

Rail



Hope for Tomorrow

Korea Rail Network Authority
Sustainability Report 2013



About This Report

Characteristics of the Report

Korea Rail Network Authority (KR) has published a sustainability report since 2008 to disclose and share the activities and accomplishments of KR's sustainability management. This is KR's fifth sustainability report and contains all activities and accomplishments in the general areas of economy, environments, and society.

Standards Used in Writing the Report

This report was written in accordance with the GRI (Global Reporting Initiative) G3.1 Guidelines and ISO 26000, which is an international standard in the field of corporate social responsibility. The report was written to fulfill all the requirements for receiving the "A+" level in the application index of criteria in the GRI 3.1 Guidelines.

Period and Scope Covered by the Report

This report covers quantitative results and accomplishments produced from January 2012 to December 2012. As for noteworthy accomplishments for time-series analysis, the date for three years from 2010 is included, and significant qualitative accomplishments from the first quarter of 2013 are also covered. The activities for sustainability management of KR's main headquarters and five local headquarters are addressed according to their priority, and the data taken from 211 construction sites is surveyed in the environment category. The currency unit used in this report is Korean won.

Verification of the Report

The credibility and accuracy of the data and contents of the report were ensured through a third party's verification. The third party authenticating agency confirmed that the legitimacy of the report meets the "A+" level in the application standards in the GRI G3.1 Guidelines.

Additional Information and Feedback

Further information can be found on KR's - website and For those who have opinions about this report, please submit the questionnaire at the back of the report to us or contact us through the number below.

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2012 Sustainability Highlights



Expansion of Benefits of Public Transportation through Timely Opening of Rail Network

KR expanded areas covered by KTX in order to construct nationwide rail networks that make any place in the country accessible within 90 minutes of travel and carried out rail network construction projects, fully considering project priorities such as travel demand and the benefits of rail opening. As a result, double tracking and electrification projects of 8 lines, including the Gyeongui Line, and the conventional rail speed-up projects of 11 projects for major 8 lines, including the Gyeongchun Line and Jeolla Line, were opened in a timely manner.



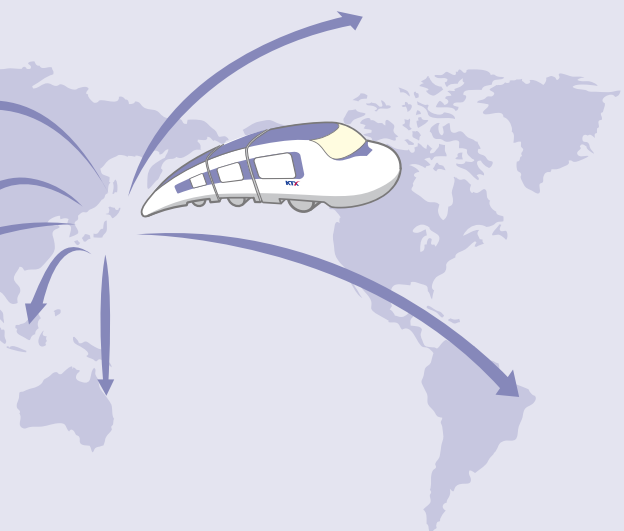
Boosting The Corporate Transparency

KR boosted contacting transparency to earn trust from the public by improving its evaluating process and associated contacting methods in selecting engineering companies for the planning and inspection of rail construction projects. In addition, the One Strike Out Policy for offenders was expanded to business partners, and disciplinary measures were strengthened on companies that violated fair trade contracts between business partners to lay a foundation for preventing corruption in advance.



Reduction of Greenhouse Gas by 820 thousand tons by 2020

KR has established middle and long term plans to respond to climate change by December 2012 and aims to cut greenhouse gas emissions by 820 thousand tons by 2020 by improving over planning, applying new renewable energy, and constructing low carbon rail networks by utilizing eco-friendly new materials and methods. This corresponds to 3.4% of the estimated greenhouse gas emission of 2.4 million tons, which are expected to be emitted by 2020 at rail construction sites.

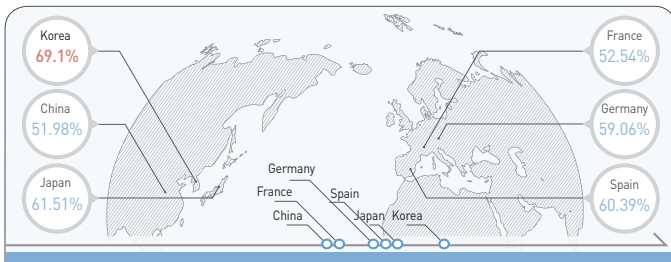




Awarded Korea's Most Creative Executive Grand Prize in 2012

The Chairman of the Board of Directors, Kim Kwang Jae, won Korea's Most Creative Executive Grand Prize in April, 2012.

At the event co-hosted by the Ministry of Knowledge Economy and Joogang Ilbo, Kim Kwang Jae was accredited for his innovative work in solving the budget waste problem caused by excessive design and constructing user-friendly rail networks to establish a foundation for sustainable growth in the rail network industry. His process of achieving results and experiences were published in a book to encourage corporate CEOs and the young generation to endure and overcome crises.



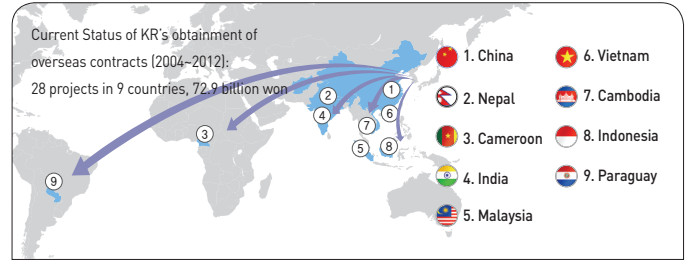
Reached a 69.1% Rate of Electrification, No. 1 in the World

KR completed 11 electrified double-track constructing projects including the Gyeongjeon Line connecting Masan and Jinju, Suin Line connecting Oido and Songdo, Bundang Line connecting Wangsimni and Seolleung, Gyeongui Line connecting Gongdeok and DMC, and others. The electrified lines were increased by 86.4km, a 69.1% rate of electrification (2,522km electrified line/3,650km line), putting KR in first place in electrification rate among developed countries that are operating high-speed railways. KR plans to achieve an electrification rate of 85% by 2020 as it repositions itself as the eco-friendly global leader in the rail network construction industry.



