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KORAIL, Leading the Standards
in Railway Mobility!

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2024 KORAIL ESG·Sustainability Report

KORAIL

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KORAIL

About This Report

Overview

Korea Railroad Corporation (KORAIL) is the representative railroad public enterprise of South Korea, leading the improvement of the quality of life for citizens and the development of the nation and regions through a shift in the transportation paradigm centered on high speed rail. Furthermore, to achieve sustainable growth, the corporation is actively engaging in various activities and achieving meaningful results in all areas, including environment, society, and governance. This report has been published to transparently disclose KORAIL's achievements and activities over the past year and to gather feedback from various stakeholders to reflect in our management activities. In particular, it details the active participation in ESG disclosures and aims to achieve the highest level of sustainable management evaluation, including financial and non-financial performance, as well as key reporting issues based on the results of double materiality assessment. Moving forward, KORAIL will continue to provide safe and innovative services while realizing transparent management, becoming a public enterprise that citizens can trust even more.

Period and Scope

The reporting period is from January 1, 2023 to December 31, 2023 and includes performance results from activities up until the first half of 2024 when deemed important information for stakeholders. For quantitative performance, data from the last three years has been provided to identify trends. Data with annual changes is based on the accounting closing date (December 31), and any need for disclosure regarding separate data collection periods has been specified. This report focuses on the environmental, social, and governance performance of the headquarters and 12 regional offices, and the disclosed data includes some aspects of overseas business.

Reporting Standards

This report complies with the Global Reporting Initiative (GRI) Standards to transparently disclose sustainable management performance and is structured to reflect the principles of the UN Global Compact, K-ESG, and the key agendas of ISO 26000. Additionally, to address key issues, it adheres to the standards set by the Sustainability Accounting Standards Board (SASB). For financial performance, the report is prepared in accordance with the Korean International Financial Reporting Standards (K-IFRS).Furthermore, to ensure the reliability and fairness of the reporting content, it has been verified by a third-party verification agency, and the results are included in the verification statement.

Inquiry

KORAIL's sustainability report can be viewed and downloaded from the website. For more detailed information or any inquiries, please contact us at the information provided below.

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Responsible Department Planning & Coordination HQ Strategic Planning Department

This report has been created as an interactive PDF for the convenience of the reader, allowing easy navigation to related websites and pages.

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CEO Message

Together with the Value of Era, Leading the Future Mobility

The year 2024 marks the 20th anniversary of KTX, the 50th anniversary of the metropolitan subway, and the 130th anniversary of railroads in South Korea. As Korean Railroads enters a new era of transformation, we have continuously grown through numerous changes and challenges over the years.

KORAIL President & CEO
Han, Moon-hee

Currently, KORAIL operates over 3,400 trains daily across a nationwide railroad network of more than 4,000km. We are expanding into international markets, including Tanzania and the Philippines, in addition to international multimodal transport services via TCR.

Last year, we achieved record-high passenger transport volume and overseas business revenue, and we participated as an implementer in the Yongsan International Business District development project, striving to enhance our financial stability.

KORAIL is committed to providing trustworthy railroad services to the public while fulfilling our responsibilities in ESG management for sustainable development. We will lead future mobility with cutting-edge digital technology and continue to grow alongside the values of our era.

People, Achieving a Better Life

KORAIL has established a '2050 Carbon Neutral' roadmap to overcome the global climate crisis and is working towards achieving RE100.

To reduce greenhouse gas emissions from trains, we are replacing diesel locomotives like Mugunghwa and Saemaul with eco-friendly EMU electric trains, resulting in a 26% reduction beyond the government allocation for greenhouse gas emissions last year. Additionally, to provide clean air in the spaces where customers stay, we manage ultrafine dust in trains and underground stations and undertake soil purification projects on railroad sites.

In the future, we will continue to transparently disclose various environmental information to implement an eco-friendly green railroad while expanding our eco-friendly railroad infrastructure through participation in hydrogen train research and broadening chemical management standards.

World, Dreaming of a World Together

KORAIL is realizing 'KORAIL-style MaaS' by using the mobile app 'KORAIL Talk' as a platform and expanding digital-based services. We are enhancing benefits for vulnerable groups in IT, including discounts for pregnant women, seniors, and individuals with disabilities.

We will continuously develop new railroad tourism content in collaboration with local communities to address regional mutual prosperity and population decline issues. Additionally, we will expand technological exchanges with small and medium-sized enterprises in the railroad industry and continue our social contribution activities, such as 'Happy Train' and 'Seom Seom Ok Su,' for socially vulnerable groups.

Future, Thinking of a Sustainable Future

KORAIL is establishing an ESG subcommittee within the Board of Directors to enhance professional and effective ESG management.

We are also building a 'Compliance, Ethics, and Human Rights Management System' to foster a culture of integrity within the organization. By promoting harmony among different job categories, ages, and genders, we fulfill our social and ethical responsibilities, creating a cooperative labor-management relationship based on 'communication' and 'principles.'

Korea Railroad Corporation will always move forward with the public. We ask for your continued interest and support in our efforts to shape the future of railroads in South Korea. Thank you.

KORAIL ESG Focus

Digital Safety

Serious Industrial Accidents
ZERO

Major Civil Disasters
ZERO for 3 consecutive years

Serious Accidents in Commissioned Projects
ZERO for two consecutive years.

Ministry of the Interior and Safety
Recognized as an excellent disaster reduction enterprise

Mobility Innovation

International Union of Railways (UIC)
Achieved the highest on-time performance rate in the world(99.3%)

Customer Satisfaction Rate
Achieved the highest rating
(Excellent)

Cumulative Downloads Among Public Institution Apps
KORAIL Talk ranked first
(41.74 million downloads)

KORAIL Talk
Launched MaaS
(Including navigation, train location, parking payment, luggage delivery, etc.)

Financial Stability

Record-high transportation revenue
Achieved (4.3 trillion KRW)

Record-high KTX revenue
Achieved (2.27 trillion KRW)

Sustainable growth revenue
First time surpassing 400 billion KRW

Overseas business revenue
First time surpassing 20 billion KRW

Future-oriented Organization

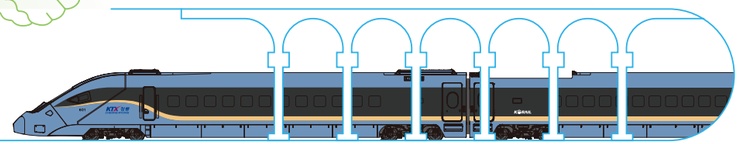
Compared To Government Allocation
Reduced greenhouse gas emissions by 23%

The Payment Linkage System By The Ministry of SMEs And Startups.
Selected as an excellent company

Green Product Status for 12 Consecutive Years & The Green Masterpiece Award for 2 Consecutive Years
Awarded

The Organizational Culture Index
increased by 0.9
(80.7 point s ⇒ 81.6 point s)

The Social Contribution Awards in the Job Creation Category
Won the Grand Prize
(largest new hires in the public enterprise SOC sector, with 1,590 employees)



OVERVIEW

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Introduction

Capital	10,924,285 million KRW
Revenue	6,372,985 million KRW
Total Asset	29,066,406 million KRW

KORAIL Overview

Since the establishment of the Railroad Authority in 1894, railroads have served as a representative mode of transportation for over 130 years, standing by the public. The railroad industry, which has led the lives of citizens across the nation and connected people and goods along the tracks, is now becoming a link that unites South Korea beyond mere transportation. To maintain the safety of our citizens and the pride of our nation, we will strive to become the world's best railroad that connects people, the world, and the future.

General Status

Foundation of Corporation	June 28, 1894 (KORAIL launched) : January 1, 2005	Authoritative Institution	Ministry of Land Infrastructure and Transportation
President (CEO)	Han Moon-hee (2023.7.24.~)	Type of Corporation	Quasi-market Public Corporation
Basis of Foundation	Korea Railroad Corporation Act (Ordinance No. 7052, December 31, 2003)	No. of Employees*	31,136
Location	240 Joongang-ro, Dong-gu Daejeon Metropolitan City, Korea		

* Including regular, non-regular workers and separate personnel, as disclosed by ALIO

General Status

KORAIL connects the nation closely through convenient passenger train operations and rapid logistics transportation. As of June 30, 2024, the general status of the company is as follows.

Service Routes and Track Length		
Route		105 routes
Track Length		4,144.1 km
Service distance	Passenger	3,878.0 km
	Logistics	3,100.8 km
	Metropolitan	741.4 km
Double-tracked distance		2,902.0 km
Electrified distance		3,309.2 km

Rolling Stock Status	
KTX	1,660 cars
Rail car	3,200 cars
Locomotive	381 cars
Passenger car	552 cars
Power car	88 cars
Freight car	8,451 cars
Crane	11 cars
Total	14,343 cars

Stations Status		
General Station		337 stations
Simple station	Staff deployed	1 stations
	Staff undeployed	311 stations
Shunting yard		2 stations
Signal station		32 stations
Signal box		7 stations
Total		690 stations (As of 24.6.30)

Affiliated Companies

The subsidiaries under KORAIL contribute to the development of the railroad industry by enhancing business competitiveness through the creation of new revenue sources and business diversification. We will do our best to strengthen the expertise of each subsidiary by integrating the company's long-standing know-how and infrastructure to provide sustainable railroad services to the public.

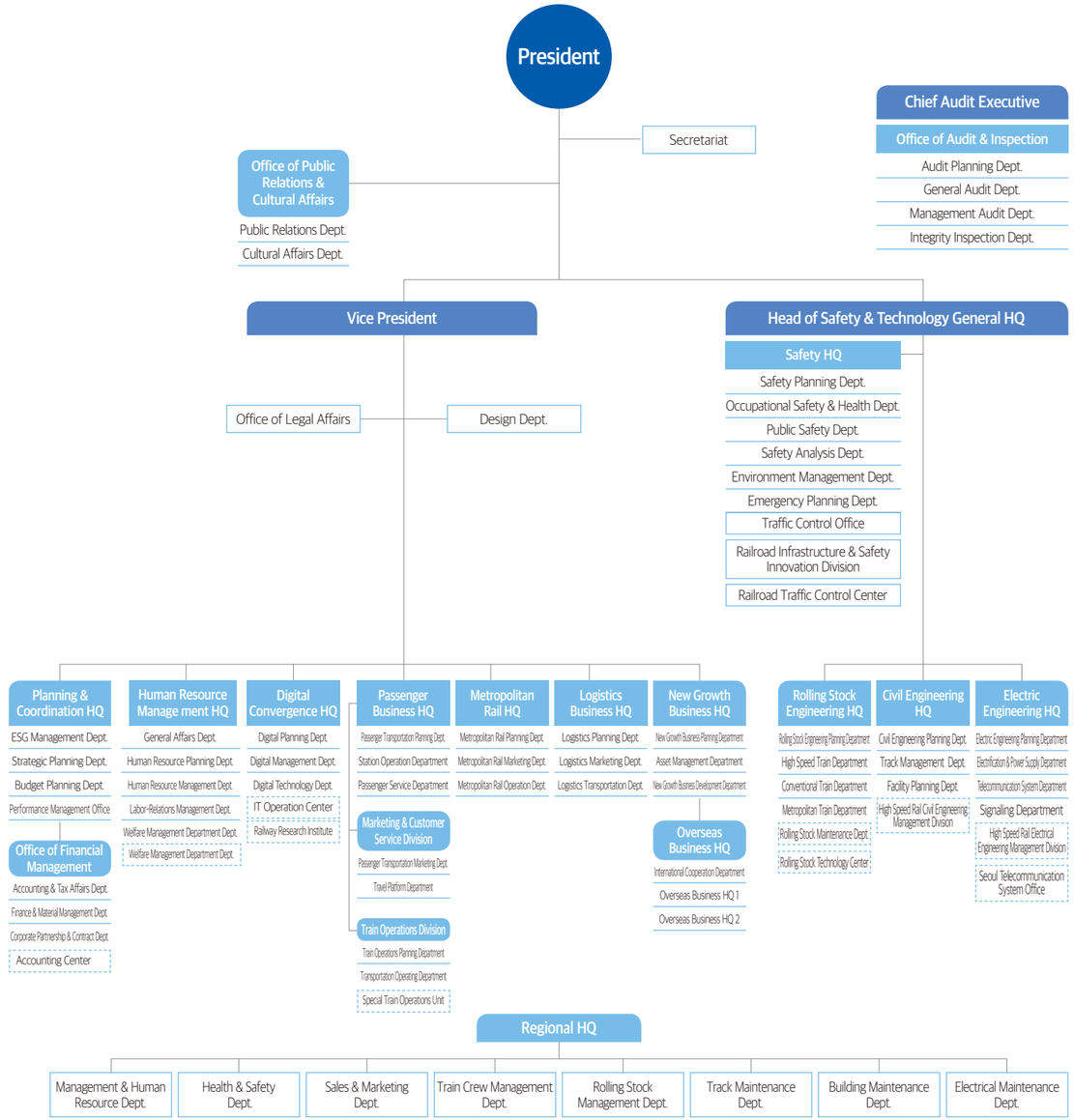
Name of Enterprise	CEO	Business Contents	Employee (people)	Capital (100 million KRW)	Sales (100 million KRW)	Share ratio (%)
KORAIL RETAIL	Kim, Y.T.	Operate commercial facilities and advertisement media	463	120	3,093	100.00
KORAIL TOURISM	Kim, S.S. (Acting)	Tourism leisure, distribution/crew service	1,302	40	751	51.00
KORAIL NETWORKS	Jeon, C.H.	Entrust station management & customer center, operate parking lot	1,678	72	1,173	89.47
KORAIL LOGIS	Lee, J.W. (Acting)	Logistics in connection with railroad	543	77	912	92.08
KORAIL TECH	Cho, D.S.	Manage tracks & electric system, repair the rail cars	5,267	19	2,464	97.31

Organization Status

In 2023, we reorganized our structure with a focus on strengthening the safety management system and digital innovation. To enhance safety, we established the Safety Technology Headquarters and reorganized safety and technical organizations. Additionally, we expanded the Digital Convergence Headquarters for company-wide service innovation based on digital technology. All KORAIL employees take pride in leading the new standard of South Korean railroads and are opening a new future for the nation.

Organization Chart

(As of 2024 July)



Major Business Locations and History

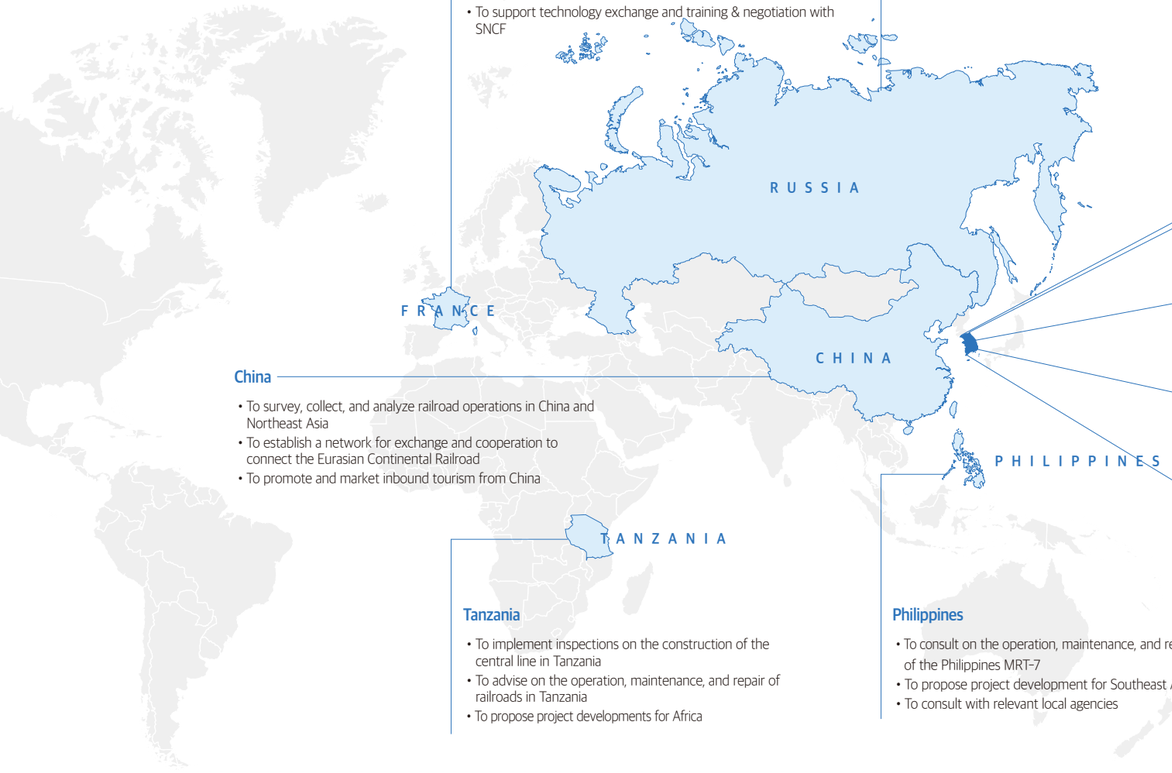
Overseas Branches

France

- To establish a network with operators and relevant railroad institutions
- To survey, collect, and analyze the policy, service, and managerial strategy of railroad
- To support the efficient procurement of goods manufactured by foreign companies
- To support technology exchange and training & negotiation with SNCF

Russia

- To strengthen cooperation with Russia, focusing on the Continental Railroad
- To exchange information about RZD and OSJD



China

- To survey, collect, and analyze railroad operations in China and Northeast Asia
- To establish a network for exchange and cooperation to connect the Eurasian Continental Railroad
- To promote and market inbound tourism from China

Tanzania

- To implement inspections on the construction of the central line in Tanzania
- To advise on the operation, maintenance, and repair of railroads in Tanzania
- To propose project developments for Africa

Philippines

- To consult on the operation, maintenance, and repair of the Philippines MRT-7
- To propose project development for Southeast Asia
- To consult with relevant local agencies

Domestic Sales Network

Major Station Logistics Station (2024.1.1 기준)

Highspeed Railroads	69 Stations	596.3km
Conventional Railroads	211 Stations	3,551.4km
Metropolitan Railroads	275 Stations	741.4km
Logistics Stations	76 Stations	3,100.8km

Passenger transport

High speed trains
KTX Cheongryong, KTX, KTX-Sancheon, KTX-Sancheon(Wongang), KTX-Eum

Conventional trains
ITX- Saemaeul, ITX-Maeum, Mugunghwa Train, Nuri Train

Regional transport

Metropolitan railroad
Gyeongbu, Gyeongin, Gyeongwon, Janghang, Gyeongeui, Joongang, Ansan, Gwacheon, Bundang, Suin, Gyeongchun, Ilsan, Gyeongkang, Seohae. Donghae, Line

Logistics transport

Operate 76 stations to handle freights including Dodam, Ipseokri, Ssangryong, Obong, and Busan New Port

Items to handle :
Cement, containers, coals, steel, oils, ores, etc.

History

1894-2004

1894.06.28.	Opened the Bureau of Railroad under Joseon Gongmu-amun
1899.09.18.	Opened Gyeong-In Railroad (Noryangjin~Incheon) (Partially Opened)
1905.01.01.	Opened Gyeongbu Railroad (Yeongdeungpo~Choryang)
1939.07.20.	Opened Gyeongchun Railroad (Sungdong~Chuncheon)
1973.06.20.	Opened Central Metro Line (Cheongnyangri~Jecheon)
1974.08.15.	Opened Seoul Metropolitan Subway Lines (Seoul~Suwon, Guro~Incheon, Yongsan~Seongbuk)
2004.04.01.	Opened Gyeongbu High Speed Railroad Phase 1 (Seoul~Daegu)

2005-2015

2005.01.01.	Launched KORAIL
2007.05.17.	Pilot operation of trains in the connected section of the Trans-Korean railroad (Gyeongui Line and Donghae Line)
2010.03.02	Initiated commercial operation of KTX-Sancheon Korean High Speed Railroad
2010.11.01.	Opened Gyeongbu High Speed Railroad Phase 2 (Dongdaegu~Busan)
2011.10.05.	Launched Jeolla Line (Youngsan~Yeosu Expo) KTX
2012.06.30.	Opened the 1st Suin Metro Line Phase 1 (Oido~Songdo)
2014.05.12.	Launched ITX-Saemaeul
2015.04.02.	Launched Honam High Speed Railroad, operated Pohang direct line KTX (Singyeongju~Sinpohang)

2016-2020

2016.02.27.	Opened Suin Line Phase 2 (Songdo~Incheon)
2016.12.30.	Opened Donghae Metro Line Phase 1 (Bujeon~Ilkwang)
2017.12.22.	Operated Gangneung KTX (Seoul~Gangneung)
2018.01.26.	Opened Donghae Line (Pohang~Yeongdeok)
2018.06.07.	Joined OSJD (Organization for Cooperation of Railroads) as a full member
2019.04.08.	Hosted the Conference of General Directors of OSJD Railroads
2020.03.02	Launched the extended Gangneung KTX (Donghae Station)
2020.09.12.	Opened the full section of Suin Line (Suwon~Incheon)

2021-2022

2021.01.05.	Launched Jungang Line (Cheongnyangni~Andong) KTX-Eum
2021.12.28.	Opened Donghae Metro Line Phase 2 (Ilkwang~Taehwa River)
2021.12.31.	Opened Jungbunaeryuk Line KTX (Icheon~Chungju)
2022.03.29.	Conducted the declaration ceremony of ESG management
2022.09.20.	Surpassed 900 million users of KTX
2022.11.17.	Elected as chairman of the Asia-Pacific regional assembly in the International Union of Railroads (UIC)

2023-

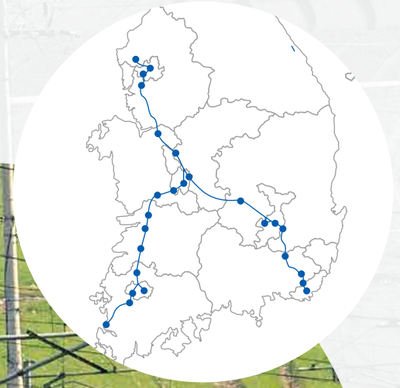
2023.08.31	KTX surpassed 1 billion cumulative passengers
2023.09.01	Began operation of ITX-Maeum (EMU-150)
2023.12.29	Extended operation of KTX Jungang Line (Seoul Station) and Jungbunaeryuk Line (Pangyo Station)
2024.01.01	Declared 'Digital New Management'
2024.05.01	Began operation of KTX-Cheongryong (EMU-320)

SPECIAL REPORT

KTX : 20 Years with Customers, Dreaming of a Sustainable Future

Intro

On April 1, 2004, KTX opened as the fifth high speed railroad in the world, heralding a 'speed revolution and economic revolution' and transforming South Korea into a region where travel times are within two hours. Over the past 20 years, KTX has continuously operated at speeds exceeding 300 km/h, now serving an average of 230,000 passengers per day, establishing itself as the representative mode of transportation in South Korea.



2004

2 lines, 20 stations

When KTX opened on April 1, 2004, there were only two KTX lines: the Gyeongbu Line and the Honam Line, with just 20 operational stations. The Gyeongbu Line was developed in phases: Phase 1 involved constructing a new line between Seoul and Daegu and electrifying the existing line between Daegu and Busan, while Phase 2 focused on building a new line from Daegu to Gyeongju and Busan. The Honam Line, connecting Yongsan to Gwangju and Mokpo, was also opened with double-tracks, operating at high speed on only certain sections. At that time, the travel time from Seoul to Busan was 2 hours and 40 minutes, and from Yongsan to Gwangju it was 2 hours and 47 minutes.

2024

8 lines, 69 stations

With the completion of Phase 2 construction in 2010, the KTX Gyeongbu Line was fully opened, reducing the travel time from Seoul to Busan to 2 hours and 23 minutes. Since then, KTX lines have steadily increased. In December of the same year, the Gyeongjeon Line (Seoul-Jinju) opened, followed by the Jeolla Line (Yongsan-Yeosu Expo) in October 2011, and the Donghae Line (Seoul-Pohang) and Honam High Speed Railroad (Osong-Gwangju Songjeong) in April 2015, which reduced the travel time between Yongsan and Gwangju Songjeong to 1 hour and 36 minutes. In December 2017, the Gangneung Line (Seoul-Gangneung) was opened, followed by the Jungang Line (Cheongnyangni-Andong) in January 2021, and the Jungbunaeryuk Line (Bubal-Chungju) in December. In December 2023, the Jungbunaeryuk Line was extended (Pangyo-Bubal) and the Jungang Line (Seoul-Cheongnyangni) was extended. As a result, as of 2024, KTX now connects the entire country with 8 lines and 69 stations.

Average Daily Passengers

The average number of KTX passengers, which was 72,000 in 2004, has increased to 230,000 in 2023, representing a growth of approximately 3.2 times.
The maximum number of daily passengers reached 319,000 on October 28, 2023, during the autumn peak season, which is an increase of 89,000 compared to usual figures. This indicates a growing number of passengers choosing KTX for long-distance travel.

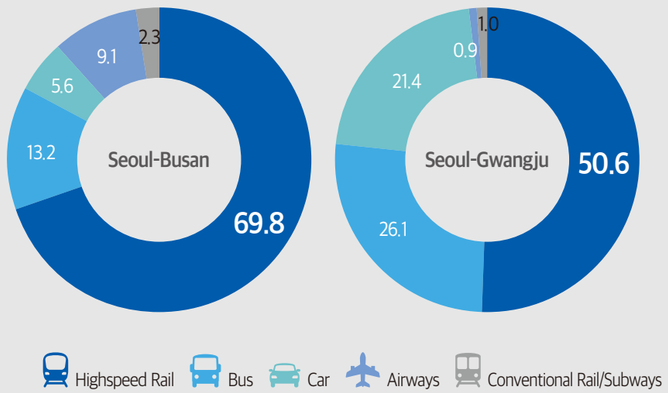
Yearly Passenger Trends

The number of KTX passengers has steadily increased each year. After recording nearly 20 million passengers in 2004, the annual passenger count surpassed 50 million in 2011, reaching 85 million in 2023. Excluding the years when passenger numbers dropped due to the opening of SRT in 2017 and the significant decline during the COVID-19 pandemic in 2020 and 2021, KTX passenger numbers have shown continuous growth.

Major Intercity Transportation Modes

In terms of transportation between major cities across the country, KTX has a market share of 50-70%, significantly higher than other transportation modes. This indicates that KTX has established itself as the strongest long-distance transportation option since its opening in 2004.

Traffic Volume by Transportation Mode between Seoul and Major Regions (Unit: %)

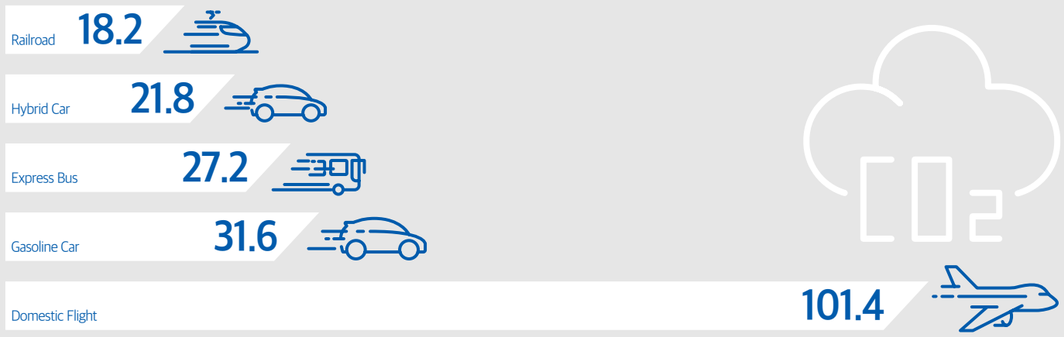


Source: 2019 Passenger Origin-Destination Survey (The Korea Transport Institute)

Representative Eco-Friendly Transportation Modes

As of 2018, South Korea's total greenhouse gas emissions amounted to 727.6 million tons of CO_2-eq, with the transportation sector accounting for 13.5% of this total. Within the transportation sector, road transport is responsible for 96.5% of greenhouse gas emissions, while civil aviation contributes 1.6%, shipping 1.0%, and railroads only 0.3%. Notably, the greenhouse gas emissions from railroads are relatively low compared to other modes of transportation, making it a focus for future eco-friendly transport solutions. The '2050 Carbon Neutral Roadmap for South Korea,' established in 2021, aims to increase the railroad sector's contribution to greenhouse gas reduction from the current 14.4% to 47.5%.

Greenhouse Gas Emissions by Transportation Mode (Unit: $kgCO_2e$)



Source: Hankyoreh Newspaper (2024.02.10), Travel Distance: Seoul-Busan, 395 km (based on transportation distance by region in the Environmental Product Declaration guidelines)

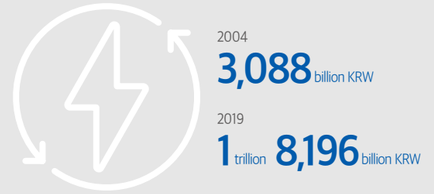
CSV: A Good Example of Regional Win-win

KTX has positively impacted regional economic revitalization by connecting the entire country within a half-day living zone. Additionally, high speed rail is highly energy-efficient, resulting in significant energy cost savings.

Impact of High Speed Rail on Regional Economic Revitalization
(Positive Perception Rate, as of 2021)

Source: 2021 Transportation Industry Job Information Survey (Characteristics of High Speed Rail Usage and Demand for Rail Services), Korea Transport Institute 2021

Energy Savings from High Speed Rail Usage



Source: High Speed Rail: Changing South Korea, Korea National Railroad Authority, 2021

Special page – Digital project 400

What is Digital 400 Project?

Project Goals: Strengthening Digital Infrastructure, Increasing Operational Efficiency, and Promoting Innovation

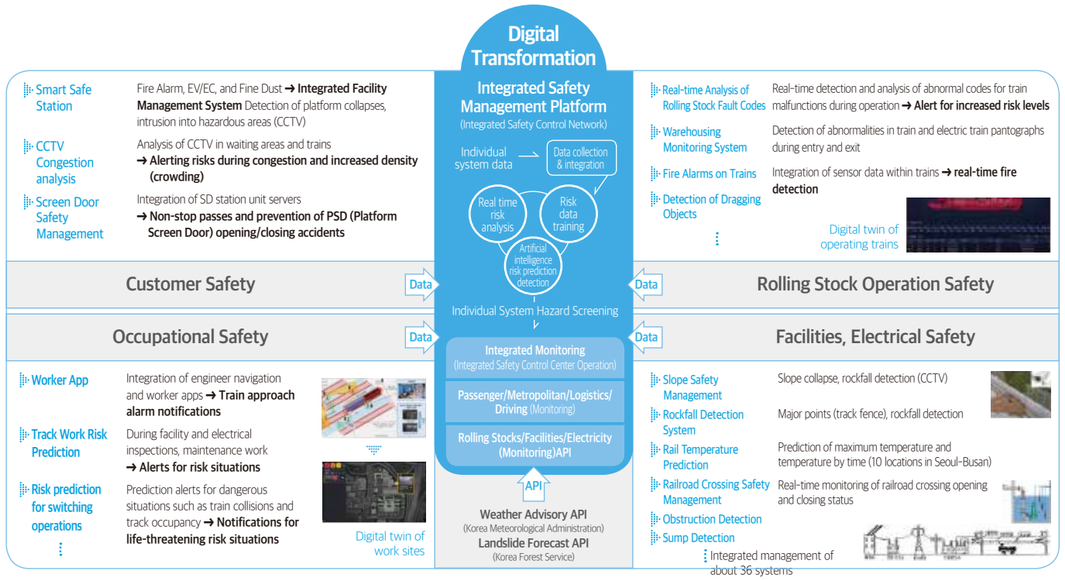
Digital transformation (DX) will serve as a crucial tool and measurement means for KORAIL's sustainable development, making it a driving force for change.

Training 400 Digital Core Leaders (400 projects to be executed annually)

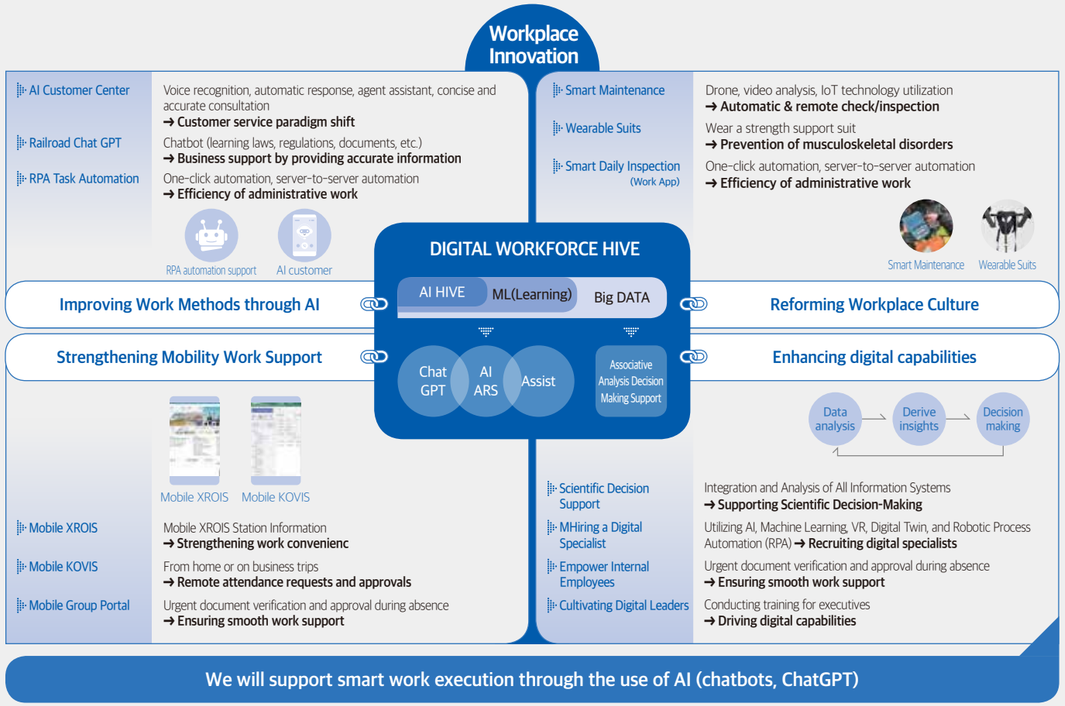
Achieving a commercial speed of 400 km/h for high speed trains

Five Key Initiatives

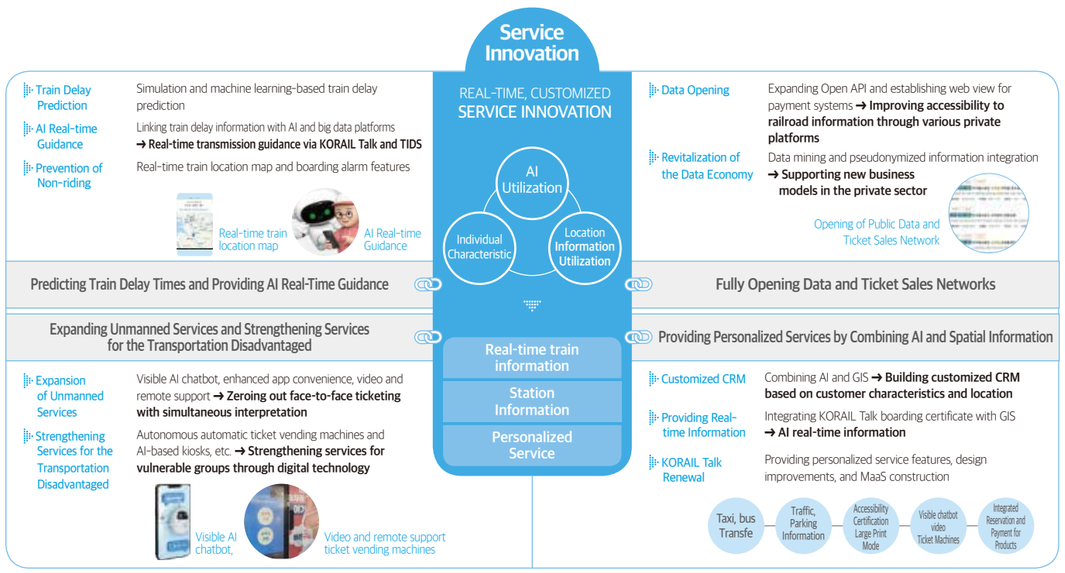
01	02	03	04	05
Training 400 Digital Core Leaders	**Establishing and Operating a Digital Academy**	**Building Digital Hubs & Innovation Centers**	**Developing Digital Learning Materials and Building Smart Libraries**	**Digital Win-win and Digital Innovation Competition**
Cultivating 400 leaders by Q4 2024 to lead innovative digital projects.	Establishing and operating state-of-the-art academies in Seoul and Daejeon to train digital specialists (1,000 by 2024 and 10,000 by 2030).	Establishing centers for collaborative agile projects, including partnerships with academia, at each hub and location (by Q3 2024).	Supporting learning through maintenance digital materials and specialized training content via a metaverse library, along with providing conveniences such as virtual meeting spaces.	Conducting performance reporting and awards for 400 projects executed annually.



We will achieve a groundbreaking transformation in accident prevention and response through the establishment of an AI-integrated safety management system.



We will support smart work execution through the use of AI (chatbots, ChatGPT)



We will significantly reduce customer inconveniences by providing real-time train information and personalized services.

KORAIL Main Business

Overview of KORAIL's Main Businesses

Management Target

Safe Railroad (Safety, Rolling Stock & Facility Maintenance Businesses)

- Establishment of safety management and emergency response systems to ensure that railroad systems, including control, signaling, and facilities, operate organically for the safe operation of passenger and freight trains.
- Systematic maintenance of rolling stock through inspections, repairs, performance tests, and disassembly and maintenance of major components to ensure the reliability of rolling stocks.
- Regular maintenance of core railroad infrastructure, including tracks, railroad bridges, catenary systems, and switches, to support safe train operations.

Prevention of safety accidents and management of disasters to protect the lives and property of the public, while ensuring the safety of employees and stakeholders.

Extension of the Railroads **9,912.1km**

Electrified Track Extension **10,008km**

Train operation **3,378 times a day**

Safety Management (Railroad Traffic Control Center)

Rolling Stock Maintenance Operations

Facility Maintenance Operations (Track Work)

Average Daily Traffic

Convenient Railroad (High Speed, Conventional, and Metropolitan Railroad Businesses

- Provide convenient rail transport services to the public through the operation of passenger trains, including high speed, conventional, and metropolitan trains.
- Establish railroad tourism infrastructure and develop tourism products, while expanding transfer systems with public transportation and connections to local transport modes.
- Expand services for the transportation disadvantaged and provide universal rail transport services on less frequented routes.

Achieve national economic development and enhance transportation welfare by delivering fast, accurate, and convenient rail transport services.

High Speed Railroad Business **230,000 people**

Conventional Railroad Business **140,000 people**

Metropolitan Railroad Business **3,010,000 people**

High Speed Railroad Business (KTX)

Conventional Railroad Business (ITX-Maeum)

Metropolitan Railroad Business (Electric Train)

Sustainable Growth Railroad Revenue

Railroad as aTotal Logistics (Freight Transport · Total Logistics Businesses)

- Transporting strategic items such as export-import containers, cement, and steel, moving away from a focus on raw materials like coal and oil.
- Promoting transportation agreements for global logistics business and modernizing logistics facilities to establish an efficient railroad logistics system.
- Advancing the development of handling, CY, and warehouse operations linked to railroad freight transport, as well as developing logistics facilities around major cities.

