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KORAIL Sustainability Report 2023

ESG
KORAIL
LINK
KOREA



Connecting the People,
the World and the Future

KORAIL

KORAIL Sustainability Report 2023



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Website



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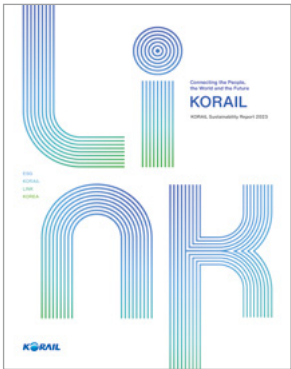
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Cover Story



KORAIL's will to connect the people, the world, and the future by practicing sustainable management is embodied as a green railroad.



KORAIL to the Future

From the first whistle sounded 130 years ago to this day, the Korean Railroad System has been the artery of the nation, tirelessly connecting every corner of the country. KORAIL will carry forward its steadfastness and draw its centennial plan, extending as straight as railroad tracks.

About This Report

Overview

KORAIL has led ahead to make railroads trusted by its passengers through the multi-directional innovation driven by putting safety at the center. In order to share the ESG activities and performances made during such process and communicate stakeholders, we have published ‘KORAIL Sustainability Report 2023’. This is the first report since ‘KORAIL Sustainability Report 2019-2020’ in the past. The format of report and the composition of contents are different from the previous ones, without any special relation. Moreover, this report contains detailed major issues of the corporation for sustainable management through the assessment of double materiality which measures the financial, social and environmental impacts. The publication cycle of future reports shall be one year.

Period & Scope

The report period is from January 1, 2022 to December 31, 2022. The report contains the ESG activities and performances of KORAIL including the KORAIL Headquarters and 8 Regional Headquarters. For partial qualitative performances, the activities implemented in the second half of 2023 have been included. In addition, for the quantitative performances, the data for 3 fiscal years have been provided to inform the trend.

Preparation Standard

This report has been prepared in reference to the global reporting guidelines of sustainable management - GRI (Global Reporting Initiative) Standards 2021 and the principle of ISO 26000. The definition of the report standard of financial information complies with K-IFRS (Korean International Financial Reporting Standards).

Verification of Report

In order to enhance the reliability and improve the quality of the contents in the report, we have received the verification from the independent professional verification agency of Korea Management Registrar (KMR). Specific contents of verification result have been included in the Appendix.

Inquiry in Relation to This Report

This report shall be published both in Korean and English. It will be available for downloading at the KORAIL Website as a PDF file. If you have any opinion or inquiry in relation to this report or the ESG activities of KORAIL, please contact us.

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Value for Delivering Your Heart

The excitement of travel, the waiting for your way home, and the hustle and bustle of daily life. KORAIL carries joys and sorrows of customers across the nation.
Beyond being just a mode of transportation, we will be a railroad that delivers your and happiness.



KORAIL to the Future

From the first whistle sounded 130 years ago to this day, the Korean Railroad System has been the artery of the nation, tirelessly connecting every corner of the country. KORAIL will carry forward its steadfastness and draw its centennial plan, extending as straight as railroad tracks.

CEO Message



To all of you who consistently support KORAIL

In recent years, the railways, which have been an integral part of the daily lives of the nation for 130 years, have faced new challenges such as COVID-19, climate change, and the technological advancements of the Fourth Industrial Revolution. Novel mobility technologies like drones, hyperloops, and autonomous vehicles have emerged, and mobility platforms continue to evolve. The business environment is rapidly changing, making environmental protection and social responsibility not optional but essential. To lead in shaping the future integrated transportation systems in the future, we will present new transportation paradigms through unlimited imagination and work towards a sustainable future within the trust of the nation.

We will become a representative carbon-neutral transportation operator that considers both the global environment and the public health.

"As the train runs, the Planet Earth becomes clearer."

Railways are gaining recognition worldwide as the future of 'green mobility' amid the global climate crisis. This is due to their significantly low CO₂ emissions and energy consumption, which are just 1/6 and 1/9 comparing with the cars. We have replaced conventional diesel cars with electric ones to reduce carbon emissions. Last summer, the new environmentally friendly train 'ITX-Maum' was launched on the Gyeongbu Line and Taebaek Line, and next year, the high-speed train 'EMU-320' is preparing for its first service. The eco-friendliness of KTX and KTX-Sancheon received excellent ratings, winning the 'Green Masterpiece Award' for two consecutive years. Furthermore, to reduce underground fine dust, we have operated a smart air quality management system and deployed 250 electric rolling stocks with air purifiers. We will also diligently monitor passenger health through improvements in railway facility air quality.

We will collaborate to enhance public value.

We have supported not only our partners but also small and medium-sized enterprises for a sound railway industry ecosystem. We have engaged in joint technology development and actively assisted in the procurement of innovative products, promoting stability and self-reliance in business expansion. We have also been dedicated to social contributions for vulnerable social groups. Through various volunteer activities such as 'Happy Train,' which creates good memories of train journeys, and 'Rail House,' which helps improve housing through employee talent donations, we have extend our efforts. To stimulate local economies, we have consistently showcased railway tourism content that captures the hidden charm of each region. We have also operated job experience programs for youth and women and opened 'Seom Seom Ok su' shops employing hearing-impaired individuals, providing nail care services, contributing to job creation for our citizens.

We will practice the people-centred safety management for the well-being of the nation and our employees.

We are committed to providing safe and comfortable railways. We have continued to invest in improving aging rolling stocks and facilities and aim to create a safe environment based on digital technologies. We will also advance our smart maintenance system and implement mechanized and automated in our work processes for high-risk works. Furthermore, we will protect our passengers by expanding CCTV coverage at stations and on board, installing more elevators and improving crowdedness. Above all, we will gradually instill an organizational culture that prioritizes safety.

As a public corporation, we will actively fulfill our social responsibility and walk alongside our citizens. We kindly request your continued strong interest and support for our ongoing efforts towards a better future.

Thank you.

Han, Moon-hee
President & CEO of Korea Railroad Corporation

Introduction to Corporation

KORAIL advances towards the future based on safety, innovation, communication, and trust.

We are committed to providing the best services to our customers and creating a safe railway environment, and strive to enhance public value and ensure financial solvency, enhancing the company’s value both domestically and internationally. Additionally, we aim to build growth momentum through innovation, leading the future of transport and fostering a trustworthy management for the nation.

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ESG Outcomes



Achieved the Highest Rating (AA) in SUSTINVEST ESG Assessment

As a representative railway operator of Korea, KORAIL has declared ESG management to fulfill social responsibilities. We have promoted ESG management based on eco-friendliness, joint-growth, and trust.

In the environmental sector, we have expanded the introduction of eco-friendly, low-carbon railway technologies to address climate crisis and take a leading role in achieving carbon neutrality of the railway industry.

In the social sector, we prioritize safety as our utmost value and pursue collaborative partnerships with local communities to foster mutually beneficial cooperation.

In terms of governance, we thoroughly comply ethical standards and encourage active communication of our employees to create an upright, sound company culture.

Through these continuous efforts, we achieved significant results in ESG management in 2022, including winning the Green Masterpiece Award for two consecutive years, achieving ZERO major injuries of the public, and attaining a second-tier rating in the comprehensive integrity assessment. Furthermore, we achieved an AA rating in Sustainvest ESG assessment. We will just maintain the status but will become a public enterprise that leads ESG through endless innovation and self-reflection.



Environmental
Railroad Service Leading Green Mobility



Received 'Green Masterpiece Award' for 2 Consecutive Years

Following the 'KTX-Eum Central Inland Line' which was selected as green product of the year by consumers in 2022, 'Donghae Line KTX', also is chosen as green product of the year in 2023. Accordingly, KORAIL has received 'Green Masterpiece Award' for 2 consecutive years for the first time as a public enterprise. As such, KORAIL is selected as an award winner every year for each newly opened route and train type, making itself a representative low-carbon, eco-friendly transport service operator.



24% Reduced Greenhouse Gas Emission Comparing to the Government Cap

Since KORAIL announced that it would conduct ESG management, we have participated in the greenhouse gas emissions right trading system to create sustainable eco-friendly value and sold the emission right of 221,270 tons and made the profit of KRW 4.28 billion. As a result of such efforts, we received the Minister's Commendation at the Carbon Neutral Lifestyle Contribution 2022 hosted by the Ministry of Environment.



Succeed in Pilot Operation of Long Freight Train

KORAIL successfully completed the pilot operation of Long Freight Train composed of 50 rolling stocks in July 2022, to prepare the basis to increase the rail freight transport volume. Through this project, which maximizes the advantages of railways as a mass transport mode, we are now one step closer to transitioning to green mobility.



Social
Railroad Service Increasing the Quality of Life



Acquired Highest Grade - Level 5 in the Community Contribution Recognition

We have been recognized of the activities to realize social contribution in various areas such as disaster relief, supporting for social classes vulnerable to COVID-19, recruiting local people, and cooperating with SMEs. As a result, we have acquired the highest grade, which is level 5, in the recognition system for the contribution to communities.



ZERO Serious Accident on Citizens

We have preemptively prevented the risk factors of typhoon, cold wave, wild fire and rockslide rocks in thawing season and secured the safety of passengers from natural disaster. From its result, we have been selected for the excellent corporation conducting the best practices in the assessment of disaster control of the national core public corporation/infrastructure in 2022. As well, we have accomplished ZERO serious damage on citizens.



Received Grand Prize in Competition for Excellent Case of Utilizing Pseudonym Information

We have disclosed the pseudonym information to the open market of national transport data which analyzed the travel patterns with the Big Data such as preferred tourist attractions and consumption tendency by visitors. Based on this, we have helped our partner travel agencies to develop tour packages to activate the depressed travel industry.



Governance
Railroad Service Being Trusted



Accomplished Second Rating of General Integrity by ACRC (Anti-Corruption & Civil Rights Commission)

Based on the strong determination of the CEO to completely eliminate unethical behavior, KORAIL actively pursued a 3Nos (ZERO tolerance for bullying, sexual harassment, and corruption) policy. After obtaining ISO 37301 international standard certification, we have achieved a post certification and innovated our ethical management system based on the government ethics standards. As well, we established a one stop K-Anti-corruption system from identifying corruption factors to system improvement and internalize an ethical organization culture.



Established a System to Prevent Conflicts of Interests

We have operated an exclusive Taskforce (TF) for the prevention of the conflict of interests to discover the blind spot for the conflict of interests and improve the vulnerable system and process. In addition, we have spread the self-checklist and shared the videos of cases for the conflict of interests through in-house broadcasting to establish a system to fulfill the company-wide prevention of the conflict of interests. We invited external experts to provide relevant training and expanded monitoring to our suppliers, laying a solid foundation for conflict of interest prevention.

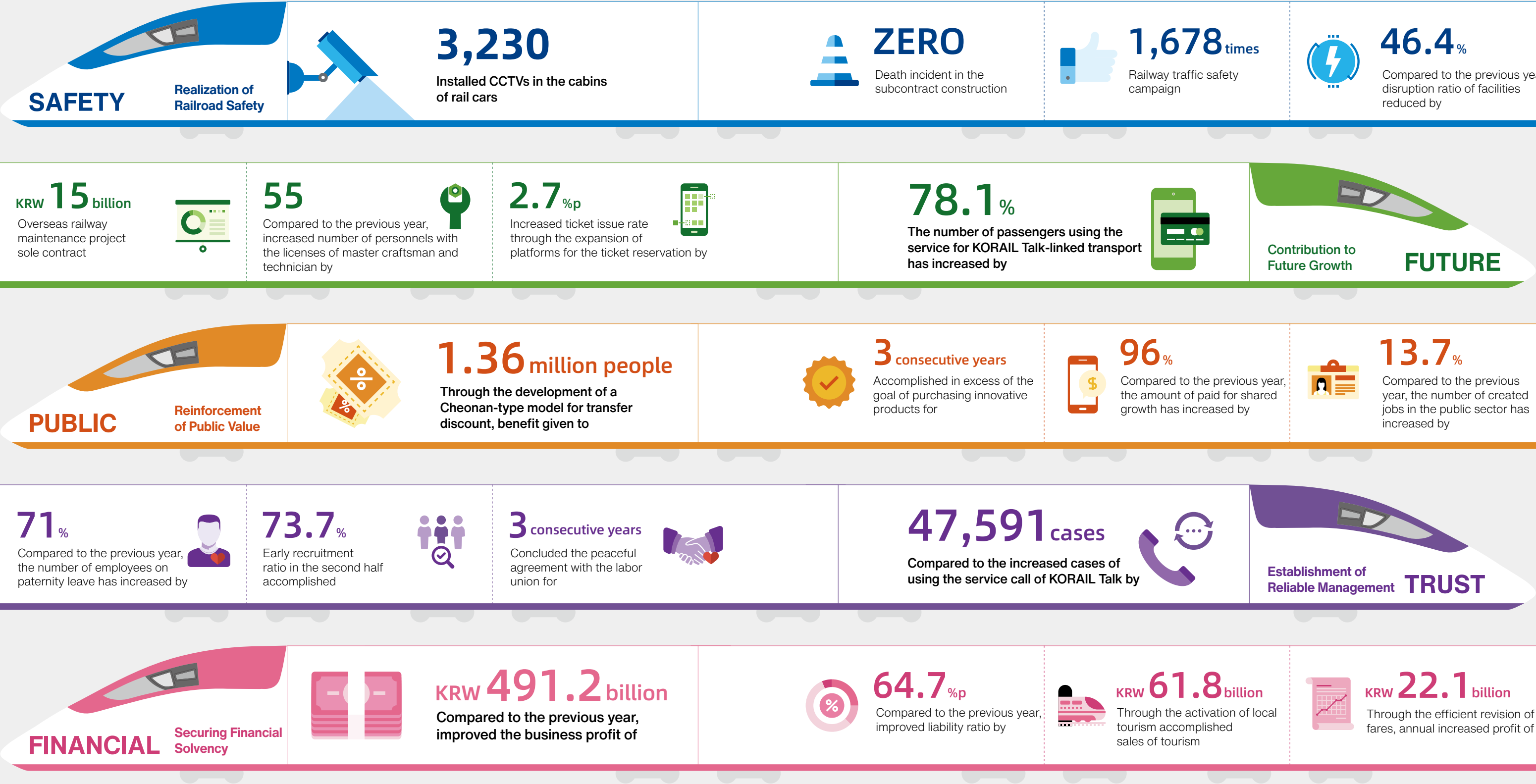


Establishing an Ethical Management System for KORAIL

We developed the top 100 tasks for ethics management innovation, implemented ethics management system by incorporating the Ministry of Strategy and Finance's ethics management standard model. We also established a robust system for the prevention and management of corruption risks through the participation of the Rights and Integrity Commission in compliance operations. Furthermore, we declared and implemented to strengthen both internal control management and internal accounting management system.

KORAIL Highlights

KORAIL made remarkable achievements in various fields such as safety, public value, financial soundness, future growth, and trust management in 2022. We will continue to provide safe and innovative services and realize transparent management to become a more reliable company for the people.



KORAIL Overview

Company Introduction

KORAIL has been the representative transport mode in Korea for 130 years since 1894 when the first railroad authority was established. Like trains enabling people to travel across the country for half a day along the stretch of railroad, KORAIL has become a link to connect Korea as one nation beyond the simple transport means. KORAIL will become the top-tier railway operator that will keep the safety of citizens and the pride of Korea and connect people with the world and the future.

Foundation of Corporation	June 28, 1894 (KORAIL launched): January 1, 2005		
CEO	Han Moon-hee (2023.07.24.~)	Capital	KRW 10,853,867 million
Basis of Foundation	Korea Railroad Corporation Act (Ordinance No. 7052, December 31, 2003)		
Competent Institution	Ministry of Land Infrastructure and Transportation	Sales Performance	KRW 6,203,859 million
Type of Corporation	Quasi-market Public Corporation		
Location	240 Joongang-ro, Dong-gu Daejeon Metropolitan City, Korea	Total Asset	KRW 29,043,688 million
No. of Employees*	30,989		

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

General Status

KORAIL has been extensively connecting the entire nation with convenient passenger train services and efficient logistics transportation. The company's vehicle operation status as of the end of 2022 is as follows.

Operational Routes and Distances		Vehicles Status		Stations Status	
Route	106 routes	KTX	1,644 cars	General station	337 stations
Railway distance	4,131.2 km	Rail car	2,981 cars	Simple station	Station staff deployment 2 stations
Business distance	Passenger 3,863.0 km	Locomotive	395 cars	Station staff absence	308 stations
	Logistics 3,104.5 km	Passenger car	626 cars		
Double-tracek distance	Metropolitan 705.4 km	Power car	89 cars	Classification yard	2 stations
	Subway distance 3,216.1 km	Freight car	9,124 cars	Signal station	32 stations
		Crane	12 cars	Signal tower	7 stations
		Total	14,871 cars	Total	688 stations

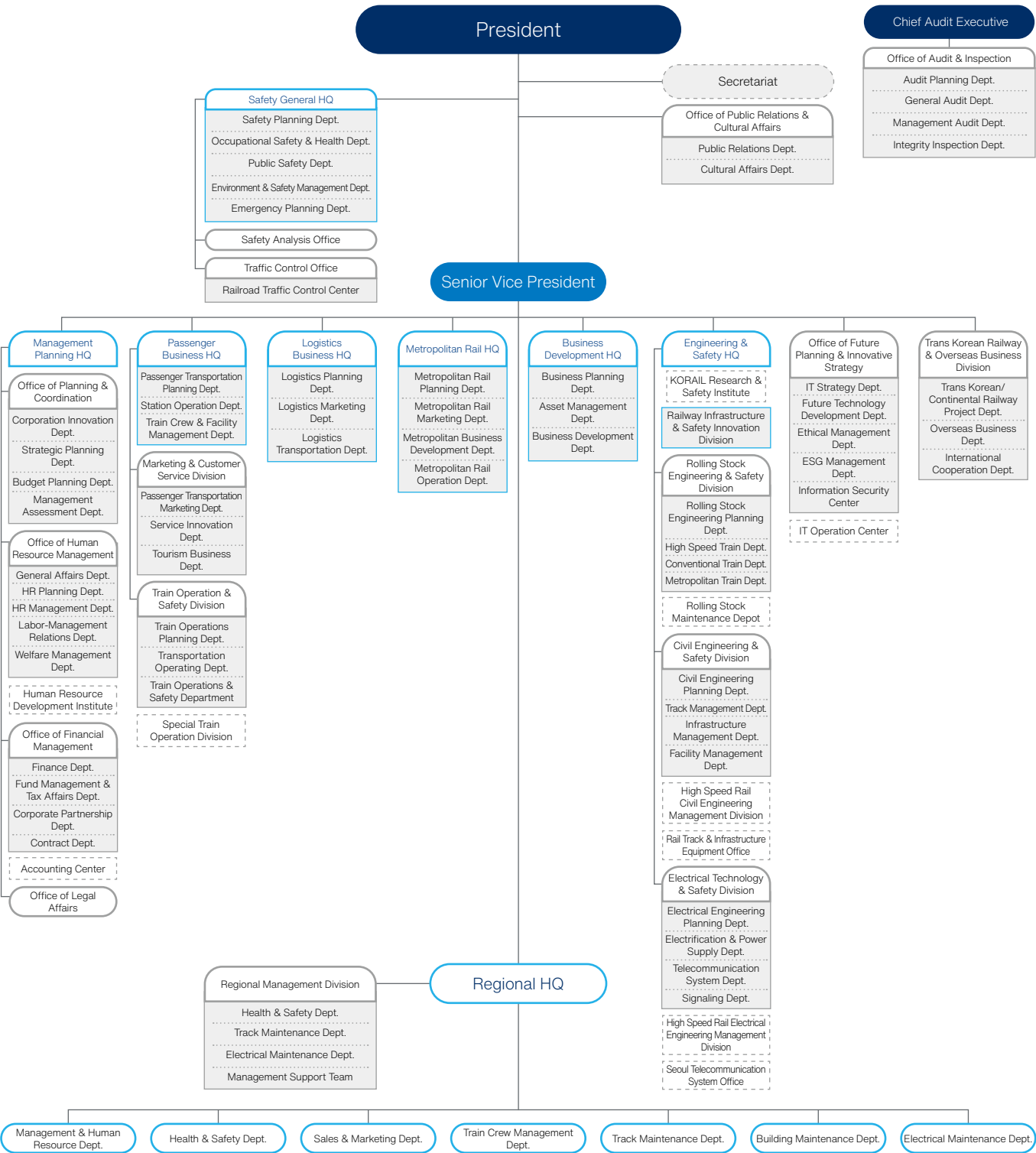
Subsidiaries

Subsidiaries under KORAIL has contributed to the development of railroad industry through the efficient diversification of businesses and the systematic development to be profitable. We will do our best to graft the knowhow of KORAIL with the infrastructure, and strengthen the expertise to provide the sustainable railroad service.

Name of Enterprise	CEO	Business Contents	Employees	Capital (KRW 100 million)	Sales (KRW 100 million)	Share Ratio (%)
KORAIL RETAIL	Kim, Y.T	Operate commercial facilities and advertisement media	507	120	2,620	100.0
KORAIL LOGIS	Yang, W.H	Logistics in connection with railroad	839	77	1,005	97.23
KORAIL TOURISM	Kwon, S.I	Tourism leisure, distribution/crew service	1,403	40	699	60.80
KORAIL NETWORKS	Kim, H.S	Entrust station management & customer center, operate parking lot	1,915.80	72	1,172	98.98
KORAIL TECH	Cho, D.S	Manage tracks & electric system, repair the rail cars	5,395	19	2,623	97.98

Organization Structure

Under the leadership of the CEO, KORAIL has created a healthy organizational culture according to the values of trust and mutual respect for employees of offices, divisions and headquarters across the country. In addition, we have strengthened our internal system based on active communication between jobs, positions, and sectors.



KORAIL Overview

Overseas Branches

1

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 the technology exchange and training & negotiation with SNCF

2

Russia

- To strengthen the cooperation with Russia focusing on the Continental Railroad (Russia)
- To promote the connection of railroads of the ROK, DPRK and Russia and the operation
- To exchange information about RZD and OSJD

3

China

- To survey, collect and analyze the railway operation in China & Northeast Asia
- To establish a network of exchange and cooperation to connect Eurasian Continental Railway
- To promote and market for inbound tourism from China

4

Philippines

- To consult to operate, maintain and repair of Philippines MRT-7
- To propose to develop the project for Southeast Asia
- To hire and manage local employees
- To consult relevant local agencies

5

Tanzania

- To implement the inspection on the construction of the central line of Tanzania
- To advise the operation, maintenance and repair of railroads in Tanzania
- To propose project developments for Africa
- To hire and manage local employees



Domestic Sales Network



Passenger transport

- High speed trains**
KTX, KTX-Sancheon, KTX-Eum
- Conventional trains**
ITX-Maeum, Saemaeul Train, Mugunghwa Train, Nuri Train, Commuting Train

Regional transport

Metropolitan railway
Gyeongbu·Gyeongin·Gyeongwon·Janghang (Line 1), Gyeongui·Joongang, Ansan·Gwacheon, Bundang·Suin, Gyeongchun, Ilsan, Gyeongkang, Donghae, Seohae 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

	High Speed Railway	60 stations	596.3km
	Conventional Railway	204 stations	3,534.9km
	Metropolitan Railway	288 stations	705.4km
	Logistics Railway	76 stations	3,104.5km
	Major Station		
	Logistics Station		

Criteria 2023.02.

History

1894-2004

- 1894.06.28.**(Lunar) Opened the bureau of railroad under Joseon Gongmu-amun
- 1899.09.18.** Opened Gyeong-In Railroad (Noryangjin~Incheon)
(Partial 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 inter-Korean railroad (Gyeongui Line and Donghae Line)
- 2010.03.02.** Initiated the 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 the 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 Railways) as a full member
- 2019.04.08.** Hosted the Conference of General Directors of OSJD Railways
- 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 Central Line (Cheongnyangni~Andong) KTX-Eum
- 2021.12.28.** Opened Donghae Metro Line Phase 2 (Ilkwang~Taehwa River)
- 2021.12.31.** Opened Central Inland 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 Asia-Pacific regional assembly in the International Union of Railways (UIC)

KORAIL Overview

MISSION & VISION

KORAIL has made an effort to connect the world and the heart into one beyond the connection between person and person, people and goods. The most important reason to lay railroads throughout Korea, and operate, maintain and repair them is for 'the life and safety of citizens'. We have put safety as our first priority and invested in the safety-related technologies for our advanced safety management system. We promise to provide leading, reliable railroad service with the transport platform for everyone.

MISSION

KORAIL, Connecting the People, the World and the Future

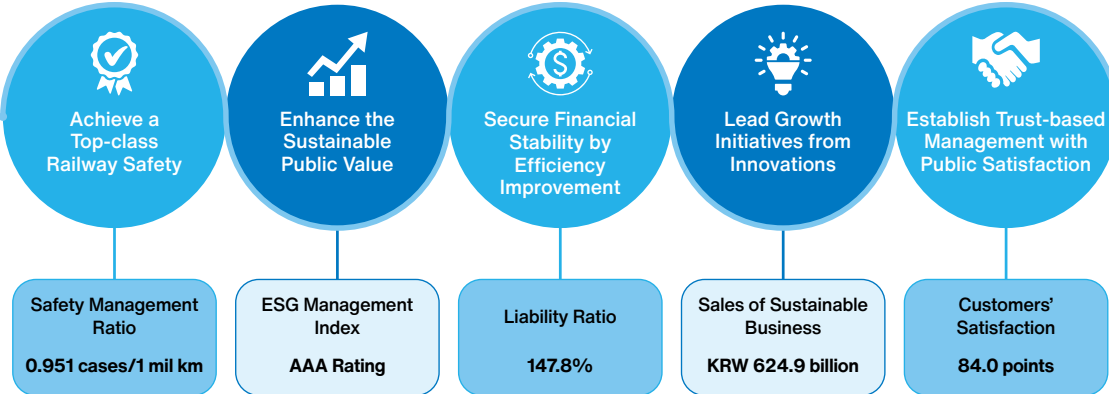
VISION

KORAIL, a Companion for Opening Future Transportation

Core Values

Safety	Innovation	Communication	Trust
Safety of the People Safety First	Continuous Growth Profit Improvement	Open-mindedness Mutual Respect	Public Interest First Customers' Satisfaction

Strategic Goals



Managerial Goals (~2027)

Strategic Tasks

Strengthening the management system of rail safety	Expanding the eco-friendly management	Tightening financial risk management	Building growth engine and TCR/TSR cooperation	Developing user-centered digital service
Preventing serious accidents & Promoting the safety culture	Strengthening mutually beneficial cooperation and public convenience	Maximizing transportation revenue	Leading an integrated transportation system	Extending public PR/communication
Upgrading maintenance system	Reinforcing internal control & Establishing ethical management	Optimizing resource management	Nurturing core and professional human resources	Spreading organizational culture based on trust/respect/fairness

Major Performance Index

- Safety management ratio
 - Sick leave accident ratio
 - Level of railroad technology
- ESG management index
 - Assessment of shared growth
 - General integrity
- Liability ratio
 - Sales increase ratio
 - Proportion of labor cost
- Sales revenue for sustainable business
 - Domestic production of parts for rail cars
 - Foster core talented personnel
- Customers' satisfaction
 - Awareness of brands
 - Index of organizational culture

Accomplishment of Performance Goal

Performance Goal	Performance Index	Unit	'22 Goal	'22 Performance	'27 Goal	Accomplishment (%)
Achieve a Top-Class Railway Safety	Safety Management Ratio	case/1 million km	1.360	1.914	0.951	71.1
	Disaster Management Assessment of Public Corporation	Rating	Excellent	Good	Excellent	80
	Level of Information Security	Pts	76.4	75.56	85.4	98.9
	Sick Leave Accident Ratio	%	0.213	0.245	0.216	87.0
	Reinforcement of Railroad Safety & Investment	%	100	100	100	100
	Railroad Technology Level	Level	3.84	3.76	4.32	97.9
Enhance the Sustainable Public Value	ESG Management Index	Rating	A	A	AAA	100
	Accomplishment of Goal for Energy Management of Greenhouse Gas	%	100	100	100	100
	Reduction of Fine Dust	µg/m³	55.2	30.9	49.9	178.6
	Job Creation for the Citizens	People	25,295	26,832	32,932	106.1
	Assessment of Shared Growth	Rating	Excellent	Good	Best	80
	General Integrity	Rating	1	2	1	80
Secure Financial Stability by Efficiency Improvement	Public Notice of Management	Rating	Excellent	Excellent	Best	100
	Liability Ratio	%	241.3	222.6	147.8	108.4
	Increase in Railroad Transport Service	High Speed	1 thousand	62,451	63,821	102.2
		General	1 thousand	56,494	57,584	101.9
	Enhancement of the Competitiveness of Logistics Business	Region	1 million	1,049	1,016	97.0
		1 thousand t	25,996	23,623	34,250	90.9
Lead Growth Initiatives from Innovations	*Sales Increased Ratio	%	13.0	6.1	3.2	46.9
	*Proportion of Labor Cost to Sales	%	39.7	43.2	33.6	91.9
	Total Asset Return Rate	%	24.0	21.4	35.8	89.2
	Sales for Continuous Growing Business	*Subsidiary	KRW 100 million	3,659	3,662	102
		Overseas	KRW 100 million	90	112	124.4
	Eco-friendly Energy Business	MW	24.4	5.9	39.1	24.2
Establish Trust-Based Management with Public Satisfaction	Development of Domestic Parts for Rail Cars	%	85.7	85.7	90.7	100
	Fostering Ration of Core Talented	%	2.1	2.6	5.0	123.8
	Railroad Service Index	Pts	83.0	79.9	87.0	96.3
	Online Ticket Issue Ratio	%	87.0	88.2	88.4	101.4
	Customers' Satisfaction	Pts	80.4	83.2	87.9	103.5
	Brand Awareness	Pts	5.15	5.15	5.95	100
	Organizational Culture Index	Pts	79.26	80.70	84.98	101.8
	Labor-Management Relation Index	Pts	3.00	3.79	3.25	126.3

* Based on separate financial statements

Major Businesses

KORAIL seeks to efficiently increase profits by transporting passengers and logistics using a network of routes stretching across the nation, and is leading the eco-friendly transport industry.

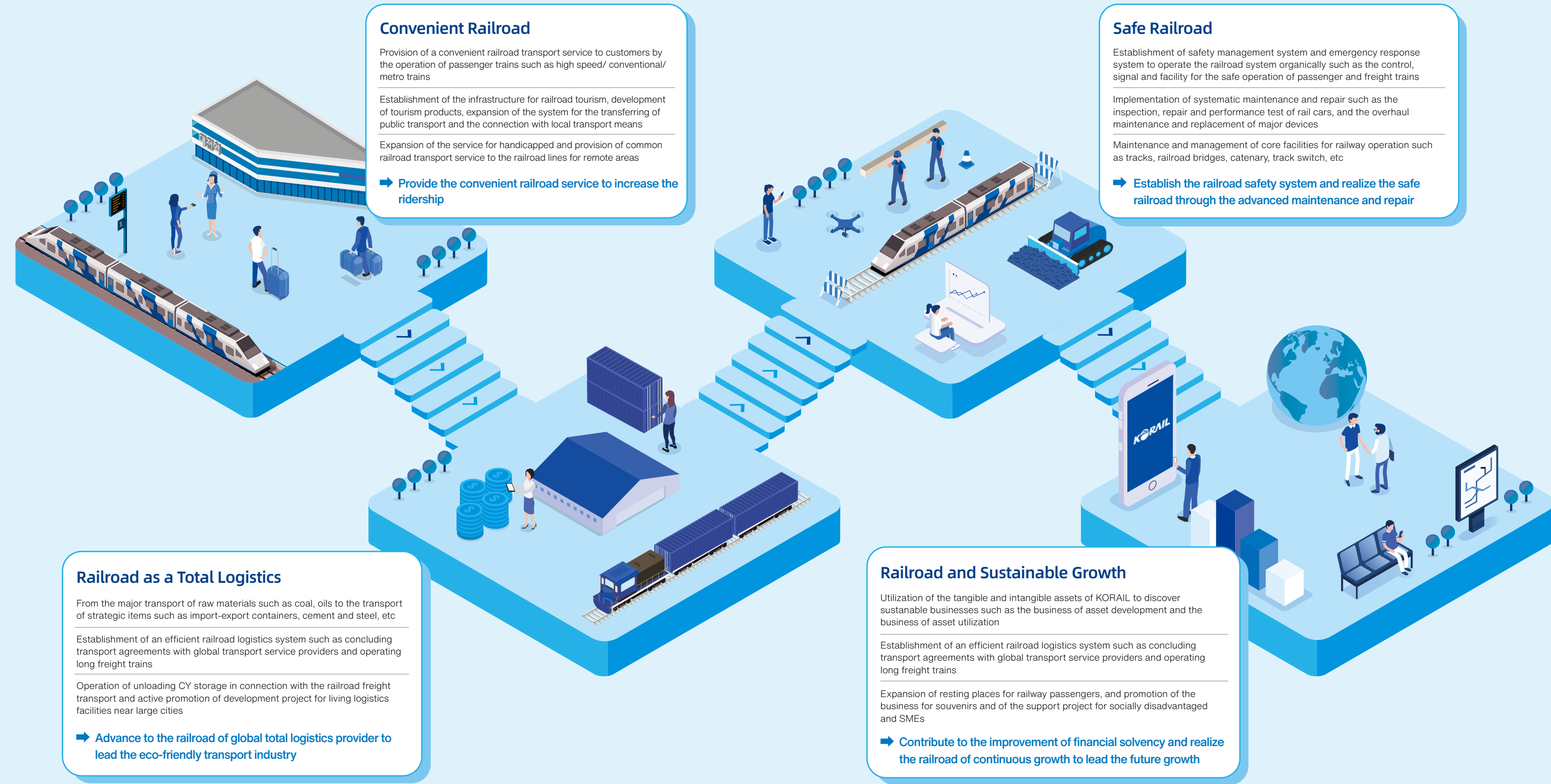
Through sustainable management activities, we will continue to fulfill our social responsibilities as a representative railroad operator of the Republic of Korea.

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KORAIL at a Glance

KORAIL is committed to providing comfortable transport services to the customers, creating customer value, and advancing towards becoming a global integrated logistics solution provider by operating highly efficient and eco-friendly freight trains and expanding its presence in the comprehensive logistics business. Furthermore, we are dedicated to enhancing safety through the utilization of state-of-the-art equipment for railway maintenance systems. We are actively engaged in ongoing asset development projects and pioneering overseas railway markets to lead the future of railroads in the Korea.



Convenient Railroad

High Speed Railroad Business

KORAIL has secured the competitiveness under the rapidly changing transport market through the continuous improvement of high speed railroad service. Based on the new marketing strategies and the expanded accessibility to ticket reservation, we have increased the number of passengers for high speed railroad to the pre-COVID19 level. We have provided safe and reliable customized service for our passengers to experience, thereby realizing the customer-centred growth of the high speed railroad.

Reinforced Marketing in Response to Post COVID-19

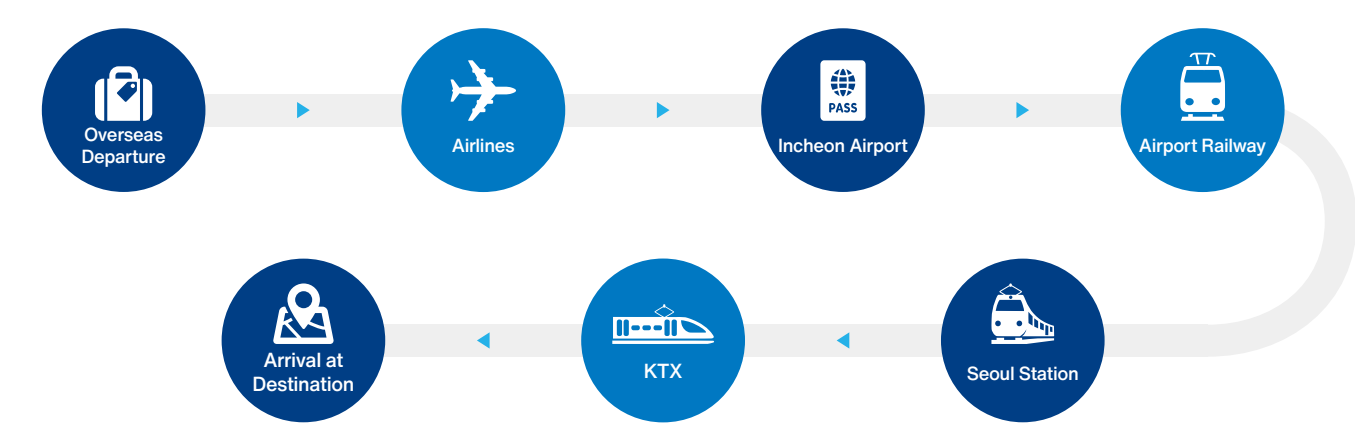
In order for the issue rate of boarding ticket to return to the pre-COVID level, KORAIL has enhanced its marketing strategy to increase the demand of KTX services. To catch up with the recovering trend of the ridership of long distance passengers, we have expanded the number of stops of KTX services and increased the operation of trains, and absorbed the reduced portion of demand for express bus and domestic airlines. In addition, we have expanded the sales of combined standing-seating tickets and introduced the discount product of family seat and the discount product of KTX round trip package. We have procured actual consumers through the efficient operation of seats. In addition, we are increasing KTX demand by implementing a flexible pricing strategy according to train preference, such as lowering fares for short-distance sections in the metropolitan area and providing discounts for non-preferred trains. As a result of these efforts, the number of high-speed rail users increased by 4.9% from 45.77 million to 48.02 million during the same period compared to before social distancing was lifted.

