

Information disclosure based on TCFD/TNFD

Basic approach

Realizing that environmental protection is an important management task, we have formulated the JR-West Group Basic Environmental Policy under which we pursue increasingly deeper initiatives from a long-run perspective.

Protecting the global environment is an important management issue for the future continuity of our business, and we are working to understand the various climate change and nature-related risks and opportunities. We support the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and the Task Force on Nature-related Financial Disclosures (TNFD) and will proceed with appropriate disclosure and analysis of information on climate change and nature-related risks and opportunities.

These risks and opportunities, and the analysis thereof, focus on those areas comprising our core businesses: railways, sales of goods and food services, hotels, shopping centers, and real estate. With regard to nature-related risks and opportunities and their analysis, we narrowed down the scope of our targets based on the size of our business bases and the extent of their contact with natural capital during operations, and we focused on general depots (rolling stock factories where inspections, repairs, and modifications of railway vehicles are carried out). The details of the analysis are shown on pages 79 and 80.

Governance

The JR-West Group will contribute to the creation of a sustainable society, and we will pursue initiatives to protect the environment and allow us to grow sustainably in the long term. And to serve as the driving force behind these initiatives, we have established the Global Environment Committee, which is chaired by the president and comprises executive directors in charge of Head Office departments and general managers of the principal divisions. This committee generally meets twice annually to deliberate on the Group's

basic policy for global environmental protection and on the setting of medium- and long-term environmental targets and plans. It also monitors the progress of concrete initiatives aimed at achieving the plans and targets.

Items on the Global Environment Committee agenda are reported to and discussed by the Sustainability Committee, Group Management Committee, and Board of Directors as necessary.

Strategy

Climate change-related

Based on the impacts of climate change and socioeconomic scenarios in light of the situations presented by the IPCC (Intergovernmental Panel on Climate Change), the JR-West Group has analyzed the risks and opportunities that climate change represents to its entire business.

We are aware of such risks as the heightened costs accompanying the introduction of carbon pricing, and increased damage brought on by more frequent typhoons and floods. Conversely, the superior environmental characteristics of railway have been recognized, and it was found that the increased convenience offered by the spread of MaaS and other similar services also provides opportunities to increase railway use.

The details of the analysis are shown on pages 75 to 80. The analysis was conducted using a 1.5°C increase scenario (RCP¹ 1.9) and a 2°C increase scenario (RCP 2.6) in which society aggressively addresses climate change to prevent temperature rise; and a 4°C increase scenario (RCP 8.5) in which measures are insufficient to prevent a temperature rise. Note that the qualitative analysis is based on a 1.5°C increase scenario and a 2°C increase scenario.

The JR-West Group has formulated the JR-West Group Zero Carbon 2050 long-term environmental goals and has set the objective of achieving net-zero CO₂ emissions² for the entire Group by 2050. We have set interim goals of reducing emissions by 35% by fiscal 2026 and 50% by fiscal 2031 (both against fiscal 2014 levels). Additionally, we have set goals of a 60% reduction by fiscal 2036 and a 73% reduction by fiscal 2041 (both against fiscal 2014 levels).

Towards these goals, as environmental protection initiatives under our Long-Term Vision and Medium-Term Management Plan 2025, we are further improving energy savings by, for example, introducing energy-efficient railcars, adopting power made from renewable energy, and using renewable diesel. We are also striving to achieve a passenger modal shift by, for example, making trains and other public transportation more convenient through MaaS apps and publicizing the environmental friendliness of trains as

transport modes within and between cities. It is all part of collaborative efforts with regions and communities to achieve a decarbonized society.

Nature-related

We analyzed and evaluated the railway business, which is the majority of the mobility segment and which accounts for approximately 60% of the JR-West Group's revenue, in accordance with the LEAP (locate, evaluate, assess, prepare) approach advocated by the TNFD as an integrated approach to evaluating nature-related issues. Specifically, in order to clarify the scope of the study and the nature-related topics to be analyzed, we first used the ENCORE³ nature risk assessment tool to confirm the overall status of our railway business' dependence, and impact, upon nature. Of the identified items, we confirmed operational details that have a high point of contact with natural capital, focusing on items that are not subject to climate change causal analysis under the TCFD.

Our railway business is broadly comprised of train operation and equipment maintenance. As a result of narrowing down the scope of our analysis, we decided to focus on our general depots, which are the largest business base in terms of scale and, therefore, have the greatest dependency, and impact, upon natural capital, as well as use the most water.

Regarding dependence on natural capital in the operation of our general depots, we recognized a certain degree of dependence on water resources for washing parts, water supply, and other uses. However, when we assessed the water stress around our bases using the Aqueduct⁴ water risk assessment tool, we found that none of our general depots are located in areas with high water stress or risk of water depletion. Regarding the impact of our operations on natural capital, we recognize the risk of violating regulations and incurring liability for damages due to water and soil contamination caused by improper handling of wastewater and waste. However, we are taking steps, through our own ISO 14001-compliant environmental management system, to prevent environmental pollution, minimize damage if it does occur, and reduce our environmental impact.

We also learned that, through nature-conscious business, we can gain opportunities to deepen collaboration with local communities and expand sales of group company products and services that contribute to reducing environmental impact. The details of the analysis are shown on pages 79 and 80.