Providing comprehensive logistics services to enhance logistics competitiveness and contribute to national economic development.

Total Revenue from Logistics Business **284.3 billion KRW**

Average daily traffic (Freight Transport Business) **58,000 tons**

Revenue from Total Logistics **47.5 billion KRW**

Freight Transport Business (Freight Trains)

Total Logistics Business (Busanjin Station CY)

Total Logistics Business (International Forwarding)

Sustainable Growth Railroad Revenue

Railroad and Sustainable Growth (Asset Development · Asset Utilization · Global Businesses)

- Utilizing our tangible and intangible assets to identify and promote future growth drivers through asset development and utilization projects.
- Strengthening win-win cooperation by expanding collaboration through support programs for socially disadvantaged groups and small and medium-sized enterprises.
- Building networks and enhancing cooperative systems in preparation for expanding international exchange and overseas business.

Sustainable Growth Sales
Exceeded 400 billion KRW in 2023
110% Year-over-year increase

Securing sustainable management through development and operation projects, new business development, and overseas ventures utilizing our tangible and intangible assets.

Asset Development Business **220.2 billion KRW**

Asset Utilization Business **400.1 billion KRW**

Overseas Business **20.07 billion KRW**

Asset Development Business (Yongsan Station Area Development)

Asset Utilization Business (KORAIL Lounge)

Overseas Business (Uzbekistan high speed rail maintenance agreement)

Safe Railroad

Safety Management

KORAIL practices 'Emergency Safety Management,' prioritizing the safety of the public, with the entire organization participating in projects to restore trust in safety. After three passenger train derailments and four serious accidents occurred in 2022, which lowered trust in railroad safety, we conducted data analysis to identify root causes and implemented comprehensive preventive measures. As a result, we achieved zero serious accidents for the first time since the establishment and reached zero derailments of passenger trains.

Reinforcement of Major Accident Prevention Management

Measures to prevent railroad accidents
6 Strategies, 50 Tasks

- Proactive Response to Risk Signs
- Unusual Incident Response System
- Rolling Stock Maintenance System
- Strengthening Customer-Centric Guidance
- Railroad Facility Maintenance
- Keeping the Basics

ZERO Major Railroad Accidents

- Establishment of phased array technology and inspection system for high speed trains
- Complete replacement of relay rails (86 locations) to strengthen vulnerable track management
- Expansion of safety facilities on railroad crossing approaches (862 locations)

Measures to prevent serious accidents
6 Strategies, 41 Task

- Keeping the Basics
- Strengthening Worker Competencies
- Eliminating Human Errors
- Improving Workplace Environment
- Establishing a Safety Culture
- Enhancing Safety Systems

ZERO Serious Accident

- Securing safety equipment such as monitoring CCTV at work sites
- Reinforcement of work environment facilities through expansion and upgrading of lighting towers(24 locations)
- Train approach warning app integration device for train monitors → individual distribution to workers

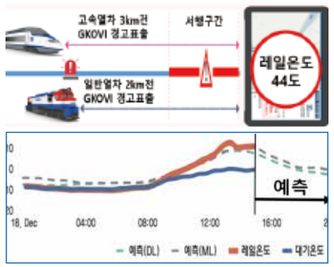
Strengthening Digital-Based Safety Control Functions for Securing Safety Policy Implementation

One of the most significant changes in KORAIL's organization is the complete reorganization of the company-wide safety structure. The establishment of the Chief Safety Officer (CSO) position has enhanced the independence of safety functions and expanded the safety management organization. The new president's commitment to transitioning from a manpower-centered safety management approach to a digital technology-based safety management system has been fully reflected in 2023. A rail temperature prediction system has been established to prepare for abnormal climate conditions, and real-time monitoring of key vehicle components allows for immediate identification of risk factors. Additionally, the use of digital inspection equipment has enabled more detailed inspections of operating line facilities.

Establishment of Abnormal Climate Response System

Earthquake Impact Zone Query

Visualization of Train Control



Rail Temperature Prediction Screen Display (Data Portal)

Establishment of a System Capable of Collecting Information, Responding, and Predicting Abnormal Climate Conditions

The system displays route and map information for areas under weather advisories, allows for the query of structures located within earthquake impact zones, and visualizes train control criteria based on rainfall for sharing. The Train Driver Guidance System (GKOVI) shares real-time rail temperature information, providing guidance on slow-speed driving standards. Additionally, a rail temperature prediction system based on big data has been established to scientifically predict rail temperatures, enabling proactive measures such as preemptive train control and the deployment of track monitors. Automatic sprinkling devices for heatwave preparation have been installed at 124 locations on high speed lines, with plans to expand to a total of 426 locations (289 high speed, 137 conventional) by 2024

Ga-Na-Da Safety Poster

Zero Serious Industrial Accidents by Strengthening Control of On-Site Work Risk Factors

KORAIL has enhanced the self-discipline prevention system through employee participation in 'risk assessments.' A total of 155,392 hazardous risk factors were evaluated, leading to the mitigation of these risks. Additionally, improvement measures were implemented based on the analysis of job accident data, focusing on 26 key risk factors across eight areas. The "Ga-Na-Da Basic Rules" campaign was launched to raise employee awareness of safety. To specifically eliminate train contact risk factors, systems such as motion detection alarms, train approach alarm apps, and unauthorized access control have been established. Furthermore, safety standards equivalent to those of employees have been ensured in third-party contracts as well.

Rolling Stock Maintenance & Repair

KORAIL conducts thorough maintenance operations from the point of vehicle purchase to disposal to ensure the safe operation of trains. Recently, with the transition from diesel to electric locomotives and the generational shift from baby boomer employees to MZ generation employees, maintenance methods have significantly changed from being labor-intensive to focusing more on data and sensor diagnostics. Significant improvements are being made in key maintenance areas, including fault repair, performance enhancement, and regular maintenance.

Achieved the Highest Operating Safety Rate in History Through Systematic Rolling Stock Maintenance

KORAIL strictly operates vehicle failure management standards. According to these standards, only delays of over 20 minutes are recognized as vehicle failures, but delays of over 5 minutes are also subject to management. Recently, if a delay exceeds 5 minutes, failure information is automatically transmitted, allowing for prompt action. This standard is stricter than those in advanced railroad countries, resulting in a significant improvement in vehicle reliability, with the distance driven safely (based on the 5-minute standard) increasing from 112,652 km in 2022 to 118,313 km in 2023. After repairs are completed, big data analysis of the causes of failures and the derivation of improvement measures are pursued to enhance performance. In the area of regular maintenance, efforts are also being made to improve failure analysis and safety rates through the vehicle management system.

Real-Time Fault Inspection Transitioning from a Time-Based Maintenance System (TBM) to a Condition-Based Maintenance System (CBM)

KORAIL has optimized our maintenance cycle by transitioning from a traditional time-based maintenance system (TBM) to a condition-based maintenance system. By installing monitoring sensors on vehicles, the condition of key components can be monitored in real-time, and the status data can be transmitted to the ground. This allows for real-time management of vehicle conditions, transforming periodic vehicle inspections into real-time inspections based on abnormal conditions, which is expected to significantly reduce vehicle failures.

Condition-Based Maintenance Interval Optimization

KTX-1 Safety Assurance Through Precise Safety Inspections

For vehicles that have been in operation for 15 years, a half-life overhaul (HLO) has been conducted to confirm their operation until the expected lifespan of 30 years. For vehicles at the 20-year mark, remaining lifespan assessments and precise safety diagnostics were carried out to measure their predicted lifespan. A second HLO was conducted, including modifications to key electrical components, to establish criteria for economic maintenance limits, review vehicle replacement timing, and provide a basis for lifespan extension.

Track Facility Inspection Cases Using Digital Inspection Equipment

Improvement — Autonomous Track Inspection Robot

- Obstacle recognition within rail tracks and surrounding environment imaging
  * Speed: 20 km/h, remote control, and real-time video transmission

Safe track inspections even in adverse weather conditions

Improvement — Digital Track Switch Testing Device

- Inspection of component conditions before installation of track switches
  * Operates on electrical signals, allowing inspections without on-site installation

Inspection time reduced to within 1 hour and work efficiency improved by 89%

Examples of Real-Time Remote Monitoring and Automatic Inspection Systems for Key Facilities

New Installations

Establishment of Monitoring System for Rail Facilities Protection

- Real-time monitoring of the vehicle's upper pantograph
- Real-time alerts for defect information to the control center and business office
  * Immediate control of operations for affected vehicles and on-site inspections

Expanded Detection

Real-Time Automatic Inspection Using Operational Trains (ITX-Saemaul)

- Real-time monitoring of the vehicle's upper pantograph
- Real-time alerts for defect information to the control center and business office
  * Automatic analysis of inspection data (expanding to 3 electric trains by 2024)

Facility Maintenance Management

KORAIL is committed to implementing a safe railroad for the public through facility maintenance based on advanced digital technologies. Additionally, we are promoting a major shift towards a smart maintenance system by transitioning from a manpower-centered approach to automation and mechanization in the inspection, maintenance, and repair of railroad facilities. The development and introduction of digital-based inspection equipment allow for safe and rapid inspections of track facilities.

Development and Introduction of Digital-Based Inspection Equipment for Safe and Rapid Track Facility Inspections

To ensure the safety and punctuality of trains, various digital-based inspection vehicles are utilized for real-time track inspections. In response to severe weather conditions such as typhoons and heavy rainfall, a self-driving track inspection robot has been developed to replace manual walking inspections and visual checks, and it is currently being prepared for practical application after pilot operations.
Previously, spare parts for track switches, which are stored for unusual incidents, required on-site installation for functional testing due to their heavy weight. However, a dedicated digital track switch testing device has been developed, allowing for functional testing directly at the storage location without the need for on-site installation. This innovation has resulted in a n 89% improvement in inspection time and work efficiency.

Establishment of Real-Time Remote Monitoring and Automatic Inspection System for Key Train Operation Facilities

For facilities in sections where trains operate continuously, precise inspections were virtually impossible. However, by applying ICT technology to operating trains, real-time remote monitoring and automatic inspections have become feasible. The system enables real-time automatic detection of facility deformations during train operations, allowing for immediate on-site inspections and maintenance in case of any abnormalities.

Improvement of Train Running Safety through Self-Developed Relay Rails in High Speed to Conventional Line Connection Sections

Previously, the connection between high speed and conventional tracks involved welding relay rails with significant cross-sectional changes, which was vulnerable to track misalignment. To address this issue, relay rails with improved cross-sectional area and weight reduction were developed in-house, resulting in a 35% enhancement in train running stability.

Easy Detection of Fine Microcracks Using Portable Ultrasonic Detector for Rail Management

Internal cracks in rails can lead to severe damage, making early detection crucial for prompt action. The traditional testing method involved scanning the upper running surface of the rail with ultrasonic waves to detect cracks through reflections, which risked creating shadow areas where the ultrasonic waves did not reach the bottom of the rail. To overcome this, portable ultrasonic detectors, based on technologies used in the medical field, have been introduced, enabling inspections down to the bottom of the rail and strengthening rail management while eliminating shadow areas in rail testing.

Expansion of Trackside Infrastructure to Prevent Trespassing Accidents, Significantly Reducing Casualties

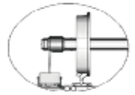
Despite the prohibition of unauthorized access to tracks under the Railroad Protection Act, an average of 10.2 casualties occur annually, necessitating fundamental measures. In response, KORAIL has blocked access points from platforms to tracks with safety barriers and has completed the installation of protective fences along interstation tracks, effectively eliminating unauthorized entry routes.

Fundamental Improvement of High Speed Train Axle Temperature Detector Measurement Errors

The previous single-point measurement method was susceptible to errors caused by external factors such as train vibrations and sunlight. However, the newly introduced multi-point (8-point) measurement and data comparison analysis algorithm have fundamentally improved these errors, helping to prevent train operation disruptions.

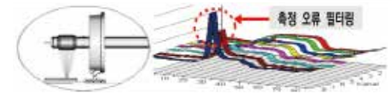
Improvement of High Speed Train Axle Temperature Detector Measurement Errors

Existing
1 pixel measurement



Measurement error caused by external environment

Improvement
8 pixel measurement + data comparison — Measurement Error Filtering



Filter false measurement data to ensure measurement data reliability

Development of an Evolved "Hand Tie Tamper" for a Convenient and Safe Work Environment

In areas where equipment deployment is challenging, the development of a lightweight and convenient domestic hand tie tamper (a device for track compaction) has greatly assisted workers and significantly enhanced workplace safety.

Introduction of Hand Tie Tamper (Air-Operated Track Compaction Machine)

Promotion Details

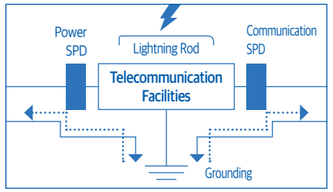
- Feedback Collection and Satisfaction Survey of Maintenance Workers Through On-Site Demonstration Events
  * Development Priorities: Lightweight > Engine Heat Reduction > Vibration Reduction > Compaction Effect
- Compared to existing equipment, the new design has achieved lightweight construction, improved usability, and a 42.8% enhancement in compaction performance.
  * weight 25kg → 15kg, heat generation 46.8℃ 33.6℃, vibration 122dB → 109dB

213 units introduced

Effects

Improvement of work safety due to weight reduction
(Lost time injuries caused by musculoskeletal disorders decreased by 66.7% compared to the previous year)

Surge Protection Device (SPD) Installation Diagram



Development of a Dedicated Surge Protection Device Tester for Railroads

With the increasing frequency of extreme weather events, lightning occurrences have risen, leading to increased use of surge protectors for equipment protection. However, there was no suitable tester for surge protectors in the railroad environment, resulting in reliance on visual inspections, which had physical limitations for fault assessment. The successful development (patent application) of a dedicated tester to measure the operational status of surge protectors has enabled precise measurements for accurate lifespan predictions, ensuring the reliability of surge protectors and preventing failures in telecommunications equipment due to lightning and surge-related overvoltages.

Convenient Railroad

(High Speed, Conventional, and Metropolitan Railroad Business)

Providing Fast, Accurate, and Convenient Railroad Transport Services for National Economic Development and Transportation Welfare

high speed Rail Record Revenue

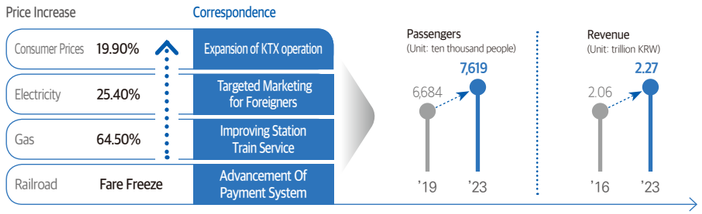
'23: 2.27 trillion KRW vs '16: 2.06 trillion KRW

10.3% ↑

High Speed Railroad Business

KORAIL's KTX is celebrating its 20th anniversary and is making various efforts to recover the decreased demand due to high prices and the economic downturn in the post-COVID era.
First, to alleviate the fare burden on the public, we have kept fares frozen for 12 years, despite a 19.9% increase in various prices. Additionally, to minimize revenue losses, we have made various self-reform efforts, resulting in achieving the highest-ever revenue of 2.2696 trillion won in 2023.

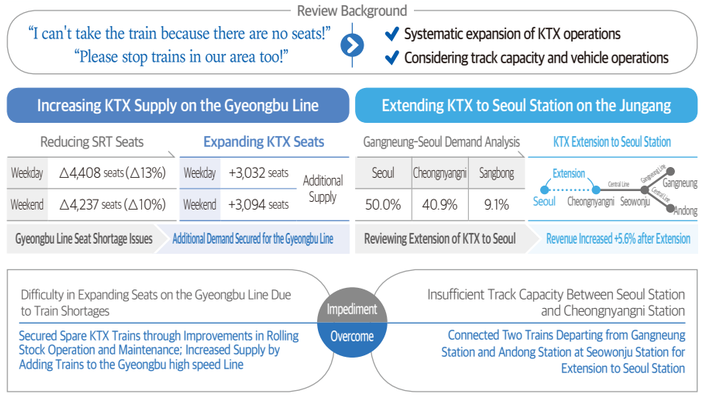
High Speed Railroad Business Key Achievements



Expansion of Demand-Oriented KTX Operations

Through market analysis, we have systematically expanded KTX operations by improving various constraints such as track capacity and vehicle operation on routes with demand, significantly contributing to revenue growth. Particularly on the Gyeongbu Line, while it was challenging to expand seating due to vehicle shortages, improvements in train operation and maintenance allowed for the acquisition of spare KTX trains, enabling the sale of over 6,000 additional seats per week. For the Gangneung-Seoul route, there was high demand at Seoul Station, but operations were difficult due to insufficient track capacity between Seoul Station and Cheongnyangni Station. However, by connecting two trains departing from Gangneung Station and Andong Station at Seowonju Station and extending their operation to Seoul Station, we were able to achieve both increased revenue and reduced carbon emissions.

Expanding KTX Operations Reflecting Public Opinion



KORAIL Foreigners' Specialized Services

Creating New Demand in the Market of 80.4% Non- and Dormant Members of the Domestic Population

Due to the limitations of the existing internal reservation and ticketing platform in generating new demand, KORAIL recognized the need to target new domestic and international markets. Considering that 80.4% of the domestic population consists of non-members and dormant members, efforts were made to increase train reservation usage among this demographic. To achieve this, we collaborated with three financial platforms with over 5 million users, allowing customers to purchase tickets without needing to sign up or install the KORAIL Talk app. This enhanced accessibility for non-members led to a 42.4% increase in ticket sales through private platforms compared to the previous year, generating an additional revenue of 35.4 billion won.

Targeted Marketing in the Global Foreign Market

With the continued popularity of K-pop, the influx of foreign visitors to Korea has increased, particularly among Chinese tourists, who make up the largest proportion (30%). We conducted targeted marketing aimed at this demographic. To enhance reservation convenience, we implemented ticket sales linked to WeChat and Alipay, the largest mobile platforms in China, making us the first public sector initiative to offer ticket reservations through Chinese apps. Since its official launch in April 2023, it achieved sales of 130,000 seats and generated revenue of 5 billion won. Additionally, we have provided specialized services for foreigners by collaborating with international airlines to add ticket terminal sales functions.

Enhancing Digital Ticket Reservation Services to Increase Customer Convenience

For high speed trains, the self-ticketing rate is around 90%, making convenient service during ticket reservations essential. To improve this, a one-click payment system was introduced in the app, allowing payments that previously took several steps to be completed in just three seconds. As a result, the share of convenient payments increased by 7.1 percentage points compared to the previous year. By addressing and improving inconveniences reported during ticket reservation refunds through KORAIL Talk, the number of complaints and inconveniences has significantly decreased.

Expanding Customer Experience: Focused Services for Stations, Trains, and Parking

The traditional labor-intensive baggage delivery service between stations and trains revealed several limitations during testing, such as long wait times and reduced operational revenue. In response, we introduced digital smart technology and integrated baggage delivery with parking services. The service area was expanded to 16 regions nationwide, allowing for year-round operation and enabling advance reservations for accommodation-station-baggage delivery services through the app, thereby transforming the paradigm of hassle-free railroad travel. As a result, usage surged from 21,000 to 99,000 cases, a 359% increase compared to the previous year. A pre-settlement feature for parking was added to KORAIL Talk, facilitating quicker movement for customers using personal vehicles after disembarking.

Increased Customer and Employee Satisfaction Through Self Check-In for Non-assigned Seats

With the increase in passenger boarding rates, the sale of non-designated seats also rose. Previously, crew members had to frequently check in passengers, which was inconvenient. This process was improved by allowing self check-in via QR code recognition in the KORAIL Talk app, alleviating inconveniences for both customers and crew members. These efforts led to the service being selected as one of the Best Top 5 Service Excellence Cases in 2023.

Using AI & Digital Twin Technology for Smarter Customer Guidance

KORAIL aims to provide smarter customer guidance services by utilizing various digital technologies. For simple guidance tasks within stations, AI-based robots are being employed to assist with information. Intelligent CCTV systems now automatically alert staff to emergencies, allowing for quicker responses compared to traditional visual monitoring. We plan to implement features for navigation within complex station layouts and an integrated management system for customer service facilities using digital twin technology.

Smart Customer Guidance Cases

Pilot operation in '23		Completed development in '23, Scheduled to open in '24	
Using AI-based robots to support simple guidance tasks	Intelligent CCTV recognizes and notifies emergencies	Establishment of guide service inside the station using Apps	Integrated Management of Hospitality Facilities Utilizing Digital Twin(3D)

Faster, More Accurate, and Easier Customer Guidance with a Standardized System

Previously, our announcement broadcasts and messages were inputted individually at each station, leading to challenges in delivering timely and accurate information. To improve this, a system was established that allows the central control room to uniformly broadcast announcements and display content on electronic boards during unusual situations, resulting in faster and more accurate customer guidance.

Improved Items for Standardized Guidance System

Existing

Differences in guidance information and delays in announcements

- Limitations in real-time sharing of operational information and status updates.
- Omissions, errors, and distortions in the information delivery process.

Improvement

A standardized guidance system enables quick customer announcements like those of KTX

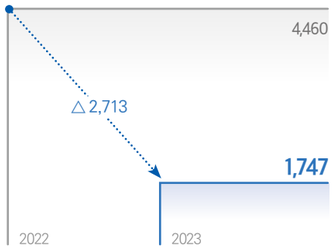
- In unusual situations, the central control room broadcasts customer guidance information uniformly.
- Improvements in the information delivery method from headquarters to the field minimize guidance errors.

Increased Customer Satisfaction through Enhanced Digital Train Delay Management

As passenger numbers have risen, train delays due to various causes have also increased. To strengthen management, we expanded its on-time rate monitoring from focusing solely on terminal stations to include intermediate stations. The causes of delays are analyzed using big data, allowing for adjustments in operating times or the deployment of border control personnel during peak congestion to minimize delays. A new department was also established to respond swiftly to reroute trains between KTX and SRT lines during unusual situations to reduce consecutive delays. To prepare for delays caused by abnormal weather, we measure rail temperatures in advance and use a remote power management system along with automatic watering devices to prevent rail deformation due to extreme temperatures. As a result of these efforts, customer complaints (VOC) significantly decreased from 4,460 cases in 2022 to 1,747 cases in 2023, achieving a world-leading on-time operation rate of 99.3% according to the International Union of Railways (UIC) standards.

Reduction in Delay-Related VOCs

Received VOC related to the delay (Unit : case)



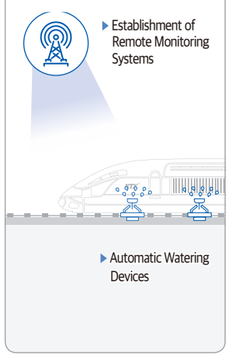
Strengthened Management of Train Delays

Expansion of weather detection system facilities

- Big data-based rail temperature prediction
  * Installation of 284 rail temperature measurement sensors nationwide
- Advancement of railroad weather information systems
  * Shortened rainfall reception cycle (from 20 minutes to 5 minutes)

Introduction of automatic and intelligent equipment

- Establishment of remote monitoring systems for substations and power
  * Completion of installation of 444 IoT diagnostic sensors
- Expansion of automatic watering devices to general lines
  * From 124 locations (high speed) to 426 locations (high speed + general



Conventional Railroad Business

KORAIL operates conventional trains on over 90 main and branch lines nationwide, contributing to the expansion of public railroad services. In 2022, the customer satisfaction score for conventional trains was 78.5, reflecting poor performance. To address this, in 2023, we established and implemented groundbreaking customer service improvement measures. Through seat expansions, the introduction of new trains, and enhancements for the convenience of transportation-vulnerable individuals, the number of conventional train users increased by 3.01 million compared to the previous year. The expansion of railroad-centered tourism products led to a 40% increase in railroad tourism revenue compared to the previous year. As a result, the customer satisfaction score for conventional trains in 2023 improved significantly to 88.3, an increase of about 10 points.

Enhancement of Customized Services for Transportation Vulnerable Individuals and Improved Accessibility through KORAIL Talk

Reservations for senior seats, which were previously only possible at station counters, can now also be made through the KORAIL app. The payment extension service, which was previously available only to seniors, and the one-call service, allowing booking, payment, and ticket issuance with a single phone call, have now been expanded to include customers with disabilities. This has led to a 54% increase in the number of beneficiaries. Pictograms for wheelchair-accessible seating have been installed on the cabin floors to facilitate easier train access for wheelchair users. To address the digital divide among vulnerable IT groups due to the expansion of non-face-to-face services, digital guides have been deployed to assist with the use of automatic ticket machines in stations. Customized instructional videos on how to use KORAIL Talk have been produced and distributed in collaboration with relevant organizations such as the Korean Senior Citizens Association.

Enhancement of Customized Services for Transportation Vulnerable Individuals

		Operation Status	Advancement of customized services	Achievement
Reserved seats for seniors	Status	• Separately allocated seats for elderly customers who are unable to make a reservation (seats for the elderly)	• Improved the system so that reservations and sales can be made on KORAIL Talk	• 26% increase in senior seat bookings * 346,000 tickets in '22 → 435,000 tickets in '23
	Issue	• Elderly seats are sold only at the station ticket counter		
Deferred payment service	Status	• Deferred payment until 20 minutes before departure for customers who cannot make a purchase within 10 minutes of the payment deadline	• Customers with disabilities are also automatically enrolled in the deferred payment service	• 54% increase in the number of beneficiaries * 627,000 in '22 → '23: 968,000
	Issue	• Only senior citizens among the transportation vulnerable are automatically enrolled		
One-call service	Status	• Providing services that allow you to make reservations, payments, and ticketing with a single phone call	• Expanding the scope of the one-call service to customers with disabilities	• 148% increase in the number of users * 9,153 cases in '22 → '23 22,734
	Issue	• Automatically apply one-call service only for senior customers		
Wheelchair Seats	Due to the increase in users, it is difficult to secure space for electric wheelchairs		• Dedicated pictograms are installed on the floor of the guest room to free up space for wheelchairs (Completed installation on high speed train in '23, all train installation in '24)	

ITX-Maeum started operation

Reduce travel time

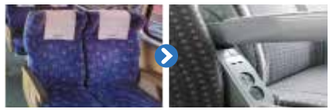
Travel time reduced
(Average reduction of 54 minutes from Seoul to Busan)

Make seats more comfortable

Seat area increased by 13.8%
(Front-to-back spacing improved by 15mm)

Make interiors more luxurious

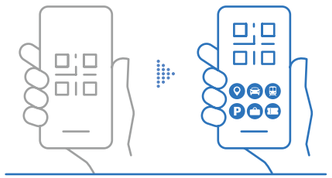
Outlets per seat increased from 0.12 to 1
(Equipped with USB ports, tables, and reading lights)



Introduction of New ITX-Maeum Trains and Improvements to Existing Train Interiors

KORAIL has introduced new ITX-Maeum trains to replace aging conventional trains. With a distributed power system, travel times have been reduced, and seat spacing, and area have been increased for customer comfort. Facilities for using electronic devices, such as outlets and USB ports, have also been improved. We plan to expand the deployment of next-generation eco-friendly ITX-Maeum trains. Discounts for conventional train users have also been strengthened. To alleviate the transportation cost burden for irregular users of conventional trains, the N card program of KTX has been extended to conventional trains. Improvements have also been made to existing trains. Additional outlets have been installed in ITX-Saemaul trains, and a compressed air spraying device has been installed in Mugunghwa train restrooms to address odor issues, along with steam cleaning to maintain cleanliness on par with KTX standards.

Linked Service Customer Experience Improvement and Advancement



- UX/UI main redesign for railroad-centered connection service ('24 May)
- Automatic recommendation of product items considering customer usage patterns ('24 Dec)

Improving accessibility to connected services

Service Advancement

Existing	Improvement
Providing operation information only for trains reserved by customers	Real-time operation information for all passenger trains ('24 July)
Providing location information based on simple map data	Providing a pathfinding service in history using VR ('24 Dec)

New Services

Railroad Station Conference Room Reservation & Payment (Second Half of '24) | Public bicycle reservation and payment (second half of '24) | Linked Service Search Function ('24 Dec)

Transforming the Current Ticket Reservation-Focused KORAIL Talk into a Comprehensive Super App

KORAIL has continuously expanded various linked services within the KORAIL Talk app; however, due to low user engagement, there was a need for service improvements from the customer perspective and a redesign of the UI/UX. In response, the 'KORAIL MaaS Task Force' was launched to undertake a comprehensive service overhaul, aiming to establish a railroad-centered integrated mobility platform. By the end of 2024, the goal is to enhance the customer experience for linked services and continuously expand the level of integration and types of services offered.

Creating a New Transport Model Combining Rail and Bus to Overcome Natural Disasters

In July 2023, extreme rainfall caused track damage, halting operations on the Chungbuk, Yeongdong, and Jeongseon lines, leading to inconvenience for residents. In response, we collaborated with local governments to sign operational agreements with regional bus companies for the affected areas and developed a bus reservation program to provide seamless transfer services. Adjustments were made to daily operation frequencies based on customer demand, and bus departure times were coordinated with train arrival times to minimize inconvenience for residents.

Improving Rail-bus Combined Transportation

- Swift implementation of the operation improvement order procedure
- Promotion of bus operation connected to local residents

KORAIL
- Signed an agreement with a local bus company
- Emergency development of bus reservation program

Local Goverments

Chungbuk Line	Yeongdong Line	Jeongseon Line
4 Dailly Combined Transportation (Jeungpyeong~Jecheon)	8 Dailly Combined Transportation (Dongbaeksan ~ Yeongju)	City Tour Bus Route Adjustment (From Jeongseon → from Mindungsan)
Daejeon – Transfer: Jeungpyeong – Jecheon	Donghae – Transfer: Dongbaeksan – Yeongju	Cheongnyangni – Transfer: Mindungsan – Jeongseon

Revitalizing the Railroad Tourism Industry through New Themed Tourism Development Utilizing Local Tourist Resources

In the post-COVID era, KORAIL faced issues of seat shortages and limited stay times at tourist attractions due to increased train passengers. To address this, we collaborated with local governments to develop products that enhance local appeal while securing stay times without reducing revenue. As a result, products like 'Untangodo 1330,' themed around the Taebaek mining area, were successfully launched. To alleviate travel cost burdens, discount coupons, and new region-specific railroad tourism programs were planned. These efforts resulted in a 40% increase in tourism demand compared to the previous year.

Collaboration case to revitalize the railroad tourism industry

Untangodo 1330 'Walking through Gangwon by train'	Railroad & Night Tour 'New Charm of Night Different from Day'
Developed trekking tourism products utilizing low-demand routes in abandoned mine areas (Taebaek, Samcheok, Yeongwol, Jeongseon)	Operated night-time specialized stays and lodging products using low-demand trains (Gangneung, Jinju, Tongyeong)
Collaboration | Gangwon-do, Gangwon Tourism Foundatio	Collaboration | Ministry of Culture, Sports and Tourism, Korea Tourism Organization

Alleviating Travel Cost Burdens through New Regional Tourism Promotions

While tourism demand is rising, economic downturns have made travel costs the biggest barrier to domestic travel. To alleviate the travel cost burden for citizens and invigorate domestic tourism and local economies, KORAIL launched region-specific railroad tourism promotions. We offered train fare discounts, while local governments provided regionally tailored tourism discount coupons and payback incentives. These efforts to activate region-specific railroad tourism promotions resulted in a significant 40% increase in railroad tourism revenue compared to the previous year.

Metropolitan Railroad Business

KORAIL operates a total of 15 metropolitan railroad lines (49.8% of the nationwide metropolitan and urban railroad service routes, covering 741.4 km), providing improved time value for citizens and balanced public transportation services through the expansion of metropolitan railroad networks and efficient train operations. Additionally, by utilizing IT technology, we are creating a safe and user-friendly station environment and striving to implement customer-centered metropolitan railroads through improvements in operational systems and emotional broadcasting initiatives.

Enhancing Transportation Convenience through Successful Openings of New Lines and Extensions

By expanding metropolitan railroad services in the western and northern regions of Gyeonggi Province, KORAIL has fostered balanced development of public transportation between regions and created a 30-minute living environment in the metropolitan area. The opening of the Sosa-Daegok-Ilsan Seohae Line has increased transportation convenience for five local governments in the western Gyeonggi area, while the extension of the Dongducheon-Yeoncheon Gyeongwon Line has alleviated transportation inconveniences for residents in northern Gyeonggi Province. Through the establishment of an optimal train operation plan reflecting user demand and environmental changes, the average daily ridership in 2023 (3.01 million people) increased by 8% compared to the previous year

Sosa-Daegok	Bus 79 minutes Metro 21 minutes	58 min. reduced
Sosa - Ilsan	Bus 94 minutes Metro 32 minutes	62 min. reduced
Seoul - Yeoncheon	Bus 210 minutes Metro 100 minutes	110 min. reduced

KORAIL-SKT Business Agreement

Congestion Measurement

Mobile data | Train Operation Information | Transportation card data

Provide congestion information

Display congestion rate by compartment

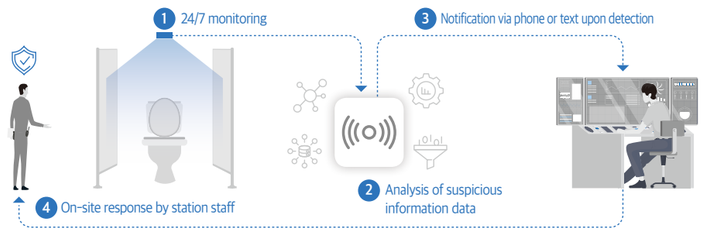
Providing a Safe and Convenient Metropolitan Railroad Environment through IT Technology

To alleviate congestion on metropolitan subways and create a safe usage environment, KORAIL is developing a real-time congestion information system in collaboration with mobile carriers. Starting with lines 1, 3, and 4, this system will gradually expand, allowing users to check real-time congestion information for each car through the 'KORAIL Subway Talk' app. This will enable customers to decide where to board, helping to disperse riders and alleviate congestion.

Installation and Operation of a 24-Hour Illegal Filming Detection System in Restrooms

To ensure that women can use station restrooms safely, KORAIL has installed a 24-hour illegal filming detection system in 64 locations across four stations. This smart system allows for the detection of hidden cameras, enabling proactive crime prevention and immediate action. Plans are in place to expand this initiative to additional stations in the future.

Overview of the Continuous Detection System



Types of hidden cameras | tumbler-mounted, toilet lid-mounted, tissue box-mounted, screw-mounted, trash can-mounted

Enhancing Customer Satisfaction through Differentiated Customer-Centric Services

In collaboration with specialized organizations for the transportation disadvantaged, we developed user-friendly automatic ticket vending machines, which have been installed at eight locations. A pilot operation has been conducted to ensure stability, with plans to install these machines at all metropolitan railroad stations by 2025. We also proactively identified and addressed inconvenient and unreasonable systems by extending the refund period for unused tickets from 7 days to 14 days and increasing the alternative transportation fee from 5,000 won to 10,000 won. These efforts were implemented through discussions with 12 railroad operating organizations.

Improvement of ticket machines

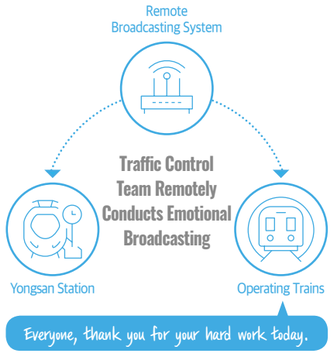
Enlarged monitor	Magnifier function	Low Posture Mode	Braille keypad

Expansion of Transfer Transportation

To improve the convenience of using the Donghae Line (Busan-Ulsan) located on the outskirts of urban areas, we introduced a demand-responsive bus service in collaboration with local governments in September 2023. This service connects 11 key tourist destinations centered around Osiria Station and Gijang Station, providing tailored transportation and tourism information for foreign visitors, thereby facilitating transfer convenience and promoting local tourism.

Implementation of Emotional Broadcasting for Customers

KORAIL has established a centralized broadcasting system based on LTE that can transmit audio in real-time at stations and on trains. We utilize this system to implement emotional broadcasting for customers. Notably, we provide special emotional broadcasts for metropolitan subway users featuring voice donations from social celebrities, such as support for 500,000 College Entrance Exam takers (table tennis player Shin Yu-bin) and New Year greetings.(singer Kyuhyun)



Participation in GTX Operations to Strengthen Future Growth Competitiveness

Leveraging the expertise gained from railroad operations, we actively participate in the GTX private investment project, a key national policy initiative. We maintain infrastructure for the GTX-A financial section (Suseo-Dongtan) and are preparing to participate in the station and train operations and facility maintenance for the upcoming GTX-B and C projects. To achieve this, we focus on thorough preparation for project participation through benchmarking other private investment projects and forming task force teams, striving for the successful opening and operation of the GTX.

Participation in GTX Operations

GTX-A opening support and cooperation

A Unjeong~Dongtan: 82.1km
(Government-funded : 39.5 km, Private: 42.6 km)

Suseo ~Dongtan(Government-funded) (Scheduled to open in '23 Mar)		Unjeong ~Seoul (Private) (Scheduled to open in '24 Dec)	
Control	KORAIL	Control	KORAIL
Maintenance		Maintenance	GTX-A Operation(Corp.)

Preparation for participation in GTX-B,C projects

B Incheon National Uni.~ Masuk: 82.7 km
(Control, Operation, and Maintenance)
Private 39.9km Common 22.9km Government-funded 19.9km

C Deokjeong~Suwon & Sangnoksu 86.5km
(Control, Operation, and Maintenance)
Private 38.0km Common 48.5km

Railroad and Sustainable Growth

KORAIL Logistics Business HQ primarily handles the transportation of containers for imports and exports, as well as cement, steel, and coal necessary for key national industries. Moving beyond traditional transportation services, the HQ is expanding its business areas to include loading, warehousing, and forwarding, aiming to become a global comprehensive logistics company. In response to eco-friendly government policies, the Logistics Business HQ is committed to operating high-efficiency, eco-friendly freight trains to reduce national logistics costs and actively support the government's carbon neutrality policies. Thorough preparations for international freight train operations will be made to prepare for the future era of continental railroads.

Freight Transport Business

Maximizing Freight Train Transportation Efficiency by Minimizing Empty Runs

For freight trains, round-trip operations are conducted based on departure and arrival stations. To mitigate the rigid transportation pattern that leads to empty train runs due to variations in cargo volume, we have improved operations to minimize running costs. The secured freight cars are then allocated to other routes. Additionally, to reduce empty returns, we have collaborated with global shipping companies to secure fixed cargo volumes and sought out necessary loads during one-way transports, thereby enhancing overall efficiency.

Regularization of Irregular Freight Trains and Acquisition of New Railroad Transport Contracts

KORAIL has assessed the handling capacity of stations by item, identified the routes and patterns of freight trains, and coordinated with customers to adjust transport demand and working hours, thereby increasing the turnover rate of freight cars. This has resulted in an increase in transport volume of 108 cars per day and 1 million tons annually. We also have conducted eco-marketing targeting the green market, global companies, and public institutions, leading to agreements for railroad transport of new freight under carbon emission reduction obligations. We have actively engaged in sales around import and export markets and container yards to facilitate the transition from road transport to railroad transport.

Building Logistics Infrastructure for Future Growth

KORAIL needs to strengthen its competitiveness by collaborating with the government for the smooth operation of the new Seohae Line. To this end, the government will support 50% of the purchase cost for 53 locomotives and freight cars to be deployed on the Seohae Line, which is set to open at the end of 2024. To secure future logistics transport competitiveness, we are aiming for the commercialization of 50-car-long freight trains with an average maximum length of 750m as per UIC standards. This includes expanding the tracks at Obong and Gimcheon Stations (scheduled for December 2024) and conducting train control inspections (scheduled for March 2025), while currently verifying all necessary conditions in collaboration with the government for operations in 2025.