	Strengthened Transport of Railroad	Efficient Operation of Seats	Establishing Flexible Fare Strategy
Strategy	- Increased operation of trains during peak season - New installation and expansion of KTX stations (Seodaegu, Haengsin, Deokso)	- Expansion of combined KTX boarding ticket - Adjustment of payment period for boarding ticket approaching the departure	- Operation of special price product for the seats of low preference - Operation of pass product based on the flexible discount price for demand
Performance	180 thousand people in use of increased train service 820 thousand passengers in use of Seodaegu-Haengsin-Deokso Stations KTX	64.3% increase of passengers with combined boarding ticket to the year 2019 40.7% decrease of cases for automatic cancellation after the departure	194 thousand passengers in use of special price product in 2022 25.7% increase of profit from pass product to that in 2021 (KRW 15.7 billion)

Increasing Accessibility to Ticket Reservation

KORAIL has diversified the platform for ticket reservation and enhanced the convenience of passengers, and prepared the basis for the increased demand for railroad. Especially, through the "Rail & Air" service, the combined purchase service of airline and railroad, we have guided the optimum route from the point of departure to the destination and relieved the effort of purchasing boarding ticket and airline ticket separately. We have put an effort for customers to enjoy more convenient journey. Currently, it operates in conjunction with 12 airlines, including Asiana Airlines, Singapore Airlines, and Qatar Airways, and 8 KTX stations, including Busan, Dongdaegu, Pohang, and Mokpo, and plans to strengthen the integrated reservation system by expanding the number of partnering companies and stations in the future. KORAIL has also introduced the function to reserve the railroad boarding ticket on the screen of the private platforms when searching travel destination and expanded the accessibility of reservation. The representative case is the One-click Reservation Service through the Kakao T Business and the navigation service on Naver Map. In case of the service connected with Naver Map, we have contributed to the issue rate of boarding ticket through the increased convenience of contactless reservation but also the promotion effect of KORAIL in the portal main banner. On such search result of private platform path, through the strategy to display the reservation button and induce potential customers to railroad, we have accomplished the performance of 2.7%p increase in the self-issue rate in 2022 to that of previous year.

'One-ticket Integrated Purchase Service for Aviation-airport Railway-KTX' Transfer



Provision of Customized Service

In order to provide the customer-centred railroad service, KORAIL has utilized the digital, contactless technology to simplify the reservation procedure and establish the comprehensive response system to manage the crowd of people. We have expanded the target for KORAIL-Talk Help Chat and increased the cases of use by 25 times to that before the improvement. We have implemented the online reservation for customers on their military service and increased the monthly average number of users of military service discount by 11 times. In addition, through the methods of adjusting the departure and arrival of trains and the additional assignment of station employees for customer guidance, we have systematically responded to the management of the stream of people in the train station. Besides, we have expanded the means of convenient use and simple payment with low fee. We have done our best to provide the customized service by implementing 114 One-stop Service for the people vulnerable to IT.

Comfortable and Safe Travel by Train

For all passengers in use of high speed train to enjoy pleasant and safe travel, KORAIL has made a great effort to improve the facilities including the sanitation onboard. We have increased the section to clean in the trains during the operation and improved the sanitation. We have improved the information service to check various convenient facilities in the train on the ticket shown on KORAIL-Talk and promoted the convenience of users. Moreover, we have been operating the one-stop crime report service for immediate response in the situation room of railroad police at the occurrence of crimes, and this service is selected as the best 'KORAIL Service'. In addition, we have operated the suitcase delivery service to major tourist sites during the holiday season and reduced the burden of tourists to move with heavy suitcases. In 2022, a total of 21,538 luggage delivery services were provided, and 97.1% of users responded that they were satisfied.

'Luggage-free' Travel by Train

Ask for the delivery service of suitcase after getting off the train  - Implemented at major tourist site during vacation - Make a reservation at website of business or deliver the suitcase at station concourse and receive the onsite application of storage	Move to tourist site easily  Remove the burden to stop by the accommodation and leave carriers	Complete the delivery of suitcases at the accommodation  - If necessary, provide the service to store carriers - After the complete delivery of carriers, send photos to customer's mobile phone
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Sharing of Real-time Situation of Trains & Improvement of On-time Service

KORAIL has improved the IT system and strengthened the emergency operation system to minimize the inconvenience of customers at the occurrence of train delays. Through various media such as KORAIL Talk, station information board, and on-site passenger guidance, we have delivered the information of the delay and changed operation plan to customers to reduce the confusion. We have done our best to provide the change of boarding ticket and the choice of alternative transport and to make proper compensation for exceptional situation. Moreover, we have analyzed major causes of delay to strengthen the execution and emergency response ability for corresponding causes, thereby preventing the frequent delay and successive delay of trains.

KORAIL Talk		Station Information Board		On-site Passenger	
Before Improvement	After Improvement	Before Improvement	After Improvement	Before Improvement	After Improvement
Absence of the system to connect the information of ticket reservation and train operation, and the information of guide system	Provision of delay push automatic notification and the guide of arrival time in schedule by train	Public notice of 'Any' delay	Display of delayed time (minutes) of train	Difficult to share the information fast due to manual computation of delayed time for detour operation	Provision of the GPS-based real-time information about the operation and location of a train to employees

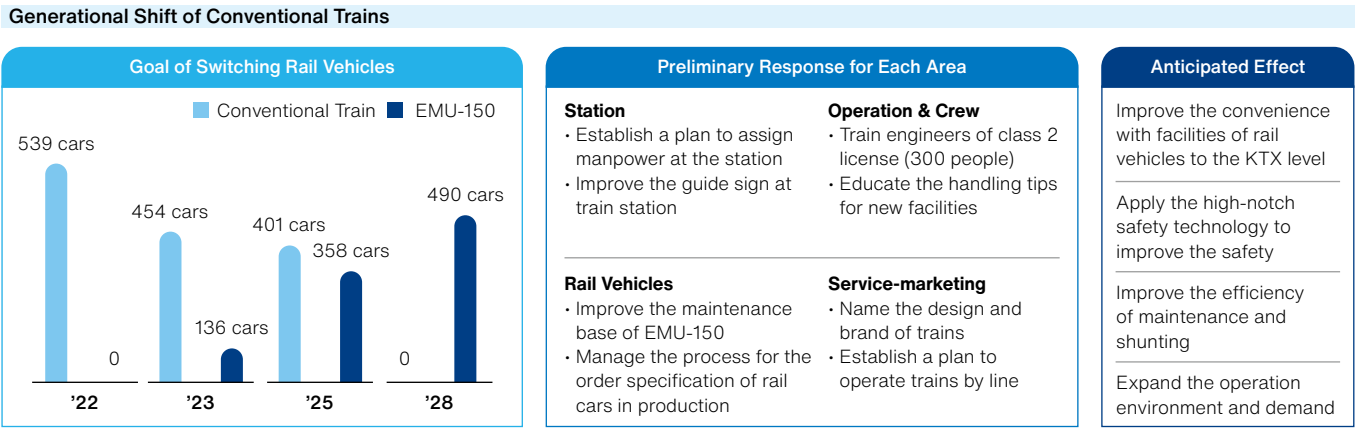
Convenient Railroad

Conventional Railroad Business

KORAIL has replaced aged conventional rolling stocks to new trains to raise the safety, efficiency and convenience. We have expanded the integrated transport service and passionately participated in the local revitalization projects through shared-growth railroad tourism in connection with government and local governments. Through such provision of the service to improve overall infrastructure and to meet the needs of customers, we have not only promoted the convenience of passengers but also improved the efficiency of train operation.

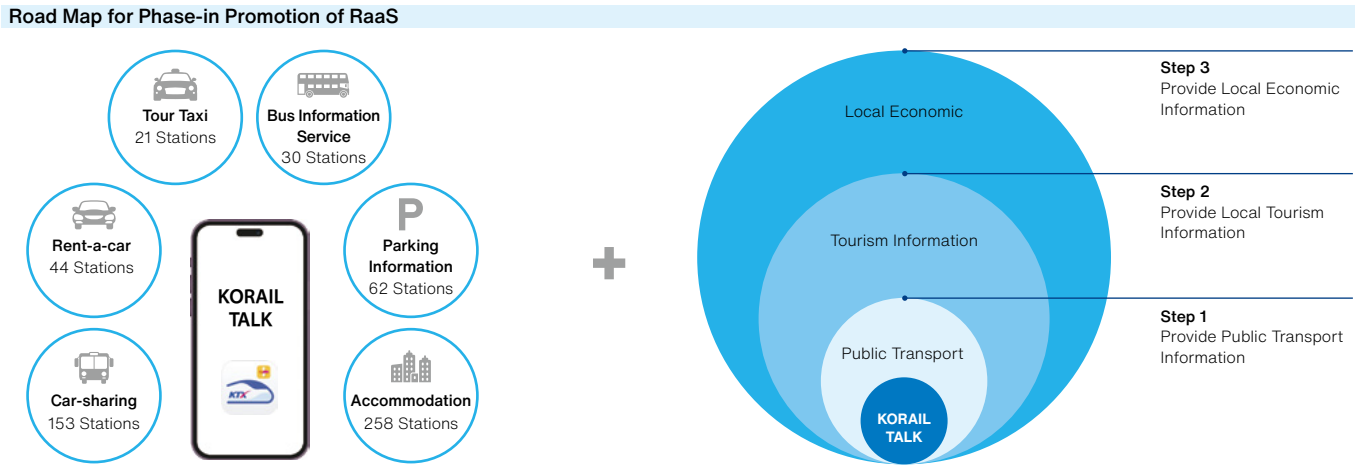
Accomplishment of Future Railroad Operation

KORAIL has set up the business strategy of active response to continuous change of operation environment such as aged trains in conventional railroad and decreased local population. We have selected ITX-Maum (EMU-150) as the replacement rail cars which supplemented the disadvantage of existing conventional trains and combined the advantages of recently introduced trains. In addition, we have made an effort to provide stable railway operation during the replacement of rolling stocks by conducting thorough maintenance of existing trains and pilot operation of novel rolling stocks. Also, in line with the conversion of new vehicles, we are training new drivers and providing training for handling new facilities. We are working to prevent customer complaints caused by rolling stock replacements by improving station information signages and re-establishing train operation plans for each route. We expect that the introduction of the EMU-150 will have a positive impact on improving customer convenience, strengthening work efficiency, and expanding demand for conventional railways.



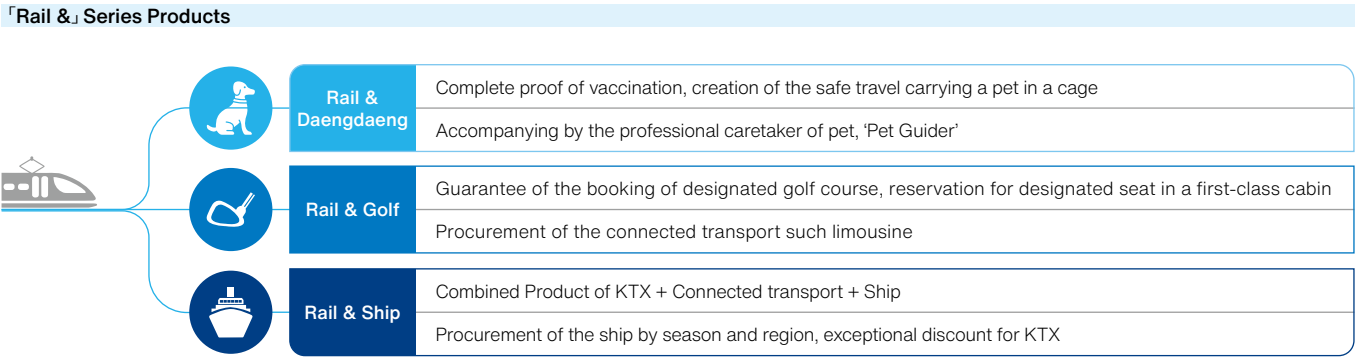
Provision of KORAIL Type Integrated Transport Service

KORAIL has provided the integrated travel service for the reservation of other transport means such as bus, taxi, and car sharing and accommodation through the KORAIL-type integrated transport service, RaaS (Rail as a Service). We have established the system to inquire all optional services and make a reservation in KORAIL Talk free from the previous cumbersome procedure, which required individual reservation for means for connection, and largely increased the convenience of passengers. Through KORAIL Talk, we have provided the transfer information of public transport in real time and expanded the integrated service continuously which enables one-stop reservation and payment for taxi and rent-a-car.



Activation of Railroad Tourism Business

In order to respond to the increased demand of domestic tourism according to the lifting of social distancing, KORAIL has released the local tourism packages in collaboration with the central and local governments. Also, we have put an effort to develop the products which reflect the trend of new normal. We carried out projects linked to 'Travel Month 2022' and 'Traditional Market Month 2022', and took the lead in overcoming the crisis of local tourism stagnation by planning promotions such as discounts on railway fares and provision of vouchers of products of our partners. In addition, to enhance the image of railroad tourism and create the profit generated from the linked service, we have decorated a simplified station to a theme station which matches with local tourism resources and changed it to tourist's attraction. And the product 'Rail&' series which reflects the preference of Generation Z, contributed to the increased demand of railway tourism. By combining themes that meet customer needs with rail tourism, such as "Rail&Daengdaeng", which has followed the trend of travel with pets, "Rail&Golf", which has kept pace with the rapidly increasing demand for golf, and "Rail&Ship", which combines KTX and ships, it has created 21,169 users. Through such efforts, the number of railway tourists attracted exceeded 2.58 million in 2022, which is a 2.2-fold increase compared to the previous year. As a result, KORAIL won the grand prize at the traditional market excellent win-win activity contest.

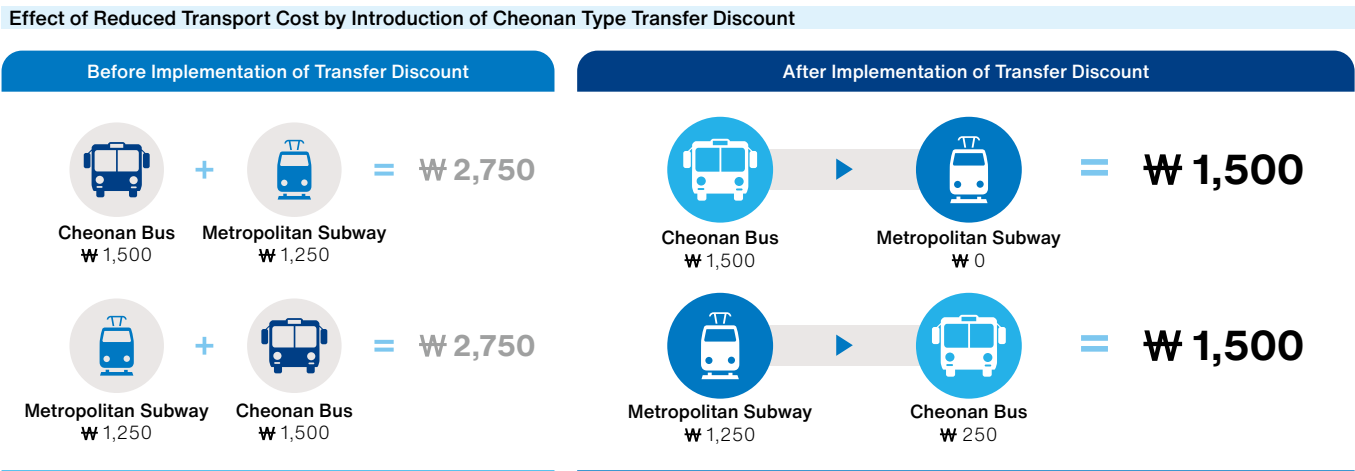


Metropolitan Railroad Business

KORAIL has built the basis to establish the linked transfer system between capital and local public transports and expand the corresponding business to more regions. Moreover, we have put an effort to strengthen the safety management system to the danger in crowded stations and to create an environment for laborers to work safely. We have enhanced the satisfaction of users of metropolitan railroad through the improvement of facilities that meet the needs of customers.

Development of Transfer Discount Model for Public Transport of Cheonan Bus to Seoul Metropolitan Region

KORAIL has arbitrated the problem of transfer discount which caused a long conflict between the City fo Cheonan and the municipal government of the Seoul Metropolitan area and developed 'Cheonan Transfer Discount Model' to relieve the burden of transport cost of residents of Cheonan. By developing a transfer discount model that does not affect fare revenue for KORAIL and transport service providers in the Seoul metropolitan area, we have contributed to the improvement of transportation convenience in the local region. Through this model, the basic fare for the metropolitan subway has been discounted, resulting in an annual benefit of KRW 1.7 billion for over 1.36 million people. We expect the successful settled case of transfer discount by Cheonan City to be expanded to other local governments.



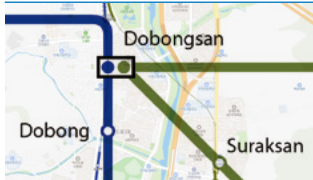
Convenient Railroad

Relieve of Congestion and Expansion of Guide Service

While passengers are more aware and concerned about safety for the crowdedness of large-scale number of people, KORAIL has assigned exclusive manpower for the safety at the congested section inside the station including the transfer station. We have done our best to secure the safety of customers by adding the express train stations by the demand of passengers or increasing the operation trains. When large-scale number of people is concentrated during local festivals, through the adjustment of non-stop passing and train operation, we relieve the congestion. In order to respond immediately when any accident takes place, we have completed the consultation with Seoul Metropolitan Police to share the real-time information of train operation and the pilot operation will be conducted within this year. KORAIL has also promoted the establishment of an AI-based intelligent CCTV and an AR-based customer guide system to introduce the smart station on schedule. Based on this, we will provide the safe and reliable metropolitan railroad service.

Promotion to Enhance Customer’s Convenience by Facility Improvement

KORAIL improves the previous subway line map which displayed the transfer station in other location different from actual topography without sufficient information of transfer sections. Now, we have added colors to the lines available for transferring like a traffic light and expressed the location of transfer stations based on actual topography to improve the convenience of customers. Improved line map has been installed at 264 metro stations of the Seoul metropolitan area and in 2,600 metro cars. The corresponding project has been selected as the excellent case for ‘Metro Line Design’ and ‘Improved Cabin Guide Display’ of Best KORAIL Service 2022. Moreover, to alleviate the inconvenience experienced by ITX-Cheongchun passengers who share the same platform gates with metro railway passengers and find it challenging to locate the QR reader, we have developed a proposal to install additional QR readers in easily accessible locations. We have strengthened the visibility of guide signs and adjusted the location and size of boarding ticket tag to promote the convenience of elderly people.

Contents of Facility Improvement in Metropolitan Railroad			
Adjustment of ITX-Cheongchun Boarding Ticket Tag  Additional installation of tag sensors at the top of the exiting one and doubled in size	Improvement of Text Arrangement of Station Name and Expression of Transfer Information  Express transfer station with the type of signal (Same color as transfer line)	Improvement of Directivity of Subway Lines  Maintain the gab between subway lines Enable a person of color anomaly to perceive the direction	Consideration of Actual Topography to Express Location  Apply actual topography at maximum (Minimize distortion)

Promotion to Expand Cooperative Project of Local Governments

KORAIL participated in the support project of youth transport cost subsidy project in Suwon and Siheung solely as the public corporation. We have provided the benefit of transport usage discount to 156 thousand young people at corresponding areas and promoted the use of public transport. In addition, we have cooperated with local governments to enhance the aged and negative image of metro line 1 and operated the cooperative platform of culture and railroad. We have procured the exhibition space inside the station and proceeded with the PR based on the emotional broadcasting. We have contributed to the revitalization of various areas at Suwon, Bupyeong, Bucheon and Yeongdeungpo based on the corresponding project which vitalizes the outdated metro subway line 1. We have accomplished the increasing number of 760 thousand visitors.

 (KORAIL) Produced Rail Plus transport Card 	 (Local Government) Selected Beneficiaries, Paid transport Cards Suwon City Support fund paid for career seekers (KRW 300 thousand for each person) Siheung City Youths (Maximum support of KRW 30 thousand per month, KRW 360 thousand per year)	 (Local Government) Computed Support Fund Siheung City Settle the amount of transport cost by users, compute the support fund	 (KORAIL) Fare Adjustment KORAIL Compute the amount of using transport card KORAIL Recharge the payback in transport card of beneficiaries in Siheung City
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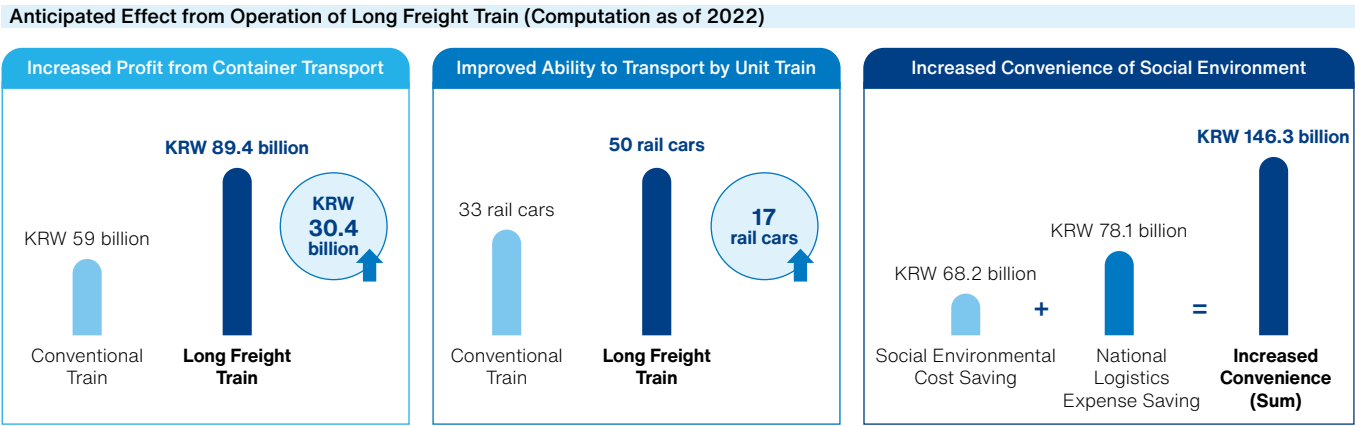
Railroad as a Total Logistics

Freight Transport Business

KORAIL has pursued the improved profit of transport business and enhanced convenience of social environment through the innovation of transport system. We have prepared the cornerstone for the development of successful and sustainable railroad logistics in the operation of business test for the long freight train and contributed to the policy of eco-friendly carbon neutral. In addition, we have come forward to respond to emergency transport at exceptional situation and minimize the national economic damage. We have also lead ahead of public benefit of railroad logistics by creating the environment of safety first of field laborers.

Successful Pilot Operation of Long Freight Train

KORAIL has promoted the operation of a long freight train composed of 50 rolling stocks to resolve the deficit structure of railroad logistics business and create new profit model. We have earlier completed two times of pilot test for the long freight train and succeeded in the pilot operation with the same method as the actual business operation from Obong Station to Busan New Port Station for the first time in Korea on July 2022. Following the completion of facility improvements and additional trial runs for the long freight trains, we will commence commercial round-trip operations. When the long freight train will be introduced in full scale, it is expected not only to increase the efficiency of mass transport of railroad but also to cause positive effect on carbon neutral.



Procurement of Competitiveness for Future Railroad

KORAIL has concluded MOU with Korea Maersk for the activation of railroad logistics and committed to the expansion of freight transport through railroads and the establishment of the sea and land complex transport system in preparation for the international railroad. We have composed the consortium with LX Pantos and promoted the reinforcement of connected transport service and the conversion to railroad transport from road transport. In addition, we have resolved the previous irrational practice through the conversion to the actual distance fare system and the improvement of fare for container heavy cargo and adjusted the fare flexibly to increase the annual profit of KRW 22.1 billion.

	Conversion to Actual Distance Fare System	Improvement of Fare for Container Heavy Cargo	Flexible Adjustment of Fare
Promotion Background	For the previous computation of fare, the shortest route of freight business has been applied, but the actual transport route is detoured to increase the transport distance by the environment of tracks	Available to load two cargoes of less than 25 tons of weight in 50-ton freight car but in excess of 25 tons, decline the efficiency of transport as it is available to load only one cargo	Customized marketing policy which reflects the change in the market competitiveness of railroad transport and increased demand of the improvement of fare system which reflects the features per item of railroad cargo
Improvement Direction	Check overseas cases in application of extra charge by the increased transport distance and review the relevant standard with client companies	Adjust and reflect 'Road Safety Fare System' which applies 10% extra charge in excess of 1 tons to fit proper railroad transport	Container Reflect to optimize the market fare such as the road safety fare General cargo Reflect the transport cost and demand
Improvement Result	Change to apply the standard of actual transport distance at the computation of fare	Implement the application of 40 feet fare to 20 feet young container which exceeds 25 tons per container	Container: + 11.2% per ton General cargo: Average fare + 4.9%
Increased Annual Profit of KRW 22.1 Billion			

Railroad as a Total Logistics

Enhanced Public Benefit of Railroad Logistics & Strengthened Safety of Transport

In order to solve the problem of the group refusal of transport by the cargo workers' union which occurred two times in 2022, KORAIL composed the emergency transport countermeasure HQ with the Ministry of Land, Infrastructure and Transport and transport businesses to support the emergency transport of 27,000 tons and lead the way to enhance the public benefit of railroad logistics. In addition, we have put an effort to supplement the facilities and to internalize the awareness of safety practice to prevent the critical industrial accidents and to secure the safety of field workers.

Strengthen Safety Countermeasure to Secure the Safety of Workers		
	Prevention of Human Error	Strengthen to keep the basics: Field education in progress and strengthened management and supervision of a manager Secure the sufficient manpower: Based on the agreement of labor-management, complete the pilot operation of shunting according to the change of work pattern
	Facility Improvement	Supplement the pedestrian passage: Relocate the fence near the tracks, install additional palm mat for pedestrian passage Add & supplement safety facility: Additionally install alarm for approaching train, crossing gate on the track, and lightings
	Development & Introduction of Innovative Technology	Automatic shunting system: Promote national R&D which converts manpower centered shunting to automatic shunting system Traveling freight car weighbridge: Install the weighbridge at major stations to measure the freight car successively under the driving condition to prevent overload and uneven load

Total Logistics Business

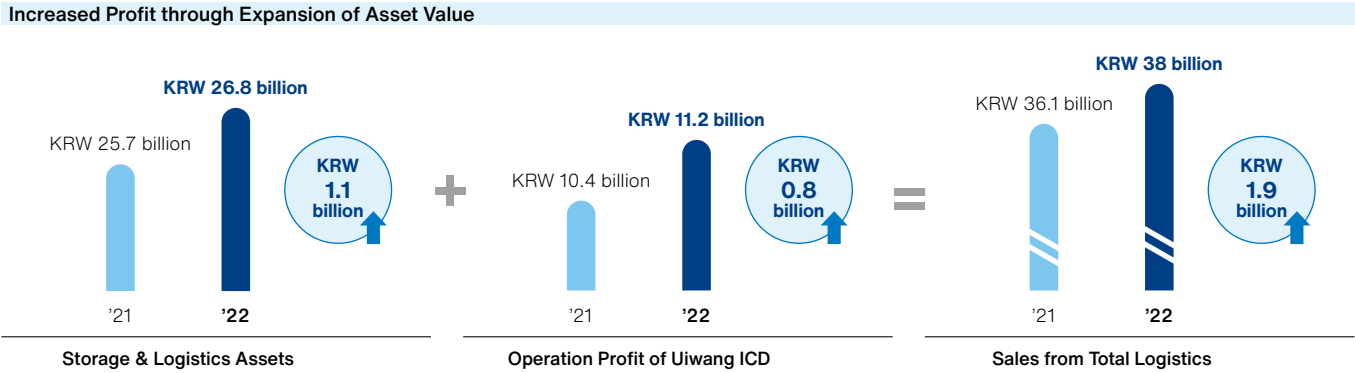
KORAIL has responded to the change of the trend in logistic industry by the development of logistics facilities and the expansion of business areas through private cooperation. By the year 2030, it is scheduled to settle Uiwang ICD operation method stably and create additional profit. In addition to previous transport business, we have a dream to diversify the business areas such as unloading, storage and forwarding, etc and to advance to the global enterprise of general logistics.

Enhancement of Efficient Operation of Uiwang ICD

Due to the impending expiration of the lease for Uiwang ICD located in the metropolitan region, which will be operated by KORAIL, we have worked on restructuring and repositioning the operation of the ICD. We have developed efficient operating strategies by expanding a TF with experts in various fields and incorporating feedback from customers to formulate an operational plan. Furthermore, we have considered the comprehensive changes in domestic and international environments, including future cargo volume and national logistics strategies, and evaluated options for the integrated operation of the container handling facilities, which are currently operated separately in two terminals, and the possibility of initiating new rail logistics-related projects in the remaining land parcels.

Maximized Added Value of Logistics Assets Based on Cooperation with Privates

KORAIL has developed new logistics facilities on idle land, transitioning from a simple leasing model to a public-private partnership model for warehouse operations. We have also expanded the scope of our business. In addition, we have aimed to enhance the value-added services of the warehouse business by diversifying the types of items stored, including fresh logistics. We have planned to introduce services linked with courier and e-commerce platforms, strengthening Door-to-door services to increase revenue from comprehensive household logistics.



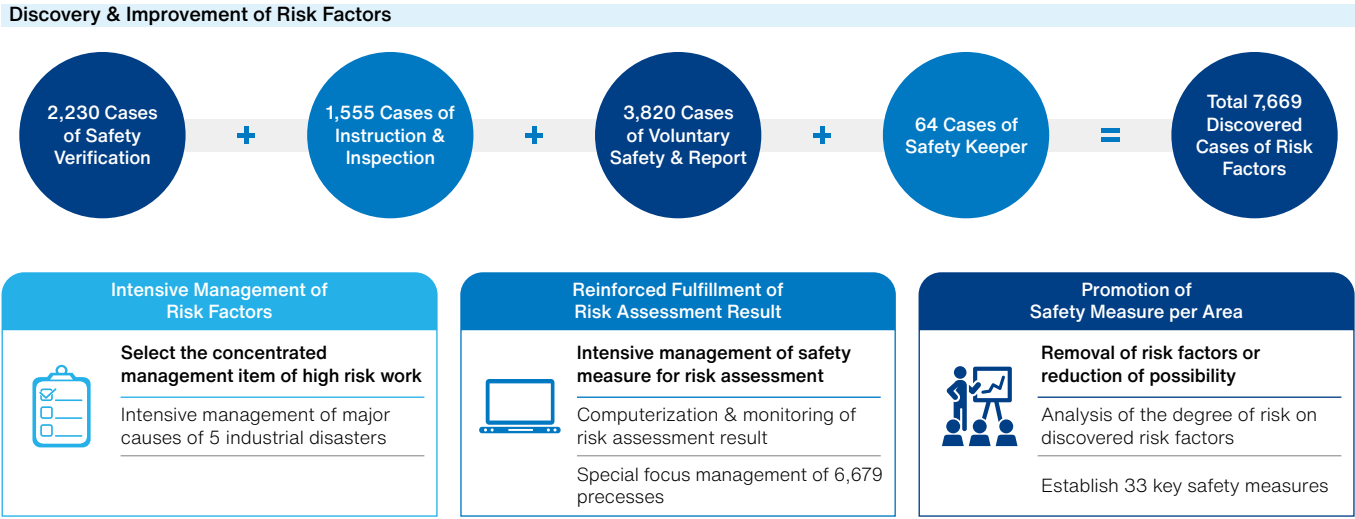
Safe Railroad

Safety Management

KORAIL has implemented the prevention-centered safety management through the continuous verification of safety and the advanced establishment of infrastructure for the safe operation of railroad. In order to realize the railroad which citizens can use safely, we have devoted all our energy to reduce the railroad accident and interruption and promoted the procurement of the highest level safety.

Diversified Verification of Safety of Railroad Operation

As the voice was raised to be concerned of aged railroad facilities and big accident, KORAIL had discovered and improved risk factors from different perspectives to quiet the anxiety of citizens and block accidents fundamentally. It has been possible to analyze the risk factors in real time at the main office and each local HQ by establishing the electronic management system for the verification of safety. We have discovered and improved 2,230 cases of risk factors through total 882 times of verification.



Preventive Management of Delayed Operation to Disaster

In the middle of increasing worldwide phenomenon of abnormal climate, KORAIL has established the railroad safety countermeasure for each season and expanded the safety facilities in application of new technology, and prepared for the rapidly changing environmental conditions. We have coated the thermal barrier paint to drop the temperature of rails to prevent rails from bending under the heat wave and additionally installed automatic water sprinkling system. We have developed the rapid hardening complex mat to prevent the loss of the surface of slope on the tracks by localized heavy rain for prevention and emergency restoration. We have installed the automatic sprinkling system of hot air and snow accumulation prevention solution during the winter season to prevent the accidents from cold wave and heavy snow. From such effort, delayed operation was decreased by 16.7% to the previous year from 12 cases to 10 cases even under record-breaking heavy rain and heat wave in 2022. The operation interruption was also decreased by 20.5% to the previous year from 78 cases to 62 cases. We will continue to make sustained investments in order to rigorously prepare for climate change, minimize damage from natural disasters, and enhance public trust in railway safety.



Thawing System



Snow Accumulation Prevention System

Safe Railroad

Rolling Stock Maintenance & Repair

We have done our best to maintain and manage rail vehicles safely from the design to production and operation. Through the activity to prevent the failure for each life cycle of rolling stocks, we have minimized the failure of rail cars. We have introduced the real-time remote inspection system for the inspection on defect during the operation. In addition, we have taken the lead to provide rail cars that give trust and satisfaction to customers such as the creation of safe cabin environment with the early installation of CCTVs inside passenger compartments.

Activity to Prevent Periodic Failure of Rolling Stocks

Given the characteristic of rolling stocks that are expected to operate safely for up to 30 years once manufactured, a significant amount of effort is required from the design stage to introduce high-quality vehicles. KORAIL has received the design verification from the professional department in the corporation to minimized the fault of rail vehicles. The manufacturing process has been managed by the professional agency designated by the Ministry of Land, Infrastructure and Transport. When any problem is found during the manufacturing, we will take action immediately and compose the joint task force with the manufacturer to prepare the resolution. In addition, even after the complete manufacturing of rail vehicles, we prevented the failure from long time use of parts by utilizing the cases of failure and the analysis technique of reliability to set up the proper replacement cycle of parts and to reflect the knowhow of maintenance of rail cars on the manual for maintenance and repair. As a result, the number of vehicle breakdowns in 2022 was decreased by 6 cases to the previous year. The number of vehicle manufacturing defects also decreased from 21 cases, the average of the past 3 years, to 19 cases, a decrease of 9.5%.

Establishment of Real Time Remote Inspection System

With the introduction of high-quality railway vehicles, the maintenance intervals have been extended. However, this has raised the need for additional inspections of the upper pressure devices. Nevertheless, as the vehicle bases are distributed throughout the country, it was challenging to efficiently address situations where anomalies occurred in the existing method where workers manually inspected the upper devices. To address this, KORAIL has installed 60 CCTVs at arrival line to and departure line from the base to establish the real-time inspection system based on the remote control system. We have utilized the corresponding system to proceed actively with the precise inspection on abnormal rail vehicles and the replacement of the vehicles. We have taken action against danger sign in advance to strengthen the safety of railroad operation. In addition, through the thermal image filming, we have prepared the system to inspect in real time the defect of traveling unit including the axles of rail vehicles. Currently, we have installed the thermal image filming in operation at Shindorim Station to send automatic alarm to the employees in charge of control when the temperature of device at the bottom of train exceeds 80℃. It is scheduled to expand and apply the said business to high speed train and general train after the confirmation of installation dimension.