As a goal related to natural capital, the JR-West Group set a target for water usage per unit of consolidated sales, which indicates the efficiency of water use in business activities, to 6.5 m³/million yen or less by fiscal 2026. This target was achieved in fiscal 2024 through actions to reduce water usage, such as water-saving efforts by all employees, facilitated via water-related education, and the replacement of equipment with water-saving ones in each business department. We will continue to push efforts that contribute to the protection of natural capital in general, including biodiversity.

Moving forward, the JR-West Group will take appropriate measures to address the risks and opportunities it has identified, thereby working to improve corporate value in a sustained, long-term manner as a corporate group responsible for social infrastructure, while contributing to the realization of a sustainable society.

¹ RCP: Representative concentration pathways
² Scope 1 and Scope 2 emissions (consolidated)
³ ENCORE (exploring natural capital opportunities, risks and exposure): A TNFD presentation tool that visualizes the risks posed to business by dependence, and impact, upon nature and by environmental change.
⁴ Aqueduct: A TNFD presentation tool provided by the World Resources Institute (WRI) that can assess water-related risks, such as water stress and water depletion

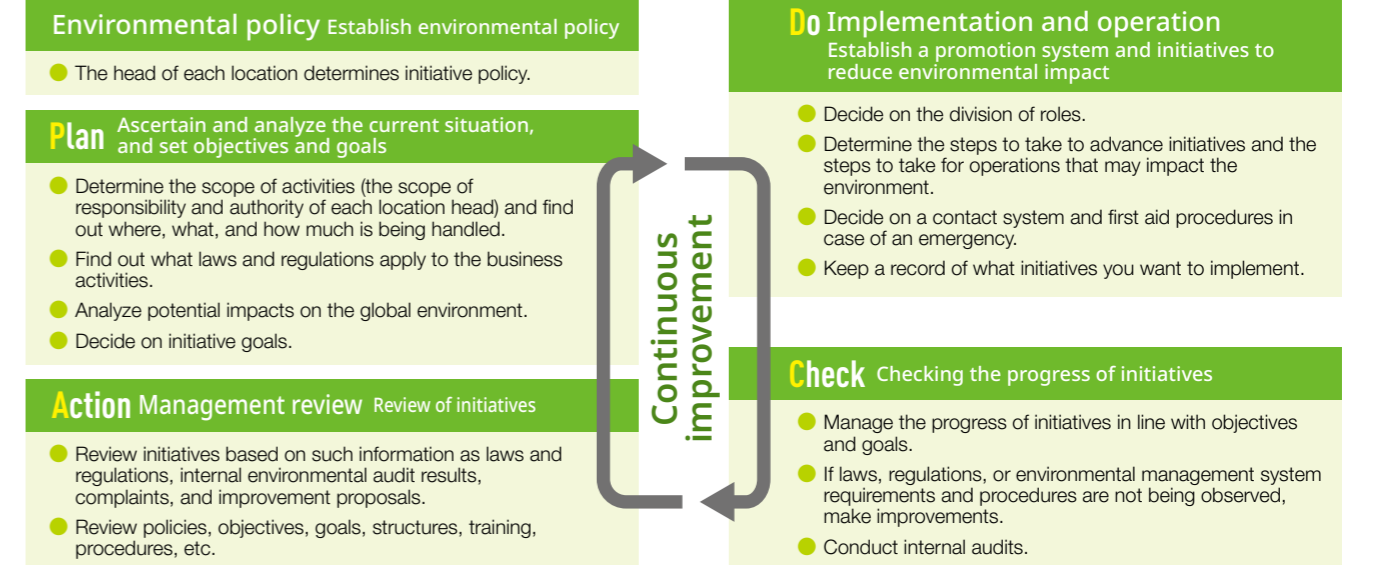
Railway business dependence, and impact, upon nature

Analysis using ENCORE

Within scope of TCFD analysis				Outside scope of TCFD analysis			
Dependence		Impact		Dependence		Impact	
Adjustment		Climate change		Supply		Contamination	
Climate adjustment	Flood protection	Erosion protection	GHG emissions	Ground-water	Surface water	Non-GHG air pollution	Life hindrance
Medium	Medium	High	High	Medium	Medium	High	High

Note: Identified with the July 2024 updated version. Only identified results of "medium" or higher are listed.

JR-West's ISO 14001-compliant environmental management system



Risk management

The JR-West Group will update the content of its analysis based on information such as changes in the business environment and the publication and update of a range of forecasts issued by public institutions in relation to climate change and nature-related risks and opportunities, along with measures to address them. Also, in meetings of the Global Environment Committee, we will also periodically deliberate on and monitor the content of the analysis and the state

of initiatives aimed at achieving environmental targets.

Content discussed by the Global Environment Committee is reported to and discussed by the Sustainability Committee, Group Management Committee, and Board of Directors as necessary, sharing and managing matters such as climate change-related risks as important issues for management.

Indices and goals

The JR-West Group has formulated the JR-West Group Zero Carbon 2050 long-term environmental goals and has set the objective of achieving net-zero CO₂ emissions for the entire Group by 2050. We have set interim goals of reducing emissions by 35% by fiscal 2026 and 50% by fiscal 2031 (both against fiscal 2014 levels). Additionally, we have set goals of a 60% reduction by fiscal 2036 and a 73% reduction by fiscal 2041 (both against fiscal 2014 levels).

