with environmental greening organizations on projects such as tree planting, environmental conservation, and awareness-raising.



Implementation of 3R initiatives

The JR Kyushu Group is helping to build a recycling society by implementing measures to make effective use of resources through the three Rs: reduce, reuse, recycle. As a part of this effort, we are working to reduce the volume of waste in construction by studying designs and methods for limiting waste as well as ways to reuse waste. In addition, we are working to reduce the materials used in construction and to introduce materials that make it possible to limit the volume of materials that are disposed of. Furthermore, the industrial waste that is generated is processed appropriately under the Waste Management and Public Cleansing Act.

Use of environmentally friendly materials

To address the issue of plastics in our seas, we are successively switching to more environmentally friendly materials.

- We have switched to biodegradable straws on board Seven Stars in Kyushu
- Straws used in the bar lounge of the Okuhita Onsen UMEHIBIKI inn are now made from locally grown cedar



- At Station Hotel Kokura, cards used by guests to indicate that they do not require their room to be cleaned are now made from Limex, an environmentally friendly limestone material, instead of plastic. The packaging film used for amenities is now made from a reusable sugarcane-based material.



Efficient facilities at THE BLOSSOM HAKATA Premier

In September 2019, we opened THE BLOSSOM HAKATA Premier. Energy is monitored and controlled from a central office to reduce energy consumption. Water conservation practices are also in place: water is reused, water-saving devices are installed on taps, and water-efficient equipment is used.



Initiatives for paperless practices and reduction of copy paper usage

We are working to make processes such as internal meetings paperless through measures such as using monitors and projectors and introducing an internal system to digitalize ledgers. We are also working to reduce the use of copy paper. The individual recognition feature of IC cards is used to visualize how much copy paper each department is using and measures are taken accordingly. 5.6% less copy paper was purchased in the fiscal year ended March 2020.



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Management of Chemical Substances

JR Kyushu appropriately manages and disposes of chemical substances that affect the environment in accordance with the relevant laws.

Initiatives under the PRTR Act

Chemical substances used in each area of our business are appropriately managed according to the PRTR Act (Act concerning Pollutant Release and Transfer Register). In the fiscal year ended March 2020, we reported information such as our emissions from organic solvents used to paint trains at our Kokura Rolling Stock Center and Kumamoto General Rolling Stock Center.

Emissions and transfer of chemical substances under the PRTR Act

Chemical substance	Emissions in the air	Transfer to groundwater	Transfer outside work site (unit: kg)
Asbestos	0.0	0.0	8,300.0
Ethylbenzene	1,500.0	0.0	0.0
Xylene	1,800.0	0.0	0.0
Styrene	4,700.0	0.0	0.0
Toluene	3,598.7	2.1	54.0
Methylnaphthalene	38.9	0.0	0.0
Total	11,637.6	2.1	8,354.0

Measures against CFCs

As CFCs are known to damage the ozone layer, we register any CFCs used at each of our locations and record filling and collection volumes when using or disposing of CFCs. All CFCs are appropriately managed. In accordance with the Act on Rational Use and Proper Management of Fluorocarbons that was enacted in April 2015, we are carrying out measures such as inspections to prevent CFC leakage. In the fiscal year ended March 2020, our total leakage of CFCs was 1,732t-CO₂, which we reported to the relevant minister in the Japanese government according to the on Rational Use and Proper Management of Fluorocarbons.

Management of PCB waste

PCBs (polychlorinated biphenyls) were previously used as insulating oils for our rolling stock and electrical facilities, but we have now switched to non-PCB oils by phasing out or redesigning older trains and facilities. Waste from used PCBs is managed according to the relevant laws and regulations.

We now use mineral oil as our insulating oil. As equipment without zero PCB certification may contain traces of PCBs in its insulating oil, we are analyzing PCB in the oil, storing the oil appropriately, and successively disposing of it.

The Environmental Footprint of JR Kyushu

INPUT

Resource input

Energy usage

Crude oil converted	182,000 kℓ
Electricity	646,022,000 kWh
(Electricity for railway division only: 626,699,000 kWh)	
Gas	434,000 m ³
Other fuels	15,000 kℓ

Resource usage

Water	765,000 m ³
(2,455,000 m ³ for the whole JR Kyushu Group)	
Copy paper (converted to A4)	46,683,000 sheets

OUTPUT

Environmental footprint

CO₂ emissions generated by energy consumption

251,000 t-CO ₂
(Emissions for railway division only: 244,000 t-CO ₂)