International Credit Rating Raised from A1 (Positive) to Aa3 (Stable)

KR redeemed a debt of the amount of 92.9 billion won in 2012 by developing new rail assets, winning overseas contracts and reducing the national budget. KR also improved its financial system through cost-cutting efforts such as optimizing construction scales and upgrading construction methods. As a result, Moody's, an international credit evaluating agency, raised the international credit rating of KR from A1 to Aa3, facilitating solid procurement of finances for rail network construction.



Expanding into Global Overseas Market

KR has diversified overseas projects after entering into China, the largest rail network market in the world, in 2005 and continually expanded into the overseas market. The contract price for 2012 greatly increased to 12.6 billion won, a 67% increase compared to last year's contract price of 7.6 billion won. 22 rail network projects are being conducted in 9 countries including China, Cameroon, Nepal, and India.



Highest Level in Construction Safety with 0.082% Rate of Accidents

KR is investing great efforts in preventing safety accidents in advance. KR carried out special management for construction sites that were vulnerable to accidents, including sites where an accident occurred before. The lowest bidding was conducted by reinforcing its quality safety management system and analyzing the major causes of accidents. New and foreign workers, who account for 67% of all accidents, were required to receive mandatory customized safety education. This helped achieve the lowest level accident rate of 0.082%, which is 1/9 of the average accident rate of 0.74% in the domestic construction business.



Achieved the Highest Level in Shared Growth for 2 Consecutive Years No. 1 among All Affiliated Agencies of the Ministry of Land, Infrastructure, and Transport

KR signed fair trade agreements with 805 primary and secondary business partners participating in the rail network construction business, and made continuous efforts in eliminating illegal activities at construction sites. Furthermore, KR cooperated with small and medium companies to develop catenary materials with 100% domestic technologies. KR also led the government's shared growth policy by increasing the number of opportunities for small and medium companies to participate in the rail construction business, achieving the highest level in the shared growth evaluation of public corporations hosted by the Ministry of Industry and Commerce for 2 consecutive years.

CEO's message

We will revitalize the national economy by constructing user-friendly rail networks and provide faster, safer, and more convenient public rail transportation.

Respectable Stakeholders of KR!

As the concern for environmental and social issues along with economic growth and the demand for corporate social responsibilities has been rapidly rising in the 2000s, many corporations today in and out of the country consider sustainability management as one of the basic and crucial values of corporate activities.

Sustainability can be defined as increasing corporate value through management activities to meet the needs of various stakeholders while creating positive value in the areas of society and environment and realizing economic growth. KR was founded in January, 2004 to promote public convenient use of transportation for the Korean public and contribute to the healthy development of the national economy on behalf of the government through efficient implementation of construction and management of rail facilities and all related projects. After joining the UN Global Compact in February, 2007, KR abides by the 10 principles of the UN Global Compact in the 4 categories of human rights, labor, environment, and anti-corruption. KR has also annually published sustainability reports, sharing the accomplishments of KR in 3 fields of sustainability issues, namely economy, society, and environment, with stakeholders.

Rail Network as Sustainable Means of Transportation

With the emergence of the rail network industry as an eco-friendly means of transportation and a creative convergence industry combining civil engineering, rails, vehicles, architecture, and information communication technology, the future value of the rail network industry is just being realized. KR is reviving the value of rail networks as an eco-friendly and energy efficient means of transportation to build faster, safer, and more convenient rail networks, reflecting the changes in the world rail network market that has been developing through high speed railways.

Building a Rail Network to Make Any Place in the Country Accessible within 90 Minutes of Travel by 2020

KR will complete the construction of the Honam High-speed railways and the Seoul Metropolitan Area High-speed railways on time and transform the main-line railways into high-speed railways. This connected the existing Gyeongbu High-speed Rail with strategic spots across the country, making traveling anywhere in the country

possible within 90 minutes by 2020 and benefiting more citizens. The entire country will be united as a single-unit city within a 90 minute travel -time zone, establishing a convenient and safe rail network transportation system, reducing greenhouse gas emission—the main culprit in global warming—and saving 2.59 million TOE tons of energy annually. Travel time, The number of car accidents, and environmental costs will be reduced, creating an estimated 6.8 trillion won of added value annually while causing a production effect in the amount of 233 trillion won and employment effect in 1.98 million job openings by 2020.

Strengthening Responsibility Management for the Future of the Rail Network Industry

KR produced admirable accomplishments by guiding the government's rationalization policy for public corporations, observing the principles and basic rules to realize efficient management, and creating innovation through the hard work of all employees. To pay off the debt created by KR's self-supplying 50~60% of its construction investment cost of high-speed rails, the scale of facilities was optimized according to the plan of rail operation and the demand in travel. 1,020.5 billion won of expenses was saved in 2012 through improving construction methods, planning VE, and 6 Sigma Creative Innovation. Furthermore, active participation in profitable activities such as new resources development, overseas projects, and lease of governmental property enabled KR to redeem the debt of 41.5 billion won in 2011 for the first time since the establishment of the corporation and to repay 92.9 billion won of net debt in 2012, thereby raising its international credit rating from Aa3 by 2 grades.

Investment priorities were examined from the perspective of the customers who use the rail network, and resources were dispensed in an efficient manner to successfully open 11 rail network projects in 2012, such as the speed-up rail projects for the Gyeongchun Line and Jella Line, 4 Metrorail projects, and 5 conventional rail network projects as promised to the public. By implementing the field-oriented quality safety system, the number of accidents was reduced by addressing the roots of problems, recording the lowest accident rate of 0.082% in the domestic construction industry in 2012.

KR will improve the competitiveness of Korea's rail networks by



continually developing new technologies and lead industry growth through ceaseless innovation and transformation.