We believe that this is a level that will result in Japan meeting the goals that it has set for CO₂ reduction and lead to the achievement of the targeted temperature increase of 1.5°C or less, or less than 2°C higher than that of the time of the

industrial revolution—the goal of the Paris Agreement.

With regard to water, which is the main natural capital related to our business activities, we have set a target for reduction of water usage per unit of consolidated sales, which indicates the efficiency of water use in our business activities, to 6.5 m³/million yen or less by fiscal 2026. Moving forward, we will continue to investigate what nature-related indicators and targets the Group should set, with reference to the disclosure indicators recommended by the TNFD.

The JR-West Group will contribute to the realization of a sustainable society by promoting efforts to reduce CO₂ emissions and protect natural capital.

Qualitative analysis of climate change-related risks and opportunities

Potential risks

*Sales of goods and food services; SC: shopping centers

Type	Risks to JR-West	Impact	Railways	Sales/food*	Hotels	SC*	Real estate	Response	
Risks associated with the transition to a decarbonized society (transition risks)	Policy and legal	Heightened costs accompanying the introduction of carbon pricing	Large	○	○	○	○	<ul style="list-style-type: none"> Promote energy-efficient rolling stock, energy-saving equipment, and energy-saving driving Use alternative fuels, switch electricity to renewable sources Transition to low-carbon equipment and facilities through the use of internal carbon pricing (5,000 yen/t-CO₂ as of Sept. 2025) Install energy-efficient equipment (high-efficiency air conditioners, LED lighting, water-saving equipment, etc.) Decrease the amount of electricity purchased from retail electricity providers by incorporating solar power from on-site PPAs and other means Reduce basic contract fees by managing demand values through cooperation with tenants Respond to growing green investment through sustainable finance 	
		Increased green investment brought on by emissions controls	Large	○	○	○	○	<ul style="list-style-type: none"> Control development costs through open innovation and joint development with other companies Use subsidy systems from the government and other organizations 	
		Increased development costs to support next-generation technology		○	○	○	○	<ul style="list-style-type: none"> Investment that takes environmental values into account using internal carbon pricing (5,000 yen/t-CO₂ as of Sept. 2025) 	
	Technology	Failed investment due to errors in assessing environmental values		○	○	○	○	<ul style="list-style-type: none"> Use alternative fuels Study sustainable modes of transportation that are environmentally appropriate for the region 	
		Increased costs for procuring fossil fuels		○	○	○	○	<ul style="list-style-type: none"> Control the cost of purchasing materials by updating equipment and reviewing facilities 	
		Increase in material prices due to suppliers passing on environmental costs through their pricing	Large	○	○	○	○	<ul style="list-style-type: none"> Promote energy-efficient rolling stock, energy-saving equipment, and energy-saving driving Establish in-house systems and methods to respond to power shortage warnings 	
	Market	Increase in electricity shortages caused by disturbances in the supply-demand balance associated with the electrification of society and the expanded use of renewable energy		○	○	○	○	<ul style="list-style-type: none"> Use subsidy systems from the government and other organizations (ZEH support project of the Sustainable Open Innovation Initiative, etc.) 	
		Increase in construction costs with the dissemination of ZEH and ZEB		○	○	○	○	<ul style="list-style-type: none"> Achieve smart, green transport by using MaaS in urban areas and intercity transportation Consider sustainable transport systems that are environmentally appropriate for the region, in consultation with the region concerned Pursue business (new store set-up, etc.) from the perspective of the environment and ethical consumption Expand EV parking spaces so EVs can coexist with public transportation Adopt environmentally friendly product planning, construction planning, and equipment specifications (use solar power systems, make rooftop gardens, make wooden apartment buildings fire-proof) Use environmentally friendly sales promotion tools in model homes (use posters and banners made of green materials, buy environmentally friendly equipment, switch to digital pamphlets, etc.) 	
		Increase in construction costs with the dissemination of ZEH and ZEB		○	○	○	○	<ul style="list-style-type: none"> Disclose information on the status of TCFD analysis and the JR-West Group Zero Carbon 2050 long-term environmental goals Conduct research on the development of social infrastructure through the Kyoto University Disaster Risk Management Engineering course (JR-West), and hold regular lectures for citizens, both funded by the company Acquire environmental certifications, such as DBJ Green Building Certification (Development Bank of Japan) and CASBEE, and publicize these Create environmentally friendly standard specifications Incorporate new technologies in collaboration with installation contractors 	
	Reputation	Growth of ethical consumption in society		○	○	○	○	<ul style="list-style-type: none"> Publish information on JR-West safety initiatives, including planned suspensions of operations Provide information to customers in a timely and appropriate manner when train operations are suspended 	