Long Freight Train

Long Freight Train Operation Project

	Gyeongbu Line Obong~Busan New Port 50-car Long freight train operation goal ('24 Dec)					Achievement
	Stations			Evacuation space during operation	Train Control System	
Obstacles	Obong	Gimcheon	Busan New Port	Need for New Installations at 7 Locations Considering Passenger Train Competition	Comprehensive control for speed and braking is possible for up to 40 cars	Departure station track length 37 cars → 40 cars
	661m	729m	869m			Activating Uiwang ICD
Overcoming Efforts	Extended to 760m	Extended to 810m	Currently available	Government reviewing measures ('23 Apr - '24 Jun)	Upgrade to control 50 cars by '24 Dec	Successful commercial operation of 40-car long freight train ('24 Jan)

Total Logistics Business

With the amendment of the Korea Railroad Corporation Act in 2021, allowing the utilization of railroad facilities and land, KORAIL has been drafting a comprehensive roadmap since 2022 to explore new businesses and leap into a comprehensive logistics company.

Expansion of 'Last Mile Logistics' Services to Enhance Public Convenience

KORAIL provides fast and convenient intercity logistics services through the KTX express delivery service. Since March 2023, we have selected new operators and renewed the service with customer-oriented features at 13 major stations on the Gyeongbu Line and Honam Line. In the future, we plan to expand the service range to 15 locations, including newly established railway networks, and aim to expand various services, such as the direct delivery of public interest emergency cargo.

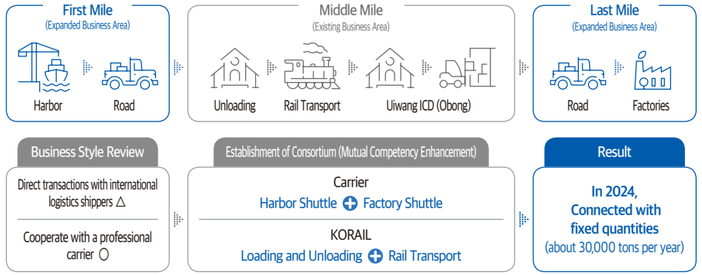
Reinforcement of Last Mile Logistics Services

	'Seoul' Micro Fulfillment Center (MFC) - Susaek Station	'Ulsan' Delivery Terminal Taehwagang Station	Incheon Station
Achieve-ments	Expansion of e-commerce to include comprehensive functions for household logistics (delivery), such as additional storage, processing, and transportation	Integration of ulsan southern region with nearby residential and commercial facilities, supply of delivery hubs	Smart storage tender planned
Result	Revenue generation 8.4 billion KRW (Future Plan) Examining new forms of last mile logistics such as delivery by train passengers		

'Becoming a Comprehensive Logistics Company Offering 'Full-Mile Services'

KORAIL aims to expand transportation limits by developing services that encompass First-Last Mile, not just limited to cargo arriving at railroad stations. We successfully implemented an international forwarding pilot project at the idle land of Sintanjin Station CY, generating revenue. The pilot project highlighted the need to secure competitiveness through Full-Mile services, leading to the establishment of a consortium with specialized transport companies. We have secured approximately 30,000 tons of fixed cargo annually for 2024 and are enhancing international logistics transportation capabilities by accumulating nonstop transportation capacity from shipping companies to railroads and to factories.

Full-mile Service Highlights



Modernization and Diversification of Logistics Facilities including Uiwang ICD

KORAIL is preparing to transform Uiwang ICD into a hub for a comprehensive railroad logistics business. To achieve this, we are working with the government to reorganize it into a cutting-edge smart inland logistics base through expert consulting, technical reviews, and analysis of advanced cases, aiming to develop it into a landmark for comprehensive railroad logistics. Existing CYs and new CYs will move away from simple leasing methods to maximize operational profits considering business viability.

Railroad and Sustainable Growth

Asset Development Business

KORAIL is making various efforts to achieve its annual goals by discovering sustainable development projects. The traditional business model of simple sales has shown limitations in improving the corporation's financial soundness, necessitating a paradigm shift for business area expansion. Accordingly, we are committed to identifying innovative items and developing new businesses that can ensure future growth.

Establishment of a Master Plan for Development of 66 Locations and Concurrent Idea Contest

KORAIL has selected 66 locations to solicit ideas for the utilization of development sites, moving away from traditional development methods to apply asset utilization ideas. We are fostering core professionals and has established expert consultations and a roadmap with the goal of achieving 30% of sustainable growth revenue by 2050.

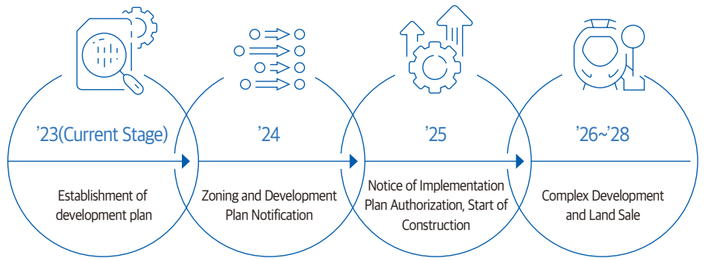
Yongsan Station Area Development Project: Proposal for Zoning Designation and External Announcement of Development Plans to Kick Off the Project

After conducting a preliminary feasibility study in 2021 and refining the development plan in 2022, KORAIL jointly announced the proposal for zoning designation and the development plan for the Yongsan International Business District urban development project with the Seoul City and SH Corporation in February 2024. Currently, a collaborative partnership with the licensing authority, Seoul City, and the joint developer SH Corporation is working to realize the development plan and expedite the licensing process. The zoning designation announcement is expected to be completed in the second half of 2024, and the implementation plan approval announcement in the second half of 2025, with the staged supply of developed land from 2026 to 2028.

Yongsan International Business District

Bird's Eye View of Beomcheon Train Depot

Development Plan



Simultaneous Promotion of Relocation of Railroad Train Depots and Development Projects in Full Swing

KORAIL aims to generate sustainable profits through the relocation of rolling stock depots and the redevelopment of existing sites. Five leading project sites have been selected, including Busan New Port Station and Yongsan Maintenance Depot. A new depot is planned around Busan New Port Station, while the existing depot will undergo mixed-use development through a public solicitation process. The relocation of the Imun Train Depot is currently being assessed for feasible sites and costs through research, with plans to reduce complaints related to noise and dust while creating a space that combines residential, commercial, and office functions. Through these two projects, the corporation aims to modernize maintenance facilities and achieve a profit of 476 billion KRW from station area development.

Asset Utilization Business

KORAIL is creating new revenue sources through customized projects to diversify its new growth businesses. To enhance revenue generation and competitiveness, we are committed to improving its marketing strategy for railroad transportation cards and its management system for affiliated companies. By reflecting changes in customer trends and shifting perspectives, we have generated new income. Through differentiation in marketing targets, we have expanded our business and strengthened corporate competitiveness, achieving a record revenue of 400 billion KRW for the first time.

KORAIL Lounge

Reinventing the Service Space 'KORAIL Lounge' into a Profit-Generating Service Area

With the prolonged vacancy of the existing KORAIL Lounge, there was a need to create a multifunctional space that meets high-level demands for waiting areas and commercial facilities. As a result, the operation of the KORAIL Lounge now serves 530,000 users annually, generating new revenue of 3.6 billion KRW.

Transforming Mandatory Installation Spaces for Electric Vehicle Charging Stations into Profit-Generating Business

To alleviate the burden of installation costs for charging stations, a preliminary pilot operation was conducted to secure business viability, followed by a public solicitation for private operators. The limitations of electrical capacity at each station were investigated and addressed with the cooperation of Korea Electric Power Corporation (KEPCO) across 160 stations. This initiative is expected to save approximately 30 billion KRW in initial investment for electric vehicle charging stations and generate an annual rental income of 700 million KRW.

Achieved a 2-fold Increase in Railroad Transportation Card Usage (50.9 Billion KRW) through Differentiated Marketing Strategies

The railroad transportation card business required a differentiated marketing strategy to enter the limited market of prepaid transportation cards as a latecomer. A mobile card that allows students and foreigners who have restrictions on postpaid card issuance to recharge anytime was developed. By collaborating with local governments to participate in transportation cost support programs, a competitively priced nationwide interoperable transportation card centered on rail was created. This initiative has provided benefits to a cumulative 170,000 users (2.8 billion KRW), ensuring welfare benefits for transportation-disadvantaged individuals and fulfilling the social responsibility of a public corporation.

Overseas Business

KORAIL Achieves First Annual Revenue of 20.07 Billion KRW from Overseas Business

KORAIL is enhancing its revenue and contributing to management improvement through the diversification and expansion of its overseas business, positioning it as an international sustainable growth driver. We recorded a historic annual revenue of over 20 billion KRW for the first time this year, generating 13.6 billion KRW from overseas railroad consulting, 5.79 billion KRW from exporting idle assets, and 680 million KRW from international training projects. Leveraging advanced technology from railroad operating agencies, KORAIL formed a consortium with six private companies to successfully enter new overseas markets, achieving a total of 17.4 billion KRW in projects across three countries. Furthermore, based on the trust established with existing partner countries, KORAIL is conducting a railroad operation and maintenance consulting project in Tanzania worth 15 billion KRW, which began in 2022, and has independently secured a 17.3 billion KRW operation and maintenance consulting project in the Philippines in 2023. By diversifying and expanding its business from technical consulting to operation and maintenance consulting, KORAIL has laid the groundwork for direct involvement in operation and maintenance projects, including being selected as the preferred bidder for the urban railroad O&M project in the Philippines.

ESG KORAIL, LINK KOREA!

KORAIL Management Strategy Promotion System

KORAIL aims to leap forward as a world-class railroad company that connects people, the world, and the future through its vision of 'KORAIL, a Companion for Opening Future Transportation," based on an absolute safety system. We seek to create innovative customer value and establish a sustainable management system. To guide the thoughts and actions of our employees, we have established core values and set four major management goals along with twelve strategic initiatives, aligning our management value system with these core values to achieve our vision.

Mission — KORAIL, Connecting the People, the World and the Future

Vision — KORAIL, a Companion for Opening Future Transportation

Core Values

SAFETY	INNOVATION	COMMUNICATION	TRUST

Managerial Goals

Digital-Based Safety Management Advancement	Enhancement of Financial Soundness for Self-Reliant Management	Mobility Innovation That Citizens Can Sense	Establishment of a Future-Oriented Organizational Culture
Disaster-Safety Management Ratio	Dept Ratio	Customer Satisfaction	ESG Management Index
Safety Management Rating	Operating Profit and Loss	Digital Service Achievement Rate	Organizational Culture Index

12 Strategic Tasks

Integrated Digital Safety Management	Maximizing Transportation Revenue	Digital Service Innovation	Internalization of ESG Responsible Management
Prevention of Serious Accidents and Spread of Safety Culture	Securing Competitiveness in New Growth Business	Establishment of Future Convergence Transportation Platform	Creation of A Smart Work Environment And A Culture Of Mutual Respect
Scientificization of Maintenance	Optimization of Resource Operation	Strengthening Public Communication	Fostering Convergence Professional and Securing Cutting-edge Technology

36 Performance Indexes

Disaster Safety Management Assessment, etc. (7 indexes)	Total Labor Cost Management, etc. (9 indexes)	Expansion of KORAIL-type MaaS, etc. (9 indexes)	GHG Emission Management, etc. (11 indexes)

ESG Management Implementation System

KORAIL is focused on establishing and internalizing a mid-to-long-term ESG management plan in 2022 to contribute to the sustainable development of society and create tangible ESG results. We have developed a unique ESG vision that reflects changes in the management environment and have selected 12 strategies along with 47 action items. With the goal of leading the public sector and voluntarily spreading ESG management to the private sector, KORAIL is striving to achieve an AAA rating in the ESG management index. To enhance execution capabilities, these initiatives have been designated as key KPIs for each department, with regular monitoring and oversight in place.

ESG Management Vision & Goal

Vision
ESG KORAIL to Connect the People, the World and the Future

Slogan
ESG KORAIL, Link Korea!

Strategic Goal
Achieve KORAIL ESG Management Index AAA Grade

Aiming Point

Railroad Service
Leading Green Mobility

Railroad Service
Increasing the Quality of Life

Railroad Service
Being Trusted

Strategic Tasks

Environmental Management Establish the basis for sustainable eco-friendly railroads	Safety Innovate the railroad service in priority of safety	ESG Management System Establish ESG Management System
Carbon Emission Convert to green mobility of railroads	Win-win Cooperation & Local Society Support ESG to enhance the supply network & the competitiveness of local societ	Ethics · Compliance Internalize the enterprise culture of integrity and fairness
New Renewable Energy Expand the railroad infrastructure to promote decarbonization	Railroad Transport Improve the railroad transport service for convenient use	Communication Activate the communication management of transparent participation
Ecosystem Preservation Expand the ecosystem preservation culture experienced by citizens	Labor · Human Right Strengthen the personal competency of growth and respect	Board of Directors Substantiate the activities of BOD

KORAIL ESG Management Strategy System

Promoting Organization

KORAIL has established the ESG Management Department, a dedicated organization for ESG, within the Planning and Coordination Headquarters to strengthen the execution of ESG management alongside the ESG Subcommittee of the Board of Directors. The ESG Management Department oversees ESG tasks, while the Ethics Management Department, part of the Human Resources Management Headquarters, directs compliance and ethical management. The Integrity Investigation Office and Audit Planning Departments of the Audit Office monitor the ESG management implementation system. The ESG Management Department quickly incorporates management suggestions agreed upon by the Advisory Board and the ESG Subcommittee into the execution goals of each responsible department and promotes the advancement of ESG through a process that reviews and deliberates the results of monitoring detailed execution tasks and provides feedback.

Headquarters Organization

Establishing a Foundation for Sustainable Management through KORAIL's ESG Direction

KORAIL has laid the groundwork for sustainable management by setting its direction through a KORAIL-specific ESG management system, facilitated by communication with stakeholders. We are not limiting our efforts to internal operations but are also collaborating and disseminating ESG management practices with the public, partner companies, and local communities. As a public corporation, KORAIL is committed to realizing specialized ESG management and faithfully implementing government policies.

ESG Management Index increased by 1 grade (AA grade in '23)

E
Environmental
Achieving Net-Zero

1. Eco-friendly transportation: Railroad
   - Replacement of aging diesel vehicles
2. Compliance with Indoor Air Quality Legal Standards
   - Management below standards for fine dust and other pollutants
3. Completion of soil remediation in the Yongsan Station area
   - Compliance that is stricter than legal regulations

S
Social
Social Contribution & Job Creation

1. Creation of Quality Jobs
   - Hiring of 1,590 Regular Employees
2. Job creation for socially vulnerable groups
   - Hiring of 3,000 individuals
3. Shared growth with partner companies
   - Joint overseas project acquisition worth 17.38 billion KRW

G
Governance
Trusted KORAIL

1. Stakeholder participation and Communication Council
   - 29 members (9 internal, 20 external)
2. Strengthening personal data protection
   - Establishment of an Integrated Management System (ISO 27001 international certification obtained)
3. Activation of integrity communication between the CEO and partner companies
   - Prevention of corruption factors such as direct contracts

Stakeholder Communication

Stakeholder Engagement

KORAIL strives to create a better organization by communicating with various stakeholders, including the public, customers, partner companies, government, and related agencies, employees, and labor unions. We engage in tailored communication from the perspective of stakeholders, utilizing platforms such as KORAIL Talk, social media, forums, and consultative bodies, without being limited by format or method. This approach ensures that stakeholder voices are heard, and their opinions are reflected in management decisions. As a result of these efforts, public participation has significantly increased, leading to the opening or extension of railroad lines that reflect local needs.

Communication Methods by Stakeholders

	Citizens & Customers	Partnership	Government & Related Organizations	Employees & Labor Union
Main Channels	KORAIL Talk · Homepage VOC/SNS	Win-Win Forums and Joint Development Councils	Press Conferences with Relevant Agency Consultative Bodies	Junior Board on the Work Portal/In-house Broadcasting
Customized Communication for Each Stakeholder	• Expansion of KORAIL Talk Services for Public Convenience – Introduction of KTX autonomous seat self-check-in and advance parking payment options • Improvement of participation methods to ensure easy public access – Public Naming Contest for ITX-Maeum Open Train – The public vote for the Best Service of the Year • Specialized Services to Meet Customer Expectations – Expansion of phone reservation priority services for transportation-vulnerable individuals during holidays and chat consultation services • Creation of viewer-customized content to secure fandom – Formation of a Social Media Content Team and Collaboration with Influencers – Diversification of communication channels through honorary reporters and employee creators	• KORAIL's First Win-win Forum with Small and Medium Enterprises (SMEs) and CEOs – Improvement of regulations, including the relaxation of delivery performance evaluation criteria • Operation of Consultative Bodies to Strengthen Strategic Linkage and Management with Affiliates – Expansion of sales infrastructure, leading to simultaneous revenue growth for both affiliates and KORAIL	• Collaboration with Government, Local Governments, and Relevant Agencies to Solve Regional Issues – Early opening of the Taebaek Line and extension of the Central Line • Formation of Consultative Bodies among Relevant Agencies for Safe Railroads – Establishment of the Safety Council involving the Ministry of Land, Infrastructure and Transport, KORAIL, and Seoul Metro • Hosting of New Format Forums: 'New Car Test Ride + Report + Briefing' – Encouraging participation from numerous media outlets and enhancing understanding of railroads	• Strengthening comprehensive online and offline customized communication – CEO video message, first monthly meeting live streamed on YouTube – CEO-young director forums, conflict management visiting nationwide
Achievements	• Public Institution App Achieves Number One in Cumulative Downloads • Significant increase in public participation • Customer satisfaction score rises by 6.6 points • Approximately 10,000 increase in YouTube subscribers	• Selection of Excellent Companies under the Delivery Price Linking System • Total sales of affiliates increased by 27.4 billion KRW	• Expansion of railroad benefits reflecting regional needs • Media coverage related to the forums increased by about twofold	• CEO communication videos: 10 times in 2023 • In-house broadcasting: 50 times in 2023 • 78% of young director proposals reflected in policies

Customized Services Reflecting PublicVoices

KORAIL reflects the voices of the public and provides customized services through various communication channels. Based on customer feedback, we have implemented practical changes such as autonomous KTX seat self-check-in, improvements to Wi-Fi services, and expanded traffic information provision. As a result, customer convenience and service satisfaction have significantly improved, and the speed of processing information disclosure has also been enhanced. KORAIL is committed to actively gathering public demands to continuously provide better services.

Customized Service Improvement Efforts and Performance

Channels	Public Opinion	Improvement Performance
VOC	• "I'm a long-distance commuter using the free seating, and I can't relax and sleep comfortably before ticket inspection."	✔ Introduction of KTX autonomous seat self-check-in * Check-in by recognizing the QR code attached to the seat with KORAIL Talk
	• "The Wi-Fi is slow and disconnects frequently."	✔ Speed improvement through 5G upgrade of high-speed train Wi-Fi
	• "There are too many people, and there's no place to sit." • "I wish there were more cafes and food outlets."	✔ Opening of an open KORAIL lounge accessible to everyone * Premium relaxation spaces established at 4 stations + 12 stores available
Public Sugges-tions	• To address the excessive waiting time caused by customers gathering to settle parking fees all at once upon train arrival.	✔ Launch of KORAIL Talk parking pre-settlement service * Settle in advance with KORAIL Talk and exit immediately upon arrival
	'22 National Service Idea Contest: Excellent Award	
Customer Center	• When replacing smartphones, synchronization with the existing ticket confirmation device is needed (Customer Center call)	✔ Launch of KORAIL Talk self-synchronization service * Significant reduction in Customer Center requests after service launch (1,185 requests per month)
	Average monthly requests to the Customer Center: 9,747	
Public Surveys	• After pilot operation of the baggage delivery service in '22, a satisfaction survey was conducted, and public opinions were collected.	✔ Permanent implementation of baggage delivery service, available for mobile application and payment * Service available at 16 stations, with application and payment through KORAIL Talk
	Opinions: Expand the target, operate continuously, mobile application requests.	

Public Disclosure of Information Desired by Public and Improvement of Convenience

Evaluation Areas		Promotion Details	Achievements
Expanding the Right to Know	Advance Information	• Reflection of public needs through national surveys (May 17, 2023 – June 13, 2023) • Identification of public interest items through analysis of information disclosure requests (2022) * Five additional preemptive information items were identified (186 in 2022 → 191 in 2023)	2.1 times the target for public institutions (Target: 90 items, Actual: 191 items)
	Original Text disclosure	• Improvement of original text disclosure monitoring method (introduction of RPA) resulting in increased disclosure rate * 341 items (72.2%) in 2022 → 526 items (76.1%) in 2023 • Completion of online training for information disclosure (5,665 in 2022 → 11,567 in 2023)	+8.2 percentage points compared to the average of public institutions (Average: 67.9%, Actual: 76.1%)
Capacity Enhancement	Request Processing	• Legal processing deadline revised from 10 days to 5 days (August 2023) * Operation of individual notification service to shorten information disclosure processing time • Expansion of incentives for excellent evaluation (from 2 points in 2022 to 3 points in 2023)	Average processing time: 2.9 days (Legal processing time for information disclosure: 10 days)
	Customer Care	• Clear legal grounds presented when notifying non-disclosure through satisfaction analysis • Improvement of designated process for information disclosure to achieve zero processing delays * 1,310 cases in 2022 (3 delays) → 1,340 cases in 2023 (0 delays)	0 processing delays for 1,340 requests (3 delays in '22 → 0 delays in '23)
Customized Service	Accessibility Improve-ments	Requests from the Public: • "How do I request information?" • "It's inconvenient to search for information." → Website Improvements: • Guidance on request methods and checking responses • New menu for frequently accessed preemptive information	Information Disclosure Satisfaction improved by 0.77 points (8.00 points in '22 → 8.77 points in '23)
	Content Inspection	• Utilization of KORAIL Honorary Reporters for content monitoring * Checking for typographical errors, misspellings, and errors in English materials • Monitoring of promotional content to ensure accurate information delivery and enhance transparency	No typographical errors were found in the monitoring results of the Honorary Reporters' promotional content

Achievement Selected as an 'Excellent Institution' in the 2023 Ministry of the Interior and Safety's Comprehensive Evaluation Of Information DisclosureComprehensive evaluation of information disclosure has increased for four consecutive years ('20: 92.97 points → '21: 93.98 points → '22: 94.5 points → '23: 96.38 points)

Opening Public Data

Expansion of Public Data Opening

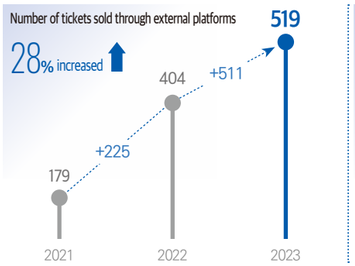
KORAIL is expanding data opening to financial platforms in addition to the representative public data platform for the convenience of the public. By opening public data in the form of digital services (APIs) on popular financial platforms, we have enabled ticket reservation integration services. As a result of providing public data to three selected domestic financial platforms with over 5 million users, the number of ticket sales through external platforms increased by 42% compared to the previous year.

Selected as an 'Excellent Institution' in the 'Evaluation of Public Data Provision and Operation'

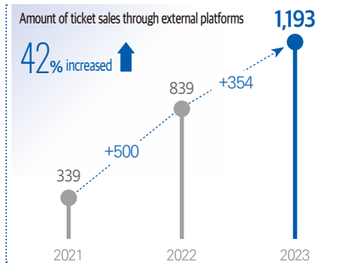
for three consecutive years by the Ministry of the Interior and Safety

'21 Feb	'22 Dec	'23 Oct
First public institution to link digital assets (Naver, Kakao)	Integration with accommodation and travel platforms, overseas airline and travel (ACP-Rail) booking services	Integration with financial platforms (Toss, KB, Shinhan)

Number of tickets sold (Unit: ten thousand tickets)



Amount of ticket sales (Unit: hundred million KRW)



Selected as an Excellent Case of Data Analysis and Utilization in the Public Sector for 2023

by the Ministry of the Interior and Safety

Integration of Railroad Data and Customer Behavior Pattern Data

KORAIL is working to enhance data value by integrating and opening railroad data with customer behavior pattern data. By purchasing mobility, consumption, and credit data that can estimate regional inflow paths, we combine and analyze this data with railroad data to derive the movement and consumption characteristics of visitors by city.

KORAIL	SK telecom	신한카드	KCB
Boarding and alighting performance, railroad usage patterns (4.92 million cases)	Tourist site visit information, lifestyle data (19.63 million cases)	Consumption by industry, family composition information (13.75 million cases)	Income information, vehicle and housing ownership (45.2 million cases)

✔ Opening of analysis reports utilizing big data convergence analysis techniques (Public Data Portal, 435 usage cases)

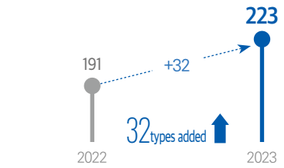
✔ Hosting of 'Visiting Tourism Big Data Briefings' and actively disseminating utilization cases (4 sessions, 25 organizations)

Travel Agency	Local Governments	Travel Platforms	Government & Public Institutions
API linkage collaboration with 4 travel agencies	4 local government organizations (Andong, Yeongju, Daegu, etc.)	7 private platforms (Yanolja, Socar, etc.)	10 organizations including the Ministry of Culture, Sports and Tourism and the Korea Tourism Organization

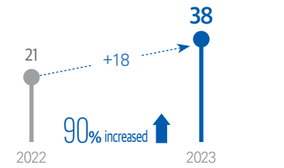
Activation of Data Industry Ecosystem through Public Data Opening

KORAIL proactively responds to private data demands by opening service-oriented customized public data. To this end, we are identifying tailored data through demand and preference surveys and have opened eight types of highly preferred public data on the public data portal. By providing high-quality, high-value national key data such as transport performance, operation plans, and station-related information, we contribute to the creation of new added value.

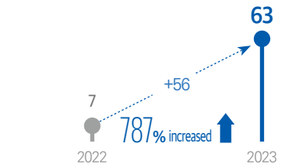
Opening of Public Data (Unit: types)



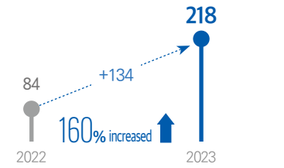
Number of File Data Uses (Unit: thousand cases)



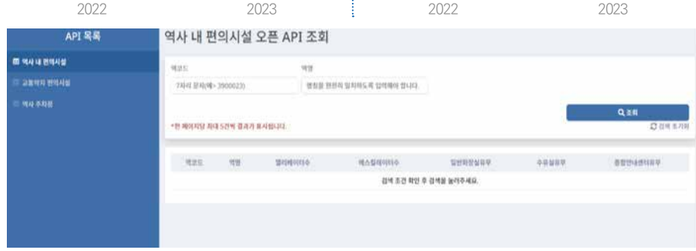
Number of API Usage (Unit: ten thousand cases)



Cumulative Number Of API Users (Unit: people)



Ticket Authenticity Verification OPEN APII



Example of Popup for KORAIL Open API Queries

Selected as an 'Excellent Institution' in the 'Evaluation of Public Data Provision and Operation'

for three consecutive years by the Ministry of the Interior and Safety

Excellent Provision and Operation of Public Data

We continuously open excellent public data through steady efforts in the management system, expansion of opening, utilization support, and quality management of public data. As a result of these efforts, we have achieved the recognition of being selected as an 'Excellent Institution' for three consecutive years in the 'Evaluation of Public Data Provision and Operation' conducted by the Ministry of the Interior and Safety.

Promotion Details		Achievement
Management System	• Strengthening the number of public data practitioners (1 person → 2 persons) • Conducting internal training to enhance data capabilities	• Establishing systematic plans and securing management foundations • Conducting capacity-building training twice (including responsible personnel)
Expansion of Opening	• Providing open formats for efficient use of data • Actively responding to new public data requests	• 100% open format for public data provision • 100% timely processing rate for provision requests (9 cases)
Utilization Support	• Opening user-centered, highly usable data • Actively responding to error reports and inquiries from the private sector	• Conducting public demand and preference surveys (twice) • 100% timely processing rate for data errors (19 cases)
Quality Management	• Establishing and implementing a management plan for quality control • Diagnosis, improvement plans, and supplements for quality enhancemen	• Data management system evaluation score: 35.34 points (out of 40) • Data value management evaluation score: 57.14 points (out of 60)

Stakeholder Communication

Stakeholder Interview

Professor Lee Jong-wook (Seoul National University of Science&Technology, College of Future Convergence)

I am a private member of the Government Public Institution Operating Committee, having conducted various management consulting activities with KORAIL for a long time. Currently, as the chair of the Digital Management Consulting Committee, I provide advice on management innovation and digital transformation for the organization.
An important focus for KORAIL over the past three years has been to strengthen organizational stability and sustainability. In a changing management environment, we have made various efforts to promote future business and manage the organization more effectively. In this process, the excellence of its technical organization and the high pride of its employees have become significant assets for KORAIL.
I am impressed by its focus on creating a more flexible and collaborative internal environment to build a better organizational culture. Furthermore, KORAIL demonstrates strengths in leading carbon neutrality and achieving balanced regional development, exploring various ways to enhance public service throughout the national railroad network. Through these efforts, we can also expect the development of labor-management relations based on inclusion and cooperation.
As we celebrate the 20th anniversary of KTX, the public is re-evaluating the value of railroad services. I hope that KORAIL will pursue carbon neutrality, systematize ESG management, and expand railroad services that lead in green mobility. Additionally, I hope KORAIL will build a trusted railroad system and take the lead in transforming perceptions towards a culture of integrity, fairness, and safety.

Chairperson Kim Myung-hee (Daejeon Metropolitan City Social Welfare Council)

This year, I am serving as a member of KORAIL's Social Contribution Operating Committee, contributing to KORAIL's various social contribution activities. Recently, KORAIL has successfully promoted tailored social contribution activities for vulnerable groups and people with disabilities, while enhancing cooperation with the local community through expanding market access for excellent companies and providing support for natural disasters.
As a result of these efforts, KORAIL's social contribution activities have been very proactive, with an execution rate exceeding 100% compared to the previous year's budget, showcasing their commitment. Various programs utilizing railroad infrastructure, such as Happy Train, Rail House, and Green Travel, can be evaluated as leading initiatives among public institutions.
For KORAIL to successfully implement ESG management in the future, it is crucial to further strengthen stakeholder participation and communication. To achieve this, it is necessary to create an environment that encourages the involvement of various stakeholders, including local governments, businesses, and academia, in close cooperation with the community. Additionally, the commitment of top management to sustainable management activities and the co-growth with partner companies are important for expanding sustainable environmental management.
In the long term, it is essential to develop customized customer response strategies based on future customer analysis due to low birth rates and an aging population and to realize social value through segmented tailored social contribution activities for vulnerable groups and people with disabilities. To facilitate this, establishing and expanding a dedicated organization for social contribution activities will be essential. I hope that KORAIL will continue to play a leading role in ESG management through these efforts.

Professor Kim Min-kyun (Sogang University Business School)

I have experience participating in the management evaluation, consulting, and project evaluation of KORAIL, and I understand that KORAIL's ESG management has been continuously evolving. KORAIL is an important organization operating major transportation systems in South Korea, such as KTX and subways, with customer satisfaction and safety as top priorities. To maintain a vibrant, open, and innovative image, KORAIL gathers feedback from various stakeholders and has established a positive public service image, keeping customer satisfaction at a high level each year.
While it cannot be said that safety issues are inadequate given the high frequency of operations and extensive coverage, every safety-related incident, such as vehicle maintenance or breakdowns, negatively impacts the organization's image. When solutions to safety issues are not effectively implemented, and incidents recur, it leads to a growing negative perception of the organization. Therefore, I believe that the active introduction and utilization of advanced technologies are necessary to continuously improve safety and customer satisfaction, along with ongoing investment.
Since internal customer satisfaction leads to external customer satisfaction, improving labor-management relations and managing subsidiaries are also important tasks. Given its close relationship with the public, I hope KORAIL will advance towards establishing an ESG framework that reflects regional characteristics through efforts to devise various regional development strategies and shared growth plans.

Lee Cheol-kyu Senior Researcher (Korea Railroad Research Institute)

As a researcher at an organization that collaborates on policy and technical aspects of environmental issues, particularly in carbon emission reduction for KORAIL, I engage in technical services and consulting. KORAIL is continuously advancing its ESG management, prioritizing customer satisfaction and safety.
In the past three years, carbon neutrality has emerged as the most critical issue. The national Carbon Neutrality and Green Growth Basic Act has been enacted, and the Ministry of Land, Infrastructure and Transport has announced the Carbon Neutral Roadmap for the transportation sector. KORAIL is responding to these demands by establishing and implementing strategies to achieve carbon neutrality by 2050.
There is also a growing interest in solar sound barriers for railroads. Solar power is gaining recognition as a vital decarbonization energy source due to issues surrounding carbon neutrality and RE100. KORAIL is actively exploring ways to expand solar power in the railroad industry and is focusing on developing solar sound barriers. Additionally, there is attention on building a sustainable resource recycling system. It seems necessary to consider resource recycling by referencing the recyclability criteria of European railroad operators.
Through ESG management, I expect KORAIL to provide even safer railroad transportation services and to make greater efforts towards carbon neutrality and sustainability.

Hwang Cheol Labor Attorney (SJ Labor Law Firm)

I am a certified labor attorney providing legal consulting on personnel and labor matters for KORAIL. I understand that ensuring the safety of railroad passengers and preventing industrial accidents among internal staff are very important business goals for KORAIL.
Recently, I have noticed a vibrant and youthful atmosphere in KORAIL's social media channels, indicating active communication with the public. As a major mode of transportation in the country, I believe that the government needs to provide more support for train operations in underserved areas with lower passenger demand.
I hope KORAIL will take a greater interest in community development and contribution activities, particularly focusing on stations and business offices. Additionally, I urge continuous attention to environmental sustainability by replacing some aging diesel locomotives with electric trains.
As a public enterprise responsible for safe railroad transportation, I appreciate that all organizational members play a vital social role needed by the country. I remember KORAIL's previous motto, 'KORAIL with the People.' I expect KORAIL to not only faithfully carry out its core duties but also to actively engage in contributions for vulnerable groups in the community, including those with mobility challenges.

Materiality Assessment

Double Materiality Assessment

Double Materiality Assessment

KORAIL has identified significant ESG (Environmental, Social, and Governance) issues across our operations to establish strategic priorities for sustainable management. This process allows us to focus on and effectively manage the issues that are most important to both the organization and our stakeholders. To ensure comprehensive management and reporting, KORAIL has selected critical issues that may impact our ESG management based on the materiality assessment methods recommended by GRI and ISO 26000.

Double Materiality Assessment Process

KORAIL conducted an internal and external environmental analysis, and a double materiality assessment based on the principles of sustainability context, significance, completeness, and stakeholder engagement as presented by the GRI (Global Reporting Initiative) to derive important ESG management issues.

STEP 1 IDENTIFICATION

Sustainability context
Benchmarking / Media analysis

Stakeholder engagement
Stakeholder qualitative research and quantitative research

- Based on the sustainability context and stakeholder engagement, identify aspects influencing organizational management activities and stakeholder decision-making.
- Identify impacts occurring internally and externally to the organization, and derive relevant topics associated with them.

STEP 2 PRIORITIZATION

Importance
Importance Assessment (Relevance assessment / Significance assessment)

Stakeholder engagement
Stakeholder qualitative research and quantitative research

- Based on the significance principle and stakeholder engagement, assess the related issues in terms of their significance.
- Assess significance in terms of environmental, social, governance, and economic aspects.

Report

STEP 3 VALIDATION

Completeness
Checking the appropriateness of scope, range, and period

Stakeholder engagement
Stakeholder qualitative research and quantitative research

- Apply key aspects to the report based on the completeness principle and stakeholder engagement.
- Compose material aspects into standard disclosure requirements (material aspects and performance index).

STEP 4 REVIEW

Sustainability context

Stakeholder engagement

- Based on the sustainability context and stakeholder engagement, review the published report.
- Apply review findings to future reports.

Double Materiality Assessment Overview

Benchmarking
Sustainability was analyzed based on ESG management reports from companies, both domestic and international, that excel in ESG management. This analysis, grounded in GRI reporting principles, helped identify additional issues that KORAIL needs to address and promote.

Expert Interviews
Interviews were conducted with stakeholder groups defined according to the value creation flow. By closely examining the requests and shared values of internal and external experts representing these groups, key issues were identified.

Media Analysis
To objectively understand external perceptions of KORAIL's key ESG management issues, articles from January to December 2023 were analyzed to extract relevant issues.

Stakeholder Survey
impacts of KORAIL, a survey was conducted among key stakeholder groups, including employees, customers, partners, and the local community. This survey identified the ESG management issues perceived by each stakeholder group and was reflected in the double materiality assessment.

