

Highlights

JR East's responsibility to the global environment

JR East recognizes the magnitude of the impact of our business activities on the global environment, and is committed to environmental conservation. Here, we outline the direction that we plan to take, and comments by Professor Fumihiko Nakamura of Yokohama National University, an expert on urban transportation planning.

Evaluating railways in an age when global environmental issues have come to light

In 2004 and 2005, we held dialogues with our stakeholders on the theme of "Railways and A Sustainable Society," in order to learn the views of outside experts.

Most of those participating in the dialogues told us that, "in the future, railways will come to play an even greater role in society, and that is why we have high expectations of JR East."

Against a background of such a view, there is the issue of global warming. It is predicted that the excessive accumulation of CO₂ and other greenhouse gases in the Earth's atmosphere could cause the overall global temperature to rise by 2.0°C by 2028. A great number of scientists have presented a general view that a rise in the Earth's average temperature by 2.0°C would make it impossible to sustain our current economic activities, due to the collapse of the balance of the ecosystems on which humankind depends for its existence, as well as famines and other calamities on a global scale.

Travel is a very natural human activity, both for economic and recreational purposes. We realize, however, that as the issue of global warming becomes dire and prominent, people's choices among various modes of transportation have become an important matter. Specifically, we believe that many of the participants in our dialogues predicted that railways would play a greater role in the future, because they have recognized the need to choose railways as a means of transportation with lower CO₂ emissions.



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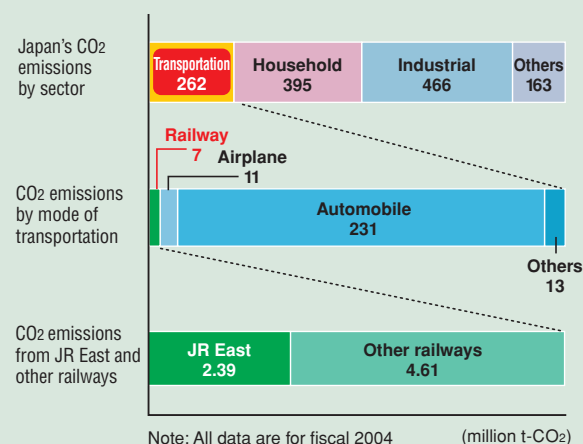
The environmental impact of JR East is not insignificant

JR East operates in the Kanto and Tohoku regions of Japan, as well as some parts of the Chubu and Hokuriku regions. Every day, we carry a total of 16 million passengers.

We account for about 30% of the CO₂ emissions of Japan's railway industry. Our annual consumption of electricity—used mostly to operate trains—amounted to 5.66 billion kWh in fiscal 2005. This is equivalent to the electricity consumed by 1,510,000 ordinary households. The amount of waste collected at our stations and on trains is equivalent to the household waste produced by 110,000 people.

In light of these facts, we recognize that our business activities have a significant impact on the global environment, and have been committed to environmental conservation.

CO₂ emissions in Japan and from JR East



Two approaches for promotion of ecological activities

We have two fundamental approaches to environmental conservation, which we list below.

(1) Creating a railway system with low environmental impacts

(2) Creating a user-friendly railway system

We call these our "two approaches for the promotion of ecological activities."

Our first approach, "creating a railway with low environmental impacts," refers to minimizing the environmental impact of our business activities. We act with the recognition that environmental conservation is a vital and unquestioned part of our social responsibility.

We continue to build and enhance our environmental management system by acquiring ISO 14001 certification at all six of our General Rolling Stock Centers, facilities that have particularly large environmental impact, by 2005.

Our greatest priority in our efforts to prevent global warming is the reduction of our train energy consumption, which accounts for 70% of all the energy we consume. As part of these efforts, we have been actively introducing new energy-efficient railcars that use about half the energy of conventional railcars. As of March 2006, more than 81% of our trains are energy-efficient ones, and we have succeeded in reducing our total train energy consumption, even though our transportation volume has increased.

We are also taking advantage of the power plants we own. We have been striving to utilize our hydroelectric plant effectively, and operate our thermal power plant more efficiently. As a result of these efforts, as of March 2006, CO₂ emissions per unit of electricity generated at our thermal power plant were 26% lower than fiscal 1990 levels.

Furthermore, we are promoting to recycle waste collected from our stations and trains by establishing our own recycling centers. In particular, newspapers and magazines

are recycled into office-use copy paper and paper used to produce a magazine for Shinkansen passengers.

Although we will never finish our efforts to reduce environmental impacts, our approach is to prioritize our actions, and achieve each of them in turn.

Approach to total optimization of transportation



Our second approach is “creating a user-friendly railway system.” Based on this, we strive to reduce the environmental impact of transportation as a whole by encouraging more people to use railways.

The data show that railways produce fewer CO₂ emissions per unit of transportation volume than other forms of transportation. For example, it has been found that the CO₂ emissions of a railway per person transported are one tenth those of an automobile. In order to maintain and improve the environmental advantage of railways, however, we must encourage more people to use railways. In order to do this, it is vital that we make railways more convenient.

In modern society, the mobility of an automobile makes it an essential form of transportation, but railways are said to be best suited for medium- and long-distance travel between fixed points, such as between cities.

We thus promote intermodal transportation using the optimum combination of transportation.

Our initiatives to improve the convenience at connection points between transportation facilities include our park-and-ride schemes, which provide parking spaces near train stations, and our sale of a product named “Rail & Rent-a-Car,” which offers smooth and inexpensive access to rental cars from train stations.