Decline in the environmental preeminence of railways due to the electrification of automobiles		Large	○	○	○	○	<ul style="list-style-type: none"> Initiatives mainly in the railway business Measures to prevent flooding of railway facilities <ul style="list-style-type: none"> Implement both facilities-based and operations-based measures to prevent flooding and relocate rolling stock at important facilities such as general depots, rolling stock holding facilities, signal equipment facilities, and control centers Weather disaster response system <ul style="list-style-type: none"> Introduce a weather disaster response system on major railway lines in the Kansai area to prepare for worsening weather disasters and minimize the risk of human error Deploy radar rainfall monitoring systems on all conventional railway lines to improve safety in the event of localized heavy rainfall Reinforcement measures of slopes on railway lines <ul style="list-style-type: none"> Reinforce sloping areas and establish drainage systems to improve safety and shorten times when operation is restricted, primarily in the Kyoto/Osaka/Kobe area Create slope disaster charts and utilize sensing technologies to understand slope deformation and enhance detection precision Strengthening of railway track equipment <ul style="list-style-type: none"> Improve train operations' safety and durability by replacing old wooden railroad ties with concrete ones Planned suspensions of operations <ul style="list-style-type: none"> Implement planned suspensions of operations, including relocation of rolling stock, as necessary when large typhoons approach or make landfall Appropriately provide information regarding planned suspension and resumption of operations Emergency response training 		
Negative effect on material procurement due to reduced ESG rating		Large	○	○	○	○	<ul style="list-style-type: none"> Initiatives common to all businesses Create a crisis management manual Ensure safe operation of business through proper shutdowns, and early or delayed openings or closings of stores Have BCP measures (supplies, BCP back-up power source, etc.) in place in new office buildings. Install emergency equipment (water and flood gates, etc.), have back-up power, install cubicles on higher building floors Collaborate with local government to offer usage of buildings with floors and cubicles that don't flood, and elevated water tanks, for use as regional evacuation shelters (e.g., Machiya Building, Yokohama Portside Building) Use hazard maps to minimize risks and boost market competitiveness (e.g., do not put apartments on the first floor of buildings in areas in danger of flooding) 		
Risks associated with the physical impact of climate change (physical risks)	Abnormal weather	Increased damage to railway facilities due to the increasing frequency of typhoons and floods	Large	○	○	○	○	<ul style="list-style-type: none"> Taking BCP into account, install emergency power generators at control centers in order to maintain function during power blackouts Establish in-house systems and methods to respond to power shortage warnings Deploy the N700S to the Tokaido and San'yo Shinkansen lines (Its onboard battery-based self-propulsion system allows us to help customers in the event of extended blackouts) 	
		More suspension of train operations and stoppage of business due to damage to railway facilities	Large	○	○	○	○	<ul style="list-style-type: none"> Ensure critical train-operation items have multiple supply sources and sufficient inventory on hand Pursue initiatives to mitigate damage to railway facilities (stated above) 	
		Increased disruption of train services and business operations due to power blackouts	Large	○	○	○	○	<ul style="list-style-type: none"> Green rooftops and building walls, adopt heat-insulating materials Improve air conditioning efficiency by introducing district heating and cooling systems Reduce energy consumption by installing high-efficiency air conditioners 	
	Working environment	Acute risks	Material shortages due to disruptions in supplier logistics		○	○	○	○	<ul style="list-style-type: none"> Expand measures to prevent damage from animals (install fences to keep deer from entering, develop sound equipment for repelling animals, improve vehicle obstruction guards, etc.)
			Increased damage insurance		○	○	○	○	<ul style="list-style-type: none"> Step up food hygiene
			Increased air conditioning costs due to rising temperatures		○	○	○	○	<ul style="list-style-type: none"> Measures to prevent heat stroke <ul style="list-style-type: none"> Prepare equipment to counter heatstroke, such as air-conditioned clothing, use the WBGT index, work in the morning and evening hours Equip crew compartments on railcars with air conditioners Reconstruction of railway systems <ul style="list-style-type: none"> Reduce workload along railway lines through onboard and sensor-networked ground inspections, surveying with MMS technology, and the mechanization and automation of construction work Reduce workload along railway lines through the integration of functions into vehicles and the simplification of ground facilities
		Chronic risks	Increased damage from animals due to the expanding range of wildlife caused by decreased snowfall		○	○	○	○	
			Increase in the risk of food poisoning due to rising temperatures		○	○	○	○	
			Increase in labor accidents such as heat stroke due to rising temperatures		○	○	○	○	
			Increased cost of measures to prevent heat stroke		○	○	○	○	