32 Material ESG Issues

Environmental · Social · Governance · Economy

1	Enhancement of Railroad Safety Management System
2	Efforts to Ensure the Safety of Railroad Workers
3	Railroad Passengers Customer Satisfaction
4	Utilization of IT Technology and Expansion of Customer Services
5	Employment Stability for Employees
6	Ethical Management System and Operations (Anti-Corruption and Integrity)
7	Improvement of Financial Stability
8	Commitment and Efforts of Top Management for Sustainable Management Activities
9	Expansion of Low-Carbon and Eco-Friendly Train Introduction
10	Opening of Public Railroad Data
11	Establishment of a Stable Funding System
12	Implementation of Eco-Friendly Railroad Policies
13	Management of Wastewater and Waste Discharge
14	Operation of Employee Grievance Handling System
15	Financial Impacts of Climate Change and Risks and Opportunities for Business Activities
16	Fair Contracts and Procurement
17	Management of Air Emissions, including Greenhouse Gases
18	Establishment of Low-Carbon Energy Systems in Stations
19	Establishment of Human Rights Management
20	Expansion of Renewable Energy Introduction
21	Stakeholder Engagement (Enhancing Communication with Customers and Local Communities)
22	Strengthening of Railroad Maintenance Systems
23	Improvement of Working Environment and Employee Welfare
24	Strengthening of Internal Control Systems
25	Strengthening of Ecosystem Conservation Activities (Ensuring Biodiversity)
26	Compliance with Environmental Regulations
27	Shared Growth with Partner Companies
28	Expansion of Environmental Expenditure and Investment
29	Healthy Labor-Management Relations
30	Responsible Marketing (Avoiding Exaggerated Advertising)
31	Implementation of Railroad Professional Talent Development
32	Protection of Customer Personal Information (Information Security)

TOP 10 ESG Material Issues

● High Priority ◐ Medium Priority ○ Low Priority

ESG Core Management Issues	ESG Issue	Implementation Plan	Global Initiative			Stakeholder						Impact		Page
			GRI	UNGC	SASB	Employeer	Customer	Community	Partner Companies	Government & Related Organizations	Media	Financial	Social, Environmental	
1	S Enhancement of Railroad Safety Management System	• Rebuild a safety foundation with participation from all members • Establish a Chief Safety Officer (CSO) and design/operate a safety/digital-based organization • Strengthen safety controls through advanced technology and innovation	●	●	●	●	●	●	●	●	●	●	●	60-65
2	S Efforts to Ensure the Safety of Railroad Workers	• Establish a self-regulating safety system through risk assessment • Enhance control systems for on-site operational risk factors • Provide customized safety training as a top priority, focused on the field	●	●	●	●	◐	◐	○	◐	●	◐	●	61-62
3	S Railroad Passengers Customer Satisfaction	• Listen to customer voices through various communication channels, including the website • Increase customer convenience by operating an open KORAIL lounge • Expand baggage delivery services to 16 stations nationwide	●	●	●	◐	●	●	●	●	●	◐	●	40-42, 68-69
4	S Utilization of IT Technology and Expansion of Customer Services	• Strengthen train delay management using digital technology • Introduce convenient services like self-check-in with QR codes through the KORAIL Talk app • Provide inclusive services, such as assigning guides for digitally disadvantaged individuals	●	○	◐	◐	●	○	●	◐	●	●	●	68-69
5	S Employment Stability for Employees	• Operate a labor-management cooperation system based on laws, principles, and fairness • Improve working conditions and promote family-friendly management through labor-management cooperation • Enhance work safety and improve labor-management relations through the introduction of advanced technology	●	●	●	●	◐	○	◐	●	●	◐	○	70-78
6	G Ethical Management System and Operations (Anti-Corruption and Integrity)	• Strengthen the implementation of ethical management standard models and enhance the operation of ISO 37301 • Internalize awareness of integrity and promote a culture of integrity • Establish and continuously internalize a conflict of interest prevention system	●	●	●	●	●	●	●	●	●	◐	◐	92-96
7	Economy Improvement of Financial Stability	• Maintain the stability and soundness of the financial structure and re-establish financial risk management systems • Expand cost reduction efforts through organizational restructuring and fuel cost savings • Systematize investment budget management processes and strive for overall revenue growth	●	◐	●	○	○	○	●	●	●	●	◐	97-99
8	G Commitment and Efforts of Top Management for Sustainable Management Activities	• Establish and strive to achieve the vision of ESG KORAIL, connecting people, the world, and the future • Promote the solidification of ESG management through the operation of an ESG subcommittee • Pursue overseas business based on global standard models to leap forward as a global logistics company	●	●	◐	●	●	●	●	●	●	○	●	37-39, 100-101
9	E Expansion of Low-Carbon and Eco-Friendly Train Introduction	• Realize eco-friendly decarbonized railroads from design to dismantling • Transition diesel vehicles to electric vehicles and expand the introduction of new electric vehicles	●	●	●	◐	●	●	●	●	●	○	○	54
10	G Opening of Public Railroad Data	• Open ticket reservation-related services to financial platforms via API for free • Promote the fusion and opening of railroad data and customer behavior pattern data • Provide customized public data openings focused on service to proactively respond to private data demands	●	◐	●	●	●	●	●	●	●	◐	●	42-43

People,
Achieving a Better Life

52 Railroad where Nature and People Coexist

57 Climate Crisis Response

60 Safe Railroad

Railroad where Nature and People Coexist

Eco-Friendly Management System

2050 Net-zero Roadmap

Eco-Friendly Management System

The global environmental crisis has begun with rapid climate change, and companies cannot evade their environmental responsibilities in the face of such catastrophic climate shifts. As a public enterprise representing the railroads of South Korea, KORAIL is establishing an environmental management system and expanding the use of eco-friendly transportation through the Certification of Environmental Product Declaration. To reduce GHG emissions, we have developed and is implementing a carbon neutrality roadmap for 2050 along with detailed action plans, ultimately striving for carbon negativity and achieving RE100. KORAIL supports and adheres to the 17 global goals set forth by the UN SDGs, promoting green mobility by maximizing energy efficiency and minimizing environmental pollution through the development of eco-friendly technologies and the verification of new environmental technologies. We will contribute to creating social and environmental benefits by engaging in conservation activities for biodiversity in collaboration with small and medium-sized enterprises and local communities that are growing together.

Commitment to Implementing Eco-Friendly Green Railroads

KORAIL will strive to implement **eco-friendly green railroad.**

First — We will enhance the eco-friendliness of railroads by establishing an environ-mental management system.
- Organize an environmental team and establish a comprehensive environmental management system.
- Promote the use of eco-friendly transportation through the Certification of Environmental Product Declaration
- Enhance our eco-friendly corporate image through consumer evaluations.

Second — We will strive to reduce GHG emissions in response to climate change.
- Introduce eco-friendly KTX-Eum trains and gradually retire diesel locomotives.
- Research eco-friendly technologies, including the development of hydrogen fuel cell hybrid trains.
- Install and maximize the use of energy facilities such as solar, thermal, and geothermal energy.

Third — We will strive for environmental manage-ment to minimize environmental pollution.
- Contribute to resource recycling through the expansion of waste recycling.
- Achieve zero environmental pollution incidents through proactive and preventive management.
- Continue to upgrade and maintain aging environmental facilities.

Fourth — We will strive to fulfill our corporate social responsibility through eco-friendly railroads.
- Promote the verification of eco-friendly technologies from small and medium-sized enterprises for mutual growth.
- Advance environmental business activities in collaboration with the community, such as designating a railroad environmental week.
- Contribute to creating social and environmental benefits using eco-friendly green products.

Environmental Management Promotion System

KORAIL, Connecting the People, the World, and the Future

Establishment of a carbon neutrality implementation system and smart environmental management

3 Promotion Strategies

Establishment of 2050 Net-zero Implementation System	Smart Environmental Infrastructure Management	Activation of Eco-friendly Management for Environmental Conservation

12 Initiatives

01 **Achieve greenhouse gas emission reduction targets** Implement greenhouse gas reduction targets (2.035 million tons)	02 **Prepare measures to respond to the climate crisis** Establish mid- to long-term climate change	03 **Practice energy-saving lifestyles** Thorough management of high-efficiency equipment purchases
04 **Implement low-carbon management** A challenge to win the 'railroadroduct of the Year' for 12 consecutive years	05 **Establish a proactive response system for soil contamination** Systematic management of soil remediation projects	06 **Strengthen waste recycling and legal disposal** Thorough management from delivery to disposal
07 **Enhance water quality environmental management** Strengthen implementation and management	08 **Strengthen control and management of chemical substances** Thorough compliance with legal requirements for chemical substances	09 **Standardize railroad noise management** Prepare manuals and management cards
10 **Activate environmental mapping and consulting** Focus on One-Stop environmental consulting	11 **Manage indoor air quality to meet the right to know** Display fine dust measurement values and improve air conditioning systems	12 **Expand communication and education on eco-friendly management** Operate railroad environmental week and disclose environmental information.

GHG Emission Verification Opinion

GHG Emission Verification Opinion

KOREA RAILROAD

Year	Scope 1	Scope 2	Total
2023	306,882,208	1,294,149,664	1,501,917

KOREAN STANDARDS ASSOCIATION

KORAIL's Goals and Commitments Regarding Climate Change

KORAIL is strengthening its ESG management by thoroughly managing climate change factors and enhancing communication with stakeholders. In relation to climate change, we transparently disclose governance, strategy, risk management, indicators, and targets in accordance with the basic framework of TCFD, aiming to participate in the international community's response to global warming. Our goal is to establish a carbon neutrality implementation system for our vehicles by 2050, and we are currently implementing 12 key initiatives to enhance the smart management of environmental infrastructure and promote eco-friendly management. Ultimately, we strive to achieve carbon negativity.

Environmental Management Promoting Organization

To effectively operate our environmental management system, KORAIL has established an organic organization that systematically links the headquarters with its affiliates, currently comprising a total of 61 environmental officers.

Environmental Management Promoting Organization Chart

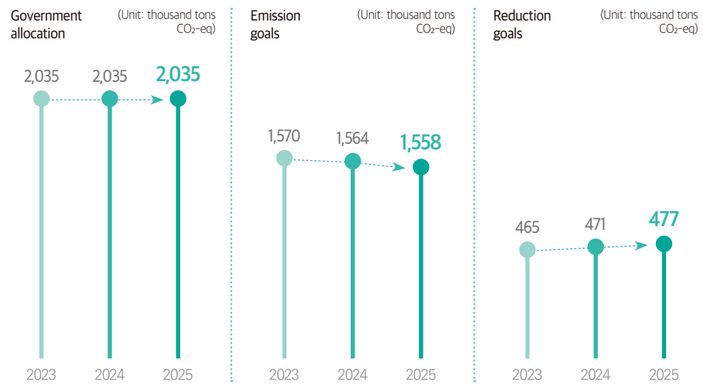
Headquarters (Safety HQ Environment Management Department)

Rolling Stock Engineering HQ	Civil Engineering HQ	Electric Engineering HQ	12 Regional HQs (Health & Safety Department)	Rolling Stock Maintenance Depot (Technology Planning Team)	3 Affiliated Organizations (Safety & Technology Team)
Strengthening the inspection and maintenance system for railroad vehicles (passenger cars) and ensuring the safety and quality of parts to prevent and respond to climate change.	Preventing and responding to climate change concerning tracks and civil engineering/building facilities.	Preventing and responding to climate change regarding electrical infrastructure (including electric train power, information communication, and signal control facilities).	Station Track Maintenance Office Building Maintenance Office Electrical Maintenance Office	Rolling Stock Maintenance Office	High Speed Rail Civil Engineering Management High Speed Rail Electric Engineering Management Divison Seoul Telecommunication System Office

Approach to Key Activities in Eco-Friendly Management

To mitigate risks related to train operations caused by climate change and respond proactively, KORAIL manages and assesses related facilities in advance, implementing active response measures and monitoring. Even in a situation where an increase in greenhouse gas emissions is expected due to the expansion of public transportation infrastructure and new line additions, we are setting and managing long-term greenhouse gas reduction targets through the 3rd National Railroad Network Construction Plan and mid- to long-term transportation strategies, thereby contributing to the national greenhouse gas reduction goals.

KORAIL's Climate Change Reduction Goal



Expansion of Low-carbon, Eco-friendly Trains

Eco-Friendly, Decarbonized Railroads from Design to Dispose

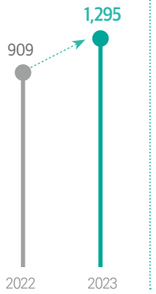
KORAIL is enhancing energy efficiency and reducing noise through the introduction of an energy-saving cooling system and the lightweighting of trains. By converting 52 diesel vehicles to electric and newly operating the ITX-Maeum as an electric train, we have reduced greenhouse gas emissions by approximately 22,000 tons, bringing the total emissions for 2023 down to 1,504,017 tons and achieving a 26% excess reduction compared to the government's reduction allocation. We are also minimizing environmental pollution through the recycling of metals from retired vehicles and the conversion of insulating oil.

Conversion to Electric Vehicle
52 diesel vehicles **2.2** thousand tons

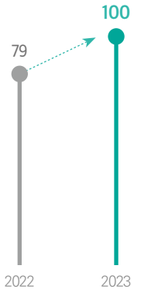
Excess Reduction
of Government GHG Allocation **26%**

53.1 thousand tons

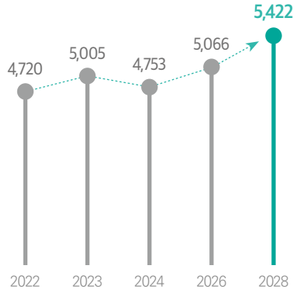
Number of scrapped trains (Unit: cars)



Status of disposed train sales (Unit: hundred million KRW)



Trends in electric railroad vehicle ownership (Unit: cars)



Expansion of Low-Carbon Eco-Friendly Trains and Green Achievements

KORAIL is continuously expanding and introducing low-carbon eco-friendly trains to achieve carbon neutrality by 2050 and realize green growth. Recognized for this effort, we have obtained 'Certification of Environmental Product Declaration' and 'Low-Carbon Certification' from the Ministry of Environment. We have been selected as the Green Product of the Year for 12 consecutive years and have received the Green Masterpiece Award, becoming the first public institution to do so.

12 consecutive years
Green Product of the Year

First Public Institution to Win
Green Master-piece Award for Two Consecutive Years

Certification of Environmental Product Declaration (One-Way Transport per Person)

Date of certification acquisition (date of application)	Certification Details	Total GHG Emissions	Emissions per 1 km	Level (Compared to Passenger Cars)	Logo
'24.02.28 ('23.12.17.)	KTX Seoul-Busan	10.54	0.0253	1/4.8	

Awarded Korea Green Product of the Year

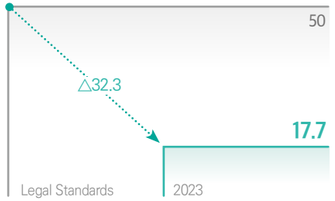
Years	2012	2021	2022	2023
Route	KTX Seoul-Busan	KTX-Eum Center Line	KTX-Eum Jungbu Inland Line	KTX-Donghae Line
Details	First Public Institution to Win	10 Consecutive Years	11 Consecutive Years	12 Consecutive Years

Clear Air, Quiet Railroads: Improved Surroundings around Stations

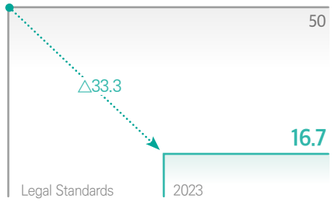
Strengthening Management of Fine Dust for Clean Air

KORAIL enhances indoor air quality management in vehicles and stations, maintaining fine dust levels up to 94% lower than legal standards. We conduct air quality measurements inside trains twice a year and replace air purifier filters in new vehicles three times a year. Air purifiers in stations operate for up to 20 hours a day, and high-pressure water trucks are used in underground sections to suppress dust. We have also shortened the filter replacement cycle for air conditioning systems to semi-annually, maintaining clean air and improving management efficiency through the development of fine dust collection technology.

Vehicle Air Quality (Unit: μg/m³)

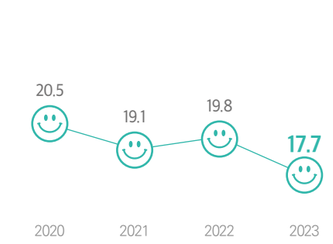


Station Air Quality (Unit: μg/m³)



Pollutants (8types)
Compared to legal standards
less than 92%

Vehicle Air Quality Average Concentration (Unit: Ultrafine dust(μg/m³))

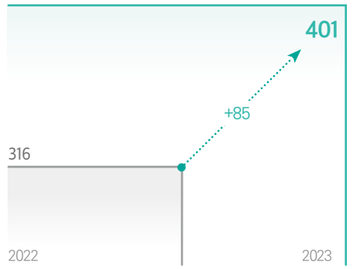


Station Air Quality Average Concentration (Unit: Ultrafine dust(μg/m³))

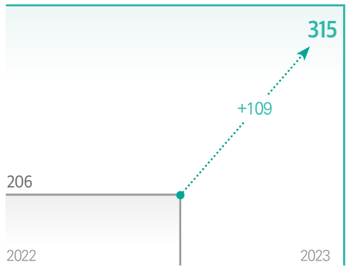
Managing Air Pollutants Within Legal Standards

KORAIL strictly manages air pollutant emissions, controlling dust and nitrogen oxides rigorously. We have strengthened our management system with 12 environmental management inspections per year, six cross-checks, and quarterly self-diagnoses, expanding the number of air quality measurements to 315. Additionally, we have upgraded eight air pollution prevention facilities and secured an extra budget for consumable replacements (8.5 million KRW) to enhance emission efficiency.

Consumables Budget (Unit: million KRW)



Number of self-measurements (Unit: times)



Renewable Energy Generation and Noise Reduction At the Same Time: Solar Noise Barrier Power Generation System

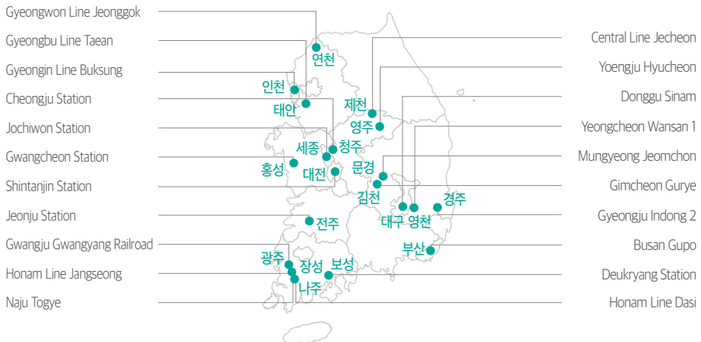
To reduce noise generated by railroad operations, KORAIL expanded the installation of noise barriers by 2.1 km compared to the previous year, bringing the total to 92.1 km in 2023. We installed new noise barriers at 98 locations and long rails at 35 locations to strengthen noise management. Furthermore, through research on solar noise barriers, we have installed an 80m demonstration structure at Suncheon Station on the Gyeongjeon Line and are currently conducting pilot operations. This initiative aims to analyze the effects of eco-friendly energy production and greenhouse gas reduction, with plans to expand installations for sustainable environmental management.

Contaminated Soil Remediation of Railroad Sites

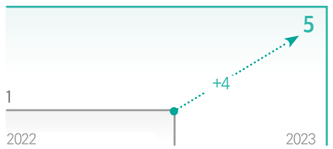
Creating a Healthy Soil Environment through Pollution Prevention and Soil Remediation

KORAIL is implementing measures to prevent soil contamination by installing oil-absorbent fabrics and conducting regular inspections of oil tanks. We are focusing on areas of concern through intensive inspections by environmental managers. At the Seoul Rolling Stock Depot, we conducted the first-ever 'Soil Risk Assessment' to evaluate the prevention of contamination spread and the reduction of human health risks, putting effort into managing contaminated soil and preventing its spread. At the Bugok Rolling Stock Depot, we are currently remediating over 4,000㎥ of contaminated soil. By investing additional budget, we are progressing with soil remediation and have reduced pollution by one-fifth by maintaining drainage systems to block external runoff.

Soil Measurement Network Designated by the Ministry of Environment (21 Locations Nationwide)



Soil Investigation of Railroad Sites (Unit: Cases)



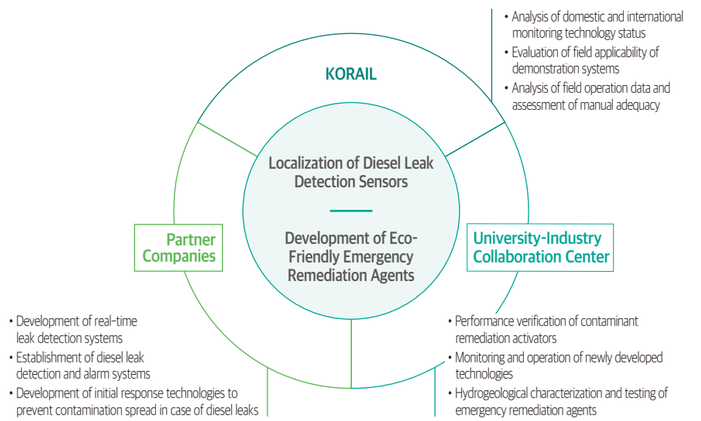
Risk Assessment Budget (Cumulative) (Unit: 100 million KRW)

Soil Contamination at Bugok Depot (Unit: ㎥)

Safe and Eco-Friendly Remediation of Soil and Groundwater at the Yongsan Station Development Site

KORAIL is remediating contaminated soil covering an area equivalent to 12 football fields at the Yongsan Station Development site, processing approximately 590,000㎥ of waste. By applying the latest groundwater remediation techniques, we have improved the contaminated groundwater to meet residential water standards and safely dismantled 15 unexploded ordnance items, implementing thorough safety measures. Additionally, we established and publicly disclosed an environmental management plan addressing noise, vibration, and airborne dust, ensuring transparency. By minimizing local complaints through differentiated management across seven zones, we successfully completed the project.

Development of Domestic Eco-Friendly Technologies for Soil Pollution Detection and Emergency Remediation



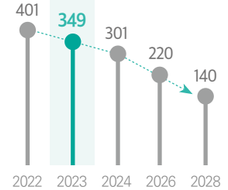
Climate Crisis Response

KORAIL, Leading Green Mobility

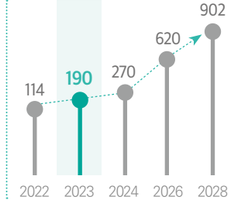
Leading the Way in Green Mobility with Energy-Efficient High-Speed Trains

KORAIL is taking the lead in efficient energy use and the transition to green energy to address environmental issues. Railroads, which began in England 200 years ago, established themselves as a rapid land transportation mode but have accompanied environmental challenges. However, modern railroads are evolving with efficient energy use and the adoption of green energy. In South Korea, the operation of diesel vehicles is decreasing, and we are entering the era of power-distributed railroad vehicles such as EMU-320, EMU-260, and EMU-150.

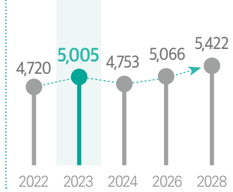
Diesel Locomotive Decline Trend (Unit: cars)



Trends in Ownership of Power-Distributed Vehicles (Unit: cars)



Trends in Ownership of Electric Locomotives (Unit: cars)



H_2 TRAIN
600kM
CO_2 ZERO

Development of Eco-Friendly Hydrogen Rolling Stocks

In response to global carbon neutrality goals, KORAIL has participated in the development of eco-friendly hydrogen railroad vehicles for the first time in South Korea. Collaborating with nine institutions, including the Korea Railroad Research Institute, we conducted research over five years, resulting in the production of a prototype vehicle consisting of two cars (maximum output of 1.2MW, maximum speed of 121 km/h, and a range of 600 km on a single charge). We established a temporary hydrogen charging station at the Osong Depot and successfully completed a 5,000 km driving test. This achievement is a testament to KORAIL's eco-friendly technological capabilities and our commitment to a sustainable future.

Hydrogen Electric Prototype Vehicle in Operation on the Osong Test Line
(Source: Ministry of Land, Infrastructure and Transport)

Minister's Award for Practical Application of New Technologies
by Minister of Trade, Industry and Energy
Practical Application of New Technologies

Innovative Energy Reduction Technologies through Development of Korean High-Speed Train

As a national public institution, KORAIL is focused on developing energy reduction technologies. Starting in 2024, we aim to develop Korean high-speed train vehicles modeled after France's TGV-M over a four-year period. Our research includes minimizing air resistance, lightweighting the train body, reducing noise and vibration, and utilizing regenerative power. Through these efforts, we plan to develop energy-efficient vehicles that reduce energy consumption by up to 30%, proactively responding to the global green mobility market.

Railroad Safety Prepared with Technology for Climate Crisis Prevention

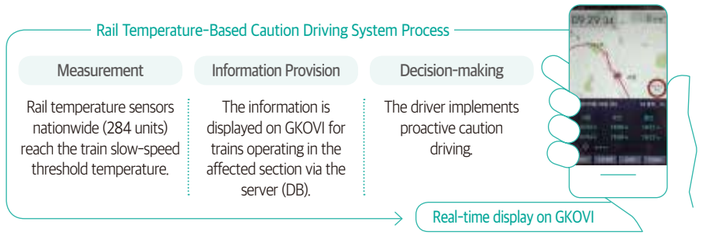
Preventing Climate Crisis, Achieving Zero Railroad Accidents and Disruptions

KORAIL is actively responding to rapidly changing environments in preparation for natural disasters caused by climate change. By collecting and analyzing scientific information during disaster situations such as heavy rainfall, heat waves, and typhoons, we respond swiftly and implement proactive measures to prevent train accidents and disruptions.

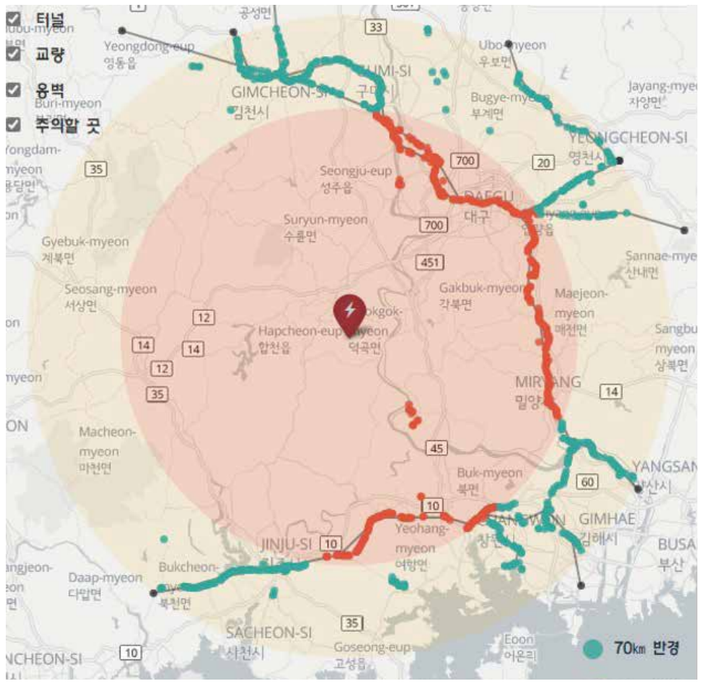
Establishment of Railroad Weather Information System | Scientific Information Collection

- ✔ Weather advisory sections marked on route information and maps.
- ✔ Rainfall reception frequency: 3 times/hour, increased to 12 times/hour
- ✔ Map marks for earthquake impact zones on routes and structures
- ✔ Four-color indication for train control based on rainfall:
- ✔ Four-color indication for train control based on rainfall: Normal (Green ●), Caution (Yellow ●), Slow speed (Yellow-Red ●), Stop (Red ●)

Rail Temperature Display in the Locomotive Driver's Train Operation Guidance System (GKOVI)



Visualization of Train Control

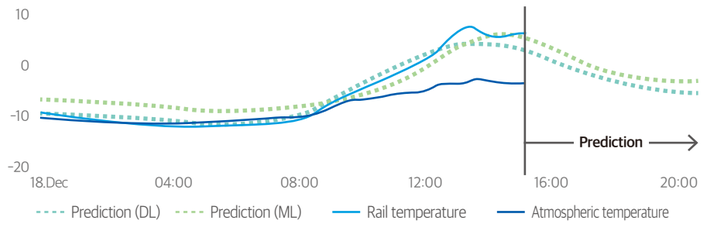


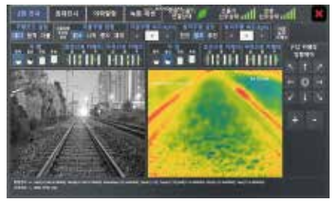
Earthquake Impact Zone Inquiry

Rail Temperature Measurement Sensor

Establishment of Rail Temperature Prediction System

We collect data from 257 temperature sensors nationwide to predict rail temperatures based on big data (D+2) and utilize this information for hourly forecasts, reflecting it in train operations to proactively prevent accidents.





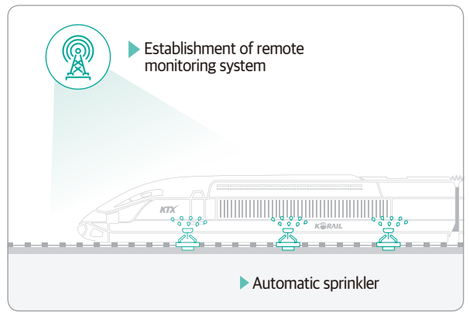
Remote control using LTE (no distance limitation)

Autonomous driving with satellite navigation and lidar

Achieved Zero Fatalities from Weather Disasters through Heatwave and Flood Preparedness

KORAIL has expanded the installation of automatic sprinkling systems to 265 locations on high-speed lines and installed 107 systems on regular lines to prevent railroad accidents caused by heatwaves and heavy rainfall. Additionally, we improved drainage systems and removed warning signs for falling objects at 102 stations to prevent damage from debris. As a result, there were no fatalities during typhoons and heavy rainfall in 2023, and railroad accidents and disruptions significantly decreased. Notably, there were no railroad accidents due to heatwaves in 2023.

Automatic Sprinkler System According to the Remote Monitoring System



Automatic sprinkler

Strengthened and Detailed Railroad Operation Standards

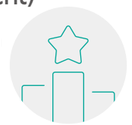
KORAIL has enhanced train safety operations by expanding the installation of automatic sprinkling systems and applying heat-resistant paint to combat heat waves. We have raised the slow-speed operation standards to 53℃ for high-speed lines and 50℃ for regular lines, issuing heatwave warnings (when the ambient temperature exceeds 35℃). We established detailed operation standards during heavy rainfall, setting thresholds at 50 mm/h (40 km/h) and 55 mm/h (60 km/h) to enhance the safety of train operations. Through these proactive measures, we have secured safe railroad operations with the utmost priority on protecting the lives of the public.

Safe Railroad

Establishment of Systems for Ensuring Railroad Safety

0 Serious Industrial Accidents
(4 cases → 0cases)
ZERO

Top Grade (Excellent)
National Core Infrastructure Disaster Management Evaluation
6 Consecutive Years



Rebuilding a Safety Foundation with Collective Capability

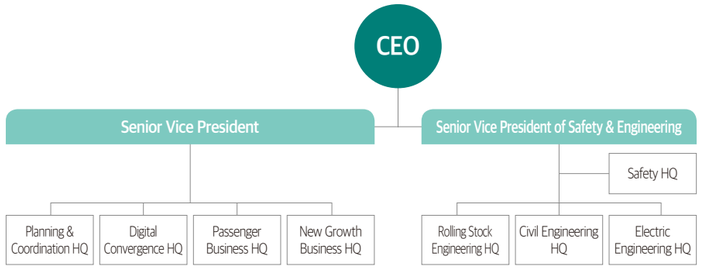
KORAIL recognizes the risks associated with railroad accidents and prioritizes safety above all. In 2023, we declared an 'Emergency Safety Management' system and established the position of the Senior Vice President of Safety & Engineering to strengthen our safety management organization. The CEO and executives completed special safety training held nine meetings on serious disaster prevention measures and identified 75 safety improvement initiatives through employee suggestions. We also benchmarked excellent disaster safety management systems from other public institutions and continuously improved safety through eight advisory sessions.

Rebuilding a Safety Foundation with Participation from All Members

Establishment of Chief Safety Officer and Safety/Digital-Based Organizational Design

The CEO of KORAIL focuses on safety as the top priority, concentrating on organizational capabilities while pursuing management innovation, financial stabilization, and digital-centered customer service innovation. After taking office, the CEO reorganized the organization to enhance safety and core business functions, establishing the Chief Safety Officer (CSO) position and placing the Chief Safety Technology Officer directly under the CEO. This separation of safety and management departments, along with the centralization of closely related departments, has enhanced synergy in safety management through technological development. These measures have contributed to achieving zero serious disasters and maximizing organizational efficiency.

Organizational Restructuring for Safety Foundation Establishment

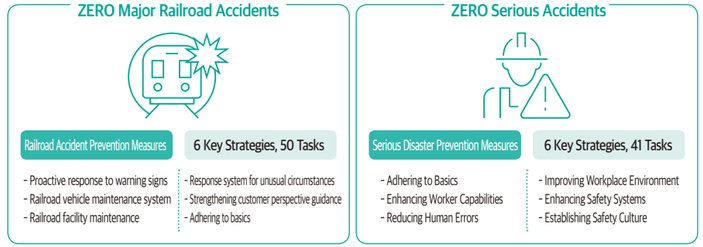


Creating Railroad Safety Together

Safety Control Through Advanced Technology and Innovation

The Office of the Senior Vice President of Safety & Engineering HQ at KORAIL is promoting the advancement of safety management based on digital technology. We have selected 12 strategic tasks and 176 implementation tasks, enhancing coherence in line with the government's national tasks. To prevent railroad accidents, we established six key strategies and 50 tasks and implemented six key strategies and 41 tasks to prevent major accidents and serious injuries during work, striving to preemptively avert fatalities from major railroad accidents and serious disasters.

Railroad Accident and Serious Disaster Prevention Measures



Strengthening Monitoring-Based Safety Management Systems

KORAIL continuously monitors safety status through emergency management meetings and field safety audits. We have created a safer working environment by increasing the safety budget, augmenting personnel, and enhancing training. As a result, we received the 'Mobility Safety Innovation Award' in 2023, recognizing our contributions to mobility innovation.

2023 South Korea Mobility Innovation Award 'Operational Innovation Award'

Customized Safety Initiatives

KORAIL analyzed three passenger train derailments that occurred in 2022 to identify causes such as wheel damage and inadequate responses to weather changes. We are implementing customized safety initiatives, including strengthening vehicle inspection standards, enhancing natural disaster response capabilities, and refining inspection criteria by track type. Our maintenance standards are stricter than those abroad, requiring maintenance for delays of five minutes or more. We have also introduced 832 new vehicles with enhanced safety features to fundamentally eliminate the potential for major disasters, continuously reinforcing safe operations.

Recognized as an Excellent Institution

By Ministry of the Interior and Safety
「Safety Korea Training and Continuous Training」

Excellent Award in Safety Korea Training and Continuous Training

On-site Disaster Response and Recovery System

KORAIL has strengthened its field-centered disaster response and recovery system by creating 56 emergency preparedness control work standard manuals. The existing complex manuals have been summarized into two pages for easy access via personal cell phones, enhancing usability. In preparation for abnormal weather conditions such as heatwaves, we have simplified and detailed train operation safety standards, achieving zero passenger train derailments through proactive safety measures. Through repetitive emergency response training and joint training with external organizations, we have enhanced our accident response capabilities, earning an A grade in the 'National Core Infrastructure Disaster Management Evaluation.' We are also recognized as an excellent institution for 'Safety Korea Training' and 'Continuous Disaster Preparedness Training' by the Ministers of the Interior and Safety and Land, Infrastructure, and Transport.

Establishment of a Digital-Based Accident Prevention System

KORAIL is utilizing digital technology to establish a railroad weather information system and an AI-based rail temperature prediction system. We display rail temperatures on locomotive navigation systems to enhance data collection, rapid information delivery, and accident prevention. We are preventing railroad disasters through continuous maintenance and technical responses, including the comprehensive renovation of 86 relay rail sections in high-speed and regular line connections, segmenting track management standards, and building facility monitoring systems. These efforts are creating a safer railroad operation environment.

Transitioning Maintenance Systems and Automating Inspection Equipment

- ✔ Transitioning maintenance system (TBM → CBM)
- ✔ Introduction of automated inspection systems in operating trains
- ✔ Implementation of Smart Factory Construction Projects (4 Cases)
  * Real-time Inspection of the Drive System Using Thermal Cameras, etc.
- ✔ Introduction of advanced maintenance equipment
  * Automated inspection drones, autonomous inspection robots, etc.

Technology that Protects Safety

Creating a Safe Train Operation Environment with Advanced Technology

KORAIL is developing advanced technology and focusing on proactive responses to create a safe train operation environment. We have established a climate prediction system based on IoT and big data, providing railroad weather information that reduces railroad accidents and disruptions due to climate disasters. By comprehensively renovating 86 sections with our self-developed low-profile rails, we improved train running safety by 35%, and the introduction of remote diagnosis and inspection systems has enabled safe maintenance. As a result of these efforts, we received the Excellence Award at the 2023 Railroad Safety Innovation Competition.

Excellence Award

In 「Railroad Safety Innovation Competition」
By the Ministry of Land, Infrastructure and Transport

Excellence Award at the Railroad Safety Innovation Competition

Maintaining a Sustainable Safety Environment

Efforts to Maintain Train Safety

Failure maintenance
Response to operating vehicle failures / Fault analysis and preventive measures

Performance improvement
Big data analysis of vehicle failures / Selection of major failures and performance improvements

Regular maintenance
Analysis and modification of component maintenance cycles / Establishment and implementation of annual maintenance plans

Response Procedures for Failures

Failure occurred	Transmission of failure information	Failure maintenance
In cases of delays exceeding 5 minutes	Automatic notification from systems (FWTS·RTD)	Immediate action upon receipt of failure information (1,244 actions in '23)

* FWTS(Faultcode Wireless Transmission System / RTD(Radio Transmission Device) Real-time wireless transmission of vehicle information

Regular Maintenance and Maintenance Infrastructure Establishment through the Rolling Stock Management System

KORAIL has transitioned its maintenance approach from a labor-centric model to one focused on data and sensor diagnostics, in response to the retirement of the baby boomer generation. We are replacing aging diesel vehicles with new models such as EMU-320 and EMU-260, and automatically generating maintenance plans through our rolling stock management system to enhance fault frequency and cause analysis. This has allowed us to add nine more maintenance targets, change the maintenance cycle for 50 items to HLO (Half-Life Overhaul), and achieve a regular maintenance target of approximately 1.55 million units. We recorded an operational safety rate of 99.996%, and by utilizing ICT facilities and AI for maintenance automation, we are preventing train accidents and enhancing worker safety.

Establishment of Key Maintenance Infrastructure and Effects

Details		Effects
Thermal cameras for axle temperature detection	Smart nut runner tightening	• Reduction of freight car failures • Prevention of high-speed train (passenger) derailments • '23 zero (1 case in '22)
Ultrasonic testing for wheel phase arrangement	Wireless electric traction for railroad vehicles	

Achieving Record-High Operational Safety Rates

KORAIL operates 14,408 trains annually, transporting 1.2 million passengers and covering a total distance of 1.5 billion kilometers. Each train travels approximately 100,000 km per year, with around 56 failures occurring among 1,232,970 trains. To further reduce this number, KORAIL aims to continuously enhance train safety through accurate and rational maintenance.

Proactive Response in Railroad Maintenance Systems and Improving Vehicle Reliability

KORAIL has shifted from conducting maintenance after delays of over 20 minutes in the past to implementing real-time actions for delays of over 5 minutes through an automated notification system. In 2023, we implemented 1,244 proactive measures, which is stricter than management practices in advanced railway countries like France and Germany, resulting in a record-high vehicle reliability of 118,313 km.

Improving Vehicle Performance and Preventing Failures Using Big Data

KORAIL has maintained the number of failures at a record low of 56, the same as the previous year, through identifying failure causes and performance improvements using big data. By reflecting maintenance policies from the manufacturing stage and pursuing annual performance improvement plans, we have achieved performance enhancements in four high-speed vehicles, eleven regular vehicles, and six electric vehicles, contributing to better vehicle management and performance.

Improving Vehicle Performance and Preventing Failures Using Big Data

Production & Introduction	Major Failures	Countermeasures	Performance Improvement
Manufacturer specification documents	Selection of big data	Technical changes	Reflection of maintenance policies

Feedback of performance improvement items to the design stage

- **High Speed Train** | Establishment of logic to prevent improper handling of KTX pantographs by the conductor, etc. (4 projects)
- **Conventional Train** | Installation of individual cutoff systems for diesel locomotive traction motors, ect. (11 projects)
- **Metropolitan Train** | Circuit improvements to ensure the operation and display of main air compressors are consistent, etc. (6 projects)

Efforts to Create a Safe Railroad Environment

Major Accidents in Contracted Projects

ZERO for 2 consecutive years

Establishment of a Voluntary Safety System

KORAIL has thoroughly controlled risk factors during on-site work to reduce the probability of serious industrial accidents. By establishing a 'voluntary safety system' that encourages workers' active participation through 'risk assessment,' proactive safety activities have been promoted. In 2023, we achieved zero major accidents and zero major accidents in contracted projects for two consecutive years, resulting in zero serious industrial accidents among employees since the establishment of KORAIL. By conducting a comprehensive analysis of the causes of industrial accidents over 18 years, an investment of 437.1 billion won was made to improve 26 key risks in 8 areas, significantly enhancing safety.