Creation of Safe Environment for Passenger Room

To protect the cabin safety from crime, KORAIL has installed CCTV in all 3 types of high speed trains, 6 types of conventional trains and 2 types of metropolitan subways. Through the simplified installation method for each train and the product show, we have optimized the process. By the end of 2022, we have installed 3,230 CCTVs and completed the establishment one year and 6 months earlier than the time of the legalization of CCTV installation inside the cabins. Moreover, we have assigned exclusive manpower at major stations to strengthen the disinfection for rail cars. We have implemented the special cleaning through external professional business company to devote to disinfection and sanitation and enhance the safety and satisfaction of customers.



CCTV Installed in Cabin of KTX



CCTV Installed in Metropolitan Subway

Facility Maintenance & Management Business

KORAIL has devoted to utilize the high-notch technology to manage facilities of danger sign preemptively and remove the risk factors for customers to use the railroad facilities safely. We have also introduced the smart inspection equipment to raise the efficiency of inspection and create the environment for workers to inspect safely on the facilities.

Establishment of Infrastructure to Improve Risk Factors for Accident

KORAIL has installed the intelligent video protection system at the boarding platform of a train which strengthened the recognition ability of object and improved the risk factors. We have expanded to install the emergency call device at 64 major stations such as boarding platforms and toilets and established the real-time communication system between customers and the station office. Also, we have established the alarm system at the screen door to close the safety door and take action to sound the alarm at the interruption of getting on and off to prevent the safety accident including jamming. Besides, we have prepared the one-stop guide system to deliver the comprehensive guidance to customers from the control room. We have improved the navigation system (GKОВI) to notify exact location of emergency stop at the unusual situation during train operation. We have advanced the real-time communication system between crews.

Introduction of High-notch Technology Based Maintenance & Management System

KORAIL has ensured the maintenance and management of facilities such as tracks, subway lines, stations and crossing. We have converted the inspection method to the automatic measurement utilizing commercial trains from the previous inspection mainly on the manpower which was only possible to inspect at night time besides business hours. Regular inspection has been available on 20 kinds of core facilities during the train operation. We have utilized the IoT-based remote monitoring diagnosis system for the facilities of danger sign for real-time monitoring and preemptive response. Moreover, we have comprehensively managed the data of measurement and diagnosis with the integrated monitoring system for each dispersed area with low utilization and promptly responded to the occurrence of interruption. Likewise, from the result of introducing such maintenance and management system utilizing the high-notch technology, we have accomplished the performance of 46.4% reduction of facility interruption ratio, decreasing from 0.097% in 2021 to 0.052% in 2022.

Procured Safety of Workers through Development of Smart Facility Inspection System

KORAIL has utilized the smart technology to improve the inspection process and expanded the introduction of alternative equipment to manpower. The representative case is the smart glasses which enable the facility inspection and filming to the automatic registration of data and the storage of report with one high-notch eyeglass type equipment. The smart glasses utilize the voice recognition technology to maximize the inspection effect and free both hands of a worker to prevent themselves from falling. In addition, when a worker is affected by external impact or he detects the tilt on the high land, such function of a sensor inside the device sends alarm to designated computer. Currently, smart glasses are being used at the Seoul Regional HQ, Daejeon-Chungcheong Regional HQ, Daegu-Gyeongbuk Regional HQ, and Chungbuk Regional Management Division's Facility Maintenance Department. And the introduction of this device is scheduled to be expanded to other regional HQs in the future. Besides, KORAIL has increased both the safety of a worker and the efficiency of inspection on facilities through various systems such as application for train approaching alarm mounted with the function to sound the danger warning with luminescence for the approaching train and the drone-based automated inspection system.



Inspection of Rail by Drones



Wearing Safety Helmets Attaching Smart Glass



Voice Recognition Based Smart Glass for Inspection on Railroad Facilities

Railroad and Sustainable Growth

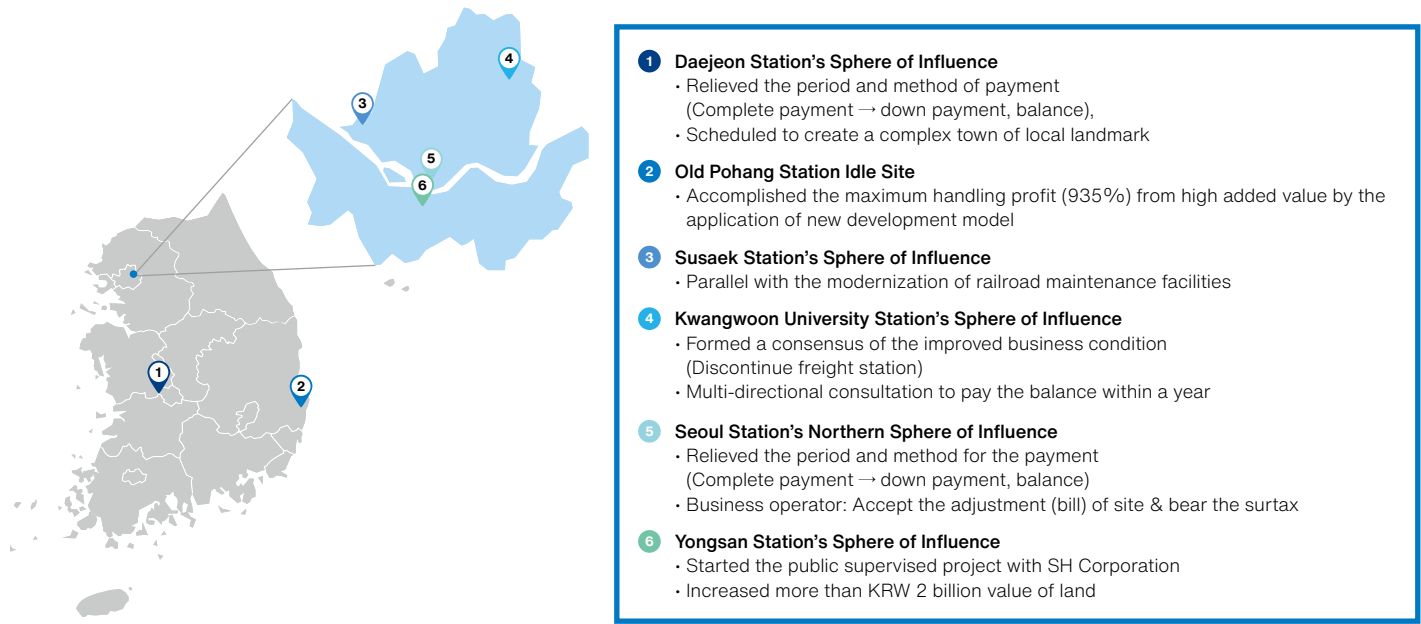
Asset Development and Utilization Project

KORAIL has founded a new development project model for the district near the station to minimize the business risk. We have promoted both the fulfillment of governmental policy and the maximization of development profit through the optimization of resource management and contributed to the improvement of financial solvency. Moreover, we have diversified the method to manage multiple businesses the toward the direction to utilize unused land and intangible asset to prepare the basis for additional profit and to strengthen the convenience of citizens.

Risk Management of TOD(Transit-Oriented Development) and Procurement of Continuity

KORAIL has established new vision and development strategy to improve the TOD and minimize the risk. We have changed the urban plan toward the direction to collaborate with local government and maximize the increase of asset value. We have directly established a development guideline to use the floor area ratio at maximum. In addition, we have taken the lead to bear a burden of process cost for work facilities inside the development project site and to relieve the uncertainty of project and create high added value through the unification of land.

Effort to Procure Continuity of TOD



Diversification of Profit Creation by Pioneering New Project

KORAIL created an open complex lounge including commercial facilities for the previous closed type rest area which had been operated by the membership through the development project of KORAIL lounge and procured new profit resource. The lounge has been opened at Osong Station, Yongsan Station, Dongdaegu Station, which contributes largely to the enhancement of the image of station along with the expansion of infrastructure for customers' convenience. Besides, we have created the additional profit through the rental business of a recharging station for electric rail cars and the rental business of a conference room inside the station utilizing the previous site of railroad parking lot. We have proceeded with the project of railroad goods in collaboration with the famous character brands.



KORAIL Lounge in Osong Station



Goods of KORAIL



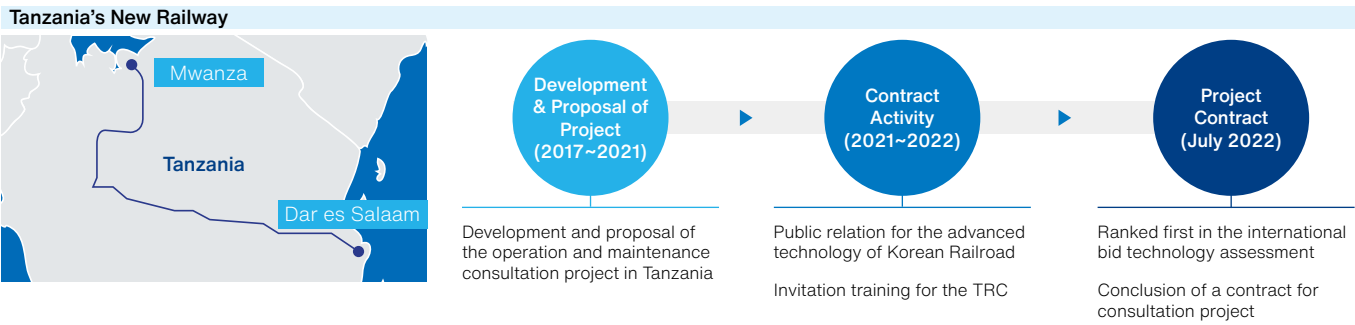
Renting Conference Room in Seoul Station

Trans-continental Railway and Overseas Project

KORAIL as the representative operator of railroad in Korea has promoted the diversification of overseas projects based on the original technology and expertise and procured the global competitiveness. In addition, we are creating a foundation for trans continental railway operation by reorganizing international train operation standards laws and systems and establishing public-private partnerships to assign the role of each institution in international railway operation.

Enhanced Position of Technology of Korean Railroad

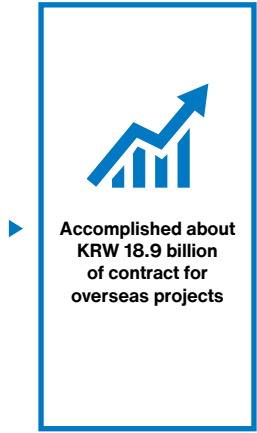
KORAIL has succeeded in the contract of a consultation project to operate and maintain railroads in Tanzania based on the advanced technology and opened a new chapter of overseas railroads. Through the said project, we have not only obtained the opportunity to export the knowhow and technology of railroad operation, maintenance and repair to overseas countries for the first time in Korean railroad but also announced the position of the technology of Korean railroad to international railroad markets. In addition, to accomplish the successful project, we have proceeded with the invitation training for employees in the railroad corporation of Tanzania. We have composed a special exclusive team to operate the customized program of technology transfer and proceeded with the discussion about the mid to long term roadmap vision of the railroad in Tanzania.



Enhancing Overseas Business Competency through Public-private Partnership

KORAIL composed the Team Korea with private enterprise and have obtained the contracts of overseas projects in various areas such as a consultation project, the discovery and selling of unused assets, and an international training project to accomplish about KRW 18 billion of contract and KRW 11.2 billion of annual sales. Based on the stepping stone of the said performances, we plan to discover the items of new project and to hold the conference for the cooperation of joint advancement to overseas markets with domestic enterprises.

Category	Project Name	Period	Project Cost
Diversification of Project	Consultation project of O&M for railroads in Tanzania	2022.09.~2025.08.	KRW 15 billion
	Plan for the project to establish a training center for the modernization of railroads in southern Egypt	2022.05.~2022.12.	KRW 80 million
	Education for the maintenance of diesel train for employees in Railway Services of Bangladesh	2022.11.~2022.12.	KRW 90 million
	Education to foster core manpower of MRT-7 in Philippines	2023.05.~2024.05.	KRW 1.6 billion
	Strengthen the competency to operate RTCC (Railroad Traffic Control Center) of Mongolia	2022~2024	KRW 300 million
International Training	Training for the railroad development strategy in Mongolia	2022~2024	KRW 100 million
	Invitation training to demonstrate in land transport area in Indonesia	2022	KRW 110 million
	Invitational training for ASEAN transportation officials	2022~2023	KRW 500 million
	Training on development and management of railway transportation system in Laos	2023~2025	KRW 380 million
	Training to reinforce the competency of safety management in the railroads (in area of tracks) of Vietnam	2023~2024	KRW 610 million
	Tanzania Post-management Field Project	2023	KRW 70 million



Building Foundation for International Railway Operation

KORAIL has translated the laws and institutions of OSJD the operation standard of international trains to share with the government. We have implemented the CIQ workshop together with 10 governmental institutes to establish the role of works by each institute. Also, we have opened the course for the professional to operate the inland railroads and fostered 66 operation professionals. We have actively participated in the international conferences and promoted the public relations to overseas countries about the excellent cases of Korean railroads. We have engaged in the international exchange in many different fields such as the PR of domestic SMEs utilizing overseas branches and enhanced the position of Korean railroads in the global markets.

Sustainable Management System

KORAIL is dedicated to making a leap as a top-tier ESG company.

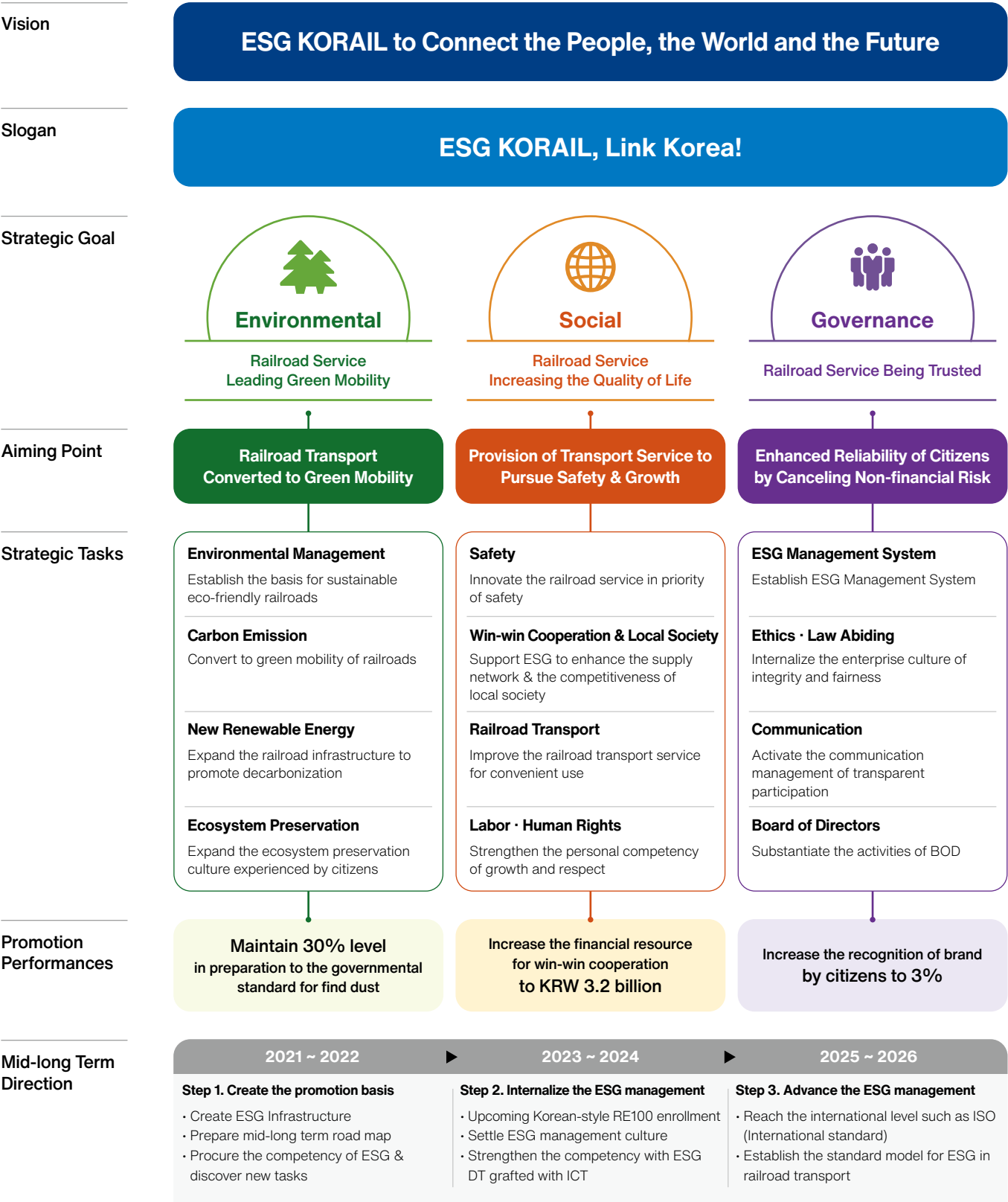
We have strived to establish strong trust among the public by leading in green mobility through ESG management and prioritizing safety in railway services. Additionally, we have actively engaged with stakeholders through various channels to formulate objectives and plans related to the operation of the corporation. We will be committed to leading ESG in the railway sector by improving both financial and non-financial performance.

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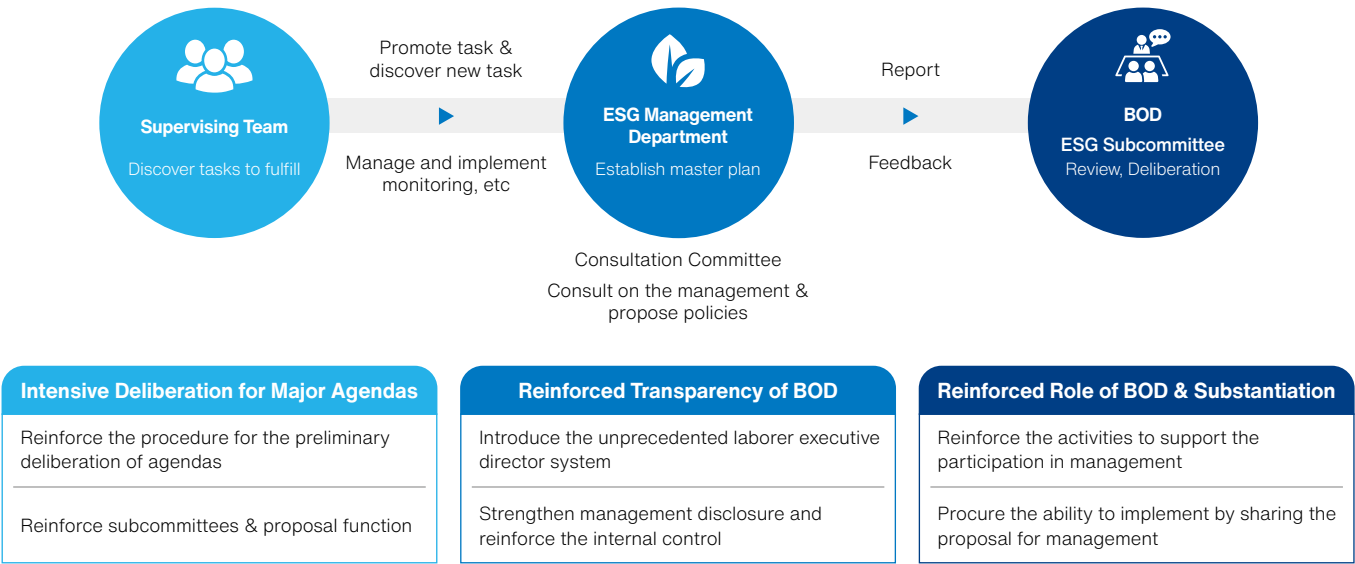
ESG Management Strategy & Implementation System

Vision & Goal of ESG Management

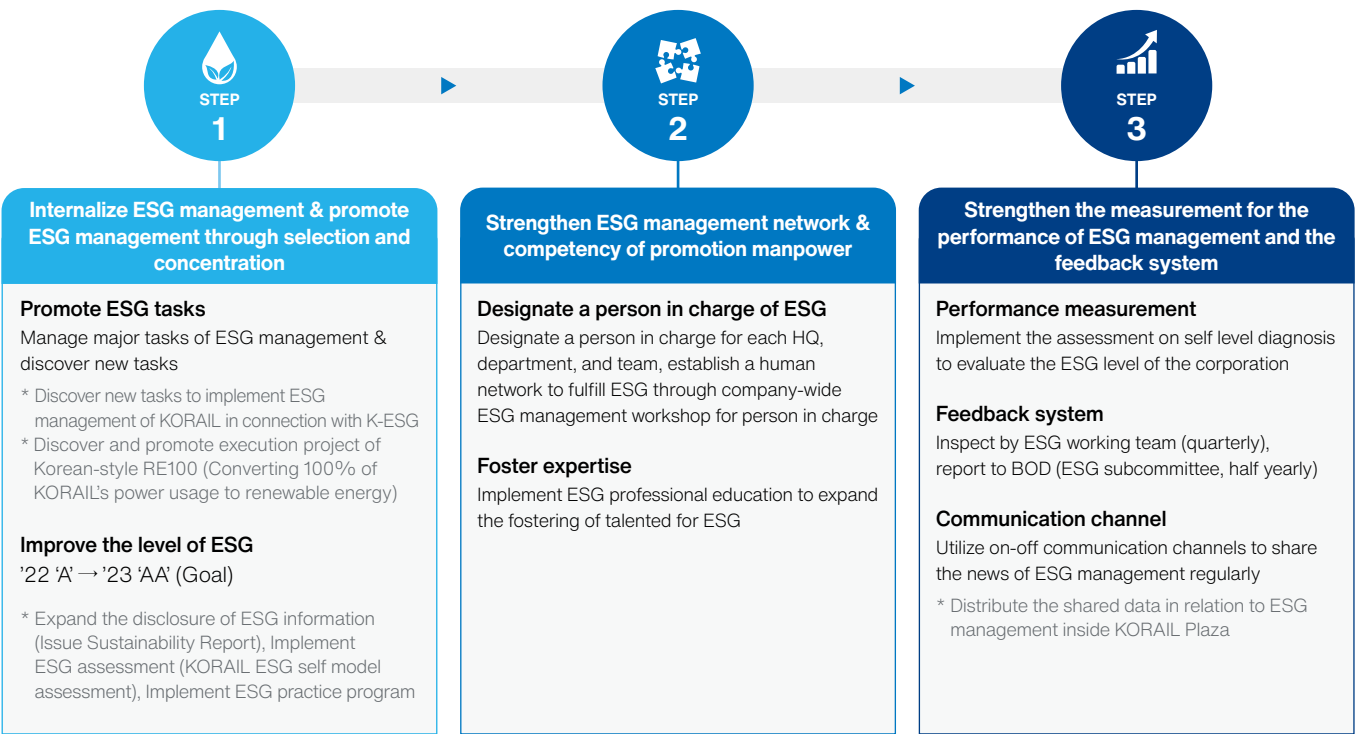


Organization of Promotion

KORAIL has established and enhanced the ESG management system through the operation of dedicated entities, including the ESG Management Division and an ESG Subcommittee within the board of directors, which includes non-executive directors. Furthermore, we have formed advisory committees to gather insights from internal and external experts, discussing strategies for identifying new business opportunities and internalizing ESG management practices. In addition, we have developed our own ESG assessment model to diagnose the current state of ESG management for monitoring progress and performance. We have also formulated our ESG management basic plan in March 2022, setting up 12 major strategic objectives and 47 action items for implementation and monitoring.



Direction of Promotion



ESG Management Strategy & Implementation System

ESG Governance

Status of Composition of BOD

The board of directors has played a crucial role in decision-making and risk management related to issues surrounding KORAIL. Additionally, it has strengthened the pre-deliberation process for major matters within the corporation and supported management participation activities. To ensure fairness, we have diversified our board composition by age, gender, and professional expertise. The appointment process of directors follows the regulations outlined in Article 25 of the Public Enterprise Operation Act (regarding the appointment of public enterprise executives) and internal regulations governing the appointment of executives. The candidate recommendation process involves public recruitment, exclusion of candidates recommended by stakeholders, and public disclosure of meeting minutes, among other measures. An executive recommendation committee, consisting of non-executive directors and external members, makes decisions related to candidate recommendations, ensuring the fairness of the director appointment process. The current status of our board of directors is as follows.

(Criteria 2023.10.)

Position	Duty	Name	Gender	Terms
Head of Corporation	President	HAN**	Male	2023.07.24.~2026.07.23.
Executive Director (Auditor)	Auditor	KWON**	Male	2023.09.06.~2025.09.05.
Executive Director	Senior Vice President	JEONG**	Male	2023.10.20.~2025.10.19.
	Executive Vice President of Safety General HQ	HONG**	Male	2022.11.02.~2024.11.01.
	Executive Vice President of Passenger Business HQ	JEONG**	Male	2022.11.02.~2024.11.01.
Non-executive Director	Senior Non-executive Director	AHN**	Male	2021.07.09.~Appointment of a successor
		JEONG**	Male	2021.04.14.~Appointment of a successor
		KIM**	Female	2022.01.10.~2024.01.09.
		KIM**	Female	2022.01.10.~2024.01.09.
	Non-executive Director	KIM**	Male	2023.01.04.~2025.01.03.
		BAEK**	Male	2023.01.04.~2025.01.03.
		LEE**	Male	2023.01.04.~2025.01.03.
		SONG**	Female	2023.04.10.~2025.04.09.

Compensation and Evaluation of BOD

KORAIL periodically discloses information related to board compensation through the ALIO. The compensation for executive directors is paid within the limits established by the resolution of the general shareholders' meeting, while compensation for non-executive directors is determined in accordance with the "Executive Compensation Guidelines for Public Enterprises and Quasi-Government Organizations." The President of the corporation is evaluated based on performance assessments conducted by the Ministry of Economy and Finance and performance agreement evaluations. Executive directors are assessed according to the performance evaluations of public enterprise management and the performance of management contracts.

Compensation of BOD				
Position	Unit	2020	2021	2022
Head of Corporation	KRW 1 thousand	121,714	161,636	138,760
Executive Auditor	KRW 1 thousand	126,065	141,479	129,025
Executive Director	KRW 1 thousand	97,371	124,439	109,005
Non-executive Director	KRW 1 thousand	29,869	29,937	28,537

Expansion of Participation in Management by Non-executive Directors

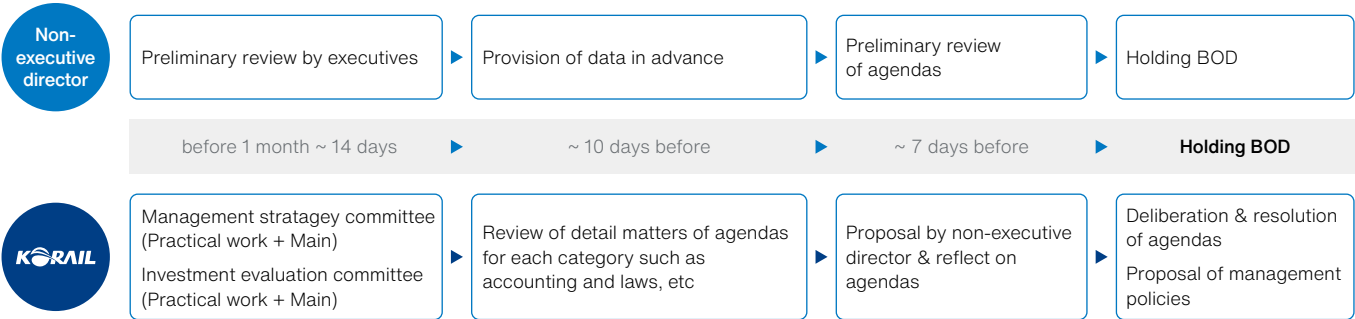
KORAIL has expanded the participation of non-executive directors in management by diversifying communication channels. Using SNS and e-mail, we have quickly shared major pending issues and agendas in non-face-to-face situations, and regularized a one-on-one communication system between non-executive directors and management. In addition, we have actively listened to non-executive directors' suggestions on pending issues, such as sharing major business plans every week and collecting opinions on major business performance and plans every month. Moreover, a procedure has been established to reflect 100% of the suggestions of non-executive directors in the process of preliminary review of the agenda so that the expertise of non-executive directors could be utilized in various ways. We have also pursued gender equality in the process of appointing non-executive directors based on the ability-centered operation of the board of directors. We currently have three female non-executive directors, and we also actively accept their policy suggestions. As a result of these efforts, the number of non-executive directors' proposals increased from 22 in 2021 to 27 in 2022.

Expertise and Transparency of BOD

The BOD of KORAIL is not only composed of a wide range of age groups and balanced gender ratios, but is also strengthening subcommittees and suggestions through a board of directors with expertise in various fields. In order to enhance the expertise of BOD, the Minister of Strategy and Finance goes through the process of appointing non-executive directors after deliberation and resolution by the public institution's steering committee. Also, we have introduced a labor director system to receive voices from the field and ensure transparency of BOD.

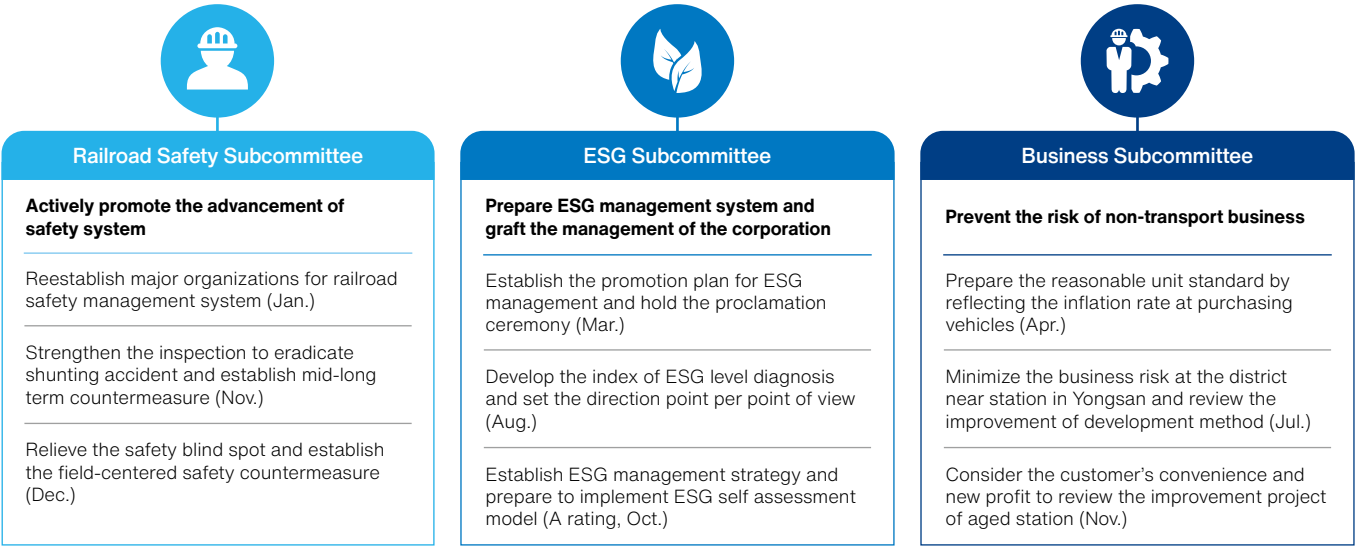
Convening BOD & Resolution Process

KORAIL has strengthened the pre-approval process for board agenda items. We have reported the actions taken in response to recommendations from non-executive directors to the CEO to allow for the refinement and modification of agenda items before presenting board meetings. Through this process, we have aimed to enhance the understanding and completeness of agenda items, as well as proactively mitigated risks by addressing issues in advance.



Subcommittees inside BOD

KORAIL has operated so-called subcommittees, utilizing the expertise of non-executive directors. These subcommittees have engaged in specialized discussions on key issues and goal achievement within their respective domains. We have established the "Railroad Safety Subcommittee," "ESG Subcommittee," and "Business Subcommittee." Through these three subcommittees, we have got expert and effective management recommendations.



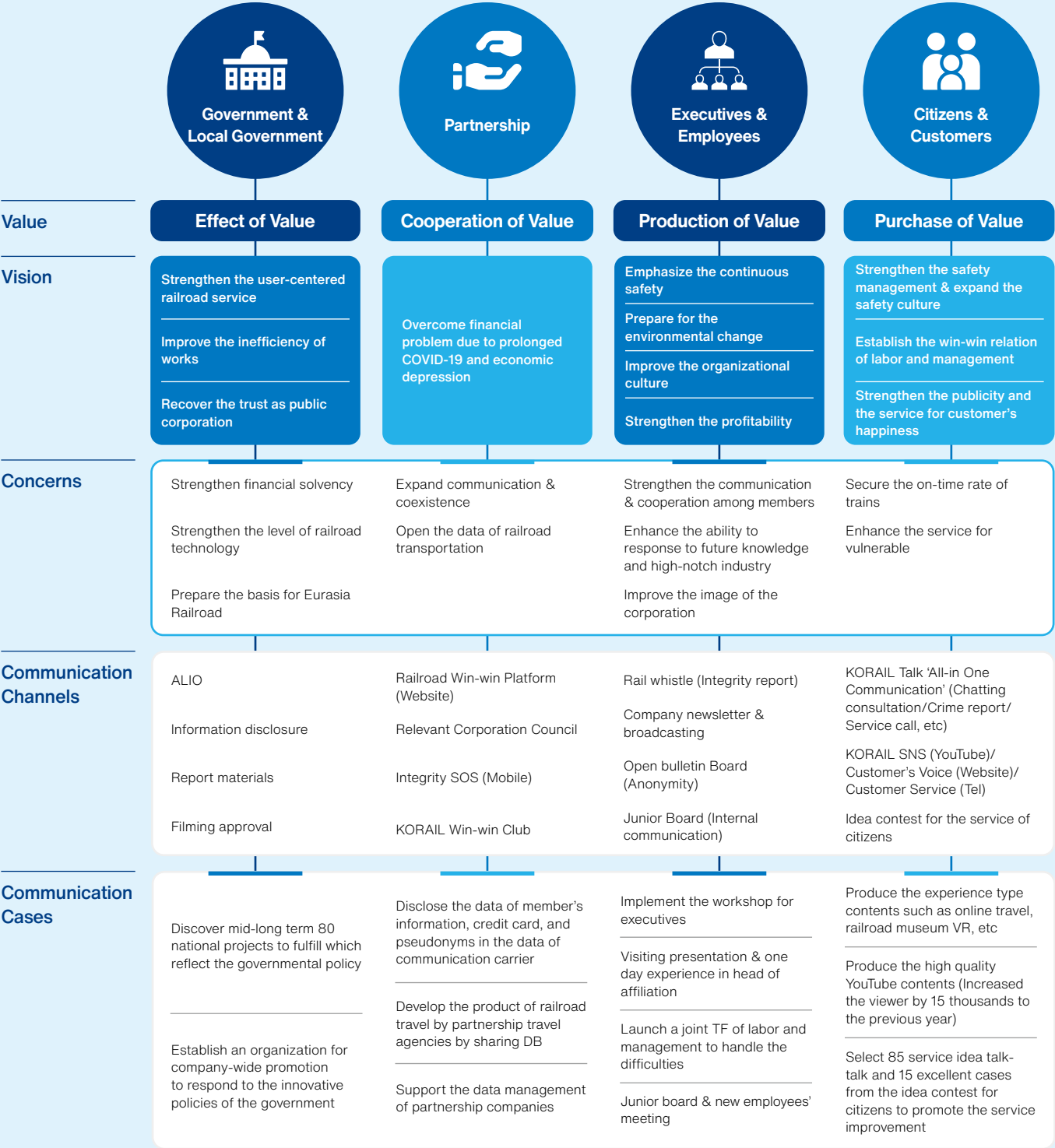
Laborer Executive Director System

KORAIL is the first public corporation under the MOLIT to introduce a labor executive director system to enhance transparency in the operation of the BOD. In the labor-management consultations held from January to October 2022, our regulations were revised, the standards for operating labor directors were established, and labor directors were recommended and appointed in December of the same year. Only those who have been in office for more than three years will be eligible for labor director status, and the term of office can be renewed for up to two years and on a yearly basis. Not only trade union members, but also non-union members and non-regular workers can be elected as labor directors if they meet the qualifications. The labor executive director system guarantees the actual participation of the labor union in management and contributes to the actual activities of the board of directors and strengthening diversity, transparency, and fairness by receiving vivid on-site experience.