Take off as an Eco-Green Rail Enterprise Fulfilling Environmental Responsibilities

KR is preemptively responding to climate change by building middle and long term plans, reducing greenhouse gas emissions by 820 thousand tons by 2020. KR is vigorously carrying out environmental activities by improving over planning, using eco-friendly material and methods to minimize impact on the environment. Solar energy generation projects using rail network facilities such as the platforms within train stations and roofs of depots are in progress to help solve the national power shortage issue and to reduce inconvenience to the public. KR will elevate the eco-friendly value of rail networks by implementing stage-appropriate environmental policies in each stage of the rail network life cycles, covering planning, construction, operation, and the restoration and reuse of abandoned rail lands.

Collaboration for Shared Growth and Contribution to Local Communities

KR signed fair trade agreements with all primary and secondary business partners in the rail network construction field to eradicate unfair bidding practices. KR strives to root out corruption by giving rewards for reporting unethical activities by subcontractors. Practical assistance is provided to small and medium firms through joint venture with prime contractors, benefit sharing, and private and public joint technology development, to achieve shared growth as business partners. In addition, VOC improvement activities catering to customer needs will satisfy customers, and outstanding social contribution activities utilizing rail network engineering will help KR in fulfilling its social responsibilities as a public corporation.

KR will concentrate its efforts on building faster, safer, and more convenient rail networks that will make any place in the country accessible within 90 minutes of travel by 2020 and will reinforce sustainability management to fully carry out its increasing social and environmental responsibilities. KR will appreciate your continuous attention and encouragement as our stakeholders for our rail network to attain greater growth and competitiveness in the global market. KR will always listen to your opinions and feedback, fulfill our social responsibilities through transformation and innovation, and be with you as a global partner and a green rail network company leading sustainability management

I'd like to express my deepest gratitude for your continuing support.

Korea Rail Network Authority

CEO Kim Gwang Jae

KR NETWORK STORY

Rail Network Construction

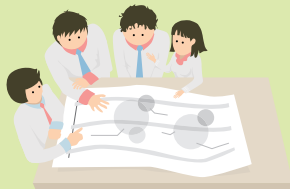
Establishment of Next Generation Transportation Networks including High-speed Railways, Conventional Railways, Metro Rails, and Tilting and Magnetic Levitation Railways



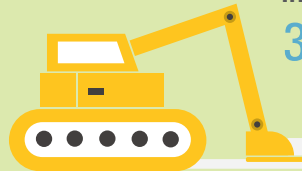
2020 Vision

Building Rail Network to Enable Access to Any Place in the Country within 90 Minutes of Travel

90
minutes



Design and Examination



Increase in Railways

3,650 km



Field Inspection



Field Survey

Business Scale

High-speed rail ways

32

trillion won

Metropolitan railway

18

trillion won

Conventional railway

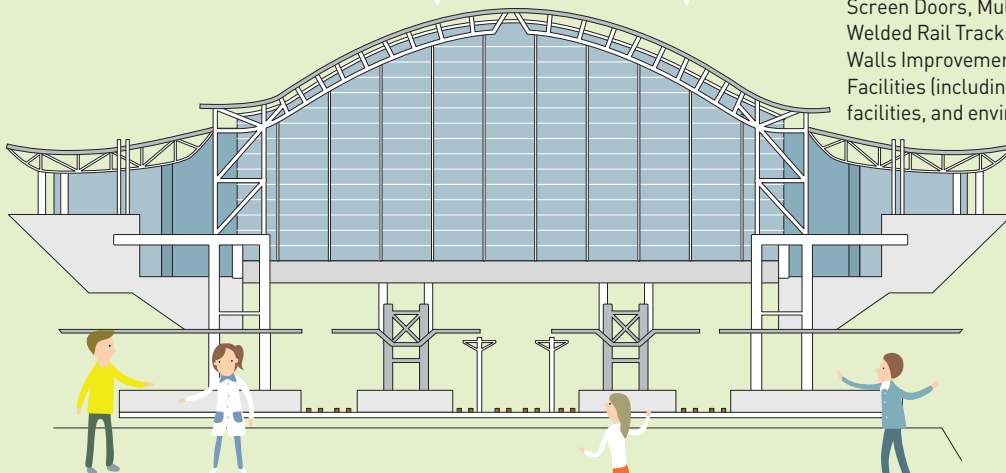
39

trillion won



Seismic Reinforcement

6.0
Richter Scale



Facility Safety Management

Safety Review of Facilities and Maintenance, Screen Doors, Multi-level crossing, Continuous Welded Rail Tracks, Construction of Soundproof Walls Improvement and Modernization of Rail Facilities (including decrepit facilities, safety facilities, and environment facilities)



Network Building

Overseas Projects

Seeking opportunities for overseas project including supervision of overseas railroads Winning overseas projects, participating in Official Development Assistance (ODA) projects Establishment of public and private collaborative networks, cultivation of international human resources

Winning overseas Rail Projects
(2004-2012)

729 Billion Won
28 Projects in 9 Countries

**KOREA RAIL
NETWORK AUTHORITY**

Railway Assets Management

Development of Complex Station and Station-influenced Area, Management of State-owned Property Transformation into Eco Parks and Bike Paths from Abandoned Rail Yards, Construction of Happy Housing on Idle Land

Asset-size under
Management

90 Trillion Won



I

Introduction



- [KR Overview](#)
- [KR Vision and Value](#)
- [Governance Structure](#)
- [Ethical Management](#)
- [Risk Management](#)
- [Participation by Stakeholders and Communication](#)
- [Interview with Stakeholders](#)
- [Major Sustainability Issues](#)

KR is preparing for the happier world of tomorrow.

KR is advancing into the world to reestablish itself as the center of transportation, culture, and distribution in Northeast Asia, drawing upon its expertise and experience accumulated from its 110 year of Korean rail history.

KR is always at the center of the future of the world's rail networks.

<Key Performance Indicators of Sustainability Management>

Category	Performance Indicator	Unit	2010	2011	2012
Economy	Total Length of Railways	Km	3,618	3,637	3,650
	Rate of Electrification	%	61.14	66.97	69.1
	Amount of Budget Saving	0.1 Billion won	4,722	5,299	6,532
	Profits from Development of Railway Assets and Overseas Projects	0.1 Billion won	708	855	994
Environment	Environmental Management Index	Points	105.4	113.1	158.1
	Reduction Rate of Greenhouse Gas	%	-	5.8	16.6
	Cases of Environmental Law Violations	Cases	0	0	0
	Rate of Recycled Construction Waste	%	92.57	95.6	97.2
Society	Customer Satisfaction Rate	Points	93.21	95.43	93.98
	National Integrity Rate	Points	8.35	8.81	8.22
	Employee Satisfaction Rate	Points	74.75	73.7	76.4
	Construction Site Accident Rate	%	0.128	0.142	0.082
	Rate of Securing Core Talents	%	30.77	31.51	33.38

KR builds fast, safe, and convenient rail networks.