Self-Discipline Prevention System

Regular & Ad Hoc Assessment	Strengthening Procedures	Advanced Strategy	Securing Execution Power
• Regular risk assessmentad hoc risk assessment • Expanded scope, changes in work, industrial accident occurrences → Entire organization	• Effective revision of risk assessment procedures • Field evaluation team → responsible agency (budget execution) • Qualitative and subjective → quantitative and objective	• KORAIL-specific risk assessment model • Establishment of management measures for project characteristics (consulting) • DB construction → standardization of processes → case analysis → full implementation ('24)	• Discussion on enhancing the execution of risk assessment (5 times) • Clarification of risk assessment roles from field to CEO (reporting system: field → relevant agency → affiliated organization → safety headquarters → CEO)

Strengthening the Control System for On-Site Work Risk Factors

KORAIL has enhanced safety management in the work environment, such as train contact accidents, by installing motion detection alarms in 130 risk areas and mandating the use of alarm apps in the Management Information System (MIS) to control work locations. Through a smartphone app, door lock release permissions are managed, and an alarm app that alerts when a train approaches is provided to contractors to enhance safety. As a result, 189 risks have been mitigated, and safety is secured through institutional improvements and focused inspections for all workers, including contractors.

Measures for Ensuring Safety

Ensuring Safety through Institutional Improvements

- Revision of major industrial accident response manual (including contractors)
- Revision of safety work permit system management guidelines (specification of safety measures)

Ensuring Safety through Focused Inspections

- Concentrated inspections on core themes at sites (from document-focused to interview-focused)
- Monthly safety inspections for adjacent construction on operating lines (175 sites)

Strengthening Control of On-Site Work Risk Factors

Control of Risk Area Mitigation

Control of Work Locations on Operating Line

Control of Unauthorized Access (Work)

Safe First Training

KORAIL operates customized training centered on the field with the primary goal of 'ensuring safety.' Through basic compliance training for all employees and expert training programs, safety expertise has been strengthened. As a result, in 2023, major public and industrial accidents were eradicated, and railroad accidents were reduced by 62.5%, decreasing from 8 cases in 2022 to 3 cases in 2023. This ensures thorough safety for employees and customers.

Accidents Caused by Human Errors

(8 cases → 3cases)

62.5%

Prevention of Public Accidents

Training of Experts	Assigning shared safety goals (Human Resource Development Center), 476 courses, 9,338 personnel trained.
VR Experience	Raising awareness through virtual safety experiences, with 1,178 participants including foreign institutions.
Emergency Response	Field-centered practical training, with 23,221 practical training sessions.
Education for Affiliates	Coexistence education for major accident prevention, with 196 personnel from KORAIL Tech and Networks Industry. Prevention of Industrial Accidents

FOR EVERYONE'S SAFETY

New Hires Safety Expedition Wireless Transfer Training of Experts

3 Basic safety capability training for new hires within 3 years, 93 sessions, 1,759 personnel	New Hires
On-site safety consulting for new safety experts, 7 affiliations, 480 personnel	Safety Expedition
Training specialized personnel for prevention of transfer accidents, 5 sessions, 65 personnel.	Wireless Transfer
Customized New Education at the Human Safety Center, 9 Courses, 624 Personnel Trained	Training of Experts

Efforts to Protect Customer Safety

KORAIL is committed to ensuring customer safety from random crimes, crowd-related accidents, and fine dust by collaborating with railroad police for joint training focused on crime prevention. We have provided stab-resistant clothing and self-defense spray to our employees to enhance safety. To prevent congestion accidents, we are working with SKT to provide congestion information and have installed fine dust monitoring devices and air purifiers for air quality management. We have strengthened quarantine management to prevent the spread of bed bugs, with no cases reported to date.

Railroad Crossing Accidents

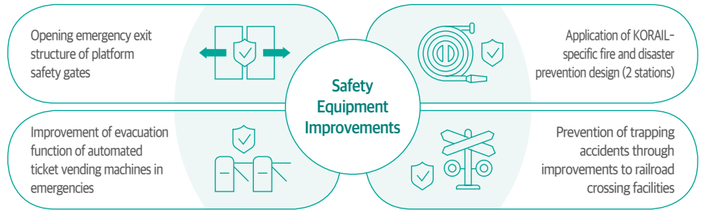
(13 cases → 4 cases)

69.2%

Improvements in Railroad Safety Facilities for Disaster Preparedness

KORAIL has intuitively and visibly improved customer close facilities for rapid evacuation in case of disasters. We developed KORAIL-specific disaster prevention design using luminous signs, which increased the visibility of fire and disaster facilities. Following installations at Suwon Station and Incheon Station, customer satisfaction reached 96%, prompting plans for further installations. In the event of a fire on the metropolitan railroad, we support rapid evacuation with automated ticket vending machines linked to automatic fire detection systems, and we have upgraded platform safety gate structures to allow for emergency exits. We are promoting the installation of safety bars on operating doors at 179 stations and invested 3.2 billion won in upgrading safety walls to pillar doors. Moreover, we standardized railroad crossings based on road characteristics to improve visibility and encourage swift evacuations, expanding the construction of smart crossings. In collaboration with local governments, we have installed 113 safety facilities (lane adjustments, mirrors, safety barriers, speed bumps) on access roads to railroad crossings.

Improvements in Railroad Safety Facilities



Major Public Accidents

ZERO for 3 consecutive years

A Safe Railroad Environment with the Public

As a public transport institution serving 1.2 billion passengers annually, KORAIL proactively addresses safety issues and expands public participation through various disaster prevention activities. We are increasing public participation in disaster response training and raising safety awareness through railroad safety campaigns and contests. In cooperation with relevant agencies, we conducted joint safety campaigns with senior elevator safety teams to enhance public involvement. As a result, major public accidents have not occurred for three consecutive years, and crossing accidents have decreased by 69.2% compared to the previous year.

Building a Safe Railroad Environment through Collaboration

Expanded Public Participation

- Increased public participation in disaster response training (549 participants, including vulnerable groups)
- Conducted a student railroad safety catchphrase contest (224 entries)
- Identified 84 railroad citizen safety guardians and 108 hazardous risk factors • Established a Railroad Citizen Safety Reporting Center (November 2023)
- Implemented 2,815 railroad traffic safety campaigns (up 68% from the previous year)

Collaboration with Relevant Agencies

- Operated a senior elevator safety team with 70 members (in collaboration with the Korea Senior Employment Agency)
- Signed a memorandum of understanding with SKT to provide subway congestion services based on telecommunications big data (December 2023)
- Trained 380,000 people on crossing methods in collaboration with the Korea Road Traffic Authority
- Conducted 10 joint safety campaigns with the Korea Elevator Safety Agency

World,

Dreaming of a World Together.

KORAIL

68 Customer Satisfaction

70 KORAIL, Growing Together

76 Vibrant Organizational Culture

81 Social Contribution

84 Shared Growth

Customer Satisfaction

KORAIL, Approaching Digitally

Customer Service Charter

KORAIL strives to provide customer-centered services based on the core values of Care, Trust, Friendliness, and Convenience. To implement consideration, we are expanding facilities for vulnerable groups, strengthening customer-centered transfer transportation services, and operating regional tourism trains to contribute to local economic revitalization. To ensure a trustworthy and safe railroad, we continuously reduce rail accidents and operational disruptions, maintain punctual operations, and provide alternative transportation and refund policies during service interruptions. For a friendly service that embodies care, we operate a service quality evaluation system and gather customer feedback through various channels to reflect improvements in our services. To enhance customer convenience, we have established an online ticket purchasing system and maintain a pleasant environment. Through this comprehensive approach, KORAIL aims to provide railroad services that bring us closer to our customers.

KORAIL Customer Service Charter

Care	Trust	Friendlines	Convenienc
Delicately and Warmly	Comfortably and Pleasantly	Like Family, Like Friends	Like Family, Like Friends

KORAIL Customer Service Charter

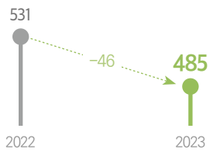
KORAIL will sincerely practice the following commitments:

- We will be a railroad that practices care.
- We will be a safe railroad that instills trust.
- We will be a friendly railroad that provides heartfelt service.
- We will be a railroad that considers customer convenience.

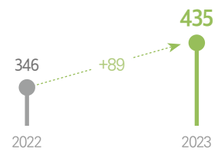
KORAIL, Approaching Digitally

KORAIL has focused on innovating customer experiences through digital services in line with the Fourth Industrial Revolution. By strengthening train delay management using digital technology, we have achieved a high on-time rate of 99.3%. Through collaboration with telecommunications companies, we provide onboard congestion information, improving the metropolitan railroad environment. The KORAIL Talk app has introduced various convenience features, such as self-check-in for flexible seating via QR code, pre-payment for parking, and providing transfer traffic information. We have also implemented self-initialization functions for ticketing devices, issued seats specifically for seniors, and offered grace periods for payment for disabled customers, enhancing overall convenience. Additionally, we have deployed digital guides at stations nationwide to provide inclusive services for digitally vulnerable groups. As a result of these customer-centered digital service innovations, the number of passengers using mainline trains increased by 12.6% compared to the previous year, reaching 136.69 million.

Parking-Related Complaints (Unit: Cases)



Senior Seat Reservations (Unit : thousand tickets)



KORAIL Talk
Public Institution App Cumulative Downloads
No.1

World's No. 1 On-Time Operation Rate
Based on International Union of Railways (UIC) Standards
99.3% Achieved

Providing Congestion Information for Metropolitan Railroads

Mobile Convenience Services
Through KORAIL Talk:
QR Self Check-in, Pre-Payment for Parking, Providing Transfer Traffic Information

Customer-centered Management

Customer-Centered Railroad Service Innovation

KORAIL has focused on enhancing customer satisfaction by minimizing inconveniences and providing differentiated services. By expanding KTX routes and introducing the new ITX-Maeum trains, we have increased transportation benefits and improved train environments, including upgrades to high-speed train Wi-Fi. We have also expanded convenience services such as baggage delivery, discounts for pregnant women, and the launch of new discount products. The establishment of new station entrances and the maintenance of mobility signage resulted in a 14.2% increase in transfer passengers. Improvements to ticket vending machines expanded emotional announcements, and revisions of customer-centric terms and conditions have enhanced the customer experience. As a result of these comprehensive efforts, our customer satisfaction score rose by 8.26% compared to the previous year, achieving a score of 86.5 and successfully providing differentiated railroad services.

Nationwide Expansion of Baggage Delivery Service
Target Stations: 16 stations in 2023 (up from 4 stations in 2022), with online reservation functionality

Baggage Delivery Usage (Unit: 100,000 cases)

Services that Respect Customer Value

Expanded Train Supply
- Additional KTX Routes
- Introduction of New ITX-Maeum Trains (10 train sets operated, providing 6,864 seats daily)
- Upgrades to Aging Trains (Added outlets to ITX-Saemaul, managed odor reduction in Mugunghwa toilets)
- Increase in General Train Seat Supply (1st quarter: 8.47 million seats → 4th quarter: 8.68 million seats)

Enhanced Discounts and Convenience Benefits
- Targeting irregular demand with N-card discount products (average fare reduction of 16.7%)
- New discount products for general trains: Discounts for pregnant women
- New station entrances (Dujeong Station, Gasan Digital Complex Station) and installation of guidance signs for separated traffic flow

Differentiated Services
- Expansion of Baggage Delivery Service to 16 Stations Nationwide
- Ensuring the right to mobility for citizens through rail-bus transfer services and improving convenience for metropolitan railroad use
- Expansion of emotional announcement broadcasts to enhance special experiences for customers, we revised customer-centric terms and conditions.

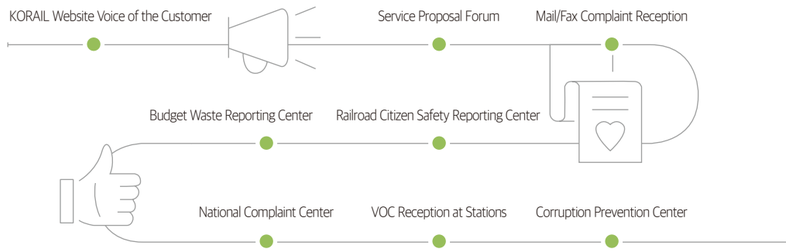
Opening of KORAIL Lounge
Osong, Yongsan, Busan, Dongdaegu
32 thousand customers visited

Various Communication Channels

KORAIL operates various communication channels to listen to customer voices and reflect feedback o n service improvements. We gather customer opinions through the website's Voice of the Customer (VOC) system, the National Complaint Center, VOC reception at stations, and through mail and fax. We respond to the outcomes in a manner preferred by customers. We continuously accept customer ideas for service improvements and reward outstanding suggestions annually. By operating centers such as the Corruption Prevention Center, Budget Waste Reporting Center, and Railroad Citizen Safety Reporting Center, we strengthen public accountability. Based on the insights derived from these initiatives, we establish customer service strategies focused on improving the train usage environment. Through the establishment of this customer-centered service culture and ongoing efforts for continuous development, KORAIL achieved an excellent (top-level) customer satisfaction rating in 2023.

Achieved Excellent (Top-Level) Customer Satisfaction
Compared to 2022: Ordinary

Various Communication Channels for Listening to Customer Voices



KORAIL, Growing Together

Job Creation

Railroad-Specific Job Creation Strategy and Large-Scale Recruitment Expansion

KORAIL is focusing on creating high-quality jobs tailored to the characteristics of the railroad industry through the 'Second Five-Year Comprehensive Job Plan (2023-2027).' The goal is to create over 150,000 jobs by 2027, and in 2023, we exceeded this target by creating 32,308 jobs. The organization conducted large-scale new recruitment, hiring 1,590 people, and expanded the internship program, bringing in 1,874 young interns. Through continuous workforce management and capacity analysis, we increased the early hiring rate to 78% and provided case-based job training for hired interns, enhancing program satisfaction.

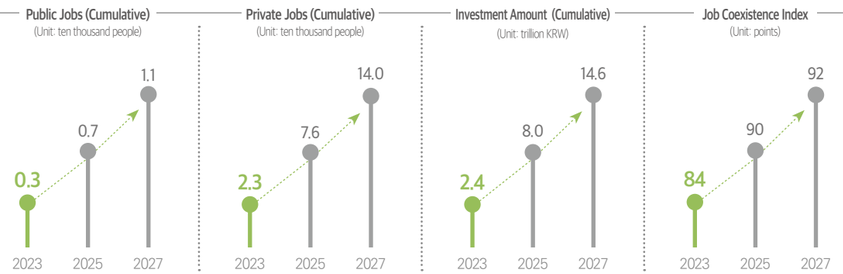
Korea Social Contribution Award
in the Job Creation Category ('23 Dec)
Grand Prize Awarded

New Recruitment in SOC Sector
1,590people

Establishing a Foundation for Creating Over 150,000 Jobs Utilizing the Railroad Industry (2023-2027)

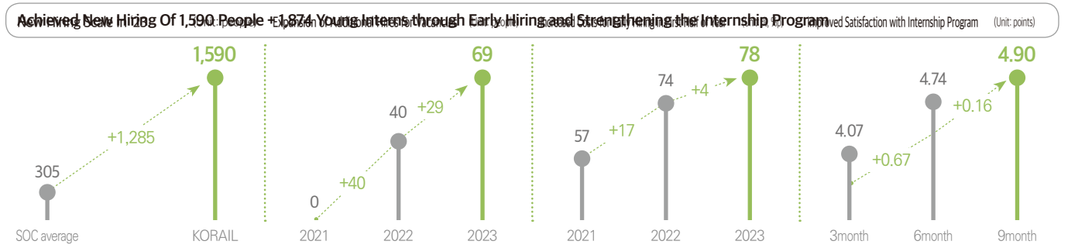
Vision	Creating Quality and Quantity Railroad-Specific Jobs		
Goals	Maximizing the Utilization of the Railroad Industry to Create Over 150,000 Jobs by 2027		
Direction and Task	Directly Employed Public Jobs	Core Railroad Jobs in Private Sector	Improving Job Quality
	• Expansion of New Hiring • Strengthening the Youth Internship Program • Diversification of Employment Types	• Expansion of Railroad-Specific Investment Projects • Customized Jobs for Vulnerable Groups • Support for Private Partners	• Supporting Sustainable Growth of Enterprises • Ensuring Adequacy in the Operation of Non-Regular Workers • Creating a Stable Job Environment
KPI	**Quantitative:** Job Creation (people) **Qualitative:** Job Coexistence Index (points)	**Quantitative:** Expansion of Railroad Project Investment(trillion KRW) **Qualitative:** Efforts for Customized Job Promotion	**Quantitative:** Job Coexistence Index (points) **Qualitative:** Improvement of Working Methods
Feedback Loop System	Goal Setting and Planning → Implementation of Initiatives → Performance Monitoring and Evaluation → Internal and External Sharing and Spreading		
	• Setting Annual Goals • Establishing a Comprehensive Job Plan	• Railroad Job Projects • Strengthening Community Collaboration	• ESG Subcommittee of the Board (Biannual) • Monitoring Goal Achievement	• Internal Evaluation Bonuses and Rewards • Sharing Best Practices with Public Institutions

5-year Roadmap

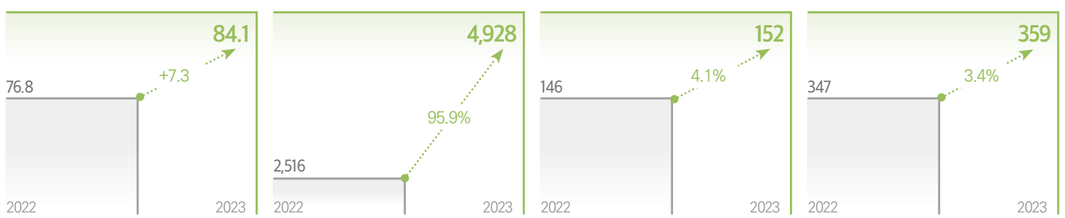


Qualitative Improvement of Jobs and Expansion of Flexible Work Systems

KORAIL pursues both quantitative expansion and qualitative improvement of jobs, establishing a comprehensive job evaluation system that includes subsidiaries. As a result, the job coexistence index rose to 84.2 points in 2023, demonstrating significant improvement. To enhance work-life balance for employees, we have introduced various flexible work systems. Satisfaction with flexible work arrangements increased to 84.1 points, and participation rates rose by 95.9%, through measures such as expanded staggered working hours, a 4.5-day workweek, and concentrated short working hours on weekends. Notably, the expansion of women's flexible work options and parental leave participation has secured additional hiring capacity for 511 individuals.



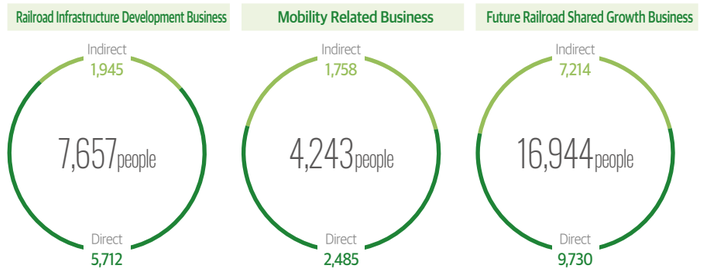
Secured Hiring Capacity Through Various Employment Types



Creation of New Jobs Domestically and Expansion in the Private Sector

KORAIL has led the development of overseas joint projects and the creation of new jobs through improvements in the operation of the 'Private Commission Management Committee,' resulting in the creation of new employment for a total of 19 individuals, both domestic and foreign. Additionally, through railroad infrastructure projects, mobility-linked initiatives, and future railroad co-growth projects, we created 28,000 direct and indirect private sector jobs. These efforts have expanded and qualitatively improved private sector jobs specialized in railroads.

Private Jobs
28,844jobs create



Total Jobs

32,308 jobs created

Jobs for Socially Vulnerable Groups

3,508 jobs created

Creating Jobs for Socially Vulnerable Groups at Railroad Stations

KORAIL is committed not only to increasing job opportunities through various employment types but also to providing jobs for socially vulnerable groups. By strengthening the cooperation system among government, industry, and civil society, we have contributed to creating 32,308 new jobs, an increase of 4.8% compared to the previous year, expanding the target group to include job seekers, career interrupters, and individuals with disabilities. To stabilize the operation of the five-year 'Seom Seom Ok Su' program, which has become a representative job for the disabled at railroad stations, we encouraged participation from large companies and opened new stores at Osong Station and Gwangmyeong Station, increasing the total to 10 operational sites. By conducting satisfaction surveys for workers and customers, we addressed inconveniences, expanded the recruitment of individuals with intellectual disabilities, and supported disabled individuals in becoming independent members of society.

Key Achievements in Job Creation

Private Sector Cooperation Jobs (187 people)
- [New] Transfer Station Order Control Personnel (15 stations, 64 people)
- [New] Elevator Safety Team (8 stations, 70 people)
- [New] KORAIL Lounge Operations (4 stations, 53 people)

Senior Jobs (1,959 people)
- Station Guide Assistants (108 stations, 1,836 people)
- Senior Club Convenience Store (Hwaengseong Station, 16 people)
- Upcycling, Railroad Interpreters (2 stations, 107 people)

3,508 people

Youth Jobs (1,118 people)
- [New] Work Experience Program (89 stations, 268 people)
- National Work-Study Students (183 stations, 737 people)
- Youth Startup Stores (27 locations, 113 people)

Vulnerable Group Jobs (244 people)
- Homeless Environmental Cleaners (11 stations, 168 people)
- [New] Disabled 'Seom Seom Ok Su' Program (10 stations, 60 people)
- Multicultural Immigrant Center (Iksan Station, 16 people)

Strengthening Cooperation Among Government, Industry, and Civil Society + Expanding Target Groups

Daejeon Seom Seom Ok Su

Representative Job for Disabled Individuals at Railroad Stations: 'Seom Seom Ok Su'

Fair & Transparent Recruitment

Indicators of Fairness and Transparency in New Hiring Satisfaction Survey

(5-point scale)

4.47 points

Local Talent Recruitment Rate

66%

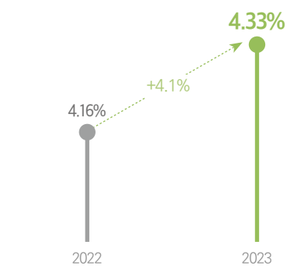
Enhancing Fairness and Transparency in Recruitment

KORAIL has improved the verification process for recruitment to ensure fair and transparent blind hiring. By utilizing an IT system for overall verification and conducting two rounds of cross-verification, we achieved a score of 4.47 out of 5 in fairness and transparency indicators in the new hiring satisfaction survey. We received no allegations of hiring misconduct from the Ministry of Employment and Labor's blind hiring monitoring or external organizations (including the Anti-Corruption and Civil Rights Commission and two other agencies). We strengthened practical assessments of job performance to establish the recruitment of excellent talents. A system for regular employment after a 12-week hiring internship was introduced and case-based interview questions were developed to enhance the satisfaction of both practitioners and candidates in the hiring process.

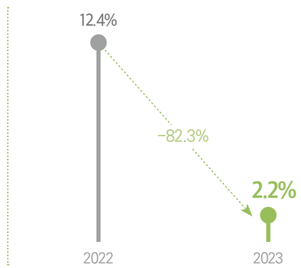
Improvements to Socially Equitable Recruitment Systems

KORAIL identified concerns regarding the placement of high school graduates, local talents, low-income individuals, people with disabilities, and veterans from nationwide recruitment in non-local areas, taking steps to improve this. We introduced a system supporting six preferred local areas and designated workplaces based on merit within the application regions. As a result, the ratio of local talents has increased for three consecutive years, reaching 66%. Through the development of suitable job roles for individuals with disabilities, the satisfaction of hiring disabled individuals and veterans has significantly improved, leading to a 10.2% decrease in turnover rates for successful candidates compared to the previous year.

Improvement in Hiring Satisfaction for Disabled Individuals and Veterans



Significant Decrease in Turnover Rate for Successful Candidates in Disabled and Veteran Recruitment



Three Customized Treatment Improvements for HR Operations Satisfaction

To achieve the goal of being a disability-friendly company even after hiring, we have introduced a five-year plan to create safe and satisfying working conditions. In this process, 20 suitable job roles were identified, earning recognition from the Ministry of Personnel Innovation. Furthermore, we improved the wage peak system by implementing focused work, preventing job vacancies, redesigning job roles, and reallocating 78 wage peak candidates. We also have improved and expanded the systems for infertility leave, caregiving leave, and parental leave, maintaining our certification as a family-friendly company for 13 consecutive years.

Job Reallocation under Wage Peak System

Award for HR Innovation
(Ministry of Personnel Innovation, '23 Dec)

Job Reallocation under Wage Peak System

Category	Reallocation
Level 2 and above	53 people
Level 3 and below	25 people
Total	78 people

Certification as a Family-Friendly Company for 13 Consecutive Years
(Ministry of Gender Equality and Family, 2010-2023)

HR Management

Talent Management System

KORAIL aims to be a "Mobility Company Leading Railroad Standards' under its management slogan. The company focuses on digital-based safety management, enhancing financial soundness, mobility innovation, and building a future-oriented organizational culture. To achieve this, we concentrate on nurturing talents with safety awareness and job expertise, internalizing safety values through field-focused practical training, and providing high-quality railroad services. We secure digital and global talents to foster a culture of voluntary learning, support the growth of our members, and strengthen core competencies.

Talent Management Strategy

제2023-중공-270호

증 서

청장재산부문 상 | 한국철도공사 호남차량업비단 R U Ready

귀 공업소는 산업표준화 및 품질경영혁신 활동으로 2023년도 전국품질분임조경진대회에서 우수한 실적을 거두었기에 이 증서를 드립니다.

2023년 11월 22일

산업통상자원부장관 방 문 [산업통상자원부장관인]

Won a Bronze Medal at 2023 National Convention on QC Circles

Enhancing High-Quality Railroad Services through Job Expertise

KORAIL has established 36 commissioned training programs to improve job skills in various fields, with 1,705 employees completing these courses. Leadership training for organizational and field managers has strengthened job expertise, and the expansion of practice-oriented group training has led to a 51.6% increase in participants, with 15,533 completing the training. Notably, smart technology training combining safety with digital elements (such as smart construction technology, with 520 participants) and the introduction of online professional certification courses resulted in 1,289 completions (an increase of 791 from the previous year). Through AI and demand forecasting study group activities, KORAIL won a bronze medal at the '2023 National Convention on QC Circles.'

Strengthening Job Training

Enhancement of Job Expertise
- Commissioned Training for Job Skill
  * Improved by Field 236 courses, 1,705
- Leadership Training for Organizational and Field Managers: 278 people

Practice-Oriented Training
- Expansion of Practice-Oriented Group Training
  * 15,533 completions (an increase of 51.6% from the previous year)
- Technology Training Enhancing Safety with Digital Elements: 520 people

Expansion of Self-Directed Learning
- Improvement of Online Professional Certification Courses
  * 1,289 completions(an increase of 791 from the previous year)
- Practical Skills Acquisition through Study Groups: 43 groups, 331 people

Nurturing Core Talented Personnel

KORAIL conducts step-by-step customized training to cultivate digital and global talents. In the digital field, we strengthen advanced technological capabilities through 26 basic and advanced courses, including practical coding and AI convergence technologies, and undertake data-driven problem-solving tasks to secure future railroad innovation capabilities. In the global field, we offer four overseas business courses, including international railroad expert training, and provide practical training abroad for translation and OSJD dispatched personnel to establish a human resource base for international exchange cooperation and overseas projects. Consequently, we have trained 796 digital core talents and 70 global core talents. Through this training, KORAIL has laid the groundwork for successfully implementing the AI-based rail temperature prediction model project, recognized as an excellent case by the Ministry of Science and ICT, and achieved annual overseas project sales of approximately 20 billion KRW.

Digital-Global Training for Core Talented Personnel Development

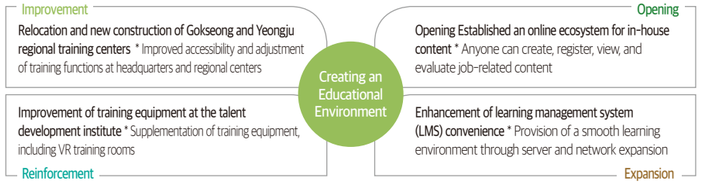
Digital
- Improvement of Digital Literacy through Advanced Technology Training
  * 26 courses, including practical coding training, with 712 participants
- Problem-Solving Projects Based on IoT Data
  * 3 courses in AI Convergence Technology Training, with 84 participants

Global
- Expansion of Talent Pool through Basic Overseas Business Training
  * 4 courses, including International Railroad Expert Training, with 52 participants
- Practical Training for OSID Courses
  * 7 courses, including interpretation and translation training, with 18 participants

Establishment of Online and Offline Training Infrastructure

KORAIL improved its online and offline training environment, resulting in a 16% increase in training participants compared to the previous year, reaching 79,960 in 2023. In particular, the provision of an online training environment increased welfare satisfaction by 11.6 points, achieving a score of 85.3 in 2023.

Digital-Global Training for Core Talented Personnel Development



Enhancement of Safety Based on Expertise

KORAIL established a Chief Safety Officer (CSO) position and expanded safety-related positions, such as the Head of the Industrial Safety Team and Head of the Citizen Safety Team, among 16 open positions to strengthen safety expertise. As a result of additionally securing specialized talents, such as industrial safety and construction safety engineers, there were no major industrial accidents or passenger train derailments in 2023.

Expansion of Open Positions

Existing (15 positions)		Expanded (16 positions)		
Management (8 positions)	Finance (1), Legal (2), Public Relations (2), Environment (1), Education (1), External Affairs (1)	Management (9 positions)	[Newly Established] 2 positions (Safety)	Safety Team Leader / Citizen Safety Team Leader
			[Released] 1 position (External Affairs)	External Cooperation Team Leader
Key Projects (7 positions)	Logistics (3), Metropolitan (1), Business (3)	Key Projects (7 positions)	Maintaining existing open positions	

Vibrant Organizational Culture

Labor Relations

Labor-Management Cooperation Based on Law, Principles, and Fairness

KORAIL is maintaining communication channels to build a reasonable labor-management relationship while responding to unfair practices according to law and principles. We have strengthened labor capacity through improved communication channels and expanded labor training for employees, enhancing mutual cooperation and trust. As a result of these efforts, we peacefully concluded the 2023 wage agreement and prevented major accidents through joint risk assessment and improvements. Furthermore, we introduced a labor director system to increase employee participation in management, achieving a 100% attendance rate for labor directors at board meetings.

KORAIL Labor-Management Cooperation System

Regular Negotiations | Labor-Management Council | Joint Labor-Management Task Force | abor-Management-Government Council | Labor Director System

Law, Principles, and Fairness-Based

Win-Win and Cooperative Trust and Joint Participation

Improving Working Conditions through Cooperation and Practicing ESG Management through Win-Win

KORAIL faced a crisis in labor relations due to a ten-day compliance struggle, a four-day first strike, and the announcement of indefinite second and third strikes. However, through proactive communication, including meetings between the CEO and the chairman, behind-the-scenes discussions among staff, and a 100-hour marathon negotiation, we overcame the crisis and improved employees' working conditions. We also took the lead in practicing ESG management through various joint labor-management programs. As a result of these efforts, we received the highest grade of LEVEL 5 from the Ministry of Health and Welfare's 'Community Contribution Recognition System Evaluation (ESG Evaluation Sector)' for two consecutive years in 2023. This demonstrates KORAIL's ability to turn crises into opportunities and build cooperative labor-management relationships while fulfilling our social responsibilities.

Highest Grade for Two Consecutive Years

Community Contribution Recognition System Evaluation (ESG Evaluation) By Ministry of Health and Welfare ('23 Nov)

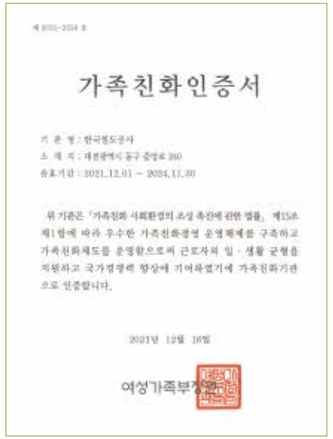
LEVEL 5

Active Communication and Cooperative Labor-Management Relations, Improvement of Working Conditions

Efforts		Achievements
Wage Welfare	20 Wage Negotiation Meetings, Marathon Negotiation	Wage Agreement Signing, Expansion of Flexible Working Arrangements
Industrial Safety	Industrial Safety and Health Committee, Major Accident Prevention Council	Zero Major Citizen Accidents for Three Consecutive Years, Zero Major Industrial Accidents in 2023
Employee Grievances	Grievance Review Committee, Counseling Channels	Reduction in Occurrences of Sexual Harassment/Bullying (-6 cases/-4 cases)
Affiliates	Subway Cooperation Practical Committee, Labor-Management Safety Working Committee	Support for Affiliate Widespread Railroad Usage, Psychological Counseling Support for Emotionally Labor-Intensive Workers

Joint Labor-Management Programs for Practicing ESG Management

- E: Hope Railroad Foundation (Co-Chairs: CEO + Union Chairman) Social Contribution Project
- S: Operation of a Joint Labor-Management Assessment Task Force for Evaluating the Adequacy of Risk Reduction Measures / Operation of a Labor-Management Safety Working Committee (Participation of Industrial Safety and Health Committee and Labor Representatives from Affiliates)
- G: Reflection of Labor Directors' Suggestions, Establishment of the 'Ethics and Human Rights Management Communication Council' (Internal)



가족친화인증서

기 관 명 : 한국철도공사
소 재 지 : 대전광역시 동구 중앙로 200
유효기간 : 2021.12.01 ~ 2024.11.30

위 기관은 「가족친화 사회환경의 조성 촉진에 관한 법률」 제15조 제1항에 따라 우수한 가족친화경영 운영체계를 구축하고 가족친화제도를 운영함으로써 근로자의 일 · 생활 균형을 지원하고 국가경쟁력 향상에 기여하였기에 가족친화기관으로 인증합니다.

2021년 12월 16일

여성가족부장관

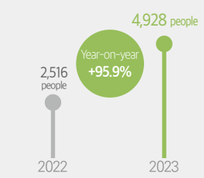
Family-Friendly Certification from the Ministry of Gender Equality and Family for 13 Consecutive Years

Work-Family Balance and Family-Friendly Management

KORAIL has made efforts to improve family-friendly systems to support the balance between work and family. We have diversified the forms of flexible working arrangements, expanded the scope of maternity and childcare leave, and enhanced usability. We also have improved family allowances for employees with multiple children. As a result of these efforts, we have received the Family-Friendly Certification from the Ministry of Gender Equality and Family for 13 consecutive years (2012-2023). Considering the characteristics of the railroad transportation industry, we adjusted the constraints on the use of flexible working arrangements to align with reality, resulting in a 95.9% increase in participation compared to the previous year, with a record satisfaction score of 84.1.

Family-Friendly Management Major Achievements

Significant Increase in Flexible Work Participation

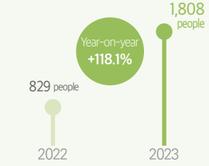


Increase in Days Used for Pregnancy Check-Up Leave

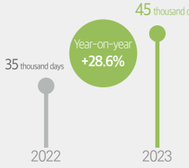
Family-Friendly Certification from the Ministry of Gender Equality and Family

Maintained for 13 consecutive years ('10 ~ '23)

Increased Participation in Staggered Working Hours by On-Site (Station/Business Office) **Employees**



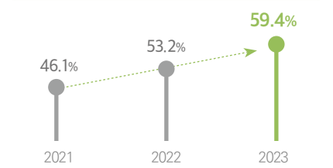
Increase in Days Used for Compensatory Leave



Highest Satisfaction Score for Flexible Work System Operation

Provision of Various Work Types and Establishment of Usage Culture

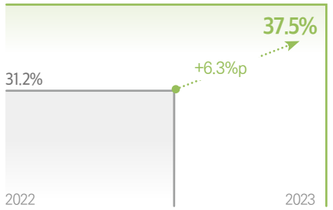
- Flexible Work Utilization Rate Increased by 6.2% Compared to Previous Year



Providing Welfare Satisfaction through Strengthening Non-Monetary Welfare

Despite limited public institution welfare budgets, KORAIL has made various efforts to enhance employee satisfaction. We improved the welfare satisfaction survey, increased communication and surveys, and expanded events to boost response rates, allowing us to identify the top welfare items preferred by employees. This has enabled us to provide customized welfare support, maximizing the use of existing infrastructure to expand welfare benefits. By creating a healthy and efficient work environment through customized psychological training and employee dormitory support, we achieved a welfare satisfaction score of 85.3, despite having one of the lowest welfare budgets among public institutions.

Enhanced Response Rate for Welfare Satisfaction Through Employee Communication and Promotion



Focused Improvement on Four Key Non-Monetary Welfare Issues, Enhancing Employee Satisfaction

2023 Welfare Satisfaction Score: 85.3 (Up by +5% Compared to the Average of the Last Three Years)

1. Customized Welfare Support Reflecting Trends
2. Expansion of Welfare Benefits Utilizing Existing Infrastructure
3. Strengthened Promotion, Communication, and Feedback for Existing and New Systems
4. Creation of a Healthy and Efficient Work Environment

Work Hour Efficiency

211 people, 5,166 hours

Improvement of Labor Safety and Labor-Management Relations through Advanced Technology

KORAIL has significantly enhanced the safety and efficiency of railroad operations by utilizing advanced technology. The introduction of an AI-based infrastructure inspection system and a digital switch testing device has enabled safe inspections even in adverse weather conditions, improving work efficiency by 89%. This aligns with the union's demands for improved working conditions and enhanced safety. The implementation of automation systems (RPA) and wireless control shunting systems has reduced repetitive tasks, allowing employees to focus on more valuable work, thereby alleviating work-related stress and excessive labor intensity. The development of portable equipment has improved equipment failure prevention and work processes, enhancing overall working conditions and job satisfaction.

Contribution to Enhancing Worker Safety and Efficiency through Advanced Technology

AI Railroad Facility Inspection System

Digital Diverter Tester

Establishment of a Foundation for Efficiency

211 people in '23

5,166 hours in '23

Communication with 'Principles' and 'Patience' Leads to Quick Resolution of Railroad Strikes

In September 2023, KORAIL faced a four-day strike due to the railroad union's strong protests. The union demanded an 8.8% wage increase and the integration of high-speed rail services. However, KORAIL deployed over 5,000 substitute workers to operate 70% of KTX services and 80-90% of commuter train services during peak hours, minimizing customer inconvenience. KORAIL formed a disciplinary task force to address the union's unfair practices and, through continuous communication, including a 100-hour marathon negotiation and meetings with labor representatives, concluded a wage agreement that adhered to the government guideline (1.7% increase). The strike was ended early at the request of the union to help overcome the management crisis, and all workers returned.

< Short-Term Resolution of Railroad Union Strike through Compliance with Principles and Continuous Communication >

Activation of Active Dialogue Channels	16 Practical Negotiations, 4 Main Negotiations, Intensive Marathon Negotiation
Minimization of Public Inconvenience	Operation of Internal and External Substitute Workers, Compliance with Essential Maintenance Work Standards for Train Operations
Strict Response to Unfair Practices	First Establishment of a Task Force for Disciplinary Actions Against Work Slowdown for Non-Compliance with Legitimate Work Instructions

Strong Protests by the Railroad Union

- Excessive Regulation Compliance Work Slowdown (10 days)
- First Strike Initiation (4 days; from 09:00 on September 14, 2023, to 09:00 on September 18, 2023)

Main Labor-Management Negotiations

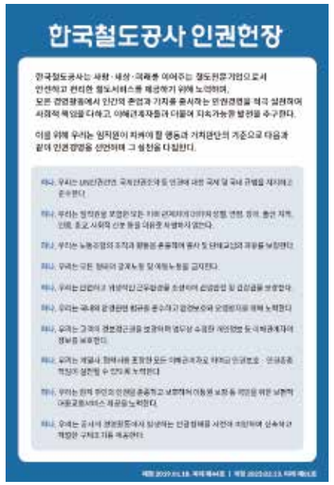
- Compliance with Government Wage Increase Rate of 1.7%
- Resolution of Wage Imbalance Among Job Types - Improvement of Ordinary Wage System
- Train Operations During Strike Period at 82.9% of Normal Levels (Minimizing Inconvenience for Train Users)

→ Suspension of the Railroad Union's Second Strike

Human Rights Management

Human Rights Management Promotion System

KORAIL has established its human rights management vision as 'Safe for the Public, Valuing Human Rights, Together with KORAIL,' creating a framework focused on people-centered management, the prevention of human rights violations, and the promotion of a culture of respect for human rights. To implement this human rights management, we have developed strategies for internalizing human rights respect, strengthening the protection of all stakeholders' rights, promoting human rights within the supply chain, and spreading a culture of respect for human rights with key practical tasks. From 2023 to 2025, we will establish a roadmap to spread a culture of respect for human rights and ensure that people-centered, human rights-friendly management is continuously realized in all management activities.