Potential opportunities

*Sales of goods and food services; SC: shopping centers

Type	Opportunities for JR-West	Impact	Railways	Sales/food*	Hotels	SC*	Real estate	Seizing opportunities
Resource efficiency	Reductions in CO ₂ emissions and energy consumption by updating rolling stock and equipment to energy-efficient ones		○	○	○	○	○	<ul style="list-style-type: none"> Accelerate the installation of high-efficiency equipment such as devices that utilize regenerative power, by using new subsidy programs and energy-saving facilities Install energy-efficient equipment when upgrading (high-efficiency air conditioners, LED lighting, water-saving equipment) Use ZEH subsidy systems and other support from the Ministry of Land, Infrastructure, Transport and Tourism, Ministry of Economy, Trade and Industry, and Ministry of the Environment
	Equipment updates making effective use of government support systems such as tax incentives		○	○	○	○	○	<ul style="list-style-type: none"> Study new energy sources (renewable diesel, carbon-free next-generation rolling stock, fuel-cell co-generation systems, etc.) Reduce the cost of installing storage batteries by utilizing national and local government grants
	Wider use of fuels with net-zero CO ₂ emissions, fuel cells, and storage batteries through technological progress and reductions in pricing	Large	○	○	○	○	○	<ul style="list-style-type: none"> In areas where the characteristics of railway can be put to good use, railways are acknowledged as being environmentally superior, with use increasing due to policy-based promotion of public transport and greater environmental awareness of customers (modal shift) Increase usage of trains and the JR-West Group's many other services by publicizing trains' environmental advantages and the Group's green initiatives Enhance secondary transport services linked with railway (park and ride, electric bicycle sharing services, etc.) Enhance services using digital technology Enhance MaaS (Kansai MaaS, WESTER app mobile life navigation app, etc.) Create synergy by offering public transport users the courtesy services of other JR-West Group businesses
Energy sources	In areas where the characteristics of railway can be put to good use, railways are acknowledged as being environmentally superior, with use increasing due to policy-based promotion of public transport and greater environmental awareness of customers (modal shift)	Large	○	○	○	○	○	<ul style="list-style-type: none"> Upgrade equipment and systems for bike sharing and other parts of the sharing economy
	Increased use due to the greater convenience of public transport associated with the proliferation of MaaS, and due to a growth in non-resident populations	Large	○	○	○	○	○	<ul style="list-style-type: none"> Cooperate with regional communities using demand-based transportation to make regional public transport more convenient Promote BRT development projects using self-driving and convoy driving technologies
	Increasing the use of public transport and spreading the sharing economy		○	○	○	○	○	<ul style="list-style-type: none"> Develop environmentally friendly housing (architectural planning, equipment specs, sales methods*) *e.g., save on building materials by reusing a model home for multiple properties; use VR to give prospective buyers virtual tour of housing units
Products and services	Spread of sustainable modes of transportation that are environmentally appropriate for the region	Large	○	○	○	○	○	<ul style="list-style-type: none"> Study participation in renewable energy business Expand renewable energy use by installing solar power equipment through on-site PPAs that utilize building rooftops and idle land
	Spread of sustainable modes of housing that are environmentally appropriate for the region		○	○	○	○	○	<ul style="list-style-type: none"> Use 100% renewable energy for new lease properties Encourage customers and others to carry out ESG investing by acquiring environmental certifications, such as DBJ Green Building Certification (Development Bank of Japan) and CASBEE
	Reduction of electricity procurement costs through expansion of renewable energy		○	○	○	○	○	<ul style="list-style-type: none"> Study participation in VPP (virtual power plant) business
Market	Wider use of electricity with net-zero CO ₂ emissions through technological progress and reductions in pricing		○	○	○	○	○	<ul style="list-style-type: none"> Pursue measures to mitigate damage to railway facilities (see previous page) and disclose related information Gain customers by developing real estate resistant to natural disasters Have BCP measures (supplies, BCP back-up power source, etc.) in place in new office buildings Install emergency equipment (water and flood gates, etc.)
	Acquisition of real estate that has low environmental impact and meets rental needs		○	○	○	○	○	<ul style="list-style-type: none"> Ongoing forest conservation activities through Club J-West Forest Study the effective use of railway forests
	Securing of revenue in the electricity supply and demand market using JR-West equipment		○	○	○	○	○	
Resilience	Ensuring of reliability through successful BCP measures in the event of weather disasters so as to reduce suspensions of train operations and stoppage of business		○	○	○	○	○	
	Maintaining railway forests helps reduce CO ₂ emissions and prevent disasters		○	○	○	○	○	

Assumptions for quantitative impact of TCFD risks and other concerns

For risks and other concerns extracted through qualitative analysis, we have made quantitative impact assumptions for those items that we expect to have a significant impact and for which objective future forecast data corresponding to the scenarios used in the analysis are available. In addition, we have estimated the trend in transportation revenues based on estimated population and GDP data derived from socioeconomic scenarios.

Our assumptions are based on society in 2030 or 2050. The transition risks are calculated based on a 1.5°C/2°C

scenario in which society acts proactively to address climate change. The physical risks and impacts on transportation revenues are calculated based on 1.5°C/2°C and 4°C scenarios. (The results of the estimated impacts are shown in the chart on page 78.)

In particular, the physical risks and impacts on transportation revenues are greater in the 4°C scenario than in the 1.5°C/2°C scenario. Based on these factors, we will take measures to address the risks and promote initiatives to realize a decarbonized society, so as to help curb climate change.