KR was established to effectively build rail networks and to systematically manage and operate rail network facilities on behalf of the country, providing public transportation and contributing to the stable growth of the national economy.

❖ Introduction of the Corporation

KR not only efficiently fulfills its required role of constructing and managing rail networks and facilities, but also strives to provide the public with the, safe, and convenient rail network service so that travelers can reach any place in the country within 90 minutes through the "construction of user-friendly rail networks", "modernization of existing rail networks to improve user's convenience and safety", and "active utilization and development of rail assets". Drawing upon its accumulated experience and technology as the 5th country to build high-speed railroads in the world, KR will maximize its efforts to launch into the overseas market, thereby boosting Korea's national prestige and revitalizing the national economy.

❖ Introduction of Organizational Structure

KR consists of its headquarters (4 head offices and 1 department), branch offices (5 local head offices, 1 overseas branch office), and secondary institution (1 research institute). The headquarters and secondary institution are located in Daejeon. Local head offices are located in Seoul, Busan, Suncheon, Daejeon, and Wonju for the efficient supervision of rail network construction projects and management of rail facilities dispersed around the country. The overseas branch in China aids in the successful performance of contracts obtained in China. KR operates under 3 principles for a small yet strong organization, innovative organization for the creation of future values, and competitive organization specializing in technology. A flexible quota system is in place to respond to the changes of workload in different areas and fields, which is characteristic of the construction industry, and enhance the management of KR's structure.

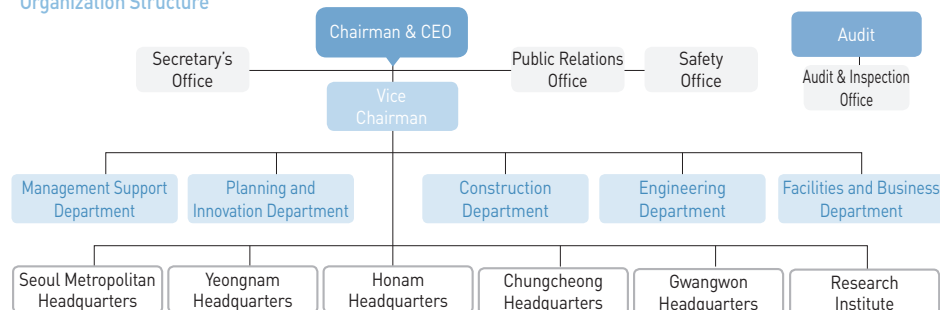
<General Status>

[As of December 31, 2012]

Name of Organization	Korea Rail Network Authority
Date of Establishment	January 1, 2004
Legal Basis of Establishment	Framework Act on the Development of Railway Industry (No. 9772) Korea Rail Network Authority Act (No.9391)
Chairman & CEO	Kim Kwang Jae
Formation	Quasi-Governmental Agency
Current Status of Budget	9,062.7 Billion Won
Government Investment	4,159.0 Billion Won
Number of Employees	1,347 Employees
Location	242 Jungang-ro, Dong-gu, Daejeon Metropolitan City

※No changes were made in the scale, structure, or ownership structure during the period of report.

Organization Structure



Quickening Period (2003 ~ 2004)

Foundation Building Period (2005 ~ 2008)

Beginning of 300km/h high-speed railway era

2004

- Establishment of Korea Rail Network Authority
- Opening of Gyeongbu High-speed Railway (Phase 1)

2005

- Winning the first contract of supervision in China's railway projects
- Opening of Cheongrangri-Deokso Double-track electrified Railways in Jungang Line

2006

- Electrification of the Entire Gyeongbu Line
- Opening of Rail Traffic Control Center
- Opening of Uijeongbu-Dongducheon Double-track electrified Railways in Gyeongwon Line

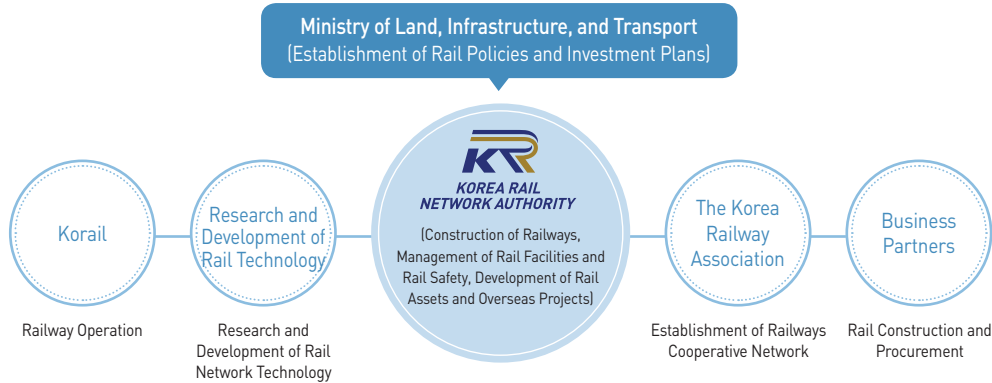
2007

- Selected as a top supervising organization of Chinese Railways
- Running test Connecting Lines between South and North Korea
- Penetration of Han River underwater tunnel through Wangsimri-seonleung

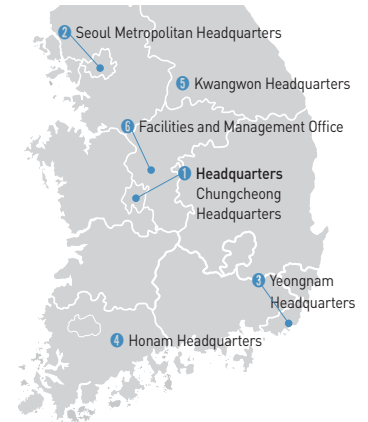
2008

- Opening of Cheonan-the Onyang Springs-Sinchang Double-track electrified Railways and Janghang Line
- Opening of Paldang-Guksu Double-Track electrified Railways in Jungang Line
- Creation of 10 billion won of profits from overseas business