Participation of Stakeholders

KORAIL has actively incorporated the perspectives of stakeholders in the formulation of new vision and mission. Efforts have been made to establish tailored communication channels for various stakeholders, allowing for the inclusion of diverse viewpoints. The use of "KORAIL TALK" has facilitated non-face-to-face, real-time, and two-way communication. As a result, stakeholders can actively participate in our projects and operational policies while perceiving complete transparency throughout the entire process.

Classification and Communication of Stakeholders



Major Communication Cases



Interview with Stakeholders



Safety

**Professor of Disaster and Safety
Management Dept. in Soongsil University
Cheong Chong-Soo**

Disaster experts exist inside the KORAIL, but it is somewhat disappointing to build systematic expertise due to the rotational work of 2-3 years. Data management is therefore essential for business continuity. Additionally, disaster-related professionals need to be supplemented and additional training is required. In addition to the disaster safety management department, disaster response training should be provided at the enterprise level so that the entire members can move organically in the event of an unusual situation. Information sharing with the corporation in charge of maintenance should be carried out smoothly, and the relationship with related agencies should be strengthened to build a delicate internal and external network and eliminate barriers between departments internally. I expect, in preparation for disaster KORAIL would be equipped with the system of continuity and profession to become the exemplary case for the safety.

Environmental

**Korea Railroad Research Institute
Lee Jae-young**

The major issue in ESG management is carbon neutral. Especially, as KORAIL is the railroad operation corporation, it is necessary to design the policy preemptively to accomplish the carbon neutral of railroads. KORAIL has currently diagnosed the problems in the environmental area and continuously carried out the service for resolution. However, as professional manpower is not sufficient and the environmental issue has been approached by the concept of post process, the budget investment is insufficient. It is necessary to invest actively on the environmental activities such as carbon neutral and expand the role of the corporation. For example, if KORAIL promotes the project to concentrate on the procurement of new renewable energy through the direct utilization of unused site and prepares the general matters in related to the operation by the conversion to hydrogen energy, we expect to stand leading the solution for environmental issues in the area of railroad.



Ethical Management

Director of Daejeon Institute of Civil Society Kim Jong-nam

It is also experienced from outside that KORAIL has made an effort to establish the ethical management through the effort to eradicate corrupted action inside the corporation. Except, KORAIL should not just engage in event-centered activity like formal campaign but it needs to advance the institution and policy of high efficiency together with external civil society to raise the participation rate of external professional members and actively promote the ethical management. As a part of the plan to internalize the integrity culture in daily life, it is necessary to have the policy to settle the in-company debate culture for executives and employees to continue the voluntary activity. I expect that the corporation will realize the social value and fulfill several activities to become an enterprise trusted by citizens based on the fair ethics.



Local Society

Professor of Social Welfare Dept. in Daejeon University Nam Mi-ae

Railroad has been used by anyone and indispensable in people's daily life. It has enough positive image as well. Its potential is sufficient to form a close and developmental relation with local society. However, people do not feel any connection of KORAIL with social society and do not know the management policy of the corporation. To solve such issue, it is recommended to cooperate with local college or institute in the level of corporation and promote local-friendly project of social contribution more actively. In a short term, the needs of local society must be identified specifically. Especially, during such process, it is important for the corporation to become the principal agent to activate the participation and cooperation of institutes in local society and professionals for direct mutual interaction. In a long term, the mission and vision of the corporation must be clear to carry out the mid-long term plan and project assessment that are related closely to local society. If a system is prepared to feedback and reflect them on the plan again, it will be possible to make the corporation working together with the local society.



Junior Board

**Chairman of Junior Board
Hong Choong-Gyo**

KORAIL has operated the Junior Board for 16 years. For recent 5 years, we have put an effort to make the forum for conversations between generations, positions and duties through the conversation with executives and the event to share lunch boxes by each affiliation. To develop the system, it is important to increase the opportunity to participate in the management activities of Junior Board. Through the activities such as the participation in executives' meeting and the observation of BOD, the conversation between Junior Board and the corporation should be expanded. First, we need to consider the Junior Board as the communication channel and let them actively participate in the process of opinion collection and problem solving. Through such process, it is necessary to enhance the trust among internal employees. Moreover, it is the final goal for the corporation to create overall horizontal organizational culture to be developed as an organization without the communication channel so called Junior Board. If we can gradually change the system to express opinions freely regardless of position and age and reflect them on the management of the corporation, the corporation itself will function as the space of communication.



Win-win Cooperation

**Team Leader of Business Division Transport
Management in Sebang Co., Ltd
Yoon Tae-gyu**

Currently KORAIL has made an effort to create the coexistence with partnership companies and fair trade culture such as the support of ESG management basis for SMEs and the expansion of fair trade culture. However, often it emphasizes the instruction from the Ministry of Land, Infrastructure and Transport rather than the requirements of client company to create the profit. To achieve the win-win cooperation with client companies, KORAIL must pay attention on the satisfaction of client companies. Also, as it is difficult to increase the volume of transport by the freight railroad only with the current operation system of freight train transport and the business policy of KORAIL, there exists a limit to reduce the emission of carbon. To bring in additional railroad freight, a task remains in the aspect of a client company who entrusts the railroad freight such as the investment on the human and material infrastructure and the consultation with railroad labor union. For example, KORAIL needs to proceed with the production of private freight rail vehicles owned by the client company for the task to increase the freight rail vehicles but there exist different opinions between departments inside the corporation. It is necessary to increase the transport of railroad freights through the phase-in resolution of such problem.



Information Technology

Professor of Software Engineering Dept. in Jeonbuk University Ryu Deok-san

It seems that KORAIL has currently utilized the progressive high-notch technology to proceed with the improvement of user centered system steadily. Here, to broaden the territory of utilization, the high-notch technology is necessary centered on station and train. For example, it is important to realize the plan for other utilization such as either the satisfaction of customers is enhanced on the basis of the Big Data analysis or the parking lot near the railroad station is connected. Besides, it is required to apply creative AI technology like mobile App or ChatGPT to access to the railroad service easily by uses of railroad and to work on the advancement of chatting service. In a mid-long term, it is necessary to establish the system for ESG management information, the integrated management system for railroad safety and to develop the risk management system based on the digital twin technology. Through such development, I expect for the corporation to lead the area of ICT-based future railroad technology.



Labor

Certified Labor Attorney in KORAIL Seong Eun-young

Currently KORAIL complies with the establishment purpose of the public corporation and the law and principle for the balanced and fair labor-management relation in keeping with the times of multiple labor unions. Also, the corporation is the nationwide enterprise where employees of many areas of business, rail cars, facility and electricity, etc have been working in various organizations such as local division, local management team, and rail vehicles maintenance team. In order to put them together, we need to communicate for the improvement of work environment through the central labor-management consultation conference and the labor-management consultation by work-site operation unit. Especially, we need to listen to the voice of field for various demands and put an effort to improve the labor environment of onsite workers around the intermediary manager to understand difficulties. If such communication of KORAIL with several stakeholder is not one-time achievement but is achieved continuously, we will advance the improvement of labor-management culture and labor environment.



Double Materiality Assessment

KORAIL has deduced the critical issues of ESG based on the international standards of ISO 26000 and GRI and K-ESG guideline. Such issues have been collected to identify domestic and overseas elements which affect the major concerned areas of stakeholder and the sustainable management. The international standards, the contents of media analysis, the benchmarking of relevant institute, and the result values of survey on internal and external stakeholder have been reflected comprehensively. Moreover, we have proceeded with the in-depth interview and survey on the professionals by each sector of ESG for critical issues and reflected them on the assessment. We have enhanced the reliability of the assessment result of double materiality through the external advice. We have deduced 30 representative critical issues of ESG through such process and transparently disclosed relevant activities and performances on the said report.

Assessment Process for Double Materiality

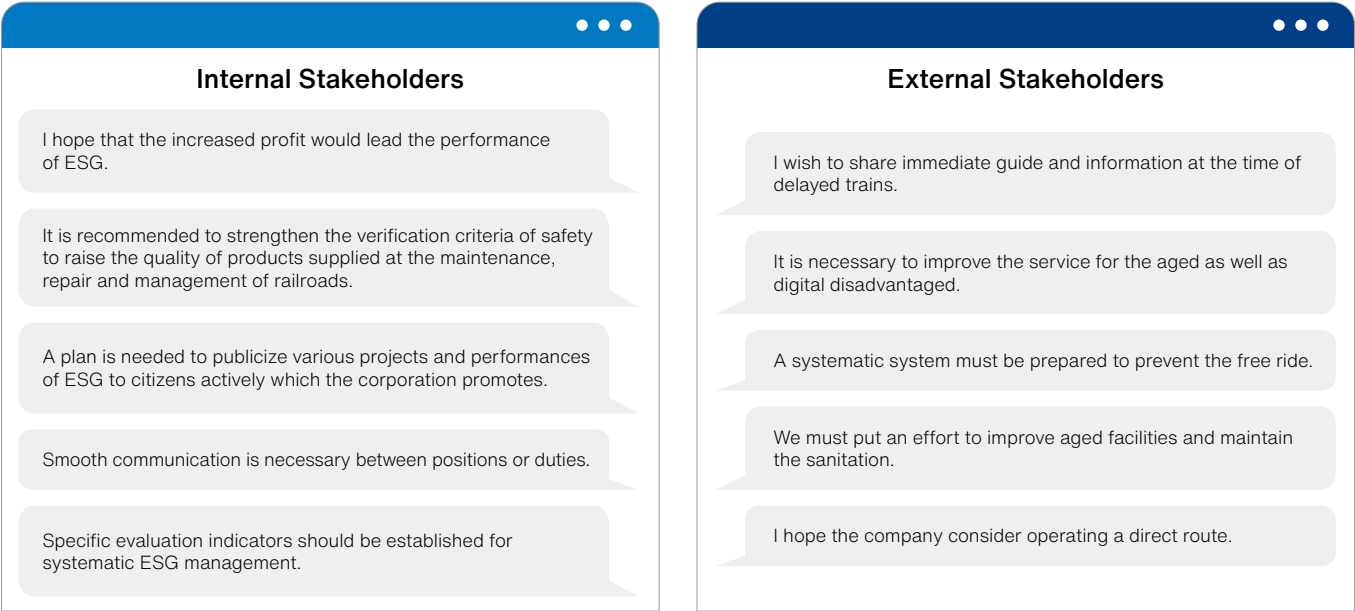


Top 30 Key Issues of ESG

Environment Social Governance

1	Strengthen the safety system mainly for the safety of laborers	16	Establish the eco-friendly infrastructure and expand its utilization
2	Improve and modernize aged facilities	17	Strengthen the management system for the emission of greenhouse gas
3	Strengthen the railroad safety management system	18	Strengthen the internal communication
4	Advance the maintenance & repair system of railroads	19	Advance the level of preemptive railroad technology
5	Improve the working environment & employees' welfare	20	Create the financial solvency
6	Eradicate in-company corrupted action	21	Lead the carbon neutral in the area of railroad
7	Improve the congestion to prevent the serious disasters on citizens	22	Strengthen the eco-friendly management system
8	Create reasonable and fair organizational culture	23	Establish the labor-management relation centered on the principle
9	Expand the introduction of low-carbon eco-friendly trains	24	Expand the introduction of green mobility
10	Settle the organizational culture for the safety based on responsibility and authority	25	Strengthen the efficiency through the improvement of work process
11	Strengthen integrity and ethical management	26	Innovate the user-centered digital service
12	Establish the integrated service in connection with shared transport	27	Foster core talented personnel
13	Establish the management system to respond to climate crisis	28	Establish the human rights management
14	Advance the management of air quality	29	Advance the risk management
15	Strengthen the information security system	30	Establish the system for low-carbon energy inside stations

Specific Opinions of Stakeholders



Double Materiality Assessment

KORAIL ESG Core Issues

Degree of Impact  High  Moderate  Low

No.	Core Issues	Stakeholder				Degree of Impact		Issue Management & Promotion Plan	UN SDGs	GRI	Report Page
		Citizens	Employees	Partnership	Government	Financial	Social & Environmental				
1	 Strengthen the safety system mainly for the safety of laborers							- Procurement of the ability to fulfill ZERO critical disaster by establishing a roadmap for the prevention of industrial disaster and improving the inspection method for the matters to fulfill obligation - inspection method for the matters to fulfill obligation Intensive management of risk factors from high risk works through the expansion and institutionalization of safe work permit system - Improvement of the procedure for risk assessment and regular monitoring of risk factors		GRI 403 Occupational Health and Safety	29, 61
2	 Improve and modernize aged facilities							- Reestablishment of the standard to select the station for new construction and promotion for new improvement in 4 stations - Improvement & expansion of facilities such as boarding platform, connecting passageway, waiting room, and heating and air conditioner, etc-KTX - Entire renewal and improved cleaning such as relieving the odor in toilets of KTX		GRI 203 Indirect Economic Impacts GRI 416 Customer Health and Safety	58
3	 Strengthen the railroad safety management system							- Conversion to the emergency safety management system and establish 5-year general safety plan - Prediction of heat wave, damage from storm and flood, cold wave and heavy snow in advance to manage the safety preemptively - Improvement of the delivery system for unusual situation and reinforcement of the competency of emergency response for the relief of customers		GRI 403 Occupational Health and Safety GRI 416 Customer Health and Safety	27-29, 58-61
4	 Advance the maintenance & repair system of railroads							- Continuous implementation of the precision safety diagnosis on aged rail cars - Procurement of the facility to maintain rail cars by the introduction of EMU-150 - Utilization of ICT high-notch technology to expand the smart maintenance & repair system		GRI 203 Indirect Economic Impacts GRI 416 Customer Health and Safety	28-29
5	 Improve the working environment & employees' welfare							- Support of the work-family coexistence through the pilot operation of various work systems - Expansion of the customized welfare service by reflecting the needs of employees - Improvement of the lodging for employees and promotion of remodeling the dormitory for crews		GRI 403 Occupational Health and Safety	72
6	 Eradicate in-company corrupted action							- Promotion to improve the wage system to strengthen the disadvantage of an employee in corruption - Strict application of One Strike Out to a person of corrupted action - Implementation of the simulated juror system to identify the level of reasonable disciplinary action against internal and external major cases of corruption and to diagnose the ethical consciousness		GRI 205 Anti-corruption	80-82
7	 Improve the congestion to prevent the serious disasters on citizens							- Assignment of part time manpower for guide at the concentrated time zone of congestion in major stations - Procurement of transfer space and relief of congestion by adjusting the arrival and departure lines of trains - Reinforcement of the visibility of guide sign		GRI 416 Customer Health and Safety	24, 60
8	 Create reasonable and fair organizational culture							- Improvement of the promotion system centered on duty and performance - Systematic promotion to foster female managers in the area of technology		GRI 403 Occupational Health and Safety GRI 405 Diversity and Equal Opportunity	69-71, 73
9	 Expand the introduction of low-carbon eco-friendly trains							- Conversion to the electric rail cars from diesel rail cars to reduce the emission of greenhouse gas - Operation of new eco-friendly train 'ITX-Maum' (EMU-150)		GRI 305 Emissions	52
10	 Settle the organizational culture for the safety based on responsibility and authority							- Vitalization of the activity for safety patrol composed of main office and affiliated institute - Monthly core education for safety theme and sharing cases for accident prevention - Reinforcement of the competency for safety manpower through VR education and external consulting		GRI 403 Occupational Health and Safety	58, 60

Performance of Sustainable Management

KORAIL practices sustainable management of environmental, social, and governance as a public company.

We have been achieved significant results by implementing ESG management initiatives and mid-to long-term strategies. We will continue to make efforts to improve the quality of service for our customers through greenhouse gas reduction, financial soundness, and transparent ethical management.

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Healthy Organizational Culture	69
Respect for Talented	73

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Environmental

Railroad Service Leading Green Mobility

Importance of Issue

The preparation of the government for the reduction of greenhouse gas and the countermeasure against the climate crisis since the proclamation of 2050 Carbon Neutral has been settled as the core value throughout the industry. Especially, the railroad is the part of transportation sector which occupies considerable number of national emission of greenhouse gas. It also represents the eco-friendly transport means. We have inevitably realized the carbon neutral and created the relevant value. Keeping up with such trend, we plan to meet the interest of citizens for the green growth and to fulfill the leading role as the low-carbon and eco-friendly transportation corporation.

Approaching Method

As the corporation to operate the railroad of eco-friendly transportation means, KORAIL has put an effort multifariously to realize the low-carbon green growth. We have established the eco-friendly management system to prevent the environmental accident and implement the citizen participating environment campaign. We have realized the carbon neutral in the area of railroad through the expansion of the introduction of eco-friendly rail cars and the efficient energy management. Also, we have succeeded in the pilot operation of the long freight train with improved transportation capability to the previous freight trains to take the lead of the activation of eco-friendly railroad logistics. Besides, we have promoted the environmental management for citizens to experience such as the activity of ecosystem preservation based on the advancement of air quality inside the station and the reinforcement of environmental management system to take the lead of the realization of eco-friendly green railroad.

Focus SDGs



Environmental pollution accident
ZERO



For the first time in public corporation,
Awards in the Green Product of the Year for
12 consecutive years

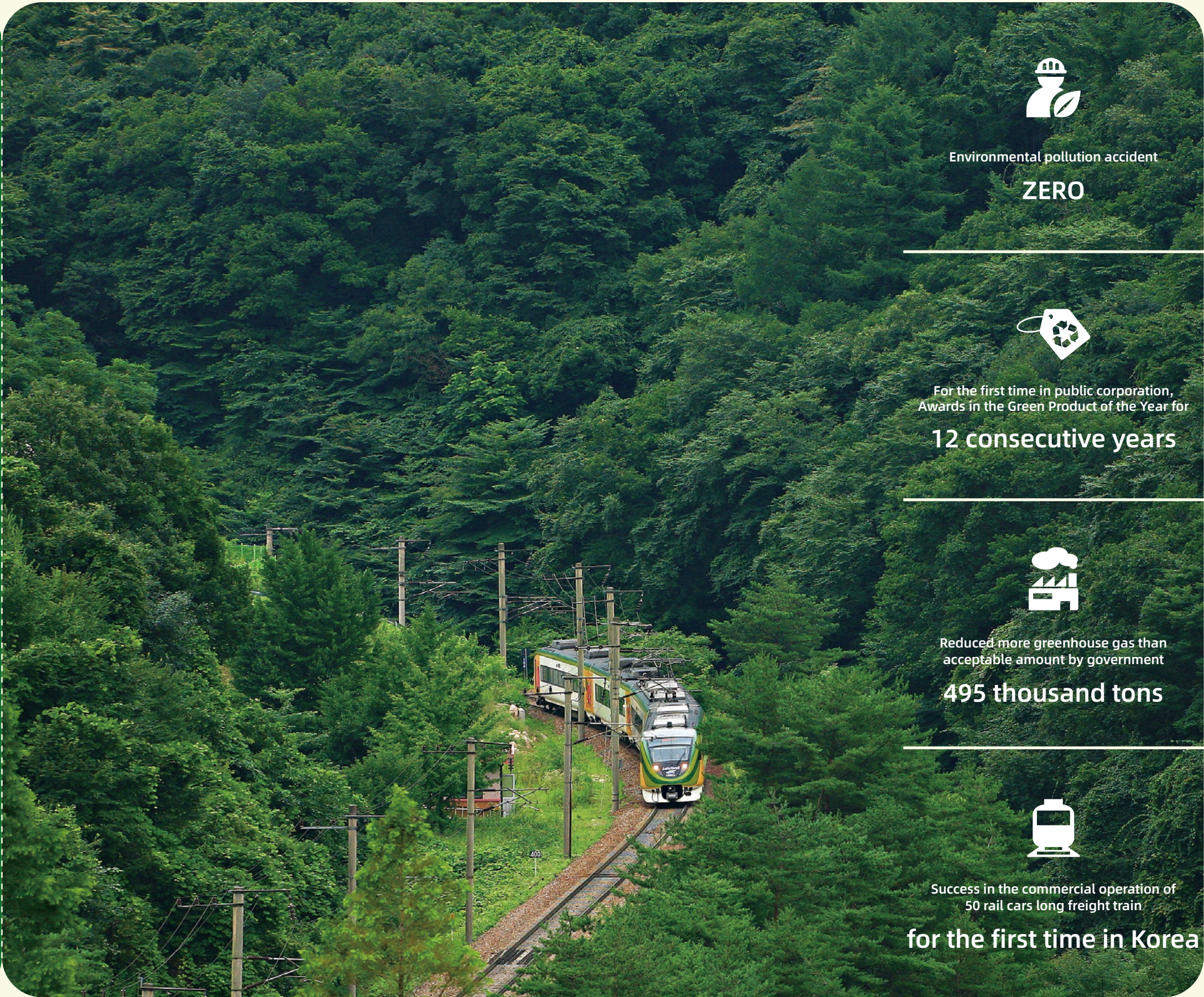


Reduced more greenhouse gas than
acceptable amount by government
495 thousand tons



Success in the commercial operation of
50 rail cars long freight train

for the first time in Korea



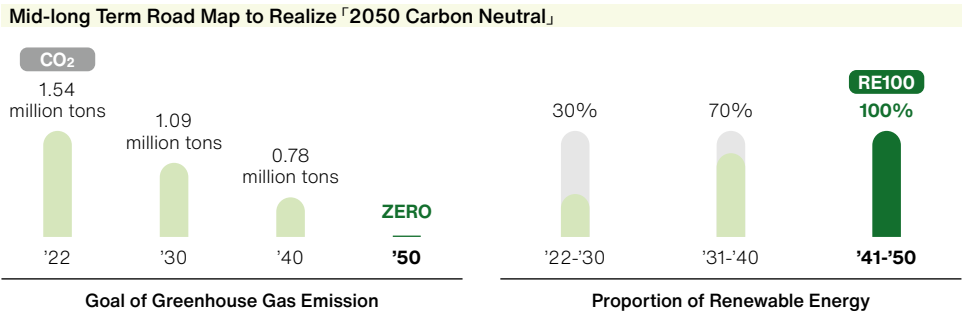
Eco-friendly Management

Establishment of Eco-friendly Management System

KORAIL has organized the exclusive environmental department to build up the company-wide environmental management system and to establish the mid-long term roadmap to realize the 2050 Carbon Neutral and take the lead of the realization of eco-friendly green railroad. Also, we have prepared the emergency response system for prompt response to environmental accidents. We have challenged ZERO environmental pollution accident through preemptive prevention training. Moreover, we have also expanded the purchase of green products and contributed to the creation of social and environmental benefit.

Settlement of Environmental Management System

KORAIL has organized the exclusive environmental department inside the general safety division of the main office and composed the network with a man in charge of greenhouse gas and energy to cope with various environmental issues quickly. We have established the environmental management & information system to manage environmental resource, environmental facility, environmental investment and environmental information systematically. We have lead ahead of the realization of carbon neutral as the public corporation for low-carbon and eco-friendly transportation through the education for the reinforcement of profession to foster professional manpower for environment. In addition, with a goal to accomplish ZERO emission of greenhouse gas and 100% proportion of renewable energy by 2050, we have established mid-long term roadmap and realized the reduction of greenhouse gas and fine dust and the expansion of renewable energy.



Prevention of Environmental Accidents & Establishment of Response System

KORAIL has established the emergency response system with relevant public institutes such as fire stations and local governments. We have strengthened the prevention activities such as the periodic maintenance of the response manual against environmental pollution accidents and the implementation of emergency response training to minimize the damage from environmental pollutions due to the environmental accidents of railroad. In addition, we have actively proceeded with the inspection activities such as the One-stop visiting Environmental Consulting with increased environment budget, the inspection on new stations and environmental facilities of business sites, and the self-measurement of water quality and atmosphere prevention facilities and with the investment on the facilities such as the extension, improvement, maintenance and repair of environmental facilities. From the result of such effort, the corporation accomplished ZERO environmental pollution accident in 2022.

Activities to Prevent Environmental Pollutions	Activities by Environmental Inspector	Establishment of Emergency Response System
Organize the manual for the emergency response to environmental accidents	Designate environmental inspector & implement the environmental inspection	Establish the emergency contact system with fire station, local government under jurisdiction
Furnish with emergency disaster prevention articles	Promote One-stop environmental instruction-consulting	Designate a person in charge of accident recovery for each area (business, vehicle, facility, electricity, building, etc)
Conduct the education for environment and spread the cases of accidents	Implement the cross inspection by the a person in charge of environment between affiliates	Implement the joint emergency response training by local government & fire station
Discover to spread excellent cases of prevention activities	Remove the insecure factor of environment	
ZERO Environmental Accident		

Environmental pollution accident in 2022

Zero

To the previous year, the investment on environmental facilities increased to

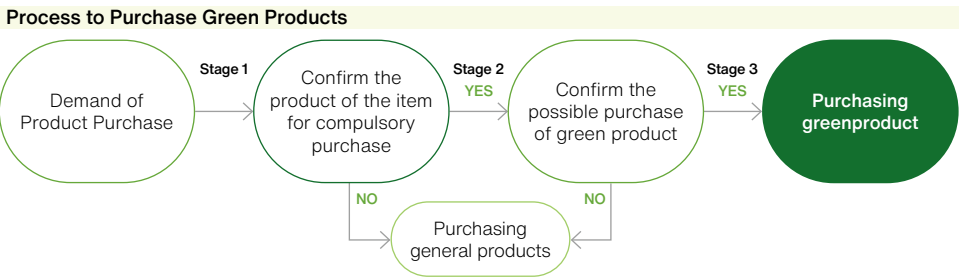
KRW 510 million

In the Performance of Purchasing Green Products in 2022, accomplished

KRW 4.4 billion

Expansion of Purchasing Green Products

KORAIL plans to expand the green management culture through the activation of purchasing green products and fulfill the social responsibility as the public corporation. At the time of purchasing goods for construction and service, we enforce to purchase low-carbon products, excellent recycled products and green products of environmental certification marks. We have announced the plan to fulfill the purchasing on website and conducted the monitoring of the performance of purchasing by each affiliate monthly and quarterly to reflect them on the internal management assessment. We have actively fulfilled the green consumption. Accordingly, we have accomplished KRW 4.44 billion in excess of 137% from KRW 3.24 billion which was the goal of purchasing green products in 2022. We have selected as the excellent corporation of purchasing green products for 2 consecutive years.



Expansion of Practical Eco-friendly Culture

KORAIL has expanded the practical eco-friendly culture through the eco-friendly challenge where anyone can easily participate and the activity of environmental preservation in connection with local society. In addition, we have collaborated with social enterprises to establish the resource circulation system and lead ahead of the company-wide improvement of recycling rate. We have been recognized of such multifarious efforts to receive the Minister's plaque 「Merit of 2022 Carbon Neutral Life Practice」.

Activity to Preserve Environment Working with Citizens

KORAIL has held 'GO! GO! Challenge' campaign at KTX Station every month to encourage citizens to use the train and promote the participation in the life practice of low carbon. In July 2022, we conducted the Eco-Rail (ECO+KORAIL) donation challenge where KRW 1,000 donation was made for using a tumbler instead of a disposable cup to encourage the use of multiple container. We have provided the travel by train to children of child welfare center at Daejeon area with the donation. Besides, we have collected wastes on the trail together with the volunteer group of local society and clean up the surroundings of the station. We have expanded the conscience of environmental preservation and unfold the good influence on local society.



PR Poster for Eco-Rail Donation Challenge



Transparent Plastic Bottle Upcycling Campaign

Establishment of Cooperative System for Resource Circulation

KORAIL has proceeded with the upcycling campaign of plastic bottles by collecting plastic bottles from passengers and collaborating with the social enterprises to recreate collected bottles as socks, doll kits, and blankets. Through this project, we have donated the created goods to vulnerable social classes to fulfill the love of neighbors together with the reduction of wastes. It is scheduled to expand the project gradually through the installation of unmanned collecting machine inside the station and the reinforcement of PR for campaign.

Improvement of Recycling Rate

KORAIL improved the quality of waste sorting by about 85 tons by removing labels from bottled water provided to KTX special rooms and saving 1,320 kilometers of vinyl annually. In addition, we have used paper back spring water which will reduce 63% of carbon emission to previous spring water bottles at the main office conference and events and strengthened the separated discharge and process of construction wastes.

Realization of Carbon Neutral

Low-carbon Eco-friendly Train Operation

KORAIL has replaced aged rail cars with electric trains and actively participated in the development of the technology of low-carbon eco-friendly trains to accomplish the transition to the green mobility. Moreover, we have succeeded in the test operation of a long freight train to prepare the starting point of eco-friendly railroad logistics. We have contributed to the policy to fulfill the carbon neutral of the government toward the magnification of eco-friendly feature that is the strong advantage of the railroad.

Expansion of Introduction of Eco-friendly Rail Cars

KORAIL has scrapped diesel trains of relatively high carbon emission and filled that place with eco-friendly electric rail cars like 'KTX-Eum' and 'EMU-320'. The carbon emission of electric rail cars shows the level of 6~70% to that of diesel rail cars. Through the introduction of eco-friendly train, we have reduced the emission of greenhouse gas by 495 thousand tons to the acceptable amount by the government in 2022. We have sold the emission right equivalent to the reduction amount to created the profit of KRW 4.28 billion. In addition, among eco-friendly electric trains, 'the Central Inland Line KTX-Eum' has been selected for 2022 green product of the year in service sector. In 2023, 'Donghae Line KTX' has been selected for the green product of the year. KORAIL has received the green product award of the year for 12 consecutive years chosen by consumers for the first time in public corporation. Having solidified our position as a low-carbon and environmentally friendly leading transportation corporation with carbon emissions being 1/6 and energy consumption being 1/9 compared to cars, we will continue to enhance the eco-friendliness of railways and strive to become a company that leads in achieving carbon neutrality.



Central Inland Line KTX-Eum



KTX Donghae Line

Conversion to Green Mobility

KORAIL has continuously participated in the project to develop eco-friendly hydrogen electric train under the supervision of the government to plan core technology and safety assessment technology. We have contributed to the conversion to next-generation green mobility In addition, we have succeeded in the test operation of a long freight train with 52% improvement of transportation capability to the previous freight train to take the lead of the activation of eco-friendly railroad logistics.

Establishment of Optical Communication Network Power System

KORAIL has replaced the power supply system inside the station with the system of high energy efficiency and introduced the optical communication network power system to nationwide major stations together with LG U+ for the real-time management of power consumption. As the eco-friendly high efficient power system has been established, we expect to reduce the power of about 464MW annually, according to Korea Forest Service, which is equivalent to the effect of reducing carbon dioxide by 19,733 pine trees. The corporation is scheduled to expand the corresponding project at 90 nationwide stations including high speed train starting from general trains at major bases of Daejeon, Gwangjusongjung, and Busan, etc.

'Green Masterpiece Award' for the first time in public corporation

Awards for 2 Consecutive Years

Additional reduction of greenhouse gas to the acceptable amount by the government

495 thousand tons



GHG Verification Statement

Annual expected reduction of energy

About 464MW

Response to Climate Change and Energy Management

KORAIL has made an effort to respond to the climate crisis preemptively and fulfill the energy saving efficiently with low-carbon green transportation. We have established the countermeasure to adapt to the climate crisis to manage the degree of risk and strengthen the competency to adapt to the railroad facilities. We have contributed to the stabilization of energy supply through the utilization of new renewable energy and the implementation of company-wide energy saving and move forward to realize the carbon neutral in the area of railroad.

Establishment of Countermeasure to Adapt to Climate Crisis

In order to respond to rapid climate change, KORAIL has established the countermeasure to adapt to climate crisis and strengthen the competency to adapt to the facilities of railroad. We have minimized the damage from 5 extreme climate elements of heat wave, cold wave, heavy rain, heavy snow and strong wind. We have predicted the possible element of effect and the level of risk from climate change by each region and reflected them on the direction to promote the management and the detailed enforcement plan of the corporation to prepare the effectiveness of the countermeasure to adapt to the climate crisis.

Specific Enforcement Plan for Countermeasure to Adapt to Climate Crisis	
Risk Management of Climate Crisis	Operate railroad weather information system & disaster monitoring system
	Prepare the real-time rail temperature monitoring system to prevent climate crisis in advance
	Establish a climate crisis mitigation project evaluation framework
Reinforced Adaptation to Climate Crisis	Enhance track safety for derailment prevention
	Prepare the safety management system for the sites with the concern of storm and flood
	Prepare the smart system in response to the climate crisis at railroad stations
Basis to Fulfill Adaptation to Climate Crisis	Prepare high-speed vehicle stability facilities for cold weather and heavy snow
	Establish the prevention system such as the accident in duty to prepare natural disaster
	Foster the professional for the adaptation to climate crisis and operate the education

2022 Korea energy Grand Prize

Minister's Plaque

Expansion of Using New Renewable Energy

KORAIL has utilized the new renewable energies of solar power, geothermal power, and wind power to replace the energy used inside the station. We have established the green station equipped with the electric car recharging station and the traffic related integrated system to expand the eco-friendly infrastructure. Moreover, we have acquired the certification of zero-energy building structure for Sangdong Station, Jeondongjin Station, Gasan Digital Station and installed 21 units of recharging station for electric cars at the parking lot of railroad station. We will utilize the infrastructure of railroad to promote the project to develop the new renewable energy and promote the decarbonization of railroad industry.

Practicing Energy Saving

The demand of electricity tends to increase every year through the opening of new lines and the project for double track electric railway. KORAIL has actively put an effort to minimize the use of life energy through the shortened time of electricity in use by the locomotive, the expansion of purchasing eco-friendly automobile, and the efficient operation of heater and air conditioner. Also, we have held the greenhouse gas energy committee more than twice a year to establish the efficient plan to reduce the energy and analyze the fulfilled performance. We have maintained 30% indoor lights out and the indoor heating temperature with lower than 17℃ and reasonable operation of elevators to fulfill the energy saving in daily life of entire employees.

Goal of purchasing & renting eco-friendly automobiles accomplished
for 3 Consecutive Years

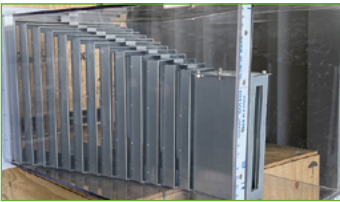
Preservation of Environment

Advancement of Air Quality Management

KORAIL has utilized the smart system for air quality management to lower the concentration of fine dust inside the underground stations. We have made it possible to manage the air quality through the newly developed reduction technology of fine dust. We have also disclosed the measured information of air quality to passengers. In addition, we have implemented the seasonal management system for fine dust to respond to high-concentrated fine dust preemptively. We have managed the legal standard value of the emission of pollutants not to exceed through the operation of air pollution prevention system.



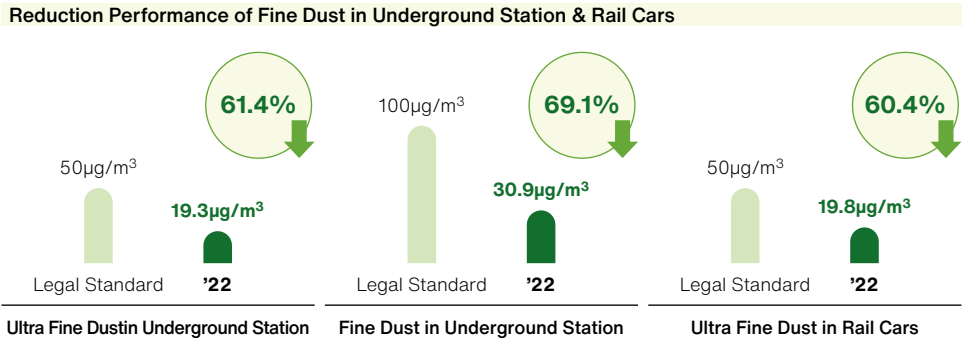
Display of Indoor Air Quality



Prototype of Filter with Inertia Collision Method

Effort to Reduce Fine Dust

KORAIL has installed 184 units of display for indoor air quality for 63 stations to disclose the real-time information of fine dust to citizens. After the exact condition of indoor air is identified through the smart air quality management system, we have implemented the regular replacement of filters and the extended operation of the ventilation system, and the introduction of the equipment for water cleaning to minimize the numerical value of fine dust inside the underground station. In addition, we have developed and installed the pretreatment filter with the inertia collision method which can reduce more than 90% fine dust through the replacement of filter without maintenance and repair in pilot operation. We have devoted to the reduction of fine dust in the underground station and inside the metropolitan rail cars. Moreover, we have operated a high-pressure sprinkler truck to wash off high-concentrated fine dust inside tunnels. We have installed 250 air purifiers in newly introduced metropolitan rail cars in 2022 and regularly replaced and cleansed filters to reduce ultra fine dust more than 60% to the legal standard.