Presuppositions for assumed transition risk and physical risk impact

Transition risks	Item	Source of forecast data used for trial calculation	Assumed impact in 2030	
			4°C scenario	1.5°C/2°C scenario
	Heightened costs accompanying the introduction of carbon pricing	IEA "World Energy Outlook 2024"	—	US\$ 140/t-CO ₂ (2030, NZE scenario, developed countries) Exchange rate: US\$ 1 = ¥149
	High material prices due to suppliers passing on environmental costs	Kiyoshi Fujikawa (author) "Load of Carbon Tax by Region and Income Group," others	—	About 2% higher than the current level

Physical risks	Item	Source of forecast data used for trial calculation	Assumed impact in 2050	
			4°C scenario	1.5°C/2°C scenario
	Greater damage to facilities due to increase in natural disasters	Technical Study Group on Flood Control Planning in Light of Climate Change "Recommendations for Flood Control Planning in Light of Climate Change" (revised April 2021); Ministry of Land, Infrastructure, Transport and Tourism	Approx. four times more frequent than current levels	Approx. two times more frequent than current levels
	Reduced revenue owing to increased operational suspensions due to natural disasters			

Quantitative impact assumptions (financial impact) for transition risks and physical risks

Transition risks	Item	Assumed impact in 2030	
		4°C scenario	1.5°C/2°C scenario
	Heightened costs accompanying the introduction of carbon pricing	—	+22.3 billion yen/year
	High material prices due to suppliers passing on environmental costs	—	+2 billion yen/year

Physical risks	Item	Assumed impact in 2050	
		4°C scenario	1.5°C/2°C scenario
	Greater damage to facilities due to increase in natural disasters	10 billion yen/year	3 billion yen/year
	Reduced revenue owing to increased operational suspensions due to natural disasters	4.5 billion yen/year	1.5 billion yen/year

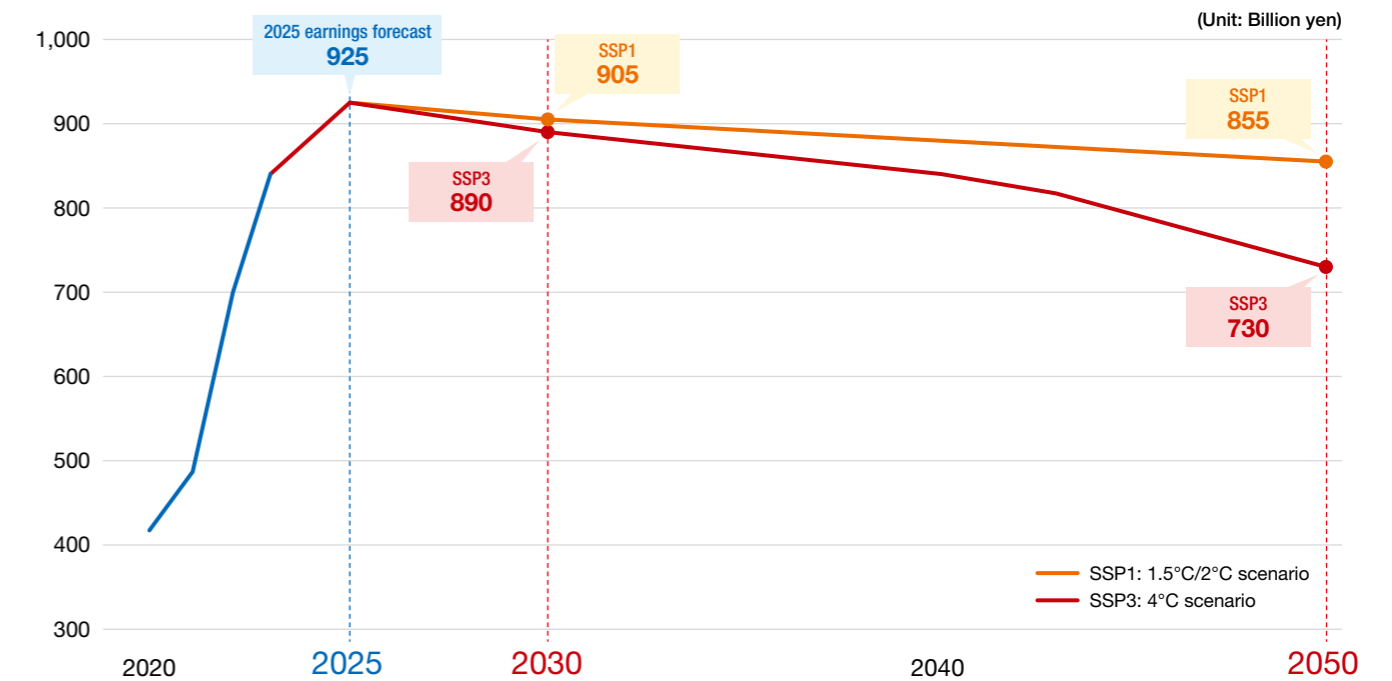
Trial calculation of changes in rail transportation revenue

Based on population and GDP data derived from socioeconomic scenarios, which are used in cross-disciplinary climate change research, we have estimated the changes in rail transportation revenue up to 2050.

The population data is derived from "Japanese SSP Population Estimates by City, Town, and Village," published by the National Institute for Environmental Studies. GDP data is derived from "Socioeconomic Projections of the Shared Socioeconomic Pathways (SSPs) Release 3.1," published by IIASA (International Institute for Applied Systems Analysis).

Based on projected demographic and domestic GDP changes in our business areas, we have estimated the changes that will occur after implementation of the JR-West Group Medium-Term Management Plan 2025. (For the data referenced here, the 1.5°C/2°C scenario = SSP1 and the 4°C scenario = SSP3.)