Structure of Rail Industry in Korea



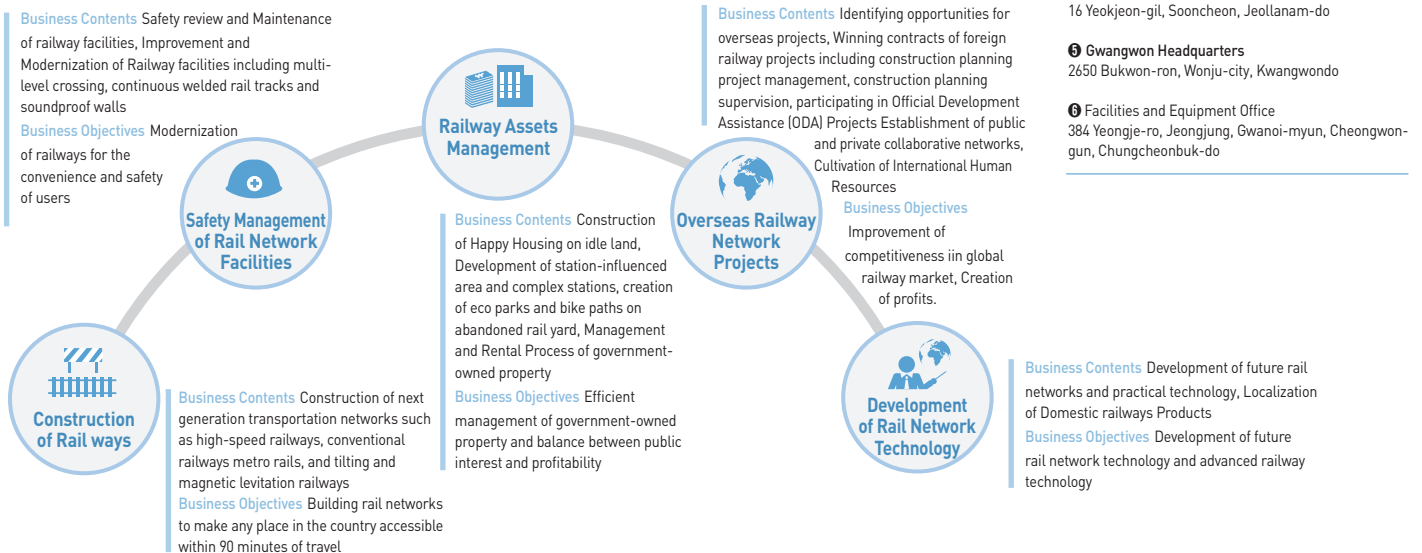
Current State of Major Places of Business



- ① **Headquarters**
242 Jungang-ro, Dong-gu, Daejeon Metropolitan City
- ② **Seoul Metropolitan Headquarters**
378 Cheongpa-ro, Yongsan-gu, Seoul Metropolitan City
- ③ **Yeongnam Headquarters**
4647 9th St. Chungjang-daero, Jung-gu, Busan Metropolitan City
- ④ **Honam Headquarters**
16 Yeokjeon-gil, Sooncheon, Jeollanam-do
- ⑤ **Kwangwon Headquarters**
2650 Bukwon-ro, Wonju-city, Kwangwondo
- ⑥ **Facilities and Equipment Office**
384 Yeongje-ro, Jeongju, Gwanui-myun, Cheongwon-gun, Chungcheonbuk-do

❖ Introduction of Major Business

KR opened the era of 300km/h high-speed railways in 2004, emerging as a global enterprise by launching into the overseas rail network construction market. Furthermore, public services projects improving public transportation and building cultural spaces, such as the development of complex transfer centers and station-influenced areas, creation of traditional markets and public parks, and construction of bike paths at abandoned rail yards are being more strongly promoted.



Leap Period (2009 ~ 2010)

Advancement Period (2011 ~)

Achievement of 350km/h

Preparation of 400Km/h

2009

- Opening of Seongsan-Munsan Double-track electrified Railways in Gyeongui Line
- Opening of Guksu-Yongmum Double-track electrified Railways in Jungang Line

2010

- Creation of 36.5 Billion Won of profits from overseas business (Technology consulting for Lanxin/Yunnan, Guizhou and other projects)
- Opening of Phase 2 of Gyeongbu High-speed Railway
- Opening of Sinsangbong-Chuncheon Double-track electrified Railways in Gyeongchun Line
- Opening of Samrangjin-Masan Double-track electrified Railways in Gyeongjeon Line

2011

- Opening of Iksan-Yeosu Double-Track electrified Railways in Jeolla Line
- Opening of Jecheon-Dodam Double-track electrified Railways in Jungang Line

2012

- Opening of Yongsan-Chuncheon High-speed Railways in Gyeongchun Line
- Opening of Iksan-Yeosu High-speed Railways in Jeolla Line
- Opening of Yongmum-Seowonju Double-track electrified Railways in Jungang Line

KR Vision and Value

KR is driving forward the 2020 Global Management Strategies focusing on Core Values.

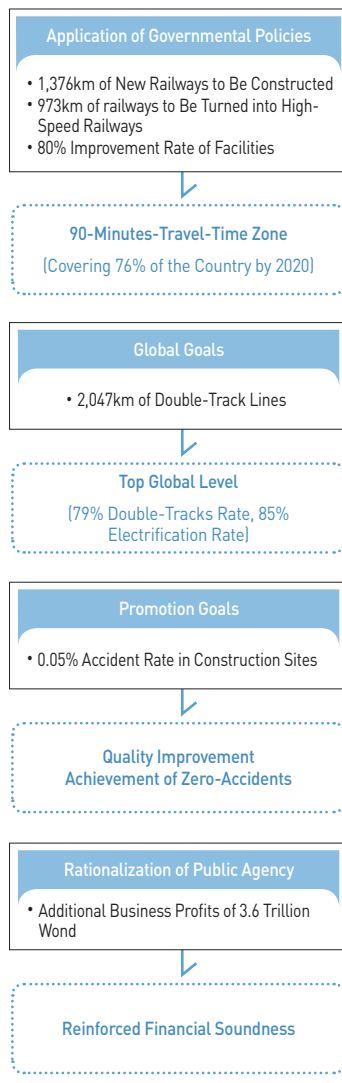
KR fully understands the value of rail networks as an eco-friendly, energy-efficient, safe, and efficient means of transportation, and established the 2020 Global Management Strategies based on the public demand for faster, safe, and convenient rail networks, changes in the global railway market gravitating towards high-speed railways, and the governmental policies on low-cost and highly efficient economic construction of rail networks.