Implementation of Seasonal Management System for Fine Dust

KORAIL has implemented the seasonal management system for fine dust annually from December to March in the next year to take action for the reduction and management of the emission of fine dust stronger than usual. We have prepared for the generation of high-concentrated fine dust by increasing the operation hour of air purifier in the underground station by 25% than the previous hour, strengthening the cleaning with water inside the station, monitoring the concentration of ultra fine dust in real-time, and the introduction of preventive operation system. In addition, we have conducted the pilot operation of autonomous cleaning robot that can clean the area of about 7,700m² for a day and contributed to the reduction of fine dust.

Reduction to Implementation (Nov. 2022.)	Reduction by Seasonal Management System (Dec. 2022. ~ Mar. 2023.)	Promotion Performance
Inspect ventilation & air conditioner Inspect air purifier Display PR video and texts in station and rail car	Inspect the real condition of reduced fine dust at random Operate air conditioner continuously Strengthen wet cleaning in station	Period of high concentration Underground stationUltra fine dust 50µg/m³ 28.6µg/m³ Legal Standard '22 42.8%

Period of high-concentrated fine dust value of ultra fine dust in underground station to legal standard reduced by **42.8%**

Operation and Management of Air Pollution Prevention System

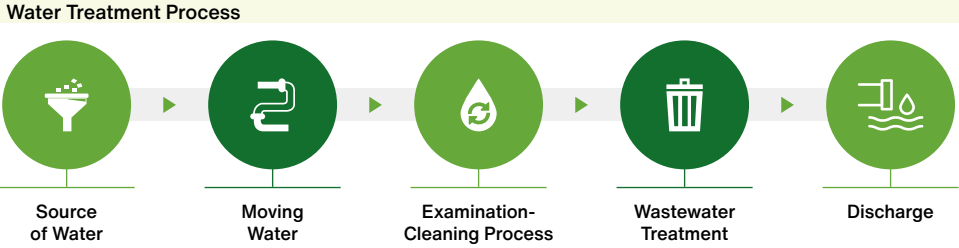
In order to manage the substances from the emission of air pollution efficiently, KORAIL has installed to operate the dust collector to prevent the emission of air pollution. Also, we have installed the air prevention system and appointed the air environment technician to manage the emission of air pollutants below the standard value. In addition, we have confirmed the emission of optimum concentration of pollutants through the self measurement of air pollution. We have utilized the results of measurement for our company's air pollutant management index.

Reinforcement of Environmental Management System

KORAIL has strengthened the management system of entire environmental areas of water quality, wastes and soil and operated the pollution prevention system to make an effort to prevent the emission of pollution source from exceeding the acceptable standard. In addition, through regular self measurement and monitoring, we have analyzed the progress of pollution level and shared the measurement result with the local society. We have fulfilled the social responsibility as the operation institute of eco-friendly transportation means.

Management of Water Quality Environment

In order to preserve the water quality of public waters, KORAIL has minimized the concentration of pollutants through the chemical and physical treatment process for all pollution sources generated at the business sites and processed the emission amount below the acceptable standard. Also, we have operated the water quality pollution prevention system and installed the oil-water separation tank to prevent the spread of pollution within the business office to prevent the external leakage due to the environmental accident.



Waste Management

KORAIL has installed and operated the waste separation storage at all business sites including business office and station. We have designated a person charge of management for each business office to implement the expertise of the manager through the goal setting of reduced wastes and the external education. In addition, we have taken the lead of recycling of waste resources in the area of railroad such as the separation of iron pieces in waste air filter and waste brake shoe head and the provision of waste woods fuel.

Management of Soil Environment

KORAIL has implemented the regular self inspection on the soil pollution. We have promoted the facility improvement of installing underground storage and piping on the ground level. Moreover, we have installed absorbent clothes to prevent the soil pollution on the tracks. We have selected 21 locations of soil measurement network at railroad sites to measure the level of soil pollution and monitor the progress of the change in the level of pollution.

Soil Measurement Network Survey Process
Select the location by year (Monitoring soil pollution)
➡ Collect soil samples (May~June)
➡ Analyze the pollution level (July~December)
➡ Announce the result



Social

Railroad Service Increasing the Quality of Life

Importance of Issues

Safety is a paramount value and responsibility that all companies should prioritize, especially for public corporations with social responsibility. We should implement rigorous management to prevent disasters and accidents. Furthermore, we should take a lead in fostering a solid societal environment through activities like promoting local economic development, engaging in various social contribution initiatives, and actively nurturing talents. Additionally, we must establish a market conducive to fair competition and create sustainable employment opportunities through an inclusive hiring process that eliminates discrimination and prejudice.

Approaching Method

KORAIL has strengthened the digitalization and intelligence of equipment for safe environment of customers and laborers. We have prevented and responded to disaster in advance through efficient management and inspection. Also, we have utilized the railroad infrastructures scattered throughout the country to contribute to the activation of local economy and take full social responsibility which is required in public enterprises. For win-win cooperation, we have supported partnership companies economically and institutionally. Internally we have strengthened the system of social balance to form a healthy organizational culture and put an effort to keep the balance of employees' work and personal life.

Focus SDGs



Death accident
from contract constructions

ZERO



Generation of production
in local economy

KRW 608.1 billion



Completed human rights
management training

**Accumulated
101,489 people**



Recruitment corruption
by external indication

ZERO



Safety Management

Reinforcement of Railroad Safety Management System

KORAIL has done our best to supplement and reinforce the safety management system. Especially, we have established the prevention-oriented safety management system to expand the safety facilities for each season and improve the facilities for aged rail cars. We have devoted all our energy to reform the strong response system and to prepare the safety countermeasure. Moreover, we have introduced the safety patrol system to establish the in-company culture of safety first and put a company-wide effort.

Preemptive Response to Disaster & Accident for Each Season

KORAIL has operated the preemptive safety management system as the countermeasure against the seasonal climate change. Especially, for the places of concerned vulnerability to accidents, we have supplemented the system through the special safety inspection. In addition, we have comprehensively analyzed the causes of interruption by accidents to prevent the recurrences. Such effort has been recognized and selected for the excellent corporation in 'Public Corporation·National Core Basis Disaster Management Assessment' supervised by the Ministry of the Interior and Safety.

Response to Safety Management for Each Season	
Thawing Period in Spring Season	Summer Season
Risk Factors: Falling rocks, Mountain fire • Inspection on the safety of sites with the concern of falling rocks: improved completed 100% • Response to mountain fire preemptively : operate the regional accident control headquarters immediately and until extinguished	Risk Factors: Storm & flood, Heat wave • Company-wide response to typhoon : Pre-emptive train operation and adjustment of the operation section • Preemptive slow operation of train to heat wave
Fall Season	Winter Season
Risk Factors: Increased vacationers • Installation of a fence to defend nearby the tracks • Inspection on the safety of railroad crossing : improved completed 100% • Safety inspection in preparation for mass transportation during holidays	Risk Factors: Heavy snow, Cold wave • Take action for the slow operation of train to heavy snow • Warming up rail cars, timely operation of PSD- turnout heating device

Improvement of Aged Facilities

The increased degree of aged facilities may cause the potential risk which will lead to the inconvenience of customers but also the accidents on the railroad. Specifically, the failure of aged parts has frequently occurred. In order to resolve this, KORAIL has promoted the systematic countermeasure to prevent failures by replacing aged products and reorganizing the replacement cycle through the analysis of lifespan of parts or introducing new rail cars. As aged track used cause the accidents, we have proceeded with the replacement of railroad ties.

Expansion of Safety Culture

To achieve the highest level of railway safety, KORAIL has been actively working to establish a culture of safety from within. Through the operation of Railway Safety Patrol, we have promoted the adherence to fundamental safety practices such as wearing safety gear and conducting on-site safety checks. We have also reinforced the functions of safety-dedicated organizations and appointed 84 Railway Citizen Safety Guardians to derive safety improvement ideas from a citizen's perspective, identifying risk factors through various means. These efforts have resulted in the improvement of 7,669 risk factors. Furthermore, the internal safety culture assessment has shown a 0.4 point increase, from 85.1 points to 85.5 points, compared to the previous year.

In the 「Public Corporation·National Core Basis Disaster Management Assessment」 organized by MOIS, be selected as

Excellent Corporation

Improved hazardous risk factors

7,669 cases

Complete early installation of
3,230 CCTVs

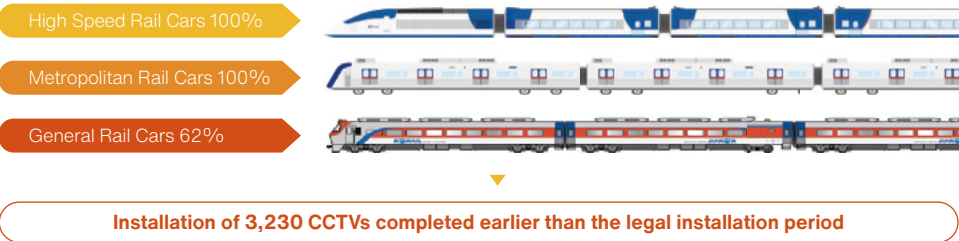
Compared to the previous year, human error reduced by
24.1%

Establishment of Measure to Protect Citizens from Critical Disaster

KORAIL has kept the principle of 'Safety First' to do our best for users of trains. We have advanced the competency to respond to disaster and accidents based on the high-notch technology in and out of the station to protect passengers from critical accident and crime.

Active Installation of CCTVs inside Rail Cars

KORAIL has installed CCTVs earlier in the cabins and passages of entire trains to prevent crimes. It was originally scheduled to install CCTVs in cabins by June 2024, but we have quickly completed the early installation. From its result, the arrest rate of sex crimes in rail cars improved 4.9% from 51.1% in 2021 to 56.0% in 2022. Moreover, the installation of CCTVs ranked first in the railway service survey that the people are most satisfied with.



Reinforcement of Competency to Respond to Disaster & Accident through Digitalization

KORAIL has divided the disaster situation to 3 stages and responded utilizing the intelligent network. Also, we have spared no effort to support the reinforcement of professional competency and produced a manual to respond in unusual situations to prevent the accident by careless handling. From the result of such effort, in 2022 the cases of human error was decreased by 24.1% from 56 cases in 2021 to 44 cases in 2022. We have been selected for the excellent corporation for 5 consecutive years in the sector of disaster management assessment with national core basis and received the minister's plaque.

Disaster Situation Stage		
Preparation	Response	Restoration
Response to Fire Strengthened process of fire prevention management • Mobile management of fire extinguisher using QR code ➡ Reduce inspection time by 75% • Expand underground station relief supplies (20~100 → 100~500)	Operation Information Prompt guide for unusual matters in metropolitan railroads • Expand the provision of delayed information on smartphone subway apps • Expand consultations with local governments on metropolitan railways (Seoul, Gyeonggi & Incheon, Busan, Chuncheon)	Accident Handling Strengthened collaboration system with MOLIT • Linkage of video conference system between MOLIT and KORAIL : Real-time sharing of recovery processes
Monitoring Strengthened provision of safety information for train operation • Integrated data portal information management (rail temperature, weather information) • Expand work site real-time monitoring system users to entire staffs	Response System Establishment of emergency response centered on the life of customers • Prepare countermeasures when a tunnel or bridge stops due to a fire Inspection of disaster prevention facilities Case studie and expert advice Clarification of duties, standardization of manuals, actual training of tunnels	Customer Guide Secure the safety of customers at unusual situation • GPS-based real-time train operation information • New joint response team with SR • New 'customer response team' in the station • Additional arrangement of order guards in crowded and transit areas

Safety Management



Personnel Dedicated to Maintaining Order in Seoul Station



Safety Campaign at Railroad Crossing



PR for Railroad Crossing Safety Leaflet

Reinforcement of Management on Congestion inside Station

Following the relaxation of social distancing measures, KORAIL has relieved the concentration inside the station through the adjustment of train operation times and the strengthened system to manage the crowd. In the metropolitan transfer stations, we have deployed 90 information staff members to prevent overcrowding and efficiently manage passenger flow by guiding passengers to disperse in high-traffic areas. In addition, when congestion reaches the level of serious stage, we have established the process of switching to 'Railroad Emergency Situation' to prevent the critical damage on citizens. Besides, we have put an effort to relieve congestion by strengthening the visibility of guides. From the result of such effort, we have gained the effect of 41.5% reduction of relevant VOC.

Safety Management of Railroad Crossing

KORAIL has established the safety infrastructure to prevent the accident at railroad crossing. We have established a customized safety facility in collaboration between the private and the government. We have expanded the safety display light at the child protection area of railroad crossing to improve the visibility. Also, we have attached the detector for locked-in vehicle on the front crossing gate at the entrance road for the automatic control of exit crossing gate to prevent the accident. Moreover, we have concluded the agreement with the navigation business to guide drivers of improved matters and proceeded with the offline education and campaign for social classes vulnerable to information.

Initiating Emergency Safety Management System

KORAIL has formulated robust safety measures to prevent accidents. Firstly, all the wheels produced identically to the ones involved in accidents were completely replaced. We have also strongly requested the MOLIT and the manufacturer to enhance and revise the wheel production standards and maintenance manuals. In particular, we have strengthened vulnerable point management through automated inspection and remote monitoring, eliminating the sources of risk through a highly intensive maintenance process. Moving forward, we will continue to safeguard the safety of the public through in-depth railway safety management.

Reinforcement of Employees' Competency & Improvement of Field Response Capability

KORAIL has reinforced the competency of the survey on industrial disasters by persons in charge of the works of safety and health. We have conducted the education for legal matters and response methods through external professional lecturer targeting a person in charge of works. In addition to it, we have conducted the field education for a new controller and the education for the mandatory knowledge of overall railroad system to improve the capability to take action against unusual matters.

Training to Strengthen Workers' Safety Capabilities

Customized Training	Experiential Training	Safety Competency Enhancement Training
Special training for new employees (1,812 people) Special training for high-risk workplace workers (3,077 people) Provision of hazardous and risk factors information, consultation, and safety training support to partner companies (5,110 times)	Theory centered training → Experienc centered training (256 people) CPR prevention of the top 5 major incidents by VR education ⋮	Conduct specialized risk assessment training by inviting external experts (567 people) Enhance competencies of industrial accident investigation personnel (41 people) Training on compliance with legal obligations under the 'Serious Disaster Punishment Act,' (26 nationwide safety personnel) Conduct an evaluation of understanding Industrial 'Safety and Health Legislation' (11,275 people)

Death accident at construction near operation line

ZERO

Death accident from the contract construction

ZERO

Creation of Safe Working Environment for Laborer

KORAIL has improved the working environment of laborers with the policy of 'Man-centered Safety Management'. We have changed and replaced the examination, maintenance and repair process with the digital smart device to protect laborers at the first line of field. Also, we have established the prior prevention-oriented safety management system to detect the information of accident and interference.

Creation of Smart Intensive Management on 4 Major Dangerous Works

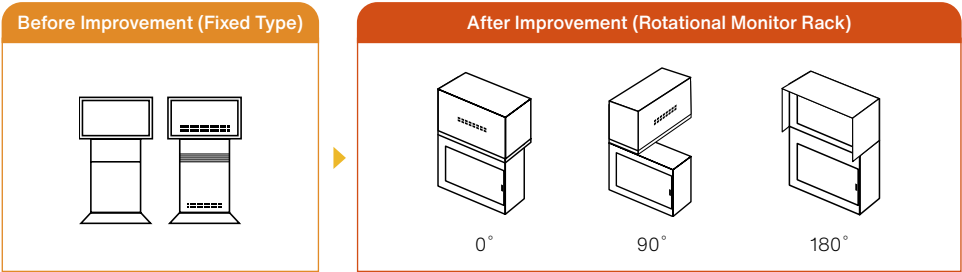
KORAIL has enacted and revised overall work rules to prevent critical industrial disasters and strengthened the equipment for safety and protection to manage 4 major dangerous works. To secure the safety of laborers, we have widely provided the train approaching alarm App and additional interlocking alarm system. Additionally, we have installed the alarm for train approaching and the elevating type safety CCTVs at for monitoring at work site.

Strengthening On-site Safety and Health Management

KORAIL has reallocated 20 on-site health managers and implemented customized health management for workers' well-being. Furthermore, to enhance the effectiveness of safety and health training, we have conducted a survey on safety and health training methods among our employees and provided special training for preventing industrial accidents, as well as internal and external safety experience education, incorporating the survey results.

Improvement of Monitoring Boarding Platform for Locomotive Engineer

A concern of generating industrial accident exists in the maintenance and repair of existing CCTV monitor for the train conductor at boarding platform. KORAIL has improved CCTV monitors at the boarding platform to rotate 180 degree for a worker to work on safely withing the boarding platform. Through such improvement, maintenance and repair have been possible in the time zone of train operation at the interruption of CCTV to prevent the delay of train operation due to impossible emergency action for operation tracks.



Reinforcement of Inspection on Contract Construction on Operation Line

KORAIL has introduced the safety level assessment before the conclusion of contract and assigned a safety manager at the contract construction. Such safety management of our company is much more strengthened level than the obligation. Also, we have activated the regular and spot inspection and the laborer danger report system at the time of construction. When the laborer is aware of the dangerous situation, the system will stop the work. Through this, we have accomplished ZERO death accident from the contract construction.

Local Community Development

Activation of Local Economy

KORAIL has spared no effort to support the activation of local economy. We have developed the tourism product to promote local tourism to draw tourists and developed the tourism product to support local traditional markets. Through the project in connection with local areas, we have improved the convenience and accessibility and established the measure for the creation of profit by local areas.

Productivity of Local Economy

KRW 608.1 billion

Tourism Products to Activate Local Tourism

To support local communities affected by the economic downturn due to COVID-19, KORAIL has improved the regional tourism programs. Collaborating with relevant institutes, we implemented measures such as product discounts, tourism promotions, the development of experiential tourism products, and expanded train operations. In particular, the series of 'Rail&' which keeps up with new normal trend have been used by 21,169 people to contribute to the railroad tourism. From the result of such effort, the number of program participants was 1.19 million people in 2021, and its number was increased to 2.58 million people. The effect to cause the productivity of local economy was KRW 608.1 billion in 2022 increased by 118%.

Improvement of Local Tourism Programs			
Promotion for Activation of Local Tourism	Promotion for Tourism in Cooperation with Local Areas	Local Festival Activation Program	
50% discount for tourism product	Tour in Gyeongsangbukdo	40 times of local festival tour train operation	
From May to September, discount for travel contents	Tour in Busan Night Tour	Development of local festival experience tourism products	
New Normal Trendy Tourism Products		Farming Area Experience Tourism Product	
Rail & Golf (Golf-linked hobby products)		Nong-Tu Rail (Operations in 5 rural areas)	
Rail & Daeng Daeng (Companion with pets)		Agricultural Product Experiences (Icheon, Eumseong)	
Rail & Ship (KTX, linked transportation, and ship combination products)			

Development of Tourism Product Supporting Transportation Cost

KORAIL has released 'People to Light Up the Night' the Busan bound great night time view in collaboration of the privates and the government to discount the KTX fare by 60%. Busan Tourism Organization and Busan Metropolitan City have taken the parts of budget support and PR and the corporation has proceeded with the product development, sales and operation. In addition to it, we have promoted the shared growth in connection with 5 medium and small local travel agencies. The said travel product provided unique experience with the theme of Busan night view which has discovered potential tourist attractions and accomplished the performance of total 2,717 people in use.

Operation of Tourism Products in Connection with Traditional Markets

KORAIL has operated the tourism products in connection with traditional markets. As for the project in connection with 'Paldo Market Places Tour Train', 'Month of Going to Traditional Market in 2022' has been released in cooperation with local government and travel agency to induce the vitality and productivity of traditional markets. The operation of 'Paldo Market Place Tour Train' has been increased to total 88 times and 26 thousand people have used. 'Month of Going to Traditional Market in 2022' has accomplished the use of 8 thousand people from two times of operation. Through these tourism products, we have received the excellent award in the contest for the best win-win activity in traditional market supervised by the Ministry of SMEs and Startups.

In the contest for the best win-win activity in traditional market, received

Excellent Award



Haeundae Ateliers Choo-Choo

Contribution to Local Society

KORAIL has utilized the infrastructure of railroad facilities to enhance the convenience of life in local society. Also, we have continuously proceeded with the local volunteer activities such as the talent donation of executives and employees. We will continue to contribute a lot to the community and coexist.

Redevelopment of Aged Railroad Stations

KORAIL has redeveloped the aged railroad stations. For example, we have redeveloped the old Haeundae station closed for several years for 'Haeundae Ateliers Choo-Choo' through the collaboration with local government and provided this place as the young artist network and the citizen's culture space.

Rail House

KORAIL has implemented 'Rail House', a social contribution activity in the form of talent donation for executives and employees. 'Rail House' is a joint labor-management social contribution activity that mainly supports the improvement of the residential environment for the underprivileged, such as repairing old houses and repairing electrical facilities. In August 2022, the volunteer group of Gangwon HQ participated in the activities to improve the education environment for children of low income. In September, the volunteer group of high-speed electricity business division provided specialized technology to improve households with poor residential conditions in Cheongju. Also, in November, the Uijeongbu building volunteer group of Seoul HQ visited the Dudrim disabled school to repair the facilities.



Gwangju Jeonnam HQ Rail House Activity



Delivered Donation to Rail House

Promotion of Happy Train Project

Happy Train is a community outreach program by KORAIL that utilizes the unique railway infrastructure to offer train trips to socially disadvantaged individuals and those in need. In September 2022, the volunteer group of Seoul HQ, in collaboration with vulnerable groups in the area, embarked on a Happy Train journey to Gangneung. In November of the same year, the volunteer group of Busan Railroad Car Maintenance Division conducted a "Hope Charging Happy Train" event for elderly individuals living alone. During this event, 21 members of Junior Board accompanied over 50 elderly individuals on a trip to Miryang, providing them with the opportunity to experience local culture and tourism.



Happy Train Project

Support Restoration from Damage of Mountain Fire

KORAIL has supported with KRW 300 million donation and relief supplies for the victims from the damage by mountain fire. Moreover, we have provided with trains for free for the smooth movement of volunteers. Also, executives and employees have volunteered for meal service in the temporary accommodation for victims.

Shared Growth

Supporting the Management of Partnership Companies

KORAIL has contributed to strengthen the market competitiveness of partner companies, including SMEs and small business owners. We have supported to implement the ESG management while establishing the sustainable creation of profit through their own technologies of partnership companies. Especially, 'KORAIL Win-win Club' is the system to implement the supporting activities of the corporation systematically.

Supporting the Establishment of ESG Management

As awareness of ESG management continues to spread, and sustainable growth becomes an essential requirement for business operations, KORAIL has provided assistance to partner companies that are facing challenges in adopting and practicing ESG management. We have offered information to help partners acquire international certifications related to safety and the environment, developed ESG management consulting and environmental management systems, and supported the establishment and enhancement of eco-friendly facilities. The aim is to help create an environment for sustainable management, in addition to offering ESG management consulting. We will continue to make ongoing efforts to support partner companies in contributing to ESG activities, enhancing their competitive edge, and fostering a vibrant market.

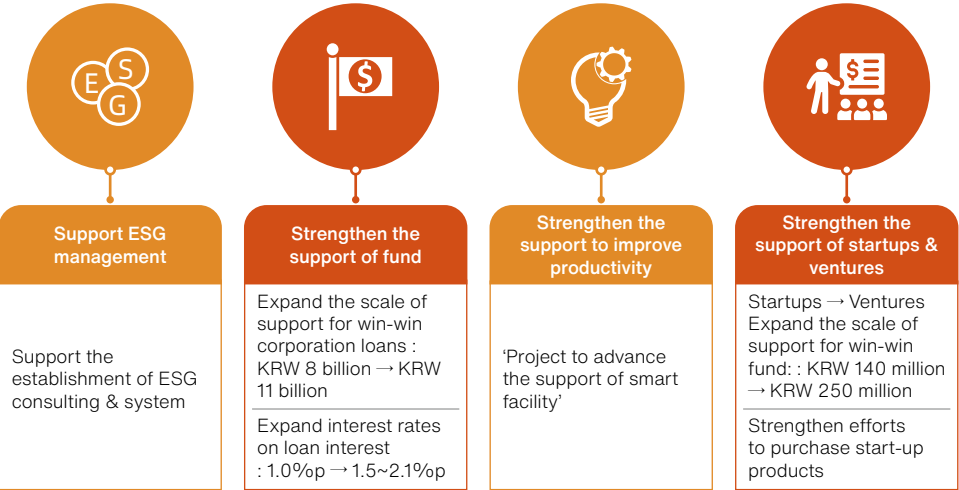
Technical Cooperation to Procure the Competency of Technological Development

KORAIL provides the technical support to strengthen the competency and protect the technologies. To strengthen the competency, Korea Railroad Academy has provided the education course for technology protection through the education channel of partnership companies and operated it in the conference body of technology introduction in the project to develop parts for rail cars including SMEs. In case of the technology protection, we have enacted the new standard for the products through technical development. We have jointly petitioned and registered the intellectual property right or supported the conclusion of the agreement on technology protection (NDA) and the cost to lease the technology.

KORAIL Win-win Club

KORAIL has launched the win-win consultation group of KORAIL Win-win Club that pursues the cooperative relation of companionship. Among the businesses in application, we select the business that meets the requirements and provides with practical benefit that utilizes the management infrastructure of KORAIL such as the support of ESG management basis, the establishment of smart facilities, and the support of markets. Partnership companies will be able to resolve the difficulties while communicating with us in real time through KORAIL Win-win Club.

Supporting Partnership Companies to Strengthen Competitiveness of Enterprise



KORAIL Win-win Club Recruitment Announcement

Establishment of Healthy Railway Market Culture

KORAIL has strengthened the competitiveness of businesses and established a healthy railway market by providing mutually beneficial solutions to partner companies, rather than one-sided support. To achieve this goal, we have enhanced our efforts in purchasing innovative products and expanding the culture of timely payment, thereby promoting a fair trade environment.

Reinforcement of Enterprise's Competitiveness for Partnership Companies

KORAIL has promoted the support for partnership companies to establish the economic basis. With diversified methods, we have derived the cause analysis and resolution by approaching the problems which partnership companies confront.

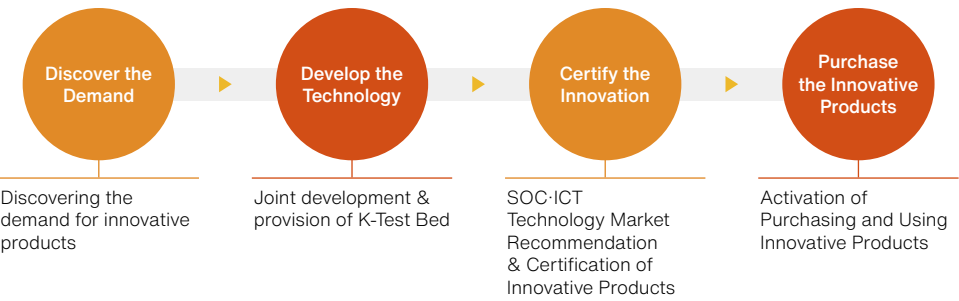
Measure to Support Partnership Companies

Strengthen the support of fund	Strengthen the support to improve productivity	Strengthen the support of startups & ventures
Expand the scale of support for win-win cooperation loan and the support for the interest rate from loan ➡ Companies using support: 52 companies → 64 companies ➡ Amount of support: KRW 6 billion → KRW 7.3 billion	Newly promote 'Project to Advance Smart Facility Support' ➡ In 2022, establishment of foundation (10 companies) & advancement (2 companies)	Expand the scale of the support for win-win fund for startups & ventures ➡ KRW 140 million → KRW 250 million Strengthen the effort to purchase the products of startups ➡ Supporting companies: 13 companies → 23 companies ➡ Purchasing KRW 92.4 billion worth of start-up products (over achievement of goal)

Reinforcement of Purchasing Innovative Products

Innovative product means the product designated by the Public Procurement Service through the screening for publicity and innovativeness for the improvement of public service and the innovation of technology. Previously, the scales of domestic railroad market and parts business market were so small that we suffered the difficulty of purchasing. In order to overcome such difficulty, we have extended the scope of the support from the discovery of innovative technology to its development, certification and purchasing. We have surpassed the goal of purchasing by 121.7% and accomplished in excess of the goal of purchasing for 3 consecutive years.

Promotion Process



Expanded Payment and Prompt Payment

On account of the management difficulties from economic depression and increased interest rate, the payment for goods has become important to SME partnership companies. KORAIL has been supporting to utilize the electronic procurement system and implement the system in relation to the payment for goods such as the coexisting payment. As a result, the amount of coexisting payment has been increased by 96%. The payment for subcontract has been increased by 7% and the advanced payment by 76%. We have been recognized of the contribution to the expansion of fair trade culture with the effort of integrity raised to the 2nd rating.

Exceeding the goal of purchasing innovative products
for 3 consecutive years

Shared Growth

Supporting Expansion of Partnership Companies

KORAIL has supported the advancement of partnership companies to domestic markets and overseas markets. As to strengthen the competitiveness of railroad is to procure the driving force of future growth for us, we have supported the growth of partnership companies and promoted the relationship of win-win cooperation.

Supporting Sales Route to Domestic Markets

KORAIL has supported the registration of products in the integrated technology market of public corporation by partnership companies. But also, we have initiatively purchased the products of technical development by partnership companies that acquired the governmental certificates such as the system off-sharing performances and the product of conditional purchase. Moreover, we have helped pioneering of sales route either by providing the opportunity to participate in the purchase consultation meeting of the government or holding the purchase consultation meeting by our company. Total 38 companies have participated in the purchase consultation to accomplish KRW 70 million economic performance.

Supporting Advancement to Overseas Market

In order to achieve success in overseas development projects, KORAIL has been utilizing its overseas branches to support the international promotion of SMEs. We have also composed consortium with 5 countries, including Vietnam and Egypt, resulting in the attainment of contracts worth KRW 12.9 billion. Furthermore, we have successfully exported jointly developed products, including the 'Portable Rail Inspection Device,' to Vietnam. As a result of these efforts, 11 private companies have entered international markets, and the number of countries where we secure business contracts has expanded from 2 in 2021 to 5 in 2022.

Discovery of New Built-in KORAIL-style Model for Performance Sharing

KORAIL has planned to promote a culture of sharing achievements with its partner companies that are closely related to the corporation's operations through the discovery of a "KORAIL-style New Performance Sharing Model." To achieve this, we have organized a "Reaching Shared Growth Academy," which includes inviting experts and conducting lectures. Additionally, we have held a "Performance Sharing Excellence Contest" targeting employees to enhance awareness and spread the culture of performance sharing. As a result of the dissemination of this KORAIL-style new performance sharing model, partner companies have seen an increase in revenue by KRW 4.5 billion.

New Built-in KORAIL-style for Performance Sharing				
Promotion Project		Railroad Corporation	SMEs	Performance
Expansion of Project	Tour Products Railroad Goods	• Develop and promote products, support the train seats	• Manage and promote the sales of goods	• KRW 6.3 billion sales created by partnership companies
		• Provide the intellectual property of railroad goods	• Develop railroad goods	
Development of New Models	Luggage Delivery Service	• Select the station for the delivery of luggage	• Receive customers' luggage and deliver them to accommodations	• KRW 80 million new sales by luggage delivery services
		• Promote the service for citizens	• 4 carriers for luggage	• Satisfied by 97.1% of passengers
	Big Data Utilization	• Offer public contest for travel goods utilizing Big Data	• Develop new products to sell and operate	• KRW 70 million new sales created by travel agencies
		• Provide Big Data, Consult for the composition of goods	• 5 travel agencies including Areum Travel Agency	

Increased amount of contract through composition of consortium
KRW 11.9 billion

Sales by SMEs with the businesses of performance sharing
KRW 9.9 billion

Human Rights Management

Establishment of Human Rights Management

KORAIL considers the respect of human rights important in the management. As for the measure to keep the dignity of executives, employees and stakeholders, we have proclaimed the Human Rights Charter in 2019 to have upgraded the system of human rights management. Also, through the human rights management committee, we have enacted relevant policies and standards and operated the human rights week to realize human rights-friendly management throughout overall management.

Human Rights Management Committee

KORAIL has operated the human rights management committee to determine regarding the human rights and deliberate on matters concerning basic planning and evaluation of human rights. The committee is composed of 12 members where the senior vice president serves as the chairperson. It is composed of the executive vice president of passenger business HQ, the vice president of office audit & inspection, the vice president of office of human resource management, the vice president of office of future planning & innovative strategy, and the labor union as an official member. Also, the committee maintains the number of external members who will be able to represent the stakeholder regarding the human rights or to conduct the professional deliberation to secure objectivity and fairness. The committee has fostered and supported 110 grievance counselors in 23 locations across the country to promote human rights of stakeholders and take remedies against human rights violations, and operated ethics and integrity practice leaders at regional HQs and affiliated organizations.

Proclamation of Policy for Human Rights Respect

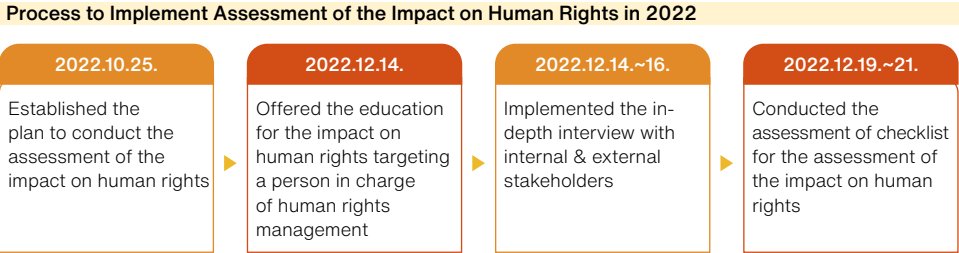
KORAIL has announced the proclamation of human rights policy that complies with the global standard of human rights. The proclamation stipulates the prevention of human rights violation inside the company and our relief measure, which has been announced at the ceremony of resolution for the implementation of ethics by CEO, executives and employees to solidify the company-wide pledge. We also held the workshop to support the establishment and implementation of the system for human rights management targeting all subsidiaries to have made an effort to expand the culture of human rights management.

Report of Human Rights Management

KORAIL has produced the human rights management report which reflects various viewpoints of stakeholders. In the report, the contents deal with the opinions of stakeholders, a response plan for major issues of human rights, a relief procedure, and the education for human rights management through the assessment of the impact on human rights as well as the system to promote the human rights management and the contents in relation to the proclamation of human rights policy. In addition, we have disclosed important issues in human rights management of us through our website to increase accessibility for external stakeholders.

Assessment of Human Rights

KORAIL has improved and prevented the risks of the violation of human rights through the assessment of the impact on human rights throughout the operation of the corporation. We have conducted the survey with questionnaires for entire employees and proceeded with the in-depth interview with internal and external stakeholders. In addition, we have derived the issues of human rights through the result of materiality assessment and defined the priority to respond to the issues and improve the human rights.



Human Rights Management

Advancement of Checklist

KORAIL has reflected the materiality assessment and FGI to advance the checklist which becomes the standard for the assessment of the impact on human rights. From its result, the items in relation to the human rights of consumers have been subdivided into 6 items such as the right to keep good health, the right to keep in safe, the right to know, the right to receive the relief from damage, the right to participate, and the right to select. Also, we have newly prepared the area of 'Safe Train Operation' for the major issue of human rights and composed the indices to evaluate the health and the stress from duty of the railroad traffic controller and the engineer.

Expansion of Human Rights Management Culture

KORAIL has promoted regular education and campaign to internalize the human rights management. Especially, in order to stop the violation of human rights by executives, employees and stakeholders, we have operated the report center for the violation of human rights. We will make an effort to expand the culture of human rights respect through the advancement of human rights management.

Education of Human Rights Management

KORAIL has conducted the education of human rights for employees. Total accumulated number of 101,489 people has taken the lecture for the education of human rights which utilized the cyber contents of national human rights commission in 2022. In addition, we have conducted the education for human rights respect targeting partnership companies to make an attempt to expand the culture of human rights respect.

Campaign for Expansion of Culture for Human Rights Respect

KORAIL has organized the "KORAIL Human Rights Slogan Contest" for all employees to encourage their participation and enhance awareness of human rights. we have also established the "KORAIL Human Rights Week" (December 8 to December 14) featuring activities such as UN-selected human rights photography exhibition and cultural events that involve the public, all aimed at promoting human rights awareness. Moreover, starting in 2021, in collaboration with the Daejeon Human Rights Office of National Human Rights Commission, we have regularly conducted the "Nationwide Human Rights Respect Culture Promotion Campaign." As part of this campaign, we have screened promotional videos advocating for the protection of vulnerable members of society at Seoul Station and organized events at nine other stations to improve awareness about countering hate discrimination, address climate crises, and showcase human rights posters.