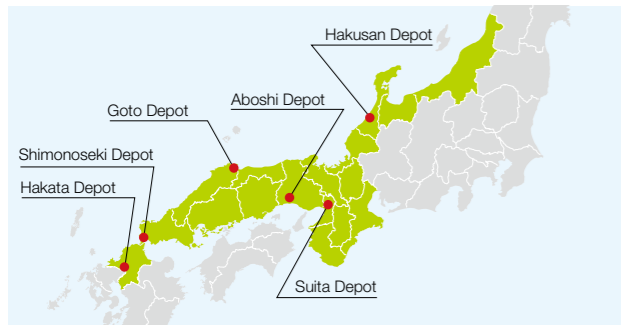
The future forecasts in our trial calculation are based on demographic and GDP estimates only and do not take into account individual factors that may affect revenues, such as future sales measures.



Qualitative analysis of nature-related risks and opportunities

Analysis target

The JR-West Group focuses on its general depots, which are central locations with significant points of contact with natural capital, and conducts analysis and assessments in accordance with the LEAP approach advocated by the TNFD as an integrated approach to assessing nature-related issues. We have six general depots: Hakusan Depot (Hakusan, Ishikawa Prefecture), Hakata Depot (Nakagawa, Fukuoka Prefecture), Suita Depot (Suita, Osaka Prefecture), Aboshi Depot (Ibo, Hyogo Prefecture), Goto Depot (Yonago, Tottori Prefecture), and Shimonoseki Depot (Shimonoseki, Yamaguchi Prefecture). In carrying out regular inspections of railcars and large-scale improvements to trains, these depots remain aware of their dependence, and impact, upon natural capital.



Analysis of regional characteristics

Scoping using the LEAP approach was used to assess water and biodiversity-related risks based on results considering operations at general depots.

Water-related risks

To assess water-related risks at general depots, we conducted an analysis using Aqueduct. The results showed that, at all general depots, the risk level of water stress and water depletion for water resources, which are heavily relied upon in the regular inspection process, did not exceed "low to medium," thus we view the risk as being low. We will continue to recognize water as an important resource and promote daily water conservation practices, utilization of recycled water, and other actions.

Water-related risk assessment Analysis using Aqueduct

Water-related risk	Hakusan	Hakata	Suita	Aboshi	Goto	Shimonoseki
Water stress*	Low to medium	Low to medium	Low to medium	Low to medium	Low to medium	Low to medium
Water depletion**	Low to medium	Low	Low to medium	Low to medium	Low to medium	Low to medium

*Water stress: Ratio of total water demand (consumptive and non-consumptive) to renewable surface and groundwater supplies
**Water depletion: Ratio of total water demand (consumptive) to renewable surface and groundwater supplies

Biodiversity-related risks

To assess biodiversity-related risks at general depots, we conducted an analysis using IBAT*. From the results, seven biological habitats and protected areas were identified within a 3 km radius of general depots. However, all of these were at IUCN category IV to VI levels, and no areas were designated as strict nature reserves, wilderness areas, national parks, or natural monuments.

*IBAT (integrated biodiversity assessment tool): A TNFD presentation tool for biodiversity-related assessment developed by four organizations: BirdLife International, the World Conservation Monitoring Centre (WCMC), the International Union for Conservation of Nature (IUCN), and Conservation International.

Biodiversity-related risk assessment

Analysis using IBAT (number of applicable areas within a 3 km radius)

IUCN category*	Hakusan	Hakata	Suita	Aboshi	Goto	Shimonoseki
Ia Strict nature reserve	0	0	0	0	0	0
Ib Wilderness area	0	0	0	0	0	0
II National park	0	0	0	0	0	0
III Natural monument	0	0	0	0	0	0
IV Habitat/species management area	0	1	1	0	1	1
V Protected landscape/seascape	0	0	0	0	0	0
VI Protected areas with sustainable use of natural resources	1	0	0	0	1	1
Total number of applicable areas	1	1	1	0	2	2

*Based on the IUCN's "Guidelines for Applying Protected Area Management Categories"

Dependence, and impact, upon nature

With regard to regular inspections, which are the main job of the general depots, we checked the actual conditions at the depots and used ENCORE to clarify their dependence, and impact, upon natural capital. We identified water, soil, air, and living things (animals) as natural capital related to operations.

Water

● Dependence: Large amounts of water are used in processes such as the washing of rolling stock and their parts during regular inspections and the supplying of water to rolling stock. Therefore, if water becomes unavailable, it may not be possible to carry out these tasks adequately. However, even in such cases, apart from some impact on service quality, there will be no problems with ensuring safety or train operations, and there will be no immediate impact on rail transportation revenue. We have also determined that the risk of water stress and water depletion is low in the areas where all of our general depots are located and that the likelihood of these risks materializing is low. At the same time, because water is a vital resource, we are using water resources efficiently, in preparation for the risk of water being unavailable, by raising awareness of water conservation through education, utilizing water recycling systems, and regularly monitoring water usage.

● Impact: At general depots, oil and grease are in the washing water effluent from rolling stock and their parts, as well as used in repair work, so there is a risk of water contamination due to improper handling. We work to reduce this risk by performing work in accordance with work manuals, as well as by conducting regular inspections and site visits and by monitoring usage.