❖ Middle and Long Term Strategies

KR redefined its purpose of establishment, reflecting the CEO's philosophy on the development of the railway industry and the values requested by the public, set its mission of the "Realization of a Fast, Safe, and Convenient Rail Network", and created a new vision of "Realization of a Rail Powerhouse through Establishment of a Railway Network Connecting Any Place in Korea within 90 Minutes of Travel". This is a result of KR putting the public's demand before everything else, by attaching a challenging and clear purpose to its 2020 vision.

After the realization of the 2020, major cities across the country will be incorporated into one metropolitan region within the 90 minute travel time zone, bringing regional balanced development. All major cities in the metropolitan economic blocs will be connected by green rail networks, and the transportation and distribution systems based on these rail networks will be in place. With the foundation for low carbon green growth, green house gas emissions from transportation will be reduced and energy will be saved.

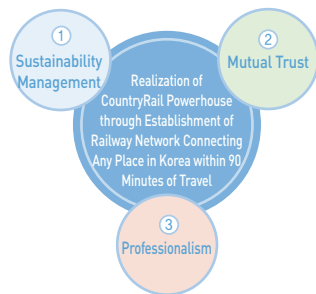
<Establishment of Promotion Goals>



<KR 2020 Global Business Strategies>

Mission	Realization of Fast, Safe, and Convenient Rail Network			
Vision	Realization of Rail Powerhouse through Establishment of Railway Network Connecting Any Place in Korea within 90 Minutes of Travel			
Core Values	Sustainability Management — Professionalism — Mutual Trust			
Strategic Goals (2020)	Construction of New railways	Upgrading Existing Railways	Accident Rate on Construction Sites	Profits from New Business
	• 1,376km	• Railways Turned into High-speed Railways: 973 km • Double-track electrified Railways: 2,047 km • Improvement Ratio 80%	• Below 0.05%	• 3.6 trillion won
Strategic Direction	Construction of User-friendly Rail Network		Modernization of Existing Rail Network for the Convenience and Safety of Users	Development and Management of Asset and Maximization of Opportunities for Entry into Global Market
Strategic Assignments	Projects		Functions	
	<ul style="list-style-type: none"> Timely Construction of Rail Network Focusing on Opening Projects Effective Investment through Optimum Planning and Construction Systematic Management of Quality, Safety, Construction, and Environment 		<ul style="list-style-type: none"> Turning Existing Railways into High-speed and Double-track Lines Improvement of Decrepit, Disaster, and Safety Facilities Maximizing Return on Investment in Rail Network Construction Establishing Labor-Management Culture of Coexistence and Trust Advancing Information Service based on IT Achieving High Transparency, from Low Grade of Integrity 	
	<ul style="list-style-type: none"> Customer Service Going beyond Customer Satisfaction Securing World-class Rail Network Technology Capability Nurturing Leaders for Rail Network Industry 		<ul style="list-style-type: none"> Making profits from Government-owned Property Diversifying Development Project of Station-influenced Area Development Projects Pursuing Competitive Overseas Projects Strategic Finance Management for Debt Reduction Accelerated Creative Innovation and Management Support Excellent Fulfillment of Social Responsibilities of a Public Corporation 	

<Core Values>

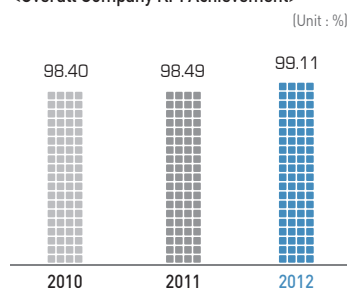


- 1 On a National Scale – Fulfilling Social Responsibilities and Pursuing Continuous Growth and Development
- 2 Dealing with Customers – Mutually Respecting and Trusting Each Other and Seeking Mutual Prosperity Based on Trust
- 3 At an Internal Scale – Nurturing Capabilities to be the Best Specialist in the Rail Network Field.

<Comprehensive Performance Management System>



<Overall Company KPI Achievement>



KR's Core Values

KR's 3 Core Values are Sustainability Management, Expertise, and Mutual Trust. Challenge, Passion, Autonomy, Creativity, Loyalty, and Trust are designated as the 6 Practical Values, which are the driving force behind achieving vision goals and carrying out strategies. The 3 Management Philosophies and 6 Management Policies in connection with the Core Values are being defined and declared in preparation for making the next leap into the future.

In response to the rapid change in environment, KR is striving to accomplish its vision goals by realizing the future value of rail networks expected by the public. KR does not settle on "maintaining the status quo", but endeavors to create a favorable management environment through passion and a spirit of challenge under "Environment-creating Management" and to accumulate resources and special talent that will guarantee a competitive edge through creative innovation under "Sustainability Management". KR's Core Values are playing a pivotal role in building trust with customers and raising KR's enterprise value.

Blueprint of KR 2020 Global Management Strategies

KR is making efforts to carry out its most basic mission of the "Realization of Fast, Safe, and Convenient Rail Network" given from the public. When the 2020 Global Management Strategies are accomplished, major cities across the country will be incorporated into one metropolitan region within the 90 minute travel time zone.