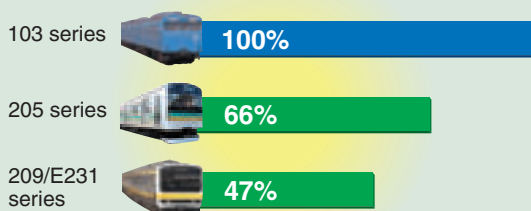
We are also committed to making railways themselves more convenient. Examples include the opening of the Shonan-Shinjuku Line, which connects the northern and southern Kanto region, and our transfer programs with other private railway lines.

We consider the maintenance and development of such railway networks to be a vital way to improve the convenience of rail transport as a whole—including other railway operators—and facilitate a modal shift by an optimum mix of forms of transportation.

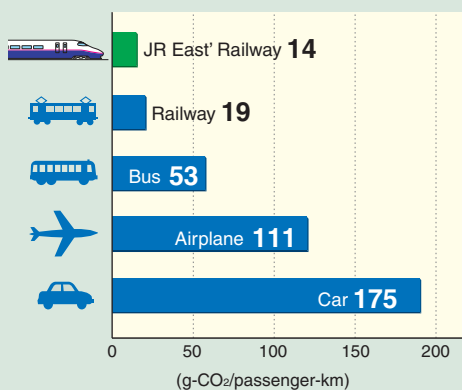
Our IC *Suica* fare-card has provided our customers with the convenience of enabling them to use our trains without purchasing tickets beforehand. In March 2007, for the purpose of achieving seamless travelling by various modes of transportation, we plan to allow passengers to interchangeably use our *Suica* and *PASMO*, a new IC fare-card issued by railway and bus companies in the Tokyo Metropolitan Area. We are committed to making our services more convenient.

Electricity consumption by train series

103 series train = 100%



CO₂ emissions by mode of transportation



Source: “Transportation and Environment,” Foundation for Promoting Personal Mobility and Ecological Transportation

Future directions



In order to further develop and promote these environmental-conservation initiatives, it is vital that we raise the environmental awareness among the employees of the JR East Group. We have just begun our JR East Eco Activities, with the aim of promoting grassroots activities in the workplace, so that every employee at every workplace will be able to think about environmental conservation, and come up with new ideas from their daily work. At the same time, we hope this initiative will spread to our Group companies, and lead to the development of new activities that feature independent efforts by each of them.

It is also essential for us to research and develop environmental technologies. We are currently developing a hybrid railcar that uses fuel cells, which is drawing attention as an energy-efficient technology. Although challenges lie ahead of us to enable its practical use, including fuel-cell performance and a way to supply hydrogen, we have taken the lead in developing this prototype railcar, in order for us to respond to future breakthroughs in fuel-cell technology.

The importance of expanding collaboration



One thing we have learned from our environmental initiatives is that broader collaboration with national and local governments, communities, and other companies is vital in order to tackle global environmental issues in a real way. For example, there are limits to how much we can do as a railway operator when it comes to building parking lots at stations, places that serve as hubs for transferring to other forms of transportation. For such a reason, the cooperation with local governments and others is essential for making the entire transportation system easier to use, including ensuring that other modes of transportation are available after train passengers leave stations. We thus believe that everyone involved must collaborate and share their knowledge in order to overcome environmental issues.

We are currently discussing measures to promote the use of public transportation as a whole in collaboration with the Management Council for the Promotion of Public Transportation established by the national government. We are committed to sharing our thoughts with a large number of our stakeholders and helping to create an environmentally-friendly, sustainable transportation system, through these discussions with the council, and by actively offering our own environmental information.



Views of professor Nakamura

1. Creating a railway with low environmental impacts

I would like to see your efforts to further promote sorting of waste collected from stations and trains include more categories, and recycle it more. I feel you should also seek to sell products at your station buildings that do not produce so much waste.

While I find your initiatives to prevent global warming including the active introduction of energy-efficient railcars to be commendable, I think that greater disclosure of information on environmental measures you are pursuing—even if you are only at the preliminary stages of examination— would make your commitments more visible.

2. Creating a user-friendly railway system

You state that railways' CO₂ emissions are one tenth those of automobiles, but there must be a difference between urban and rural areas. I hope you will study the ways to promote the use of railways in rural areas from an environmental perspective. For example, when the distance from a station to the next station is too long, and the nearest station is too far from home, community residents don't feel like using railways. I think you should consider building new stations between the existing ones, and increasing the number of available stations. I also think that efforts to attract people to

the stations themselves will be effective, for example by co-locating more stations with libraries and other public facilities.

If you are going to promote intermodal transportation, you may need to find ways to encourage people to stop using their family cars by making it more convenient for them to transfer between various modes of public-transportation in collaboration with other type of operators. An example of this would be actively posting route maps and guides in stations that include other railway and bus line networks.

I expect that encouraging the use of railways for tourism and other non-everyday travel will also facilitate a modal shift, such as by increasing the numbers of trains to tourist destinations with serious traffic congestion, and combining trains with tour buses.

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Prof. Nakamura is an expert on urban transportation planning. In addition to a wide range of public activities, including serving on the Planning Subcommittee of the Transportation Policy Advisory Council of the Ministry of Land, Infrastructure and Transport, he is also a member of the International Commission of the City Planning Institute of Japan. He participated in two past JR East Stakeholders' Dialogues.