Soil

● Impact: There is a risk of soil contamination due to improper handling of industrial waste or materials containing organic solvents, or due to oil spills during refueling. To address this risk, we have taken measures such as continuing education on how to handle industrial waste, conducting regular site visits, and managing usage. We are also working to reduce risk by using water-based paints, which have a lower environmental impact.

Air

● Impact: There is a risk of air pollution due to improper disposal of volatile organic compounds (VOCs) used in painting. We are working to reduce this risk by properly installing and operating dust collection equipment and regularly monitoring and measuring emissions.

Living things (animals)

● Impact: The noise associated with work operations may have an impact on animals. With regard to biodiversity-related risks, although there are no areas within a 3 km radius of general depots that are categorized as IUCN categories Ia to III, we are working to reduce the burden on living things through strict operational management based on our environmental management system, the installation of soundproof fences, and noise monitoring.

Qualitative analysis of risks and opportunities

We analyzed risks and opportunities, and our actions in response to them, based on dependencies and impacts. The main risks identified were those related to water. We have been steadily addressing this issue through our environmental management system, and we will continue to conduct object- and policy-based measures, which include the thorough implementation of our environmental management system.

With regard to opportunities, we will pursue collaboration with local communities and undertake various energy conservation and recycling activities for the effective use of resources. We will also work to expand sales channels to companies outside the Group for products and services from group companies that help reduce environmental impact.

Analysis of contact with nature at each stage of regular inspections

Regular inspection flow	Dependence		Impact		
	Water	Water	Soil	Air	Animals
Entrance/entrance inspection	—	—	—	—	Noise from work
Equipment and parts removal	—	—	—	—	
Inspection and repair	Washing	Oil and organic solvent spillage	—	—	
	Supplying water	Industrial waste scattering and spillage	—	—	
Painting	—	Wastewater	—	—	
	Boiler equipment drying	Organic solvent spillage	—	VOC emissions	
Equipment and parts installation	—	—	—	—	
Exit inspection/exit	Supplying water	—	—	—	

Risks

Type	Risks to JR-West	Response	
Physical risks	Chronic risks	Improper cleaning of railcars and parts due to depletion of water	<ul style="list-style-type: none"> ● Raise awareness of, and practice, daily water conservation ● Save water through water usage monitoring ● Utilize recycled water
Transition risks	Policies	Stronger regulations on wastewater and other emissions from business activities	<ul style="list-style-type: none"> ● Comply with relevant laws and regulations via thorough implementation of our environmental management system and implement measures to adapt to tighter regulations ● Respond with both object- and policy-based measures, such as maintenance and management of wastewater treatment equipment and water quality monitoring
	Reputation	Damage to company reputation as a result of negative impact of operations-related noise on neighboring residents and community	<ul style="list-style-type: none"> ● Implement measures corresponding to the cause of noise, such as installing soundproof sheets or changing the work location ● Build relationships with local residents and the community, such as through collaboration in community service projects
	Liability	Water and soil contamination caused by improper handling of waste and other materials	<ul style="list-style-type: none"> ● Avoid risks of environmental pollution and reduce environmental impact via our ISO 14001-compliant environmental management system ● Conduct regular training and education aimed at ensuring proper handling of waste and other materials ● Establish a system for rapid response and communication in the event of contamination

Opportunities

Type	Opportunities for JR-West	Seizing opportunities	
Business performance	Market	Progress in collaboration with local communities	<ul style="list-style-type: none"> ● Collaborate with local communities, such as through partnership agreements
	Resource efficiency	Progress in efficient use of water resources	<ul style="list-style-type: none"> ● Raise awareness of, and practice, daily water conservation ● Save water through water usage monitoring ● Utilize recycled water
		Progress in efficient use of resources other than water	<ul style="list-style-type: none"> ● Recycle items and materials related to the operation of general depots ● Railcar material waste ● Recyclable train waste such as bottles, cans, and plastic bottles ● Wooden pallets ● Used cooking oil from employee cafeterias...etc.
Products and services	Popularization of low-environmental-impact products in response to growing societal demand for reduced environmental impact	<ul style="list-style-type: none"> ● Use renewable diesel fuel on diesel trains ● Use environmentally friendly materials, such as low-VOC materials 	
	Expansion in sales of products and services that contribute to reducing environmental impact	<ul style="list-style-type: none"> ● Expand sales channels to companies outside the Group (e.g., West Japan Railway Technia Co., Ltd. J-TREAT highly efficient wastewater purification equipment, West Japan Railway Technos Corporation renovation work based on existing trains, etc.) 	
Sustainability performance	Sustainable use of natural resources	Progress in collaboration with local communities	<ul style="list-style-type: none"> ● Actively participate in cleanups and environmental conservation activities in collaboration with local communities

Conserving water resources when washing vehicles

From the perspective of water resource conservation, Hakata Depot is reusing a portion of the factory wastewater. Previously, the entire factory used approximately 560 m³ of industrial-use water and tap water per day, but by introducing a blended water treatment system, we are now able to reuse approximately 100 m³ of factory wastewater and rainwater per day, protecting water resources and reducing the amount of water discharged into the sewer system. As one example, we use vehicle washing equipment that reuses factory wastewater and rainwater, eliminating the need for industrial-use water.