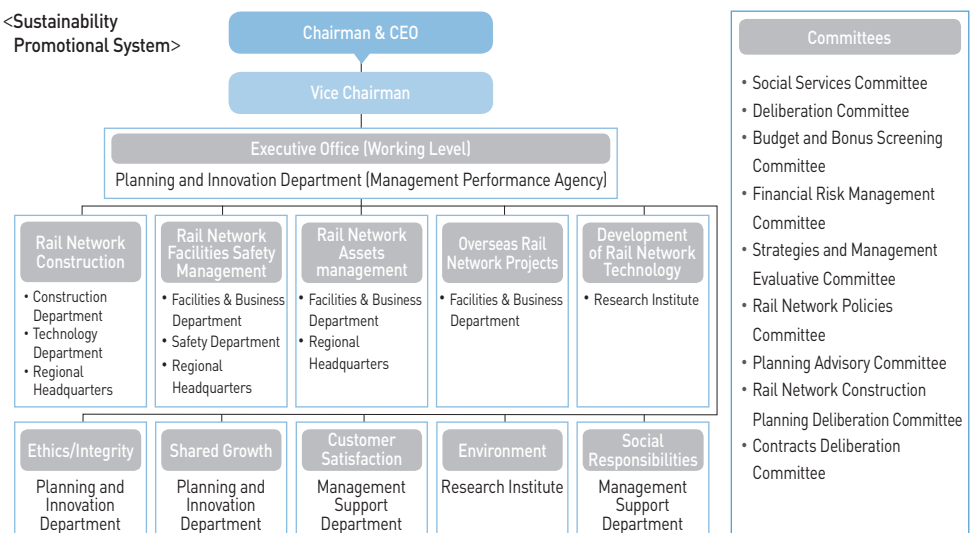
The metropolitan economic blocs will be connected by green rail networks, and the transportation and distribution systems based on rail network will be in place.

As the foundation for carbon and green growth is prepared, 7.74 million tons of greenhouse gas by traffic will be reduced and 2.59 million tons of energy will be saved on an annual basis. In addition, the Gyeongbu, Honam, and Seoul Metropolitan High-speed Railways will be opened by 2020, and all major conventional railways will be turned into high-speed railways, connecting every major city within 90 minutes of travel to bring balanced growth among different regions.

Promotion System of Sustainability Management

KR's sustainability is managed by the Management Strategy Office, Management Performance Agency, and Planning and Innovation Department, and various activities are being promoted to carry out the economic, social, and environmental responsibilities by each business department. In addition, committees of different fields such as the Social Services Committee and the Rail Network Policy Committee are assisting sustainability efforts.

<Sustainability Promotional System>



Management of Sustainability Performance

KR set practical assignments and KPI (Key Performance Indicator) to evaluate economic, environmental, and social accomplishments in establishing Global Business Strategies 2020, and introduced a unified performance management system to monitor the performance rate in real-time. To encourage the performance of assignments and improve overall KPI, practical assignments given to each department and KPI are evaluated within the department. Customized education, contests, and seminars were provided to the persons in charge to achieve greater consensus for sustainability enabling KR to earn trust from stakeholders. KR will recreate its business portfolio according to the changes in the environment and make continual improvements in the executive system of business strategies to achieve sustainability.

Governance Structure

KR enhances corporate value based on transparent governance structure by practicing responsibility management.

<Board of Directors Meeting>



<Performance Indicators of the Board of Directors>

Performance Indicators	Unit	2010	2011	2012
Number of Board Meetings	Numbers	14	11	15
Items on Agenda for Board Meetings	Numbers	57	32	34
Ratio of Preliminary Deliberation	%	100	100	100
Ratio of Revised Agenda for Deliberation	%	7.0	9.4	11.8
Attendance Rate	%	90.3	95.7	97.9
Attendance Rate of Non-executive Directors	%	95.3	92.9	96.2
Participation Rate of Non-executive Directors	%	39.9	44.6	46.7
Management Consultation by Non-executive Directors	Cases	18	18	18
Management Proposals by Non-executive Directors	Cases	68	89	94
Number of Management Proposals Accepted	Cases	39	42	43

<Five Major Management Information Provided by the Board of Directors>

Human Resources Affairs	Current Status of Each Position, Years of Service, Age Group, etc.
Finance	A Variety of Financial Indicators Including Assets and Debts
Budget	Amount of Budget Allocation and Execution
Construction	Process, Total Expenses, Planning and Interface, etc.
Assets	Profits from Government-owned Property, Land Purchase Result, etc.

KR has created and operated committees consisting of the best experts to increase the transparency of the governance structure and to achieve efficient and continuous management through swift policy making.

❖ Makeup of the Board of Directors

The majority of the board of directors is represented by the non-executive directors to ensure mutual checking and independence under the Law on Management of Public Bodies for the responsibility and transparency of management. The board of directors consists of 5 executive directors and 7 non-executive directors as of May, 2013 to manage KR's sustainability management; they are experts in finance, law, management, quality, traffic, policy, environment, safety, and assets development.

<Current Members of the Board of Directors>

Category	Name	Role (Field of Expertise)	Major Career
Executive Directors	Kim Kwang Jae	Chief Director (Chairperson of the Committee)	Director of Aviation Policy Department for the Ministry of Land, Transport, and Maritime Affairs
	Oh Byung Soo	Vice Chairperson	Executive Director of Construction Department, KR
	Kim Young Woo	Executive Director of Planning and Innovation Department	Director of Planning and Adjustment Office, KR
	Kim Young Gook	Executive Director of Construction Department	Executive Director of Seoul Metropolitan Headquarters, KR
	Choi Gang Yoon	Executive Director of Technology Department	Head of Test of Certification Center, Korea Railroad Research Institute
Non-executive Directors	Lee Seok Am	Finance, Traffic	Leader of High-speed Railway Planning Team of the Ministry of Construction and Transport
	Yang Bang Seung	Law	Senior Researcher of Law and Policy Research Institute
	Cho Gye Geun	Management	Adjunct Professor at the Department of Business Administration, Hanlim University
	Han Gwang Moom	Quality	Director of the Defense Agency for Technology and Quality
	Park Gwang Seo	Asset Development	Head of National Housing Agency, National Rental Housing, Ministry of Land, Transport, and Maritime Affairs
	Heo Man Hyung	Policy	Professor at the Department of Administration, Joogang University
	Lee Taek Kwan	Environment/Safety	Auditor of Korea Environment Corporation

* All Members are male members currently

❖ Vitalizing the Board of Directors

KR holds a monthly board of directors meeting on a regular basis, and a temporary board of directors meeting is held when an item demands immediate deliberation. The notice for meetings is made 2-7 days prior to the meeting under the revised provision, and the efficient operation of the board of directors is guaranteed through regular meetings of the board of non-executive directors and sub-committee meetings. "7 days in advance of the board meeting", a board meeting of non-executive directors consisting of the chief non-executive director (chairperson), executive director (executive director of Planning Department), and non-executive directors is held for the preliminary deliberation on the items in the agenda. 15 board of directors meetings were held in 2012, and the attendance rate of the non-executive directors was recorded at 96.2%, expanding the non-executive directors' participation in the board, exercising their voting right, and playing the role of checking management. Additionally, a webpage for the board was created to provide updated information to the directors on 5 major fields of management information areas to encourage more participation in management from the non-executive directors.