Enforcement of Roadmap for ZERO Violation of Human Rights

The roadmap of KORAIL for fulfilled zero violation of human rights has a goal to establish the system to settle the handling of grievances and the system to relieve victims and to eradicate the corrupted action completely. We have been recognized of such systematic feature to proceed with the lecture in the education of human rights for public offices supervised by the National Human Rights Commission.

Roadmap for ZERO Violation of Human Rights		
2020~2021	2022	2023
Established institution & system for human rights management	Advanced the system of human rights management	Establish the human rights- centered organizational culture
Newly installed the ethical management department (Human Rights Management)	Promoted the innovation of the system to handle grievances	Promote the cooperative projects for domestic & overseas human rights
Newly installed the integrated platform for whistle blowing system	Established the system to relieve the violation of human rights	Eradicate the corrupted action completely
Entrusted the labor legal firm of handling grievances	Reestablished the system for the due diligence of human rights	Improve the organizational culture of human rights respect

Education for human rights management completed by executives & employees in 2022

Accumulated 101,489 people



Promotional Video for the Campaign to Expand the Culture for Human Rights Respect

Healthy Organizational Culture

Reinforcement of Professional Competency of Executives & Employees

KORAIL has lavishly supported the professional talented of railroad. We have expanded the support of education and college degree to strengthen talented in each area and revised the education course specialized for the area of technical specialty such as licenses. Through such course and education, we have promoted the improvement of the momentum for the professional competency of executives and employees and their willpower to work, and the realization of goals.

Entrusted Education for Professional Area

KORAIL has actively engaged in outsourced training to enhance competencies in fields outside the railway sector. Notably, we have focused on areas such as accounting, finance, taxation, and cost analysis. To bolster expertise in accounting, we introduced 20 training programs, with the participation of 48 employees. In the fields of finance, taxation, and cost analysis, 62 employees underwent training outsourced to Samil PwC. Additionally, we have collaborated with Samsung SDS Multi Campus to provide programming education to 29 employees, thereby nurturing expert programmers in the IT domain.

Training Professionals for Drone and Inspection on Rail Cars

KORAIL has trained professionals for the drone and the inspection on rail cars. We have trained and educated 22 professionals how to inspect the facilities utilizing the drone or how to maneuver the drone. Also, as it is most effective to maintain the wheels of rail cars with the ultrasonic detection, we have conducted the education for the inspection with ultrasonic detection targeting executives and employees who wish to take. From its result, we have produced 50 professionals for the inspection on rail cars.



Ultrasonic Rail Detection Equipment



Facility Inspection Drone

Fostering of In-company Ventures and Supporting Stabilization

KORAIL has secured future growth engines by utilizing the innovation capabilities of our corporation. Since in-house ventures are independent departments, we have supported in-house ventures through business expenses (KRW 100 million), business infrastructure, expert mentoring, and government-supported projects. In order to foster in-house ventures that will lead in entering new markets and discovering ideas, we have promoted the interest of executives and reorganized the evaluation and selection process through the in-house venture idea contest, and as a result of expanding participation benefits, the number of in-house venture application teams rose 160% from 23 teams to 60 teams. We conducted mentoring camps for 8 selected idea teams and selected the final 2 teams through the evaluation committee and the deliberation committee and signed an agreement. As such, we will continue to support the development of in-house venture teams by utilizing internal infrastructure and technology.

Healthy Organizational Culture

Reinforcement of Internal Communication

To foster a healthy organizational culture, effective internal communication among employees is crucial. KORAIL has been committed to creating an internal culture that facilitates active communication. In the realm of virtual interactions, we have utilized online anonymous channels that encourage open discussions without regard for hierarchical ranks or job positions. We have also established and are currently running platforms like participation in Junior Board meetings, providing formal opportunities for employees to express their opinions.

Inducing the Relief of Conflicts among Employees through Online Communication

KORAIL has operated an online bulletin board called “Communication E-um Room,” which is open to all company employees regardless of their seniority or position. As an anonymous forum, “Communication E-um Room” has offered the advantage of enabling employees to express their opinions freely without being constrained by their job titles or positions. We hope that this platform will facilitate conflict resolution among employees and foster open communication.



Number of Members in Junior Board in 2022
275 members

Communication with Junior Board

The Junior Board of KORAIL is a forum composed of junior officers, including various positions and ranks up to Grade 3, aimed at expanding opportunities for front line staff to participate in management and enhancing communication. In 2022, our Junior Board comprised a total of 275 members from 17 different branches and regional headquarters within the company. We actively have held the on-tact conference between the executives and the Junior Board more than two times a year, facilitating dialogue on various management-related topics such as on-site safety, personnel policies, and employee welfare. This interaction with the younger workforce allows the organization to benefit from fresh perspectives and ideas, contributing to organizational innovation. We will continue strengthening our internal communication system through the Junior Board's role as a bridge between the headquarters and the field, as well as between management and employees.

Production of Poster to Activate and Induce Communication

KORAIL emphasizes the importance of an organizational culture that communicates freely and smoothly with each other. To this end, we have produced posters that induce communication activation once a month and distribute them regularly within the company. Posters have played a role in promoting intergenerational communication by providing common topics to executives and employees, and each month, one topic is selected, produced, and distributed. The poster theme has been composed of MBTI, restaurants, travel destination, famous lines, songs, balance games, energy charging methods after work, and the end of the year to improve understanding of both parties.

Business loss related to strike for 3 consecutive years
ZERO

Organizational Culture Index
80.7 points

Labor-Management Relationship Based on Principles

Since cooperation between labor and management plays an important role in forming an organizational culture, KORAIL has done its best to establish the correct direction and system for labor-management cooperation. We have promoted win-win cooperation with labor unions based on laws and principles, and sought to form a consensus between labor and management. In addition, we have aimed for subcontracting consultations and peaceful negotiations by embracing the labor unions of affiliates. In the future, we will strengthen our ability to manage labor-management relations based on better communication.

Conclusion of Peaceful Labor-Management Agreement

KORAIL has been successful in the conclusion of peaceful agreement for 3 consecutive years on the wage agreement and the collective agreement with the labor union which has been enacted regularly. We have improved the system to solve the problem of ordinary wages, and solved the problem after reaching a consensus with employees through a nationwide tour briefing session. Through the improvement of ordinary wages, the increase in performance salaries have been reduced, and the foundation for stable operation of total labor costs have been established.



Reinforcement of Operation of Labor-Management Joint TF

KORAIL has launched the labor-management joint TF for handling grievances to resolve the grievances of employees. The labor-management joint TF has conducted the consultation to fulfill the governmental policies and to resolve current issues but also played a role of improving the organizational culture. The labor-management joint TF is composed of 5 people from the corporation and 4 people from the labor union to consider the equity. Through the joint labor-management TF, we discovered four tasks (enhancing victim convenience, protecting victims, improving institutional reliability, and creating a culture of sexual harassment prevention) and handled 13 grievance reports. We will continue to strengthen our communication system and labor capabilities based on mutual cooperation between labor and management.

Internalization of Labor-Management Consultation Meeting

KORAIL has collected the opinions of employees through various communication channels and operated the labor-management consultation meeting in compliance with the governmental policies and sessions. The labor-management consultation, which was held 12 times in 2021, was held 31 times (27 working sessions, 4 meetings) in 2022, increasing the number of meetings from the previous year by 19 times. In the labor-management consultation meeting, we have discussed the improvement of the quality of work by employees such as working environment or welfare benefit. Such agenda has been applied to the long term task of our company to accomplish the improvement of dormitory and others.

Healthy Organizational Culture

Balance between Work and Personal Life

KORAIL has established the working environment for both work and personal life of employees with happiness. Especially, the right to take a break for employees is connected to the health, so that the system of rest has been newly installed and modified. As this system is also connected to the safety of customers, we will do our best to create the happy space for all.

Improvement of Welfare Benefit System

KORAIL has made an effort to improve the practical labor condition and enhance the quality of employees' personal life. The department in charge has directly listened to the voices of employees and accomplished the enhanced effective system.

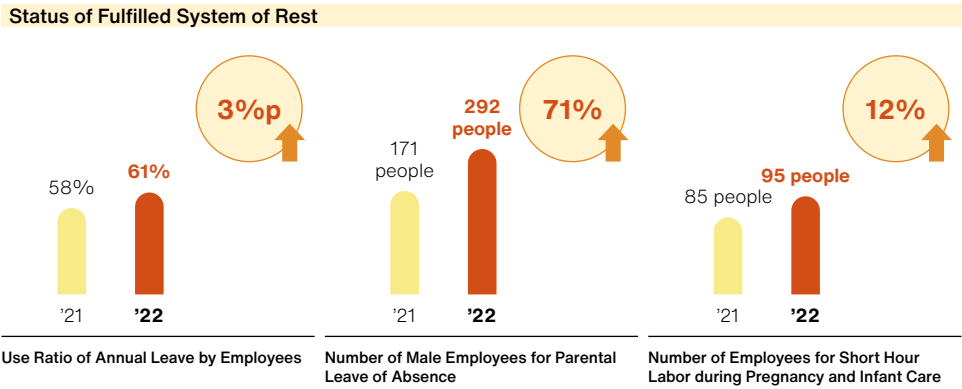
Effort to Promote the Improvement of Welfare Benefit System and Performances		
Types	Effort to Promote	Performances
Labor Condition Maternity Protection	- Participation by an in-company labor attorney to bargain - Working-level bargaining 24 times, main bargaining 5 times	- New installation of the leave of absence for self-development - Expansion of vacation for childbirth, infant care and stillbirth for male spouse - Protection measures for pregnant women in accordance with relevant laws and regulations when infectious diseases spread - Expansion of pilot operation (91.9%) of work system reform and abolition of continuous night work
Labor Environment Welfare Benefit	- Operation of labor-management consultation meeting in compliance with the session - Working-level 27 times, and main consultation meeting 4 times	- Improvement of dormitory - Improvement of cafeteria - Group injury insurance raises the coverage limit for actual loss medical expenses : KRW 20 million → KRW 30 million

Guarantee of Right to Rest for Employees

KORAIL has deleted the space to write the reason for annual leave to guarantee the right of employees to rest and promoted the activation of annual leave by enabling the carried-over annual leave even for returning employees on the pertinent year. In addition, we have expanded the scope of reward vacation for the area of facility maintenance and provided with one day before the leave of absence. We have also newly installed the system of the one-year leave of absence for the employee who served the company for 5 years.

Activation of Leave of Absence by Male Employee for Infant Care

KORAIL has operated the gender equality week to activate the leave of absence by male employees for infant care. Moreover, we have improved the system for male employees to use the leave of absence for stillbirth and infertility. In addition, we have expanded the existing computation criteria to the second child for long-service period which was applied to the third child. Such developed environment of infant care has been recognized of its contribution, and we have acquired the family-friendly certification in 2021 and 2022 from the result of evaluation by the Ministry of Gender Equality and Family.



Acquired Family-friendly Certificate
for 12 Consecutive Years

Respect for Talented

Reinforcement of Support for Female Talented in Railroad

KORAIL has spared no effort to support training female talented in railroad. We have shared the context with the human resources system focusing on the performance and people that we pursue. To keep our basic spirit to train competent talented in railroad being free from the conditions, we have actively produced female talented, female managers, executives and staffs in the area of technology.

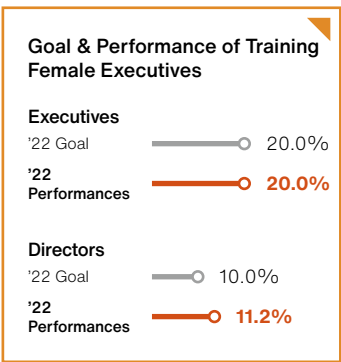
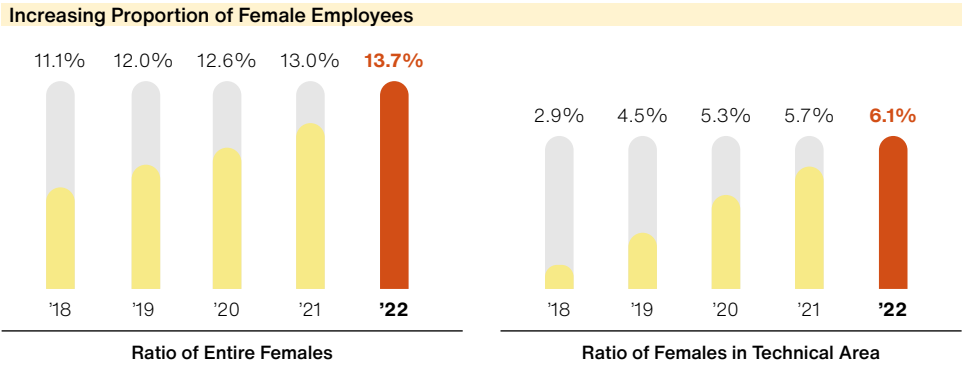
Ratio of Female Manager
14.1%

Increase in Female Managers

KORAIL has prepared the equal working conditions by holding the conference to form the company-wide consensus for the general equality and publicly announcing the information of how to take the promotion test for female executives and employees who meet the requirements. Through such effort, the ratio of female managers has been increased by 14.1%. We will plan to analyze the career development route of representative female leaders by major duty and position and take them as a role model to train female managers more efficiently.

Increase in Female Executives in Technical Area

In the past, KORAIL had a problem that the ratio of female and female managers in the technical field was unbalanced compared to the office field. In order to solve this problem, we have established a plan to train women in the technical field. We have divided female technical staff into two groups, above and below the manager level, to set goals and periodically revised plans based on their performance. In addition, we have supplemented physical limitations by introducing lightweight and mechanized equipment for efficiency. As a result, we have been able to increase the number of female managers in the technical field to 15. In the future, we will continue to strive to renew the classical field atmosphere of the technology series and achieve harmony.



Accomplishment of Goal to Foster Female Executives

KORAIL has set goals for the ratio of female appointments among executives and directors and has done its best to achieve them. In order to create and lead a culture that recognizes women's leadership, efforts have been made to strengthen women's talent capabilities by changing manager positions to circular arrangements so that they could gain various work experiences and support external education to improve their professionalism. Based on this, we succeeded in exceeding the goal by appointing 3 female non-executive directors and training 40 female executives.

Respect for Talented

Fostering Young Talented

KORAIL has provided certification education to young people looking for jobs and fostered local talented to create quality jobs. Especially, the experiential internship system is very encouraging because it is possible to develop understanding and practical capabilities for the job through direct experience and has a high conversion rate to regular workers. We will actively cultivate railway talent and stick to the role of future construction of railroad.

Supporting Education for Young Adults and Recruitment

KORAIL has supported the free education for the professional license of railroad targeting the young job seekers. We provide high-quality education by utilizing the infrastructure of the Human Resources Development Institute including the instructors. Also, we have been active for the recruitment of young adults. The opportunity for the recruitment of young adults has been expanded when the recruitment procedure was changed by the flexible operation of the recruitment for candidates and the extension of the period for successful preliminary candidates. As a result, the recruitment rate of young adults in 2022 has accomplished 1,596 people, surpassing the target of 975.

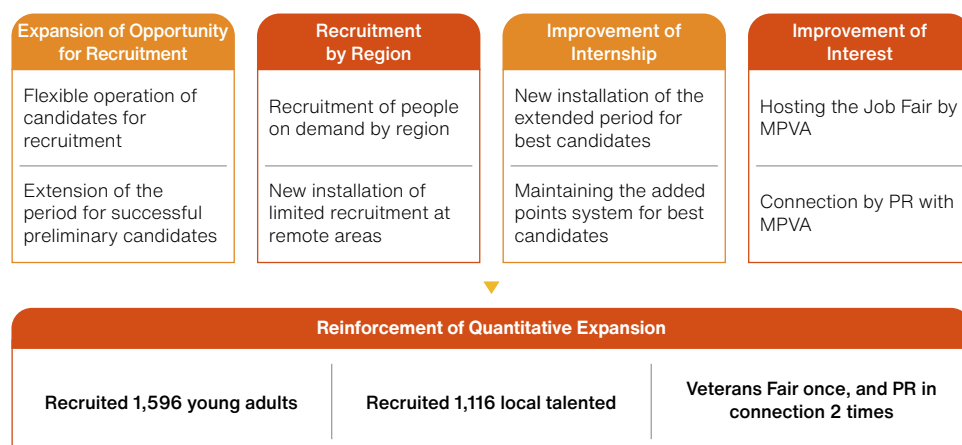
Fostering Local Talented

KORAIL has operated the program to support the education for local college students. 90 students from Songwon University have received support for obtaining qualifications through the railway driving and control certificate education program, and 106 students from Suncheon National University and Chosun University have participated in the internship of station and marketing experience. In addition, we have operated 'Nano Degree of Railroad Engineering' at Chungnam National University. Since the 'Nano Degree of Railroad Engineering' was raised to the degree course in 2022, we have expected to contribute more to the discovering and fostering of local talented.

Internalization of Experience-oriented Internship

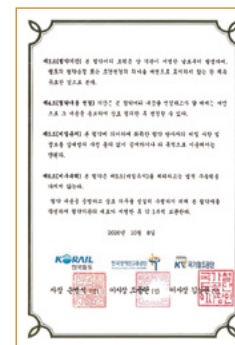
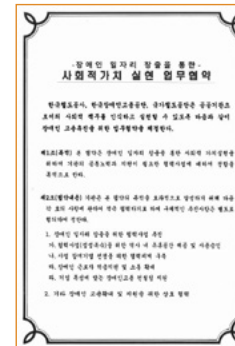
The internship system previously operated by KORAIL was a method of working once for three months. This system has been implemented with the idea of converting to a full-time position since 2018, but it had the disadvantage of not being able to fully experience construction in a short period of three months. To overcome this, we have improved the system to allow one extension only for those with excellent evaluation, extending the internship period to six months. As a result, the number of experienced interns who were converted to full-time workers was 189, an increase of 155 from 21, and the effect of improving the system has been clearly felt.

Conversion of Recruitment System and Quantitative Expansion



Recruitment of young talented
1,596 people

Among experience-oriented interns, number of people switched to regular position to that in previous year
Increased by 155



MOU to Realize Social Value

Creation of jobs for vulnerable social classes
3,347 people

Creation of Sustainable Jobs

KORAIL has utilized the railroad infrastructure to create jobs for social vulnerable. Above all, we have not been satisfied with one time event for jobs but prepared the system for continuous economic creation. We will actively create the jobs which can enhance the economic capability of vulnerable social classes and contribute to the society.

Operation of Win-win Cooperation Stores “Seom Seom Ok Su” for Social Vulnerable

KORAIL has provided an economic foundation for the socially vulnerable by providing idle space in the station and supporting start-ups. One of the representative projects is Seom Seom Ok Su, which employs deaf people to provide free nail care services to railway users, and we have signed MOUs with the National Railroad Corporation and the Korea Employment Agency for the Disabled to support the project. We have provided jobs to 34 deaf people through Seom Seom Ok Su, and promoted continuous store expansion in the future.



Daejeon Store



Gimcheon-Gumi Store

Supporting Activities for Cleaning Environment by Homeless

KORAIL has helped the social rehabilitation of homeless in collaboration with the local governments and the homeless support organizations. The "Homeless Job Project," which is implemented at 12 major stations, including Seoul, Daejeon, Daegu, and Busan stations, is a system that provides and pays for environmental maintenance jobs such as cleaning squares to homeless people. The project has contributed greatly to improve the environment around the station as well as increased the willingness of the homeless to work. Through the project, 189 homeless people worked in 2022, and we have planned to expand the scale of support.

Creation of Jobs for Elderly in Local Areas

KORAIL has supported the jobs for elderly in two directions. First of all, there is a senior safety worker system that is carried out through cooperation with local governments. Senior safety personnel are responsible for securing customer safety, such as guiding customers within the station or being placed in elevators mainly used by the elderly. Currently, 1,727 safety personnel have been working at 151 metropolitan railway stations. The other job is eco-friendly upcycling, which is collecting the necessary bottles from stations and trains for upcycling products. We created 29 jobs through our eco-friendly upcycling business.

Visiting Car Washing Service by Social Economic Enterprise

KORAIL has contracted the MOU with the metropolitan rehabilitation center and the rehabilitation enterprise to conduct the visiting car washing service at parking lots. The visiting car washing service has promoted the job creation of low-income social classes through the rehabilitation enterprise of Prumi Car Washing Cooperatives recommended by the metropolitan rehabilitation center. Also, they have provided the service with about 30% low price than the market price. We will continue to improve the system by grasping the performance and satisfaction of use.

Respect for Talented

Reinforcement of Social Fair Recruitment

KORAIL has realized the social fair recruitment and practical equality to fulfill the responsibility as the public enterprise. We will provide opportunities for the group who finds it difficult to seek jobs because of inequality, prejudice and realistic limit and do our best to create the society where we live together.

Social Fair Recruitment

KORAIL has pursued the fair recruitment without discrimination. We have made an effort for the social fair recruitment of the true meaning through the system directly related to duties such as the roadmap to select friendly duties to develop the competency of disabled and the new installation of step style experience-oriented internship for disabled. We have established the plan to accomplish the qualitative improvement of jobs and to surpass the recommended goal in the entire area of social fair recruitment for both high school graduates and disabled.

Status of Social Fair Recruitment						
Category	Criteria	Goal (people)	Ratio	Number of Recruited	Ratio	Increase
High School Graduates	Number of Recruitment	221	13.0%	390	23.0%	+169
Local Talented at Headquarters Area	Number of Recruitment	120	24.0%	194	39.0%	+74
Local Talented at Non-capital Region	Number of Recruitment	594	35.0%	1,116	65.8%	+522
Disabled	Regular Employment	1,101	3.6%	1,111	3.6%	+10
Person of National Merit	Regular Employment	1,870	6.0%	1,889	6.0%	+19

Realization of Practical Equality

KORAIL has rearranged the duties around the capability and expanded the self-directed education and the college application for the employees of high school graduates. In 2022, 11 employees entered the colleges. Through such realization, we have expanded the scope of duties by high school graduates. Moreover, we have also proceeded with the education for reemployment and for the expertise of duties.

Practical Equality System			
Category	Promotion Background	Promotion Effort	Performance
High School Graduates	• Implementation of onsite works	• Arrange duties around capability, support the education	Ratio of high school graduates among young adults assigned of staff duty '20 3.9% '21 4.8% '22 6.1%
Reemployment Service	• Necessary to reorganize the education course • Narrow target for the education of career design	• Expand the education to meet the demand • Expand the provision of opportunities for the education of career design	Satisfaction of the education for reemployment '20 78pts '21 96pts '22 96pts

Transparency of Recruitment Procedure

KORAIL has revised the 'Enforced Regulations of Recruitment' to enhance the reliability of recruitment procedure through the standardization of the criteria for the blind recruitment and successful preliminary candidates and the public announcement of both the raking and the period of failing subjects. We have separated the practical skill from the score of interview test to disclose them. Also, we have deduced the improvement matters to improve the procedure through the survey on the satisfaction for the entire process of recruitment.

Recruitment Corruption Indicated Externally

ZERO

Improved Qualitative Level of Jobs

KORAIL has spared no effort for the investment and compensation for executives and employees so that more than 30,000 employees can fully demonstrate their capabilities. When surveying the satisfaction level of welfare, we must ask the opinions of all employees and quantify and grasp the job win-win index suitable for the construction. We will ultimately lead sustainable growth by raising the quality level of construction jobs according to the construction belief that "companies are people."

Introduction of Coexistence Index of Jobs

As social demands for improving the quality of jobs have arisen, KORAIL has devised a system to manage the quality of jobs. The "KORAIL Coexistence Index of Jobs," which evaluates job security (35%), industrial stability (30%), social value (20%), and family friendliness (15%), has been constructed by referring to external benchmarking, but has been improved to a structure suitable for evaluating construction. Through quantitative results, we have improved the treatment of workers, including an increase in welfare costs, safety consulting for institutions that have experienced temporary accidents, and improvement of contract procedures. In the future, we will promote advancement by developing comprehensive indicators in the coexistence index of jobs and expanding the target of measurement.

Coexistence Indicator of Jobs in KORAIL			
External Benchmarking Benchmark 3 public corporations ➔ Indicators design, External advice ➔ Implementable indicators, Design direction	Index Design Quantification of 11 indices of 4 items Job security (35%) Industrial stability (30%) Social value (20%) Family friendliness (15%)	Measurement of Subsidiary Quantified measurement of subsidiary ➔ 81.5 points in 2022	Utilization of Result from Subsidiary Increased cost for welfare benefit Consulting for the safety of the public office with occurred disaster for closed business Improvement of contract procedures (100% winning rate)

Future Plan		
Mid Term Goal '22 81.5 points '25 90 points	Promote the improvement of betterment of laborers in subsidiary	Proceed with Advancement • Develop the general index • Expand the target for measurement

Expansion of Experience-oriented Welfare

KORAIL has measured the satisfaction with the existing welfare system and improved to expand the welfare based on the result of identified demand by employees through various communication channels such as the labor-management consultation meeting. Also, we have held the event through the website of welfare benefit center and operated the exclusive discount center for executives and employees of the corporation through the external cooperation. As a result, we have accomplished the effect of 13.5 increased points compared to that of previous year from the survey on the welfare satisfaction conducted in 2022.

Promotion Goal for Welfare System in KORAIL		
Goal	To operate the welfare system that complies with the instructions of the government and corresponds to the eye-level of citizens	
Direction	To improve the welfare benefit system of national consensus	To manage the welfare benefit expenses efficiently
Tasks	Improvement of the welfare benefit system	Self-inspection or external inspection on the execution of budget
	Inspection on the item of excessive welfare benefit	Compliance with the goal of welfare benefit expenses per 1 person

Coexistence indicator of jobs

81.5 points

Satisfaction of Welfare by Employees

86.0 points



Governance

Railroad Service Being Trusted

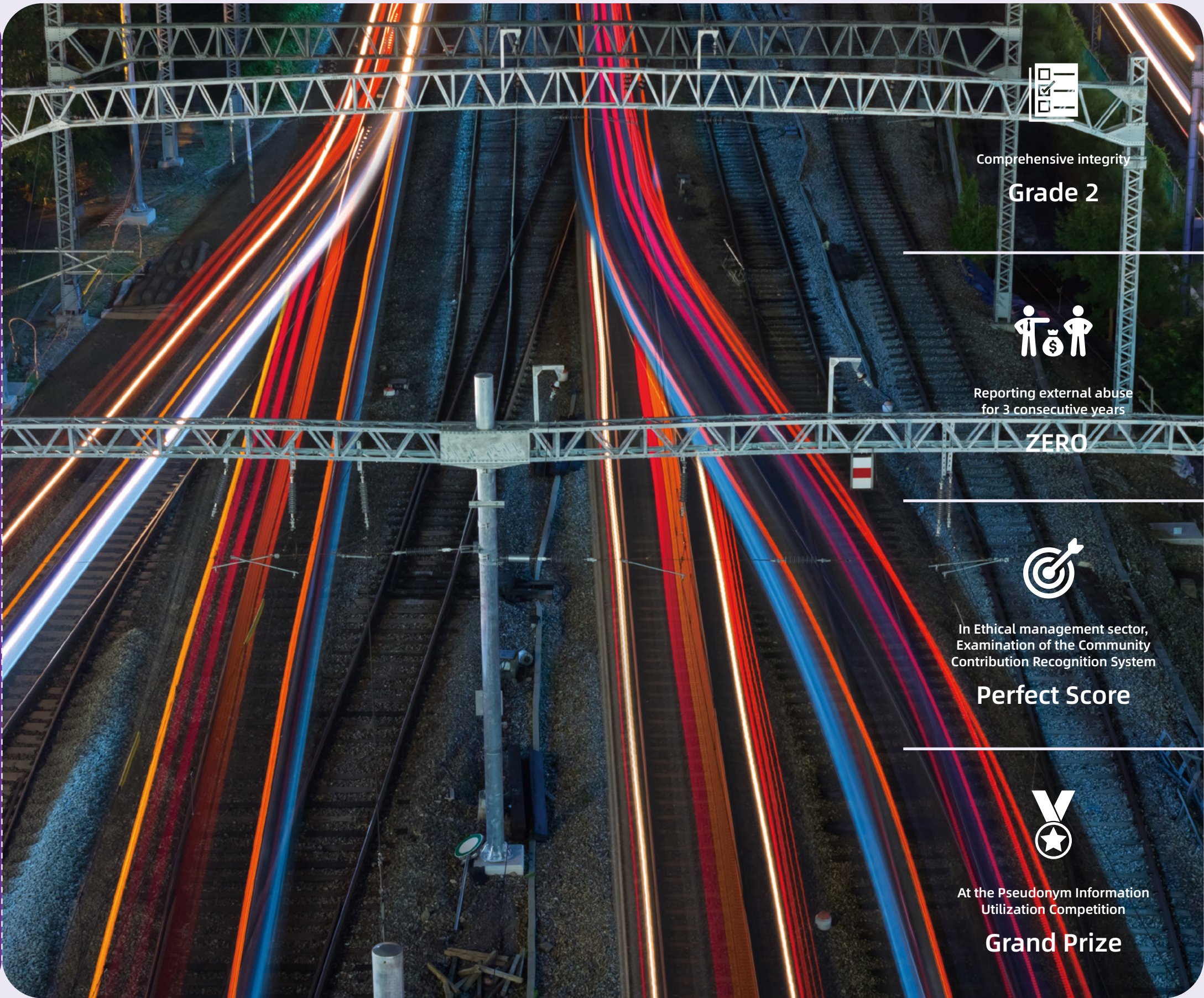
Importance of Issues

The importance of the items, 'Anti-corruption & Ethical Management' has been raised largely in the ESG assessment, and stakeholders have also emphasized the area of anti-corruption. Especially, according to the nature of the corporation where about thirty thousand executives and employees are working throughout the country, it is quite necessary to internalize the clean organizational culture. In addition, we need to collect the opinions of stakeholders through various channels and improve the system to provide better level of convenience. For this purpose, KORAIL has strengthened the trust and cooperation between members and stakeholders based on the ethical management.

Approaching Method

KORAIL has a goal of 3NOs to eradicate the abuse of power, the corruption and sexual harassment for the internalization of clean organizational culture and held fast to the principle of zero tolerance. We have systemized the report of the violation of human rights and the handling of grievances in the level of organization to manage the violation of human rights. Also, we have composed the exclusive TF for the prevention of the conflict of interests to monitor the real condition of fulfillment and put an effort to form the organizational culture. Moreover, we have secured the financial solvency through the maximization of profit and the reduction of cost. As we work with many stakeholders, we have advanced the risk management and take full responsibility of data disclosure and information security for the advancement of the management system.

Focus SDGs



Ethical Management

Eradication of In-company Corruption

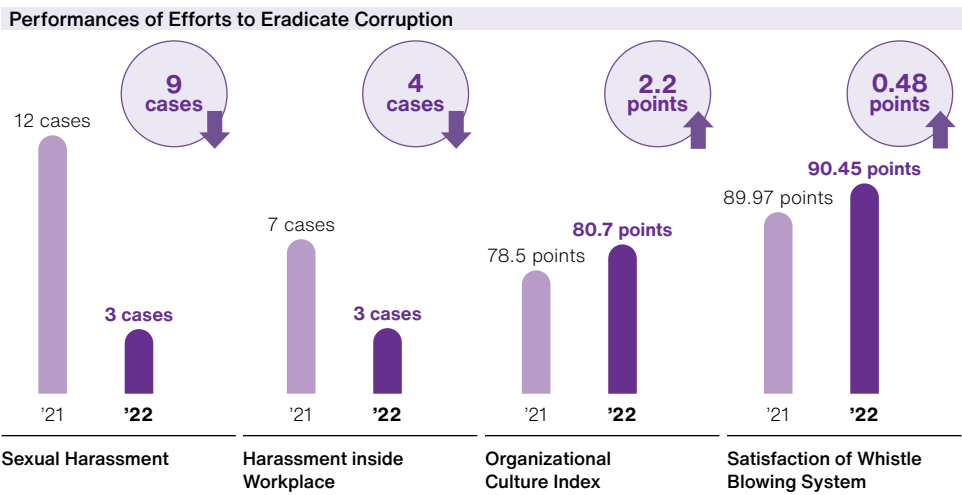
KORAIL has taken strict measures to address internal misconduct as part of its commitment to establishing an ethical and healthy management system. Furthermore, under the strong determination of our leadership, we have implemented comprehensive efforts to internalize a culture of human rights respect within the organization.

Comprehensive integrity
Grade 2

Reinforcement of Principle of Zero Tolerance with Corrupted Actions

KORAIL has implemented the roadmap for 3Nos (No corruption, abuse of power, sexual harassment) to eradicate the corrupted actions inside the company. We have put a great effort to prevent the recurrence by imposing severe punishment with no tolerance on the assailant. First of all, we have promoted the activation of whistle blowing system. From its result, our effort has been acknowledged to accomplish the 2nd rating in the general integrity and integrity effort.

Reinforced Punishment on Corrupted Incident	
2021	2022
Excluded the payment of voluntary retirement benefit for a person with disciplinary action	Increased the restricted period of promotion against a person of harassment
Expanded the prescription of disciplinary action against corrupted action, imposed the limitation of mitigated disciplinary action	Imposed the limitation on the payment of bonus to a person of serious corrupted action
Imposed the restriction on the loan for school expenses	Imposed the limitation on the payment of severance pay (Executives expulsion 1/2, dismissal 1/4)
Expanded the scope of corrupted action to the item of 360-degree feedback for promotion	Applied the deduction points to the affiliate of disciplinary action against harassment



Promotion to Introduce K-CP

K-CP (Clean Ethical Management Compliance) is the autonomous control system for anti-corruption which has been distributed by the Anti-corruption & Civil Rights Commission to support the voluntary establishment of the clean ethical management system and the efficient operation by an enterprise. KORAIL has promoted the introduction of K-CP based on the volition of the corporate head to strengthen the ethical management by introducing the standard ethical management system. Currently we have participated in the corporation for the pilot operation of K-CP and has been selected. We have composed a joint TF of the Audit & Inspection Department and the Future Strategy Department to promote K-CP more effectively through the preparation of organization diagnosis, benchmarking, consulting and system design, etc.

Systemization of Relief Procedure for Handling Grievances

KORAIL has the relief system of human rights violation and the due diligence system of human rights. In addition, we have conducted the fair evaluation with the system of handling grievances where all external people, the corporation and the labor union participate. Such systemization of KORAIL has been recognized so that we have proceeded with the lectures as the excellent case of human rights management in the education of human rights for public corporations under the supervision of the Anti-corruption & Civil Rights Commission.

Relief System for Handling Grievances			
Implementation System	Implementation Plan	Organization Operation System	Decision Making Body
	• Master plan for ethical management • Plan to promote human rights management in 2022	• Ethics Management Dept. • Consultants for grievances	• Human Rights Management Committee
Grievance Handling System	Standard System	Report Channel	Consultation-Investigation-Advice
	• Instruction for human rights charter • Instruction to prevent sexual harassment and molestation	• Rail-whistle • Online Human Rights Violation Report Center	• Operation entrusted of external labor legal firm
Grievance Handling System	Grievance Evaluation Committee	Countermeasure Consultation Council for Eradication of Sexual Harassment	Labor-Management Joint TF
	Organization for the evaluation of incidents such as sexual harassment and molestation	Field centered consultation group to eradicate the corrupted action	Labor-management consultation group to improve the grievance handling system

Company-wide Response to Prevention of Conflict of Interests

KORAIL has newly installed the TF for the prevention of conflict of interests in order to eradicate the pursuance of personal gain and prevented the conflict of interests through the education by position. Moreover, we have established the feedback system which finds the blind spot of the system to reflect it on the policy through monitoring.

Composition of Exclusive TF for Prevention of Conflict of Interests

The TF for the prevention of conflict of interests in KORAIL has intensively managed the personal use of the weak areas of contract, human resources and common commodities and prepared the self-inspection checklist for the diagnosis of personal interests. In addition, we have established the system to fulfill the institution which connects the main office with local divisions and newly installed the item of the conflict of interests in the inspection manual for daily audit.

Monitoring of Real Condition to Fulfill Prevention of Conflict of Interests

KORAIL has identified the inherent element of the conflict of interests through monitoring and supplemented the system. In 2022 the exclusive TF discovered 15 points to improve such as the regulation of disciplinary action. We have also secured its effectiveness of system operation through the Audit & Inspection Department. In regards to the management of monitoring and on-off line communication channels, the Audit & Inspection Department has regularly conducted the inspection on vulnerable area in the conflict of interests especially in the audit of particular performances. We have established the feedback system to reflect the points of improvement on the policy in the following year, which have been discovered through such process.