Human Rights Charter

KORAIL Human Rights Management Promotion System and Roadmap

Promotion System

Safe for the Public, Valuing Human Rights, Together with KORAIL

Realization of People-Centered, Human Rights-Friendly Management **h-K wave**

* h-K wave: Human Rights Korail Wave

Respect	Protection	Diffusion
People-centered Management	Prevention of Human Rights Violations	Culture of Respect for Human Rights

Strategy

Embodiment of Human Rights Respect in Management	Strengthening Protection of All Stakeholders' Human Rights	Promotion of Human Rights in the Supply Chain	Spreading a Culture of Respect for Human Rights Practice
• Advancement of Human Rights Management System • Embodiment of Human Rights Values • Operation of Employee Participation-Based Human Rights Respect Programs	• Expansion of Stakeholder Participation • Strengthening Response to Major Human Rights Issues	• Establishment of Support System for Human Rights Management in the Supply Chain • Strengthening Prevention of Human Rights Risks in the Supply Chain • Enhancement of Protection for Digital Vulnerable Groups and Customers' Human Rights	• Dissemination of Standard Models for Human Rights Management in the Public Sector • Promotion of External Human Rights Respect Cooperation Projects • Establishment of Internal and External Human Rights Networks

Roadmap

2024	2025	2026
Leap to Become a Human Rights-Friendly Company Embodiment of Human Rights Respect Management Creation of a Human Rights Management Ecosystem	**Establishment of a Culture of Respect for Human Rights** Improvement of Organizational Culture of Respect for Human Rights Implementation of Human Rights Management in the Supply Chain	**Leading Human Rights-Friendly Management** Spread of a Culture of Human Rights Respect Complete Eradication of Human Rights Violations

Human Rights Violation Prevention System

Executing Organization

- (Subject Department) Ethics Management Department (Ethics Planning Division)
- (Temporary Organization) KORAIL Human Rights Center
  * Total of 7 members (Center Head + 6 Human Rights Protection Officers)

System

- Human Rights Management Continuous Advisory System
  * Advisory Institution: Corporate Due Diligence Research Institute
- Ethics and Human Rights Management Communication Council
  * 21 stakeholders including partner companies, external experts, and affiliates

Supporting Organization

- (Policy Review Body) Human Rights Management Committee
  * Total of 12 members (6 external + 6 internal)
- (Remedy Body) Human Rights Management Subcommittee
  * 5 members from the Human Rights Management Committee

Institutional Strategy

- Human Rights Charter / Human Rights Management Guidelines
- 2024 Company-Wide Human Rights Management Promotion Plan

Strengthening Human Rights Management Implementation

KORAIL is internalizing human rights management to prevent negative human rights impacts that may arise during management activities and to promote the rights of all stakeholders. We have established the KORAIL Human Rights Center and built a continuous advisory system for human rights management through agreements with specialized institutions. We created consultative bodies for communication with external stakeholders, and the Human Rights Management Committee is now composed of a majority of external members, enhancing its policy recommendation and deliberation functions.

We have revised the Human Rights Charter and management guidelines to expand KORAIL's human rights management efforts to internal employees, partner companies, customers, and the public. The newly revised Human Rights Charter specifies KORAIL as the subject of the human rights policy declaration and introduces the values of public safety and universal mobility rights that reflect the specific nature of the railroad industry, providing railroad transportation services that respect everyone.

To protect the rights of members and ensure a safe working environment, we have completed the four major tasks and 13 detailed tasks of the 'Joint Labor-Management Task Force for Improving Grievance Handling' and expanded internal counseling channels to include the labor union. We are also expanding the committee for measures to eradicate sexual harassment and bullying, and we have produced and distributed a guidebook for handling workplace bullying and sexual harassment grievances. To protect victims, we have established stalking prevention guidelines and strengthened monitoring to prevent secondary victimization, thereby enhancing the internal system for preventing human rights violations.

Stakeholder Communication Council Meetings

Priority on Stakeholder Human Rights Protection

KORAIL has made the protection of stakeholder human rights a top priority and has strengthened the implementation of human rights management by transitioning to customized human rights education. The scope of the training targets has been expanded to include senior executives, managers, overseas dispatched personnel, and affiliate managers. We have conducted face-to-face training for on-site grievance counselors and individuals involved in incidents across the country.

To prevent human rights violations in local areas due to the expansion of overseas business, we provided human rights sensitivity training for all employees before dispatching them to overseas branches in countries such as the Philippines and Tanzania. We also posted the Human Rights Charter translated into the local languages of each branch and initiated a Human Rights Charter reading challenge.

We operate an ethics and human rights management communication council involving stakeholders and have implemented all eight policy recommendations derived from the action items, including improvements to customer lost property handling procedures and safety measures for on-site workers at partner companies. Through collaboration with government agencies, we continuously conduct campaigns to prevent hate and discrimination and promote a culture of respect for human rights, actively participating in public human rights protection activities. We also have carried out various human rights enhancement activities to improve the railroad usage environment for vulnerable groups, such as the issuance of tickets for senior citizens via KORAIL Talk and improvements to assistance services for the disabled.

Programs for Spreading a Culture of Respect for Human Rights

Regular Campaigns for Human Rights Culture Diffusion

KORAIL's Four Major Cultural Weeks

- Compliance Week: April
- Ethics Week: June
- Gender Equality Week: September
- Human Rights Week: December

Campaigns for Prevention of Sexual Harassment and Bullying

Clean Day for Sexual Harassment and Bullying (Monthly)

- Every 11th of the Month is 'Day for the Eradication of Sexual Harassment and Bullying' (Implementation of Four Major Prevention Programs)

Guidelines for Sexual Harassment and Bullying (Ongoing)

- Seven Prevention Rules for Sexual Harassment and Bullying (Displayed on PC Screensavers)

Self-Assessment of Ethical Practices

Ethics Mirror ME ME (Monthly)

- Self-Assessment of Workplace Ethics

Efforts to Achieve Gender Equality

KORAIL is continuously striving to achieve gender equality by considering ways to utilize female talent, such as expanding the number of female executives and managers, while increasing female recruitment. As a result of efforts to expand the pool of future female executive candidates and enhance female representation, we have achieved our target of three female executives, and the number of female senior and mid-level managers has increased. To cultivate female managers in technical fields where the participation rate of women is lower compared to administrative fields, we have increased the participation of female candidates for team leader and manager positions through mentoring and educational support. As a result, the percentage of female candidates for managerial positions rose to 4.2%, and nine new female team leaders successfully passed the final selection, achieving 100% of our gender diversity target.

Advancement of Human Rights Due Diligence

KORAIL has conducted human rights assessments and impact evaluations, including those of customers and the supply chain, to address the human rights blind spots within the organization. By applying the National Human Rights Commission's 'Human Rights Management Reporting and Evaluation Guidelines,' we have advanced our human rights impact assessment methods to enable the identification of actual human rights risks, moving beyond the traditional checklist approach. To establish a communication-based human rights management execution system, we selected a stakeholder range that includes labor unions, partner companies, and customers, and conducted human rights status surveys among employees and written interviews with stakeholders. We linked the results of the employee human rights status survey to the weighting of the assessment of the severity of human rights risks to select key human rights issues and diagnose actual and potential human rights risk factors through interviews with customer participation groups. As a result, we identified seven improvement tasks, including the enhancement of grievance handling procedures, supply chain health and safety management, and the management of customer information provision systems. We have completed improvements on three of these tasks, and issues requiring long-term review will be reflected in the 2024 human rights management promotion plan for ongoing improvement.

Human Rights Impact Assessment Process

Pre-research Review of Previous Year's Report, Domestic and International Trends and Cases in Human Rights Management	**Preparation for Self-Assessment** Establishment of checklists and survey questions based on preliminary survey results	**Self-Assessment and Human Rights Status Survey** Evaluation of risk levels for each indicator, linked to the materiality assessment	**Materiality Assessment** Identification of 'Key Human Rights Issues' to Address First, reviewed by advisory firms
Human Rights Management Committee Review of Human Rights Impact Assessment Results Report	**Preparation of Human Rights Impact Assessment Report** Inclusion of response plans for key human rights issues	**Analysis of Interview Results** Re-evaluation of severity assessment if previously unidentified negative issues are discovered	**Selection and Interview of Stakeholders** Identification of human rights risks through stakeholder participation, including employees and customer participation groups

Social Contribution

Social Contribution System

Social Contribution Promotion System

KORAIL has established the social contribution goal of "Happier Korean Railroad through Shared Growth' and set three focus areas: social contributions based on railroad infrastructure, cooperative growth with local communities, and the advancement of the social contribution system. To achieve this, we are working on eight key initiatives, including the expansion of the social contribution brand, providing opportunities for train travel for people with disabilities, promoting joint projects with labor and management, localized social contributions, support for identifying welfare blind spots, collaboration with institutions to create synergy, social contributions linked to environmental issues, and promoting certification for community contributions..

Happier Korea Railroad Through Shared Growth

Social Contributions Based on Railroad Infrastructure	Cooperative Growth with Local Communities	Advancement of Social Contribution System
• Expansion of Social Contribution Brand • Provision of Train Travel Opportunities for People with Disabilities • Promotion of Joint Projects with Labor and Management	• Localized Social Contributions • Support for Identifying Welfare Blind Spots • Creation of Synergy through Institutional Collaboration	• Social Contributions Linked to Environmental Issues • Promotion of Certification for Community Contributions

First KTX Experience: Happy Train

Gwangju Bitgoeul Volunteer Group's Contracted Local Childcare

Employee Walking & Plogging Donation Challenge

'Happy Train' Social Contribution Activities

In celebration of the 20th anniversary of the KTX launch, KORAIL conducted a flagship social contribution project called 'Happy Train: First KTX Experience.' This program provided train travel opportunities to 2,024 individuals from vulnerable groups, including those with economic difficulties, people with disabilities, and low-income veterans, utilizing KORAIL's transportation infrastructure. Participants experienced various railroad travel and tourism/leisure programs, helping alleviate cultural isolation. Through this initiative, KORAIL contributed to enhancing the social value of railroad services and strengthening ties with local communities.

Employee Walking & Plogging Donation Challenge

In celebration of the KTX's 20th anniversary, KORAIL held a 'Walking & Plogging Challenge' with the participation of 2,000 employees and their families. Under the theme 'Connecting Hearts, Connecting Hope,' the event combined a goal of walking 200 million steps over 20 days with environmental cleanup activities, raising 10 million won in donations. This funding was used to support the certification process for children nearing the end of protective care through Save the Children. This activity achieved meaningful results by simultaneously promoting employee health, protecting the environment, and supporting vulnerable groups, fulfilling the company's social responsibility and fostering coexistence with local communities. KORAIL will continue to engage in various social contribution activities for sustainable development in the future.

Revitalizing Local Economy

Labor-Management Joint 'Upcycling Uniform Donation Challenge'

KORAIL conducted a joint 'Upcycling Challenge' for discarded work uniforms. Thirteen volunteer groups collected high-quality discarded uniforms, which were then transformed by a social enterprise into emergency supplies and sanitary pad pouches, providing employment opportunities for people with disabilities and low-income individuals in the process. Emergency supplies and sanitary pads purchased with employee donations were packed into the upcycled pouches and delivered to 1,000 individuals from vulnerable communities and schoolgirls eligible for educational welfare support. Through this initiative, KORAIL realized various social values, such as environmental protection, support for vulnerable groups, and fostering social enterprises, presenting a sustainable social contribution model for the company.

* Upcycling: A concept that elevates the value of existing recycled materials through design and other enhancements, creating new products.

Realizing Social Value through Upcycling Discarded Uniforms

Providing Convenient Transportation Networks for Regional Vitality and Economic Revitalization

KORAIL has worked to improve transportation accessibility by expanding high-speed rail benefits to more regions and enhancing metropolitan area rail services, aiming to engage local communities and revitalize the local economy. By collaborating with local governments, KORAIL has offered customized travel packages to generate tourism demand, thereby contributing to the revitalization of local economies struggling with population decline and aiding domestic economic recovery.

Expansion Of High-Speed Rail Benefits → Expansion Of Metropolitan Railroad Services → Driving Local Economy And Tourism Demand

Improvement of Accessibility to the Capital Region from Local Areas

By improving access to the capital region, KORAIL has addressed the long-standing transportation imbalances in various areas and has made efforts to enhance the quality of life and stimulate local economies. This includes extending the starting and ending stations of KTX on the Central and Jungbu Inland line and resolving issues related to KTX stops at Mulgeum Station. Furthermore, KORAIL expedited the introduction of the new ITX-Maeum train on the Taebaek Line to enhance travel convenience for local residents.

Leading Improvement in Accessibility to the Capital Region and Simultaneous Resolution of Regional Long-standing Issues

Central Line KTX Extended to Seoul Station	Jungbu Inland Line KTX Extended to Pangyo Station
Requested by Local Government: '20 Dec.	Requested by Local Government: '21 Dec
Multiple Train Types + Platform Extensions → Enables one-stop travel convenience	Replacement of Screen Doors for Combined Subway/KTX Use → Facilitates more convenient travel to Gangnam
Gyeongbu Line KTX Stop at Mulgeum Station	**Taebaek Line ITX-Maeum Operation**
Requested by Local Government: '10~'21	Local Government's Early Operation Request: '22 Feb
Construction of Facilities Including Platform Extensions → Allows for more convenient access to the capital region with KTX stops	Enables travel from Cheongnyangni to Taebaek in about 2 hours

Expansion of Railroad Benefits to Local Areas

- Taebaek Line Extension: September
- Extension of Central Line to Seoul Station: December
- Extension of Jungbu Inland Line to Pangyo Station: December
- KTX Stop at Mulgeum Station on the Gyeongbu Line: December

Elimination Of Public Transportation Infrastructure Gaps Through Opening Of Seohae Line And Gyeongwon Line Extensions

Seohae Line Extension	Gyeongwon Line Extension
• Establishment Of The First North-South Railroad Network In The Northwestern Metropolitan Area → Shortened Commute Times Enable A 'Life With Evenings'	• Improved Convenience Of The Metropolitan Transportation Network In Northern Gyeonggi → Arriving From Incheon To The Border Area Of Yeoncheon Without Transfers

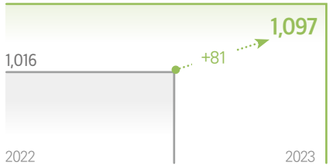
Opening of the Northern and Southern Metropolitan Railroad Network

KORAIL has gradually expanded the Sosa~Daekok~Ilsan section to establish the first north-south railroad network in the northwestern region of the metropolitan area, improving the convenience of the metropolitan transportation network in northern Gyeonggi Province by expanding the Dongducheon~Yeoncheon section. This contributed to alleviating public transportation imbalances in the metropolitan area through the expansion of the metropolitan transportation network in the southwestern and northern regions of Gyeonggi.

Successful Opening of New and Extended Sections Enhancing Transportation Convenience

KORAIL established a 30-minute living zone in the metropolitan area through the new 18.2 km line from Sosa to Daekok and the 6.9 km extension from Daekok to Ilsan. Additionally, by extending the Gyeongwon Line from Dongducheon to Yeoncheon, residents in northern Gyeonggi can now access Seoul without transfers, reducing travel time and transportation costs by half. Along with the expanded metropolitan railroad services, KORAIL analyzed customer usage patterns and train schedules to reform the optimal train operation system, achieving an 8% increase in metropolitan railroad passenger numbers compared to the previous year.

Increase In Metropolitan Railroad Passengers (Unit: Million People)



Surge In Transportation Beneficiaries Due To Expansion Of Metropolitan Railroad

New Seohae Line		Extension Of Gyeongwon Line
Sosa ↔ Daekok	Sosa ↔ Ilsan	Seoul ↔ Yeoncheon
Time reduced 58 minutes	Time reduced 62 minutes	Time reduced 1h 50m, Transportation Cost Saving 1,300 KRW

Supporting Local Economic Revitalization

Through collaboration with the Ministry of Culture, Sports and Tourism and local governments, KORAIL planned and promoted various travel products, contributing to an increase in domestic tourists by alleviating travel costs through expanded tourist train operations and discount systems. We also transformed Yonggung Station, which had been neglected for 20 years in Yecheon County, into a cultural complex with a café and a themed park, helping to create a regional cultural space. By enhancing luggage delivery services for travelers and expanding regional transportation services, we increased the economic impact of railroad tourism by 35% compared to the previous year.

Railroad Tourism Themed Products and New Regional Tourism Promotions

KORAIL launched new products linked to local tourism resources, securing competitiveness in railroad tourism while easing the travel cost burden for the public. In collaboration with local governments and the travel industry, we created theme products such as 'Walking in Gangwon by Train' utilizing trains on routes and time slots with low demand, and 'New Charms of Night' for nighttime tourism, contributing to longer stays for customers at tourist destinations. By implementing cooperative promotions with local governments, such as discount tourism products and rebate programs, and establishing a quality assurance system, we have contributed to the revitalization of domestic travel by railroad.

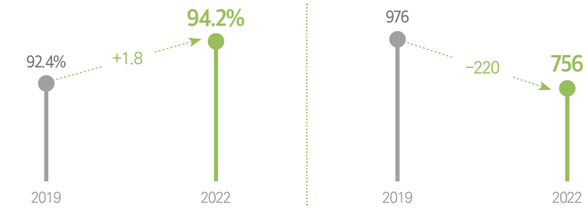
Regional Economic Revitalization Effects From Regional Tourist Railroad Operation

215,000 People → 8,212 Billion Won

35% increased

Encouraging Domestic Travel Through Reduced Burden

Domestic Travel Experience Rate (Unit: %) Annual Domestic Travel Spending Per Person (Unit: thousand KRW)



Shared Growth

Shared Growth

Focusing on the Growth of SMEs and the Development of the Local Economy

KORAIL is expanding cooperative projects that resonate with the public for local SMEs and those in the agriculture and fisheries sectors and has established various support measures to widen the market access for partner companies and small businesses. We are discovering new technology development projects by providing our technology to SMEs and transferring intellectual property rights at no cost, and we have commercialized successful development items by purchasing them.

2023 Certificate of Implementation of ESG for Agriculture & Fishery

Direction and Initiatives for Shared Growth with SMEs, Small Businesses, and Social Enterprises

Promotion Tasks

Strengthening Support for Partners to Overcome Economic Crises	Domestic Market Support Utilizing KORAIL's Infrastructure	Proactive Measures for Domestic Production and New Technology Development
Promotion of a Fair-Trading Culture	Foundation Building Through Support for Overseas Market Development	Support for Partners to Secure Technology Development Capabilities

Technical Support	Sales Channel Support	Financial Assistance
• Development of New Products with Purchase Conditions • Practical Application of Excellent Railroad Technologies from SMEs • Selection of Joint Technology Development Products with SMEs • Free Transfer of Outstanding Intellectual Property Rights Held by KORAIL	• Support for Sales Spaces Inside and Outside Stations • Support for Market Development Through Participation and Hosting of Purchase Counseling Meetings • Support for Export Consulting • Support for Contract Success Through Participation and Hosting of Export Counseling Meetings	• Low-Interest Loan Support for KORAIL's Partners Through Bank Agreements • Regional Development and Activation Through the Rural Areas Shared Growth Fund

Establishing a Transparent Economic Order

KORAIL is striving to prevent corruption at each stage of contracts to promote a fair and transparent trading culture. We have established a fair contracting culture through the expansion of external technical evaluation committees, mandatory standard contracts, and organizational restructuring. By strengthening the conflict-of-interest prevention system that blocks the entry of private stakeholders during contract execution, we have achieved perfect scores in the comprehensive integrity assessment for 'conflict-of-interest prevention' for two consecutive years.

Expanding into a Shared Growth Ecosystem

.KORAIL is working to establish a transparent economic order by realizing a win-win economy through economic and institutional support. As part of fostering a culture of coexistence and cooperation with partner companies, we ensure timely payments, shorten advance payment deadlines, and streamline the shared payment bond issuance process to protect the rights and interests of our partners. We are also improving systems to guarantee fair compensation and proactively introducing payment-linked systems to strengthen activities that prevent wage and payment arrears.

Selected as an 'Excellent Enterprise' for Payment-Linked Systems

By Fair Trade Commission of the Ministry of SMEs and Startups

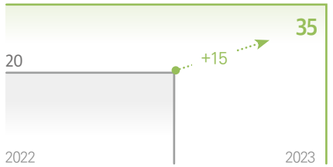
* Selected as the 'Excellent Enterprise Participating in Payment-Linked Systems' and the 'Excellent Payment-Linked Company' for the First SOC Public Enterprise to by the Ministry of SMEs and Startups
* Increase in Shared Payments to 1 Billion KRW (13.1 Billion KRW → 14.1 Billion KRW) and Advance Payment Amount to 32.2 Billion KRW (759.5 Million KRW → 791.7 Million KRW)

KORAIL, Collaborating with Private Sectors

Efforts for Public-Private Cooperation

KORAIL is making multifaceted efforts to strengthen the competitiveness of domestic companies, including SMEs and mid-sized enterprises, by listening to their voices and seeking solutions. Through the activation of consumer-centered communication, we have achieved 35 regulatory improvements by enhancing our role as partners for SMEs. As part of strengthening communication, we held a win-win meeting for the first time between the CEO of KORAIL and small businesses and conducted practical meetings to redefine our relationship beyond simple transactional interactions to that of colleagues in the railroad industry.

Improving Regulations and Resolving Difficulties (Unit: cases)



Enhancing Multi-channel Communication	Win-Win Meeting Between SMEs and CEO / Ethics and Human Rights Management Communication Council (Newly Established) KORAIL Shared Growth Club Practical Meeting / On-Site Business Growth Response Center
Improving Regulations and Resolving Difficulties	• Relaxation of Delivery Performance Evaluation Criteria: Facilitating market entry for emerging excellent technology companies. • Second-Tier Supplier Performance Certification: Expanding bidding opportunities for small component manufacturers in the second-tier supply chain. • Reduction of Railroad Vehicle Drawing Receipt Period: From 7 days to 3 days.

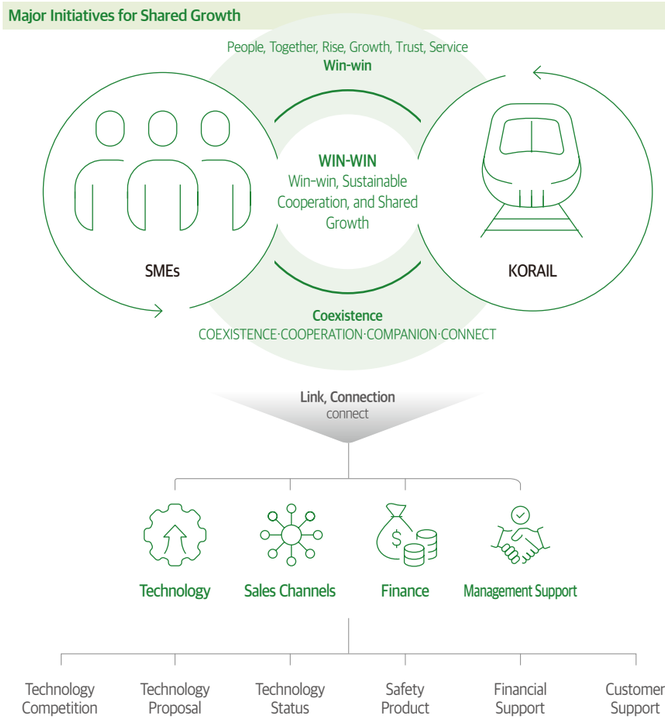
Realizing Sustainable Shared Growth Through the Railroad Shared Growth Platform

KORAIL has established the 'Railroad Shared Growth Platform' as a collaborative space to promote shared growth with SMEs, where we share resources related to technology, market access, finance, and management support. We also operate the 'Business Growth Response Center,' a dedicated reporting channel for regulatory difficulties faced by SMEs, enhancing accessibility both online and offline (via phone) to boost the vitality and innovative growth of small businesses.

Partner Companies Win-Win Meetings

Main Screen of the Railroad Shared Growth Platform Website

Major Initiatives for Shared Growth



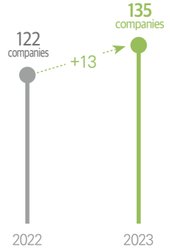
Ministerial Award for Practical Application of New Technologies

Ministry of Trade, Industry, and Energy

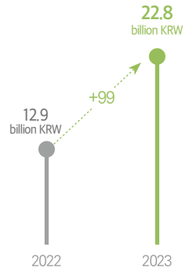
Support Throughout the Entire Process: From Technology Development to Commercialization

KORAIL is enhancing the technological competitiveness of SMEs in the railroad industry by improving the process of discovering technology development projects. We are jointly developing core railroad components with SMEs and mid-sized enterprises, as well as supporting the on-site verification of technology development prototypes. We are striving to promote a fair-trading culture through the protection of technical data. As the first public institution in the railroad sector, we are implementing joint investment projects with multiple investors and strengthening support for the commercialization of technology development products through the activation of the 'SME Technology Market.' As a result, excellent developed products have generated sales of 34 billion won, and we received recognition in the form of a commendation from the Minister of Trade, Industry, and Energy for 'Practical Application of New Technologies.

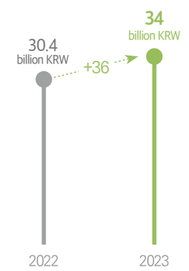
Increased Overseas Promotion for SMEs



Growth in Joint Overseas Projects



Expansion of Purchases for Technology Development Products



Customized Overseas Support Programs for SMEs

KORAIL provides various customized export support to assist SMEs in entering overseas markets. To address issues such as lack of information, initial funding, and localization challenges faced by SMEs in foreign markets, we are strengthening government overseas expansion support policies and public-private partnerships. KORAIL supports SMEs in enhancing their brand value in overseas markets by granting free use of the KTX trademark and promoting technology enhancement through joint investment R&D and multilateral collaboration projects. Additionally, we assist SMEs in commercializing developed technologies through the transfer of intellectual property rights, and we promote joint entry into overseas projects linked to ODA initiatives to help secure competitiveness in global markets. Through these efforts, we fulfill our role as a leader in the railroad industry and actively support SMEs in expanding their overseas market access and boosting exports based on the operational experience and technology accumulated in the domestic railroad industry.

Strengthened Support for Market Access Development

	Details	Achievements
Free Use of KTX Trademark	• Supporting brand recognition in overseas markets through the free licensing of the 'KTX' trademark. • Providing 10 million won to assist in market exploration.	• Supported Company: 1 company • Export Region: Canada • **Achieved Overseas Exports: 160 million KRW**
Overseas Branch Establishment Project	• Provision of export information utilizing specialized institutions – Offering valuable export insights through expert organizations – Execution of Import/Export and Customs Procedures – Regular Updates on Local Market Trends and Issues	• Supported Companies: 3 companies • New Buyers Discovered: 3 (in Indonesia, Mongolia, and India) • **Achieved Overseas Exports: 4 billion KRW**
Support for Overseas Business Briefings	• Hosting events such as 'KORAIL and Overseas Partner Briefing' • Funding Support for New Export Discovery Costs	• Supported Company: 1 company • Selection of Testbed for Localization of Developed Products

Achieved the highest rating in the 「Corporate Social Responsibility in the Community」

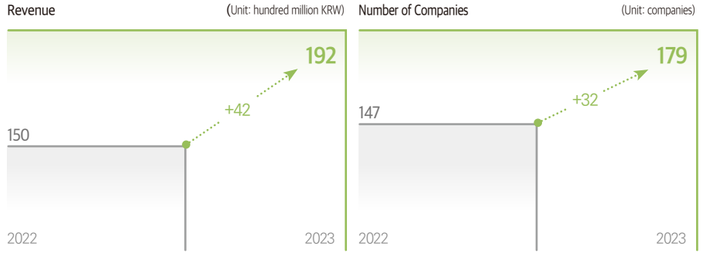
by the Ministry of Health and Welfare

Corporate Social Responsibility in the Community

Support for the Growth of Social Economy Enterprises

KORAIL consistently supports social economy enterprises by discovering various support projects and promoting their growth. As a result, we facilitated the sale of rebranded products at major station Convenience Stores 「Storyway」 generating sales of 24 million KRW. We also approved the free use of the KORAIL trademark for companies, successfully enabling the first export of rebranded social economy products to overseas markets, resulting in a simultaneous increase in brand value. In addition, we continue to enhance direct financial support, expanding rental stores for social enterprises and cooperatives, supporting market access for community businesses linked to local festivals, and purchasing goods and services from self-supporting enterprises. As a result, we have been recognized with the highest rating for the 'Corporate Social Responsibility in the Community' system from the Ministry of Health and Welfare for two consecutive years.

Continuous Expansion of Collaborative Projects for Social Economy Enterprises



R&D Support for Core Railroad Components

KORAIL supports the innovation and growth of SMEs through the localization and technological development of core railroad components. To reduce reliance on overseas components and strengthen the technological capabilities of SMEs, we have established a multilateral cooperation system and promoted joint research and development between industry, academia, and research institutions. Through these efforts, we have achieved 15 R&D outcomes for core components and transferred 12 intellectual property rights to SMEs to support product commercialization. We assist SMEs in entering overseas markets linked to ODA projects, contributing to enhancing their competitiveness in the global market. KORAIL plans to continue leading the growth of SMEs and promoting the development of the railroad industry through ongoing technological development and collaboration.

Progress and Achievements: R&D for Core Railroad Components

	Details	Achievements
Promotion of Railroad Component Development Projects	• Operation of the Railroad Component Development Task Force • Formation of an industry-academia-research consortium	Railroad Component R&D: 15 cases • Localization of core components: 10 cases • Market-leading R&D: 5 cases
Joint Investment R&D Projects with Multiple Investors	• Establishment and operation of a technology development council for railroad agencies • Joint investment in technology development by railroad agencies	Multi-investor Projects: 2 cases • National Railroad Corporation: 1 case • SR Corporation: 1 case
Intellectual Property Rights Transfer	• Public technology development between KORAIL and SMEs • Intellectual Property Rights Transfer to SMEs	Intellectual Property Rights Transfer: 12 cases • Patent licenses granted: 10 cases • Trademark usage permits: 2 cases
Joint Entry into Overseas Projects	• KORAIL-SMEs Public Technology Development • Formation of a consortium for joint entry	Support for Overseas Projects: 4 cases • Export of technology development products: 2 cases • Consortium entries: 2 cases

Future,

Thinking of a Sustainable Future.

90 Responsible Management

92 Ethical Management

97 Sustainable KORAIL

100 KORAIL, Operating Towards the Future

Responsible Management

Board of Directors

Composition and Role of the Board of Directors

KORAIL strives to establish a professional and independent board of directors to balance the interests of all stakeholders. The board consists of six executive directors, including the president, and eight non-executive directors. We ensure diversity in our board by considering age, gender, and areas of expertise, thereby securing fairness. We are enhancing the functions of the preliminary review process for major corporate matters and supporting management participation activities, while also sharing management recommendations to improve implementation effectiveness.

Composition of the Board of Directors As of 2024.08

Category	Position	Name	Gender	Career Experience		Tenure
Executive Director	President & CEO	Han, Moon-hee	Male	• President, Busan Transportation Corporation • KORAIL Senior Vice President of Management Planning HQ	• CEO of Uiwang ICD Co., Ltd.	2023.07.24 ~2026.07.23
	Chief Audit Executive	Kwon **	Male	• Adjunct Professor, Korea University Graduate School of Technology Management • Auditor, Korea Fiscal Information Service	• Public Institution Management Evaluation Committee Member, Ministry of Economy and Finance	2023.09.06 ~2025.09.05
	Senior Vice President	Jeong **	Male	• Head of Management Planning HQ • Director of Research Institute	• Head of Safety Management HQ	2023.10.20 ~2025.10.19
	Senior Vice President of Safety & Technology HQ	Hong **	Male	• Senior Vice President of Safety & Technology HQ • Head of Customer Marketing Division	• Acting Head of Passenger Business HQ	2022.11.02 ~2024.11.01
	Vice President of Passenger Business HQ	Jeong **	Male	• Head of Busan and Gyeongnam Regional HQ • Head of Gwangju Regional HQ	• Chief of Audit Office	2022.11.02 ~2024.11.01
	Vice President of Planning and Coordination	Lee **	Male	• Head of Planning and Coordination Headquarters • Head of Overseas Business Department	• Head of Busan and Gyeongnam Regional HQ • Head of Financial Management Office	2024.05.23 ~2026.05.22
Non-Executive Director	Non-Executive Director	Baek **	Male	• Legal Advisor to the Republic of Korea Assembly • Member of the Dispute Resolution Committee for Defects, Ministry of Land, Infrastructure and Transport	• Director, Center for Climate Change	2023.01.04 ~2025.01.03
	Non-Executive Director	Kim **	Female	• Head of Management Control HQ, KORAIL RETAIL Co., Ltd. • Researcher at the International Development Cooperation Research Center, Kyung Hee University	• Advisory Member of the KORAIL Railroad Development Committee	2022.01.10 ~2024.01.09
	Non-Executive Director	Kim **	Female	• Lawyer at Sungin Law Firm • Judicial Research and Training Institute	• Lawyer at Hangil / Jangbaek / Seogwang Law Firms	2022.01.10 ~2024.01.09
	Non-Executive Director	Kim **	Male	• Station Staff at Wangsimni Station, Seoul HQ, KORAIL • Station Staff at Onsu Station, Seoul Regional Railway Office	• Director of Legal Affairs, Finance, and Non-Regular Workers, National Railroad Workers' Union	2023.01.04 ~2025.01.03
	Non-Executive Director	Lee **	Male	• Co-Representative of the Coalition for Hope for New Politics	• Full-time Strategy Committee Member, People Power Party	2023.01.04 ~2025.01.03
	Non-Executive Director	Song **	Female	• CPA Jeong-a Song, Office Representative	• Audit CPA at Deloitte Korea	2023.04.10 ~2025.04.09
	Non-Executive Director	Baek **	Male	• Head of Transportation HQ, Airport Railroad Co., Ltd. • Daewoo Heavy Industries Railway Vehicle Business Headquarters	• LG Construction Ujeongbu Light Rail	2023.11.06 ~2025.11.05
	Non-Executive Director	Kimm **	Male	• Representative of Danbi Administrative Law Office • Head of Korea Smart Healthcare Association	• Seoul Yongsan-gu Ombudsman	2024.07.26 ~2026.07.25

Executive Remuneration Details (Unit: 1 thousand KRW)

Category	2021	2022	2023
Executive Vice President	161,636	138,760	128,015
Chief Audit Executive	141,479	129,025	118,571
Executive Director	124,439	109,005	102,412
Non-Executive Director	29,937	28,537	29,687

Evaluation and Compensation of the Board of Directors

KORAIL conducts evaluations and compensations for the board of directors in accordance with the 'Act on the Management of Public Institutions' to enhance the prevention of corruption, fairness, and transparency. Information regarding board compensation is periodically disclosed on the public institution management information disclosure system, ALIO. The compensation for executive directors is paid according to regulations within the limit set by the shareholders' meeting, while compensation for non-executive directors is determined based on the 'Guidelines for Executive Compensation of Public Enterprises and Quasi-Government Institutions.' The head of the institution receives compensation based on the evaluation of management performance conducted by the Ministry of Economy and Finance and the management performance agreement, while executive directors receive compensation based on evaluations of corporate management performance and contract fulfillment.

First Meeting of Non-executive Director and Junior Board

First Non-executive Director-youth Board Communication Meeting

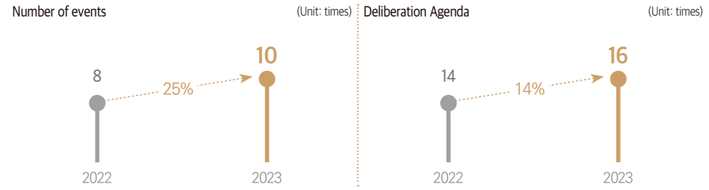
100% attendance
Board of Labor Directors

Speech Rate 1st
(21 times, 29%)

Strengthening On-Site Activities to Activate the Board of Directors

KORAIL is committed to improving effective management through the enhancement of the board of directors' substantial roles and activities. We are improving systems to support effective decision-making and encourage active management participation from the board. We actively reflect policy recommendations based on the expertise of non-executive directors and, for the first time in October 2023, held a communication meeting between non-executive directors and the Youth Board (Junior Board) to listen to the voices from the field, including those of the MZ generation.

Expansion of ESG Subcommittee Deliberations



Appointment of Labor Directors as the First Public Enterprise in SOC

With the revision of the 'Act on the Management of Public Institutions' mandating the introduction of labor directors representing employees, KORAIL implemented the labor director system in 2022. To ensure the stable establishment of this system, we appointed a labor director in January 2023, becoming the first public enterprise in SOC to do so. This appointment guarantees the participation of labor unions in management and allows us to receive firsthand insights from field experiences, contributing to the practical activities of the board and enhancing diversity, transparency, and fairness. Moving forward, we aim to lead peaceful labor-management cooperation to implement government policies and resolve current issues, systematically serving as a bridge between management and labor.

Subcommittee Activities and Implementation of Responsible Management

KORAIL operates three subcommittees: the Railroad Safety Subcommittee, the ESG Subcommittee, and the Business Subcommittee, seeking professional and effective management recommendations. To strengthen the execution of ESG management, we have restructured our organization by placing an ESG department within the Planning and Coordination Headquarters, striving to enhance the effectiveness of ESG management. As a result, our self-assessed ESG management index improved from an A grade in 2022 to an AA grade in 2023.

Subcommittee Operation Status

Railroad Safety Subcommittee	ESG Subcommittee	Business Subcommittee
Reestablishment of key organizations in the railroad safety management system	Establishing an ESG management system and integrating it into corporate management	Preventing risks in non-transportation businesses
Strengthening inspections to eliminate handling accidents	Developing and announcing an ESG management promotion plan	Reflecting inflation rates in vehicle purchases
Establishing mid- to long-term measures	Creating ESG level diagnosis indicators and setting goals from various perspectives	Minimizing risks in the Yongsan station area development and reviewing development methods
Addressing safety blind spots and developing field-centered safety measures	Formulating ESG management strategies and establishing an ESG self-evaluation model for implementation	Reassessing renovation projects for aging stations considering customer convenience and new revenue opportunities

Establishment of an Evaluation System for the Executive Recommendation Committee

KORAIL has strengthened operational transparency by improving the security of the evaluation process of the Executive Recommendation Committee and expanding information disclosure. We have enhanced the collection of candidate pledges and security training for each round and improved the system for the preparation of evaluation forms and score calculations to prevent any leakage of executive candidate information. We have expanded the scope of management disclosures regarding the board's key activities, attendance of non-executive directors, and the operation status of the ESG subcommittee, achieving a 100% compliance rate for board disclosures.