Customized Preemptive Education by Position

KORAIL has conducted the customized education by position and responded to the prevention of the conflict of interests more effectively. We have conducted the special education for executives and employees before the enactment of the Act on the Prevention of the Conflict of Interests for Public Officials. We have invited professional lecturers to educate 200 employees and proceeded with the preliminary education for the high ranking positions such as heads of affiliates and staffs. 100% of the high ranking positions completed the education, and 94.8% of ordinary employees took the education for the prevention of the conflict of interests in 2022.

Index of establishment of operation foundation for comprehensive integrity-conflict of interest prevention
Perfect Score

Ethical Management

Internalization of Clean Organizational Culture

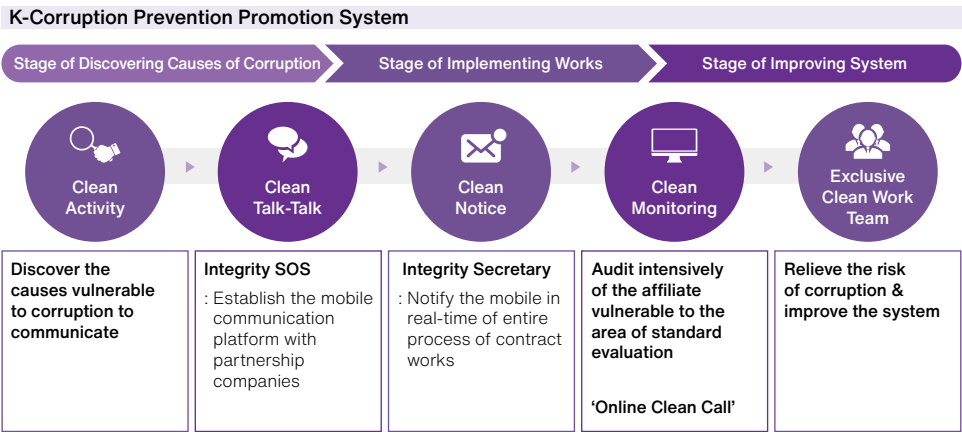
Preventing a recurrence is as important as strictly controlling the internal committee with severe punishment. In order to establish a clean organizational culture, KORAIL has implemented a project based on the participation of executives and employees. Through the K-integrity project and measures to eradicate power abuse, we have eradicated bullying incidents in the workplace, continued smooth communication with our partners, and managed corruption risks.

External experience of integrity

94.1 points

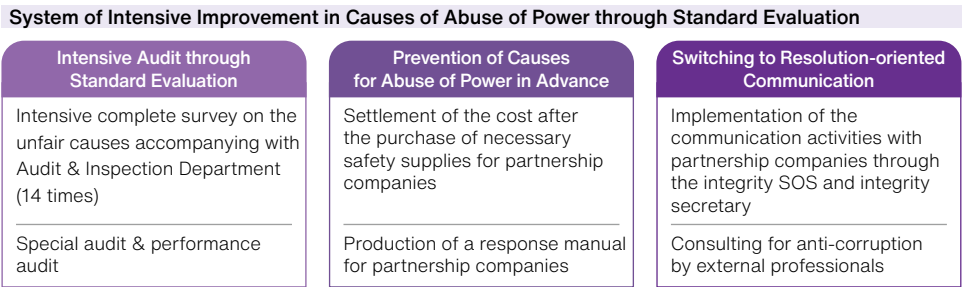
K-Integrity Solution Project

KORAIL has proactively blocked and systematically managed corruption risks through the complete innovation of KORAIL's K-corruption prevention system. Externally, we have built an integrity SOS to increase non-face-to-face communication with our partners, and expanded the integrity secretary service that transparently discloses information throughout the process from contract to delivery. Internally, the establishment of an ethical management cooperation system TF has been established to improve internal evaluation indicators of anti-corruption integrity efforts, and to strongly promote ethical management, such as the Ethics Management Committee and the Transparent Management Committee. In addition, we are making every effort to establish integrity management by strengthening the protection of corruption and public interest reporters and expanding the compensation system.



Establishment & Fulfillment of Countermeasure to Eradicate the Abuse of Power

As the business is large and with many partners, KORAIL has prevented and managed misconduct with a strict system. In addition to the internal audit of the company and the pre-blocking of power abuse, we are immediately responding to external power abuse incidents through active communication with our partners. As a result, the positive evaluation (satisfaction) of partner companies increased from 7 cases in April 2022 to 19 cases in August 2022. In order to eradicate power abuse that occurs inside the institution, a "power abuse item" has been added to the self-manager integrity evaluation item, strengthening the level of punishment for perpetrators, and changing perceptions through repetitive power abuse prevention education and awareness improvement projects. In particular, special training was conducted for executives of level 2 or higher. We have implemented 36 tasks of the 6 major strategies to eradicate power abuse, and the number of workplace harassment cases have decreased by about half compared to the previous year.



Reporting external abuse for 3 consecutive years

ZERO

Reduced incident of harassment inside workplace

△ 4 cases

'21 7 cases

'22 3 cases

Enhancement of Financial Solvency

Reorganization & Expansion of Railroad Business

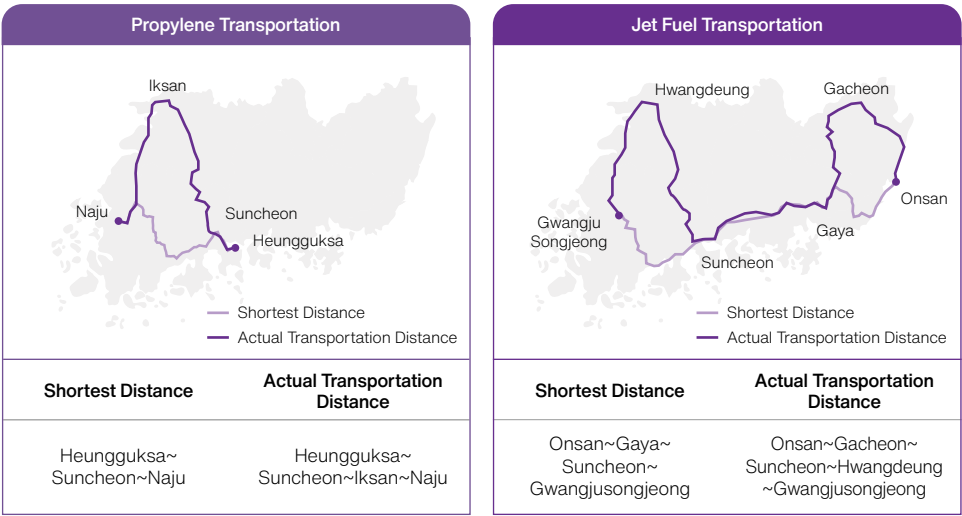
Due to the increasing importance of financial soundness due to the COVID-19 and economic downturn, KORAIL have sought to improve its finances and increase profits by expanding the profitability of its business. We have used our railway infrastructure to develop and improve our business, leading to revenue growth.

Increased Profit in Major Businesses

KORAIL has accelerated the development of key large-scale station areas such as Yongsan, Northern Seoul Station, and Susaek to expand KTX beneficiary areas. In addition, we have improved our financial position through efficient business operations by expanding high-speed rail stop stations and analyzing big data to increase the number of trains and supply seats during the peak season. In addition, through active marketing such as the implementation of Naeil-ro 2.0, the transportation business revenue increased by KRW 830.1 billion compared to the previous year.

Revision of Freight Rate & Transportation System

Previous shipping cost was computed for the shortest route according to the map but there was a difference from actual transportation distance. In order to overcome this gap, KORAIL has established a reasonable fare calculation method based on the actual transport distance and agreed with the customer. In addition, we have succeeded in improving the freight standards for heavy goods in consideration of the 'road safety freight system'. As a result of these efforts, we have achieved an annual revenue increase of KRW 22.1 billion.



Compared to previous year, total logistics sales increased by

KRW 1.9 billion

Improvement of Total Logistics Business

KORAIL has selected the priority to develop the operation method of the storage and logistics facility for living necessary. We have built new living logistics facilities and established regulations for warehouse development and operation, and have selected and operated three locations after receiving a public offering from private businesses. In addition, we have operated the storage for a simple rental business jointly with the private and added the service of unloading and storage. As a result, the total logistics sales have been increased by KRW 1.9 billion compared to the previous year.

Conclusion of New Agreement for Global Railroad Transportation

KORAIL has obtained the exclusive order for the project to maintain and repair new railroad line in Tanzania through the international open competitive bid. We have accomplished the first ranking in the technical evaluation of international bid. Besides, we have also concluded the contract with 4 other countries of Philippines, etc.

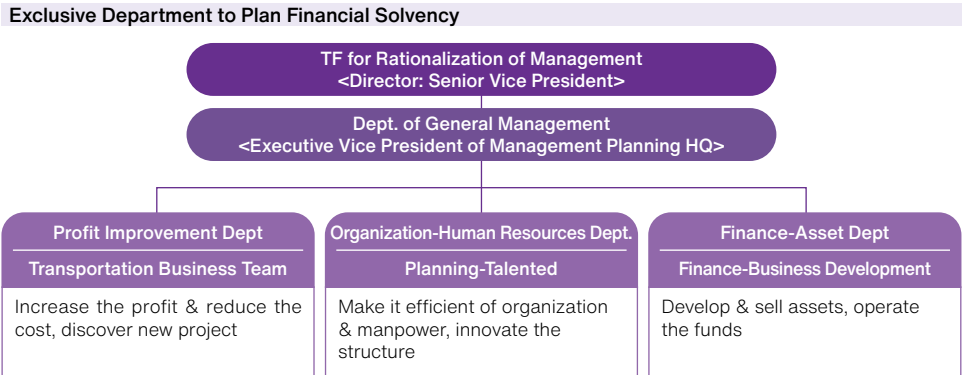
Enhancement of Financial Solvency

Innovation of Financial Structure

KORAIL has done the best to overcome the situation due to financial crisis, such as interest rate hikes and inflation. We have engaged in the multilateral improvement of financial structure and prepared the company-wide response to financial crisis through systematic goal to maintain the safety and soundness of our financial structure.

Structural Promotion System to Strengthen Power of Execution

KORAIL has established a dedicated department to improve financial soundness. The TF for the rationalization of management has developed the high intensity innovation plans and carried out audit and inspection. Innovation policies and goals have been set based on the implementation measures derived for each division, leading to company-wide participation. In particular, we have checked performance at working-level meetings held more than once a month presided over by the executive vice president of management planning HQ and strengthened our performance through internal evaluation of achievement and efforts.



Domestic production of rail car parts
85.7%

Active Cost Reduction

As intensive budget management is required, such as soaring prices and increasing fixed costs, KORAIL has expanded its savings targets, focusing on non-essential budget items. We have adjusted the goal of cost reduction higher to strengthen the power of execution and surpassed 159% of cost reduction to the goal. For specific measure, we have sought the reduction of repair and maintenance cost by the efficiency of manpower, the operation of reduced expenses, the diversification of supply network, the expansion of recycled repair, the measurement of time facilities, and the domestic production of parts.

Contents of Innovation Plan & Performance in 2022		
Efficiency of Function-manpower	Reduction of Operating Cost	Performance
Reduce the direct function of non-core works Consolidate the departments & innovate the automation of works	Reduced by 10% in the second half of 2022 Reduced by 4% from 2023	Human resources reduced by 722 people Efficiency of 1,566 people Budget reduced by KRW 39.5 billion Accomplished 164% to the goal of KRW 24.1 billion

Accounting fraud-error
ZERO

Reinforcement of Accounting Management-Internal Control

KORAIL has strengthened the system of divisional accounting and internal control for the strict management of budget. We have strengthened the review of accounting through an external professional and divided accounting and financial statement by each station for the computation. In addition, we have secured the stability through the accounting risk management committee and responded to the uncertain financial market.

Risk Management

Minimization of Customers' Inconvenience

KORAIL has continuously studied to resolve the actual inconvenience of customers and raise the satisfaction to increase the demand. We have advanced the service to the eye level of citizens such as the management of on-time operation rate stricter than the global standard and the simplified response system to crimes. We will put more effort for zero inconvenience of customers.

On-time operation rate to UIC Standard
99.067%

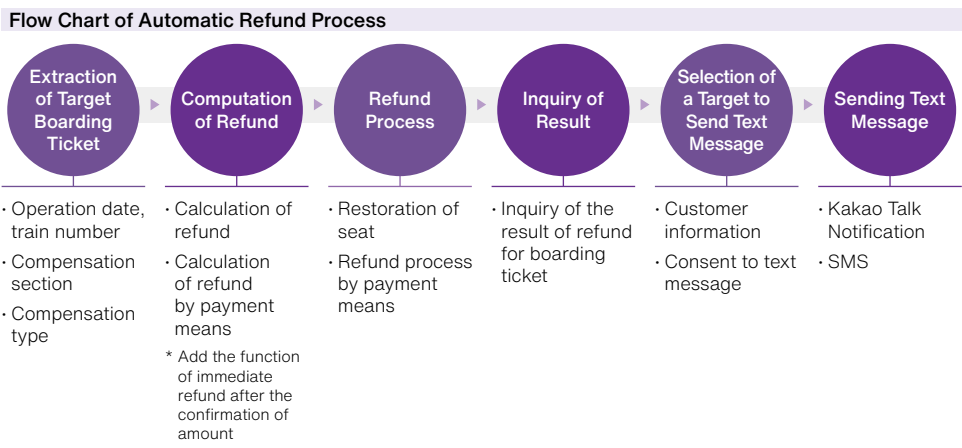
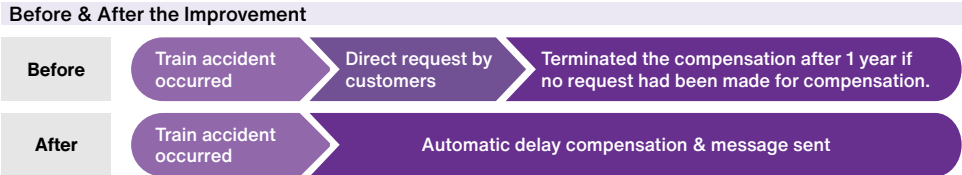
In the 'Railroad Service' organized by MOLIT, be selected as
Excellent Case

Management of On-time Rate and Guide of Delayed Service

KORAIL has revised the standards with the aim of managing the regular rate that customers can feel. Time management is stricter than before by reflecting the customer service charter-based on the Korean railway's punctuation rate. To this end, additional two-way signal facilities were installed to enable rapid opening of trains during single-line operations, and a real-time information delivery system was established through the GKOVl in preparation for unusual situations. In addition, in case of train delays, we have quickly provided delay information through KORAIL Talk push notification, station electronic display, and on-site guidance to improve customer reliability. We will continue to make efforts to reduce customer inconvenience and meet expectations and demand.

Automatic Refund of Compensation for Delayed Train

KORAIL has improved the previous method of the direct application by a customer and prepared the procedure of automatic refund for compensation. For the customer with credit card payment, the preemptive and automatic compensation will proceed through the station window or the application of account transfer on the next day from the day of incident. Moreover, we have raised the convenience of customers with the guide messages. Through this, the refund of about 170 thousand cases with credit card payment has been made automatically and the ratio of delay compensation has been increased to 95%.



Speed-up of Crime Response System inside Railroad

KORAIL has improved the previous complicated system of crime report to simplify the crime report channel. By integrating the report channels, it is available to connect with the situation room of railroad police immediately. We have added the report function of railroad police to the terminal device for the works of crews. Also, we have arranged a large button of the function for 'Railroad Crime Report Connection' on the boarding ticket screen for customers to find the crime report channel easily. Such simplified service of crime report has been selected as the 'BEST KORAIL Service'.

Risk Management

Establishment of Safe Information Environment

Due to the frequent occupational nature of keeping and utilizing customer's personal information, KORAIL has paid much attention to establishing a safe information environment. We have obtained ISO 27001 certification for the first time in a public company by meeting 93 criteria in 4 areas of the information protection management system in relation to the 'Rail Ticket Reservation Launch System', one of the major information and communication infrastructures designated by the state.

Infringement of information security & leakage of personal information in 2022

ZERO

Acquired the certificate for the first time in public corporation

ISO 27001:2022

Response to Cyber Attacks

KORAIL has reinforced the exclusive professional manpower and the manpower for cyber safety center as the response system against the cyber attacks on DDos. From its result, we have ranked the first among 146 national public offices in the response training against the cyber attacks. Moreover, we have proceeded with the PR for citizens of cyber security in the 'Month of Information Security' and put a great effort of the activities for public benefit such as the implementation of a pop-up guide to prevent smishing.

Reinforcement of Personal Information Management

KORAIL have introduced a function to create, store, and check access records for personal information processing systems to secure countermeasures according to changes in types of personal information leakage accidents and to establish a real-time internal monitoring environment. In addition, we have prevented the omission of relevant laws and regulations, such as linking the personal information processing system and applying security policies for access rights management, and upgrading the level of personal information safety.

Operation of Financial Risk Management System

KORAIL has more strengthened the financial risk management system for the continuous economic aggravation. We have managed regular monitoring and emergency response system for both financial risk and non-financial risk and collected the contingency plan for fund operation to promote the stability.

Response to Risk through Reinforcement of Regular Monitoring

KORAIL has conducted the inspection on the financial statement of major core risks with the Korea Financial Information System (KoFIS) and the Management Information System (MIS). We have immediately responded to the risk through the regular monitoring by the institution and regulations of the committee and the meeting for regular and frequent inspection on the financial indices of major core risks around the top management.

Risk Management System			
Regular Monitoring	Confirmation of Early Alarm	Conversion to Risk Response System	Assessment & Feedback
Financial (day), Non-financial (week)	Confirm the level of risk	Report to the committee and the management group	Evaluate the activity & action
Capture the signs of risk	Respond to each stage of risk	Convene the emergency countermeasure meeting	Establish the measure to prevent the recurrence

Effort & Status of Risk Response			
Financial Risk (Uncertainty of Financial Market)		Non-financial Risk (Continuous Financial Risk)	
Effort to Respond	Status of Response	Effort to Respond	Status of Response
Contingency plan for fund operation (3 times)	Zero liquidity risk by the establishment and response by each variability of inflow-outflow	Effort to strengthen the transportation profit & strategic development of assets	Expansion of the area to receive the benefit of high speed railroad
100% swap transaction to the variability of carry trade	Zero variability by 100% hedge fund such as interest rate and exchange rate	Reduction of operation cost & minimization of investment except safety	Reduction of operation cost by KRW 39.5 billion & adjustment of businesses by KRW 372.7 billion
Procurement of additional liquidity by increased credit line loan agreement for emergency	KRW 300 billion in 2021 → KRW 350 billion in 2022	Regular operation of emergency response system & reinforcement of internal control	Work shop for executives, TF for rationalization of management

Expansion of Communication with Stakeholder

Diversification of Communication Channel

As it is more important to collect the opinions of stakeholders to resolve major policies or current issues, KORAIL has diversified and activated the communication channel with stakeholders. Especially, to catch up with the changed trend since the pandemic of COVID-19, we have established and strengthened the untact real-time two-way communication channel. We have activated the communication initiatively and created the customized value through the change which stakeholders can experience such as KORAIL Talk, Integrity SOS, KORAIL Win-win Club, etc.

KORAIL Talk 'All-in-one Communication'

KORAIL has strengthened and expanded the mobile boarding ticket reservation application 'KORAIL Talk'. 'KORAIL Talk' is the representative channel of our company which has accomplished more than 30 million number of accumulated downloads. We have newly installed 'Real-time Chatting Consultation' and 'Railroad Crime Report Connection Function' and expanded the function of 'Service Call' for customers and crews to communicate in real time. From its result, the number of users of 'Service Call' has been increased drastically. 'Railroad Crime Report Connection Function' has been ranked the first in BEST KORAIL Service selected by consumers and has been reviewed highly favorable.

Public corporation mobile App number of downloads

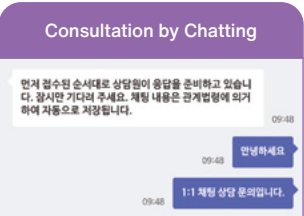
1st Ranking

Compared to previous year, number of using service call increased by

47,591 cases

KORAIL Talk Installed & Expanded for Communication Function

Consultation by Chatting



Real-time chatting consultation service

Connect directly with consultants with one touch

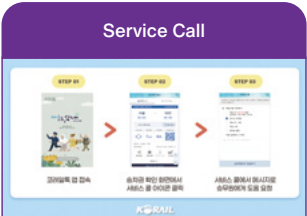
Railroad Crime Report Connection Function



Located on the main screen of boarding ticket

Automatic transmission of train number & seat information to the railroad special judicial police force

Service Call



Real-time communication between customers and crews

How to use

Touch boarding ticket
↓
Transmit the location to crew
↓
Resolved



2022 Idea Contest for Citizens

Idea Contest for Citizens

The idea contest for citizens has the theme of ideas to enhance the convenience of citizens. As it enables listening to the voices of customers in use of the railroad directly, it is possible to prepare the effective policy. KORAIL has revised the previous evaluation committee composed mainly of internal employees to compose more than half of external personnel and improve the reliability and efficiency of the proposal for selection. In 2022 contest, 287 participants with total 368 cases were received. We have selected excellent proposals among them and reflected them on actual policies.

Production of Contents Specialized for KORAIL

In the official YouTube channel of KORAIL 'Korean Railroad TV', several videos have been posted which can be provided only by the corporation. For example, in 'Online Travel with KORAIL+', it is available to experience the railroad operation with VR·4K video realistically at the viewpoint of an engineer. We have posted the video of 'Isn't it the first time to hear the sound of a train' which sends various sounds of railroad in ASMR such as the whistle and sound of the train and the video of the first time disclosure of the interior of new style train. We have promoted the activation of railroad through the contents to the trend.

Expansion of Communication with Stakeholder

Collection & Reflection of Opinions by People Vulnerable to Transport

KORAIL has conducted the monthly survey of experience satisfaction in order to resolve the inconvenience of people vulnerable to transport and listened to their opinions through the meeting with contact point employees and the association of disabled. From its result, we have implemented the special education as for the measure to improve the helper service and expanded the scope of using a lift by a person of walking disability for the target person of using wheelchair seat. We have introduced the procedure of real-time certification through the reservation by phone for the social classes vulnerable to digital system.

Operation of Customized Communication Channel for Each Stakeholder

KORAIL has established the communication channel that encompasses various stakeholders. We have operated various communication channels to meet the needs of each stakeholder. Especially, we have operated both the channel to collect the opinions of stakeholders and the channel with a goal of resolution-oriented communication to reflect them on the current issues of our company. We will actively communicate with stakeholders through the communication channels and listen to the demand of stakeholders.

Communication Channels with Stakeholders			
Citizens·Customers	Executives & Employees	Government·Media	Cooperative Companies· Relevant Public Offices
KORAIL Talk	Rail Whistle	ALIO	Railroad Win-win Platform (Website)
KORAIL SNS, YouTube	Newsletter·Broadcasting	Disclosure of Information	Relevant Public Office Consultation Association
Voice of Customers (Website)	Open Bulletin Board	Report Materials	Integrity SOS
Customer Service Center (Tel)	Junior Board	Approval of Video	KORAIL Win-win Club

Expansion of Digital Service

KORAIL has made an effort to improve the service in the digital area and enhance the Customer Relationship Management (CRM) and customers' satisfaction. For this purpose, we have collaborated with the private and the government to improve the quality of service and increased the practical communication and support through the systematic approach. We will continue to provide various digital services through active system improvement.

Implementation of Digital One-Pass

Digital One-Pass is the service to use several electronic governmental services through the certification means with one ID. KORAIL has implemented the Digital One-Pass for the convenience of citizens. As we have introduced the function of a single ID login without individual subscription, we have made it possible for a simple login to KORAIL website and KORAIL Talk with one time membership subscription.

Expansion of User-Centered Digital Service

KORAIL has expanded the user-centered digital service. In order to improve the convenient use by customers, we have prepared the real-time notification service for the information of parking at the station. We have provided the real-time situation of parking lots and omitted the process of the onsite confirmation of eligible discount by using the information of vehicles registered in 'Government 24'.

Competition Utilizing Pseudonym Information

Grand Prize

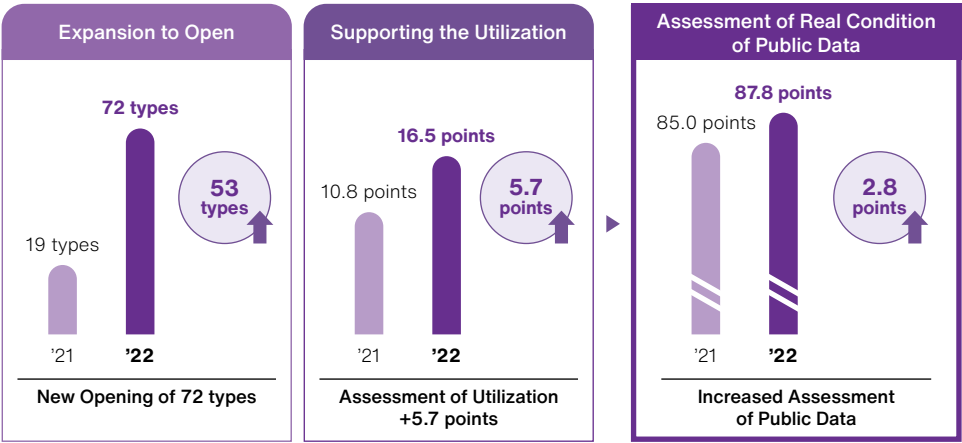
Comprehensive evaluation of information disclosure

94.5 points

Expansion of Open Public Data of Railroad

In order to coexist with the privates such as small-medium partnership companies and travel agencies, KORAIL has largely expanded the data procured by the corporation to be disclosed to the public data portal and the data o pen market from 19 types to 72 types. All data of member information, credit card and communication carrier shall be pseudonymized and combined with external data. Such open big data can be utilized for the place each one needs such as the development of railroad travel product by small-medium travel agencies. We have been recognized of the thorough pseudonymization and the diversity utilizing it and received the grand prize in the competition for the utilization of pseudonym information. In addition, we have proceeded with the visiting presentation and the cooperation data presentation to hold the consultation in order for small-medium partnership companies to utilize open big data correctly. Additionally, we have put an effort for the management of data to reinforce the reorganization and personnel of exclusive department and implement the plan systematically.

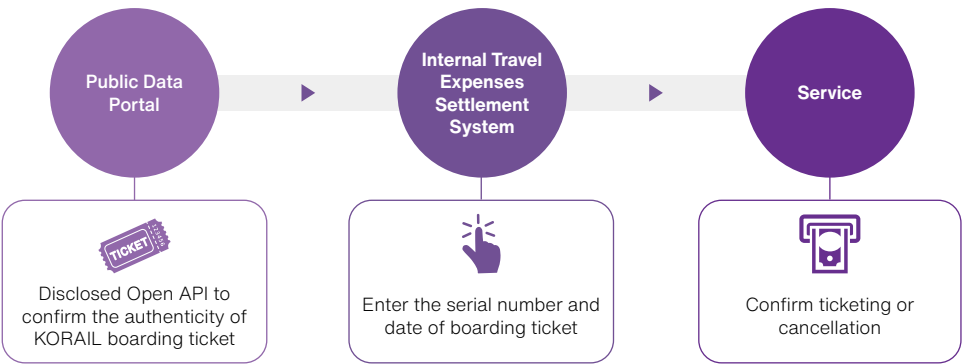
Promotion of & Performance from Expansion of Open Railroad Data



Confirmation Service for Authenticity of Boarding Ticket

KORAIL has disclosed the Open API Data necessary to confirm the authenticity of boarding tickets at the settlement of travel expenses by using trains. It is possible to prevent the illegal receipt of travel transport expenses by accessing to the public data portal to enter the serial number and data of train boarding ticket and inquiring the information of actual ticketing and train information. In addition, we have contributed to the efficiency of administration works and the shortened process time through the online process which was handled manually previously. Currently, 36 public and private enterprises have been utilizing the said service. We have received the participation award in the competition for excellent innovation cases hosted by the Ministry of Land, Infrastructure and Transport.

Flow Chart of Inquiry Service for Confirmation of Authenticity of KORAIL Boarding Ticket



Improved environment of using website

Plaque from Minster of MOIS

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ESG Data Book

Environmental

Category		Unit	2020	2021	2022
GHG Emissions					
Scope 1		tCO ₂ -eq	287,842	261,612	223,497
Scope 2		tCO ₂ -eq	1,254,501	1,281,053	1,315,915
Total		tCO ₂ -eq	1,542,343	1,542,665	1,539,412
GHG Emissions Intensity					
Sales		KRW 1 Billion	4,401	5,143	5,456
Scope 1		tCO ₂ e/1 Billion	65	51	41
Scope 2		tCO ₂ e/1 Billion	285	249	241
GHG Reduction					
Total Reduced Emission of GHG	(Reduced amount) = (Quota) - (Emission) ・ In 2020, as for the target of management system for a goal 'Permissible Amount) – (Emitted Amount)'	tCO ₂ -eq	566,734	492,509	495,762
Total Reduced Emission Ratio of GHG		%	26.87	24.20	24.36
Performance to Fulfill Emission Trading					
Quota	In 2020, permissible amount for the target of managemet system for a goal	tCO ₂ -eq	2,109,077	2,035,174	2,035,174
Emission		tCO ₂ -eq	1,542,343	1,542,665	1,539,412
Energy					
Amount of Energy in Use	Total Amount of Energy in Use	TJ	29,577	30,231	30,469
	Electricity in Use	TJ	25,830	26,769	27,498
	Solar Power	TJ	14	16	23
	Ratio of Solar Power Energy	%	0.05	0.05	0.08
	Heating in Use	TJ	0	0	0
	Gasoline, Diesel, LPG	TJ	3,547	3,217	2,718
	LNG (City Gas)	TJ	186	229	230
	LNG (Natural Gas)	ton	0	0	0
Amount of Energy Reduction	Year 2020: For the target of management system for a goal, compute by '(Reduced Amount) = (Permissible Amount) - (Total Amount in Use) From the year 2021~: By introducing the emission trading system, reduced amount has not been calculated as no separate permissible amount of energy in use was regulated	TJ	9,384	-	-
Water					
Amount of Water in Use	Amount of Water & Sewage Water in Use	1,000m³	4,982	4,852	5,990
Recycled and Reused Water		1,000m³	20	18	16
Ratio of Reused Water		%	0.4	0.4	0.3
Waste					
Waste Generation	Amount of Designated Wastes Discharged	ton	2,017	1,714	1,312
	Amount of General Wastes Discharged	ton	4,264	3,900	4,523
Amount of Waste	Total	ton	6,281	5,614	5,835
Waste Disposal Method (General Waste)	Recycled	ton	3,083	2,809	3,755
	Incinerated	ton	1,099	582	448
	Landfill	ton	45	179	302
	Other	ton	462	330	18
Waste Disposal Method (Designated Waste)	Recycled	ton	1,124	837	635
	Incinerated	ton	538	626	622
	Landfill	ton	188	60	37
	Other	ton	167	191	18
Waste Recycling	Amount of Recycled waste	ton	3,782	3,646	4,390
Amount of Air Pollutants Emitted	Sulfur Oxides (SOx)	kg	62	344	56
	Nitrogen Oxide (NOx)	kg	2,769	1,367	1,979
	Dust	kg	2,587	1,825	1,799

Category		Unit	2020	2021	2022
Water Pollutants					
Amount of Water Pollutants Emitted	Amount of Wastewater Disposal	m³	252,666	277,982	224,550
	Amount of Rail Cars Wastewater	m³	87,231	27,035	19,440
Green Vehicles					
Vehicles for Business	1 st Class (Hydrogen/Electricity Cars)	Number of vehicles	19	30	42
	2 nd Class (Hybrid)	Number of vehicles	21	13	18
	3 rd Class (Gasoline)	Number of vehicles	4	1	1
	General Vehicles	Number of vehicles	757	730	438
	Others	Number of vehicles	2	16	30
	Total	Number of vehicles	803	790	529
Investment Cost for Environmental Purification Facilities					
Air Quality		KRW 1,000	174,092	272,615	424,933
Water Quality		KRW 1,000	30,188	426,688	467,115
Environmental Cost					
Operation Cost for Environmental Facilities	Water	KRW 1 Million	30	427	467
	Air	KRW 1 Million	174	273	424
	Total	KRW 1 Million	204	699	892
Depreciation Cost		KRW 1 Million	561	436	435
Environmental R&D	National R&D	KRW 1 Million	450	432	529
Environmental R&D	In-company R&D	KRW 1 Million		39	50
Performance from Buying Green Products					
Total Purchase	Changed “Plan to Fulfill Purchasing” from 2021	KRW 100 Million	31.8	24.7	32.4
Amount of Green Purchase		KRW 100 Million	29.8	30.6	44.4
Ratio of Green Purchase	Changed to “Increasing (Purchased Amount of Green Products) - (Plan to Fulfill Purchasing)” from 2021	%/KRW 100 Million	93.65	5.9	12
Certification of Environment					
Acquired the Environmental Labeling Certification	Acquired in 2020 (2020~2022), 2023 renewal in progress	Each	1	1	1
Acquired the Low Carbon Product Certification	Acquired in 2020 (2020~2022), 2023 renewal in progress	Each	1	1	1

Social

Category		Unit	2020	2021	2022
Employment					
Classification of Employees by Region	Domestic	Person	31,092	30,918.26	30,988.5
	Overseas	Person	0	0	0
Classification of Employees By Gender	Male	Person	27,346	27,015	26,868.41
	Female	Person	3,746	3,904	4,120.09
Number of Permanent (General) Employees	Male	Person	27,290	26,955	26,806.41
	Female	Person	3,745	3,903	4,118.09
	Total	Person	31,035	30,857	30,925
Ratio of Permanent (General) Employees	Male	%	88	87	87
	Female	%	12	13	13
	Total	%	100	100	100
Number of Permanent Employees (Unlimited Contract Workers)	Male	Person	0	0	0
	Female	Person	0	0	0
	Total	Person	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	Person	56	60	62
	Female	Person	1	1	2
	Total	Person	57	61	64
Ratio of Temporary Employees	Male	%	98	98	97
	Female	%	2	2	3
	Total	%	100	100	100
Number of Employees by Age	Ages under 30	Person	5,035.25	5,070.63	4,989.38
	Ages 30 to 39	Person	4,443.375	4,848.95	5,750.19
	Ages 40 to 49	Person	10,155	9,305.67	8,334.42
	Ages 50 and above	Person	11,458.375	11,693.01	11,914.51
Diversity of Employees	Manager	Person	3,487.75	3,485.89	3,405.39
	Ratio of Female Executives	%	12	13	13
	Female Manager	Person	398.75	434.89	480.76
	Person of National Merit	Person	1,790	1,891	1,896
	Disabled	Person	1,008	1,025	1,102
Total Number of Employees			31,092	30,918	30,989
Recruitment					
Total Number of New Hires (General Permanent Employees)		Person	1,963	1,426	1,697
Female		Person	333	254	320
Disabled		Person	129	86	104
Local Talented People in Non-capital Region		Person	1,394	1,108	1,429
Person of National Merit		Person	212	185	77
Ratio of New Hires (General Permanent Employees)	Female	%	17	17.8	18.9
	Disabled	%	6.6	6.0	6.1
	Local Talented People in Non-capital Region	%	71.0	77.7	84.2
	Person of National Merit	%	10.8	13.0	4.5
Turnover and Retirement					
Number of Turnover by Gender	Male	Person	1,470	1,433	1,399
	Female	Person	94	76	108
Number of Turnover by Type	Voluntary turnovers	Person	419	441	503
	Retirement	Person	1,106	1,027	958
	Dismissal	Person	13	17	15
	Expulsion (Death)	Person	24	21	27
	End of Contract (Contract Workers, Executives)	Person	2	3	4
Total Turnover			1,564	1,509	1,507