Ethical Management

Ethical Management System

KORAIL's Ethical Management Goals and Implementation System

KORAIL has reflected the core elements of the public institution's ethical standard model to develop 26 key initiatives and 100 detailed execution tasks tailored to its characteristics. This framework aims to internalize ethical management and enhance educational expertise, focusing on improving awareness and changing behaviors. We encourage the establishment of a transparent, ethical culture at KORAIL through various practical methods.

2024 Korea Railroad Ethical Management Promotion System Chart

Corporate Vision
KORAIL, a Companion for Opening Future Transportation

Ethics Mission
3DOs (Practice and Action)
① Compliance with laws and regulations ② Practice of mutual respect and consideration ③ Implementation of integrity activitie
3DON'Ts (Eradication and Prohibition)
① Eradication of abuse and unfair practices ② Eradication of corrupt activities ③ Prohibition of hate and discrimination

Core Values
- A New Wave of Ethics for Korea Railroad E-K wave
- Compliance Adhering to Basics & Zero Corruption'
- Human Rights Respect and Consideration
- FairnessElimination of Unfair Practices

Slogan
Trains are comfortable and safe! We act ethically and fairly!

Roadmap

2023	2024	2025
Innovation of Compliance and Ethical Management System Reestablishment of Ethical Management System Establishment and Internalization of Ethical Awareness	**Promotion of Ethical Management that Resonates with the Public** Anti-Corruption and Integrity Innovation Expansion of Ethics, Compliance, and Human Rights Culture	**KORAIL's Leap as an Ethical Company** Expansion of Human Rights Management in Public Institutions Fulfillment of Social and Ethical Responsibilities

Strategic Direction and Tasks

Establishment of Ethical Management System	Corruption ZERO! Anti-Corruption Innovation	Integrity Innovation-Integrity Enhancement	Establishment of an Organizational Culture that Respects Human Rights
Reinforcement of the implementation of the standard model of ethical management	Expansion of Advancement	Advancement of K-CP Corruption prevention system& Internalization of integrity awareness and integrity statement	Strengthening and expanding human rights management activities
Advancement of ISO 37301 (Compliance Management System)	Establishment of conflict-of-interest prevention system and continuous internalization	Strengthening the prevention of misconduct and promoting efforts to eradicate it	Strengthening stakeholder-centered human rights protection activities

Implementation System

Implementing Organizations	Advisory/Consultation	Ethical Management Committee, Human Rights Management Committee, Transparent Management Committee, ESG Subcommittee
	Responsible Organization	(Overall Ethical Management) Ethical Management Department, (Anti-Corruption/Integrity) Integrity Inspection Department
	Temporary Organizations	Ethical Management Execution TF, Internal Control TF, Anti-Corruption Dedicated TF, Public Finance Recovery TF
	Innovation Leaders	Director of Ethical Management, Compliance Support Officer, Conflict-of-interest Prevention Officer
Regulatory Framework		Ethical/Human Rights Charters, Code of Conduct for Employees, Integrity Contracts, and 6 other regulations, 13 Internal Regulations
Reporting System	Reporting Channels	'Rail Whistle', Hotline, Safe Reporting Lawyer, Human Rights Violation Reporting Center, Abuse Reporting Center
Response System for Misconduct	Grievance Handling System (Ethical Management Department)	Human Rights Violation Prevention System (Ethical Management Department) / Corruption Prevention System (Integrity Inspection Department)
	Conflict-of-interest Prevention System (Integrity Inspection Department)	Internal Control System (ESG Management Department,Finance and Accounting Department) / Personal Data Protection System (Information Security Center)

KPIs(External/Internal)
Government Management Evaluation (Ministry of Economy and Finance) | Comprehensive Integrity Index (Anti-Corruption and Civil Rights Commission) | ESG Evaluation (Ministry of Health and Welfare)
KORAIL Organizational Culture Index | KORAIL Human Rights Management Index | KORAIL ESG Management Index

Monitoring /Feedback

Weekly (Daily)	Monthly	Quarterly	Bi-Annually / Annually
Emergency management meeting IT constant monitoring	Implementation status inspection meeting Implementation inspection meeting Management system council	Ethics/human rights monitoring Internal and external surveys Ethical management communication council	Evaluation of Internal Control Activities Ethical Risk Assessment Human Rights Impact Assessment

Ethical Management Priority Promotion Tasks (26)

❶ Establishment of Ethical Awareness	❷ Establishment of Management System	❸ Identification of Ethical Risks
• Strengthening ethical leadership • Creating and spreading ethical consensus • Enhancing customized ethical management training • Improving expertise in ethical education	• Advancing the organizational system for ethical management • Enhancing the execution system for ethical management • Establishing and operating external support systems • Strengthening expertise in management systems	• Operating ethical risk identification systems • Conducting ethical risk assessments • Enhancing ethical risk identification • Advancing the ethical risk identification system • Operating environmental change programs • Advancing ethical norms for environmental response
❹ Control of Ethical Risks	**❺ Communication of Ethical Information**	**❻ Monitoring of Ethical Management**
• Strengthening general ethical risk control • Strengthening core ethical risk control • Enhancing control execution management systems • Reviewing improvement measures and effectiveness	• Advancing internal reporting systems • Activating internal ethical communication • Advancing external reporting systems • Activating external ethical communication	• Advancing the ethical risk monitoring system • Enhancing the implementation effectiveness of ethical management • Strengthening responses to external feedback • Enhancing performance and post-management

Activities to Spread Ethical Culture

3 No Practice Newsletter (Quarterly)

- Ethics News
- Ethical Information
- Ethical Issues

Integrity Card News (Ongoing)

- Integrity Messages
- Integrity Issues
- Legislative Amendments

Ethics Quiz (Monthly)

- Preventive Policies and Systems
- Complaints Handling Procedures
- Internal Reporting Methods

Establishing an Ethical Culture

To establish a transparent ethical culture at KORAIL, we promote various initiatives. Each month, the CEO leads efforts to disseminate anti-corruption directives, integrity issues, and legislative amendments through card news. We conduct awareness-raising activities on customer interaction behaviors, restrictions on concurrent positions, and the anti-corruption whistleblower reward system through communication channels. In line with national expectations, we present and disseminate a code of conduct for executives based on our core values. We have established the ethical policy vision of '3 Do's and 3 Don'ts' to integrate ethical awareness into daily life. Notably, we operate an Ethics Practice Week themed around 'KORAIL's Four Cultural Weeks' and institutionalize quarterly ethical practice campaigns to spread consensus. Moving away from traditional group education, we enhance face-to-face training focused on field communication and have introduced performance-based experiential integrity training to convey ethical awareness through content that improves employee engagement. Additionally, we operate various ethical education support programs to strengthen field-centered ethical promotion.

Ethical Management Control System

KORAIL is committed to strengthening its ethical management system. As the first public enterprise to establish a communication and consultation body for ethics and human rights with stakeholder participation, this group consists of 29 members—9 internal and 20 external—who meet bi-annually to carry out their work. Of the 8 proposals made in 2023, 2 have been successfully implemented. We have restructured the internal control team dedicated to ethical management into a formal organization and established a task force for internal controls in the finance and accounting sectors. We also created an Ethical Management Control Committee to enhance communication regarding ethical integrity, jointly responding to external evaluations and support tasks. We are also improving the quality of ethical management through eligibility management for responsible personnel, training specialized human rights instructors, and developing expertise in ISO 37301 (Compliance Management Systems).

Major Internal and External Activities to Strengthen Ethical Management

Stakeholder	Roles and Activities	Achievements
Internal : KORAIL External : Customer Participation Group (2) Affiliated Companies/ Partners (13) External Experts (5)	• Suggestions for ethical and human rights management policies • Communication on human rights management issues • Discovery of ethical and human rights management policies	• 2 out of 8 suggestions received have been adopted (implementation completed) • Improvement of lost item reception and processing processes • Improvement of safety and environmental conditions for inbound operations such as lighting and facility improvements

Ethical Risk Identification System

KORAIL is establishing the Ethical Risk Identification System by enhancing its evaluation framework and implementing programs to respond to environmental changes. To strengthen the identification of internal and external ethical risks, a risk assessment program is in operation, which advances compliance and ethical risk evaluation to comprehensively assess and improve the ethical management practices of relevant departments. All misconduct incidents occurring within KORAIL and issues pointed out by external agencies are managed through a database for historical tracking, and data analysis is utilized for future risk prevention and countermeasure formulation. The Integrated Accounting Center, which has a high ethical risk level, has been included in the internal evaluation targets. The organization also investigates the impact of government measures, related laws, and unethical behavior occurring in other institutions while checking the implementation of preventive measures and reviewing any additional internal actions required.

Operation of Ethical Risk Identification Program

Category	Risk Assessment	Remarks	Evaluation Method Enhancement
Internal Controls	Evaluation of internal control activities	Entire Company (1 time)	• Evaluation Targets: All executing departments (26 divisions) • Risk Selection: Risk level (existing) + Severity (additional)
Compliance	Compliance/Ethical Risk Assessment	HQ (1 time)	
Human Rights	Human Rights Impact Assessment	HQ (1 time)	
Anti-Corruption	Corruption Impact Assessment	HQ (On-going)	

Ethical Risk Control - KORAIL Misconduct Response System

Internal and External Reporting System

- External Reporting Channels: Corruption Reporting / Abuse Reporting Center; Human Rights Violation Reporting Center /Safe Reporting Lawyer
- Internal Reporting Channels: Rail Whistle Integrated Platform (Sexual Harassment and Bullying + Corruption Reporting); 'Adhering to the Basics On' (Self-reporting of conflicts of interest, etc.)

Grievance Handling System (Sexual Harassment and Bullying)

Executing Organization	System	Supporting Organizations	Institutional Strategy
• (Responsible Department) Ethical Management Department (Ethical Planning Office) • (Field Organization) Grievance Counselors (110 people) * 23 Clean Reporting Centers nationwide	• Grievance Handling System (Reporting, Counseling, Consulting * Operating external specialized labor consulting services	• (Case Review Body) Grievance Review Committee * 4 external members+1 from the corporation+1 from the union • (Consultation Body) Sexual Harassment Prevention Council * Total of 135 members (2 experts + 133 middle managers from the field)	• Sexual Harassment Prevention Guidelines / Bullying Prevention Guidelines • 2024 Company-wide Sexual Harassment and Bullying Prevention Plan

Human Rights Violation Prevention System

• (Responsible Department) Ethical Management Department (Ethical Planning Office) • (Temporary Organization) Korea Railroad Human Rights Center * Total of 7 members (Center Head+6 Human Rights Protection Officers)	• Permanent Consultation System for Human Rights Management * Consulting Organization: Corporate Due Diligence Institute • Ethical and Human Rights Management Communication Council * 21 stakeholders including partner companies, external experts, and affiliates	• (Policy Review Body) Human Rights Management Committee * Total of 12 members (6 external + 6 internal) • (Remedy Body) Human Rights Management Subcommittee * 5members from the Human Rights Management Committee	• Human Rights Management / Human Rights Management Guidelines • 2024 Company-wide Human Rights Management Promotion Plan

Organization (Responsible / Supporting)	Policy / Strategy	System / Executable Programs
Anti-Corruption Prevention System		
• (Responsible Department) Integrity Investigation Department (Integrity Office) • (Temporary Organization) Anti-Corruption Task Force * Participation of the key risk management departments	• Plan for Promoting Integrity Culture • Anti-Corruption and Integrity Promotion Plan • Identification and improvement evaluation of corruption-prone areas within the organization	• Discovery and improvement of unfair and unreasonable systems • Operation of real-time partner company survey "Integrity Secretary" • Designation of communication liaison for partner companies (Deputy General Manager level)
Conflict-of-Interest Prevention System		
• (Responsible Department) Integrity Inspection Department (Integrity Office) • (Temporary Organization) Conflict-of-Interest Prevention Task Force * Four execution units and 16 teams	• Operating regulations for the conflict-of-interest prevention system • Self-diagnosis checklist for risk factors • Q&A bulletin board → Activation of online consultation	• Implementation of performance audits and monitoring • Continuous feedback on deficiencies in system operation and process improvements
Internal Control System		
• (Responsible Department) Planning and Coordination Headquarters (ESG Management Department) * Internal Control Diagnosis: Audit Office • (Supporting Departments) Each responsible department at headquarters (including the Integrated Accounting Center)	• (Regulations) Internal Control Activity Operating Guidelines • (Manuals, etc.) Internal Control Activity Manual + Checklist Management Manual + Internal Control Activity Guidelines	• (First Line) Creation and Inspection of Checklists * First Line: Each responsible department by sector • (Second and Third Lines) Internal Control Evaluation and Diagnosis * Second Line: ESG Management Department, Third Line: Audit Planning Department
Personal Information Protection System		
• (Responsible Department) Information Security Center • (Operating Department) IT Operations Center	• Internal Management Plan for Personal Information • Regulations for the Protection and Management of Personal Information	• Personal Information Protection and Monitoring System * Cyber Safety Center (24/7 monitoring)

Control of Ethical Risks

KORAIL is minimizing risks by strengthening the control of ethical risk factors and improvement measures. Strict disciplinary actions are taken against eight major risk factors, and continuous control activities are conducted for 47 core risk factors. Four major strategies and ten tasks for preventing personal information leakage have been completed. Through self-assessments based on ISO 37301, we have made two corrective actions and five improvement recommendations. Efforts are ongoing to improve control activities by maintaining a constant monitoring system with personnel responsible for internal control, ethical control, and human rights control.

Eight Major Risk Factors and Responses

Common Risks	Contents	Common Risks	Contents
1. Pursuit of Personal Gain	Establishment of disciplinary measures for five major reportable and five prohibited acts	5. Drunk Drive	Strengthening strict punishment for offenders (dismissal for 0.2% or more)
2. Embezzlement	Strengthening income management and establishing a continuous inspection system	6. Workplace Sexual Harassment	Expanding the operation of the Sexual Harassment Prevention Council
3. Monetary and Material Benefits	Enhancing the corruption prevention system and strengthening penalties at the level of public officials	7. Workplace Bullying	Implementing KORAIL's measures to eradicate bullying (14 tasks)
4. Violation of Concurrent Positions	Strengthening education on violation cases and integrity training	8. Personal Information Leakage	Strengthening awareness through enhanced personal information training

First Public Enterprise to Obtain International Certification

ISO 27001
(Information Security Management System)

ISO27001 Certificate

Best Practices for Responding to Misconduct

We have strengthened our response system for misconduct following incidents such as the leakage of evaluation results from the Executive Recommendation Committee and unauthorized access to employee personal information. A thorough investigation and preventive measures were established regarding the leakage of evaluation results. Our executive selection process was normalized through enhanced security training, the creation of confidentiality agreements, and the establishment of an evaluation system. In response to the unauthorized access incident, special audits were conducted by our Audit Office, and actions such as the dismissal of relevant employees were taken. Improvements were made through the establishment of an integrated management system for personal information protection, enhanced regular checks, and increased security awareness, leading to the acquisition of ISO 27001 certification.

Best Practices for Responding to Misconduct

External Findings	Diagnosis and Recognition of the Issues	Improvement Measures / Prevention of Recurrence
BTS RM Personal Information Leakage	Lack of real-time monitoring system for abnormal behaviors Insufficient criteria for disciplinary actions regarding violations	Establishment of real-time monitoring (notification) for abnormal behaviors Creation of detailed disciplinary action criteria for specific cases Digitization of evaluation forms, collection of confidentiality agreements, and restricted access to only one approver
Leakage of Executive Recommendation Committee Evaluation Results	Manual management of evaluation forms and negligence in confidentiality	Regular meetings of the Audit Committee and implementation of service supervision
Negligence in Subsidiary Work and Executive Sexual Harassment	Inadequate management system for subsidiaries and prevention training	Holding communication councils and special training for the prevention of sexual harassment
Recurrence in Recruitment Process Errors	Manual verification system and single-person verification	Establishment of IT verification system and introduction of cross-verification

Strengthening Measures for Misconduct and Personal Information Protection

Enhancement of Personal Information Protection Measures
- Establishment and implementation of 4 major strategies and 10 tasks for personal information protection.
- Strengthening regular access rights checks (from twice a year to four times a year).

Reinforcement of Security and Safety Measures
- Implementation of warning pop-ups and input requirements for reasons when accessing personal information.
- Strengthening monitoring criteria for excessive inquiries (from 100 inquiries per day to 60 inquiries).

ZERO
Personal Information Leakage

Enhancement of Security Awareness
- All individuals with access to personal information are required to sign confidentiality agreements.
- Implementation of field-specific personal information protection training (April 2023).

Advanced Monitoring System
- Upgrading the real-time monitoring system for surveillance and tracking of abnormal behaviors.
- Monitoring when the same customer is inquired three or more times within three months.

Ethical Management Practiced Together

Ethics Information Communication

KORAIL is making significant efforts to strengthen ethics and integrity. Through the 'Adhering to the Basics On' channel, a self-reporting system has been established, allowing for the reporting of violations of service regulations and inappropriate work practices. Reports received lead to investigations and improvement activities by the audit office. 'Integrity Simulation Training' has been implemented to set scenarios based on types of corruption, familiarizing employees with relevant documentation and reporting procedures. A new communication channel, the 'Youth MZ Communication Room,' has been created to incorporate the opinions of young new employees into integrity policies, resulting in eight policy changes, including relaxed restrictions on dual employment and transfers. The Standing Audit Committee also directly communicates with field staff to share anti-corruption measures and violation cases. Various communication channels have been established, including the introduction of an anonymous reporting system for human rights violations, the creation of an 'Ethics Proposal' channel, and the operation of a 'Citizen Integrity Monitor' system. For partner companies, an 'Integrity Secretary' KakaoTalk channel has been launched, and through CEO-partner company meetings, 35 issues have been identified and are currently being improved.

Monitoring Performance

Accounting Errors/ Accidents

ZERO in 3 consecutive years

Ethics Management Monitoring

KORAIL has implemented measures to prevent financial and expenditure irregularities. By analyzing payment patterns by the department when using corporate cards, unusual patterns are identified, leading to clarifications and audits of transactions. A management system has been established for key accounts to prevent misuse, such as embezzlement from corporate accounts. Additionally, seven high-risk transaction types are monitored in cash flow account management. A joint labor-management task force has developed a grievance-handling improvement program that focuses on enhancing victim convenience, protecting victims, improving the reliability of grievance-handling systems, and preventing recurrence. An ethics management public survey has identified ten key issues (with 18 detailed tasks), managing areas such as preventing abuse by partners, strengthening internal controls, and enhancing ESG management. The 'Affiliations with the Excellent Integrity Certification System' has been introduced to certify self-directed efforts and practices for spreading integrity culture, and preventive measures are taken for external criticisms that have become social issues.

Major Activities to Prevent Conflicts of Interest

KORAIL is building a self-regulatory system to promote an integrity culture by complying with the Conflict-of-interest Prevention Act and strengthening internal operational regulations. To encourage direct participation from employees, the 'Integrity Shorts' contest was held, resulting in 55 shorts being produced, with eight outstanding works selected for awards. These materials are also used for educational purposes. The 'Integrity MZ' program collects innovative ideas from young employees to incorporate into KORAIL's conflict-of-interest prevention policies, which have been recognized as best practices and are being requested for benchmarking by other organizations. Tailored face-to-face training for all employees has been enhanced, along with communication and feedback, to internalize conflict-of-interest prevention.

Activities for Internalizing Conflict-of-interest Prevention

Step 1	Step 2	Feedback
Implementation of Face-to-Face Training for Head Office Staff	**Operation of Outreach Communication for Field Employees Nationwide**	**Conducting 'integrity Simulation Training' to Strengthen Implementation Capability**
• Formation of internal and external expert instructors to provide customized training by work area (annual 30 minutes mandatory, incorporating internal evaluations) * (Previous) Online → (Improvement) Face-to-face training)	• Dissemination of the top 10 mandatory reporting and submission obligations, as well as restricted and prohibited actions that field employees must know * (Target) 130 affiliates nationwide, 1,000 employees	• Distribution of established simulated conflict-of-interest scenarios * Preparation of related documentation and reporting measures * Implementation of administrative measures such as job adjustments * Feedback on implementation procedure evaluations

Sustainable KORAIL

Establishing a Stable Financial Structure

Highest Sales Ever of KTX

2.27 trillion KRW in '23 vs
2.06 trillion KRW in '16

10.3% increased

Overseas Business Revenue

20.07 billion KRW in '23 vs
11.2 billion KRW in '22

79% increased

Maintaining Financial Structure Stability and Integrity

KORAIL is striving to achieve financial soundness and establish a sustainable system through rigorous management innovation. In response to deteriorating economic conditions, such as economic downturns, rising interest rates, and inflation, the company has pursued revenue improvement activities through asset utilization. By improving vehicle operations, KORAIL added 3,094 seats and increased track capacity through the operation of combined trains to Gangneung and Andong, achieving the highest-ever revenue from the high-speed rail at 2.2696 trillion KRW. To generate economic benefits from land assets, proactive measures such as reaching agreements to exclude occupied buildings and installment payments have been taken to resolve asset development risks and improve the debt ratio. We have also applied overseas business models, including technical consulting for intangible asset design and supervision, as well as operational maintenance-linked projects, focusing on both existing and new overseas business ventures, achieving record overseas sales of 20.07 billion KRW in 2023.

Establishing a Self-Sustaining Management Foundation Through Asset Utilization

	Rolling stock	Land	Intangibles (e.g. Technical Skills/Know-How)
Challenges	• Difficulty in expanding seats due to a shortage of rolling stock • Insufficient track capacity on the Central Line at Cheongnyangni	• Delays in permits due to occupancy of private buildings • Limited to technical consulting such as design and supervision	• Difficulty in real estate loans leading to requests for deferred payments • Lack of global recognition
Improvement Efforts	• Secured operational flexibility through vehicle inspections and operational improvements • Operated combined trains to Gangneung and Andong	• Reached agreements to exclude occupied buildings on target sites • Proposed and agreed on installment payments for remaining balances	• Secured the MRT-7 O&M project in the Philippines • Secured an ODA project in Bangladesh
Results	• Increased supply seats on the Gyeongbu Line (3,094 seats on weekends) • Revenue increase on the Gangneung and Central Lines (+5.6%)	• Completed payment for the remaining balance at Seoul Station North (151.8 billion KRW) • Partially paid the remaining balance for the Daejeon Station area (12.9 billion KRW)	• Secured the MRT-7 O&M project in the Philippines • Secured an ODA project in Bangladesh
Effects	**Expanded Transportation Revenue** Achieved the highest-ever high-speed rail revenue (2.27 trillion KRW)	**Overcame Asset Development Risks** Improved debt ratio by approximately 14 percentage points	**Diversified and Expanded Business Operations** Achieved the highest overseas project revenue (20.07 billion KRW)

Reestablishment of Financial Risk Management System

KORAIL has reestablished its financial risk management system to proactively respond to management risks arising from domestic and external business environments, including economic uncertainties such as high interest rates and inflation, increased demands for public institutions' debt management, limited risk management focused on financial risks, and the need for systematic responses to crisis phases. Recognizing that the existing qualitative risk identification method was insufficient for efficient responses, we categorized key management risks into three main areas (with 14 detailed aspects) through quantitative analysis and consultations with external experts. An early warning system has been established to enable proactive step-by-step responses to identified risks, allowing management to respond in a timely manner.

Financial Risk Management System Based on Key Risk Indicators (KRI)

Key Management Risks (KRI)	Business Risk (Expansion of Management Targets)			Financial Risk			Operational Risk
	Revenue Decrease	Increase in Power Costs	Delay in Yongsan Development	Market Risks (Interest Rates, Exchange Rates)	Liquidity Risk	Credit Risk	Internal Control Risk
	High-Speed Transport Revenue	Oil Price Levels	Delayed Period	Delay Periods Interest Rate Levels	Liquidity Standards	Credit Ratings	Control Standards

Early Warning System Operation	Existing	Improvements	Operational Response System
	• Some absence of management systems • Separate management of risk indicators by department	• Timely monitoring through system enhancements • Designation of a central department and collaboration among indicator departments	• Development of step-by-step response measures • Clarification of management responsibilities at each stage

Operation of a Step-by-Step Crisis Response System Based on Early Warnings

	Stage	Interest(BLUE)	Caution(YELLOW)	Alert(ORANGE)	Severe(RED)
Response System	Activities	• Monitoring by indicators • Performance management by indicator departments	• Cause and impact analysis • Development of short-term response measures	• Convening of the Crisis Response Headquarters • Establishing response strategies for scenarios	• Holding Crisis Management Committee meetings • Emergency management, company-wide crisis response
	Responsible Parties	Initial Response Team Leader (Head of Finance and Material Management Dept.)	Crisis Management Team Leader (Director of Financial Management)	Crisis Response Headquarters Director (Head of Planning and Coordination HQ)	Crisis Management Committee Chair (CEO)
	Operation	On-going Monitoring → Confirming Early Warning → Finalizing Countermeasures → Crisis Response → Evaluation·Feedback			
	「When multiple management risks arise, analyze the impact and sustainability of each risk stage to adjust the crisis stage upward」				

Efficient Budget Execution

Increasing Revenue Through Segregated Accounting

KORAIL has moved away from the traditional method of sharing business performance by division and is now implementing stricter financial performance management by additionally sharing financial indicators (such as debt ratio, revenue, and operating profit margin) and calculating monthly operating profits and losses for each division. The responsibility management contract has been updated to include the debt ratio for evaluating department heads. Each division has reduced the risk of increasing labor costs through adjustments of non-core tasks, organizational efficiency improvements, and mechanization, resulting in a labor cost savings effect of 29.6 billion KRW. Automation of cargo operations and improvements in logistics business profitability have contributed to enhancing safety and operational efficiency, leading to increased revenue. Through these efforts, KORAIL achieved the highest revenue in its history for transportation operations by implementing stricter financial performance management and efficiency measures.

Maximum Turnover in Transportation Revenue

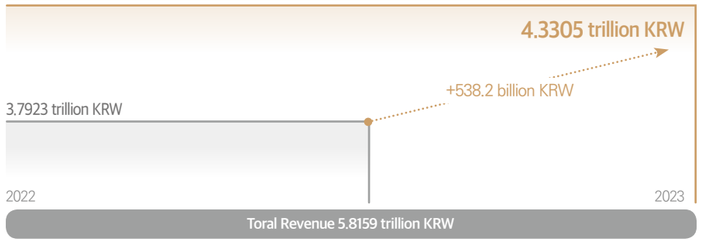
4.3305 trillion KRW in '23 vs
3.7923 trillion KRW in '22

14% increased

Achieve Maximum Turnover in Transportation Revenue

Achieved record high revenue in transportation business through efforts for company-wide revenue increase * Annual Transportation Revenue (Separate Basis)	Cost saving of 93 billion KRW through organizational restructuring, fuel cost reduction, and other company-wide efforts

Year	2019	2020	2021	2022	2023	Year-over-year
Amount	40,598	27,813	30,743	37,923	**43,305**	+5,382



Resource Allocation Plan for Sustainable KORAIL

Digital-based Safety Management
- Proactive disaster prevention management system
- Establishmentscientific maintenance Practices

2.3109 trillion KRW (2023) → +1,031 → 2.4140 trillion KRW (2024)

Improving Financial Soundness
- Investment in transportation infrastructure
- Optimization of resource management

137.8 billion KRW (2023) → +133 → 151.1 billion KRW (2024)

Innovative Mobility Experienced by the Public
- Building future converged transportation platforms such as intelligent data platforms
- Strengthening public communication and promotion

477.2 billion KRW (2023) → +281 → 505.3 billion KRW (2024)

Future-oriented Organizational Culture
- Creation of smart working environments and acquisition of advanced technologies
- Internalization of ESG responsible management

3.034 billion KRW (2023) → △31 → 300.3 billion KRW (2024)

Implementation of Management Goals Through Rational Budgeting

KORAIL has faced various financial pressures, including increasing economic uncertainty, high interest rates, high inflation, and being designated as a financially risky institution. In response, the company aimed to achieve its management goals by optimally allocating its budget. The focus was on actively implementing government policies through the establishment of a safe railroad environment, securing financial soundness, and enhancing communication with the public. Plans are also in place to expand budget allocations for projects that drive sustainable growth, such as the introduction of new trains, internalizing ESG management, and creating a smart working environment. This aims to establish a stable management foundation even amid economic uncertainty.

Improvement of Budget Operating Systems and Strengthening Communication Activities

KORAIL has made various efforts to enhance the transparency of budget operations. First, it issued educational materials on budget systems and execution guidelines, outlining the direction for budget operations in 2023, including cost-saving measures. In collaboration with the audit office, 23 inspections and training sessions on execution practices were conducted to prevent misallocation and improve budget acceptance. Cross-checking of budget execution guidelines and regulations between headquarters and field operations, listening to on-site feedback, and strengthening communication have allowed for the improvement of relevant guidelines and work processes, enabling swift action on urgent issues. Moreover, the budget execution process has been reorganized by clarifying execution criteria and strengthening the management of operating expense details. The procedures for purchasing and managing first-aid supplies have also been improved to enhance budget execution efficiency.

Strategic Response to Financial Crises

Systematization of Investment Budget Management Process

KORAIL had to seek a balance between the demands for business expansion and the pressure to reduce investment size for financial soundness. Accordingly, the criteria and scale for investment projects were clarified, and budget execution management and formulation were strengthened. New projects underwent a four-stage review process for budget assessment, resulting in a reduction of over 60% compared to actual requests. For ongoing projects, the total project cost feasibility was reviewed through a four-stage evaluation process, and any increases were subject to re-evaluation. As a result of these efforts, capital budget requirements were reduced by 349.9 billion KRW, ensuring financial stability while continuously expanding safe investments.

Budget Execution and System Improvements Fit for Purpose

KORAIL has moved away from the traditional headquarters-centered prioritization of expense budgets to better reflect on-site demands. First, a comprehensive survey was conducted to assess the need for improvements in aging workspaces, allowing field staff to directly determine project targets and priorities. Local department heads established annual improvement project plans, pursuing 470 projects totaling 182.7 billion KRW. The safety budget was verified and improved through system enhancements to ensure it was used solely for safety purposes, resulting in a 10.8% increase in execution amounts. To enhance the transparency of corporate card usage, deep learning analysis was employed to detect unusual patterns, leading to verification and audits. Through these measures, KORAIL was able to increase the efficiency and transparency of expense budget execution.

Budget Reduction Efforts Due to Cost Increases in Public Utilities

KORAIL faced the necessity of reducing expenses due to rising public utility costs and economic recession. In response, various innovative measures were implemented with the goal of achieving a 4% reduction in operating expenses. Continuous monitoring of budget execution was conducted to minimize unnecessary budgets, with monthly budget allocations held in reserve and savings expanded. Measures such as reviewing travel expense standards, energy conservation, and paperless meetings were implemented to reduce daily expenses. Budget-saving ideas were solicited to cut fixed costs, leading to initiatives such as the installation of energy-efficient heating and cooling films, energy-saving practices for shift workers' PCs, and digitization of documents using QR codes. These efforts resulted in a savings of 19.6 billion KRW in operating expenses while maintaining the level of public service.

Self-Reduction of Increased Public Utility Costs

Commodity Demand Forecasting System

- **Future Demand Forecast**: Demand forecasting based on usage performance utilizing ERP big data
- **Integration of Product Information**: Item standard information, inbound and outbound quantities, and daily inventory status
- **Visualization of Product Information**: Provision of inventory trend lines and nationwide inventory status in map format

Inventory Management Using IT Technology

KORAIL applied big data analysis techniques to make decisions based on demand forecasting systems when purchasing maintenance materials for railroad vehicles, thereby enhancing operational efficiency. By utilizing the ERP system, demand forecasting was conducted based on usage performance, and the integration of item information allowed for the visualization of appropriate inventory levels by combining item details, stock levels, inbound and outbound quantities, and daily inventory status. This enabled a nationwide inventory status to be represented in a map format, facilitating easier purchasing decisions. Consequently, long-term inventory worth 3 billion KRW was resolved, leading to a reduction in purchasing costs by 6.9 billion KRW.

KORAIL, Operating Towards the Future

KORAIL, Running Across the World

UIC Asia-Pacific Chair Activities and Strengthening Overseas Market Sales Power

KORAIL is actively engaged in various project activities for the development of international railroads as the chair of the UIC Asia-Pacific region and is actively participating in UIC working groups. We are striving for mutual prosperity with Pacific countries through railroads and are committed to spreading Korea's railroad operation technology and advanced techniques. Through global human exchanges and various international chair activities, our CEO directly plays a role in establishing footholds in overseas markets, pioneering new businesses abroad, and expanding related businesses in existing countries to broaden our territory in overseas markets.

35th UIC Asia-Pacific General Assembly Chairing

Consulting Business for Operation and Maintenance Based on Overseas Business Standard Model Secured for Two Consecutive Years

KORAIL has established an overseas business standard model and has been progressing its projects accordingly. Following the consulting project for railroad operation and maintenance in Tanzania in 2022, KORAIL achieved the result of securing the consulting project for the operation and maintenance of Metro Line 7 in the Philippines for 17.3 billion KRW in 2023. To this end, we utilized our international branch as infrastructure to communicate with the management and staff of the ordering organization. Based on the trust built through long-term design and technical consultations, we actively expanded the consulting scope, reflecting the needs of the ordering organization.

Collaboration Between Departments to Link Mobility and Core Businesses

Establishment of a Systematic and Stable Overseas Project Bidding System Based on the 'KORAIL Overseas Business Standard Model'

Standard Model

STEP 1	STEP 2	STEP 3(Current Stage)	STEP 4
Exchanges and Training	Construction Engineering Advisory	Operation & Maintenance Advisory	Direct Operation and Maintenance
'22 Tanzania		'23 Philippines (MRT-7)	

Operation & Maintenance Advisory(O&M)

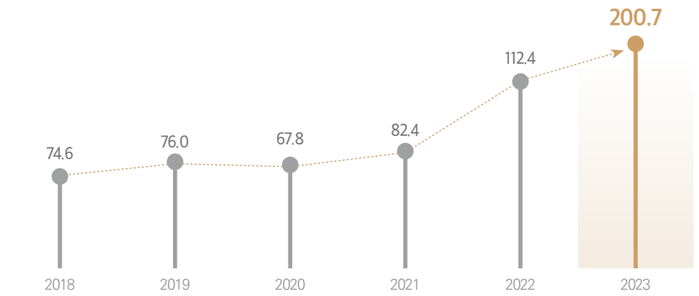
Project Period '22 Sep~'25 Aug (3 years)
Order Amount 15 billion KRW (USD 12,964,094)

Project Period '23 Apr~ '26 Dec (3 years)
Order Amount 17.3 billion KRW (USD 13,288,715)

Establishing a Foundation for Future Sustainable Growth through New Challenges

KORAIL is pushing forward overseas projects based on the overseas business standard model to secure future sustainable growth drivers. We recorded 13.6 billion KRW in overseas railroad consulting project revenue, an increase of 68% compared to the previous year, by securing new projects in five countries, including the modernization of railroad signals in Egypt. Based on a systematic work process, we generated 5.79 billion KRW in revenue through the export of idle assets, achieving a growth of 114% compared to the previous year. We earned 680 million KRW through international railroad training, resulting in total overseas business annual revenue of 20.07 billion KRW, a 79% increase from last year.

Global Railroad Business Revenue (Unit: 100 million KRW)



KORAIL has started the 'International Multimodal Transport Project based on the International Rail Cooperation Organization (OSJD)' in cooperation with China National Railway Group Co., Ltd. (CR), transporting export cargo to Europe and Central Asia via continental railways. Through this project, Korea's export cargo is transported using a combined transportation method that integrates rail and shipping, resulting in time and cost savings. KORAIL is promoting the operation of regular freight trains through the Trans-Continental Railway (TCR) to enhance the export logistics competitiveness of Korean companies and secure stable transport routes, while also focusing on increasing the share of railroad transportation. Through this, we actively support domestic companies' overseas expansion and contribute to strengthening the global competitiveness of Korean logistics.

Korea-China-Uzbekistan International Multimodal Transport Pilot Project

11 Overseas New Market Projects

Diversifying and Expanding Overseas Business Efforts to Pioneer New Markets! Conducting 11 Projects in 6 Countries!