Category		Unit	2020	2021	2022
Employee Training and Career Management					
Total Number of Trained Employees		Person	63,404	64,856	78,412
Training Cost per Employee		KRW 1,000/Person	110	160	210
Total Training Cost		KRW 1 Million	3,244	4,889	6,454
Satisfaction of Training		Point	96.4	96.69	96.78
Flexible Work System					
Time Selection System	New Hires	Person	0	0	0
	Employees who Switched to the System	Person	192	161	183
Flexible Working	Staggered Work Type	Person	5,071	3,365	2,098
	Work Hour Selection Type	Person	50	2	0
	Intensive Work Type	Person	1	0	6
	Discretionary Work Type	Person	0	0	0
Remote Working	Work from Home	Person	3,578	2,952	229
	Smart Work	Person	0	0	0
Total Number of Users		Person	8,892	6,480	2,516
Utilization Rate		%	30.28	21.89	8.46
Use of Maternity and Parental Leave					
Number of Employees on Maternity Leave	Male	Person	316	374	393
	Female	Person	124	118	119
Target for Parental Leave	Male	Person	6,542	5,889	5,200
	Female	Person	1,281	1,201	1,134
	Total	Person	7,823	7,090	6,334
	Male	Person	202	171	292
Number of Employees on Parental Leave	Female	Person	273	247	257
	Total	Person	475	418	549
Number of Employees who Returned to Work at the End of Parental Leave	Male	Person	205	181	253
	Female	Person	270	253	263
	Total	Person	475	434	516
Number of Employees who Returned to Work at the End of Parental Leave and Worked Continuously for 12 Months	Male	Person	198	178	247
	Female	Person	264	252	260
	Total	Person	462	430	507
Retention Ratio for 12 Months after Return	Male	%	96.6	98.3	97.6
	Female	%	97.8	99.6	98.9
	Total	%	97.3	99.1	98.3
Labor Union Membership					
Employees Eligible for Membership		Person	24,983	26,603	24,871
Union Members		Person	23,737	24,204	23,907
Ratio of Membership		%	95.0	91.0	96.1
Implementation of Labor-Management Consultation Meeting		Times	4	4	4
Satisfaction with Labor-Management Relationship		Point (5 pts perfect score)	3.48	3.7	3.73
Grievance Handling (VOC)					
Total Number of Grievance Reported		Case	44,673	49,872	52,655
Total Number of Grievance Handled		Case	44,673	49,872	52,655
Ratio of Grievance Resolution		%	100	100	100
Social Contribution Activities					
Number of Employees Participating in Volunteer Activities		Person	14,989	13,966	14,547
Volunteer Work Hours per Employee		Hour	1.8	1.6	1.6
Participation Ratio in Social Contribution (Donation of Love)		%	65.90	65.34	63.67
Donation for Social Contribution		KRW 1 Million	954	1,158	1,057

Social

Category		Unit	2020	2021	2022
Safety and Health of Employees					
Ratio of Occupational Accidents		%	0.205	0.217	0.239
Number of Employees Involved in Occupational Accidents		Person	65	69	76
Ratio of Occupational Accidents in Outsourced Construction Projects		%	1.06	0.99	1.09
Number of Serious Occupational Accidents	Including Outsourcced Construction Projects	Case	1	2	4
Result of the Assessment on the Level of Safety Activities in Public Corporations	Assessment under the Supervision of MOEL	Grading (Absolute Evaluation)	C	C	C
Number of Dedicated Safety Personnel (Capacity/Current Staff)		Person	470/454	504/485	522/502
Procurement fo Safety Manager	Ration of Permanent Workers	%	100	100	100
Assessment of Disaster Management		Assessment under the Supervision of MOIS	Excellent	Excellent	Excellent
Status of Utilization of Medical Checkup	General Checkup	Person	25,669	25,831	26,817
	Special Chekup	Person	20,919	12,810	13,744
	Comprehensive Chekup	Person	24,122	25,352	25,240
Health-enhancing Activities		Cases	15,260	17,434	19,875
Satisfaction Level of Employee					
Satisfaction with Welfare		Point	72.8	72.5	86.0
Ratio of total Wage and Compensation for Female to Male					
Permanent Employees (Average Amount per Employee)	Male	KRW 1 Million	68	71	71
	Female	KRW 1 Million	56	59	59
	Ratio (Female/Male)	%	82.4	83.1	83.1
Temporary Employees (Average Amount per Employee)	Male	KRW 1 Million	45	45	43
	Female	KRW 1 Million	28	30	34
	Ratio (Female/Male)	%	62.4	66.4	80.8
Welfare Expenses					
Welfare Expenses (Average Amount per Person)	Executive	KRW 1,000	382	359	496
	Permanent Employee	KRW 1,000	1,318	1,250	1,298
	Temporary Employee	KRW 1,000	1,208	1,208	1,251
Partner Companies					
Performances of Financial Support for Partner Companies		KRW 1 Million	5,640	6,017	7,274
Patent					
Patent	Petitioned	Case	47	51	44
	Registered	Case	46	35	38
Human Rights					
Number of Education Sessions Provided on Human Rights		Number of Times	1	1	1
Number of participants in the Education for Human Rights		Person	242,112	255,194	257,547
Number of Cases to Process the Incident of Human Rights Violation (Discrimination)		Case	1	2	1
Number of Occurred Cases of Forced Labor and Child Labor		Case	0	0	0
Information and Cyber Security					
Number of Information and Cyber Security Incidents		Case	0	0	0
Fines or Penalties Paid for Incidents		KRW	0	0	3,000,000
Number of Cases of Violation/Incidents of Information Security Related to Customers' Data		Case	0	0	0
Number of Customers Affected by Data Leakage		Person	0	0	0
Customers' Satisfaction					
Survey on Customers' Satisfaction		Point	79.0	79.7	83.2
Investment Project					
Contract for Investment Project		Person	521	1,283	1,185
Grievance Process					
Number of Total Grievances (Sexual Harassment, Molestation, etc.)		Case	20	19	6
Number of Processed Grievances		Case	20	19	6
Ratio of Received Grievances		%	100	100	100

Economic & Governance

Category		Unit	2020	2021	2022
Consolidated Financial Statement					
Assets	I . Current Assets	KRW	2,059,279,613,934	1,785,390,079,154	2,193,439,539,419
	1. Cash and Cash Equivalents	KRW	371,097,232,059	312,179,349,898	544,279,430,389
	2. Current Financial Assets	KRW	121,417,170,929	16,354,324,380	191,562,589,739
	3. Accounts Receivable and Other Receivable	KRW	506,530,806,486	632,556,238,893	676,765,568,080
	4. Inventory Assets	KRW	313,035,923,874	322,014,818,290	344,804,176,401
	5. Current Income Tax Assets	KRW	3,723,256,450	448,943,667	901,041,866
	6. Current Non-financial Assets	KRW	120,256,413,974	50,278,146,119	101,392,227,208
	7. Disposal Group	KRW	623,218,810,162	451,558,257,907	333,734,505,742
	II. Non-current Assets	KRW	23,217,193,502,877	23,370,213,322,460	26,850,248,749,846
	1. Non-current Financial Assets	KRW	183,049,499,647	255,015,990,762	215,562,608,498
	2. Long-term Accounts Receivable and Other Receivable	KRW	37,799,468,600	46,345,803,116	43,758,589,767
	3. Tangible Assets	KRW	22,168,471,584,964	22,077,085,888,589	25,635,757,548,542
	4. Invested Real Estate	KRW	641,037,908,943	818,603,421,785	778,142,762,235
	5. Business Rights	KRW	3,732,906,258	3,732,906,258	3,732,906,258
	6. Intangible Assets besides Business Rights	KRW	45,311,472,350	42,710,196,699	46,483,830,026
	7. Investment Shares of Relevant Enterprise	KRW	109,069,671,086	93,826,562,066	85,391,588,483
	8. Deferred Tax Assets	KRW	23,502,471,556	28,307,565,475	37,240,971,104
	8. Non-current Non-financial Assets	KRW	5,218,519,473	4,584,987,710	4,177,944,933
	Total Assets	KRW	25,276,473,116,811	25,155,603,401,614	29,043,688,289,265
	Liabilities	I . Current Liabilities	KRW	3,274,253,784,479	3,562,957,836,359
1. Trade Payables and Other Payables		KRW	791,532,508,353	857,919,673,775	882,071,979,607
2. Current Financial Liabilities		KRW	1,381,034,729,318	1,417,254,209,144	1,611,938,899,610
3. Current Income Tax Liabilities		KRW	3,271,655,808	6,527,084,373	7,418,443,502
4. Current Non-financial Liabilities		KRW	673,909,854,983	849,827,698,777	717,732,822,003
5. Current Provisions		KRW	424,505,036,017	431,429,170,290	365,060,745,063
II. Non-current Liabilities		KRW	14,734,642,987,261	15,097,814,735,292	16,456,302,350,352
1. Long-term Trade Paybles and Other Payables		KRW	60,452,209,215	66,419,953,482	54,959,680,563
2. Non-current Financial Liabilities		KRW	10,965,345,342,373	11,382,195,575,412	12,641,966,941,414
3. Non-current Non-financial Liabilities		KRW	18,067,082,615	12,134,677,880	8,894,925,555
4. Employee Benefit Liabilities		KRW	1,253,762,617,329	1,256,739,753,195	1,134,584,520,702
5. Deferred Tax Liabilities		KRW	1,850,521,420,955	1,848,849,156,504	2,321,713,037,010
6. Non-current Provisions		KRW	586,494,314,774	531,475,618,819	294,183,245,108
Total Liabilities		KRW	18,008,896,771,740	18,660,772,571,651	20,040,525,240,137
Equity	I . Paid-n Capital	KRW	10,497,470,939,267	10,768,057,640,627	10,849,219,640,627
	II . Accumulated Deficit	KRW	(10,553,934,253,710)	(11,489,301,653,323)	(11,503,557,896,889)
	III. Other Components of Equity	KRW	7,177,540,628,186	7,082,057,397,087	9,501,686,119,023
	IV. Equity attributable to Owners of the Company	KRW	7,121,077,313,743	6,360,813,384,391	8,847,347,862,761
	V. Non-controlling Interests	KRW	146,499,031,328	134,017,445,572	155,815,186,367
	Total Equity	KRW	7,267,576,345,071	6,494,830,829,963	9,003,163,049,128
	Total Equity and Liabilities	KRW	25,276,473,116,811	25,155,603,401,614	29,043,688,289,265

Economic & Governance

Category	Unit	2020	2021	2022
Consolidated Statement of Comprehensive Income and Key Indicators				
Revenue (Sales)	KRW	4,958,607,370,113	5,764,689,979,013	6,203,858,989,485
Cost of Goods sold	KRW	5,827,416,053,667	6,307,231,286,878	6,259,117,884,774
Gross Profit	KRW	(868,808,683,554)	(542,541,307,865)	(55,258,895,289)
Selling and Administrative Expenses	KRW	342,563,262,532	345,576,522,646	341,694,383,373
Operating Profit	KRW	(1,211,371,946,086)	(888,117,830,511)	(396,953,278,662)
Other Income	KRW	6,512,396,254	18,850,024,204	21,735,760,160
Other Expenses	KRW	62,749,789,178	74,616,034,499	109,228,829,977
Other Profit (Loss)	KRW	56,946,613,083	50,621,697,268	230,606,893,780
Financial Income	KRW	76,325,472,536	83,799,263,916	88,672,844,796
Financial Cost	KRW	363,908,191,175	371,574,198,607	395,911,617,279
Profit Related to Relevant Enterprise & Joint Enterprise (Loss)	KRW	(19,304,603,617)	(8,380,889,216)	2,964,941,826
Net Profit of Corporate Tax Expenses before Deduction (Loss)	KRW	(1,517,550,048,183)	(1,189,417,967,445)	(558,113,285,356)
Corporate Tax Expenses (Earnings)	KRW	174,868,484,265	(34,218,428,549)	(323,144,671,609)
Current-term Net Profit (Loss)	KRW	(1,342,681,563,918)	(1,155,199,538,896)	(234,968,613,747)
Other Comprehensive Profit or Loss	KRW	2,172,939,468,985	99,826,204,835	2,660,381,989,739
1. Other comprehensive profit or loss not subsequently reclassified for the current-term profit or loss	KRW	2,140,265,552,558	84,755,685,408	2,706,579,995,900
2. Other comprehensive profit or loss classified for the current-term profit or loss subsequently	KRW	32,672,916,427	15,070,519,427	(46,198,006,161)
Total Comprehensive Profit or Loss	KRW	830,257,905,067	(1,055,373,334,061)	2,425,413,375,992
Profit per Share	KRW	-	-	-
Basic Profit per Share	KRW	-	-	-
Net Profit Ratio of Sales	%	(27)	(20)	(4)
Net Worth Turnover Ratio	%	73	84	80
R&D Investment Research Expenses	KRW 1 Million	2,897	4,289	4,504
Allocation of Economic Value				
Government Tax and Public Utilities	KRW 1 Million	44,460	51,008	53,380
Allocation of Economic Performance				
Dividend for Shareholders (Dividend)	KRW 1,000	-	-	-
Total Tax Payment to Government (Corporate tax)	KRW 1,000	0	3,630,443	4,854,141
Total Payment to Executives & Employees (Labor cost & welfare expenses)	KRW 1,000	2,967,001,228	3,009,004,163	3,102,714,880
Interest paid to the creditor of loan company (Cost of interest)	KRW 1,000	297,992,769	294,406,521	321,222,176
Creation of Economic Value				
Business Profit	KRW 100 Million	(12,114)	(8,881)	(3,970)
Current-term Net Profit	KRW 100 Million	(13,427)	(11,552)	(2,350)
Sales	KRW 100 Million	49,586	57,647	62,039

Category	Unit	2020	2021	2022
Sales by Business				
I . Earnings from Transportation Business	KRW 1 Million	3,262,832	3,615,067	4,445,146
1. Passengers	KRW 1 Million	2,618,935	2,934,588	3,764,478
High-speed Railroad	KRW 1 Million	1,623,272	1,829,378	2,508,206
Conventional Railroad	KRW 1 Million	324,788	357,847	446,760
Metropolitan Railroad	KRW 1 Million	670,875	747,363	809,512
2. Freights	KRW 1 Million	291,097	300,918	296,193
3. PSO	KRW 1 Million	352,800	379,561	384,474
II . Earnings from Multiple Businesses	KRW 1 Million	386,592	386,251	468,649
III. Earnings from Consigned Businesses	KRW 1 Million	1,309,183	1,763,372	1,290,064
IV. Total	KRW 1 Million	4,958,607	5,764,690	6,203,859
Administration of Anti-corruption and Ethical Management				
Ratio of Participation in the Education for Anti-corruption and Integrity by Executives and Employees	%	95.74	97.87	97.07
Number of Education Sessions for Human Rights Management	Number of Times	-	1	1
Ration of Participation in the Education for Human Rights Management by Executives and Employees	%	-	17.8	85.5
Status of Disciplinary Action against a Person of Corruption	Case	0	3	5
Number of Cases for the Legal Action against Unfair Trade	Case	6 cases (4 cases of sanction on unfair trade)	16 cases (16 cases of sanction on unfair trade)	12 cases (11 cases of sanction on unfair trade)
Status of Monitoring	Assessment of Integrity	Grade	4	3
	Survey on Contribution to Social Value (~2021)	Point	72.3	72.7
	National Awareness (2022~)	Point	-	-
	ISO 37301	-	Acquired the First Certification on December	Maintain
Board of Directors (BOD)				
Operation Performance of BOD	Number of Holding BOD	Number of Times	11	12
	Number of Agendas (BOD)	Case	58	52
	Number of Holding ESG Committee	Number of Times	-	1
	Number of Agendas (ESG Committee)	Case	-	4
	Ratio of Non-executive Directors	%	0.53	0.53
	Participation Ratio of BOD	%	97.7	97.9
Total Wage for BOD	Registered Directors (Excluding Non-executive Directors and Members of Audit Committee)	KRW 1 Million	97	124
	Non-executive Directors (Excluding Members of Audit Committee)	KRW 1 Million	30	30
	Members of Audit Committee	KRW 1 Million	126	141
Retirement Pentsion				
Pension Fund for the Payment of Pension (Amount to Manage the Retirement Pension)	Degree of Accumulated Pension Asset	KRW 1 Million	79,571	88,434
Number of People in Enrollment by Type	DB	Person	477	464
	DC	Person	564	604
	Total	Person	1,041	1,068

Status of Certifications, Awards & Membership

Certification & Award Performance Status Membership Status

Yr/Mt	Award & Certificates	Supervising Public Office
22.01.	Best Grade of Management Level Diagnosis for Private Information Security	PIPC
22.04.	Certificate of Excellent Enterprise in Disaster Reduction (Busan Rail Car Maintenance Team)	MOIS
22.07.	Assessment of Disaster Management on Public Corporation (Best corporation)	MOIS
22.08.	Certificate of Safety & Health Management System (KOSHA-MS)	KOSHA
22.08.	Bronze Award in National Quality Circle Competition	KSA
22.08.	Green Product of the Year in Korea (Green Masterpiece Award)	Green Purchase Network
22.08.	Green Product of the Year in Korea (Popularity)	Green Purchase Network
22.09.	'Grand Prize' in Competition for Excellent Cases Utilizing Pseudonym Information	PIPC
22.09.	Certificate of Safety & Health Management System (ISO 45001)	CREBIZ QM
22.09.	Merit of Packing/Public Procurement	PPS
22.10.	10 major technical awards of railroad	Korean Society for Railway
22.10.	Minister's plaque/Merit of SMEs' innovation	MSS
22.11	Best award of 'Eurasia Transportation' for the management innovation through the test operation of long-freight train	CCTT
22.11.	Acquired the best grade (Lv 5) in the recognition of the contribution to communities	MOHW
22.11.	Best award in the 13th National Transport Education Institute Development Consultation Association/KORAIL Academy (Director of MOLIT Talented Development)	MOLIT
22.12.	National Core Basis Disaster Management Assessment (Best corporation)	MOIS
22.12.	Minister's Plaque for merit of website management in 2022	MOIS
22.12.	Award of 'Participation' in the competition for the best cases of national transport	MOLIT
22.12.	Certificate of Implementation of ESG for Agriculture & Fishery	L-M-S Enterprises Agriculture & Fishery Cooperation
22.12.	Minister's plaque/Mayor's Excellent award in social sector for ESG win-win activities	MSS
22.12.	Minister's Plaque/Merit of Commercialization of New Technology	MOTIE
22.12.	Assessment of corporation on recording management in 2022/A-grade (Excellent grade)	MOIS National Archives
23.01.	Merit of win-win cooperation for agriculture and fishery	Shared Growth Committee
23.02.	Certificate of Information Security Management System (ISMS)	KISA
23.06.	International certificate of ISO 37301	KMR
23.06.	Selected for the female person of the year in railroad (Deputy Mgr. Cho Hyun-Ah)	IRJ
23.07.	Green Product of the Year In Korea (Green Masterpiece Award)	Green Purchase Network
23.07.	Certificate of 'ISO 27001' International Standard Information Security Management System	SGS

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)
11	Eurasia Crossing Transport Adjustment Consulting Association (CCTT: Coordinating Council on Transsibelian Transportation)
12	Korea Emergency Plan Officers' Association
13	Korea Railway Association
14	Korean Society Railway
15	Korean Operations Research and Management Science Society
16	Korea Society of Transportation
17	Korea Industrial Technology Association
18	Korean Institute of Industrial Engineers
19	Korean Society of Public Enterprise
20	Korean Society of Quality Management
21	Korean Society of Urban Railway
22	Korean Association for Public Administration
23	Korea R&D Industry Association
24	UNGC

UN Global Compact & UN SDGs

UN Global Compact

KORAIL supports and complies with 10 principles of the UN Global Compact to suggest and develop the social responsibility of enterprises in 4 major areas of human rights, labor, environmental and anti-corruption. Moreover, we will lead ahead of the eco-friendly management and environmental preservation to convert to the green mobility of railroad transport. We declare that we will provide the transport service that pursues the safety and growth to create the social value; and establish the transparent and fair governance to enhance the trust of citizens and to fulfill the principles of ESG as the representative public enterprise of railroads in Korea.

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

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 in order 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.



1. No Poverty	7. Affordable and Clean Energy	13. Climate Action
2. Zero Hunger	8. Decent Work and Economic Growth	14. Life below Water
3. Good Health and Well-being	9. Industry, Innovation and Infrastructure	15. Life on Land
4. Quality Education	10. Reduced Inequalities	16. Peace, Justice and Strong Institutions
5. Gender Equality	11. Sustainable Cities and Communities	17. Partnerships for the Goals
6. Clean Water and Sanitation	12. Responsible Consumption and Production	

K-ESG Index

Domain	Category	Range	Assessment Subject	Page
Information Disclosure (P)	Information Disclosure Format	P-1-1	Disclosure method of ESG information	About this report
		P-1-2	Disclosure cycle of ESG information	About this report
		P-1-3	Disclosure scope of ESG information	About this report
	Information Disclosure Content	P-2-1	ESG key issues and KPIs	34, 43-45
	Information Disclosure Verification	P-2-2	Disclosure verification of ESG information	106-107
Environmental (E)	Goals of Environmental Management	E-1-1	Establishment of environmental management goals	34, 50
		E-1-2	Implementation system of environmental management	50, 55
	Raw and Subsidiary Materials	E-2-1	Usage of raw and subsidiary material	Unrelated to the business
		E-2-2	Ratio of recycled raw and subsidiary material	Unrelated to the business
	Greenhouse Gas Emissions	E-3-1	GHG emissions (Scope1 & Scope2)	92
		E-3-2	GHG emissions (Scope3)	-
		E-3-3	Verification of GHG emissions	52
	Energy	E-4-1	Energy usage	92
		E-4-2	Ration of recycled energy usage	92
	Utility Water	E-5-1	Utility water usage	92
		E-5-2	Ratio of utility water usage	92
	Waste	E-6-1	Discharged waste	92
		E-6-2	Ratio of waste recycling	92
	Pollutants	E-7-1	Air pollutant emissions	92
		E-7-2	Water pollutant emissions	93
	Violation of Environmental Laws/Regulation	E-8-1	Violation of environmental laws/regulation	No case of violation
	Environmental Labelling	E-9-1	Ratio of eco-certified products and services	93
Social (S)	Goals	S-1-1	Setting goals and disclosure	34, 43-45
		S-2-1	Hiring new employee and retention	74-77, 94-95
		S-2-2	Ratio of permanent employees	94
		S-2-3	Voluntary turnover rate	94
		S-2-4	Education/training expenses	95
		S-2-5	Welfare expenses	96
	Labor	S-2-6	Guaranteed freedom of association	71, 95
		S-3-1	Ratio of female employees	73, 94
		S-3-2	Ratio of female employees' wage (compared to average wage)	96
	Diversity and Gender Equality	S-3-3	Ratio of disabled employees	76, 94
		S-4-1	Safety and health promotion system	14-15, 27-29, 34, 58-61
		S-4-2	Ratio of industrial accident	96
	Industrial Safety	S-5-1	Establishment policy of human rights	67-68, 80-82, 86, 101
		S-5-2	Assessment risk of human rights	67-68, 80-82, 96
	Human Rights	S-6-1	Suppliers' ESG management	64-66
		S-6-2	Support for suppliers' ESG	64-66, 96
		S-6-3	Agreement of ESG with suppliers	64-66
	Shared Growth and Partnership	S-7-1	Strategic social contribution	62-63, 95
		S-7-2	Employee participation in voluntary services	63, 95
	Local Community	S-8-1	Implementation of an information protection system	86
		S-8-2	Privacy infringement and remedies	86, 96
	Information Protection	S-10-1	Violation of social laws/regulations	96
Governance (G)	Violation of Social Laws/Regulations	G-1-1	ESG agenda under BOD	36-37, 99
		G-1-2	Ratio of non-executive directors	36, 99
		G-1-3	Separation of the CEO and chairman of BOD	36
		G-1-4	Gender diversity of the BOD	36
		G-1-5	Expertise of non-executive directors	36
	Formation of the BOD	G-2-1	Attendance rate of overall BOD	99
		G-2-2	Attendance rate of executive directors	-
		G-2-3	Committees under BOD	35-37
		G-2-4	Agenda deliberation by BOD	35-37
	Activities of BOD	G-3-1	Announcement of the convocation of shareholders' meeting	-
		G-3-2	Date of shareholders' meeting	-
		G-3-3	Concentrated/Electronic/Written voting system	-
		G-3-4	Dividend policy and implementation	-
	Rights of Shareholders	G-4-1	Disclosure of code of ethics violation	No case of violation
		G-5-1	Establishment of an internal audit department	80-82
	Audit Team	G-5-2	Expertise of the audit team (including accounting/finance experts)	84
		G-6-1	Violation of laws/regulations in governance	No case of violation
	Violation of Laws/Regulations in Governance			

SASB Index

KORAIL has disclosed indicators related to the railway transportation sector based on the industry categorization of the SASB (Sustainability Accounting Standards Board) in the report. In the future, we will actively manage and disclose qualitative and quantitative indicators for individual items in accordance with SASB recommendations to our stakeholders.

Table 1. Sustainability Disclosure Topics & Metrics

Topic	Code	Metric	Category	Page
Greenhouse Gas Emissions ^f	TR-RA-110a.1	Gross global scope 1 emissions	Quantitative	92
	TR-RA-110a.2	Discussion of long-and short-term strategy or plan to manage scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Discussion and Analysis	50
	TR-RA-110a.3	(1) Total fuel consumed (2) Percentage renewable	Quantitative	92
Air Quality	TR-RA-120a.1	Air emissions of the following pollutants : (1) NO _x (excluding N ₂ O) (2) Particular matter (PM ₁₀)	Quantitative	92
Employee Health & Safety	TR-RA-320a.1	(1) Total recordable incident rate (TRIR) (2) Fatality rate (3) Near miss frequency rate (NMFR)	Quantitative	96
Competitive Behavior	TR-RA-520a.1	*Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations	Quantitative	Not applicable
Accident & Safety Management	TR-RA-540a.1	Number of accidents and incidents	Quantitative	96
	TR-RA-540a.2	**Number of (1) accident releases and (2) non accident releases (NARs)	Quantitative	96
	TR-RA-540a.3	Number of Federal Railroad Administration (FRA) Recommended Violation Defects	Quantitative	Not applicable
	TR-RA-540a.4	***Frequency of internal railway integrity inspections	Quantitative	27-29, 58, 61

- * Note to TR-RA-520a.1 : The entity shall briefly describe the nature, context, and any corrective actions taken as a result of the monetary losses.
- ** Note to TR-RA-540a.2 : Disclosure shall include a discussion of the entity's processes and procedures to manage non-accident and accident releases.
- *** Note to TR-RA-540a.4 : Disclosure shall include, where relevant, a discussion of rail maintenance practices, operating measures, and technologies that the entity implements in addition to inspections.

Table 2. Activity Metrics

Topic	Code	Metric	Category	Page
Activity	TR-RA-000.A	*Number of carloads transported	Quantitative	10
	TR-RA-000.B	**Number of intermodal units transported	Quantitative	10
	TR-RA-000.C	***Track kilometres	Quantitative	10
	TR-RA-000.D	****Revenue tonne-kilometres (RTK)	Quantitative	83, 99
	TR-RA-000.E	Number of employees	Quantitative	94

- * Note to TR-RA-000.A : The scope of disclosure includes all carloads that the entity transported in conjunction with the shipping of freight (including freight that is not containerised) 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 kilometres (the total extent of routes available for trains to operate) and take into account 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

GRI Standards Index

Statement of use	KORAIL has reported in accordance with the GRI Standards 2021 for the period January 1, 2022 ~ December 31, 2022.
GRI 1 used	GRI 1 : Foundation 2021
Applicable GRI Sector Standard(s)	Not applicable

Universal Standards

GRI Standards	Category	Disclosure No.	Cisclosure Name	Page	Remarks
GRI 2: General Disclosures 2021	The Organization and Its Reporting Practices	2-1	Organizational details	10 - 11	
		2-2	Entities included in the organization's sustainability reporting	About this report	
		2-3	Reporting period, frequency and contact point	About this report	
		2-4	Restatements of information	About this report	
		2-5	External assurance	106-107	
	Activities and Workers	2-6	Activities, value chain and other business relationships	18 - 31	
		2-7	Employees	94	
		2-8	Workers who are not employees	94	
	Governance	2-9	Governance structure and composition	36 - 37	
		2-10	Nomination and selection of the highest governance body	36	
		2-11	Chair of the highest governance body	36	
		2-12	Role of the highest governance body in overseeing the management of impacts	36 - 37	
		2-13	Delegation of responsibility for managing impacts	35	
		2-14	Role of the highest governance body in sustainability reporting	36 - 37	
		2-15	Conflicts of interest	81	
		2-16	Communication of critical concerns	36 - 37	
		2-17	Collective knowledge of the highest governance body	37	
		2-18	Evaluation of the perrformance of the highest governance body	36	
		2-19	Remuneration policies	36	
		2-20	Process to determine remuneration	36	
		2-21	Annual total compensation ratio	'Average employee wage' in ALIO	
	Strategy, Policies and Practices	2-22	Statement on sustainable development strategy	2 - 3	
		2-23	Policy commitments	34 - 35	
		2-24	Embedding policy commitments	67- 68, 72- 76	
		2-25	Processes to remediate negative impacts	80 - 82, 85 - 86	
		2-26	Mechanisms for seeking advice and raising concerns	81 - 82	
		2-27	Compliance with laws and regulations	80 - 82	
		2-28	Membership associations	101	
	Stakeholder Engagement	2-29	Approach to stakeholder engagement	38 - 39	
		2-30	Collective bargaining agreements	95	

Material Topics

GRI Standards	Category	Disclosure No.	Disclosure Name	Page	Remarks
GRI 3: Material Topics 2021	Disclosures on Material Topics	3-1	Process to determine material topics	42	
		3-2	List of material topics	43 - 45	
		3-3	Management of material topics	44 - 45	

Economic

GRI Standards	Category	Disclosure No.	Disclosure Name	Page	Remarks
GRI 201: Economic Impacts 2016	Economic Performance	201-1	Direct economic value generated and distributed	18 - 31	
GRI 203: Indirect Economic Impacts 2016	Indirect Economic Impacts	203-1	Infrastructure investments and services supported	62-63	
		203-2	Significant indirect economic impacts	64 - 66	
GRI 205: Anti-corruption 2016	Anti-corruption	205-1	Operations assessed for risks related to corruption	80-82	
		205-2	Communication and training about anti-corruption policies and procedures	80 - 82	
		205-3	Confirmed incidents of corruption and actions taken	100	

Environmental

GRI Standards	Category	Disclosure No.	Disclosure Name	Page	Remarks
GRI 302: Energy 2016	Energy	302-1	Energy consumption within the organization	92	
GRI 303: Water and Effluents 2018	Water and Effluents	303-5	Water withdrawal	92	
GRI 305: Emissions 2016	Emissions	305-1	Direct (Scope 1) GHG emissions	92	
		305-2	Energy indirect (Scope 2) GHG emissions	92	
		305-3	Other indirect (Scope 3) GHG emissions	Not applicable	
		305-4	GHG emissions intensity	92	
		305-5	Reduction of GHG emissions	92	
		305-6	Emissions of ozone-depleting substances (ODS)	Not applicable	
		305-7	Nitrogen oxides (NOx), Sulfur oxides (SOx), and other significant air emissions	92	
GRI 306: Waste 2020	Waste	306-2	Management of significant waste-related impacts	55	
		306-3	Waste generated	92	

Social

GRI Standards	Category	Disclosure No.	Disclosure Name	Page	Remarks
GRI 401: Employment 2016	Employment	401-1	New employee hires and employee turnover	94	
		401-3	Parental leave	95	
GRI 403: Occupational Health and Safety 2018	Occupational Health and Safety	403-1	Occupational health and safety management system	58 - 61	
		403-2	Hazard identification, risk assessment, and incident investigation	27	
		403-3	Occupational health services	97	
		403-4	Worker participation, consultation, and communication on occupational health and safety	97	
		403-5	Worker training on occupational health and safety	60-61	
		403-6	Promotion of worker health	97	
		403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	61	
		403-8	Workers covered by an occupational health and safety management system	97	
		403-9	Work-related injuries	97	
		403-10	Work-related ill health	Not applicable	
GRI 404: Training and Education 2016	Training and Education	404-2	Programs for upgrading employee skills and transition assistance programs	69	
GRI 405: Diversity and Equal Opportunity 2016	Diversity and Equal Opportunity	405-1	Diversity of governance bodies and employees	94	
GRI 413: Local Communities 2016	Local Communities	413-2	Operations with significant actual and potential negative impacts on local communities	No cases of violation	
GRI 414: Supplier Social Assessment 2016	Supplier Social Assessment	414-2	Negative social impacts in the supply chain and actions taken	No cases of violation	
GRI 416: Customer Health and Safety 2016	Customer Health and Safety	416-1	Assessment of the health and safety impacts of product and service categories	97	
		416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	No cases of violation	
GRI 418: Customer Privacy 2016	Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	No complaints	

Independent Assurance Statement

To readers of KORAIL Sustainability Report 2023

Introduction

Korea Management Registrar (KMR) was commissioned by KORAIL to conduct an independent assurance of its Sustainability Report 2023 (the “Report”). The data and its presentation in the Report is the sole responsibility of the management of KORAIL. KMR's responsibility is to perform an assurance engagement as agreed upon in our agreement with KORAIL and issue an assurance statement.

Scope and Standards

KORAIL described its sustainability performance and activities in the Report. Our Assurance Team carried out an assurance engagement in accordance with the AA1000AS v3 and KMR's assurance standard SRV1000. We are providing a Type 2, moderate level assurance. We evaluated the adherence to the AA1000AP (2018) principles of inclusivity, materiality, responsiveness and impact, and the reliability of the information and data provided using the Global Reporting Initiative (GRI) Index provided below. The opinion expressed in the Assurance Statement has been formed at the materiality of the professional judgment of our Assurance Team.

Confirmation that the Report was prepared in accordance with GRI standards 2021 was included in the scope of the assurance. We have reviewed the topic-specific disclosures of standards which were identified in the materiality assessment process

- GRI Sustainability Reporting Standards 2021
- Universal standards
- Topic specific standards
 - GRI 203 : Indirect Economic Impacts
 - GRI 205 : Anti-corruption
 - GRI 305 : Emissions
 - GRI 403 : Occupational Health and Safety
 - GRI 405 : Diversity and Equal Opportunity
 - GRI 416 : Customer Health and Safety

As for the reporting boundary, the engagement excludes the data and information of KORAIL's partners, suppliers and any third parties.

KMR’s Approach

To perform an assurance engagement within an agreed scope of assessment using the standards outlined above, our Assurance Team undertook the following activities as part of the engagement:

- reviewed the overall Report;
- reviewed materiality assessment methodology and the assessment report;
- evaluated sustainability strategies, performance data management system, and processes;
- interviewed people in charge of preparing the Report;
- reviewed the reliability of the Report's performance data and conducted data sampling;
- assessed the reliability of information using independent external sources such as Financial Supervisory Service's DART and public databases.

Limitations and Recommendations

KMR's assurance engagement is based on the assumption that the data and information provided by KORAIL to us as part of our review are provided in good faith. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied. To address this, we referred to independent external sources such as DART and National Greenhouse Gas Management System (NGMS) and public databases to challenge the quality and reliability of the information provided.

Conclusion and Opinion

Based on the document reviews and interviews, we had several discussions with KORAIL on the revision of the Report. We reviewed the Report's final version in order to make sure that our recommendations for improvement and revision have been reflected. Based on the work performed, it is our opinion that the Report applied the GRI Standards. Nothing comes to our attention to suggest that the Report was not prepared in accordance with the AA1000AP (2018) principles.

Inclusivity

KORAIL has developed and maintained different stakeholder communication channels at all levels to announce and fulfill its responsibilities to the stakeholders. Nothing comes to our attention to suggest that there is a key stakeholder group left out in the process. The organization makes efforts to properly reflect opinions and expectations into its strategies.

Materiality

KORAIL has a unique materiality assessment process to decide the impact of issues identified on its sustainability performance. We have not found any material topics left out in the process.

Responsiveness

KORAIL prioritized material issues to provide a comprehensive, balanced report of performance, responses, and future plans regarding them. We did not find anything to suggest that data and information disclosed in the Report do not give a fair representation of KORAIL's actions.

Impact

KORAIL identifies and monitors the direct and indirect impacts of material topics found through the materiality assessment, and quantifies such impacts as much as possible.

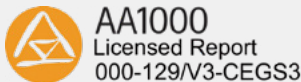
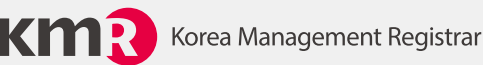
Reliability of Specific Sustainability Performance Information

In addition to the adherence to AA1000AP (2018) principles, we have assessed the reliability of economic, environmental, and social performance data related to sustainability performance. We interviewed the in-charge persons and reviewed information on a sampling basis and supporting documents as well as external sources and public databases to confirm that the disclosed data is reliable. Any intentional error or misstatement is not noted from the data and information disclosed in the Report.

Competence and Independence

KMR maintains a comprehensive system of quality control including documented policies and procedures in accordance with ISO/IEC 17021:2015 - Requirements for bodies providing audit and certification of management systems. This engagement was carried out by an independent team of sustainability assurance professionals. KMR has no other contract with KORAIL and did not provide any services to KORAIL that could compromise the independence of our work.

Oct. 2023 Seoul, Korea



CEO

E. J. Hwang