Operation and Maintenance Consulting and Construction Projects

Tanzania · Philippines · Mongolia · Myanmar · Egypt · Bangladesh

13.6 billion KRW
(Year-over-year 68%↑)

Export of Idle Assets

5.79 billion KRW
(Year-over-year 114%↑)

International Training Projects

680 million KRW
(Year-over-year 51%↑)

APPENDIX

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ESG Data Book

Environmental

Category		Unit	2021	2022	2023
GHG Emission					
Scope 1		tCO_2-eq	261,612	223,497	209,880
Scope 2		tCO_2-eq	1,281,053	1,351,915	1,294,137
Total		tCO_2-eq	1,542,665	1,539,412	1,504,017
Scope 3		tCO_2-eq	5,578.24	5,268.66	4,065.23
GHG Emissions Intensity					
Revenue		1 billion KRW	5,143	5,456	5,813
Scope 1		tCO_2-eq / 1 billion KRW	51	41	36
Scope 2		tCO_2-eq / 1 billion KRW	249	241	223
GHG Reduction					
Total Reduced Emission of GHG		tCO2-eq	492,509	495,762	531,157
Total Reduced Emission Ratio of GHG		%	24.20	24.36	26.10
Performance to Fulfill Emission Trading					
Quota		tCO_2-eq	2,035,174	2,035,174	2,035,174
Emission		tCO_2-eq	1,542,665	1,539,412	1,504,017
Energy					
Amount of Energy Used	Total Amount of Energy Used	TJ(Terra Joule)	30,231	30,469	29,835
	Electricity Used	TJ	26,769	27,498	27,043
	Solar Power	TJ	16	23	23
	Ratio of Solar Power Energy	%	0.05	0.08	0.09
	Heating Used	TJ	0	0	0
	Gasoline, Diesel, LPG	TJ	3,217	2,718	2,551
	LNG(City Gas)	TJ	229	230	218
	LNG(Natural Gas)	ton	0	0	0
Water					
Amount of Water Used	Amount of Water & Sewage Water Used	thousand m³	4,852	6,114	Confirmed by December 2024
	Recycled and Reused Water	thousand m³	18	16	
	Ratio of Reused Water	%	0.4	0.3	
Waste					
Waste Generation	Amount of Designated Wastes Discharged	ton	1,714	1,312	1,564
	Amount of General Wastes Discharged	ton	3,900	4,523	4,964
Amount of Waste	Total	ton	5,614	5,835	6,528
Waste Disposal Method (Designated Waste)	Recycled	ton	837	635	843
	Incinerated	ton	626	622	624
	Landfill	ton	60	37	29
	Other	ton	191	18	68
Waste Recycling	Amount of Recycled Waste	ton	3,646	4,390	4,877
Amount of Air Pollutants Emitted	Sulfur Oxides (SOx)	kg	344	56	44
	Nitrogen Oxide (NOx)	kg	1,367	1,979	873
	Dust	kg	1,825	1,799	1,341
Wastewater					
Amount of Water Pollutants Discharged	Amount of Wastewater Disposal	m³	277,982	224,550	222,661
	Amount of Rail Cars Wastewater	m³	27,035	22,507	22,357
Green Vehicles					
Company Vehicles	1st Class (Hydrogen/Electricity Cars)	number of vehicles	30	42	58
	1st Class (Hydrogen/Electricity Cars)	number of vehicles	13	18	16
	3rd Class (Gasoline)	number of vehicles	1	1	1
	General Vehicles	number of vehicles	730	438	372
	Others	number of vehicles	16	30	42
	Total	number of vehicles	790	529	489
Investment Cost for Environmental Purification Facilities					
Air Quality		1 thousand KRW	272,615	424,933	553,916
Water Quality		1 thousand KRW	426,688	467,115	447,015
Environmental Cost					
Operation Cost for Environmental Facilities	Water	1 million KRW	427	467	447
	Air	1 million KRW	273	424	554
	Total	1 million KRW	700	891	1,001
Environmental R&D	National R&D	1 million KRW	432	529	280
Environmental R&D	In-company R&D	1 million KRW	39	50	116
Green Products Purchase					
Plan to Fulfill Purchasing		100 million KRW	24.7	32.4	34.8
Amount of Green Purchase		100 million KRW	30.6	44.4	45.6
Excess purchase amount		100 million KRW	5.9	12.0	10.8
Environmental Certification					
Acquired the Environmental Labeling Certification		each	1	1	1
Acquired the Low Carbon Product Certification		each	1	1	

Social

Category		Unit	2021	2022	2023
Personnel Status					
Classification of Employees by Region	Domestic	people	30,918.26	30,988.5	31,134.28
	Oversea	people	0	0	0
Classification of Employees By Gender	Male	people	27,015	26,868.41	26,750.91
	Female	people	3,904	4,120.09	4,383.37
Number of Permanent (General) Employees	Male	people	26,955	26,806.41	26,688.91
	Female	people	3,903	4,118.09	4,380.37
	Total	people	30,857	30,924.50	31,069.28
Ratio of Permanent (General) Employees	Male	%	87	87	86
	Female	%	13	13	14
	Total	%	100	100	100
Number of Permanent Employees (Unlimited Contract Workers)	Male	people	0	0	0
	Female	people	0	0	0
	Total	people	0	0	0
Ratio of Permanent Employees (Unlimited Contract Workers)	Male	%	0	0	0
	Female	%	0	0	0
	Total	%	0	0	0
Number of Temporary Employees	Male	people	60	62	62
	Female	people	1	2	3
	Total	people	61	64	65
Ratio of Temporary Employees	Male	%	98	97	95
	Female	%	2	3	5
	Total	%	100	100	100
Number of Employees by Age	Ages under 30	people	5,070.63	4,989.38	4,759.75
	Ages 30 to 39	people	4,848.95	5,750.19	6,775.32
	Ages 40 to 49	people	9,305.67	8,334.42	7,423.45
	Ages 50 and above	people	11,693.01	11,914.51	12,175.76
Diversity of Employees	Manager	people	3,485.89	3,405.39	3,405.63
	Female Manager	people	434.89	480.76	512.00
	Ratio of Female Executives	%	13	13	15
	Person of National Merit	people	1,891	1,896	1,867
	Disabled	people	1,025	1,102	1,152
Total Number of Employees		people	30,918	30,988.5	31,134.3
Permanent Employee Recruitment Status					
Total Number of New Hires (General Permanent Employees)		people	1,426	1,697	1,590
Female		people	254	320	376
Disabled		people	86	104	53
Local Talented People		people	1,108	1,429	1,327
Person of National Merit		people	185	77.0	52.0
Ratio of New Hires (General Permanent Employees)	Female	%	17.8	18.9	23.6
	Disabled	%	6.0	6.1	3.3
	Local Talented People	%	77.7	84.2	83.5
	Person of National Merit	%	13.0	4.5	3.3
Turnover and Retirement					
Number of Turnover by Gender	Male	people	1,452	1,403	1,320
	Female	people	75.5	107.5	101.5
	Retirement	people	1,027	960	754
	Dismissal	people	31	15	10
	Expulsion (Death)	people	20	27	19
	End of Contract (Contract Workers, Executives)	people	4	6	22
Total Turnover	Total	people	1,527.5	1,510.5	1,421.5
Employee Training and Career Management					
Total Number of Trained Employees		people	64,856	78,412	79,960
Training Cost per Employee		people	201	260	239
Total Training Cost		people	4,889	6,454	5,375
Training Satisfaction Rate		people	96.69	96.81	96.79
Flexible Work System		people	185	77	
Time Selection System	New Hires	people	0	0	0
	Employees who Switched to the System	people	161	183	178
Flexible Working	Staggered Work Type	people	3,365	2,098	4,500
	Work Hour Selection Type	people	2	6	248
	Intensive Work Type	people	0	0	2
	Discretionary Work Type	people	0	0	0
Remote Working	Work from Home	people	2,952	229	0
	Smart Work	people	0	0	0
Total Number of Users		people	6,480	2,516	4,928
Utilization Rate		%	21.89	8.46	15.22
Maternity and Parental Leave					
Number of Employees on Maternity Leave	Male	people	374	393	372
	Female	people	118	119	111
Target for Parental Leave	Male	people	3,631	3,313	3,068
	Female	people	779	718	674
	Total	people	4,410	4,031	3,742
Number of Employees on Parental Leave	Male	people	237	347	359
	Female	people	377	374	348
	Total	people	614	721	707

Category		Unit	2021	2022	2023
Number of Employees who Returned to Work at the End of Parental Leave	Male	people	219	321	279
	Female	people	329	317	208
	Total	people	548	638	487
Number of Employees who Returned to Work at the End of Parental Leave and Worked Continuously for 12 Months	Male	people	218	315	276
	Female	people	326	311	205
	Total	people	544	626	481
Retention Ratio for 12 Months after Return	Male	people	99.5	98.1	98.9
	Female	people	99.1	98.1	98.6
	Total	people	99.3	98.1	98.8
Labor Union Membership					
Employees Eligible for Membership		people	26.603	24,871	24,920
Union Members		people	24,204	23,907	23,658
Ratio of Membership		%	91.0	96.1	94.9
Implementation of Labor-Management Consultation Meeting		times	4	4	4
Satisfaction with Labor-Management Relationship		points (5-point scale)	3.7	3.73	3.66
Grievance Handling (VOC)					
Total Number of Grievance Reported		cases	49,872	52,655	56,530
Total Number of Grievance Handled		cases	49,872	52,655	56,530
Ratio of Grievance Resolution		%	100	100	100
Social Contribution Activities					
Number of Employees Participating in Volunteer Activities		people	13,966	14,547	16,184
Volunteer Work Hours per Employee		hours	1.6	1.6	2
Participation Ratio in Social Contribution ('Donation of Love')		%	65.34	63.67	63.87
Donation for Social Contribution		1 million KRW	1,158	1,057	1,089
Safety and Health of Employees					
Ratio of Occupational Accidents		%	0.213	0.240	0.242
Number of Employees Involved in Occupational Accidents		people	68	76	78
Ratio of Occupational Accidents in Outsourced Construction Projects		%	0.99	1.09	0.76
Number of Serious Occupational Accidents	Including Outsourced Construction Projects	cases	2	2	2
Result of the Assessment on the Level of Safety Activities in Public Corporations	Assessment under the Supervision of MOEL	Absolute Grading	C	C	C
Number of Dedicated Safety Personnel (Capacity/Current Staff)		people	504/485	522/502	497/494
Securing Safety Manager	Ration of Permanent Workers	%	100	100	100
Assessment of Disaster Management	Assessment under the Supervision of MOIS	grade	Excellent	Excellent	Excellent
Health Checkup Utilization Status	General Checkup	people	25,831	26,817	22,381
	Special Checkup	people	12,810	13,744	15,469
	Comprehensive Checkup	people	25,352	25,240	28,537
Health-enhancing Activities		cases	17,434	19,875	22086

Category		Unit	2021	2022	2023
Wage and Welfare					
Welfare Satisfaction Rate		points	72.5	86.0	85.3
Ratio of Total Wage and Compensation for Female to Male					
Permanent Employees (Average Amount per Employee)	Male	1 million KRW	71	71	70
	Female	1 million KRW	59	59	59
	Ratio (Female/Male)	%	83.1	83.1	84.2
Temporary Employees (Average Amount per Employee)	Male	1 million KRW	45	43	43
	Female	1 million KRW	30	34	33
	Ratio (Female/Male)	%	66.4	80.8	77.3
Welfare Expenses					
Welfare Expenses (Average Amount per Person)	Executive	1 thousand KRW	357	496	411
	Permanent Employee	1 thousand KRW	1,250	1,298	1,339
	Temporary Employee	1 thousand KRW	1,206	1,289	1,306
Partner Companies					
Performances of Financial Support for Partner Companies		1 million KRW	6,017	7,274	11,282
Patent					
Patent	Petitioned	cases	51	44	44
	Registered	cases	35	38	25
Human Rights					
Number of Education Sessions Provided on Human Rights		people	255,194	257,547	412,533
Number of participants in the Education for Human Rights		cases	2	1	0
Number of participants in the Education for Human Rights		cases	0	0	0
Information and Cyber Security					
Number of Information and Cyber Security Incidents		cases	0	0	0
Fines or Penalties Paid for Incidents		KRW	0	3,000,000	0
Number of Cases of Violation/Incidents of Information Security Related to Customers' Data		cases	0	0	0
Number of Customers Affected by Data Leakage		people	0	0	0
Customers' Satisfaction					
Customers' Satisfaction Assessment		points	79.7	83.2	84.4

Governance & Economic Performance

Category		Unit	2021	2022	2023
Consolidated Statements of Financial Position					
Assets	Ⅰ. Current assets	KRW	1,785,390,079,154	2,193,439,539,419	1,538,092,445,049
	1. Cash and cash equivalents	KRW	312,179,349,898	544,279,430,389	165,446,166,178
	2. Short-term financial instruments	KRW	16,354,324,380	191,562,589,739	216,043,465,472
	3. Trade receivables and other receivables	KRW	632,556,238,893	676,765,568,080	690,382,338,255
	4. Inventories	KRW	322,014,818,290	344,804,176,401	363,670,889,184
	5. Prepaid income taxes	KRW	448,943,667	901,041,860	2,241,365,070
	6. Current non-financial assets	KRW	50,278,146,119	101,392,227,208	51,326,283,436
	7. Assets held-for-sale	KRW	451,558,257,907	333,734,505,742	48,981,937,454
	Ⅱ. Non-current assets	KRW	23,370,213,322,460	26,850,248,749,846	27,528,313,842,765
	1. Long-term financial instruments	KRW	255,015,990,762	215,562,608,498	212,482,251,764
	2. Long-term trade receivables and other receivables	KRW	46,345,803,116	43,758,589,767	45,820,649,493
	3. Property, trains and equipment, net	KRW	22,077,085,888,589	25,635,757,548,542	26,043,533,571,385
	4. Investment property	KRW	818,603,421,785	778,142,762,235	723,217,276,517
	5. Goodwill	KRW	3,732,906,258	3,732,906,258	3,609,488,993
	6. Intangible assets, net	KRW	42,710,196,699	46,483,830,026	41,903,907,809
	7. Investment in associates	KRW	93,826,562,066	85,391,588,483	447,773,265,834
	8. Deferred tax assets	KRW	28,307,565,475	37,240,971,104	5,902,156,485
	9. Non-current non-financial assets	KRW	4,584,987,710	4,177,944,933	4,071,274,485
	Total Assets	KRW	25,155,603,401,614	29,043,688,289,265	29,066,406,287,814
Liabilities	Ⅰ. Current liabilities	KRW	3,562,957,836,359	3,584,222,889,785	3,527,913,806,134
	1. Trade payables and other payables	KRW	857,919,673,775	882,071,979,607	1,153,950,110,106
	2. Short-term borrowing	KRW	1,417,254,209,144	1,611,938,899,610	1,676,187,018,996
	3. Current tax liabilities	KRW	6,527,084,373	7,418,443,502	1,169,005,200
	4. Current non-financial liabilities	KRW	849,827,698,777	717,732,822,003	312,302,471,438
	5. Current provisions	KRW	431,429,170,290	365,060,745,063	384,305,200,394
	Ⅱ. Non-current liabilities	KRW	15,097,814,735,292	16,456,302,350,352	16,937,468,022,489
	1. Long-term trade payables and other payab	KRW	66,419,953,482	54,959,680,563	60,584,282,724
	2. Long-term borrowings, net	KRW	11,382,195,575,412	12,641,966,941,414	13,404,625,970,465
	3. Non-current non-financial liabilities	KRW	12,134,677,880	8,894,925,555	7,903,121,717
	4. Refined benefit liabilities, net	KRW	1,256,739,753,195	1,134,584,520,702	1,223,025,849,756
	5. Deferred tax liabilities	KRW	1,848,849,156,504	2,321,713,037,010	2,223,301,453,055
	6. Provisions	KRW	531,475,618,819	294,183,245,108	18,027,344,772
	Total liabilities	KRW	18,660,772,571,651	20,040,525,240,137	20,465,381,828,623
Equity	Ⅰ. Paid-in capital	KRW	10,768,057,640,627	10,849,219,640,627	10,919,637,640,627
	Ⅱ. Deficit	KRW	(11,489,301,653,323)	(11,503,557,896,889)	(11,824,023,452,243)
	Ⅲ. Other equity components	KRW	7,082,057,397,087	9,501,686,119,023	9,500,689,404,252
	Ⅳ. Equity attributable to the owner of the parent company	KRW	6,360,813,384,391	8,847,347,862,761	8,596,303,592,636
	Ⅴ. Non-controlling interests	KRW	134,017,445,572	155,815,186,367	4,720,866,555
	Total equity	KRW	6,494,830,829,963	9,003,163,049,128	8,601,024,459,191
	Total liabilities and equity	KRW	25,155,603,401,614	29,043,688,289,265	29,066,406,287,814
Consolidated Statement of Comprehensive Income and Key Indicators					
Revenue		KRW	5,764,689,979,013	6,203,858,989,485	6,372,984,680,688
Costo Of Goods Sold		KRW	6,307,231,286,878	6,259,117,884,774	6,464,178,440,219
Gross Profit (Loss)		KRW	(542,541,307,865)	(55,258,895,289)	(91,193,759,531)
Selling and Administrative Expenses		KRW	345,576,522,646	341,694,383,373	350,342,378,905
Operating Profit (Loss)		KRW	(888,117,830,511)	(396,953,278,662)	(441,536,138,436)
Other Income		KRW	18,850,024,204	21,735,760,160	7,117,064,885
Other Expenses		KRW	74,616,034,499	109,228,829,977	108,758,274,956
Other Profit (Loss)		KRW	50,621,697,268	230,606,893,780	207,164,324,303
Financial Income		KRW	83,799,263,916	88,672,844,796	142,634,968,024
Financial Cost		KRW	371,574,198,607	395,911,617,279	474,493,038,662
Profit Related to Relevant Enterprise & Joint Enterprise (Loss)		KRW	(8,380,889,216)	2,964,941,826	130,262,030,124
Net Profit of Corporate Tax Expenses before Deduction (Loss)		KRW	(1,189,417,967,445)	(558,113,285,356)	(537,609,064,718)
Corporate Tax Expenses (Earnings)		KRW	(34,218,428,549)	(323,144,671,609)	(86,048,805,650)
Current-term Net Profit (Loss)		KRW	(1,155,199,538,896)	(234,968,613,747)	(451,560,259,068)
Other Comprehensive Profit or Loss		KRW	99,826,204,835	2,660,381,989,739	(22,954,309,723)
1. Other comprehensive profit or loss not subsequently reclassified for the current-term profit or loss		KRW	84,755,685,408	2,706,579,995,900	(9,377,405,453)
2. Other comprehensive profit or loss classified for the current-term profit or loss subsequently		KRW	15,070,519,427	(46,198,006,161)	(13,576,904,270)
Total Comprehensive Profit or Loss		KRW	(1,055,373,334,061)	2,425,413,375,992	(474,514,568,791)
Profit per Share		KRW	-	-	-
Basic Profit per Share		KRW	-	-	-
Net Profit Ratio of Sales		%	(20)	(4)	(7)
Net Worth Turnover Ratio		%	84	80	72
R&D Investment		1 million KRW	4,289	4,504	4,644
Allocation of Economic Value					
Government	Tax and Public Utilities	1 million KRW	51,008	53,380	51,642
Allocation of Economic Performance					
Dividend for Shareholders (Dividend)		1 thousand KRW	-	-	-
Total Tax Payment to Government (Corporate tax)		1 thousand KRW	3,630,443	4,854,141	-
Total Payment to Executives & Employees (Labor cost & welfare expenses)		1 thousand KRW	3,009,004,163	3,102,714,880	3,089,924,486
Interest paid to the creditor of loan company (Cost of interest)		1 thousand KRW	294,406,521	321,222,176	372,172,687
Creation of Economic Value					
Business Profit		100 million KRW	(8,881)	(3,970)	(4,415)
Current-term Net Profit		100 million KRW	(11,552)	(2,350)	(4,516)
Revenue		100 million KRW	57,647	62,039	63,730

Category		Unit	2021	2022	2023
Revenue by Business					
Ⅰ. Earnings from Transportation Business		1 million KRW	3,615,067	4,445,146	4,688,515
1. Passengers		1 million KRW	2,934,588	3,764,478	3,994,471
High-speed Railroad		1 million KRW	1,829,378	2,508,206	2,599,745
Conventional Railroad		1 million KRW	357,847	446,760	493,076
Metropolitan Railroad		1 million KRW	747,363	809,512	901,650
2. Freights		1 million KRW	300,918	296,194	296,148
3. PSO		1 million KRW	379,561	384,474	397,896
Ⅱ. Earnings from Multi-Source Revenue Businesses		1 million KRW	386,251	468,649	619,244
Ⅲ. Earnings from Consigned Businesses		1 million KRW	1,763,372	1,290,064	1,065,226
Ⅳ. Total		1 million KRW	5,764,690	6,203,859	6,372,985
Administration of Anti-corruption and Ethical Management					
Ratio of Participation in the Education for Anti-corruption and Integrity by Executives and Employees		%	97.87	97.07	99.24
Status of Disciplinary Action against a Person of Corruption		cases	3	5	6
Number of Cases for the Legal Action against Unfair Trade		cases	16 cases (16 cases of sanction on unfair trade)	12 cases (11 cases of sanction on unfair trade)	24 cases (21 cases of sanction on unfair trade)
Monitoring Status	Assessment of Integrity	grade	3	2	3
	Survey on Contribution to Social Value (~2021)	points	72.7	-	
	National Awareness (2022~)	points	-	71	73
	ISO 37301		Acquired the First Certification in December	Maintained	Post-assessment Certification('23 Jun)
Board of Directors					
Operation Performance of BOD	Number of Holding BOD	times	12	12	16
	Number of Agendas (BOD)	cases	52.0	50	57
	Number of Holding ESG Committee	times	1	8	10
	Number of Agendas (ESG Committee)	cases	4	14	16
	Ratio of Non-executive Directors	%	0.53	0.53	0.53
	Participation Ratio of BOD	%	98.3	96.0	91.8
Total Wage for BOD	Registered Directors (Excluding Non-executive Directors and Members of Audit Committee)	1 million KRW	124	109	102
	Non-executive Directors (Excluding Members of Audit Committee)	1 million KRW	30	29	30
	Members of Audit Committee	1 million KRW	141	129	119
Retirement Pension					
Pension Fund for the Payment of Pension (Amount to Manage the Retirement Pension)	Degree of Accumulated Pension Asset	1 million KRW	79,571	88,434	90,796
Number of People in Enrollment by Type	DB	people	464	385	289
	DC	people	604	674	584
	Total	people	1,068	1,059	873

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		G-3-3	Concentrated/Electronic/Written voting system	
		G-3-4	Dividend policy and implementation	
	Ethical management	G-4-1	Disclosure of violations of the Code of Ethics	92-96
	Audit organization	G-5-1	Internal audit department	94-96
		G-5-2	Expertise in audit organization	94-96, 112
	Violations of governance laws/ regulations	G-6-1	Violations of governance laws/ regulations	ALIO disclosure

SASB Index

The SASB (Sustainability Accounting Standards Board) Standards are industry-specific sustainability accounting standards published by the U.S. Sustainability Accounting Standards Board, which was established in 2011. KORAIL has disclosed indicators related to the railroad transport sector in its reports and will actively manage and disclose indicators of individual items to stakeholders in accordance with SASB recommendations in the future.

Table 1. Sustainability Disclosure Topics & Metrics

Topic	Code	Accounting Metric	Page
GHG Emission	TR-RA-110a.1	Gross global scope 1 emissions	104
	TR-RA-110a.2	ssion of long-and short-term strategy or plan to manage scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	52-53
	TR-RA-110a.3	(1) Total fuel consumed (2) Percentage renewable	104
Air Quality	TR-RA-120a.1	Air emissions of the following pollutants : (1) NOX (excluding N2O) (2) Particular matter (PM10)	105
Employee Health & Safety	TR-RA-320a.1	(1) Total recordable incident rate (TRIR) (2) Fatality rate (3) Near miss frequency rate (NMFR)	108
Competitive Behavior	TR-RA-520a.1	* al amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations	Not applicable
Accident & Safety Management	TR-RA-540a.1	Number of accidents and incidents	108
	TR-RA-540a.2	** Number of (1) accident releases and (2) non accident releases (NARs)	108
	TR-RA-540a.3	Number of Federal Railroad Administration (FRA) Recommended Violation Defects	Not applicable
	TR-RA-540a.4	*** Frequency of internal railroad integrity inspections	22-25, 58-65

Table 2. Activity Metrics

Topic	Code	Accounting Metric	Page
Activity	TR-RA-000.A	* Number of carloads transported	10
	TR-RA-000.B	** Number of intermodal units transported	10
	TR-RA-000.C	*** Track kilometres	10
	TR-RA-000.D	**** Revenue tonne-kilometres (RTK)	20-21, 97-99
	TR-RA-000.E	Number of employees	106

* Note to TR-RA-000.A : The scope of the disclosure includes all carloads that the entity transported in conjunction with the shipping of freight (including freight that is not containerized) for its customers

** Note to TR-RA-000.B : Intermodal units include shipping containers and truck trailers that can be transported across modes of transportation

*** Note to TR-RA-000.C : Track kilometres include route kilometers (the total extent of routes available for trains to operate) and consider multiple track routes such that each route kilometre with double track is considered two track kilometres

**** Note to TR-RA-000.D : A revenue tonne-kilometre (RTK) is defined as one metric ton of revenue traffic transported one kilometre. Revenue tonne-kilometres are calculated by multiplying the kilometres travelled on each leg by the number of metric tons of revenue traffic carried on that leg

SDGs and UNGC Principles

UN Sustainable Development Goals

The SDGs (Sustainable Development Goals) are the agendas of 17 common goals of mankind for the resolution in the general assembly of UN to accomplish by the year 2030 to realize the ideology of sustainable development. The SDGs present the directivity for mankind to move forward in 5 areas of People, Planet, Prosperity, Peace and Partnership with 17 goals and 169 specific goals. KORAIL actively supports UN Sustainable Development Goals for the sustainable development. We have done our best to secure the sustainability in the process of managing the businesses. .

No Poverty · Zero Hunger · Good Health and Well-being · Quality Education · Gender Equality · Clean Water and Sanitation · Affordable and Clean Energy · Decent Work and Economic Growth · Industry, Innovation and Infrastructure

Reduced Inequalities · Sustainable Cities and Communities · Responsible Consumption and Production · Climate Action · Life below Water · Life on Land · Peace, Justice and Strong Institutions · Partnerships for the Goals

UN Global Compact

KORAIL has been adhering to the 10 principles regarding human rights, labor, environment, and anti-corruption since joining the UN Global Compact.

Category	Number	Principles
Human Rights	Principle 1	Business should support and respect the protection of internationally proclaimed human rights.
	Principle 2	Businesses should make sure that they are not complicit in human rights abuses.
Labor	Principle 3	Business should uphold the freedom of association and the effective recognition of the right to collective bargaining.
	Principle 4	Businesses should uphold the elimination of all forms of forced and compulsory labour.
	Principle 5	Businesses should uphold the effective abolition of child labour.
	Principle 6	Businesses should uphold the elimination of discrimination in respect of employment and occupation.
Environmental	Principle 7	Business should support a precautionary approach to environmental challenges.
	Principle 8	Business should undertake initiatives to promote greater environmental responsibility.
	Principle 9	Business should encourage the development and diffusion of environmentally friendly technologies.
Anti-corruption	Principle 10	Businesses should work against corruption in all its forms, including extortion and bribery.

ISO 26000 Implementation Level Diagnosis Results

Esteemed KORAIL Management and Stakeholders,

Evaluation Criteria

The Korea Public ESG Research Institute conducted an 'ISO 26000 Implementation Level Diagnosis' based on the international standard for social responsibility, ISO 26000. This diagnosis includes an assessment of the processes related to social responsibility implementation and the seven core subjects (organizational governance, human rights, environment, labor practices, fair operating practices, consumer issues, community engagement and development). The iMSR diagnosed the level of social responsibility implementation of KORAIL according to the ISO 26000 checklist.

Diagnostic Scope

The Korea Public ESG Research Institute conducted assessments of KORAIL's overall internal and external activities, mid-to-long-term strategies, social responsibility activities, and the implementation process of sustainable management strategies. The diagnosis results were evaluated by reviewing relevant policy documents, performance data, and output systems.

Diagnostic Method

The Korea Public ESG Research Institute carried out the following activities to collect relevant evidence and conduct assessments based on objective diagnostic criteria, focusing on departments related to the publication of ESG and sustainable management reports:

- Review of internal materials regarding KORAIL's sustainable management activities and performance.
- Conducting interviews with responsible personnel for each sustainable management issue at KORAIL.

Diagnostic Results

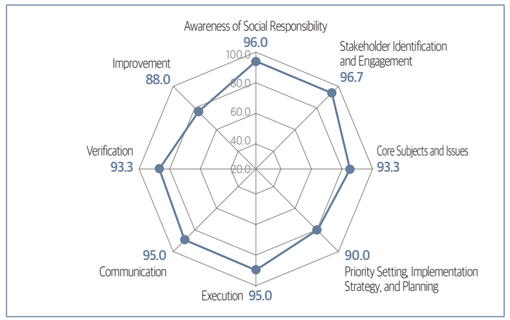
As a result of the diagnosis, KORAIL achieved a score of 945 out of a total of 1000 points, confirming that it falls under IV level of ISO 26000 social responsibility implementation. This indicates a high level of awareness among organizational members regarding social responsibility and that the organization's operational systems, policies, and practices are well-established.

Core Subject	Total Points	Diagnosis Score
Process	360	336
Achievement	640	609
Total	**1,000**	**945**

I. Diagnosis of Social Responsibility Process: 336 points out of 360

KORAIL implements its commitment to sustainable management through its mission of 'KORAIL, Connecting the People, the World and the Future' and its vision of 'KORAIL, a Companion for Opening Future Transportation.' By centering on the dedicated ESG Management Department and operating ten sustainable management working groups and various committees, the organization has strengthened its effectiveness in fulfilling social responsibility. It is recommended that, in the future, a system be established to practically integrate sustainability and social responsibility into the management strategy system and processes and to develop a performance management system for sustainable management that includes all seven core subjects of ISO 26000.

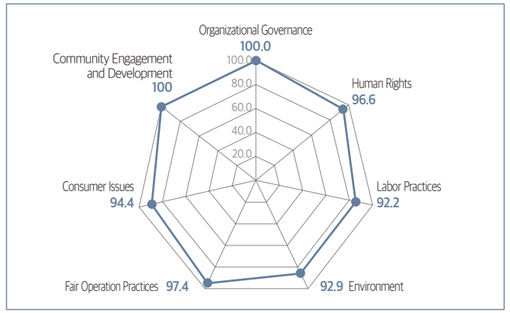
Process Diagnostic Results



II. Diagnosis of Seven Core Subjects: 609 points out of 640

KORAIL has an overall excellent level of compliance with the expectations of the seven core subjects of ISO 26000. In particular, the levels of implementation regarding human rights, labor practices, and fair operating practices were evaluated as outstanding.

Core Subjects Diagnostic Results



III. Improvement Recommendations by Areas

The improvement recommendations based on the detailed diagnosis results by subject are as follows:

① Organizational Governance
KORAIL operates specialized subcommittees within the Board of Directors to support decision-making on key issues, and has appointed non-executive directors from various fields to enhance expertise. It is recommended that the key resolutions of the ESG management committee within the Board be disclosed externally to ensure that decisions regarding social responsibility are made by the highest decision-making body.

② Human Rights
KORAIL has explicitly included respect for human rights, equal employment, and prohibition of discrimination in its personnel regulations and ethical guidelines and has a systematic grievance handling system for human rights issues. It is recommended that a company-wide human rights management system be established and that human rights due diligence for partners and subsidiaries be expanded.

③ Labor Practices
KORAIL has made notable efforts to create safe working conditions for employees and to promote work-life balance, achieving results such as the introduction of a labor director system through active communication between labor and management. It is recommended that support for creating a stable working environment and strengthening employee expertise be enhanced to overcome anxieties caused by frequent changes in personnel policies.

④ Environment
KORAIL contributes to climate change response and greenhouse gas reduction through eco-friendly railroad operations and expansion of the railroad network. In particular, its efforts in managing railroad infrastructure and enhancing railroad safety have been evaluated positively. In the long term, it is necessary to strengthen environmental management levels beyond simple regulatory compliance regarding noise, vibration, soil pollution, and waste.

⑤ Fair Operating Practices
KORAIL has expanded win-win management to enhance support for SMEs and has systematically established anti-corruption policies and systems. It is recommended that an anonymous reporting channel be activated that fundamentally prevents the identification of whistleblowers to eradicate misconduct and strengthen punishment standards for negligence and misconduct.

⑥ Consumer Issues
KORAIL continuously promotes customer service innovations that enhance user convenience, such as expanding public access to railroad data and addressing transportation deserts. However, despite ongoing improvements in safety management levels, it is necessary to ensure that a comprehensive prevention-centered safety system is established to prepare for the safety incidents that occasionally occur.

⑦ Community Participation and Development
KORAIL engages in various activities for the community, such as a non-discriminatory railroad fare policy and building a social safety net using smart transportation systems. Its active practice of community contribution activities related to railroads, such as restoring railroad stations with local residents and creating healing spaces linked to railroads, has been evaluated positively. It is recommended t hat joint labor-management community contribution activities be strengthened and professional and systematic community contributions be continuously enhanced utilizing the nationwide railroad network.

Diagnostic Result

KORAIL achieved a score of 945 out of a total of 1000 points in the diagnosis of compliance with ISO 26000, which corresponds to SR IV level. KORAIL is in the stage of expanding its social responsibility activities throughout the organization, and its levels of implementation regarding human rights, labor practices, and fair operating practices were rated as excellent.

In the future, as a specialized company in railroad transportation platforms, KORAIL aims to continuously enhance the convenience of railroad use for the public, secure the highest level of railroad safety, and establish itself as a trusted and beloved organization among its stakeholders.

September 4, 2024
CEO Kim Jeong-rae

한국공공ESG연구원

Third Party Assurance Statement

To readers of 2024 KORAIL ESG · Sustainability Report

Preface

The Institute for Public K-ESG has been requested to verify '2024 KORAIL ESG · Sustainability Report' (hereinafter referred to as the 'Report'). The responsibility for the preparation of the report lies with KORAIL, and the responsibility of the Institute for Public K-ESG is to issue a verification opinion on specific data and information within the scope specified below.

Scope and Standards

KORAIL describes the organization's achievements and activities related to
sustainability in its report. Our assurance team applied the international verification standards of AA1000A V3 and carried out a type 2, moderate-level assurance. That is, evaluation was performed on compliance with the principles of inclusivity, materiality, and responsiveness, and the reliability of the data and information was evaluated on the Global Reporting Initiative (GRI) Index provided below. Here, the standard for materiality was applied based on the professional judgment of the assurance team.
The assurance of compliance with the reporting requirements of GRI Standards 2021 is included in the scope of verification, and the assurance team reviewed it as follows to confirm this.

Universal Standards

GRI 1 : GRI Standards Foundation 2021
GRI 2 : General Disclosure 2021 (2-1~2-30)
GRI 3 : Material Topics 2021 (3-1~3-3)

Topic Specific Standards

- Topic Management Disclosure
- GRI 201-1, 201-2, 202-1, 203-1~2, 205-1~3, 302-1~2, 303-5, 305-1~5, 306-2~3, 401-1~3, 402-1, 403-1~10, 403-9, 404-1~2, 405-1~2, 406-1, 413-1, 418-1

The data and information regarding external organizations, such as KORAIL's partner companies and contractors, were excluded from the assurance scope.

Assurance Procedure

The assurance team of the Institute for Public K-ESG followed the procedures outlined below to verify the agreed-upon assurance scope according to the verification criteria described above.

- Overall review of the contents of the report
- Review of the materiality assessment procedures and methods
- Review of the ESG management strategy and goals
- Review of stakeholder engagement activities
- Interviews with responsible personnel regarding the report preparation
- Assessment of the reliability of information based on independent external sources and public databases

Conclusion and Opinion

The assurance team engaged in multiple discussions with KORAIL regarding the report revisions based on the results of document reviews and interviews and reviewed the final materials to ensure that the modifications and improvement recommendations were adequately incorporated. As a result of the assurance, the team found no inappropriate aspects related to compliance with the principles listed below in KORAIL's ESG · Sustainability Report. No issues were identified that would indicate the data included in the assurance scope were improperly reported. It is determined that the ESG · Sustainability Report has been appropriately prepared in accordance with the international standard guidelines GRI Standards 2021, and the assurance opinion regarding the four principles presented in AA1000AP (2018) is as follows.

Inclusivity

Inclusivity refers to involving stakeholders in the process of developing and achieving responsible and strategic responses to sustainability. KORAIL is committed to its responsibilities towards stakeholders and has developed and maintained various forms and levels of stakeholder communication channels to implement this commitment. The assurance team did not find any significant stakeholder groups that were omitted in this process.

Materiality

Materiality refers to determining the relevance and significance of an issue to the organization and its stakeholders. In this context, a material issue is one that can influence the decisions, actions, and performance of the organization or its stakeholders. KORAIL determines the materiality of issues identified through stakeholder communication channels using its own materiality assessment process. The assurance team did not find any significant issues that were omitted in this process.

Responsiveness

Responsiveness refers to an organization's actions concerning significant sustainability topics and related impacts, specifically the management processes for material topics determined through materiality assessment. KORAIL manages policies, task performance status, activity outcomes, and improvement plans for material topics to respond to stakeholder expectations appropriately. The assurance team did not find any missing processes in this regard.

Impact

Impact refers to an organization's response to stakeholder issues that affect its sustainability
performance, realized through communication with stakeholders as well as through the organization's decision-making, activities, and outcomes. The assurance team did not find any evidence that KORAIL's response activities to significant stakeholder issues were inappropriately described in the report.

Recommendations for Improvement

The Institute for Public K-ESG hopes that the report published by KORAIL will be actively utilized as a means of stakeholder communication and recommends the following for continuous improvement: KORAIL's effort to reorganize topics derived from the materiality assessment into categories of ESG management issues and report them in an easy-to-understand manner for readers is commendable. Moving forward, we recommend establishing key performance indicators based on a mid-to long-term strategy for the systematic promotion of ESG management and continuously striving to enhance the organization's sustainability.

Independence of Assurance

The Institute for Public K-ESG maintains independence by not having any profit-oriented interests in KORAIL's business activities apart from providing third-party assurance services.

AA1000
Licensed Assurance Provider
000-921

The Institute for Public K-ESG
한국공공ESG연구원

September 10, 2024
The Institute for Public K-ESG
CEO Kim Jeong-rae

Status of Certifications, Awards & Membership

2023 Status of External Organization Certifications and Challenges

No.	Awards & Certifications	Supervising Public Office	인증일자
1	Merit of win-win cooperation for agriculture and fishery	Korea Commission for Corporate Partnership	2023.12.20.
2	'Corporate Training Course Design System' (Patent)	KIPO	2023.01.05.
3	2023 Comprehensive Evaluation of Information Disclosure	MOIS	2023.01.09.
4	Performance Evaluation of Companies Operating In-house Venture Incubation Programs	Korea Startup Promotion Agency	2023.03.08.
5	International certificate of 'ISO 21001'	Kcerti.	2024.06.05
6	International certificate of ISO 37301	KMR	2023.06.07.
7	Selected for the female person of the year in railroad	IRJ(International Railway journal)	2023.06.12.
8	2023 Green Product of the Year in Korea (Green Masterpiece Award)	Green Purchase Network	2023.07.26.
9	2023 49th National Convention on QC Circles	MOTIE (KSA)	2023.08.28.
10	Merit of Promoting the 70th Anniversary of the Korean War	MPVA	2023.08.31.
11	Award for Social Welfare Contributors in Commemoration of the 24th Social Welfare Day	Gyeonggi Province Council of Social Welfare	2023.09.11.
12	2023 National Core Infrastructure Disaster Management Evaluation	MOIS	2023.10.06.
13	'In-house training management system and methods for employees subject to legal job training" (patent)	KIPO	2023.10.06.
14	International certificate of 'ISO 45001'	ISO	2023.10.25.
15	2023 The Payment Linkage System Enterprise Recognition	MSS	2023.11.01.
16	2023 Eulji Exercise 'Establishment of Emergency Preparedness'	MOLIT	2023.12.08.
17	Next-Generation Railway Talent by IRJ (International Railway Journal)	IRJ(International Railway journal)	2023.12.12.
18	Merit of Industrial Technology Promotion	MOTIE	2023.12.13.
19	2023 The Payment Linkage System (Excellent Company)	MSS	2023.12.18.
20	Certificate of Implementation of ESG for Agriculture & Fishery	L-M-S Enterprises Agriculture & Fishery Cooperation	2023.12.20.
21	Merit of 2023 Disaster Prevention Drills	MOLIT	2023.12.20.
22	2023 Railroad Safety Innovation Competition	MOLIT	2023.12.22.
23	Gangwon Tourism Promotion	Gangwon Tourism Organization	2023.12.27.
24	Certificate of Excellent Enterprise in Disaster Reduction	MOIS	2023.12.31.
25	Merit of 2023 Disaster Prevention Drills	MOIS	2023.12.31.
26	2023 Assessment of Disaster Management on Public Corporation (Best corporation)	MOIS	2023.05.18.
27	International certificate of 'ISO 27001'	ISO / SGS	2023.07.26
28	Certificate of Information Security Management System (ISMS)	KISA	2024.02.03
29	Merit of 2023 Rural Community Cooperative Partnership Fund	MAFRA	2024.01.18.
30	Korea Social Contribution Awards	K-WITH	2023.12.14.
31	Recognition for Corporate Social Responsibility in the Community	MHW	2023.12.01.

Membership Status

No.	Names of Associations & Groups
1	Korea Public Corporation Audit Association
2	Daejeon Chungcheong Audit Consulting Association
3	Institute of Internal Auditors Korea
4	Korea Academy of Business Ethics
5	Organization for Cooperation of Railways (OSJD)
6	Korea International Trade Association
7	Korea Engineering & Consulting Association
8	Daejeon Chamber of Commerce & Industry
9	International Contractors Association of Korea
10	International Union of Railways (UIC)

No.	Names of Associations & Groups
11	Eurasia Crossing Transport Adjustment Consulting Association (CCTT: Coordinating Council on Trans-Siberian Transportation)
12	Korea Emergency Plan Officers' Association
13	Korea Railway Association
14	UNGC
15	Korean Society Railway
16	Korean Operations Research and Management Science Society
17	Korea Society of Transportation
18	Korea Industrial Technology Association
19	Korean Institute of Industrial Engineers
20	Korean Society of Public Enterprise

No.	Names of Associations & Groups
21	Korean Society of Quality Management
22	Korean Society of Urban Railway
23	Korean Association for Public Administration
24	Korea R&D Industry Association
25	Korea Association of Travel Agencies
26	Korea Logistics Association for Railway Users
27	Korea Software Industry Association
28	Korea Transportation Card Industry Association
29	Korea International Freight Forwarder Association
30	The Society of Logistics Science and Technology