<6 Management Committees>

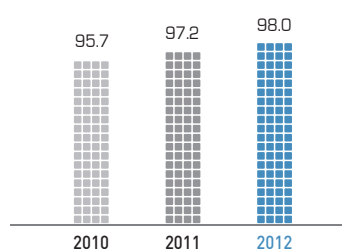
Committees	Major Accomplishments
Executives Recommendation Committee	<ul style="list-style-type: none"> Recommendation of 3 Non-executive Directors in May Recommendation of Auditor Candidates in October
Conflict Resolution Committee	<ul style="list-style-type: none"> Establishing Integrate Policy for Conflict Resolution, Finding and Managing Conflict Resolution measures 4 cases of Conflicts Including Changing the Scales of Jeongeup and Iksan Stations in Honam High-speed Railways. High-speed Railways
Financial Risk Management Committee	<ul style="list-style-type: none"> Evaluation and Management of Financial Risk for Securing Financial Soundness Voting on the Plans of Issuing Annual Rail Network Facilities Bond
Financial Auditor Appointment Committee	<ul style="list-style-type: none"> Improving Financial Transparency with Fair Selection of External Financial Auditors
Strategic Management Evaluation Committee	<ul style="list-style-type: none"> Inside Evaluation and Deliberation within the Department (Twice a year)
Budget and Bonus Screening Committee	<ul style="list-style-type: none"> 24 cases accepted out of 43 Saved Payment Estimates and Amount of Increased Avenue

<KR's Persons in Charge of Executives Appointment>

Executives	A Person in Charge of Appointment
Chairperson of the Board	President
Auditor	President
Executive Directors	Chairperson of the Board
Non-executive Directors	The Minister of Land, Infrastructure, and Transport,

<Non-executive Directors' Participation Indicator>

(Unit : Points)



❖ Utilizing the Expertise of the Non-executive Directors

KR established a subcommittee for each field of expertise for an in-depth deliberation on items in the agenda in November, 2012 and founded a management participation system in each non-executive director's field of expertise by utilizing a board of non-executive directors, subcommittee, and a management commission. The 6 management commissions are led by the non-executive directors. The non-executive directors belong to a different management commission of each field, playing an active role in policy-making processes such as the deliberation of the items on agenda, making management proposals and research proposals. KR established subcommittees of planning and management, construction, facilities, and other fields. to actively make use of the expertise of the non-executive directors. The attendance rate at the board meetings and the number of business proposals are evaluated as part of the non-executive directors' performance index to reinforce the role of the board of directors. The performance index of the non-executive directors in 2012 recorded at 98 points in 2012, a 0.8 point increase from the previous year.

<Subcommittees within the Board of Directors>

Subcommittee	Composition	Role
Planning and Business Subcommittee	3 non-executive directors, executive director, assistant administrator	Planning of Management Goals, Budget, Finance, etc. Management of the Structure, Accounting, Closing of account, Labor, etc.
Construction Subcommittee	2 non-executive directors, executive director, assistant administrator	Rail Network Construction of High-Speed Railways, Metropolitan Railways and Private Finance Projects Rail Network Technology of Tracks, Electricity, Vehicles, etc.
Facilities Subcommittee	2 non-executive directors, executive director, assistant administrator	Facilities Management of Facilities Planning, Overseas Rail Networks, Assets Development and Management, etc.

❖ Appointment Process

KR appoints its executives under the Law on Management of Public Bodies and built the Executives Recommendation Committee (ERC) for the transparent appointment of executives. ERC consists of 5 members—3 non-executive directors, 1 private member, and 1 governmental member—selected through deliberation by the board of directors. ERC determines the evaluation criteria of executive candidates and conducts document screening and in-depth interviews of the applicants through an open application process. ERC recommends the final applicants to the person in charge of appointing executives, and the person in charge of appointing executives selects the best applicants for the executive posts. The chairperson of the board is appointed by the president after a recommendation is made by ERC and the Minister of Land, Infrastructure, and Transport. The auditor is appointed by the president after a recommendation is made by ERC and the Minister of Land, Infrastructure, and Transport and voted by the Management of Public Bodies Committee. The executive directors are appointed by the chairperson after a recommendation is made by ERC, and the non-executive directors are appointed by the Minister of Land, Infrastructure, and Transport after the ERC's recommendation.

<Recommendation Process for Executive Nominees>

01. Establishment of ERC's Management Plans	02. Open Recruitment Process	03. Document Screening	04. In-depth Interviews
Selection of Appropriate Evaluation Criteria for Applicants out of 19 Requirements for the Job Performance	Daily Papers and Announcements on the Websites of KR, the Ministry of Land, Infrastructure, and Transport, Ministry of Strategy and Finance, and Ministry of Public Administration and Security	Conducting Document Screening According to the Evaluation Criteria for Each Job Performance Requirement	Conducting a 30-minute In-depth Interview for Each Applicant

❖ Evaluation and Rewards

CEO entered into a performance agreement with the executive director in accordance with the Law on Management of Public Bodies, and differential pay is awarded to the executive directors depending on the job performance of the director. The evaluation of the director is broken down as 50% leadership and 50% job performance. Leadership is categorized into leadership evaluation, customer satisfaction indications, integrity level, and creativity & innovation indications. Performance is assessed in the categories of contribution rate to the governmental management evaluation, achievement of the management strategies, and job performance results. The annual salaries of the auditors and executive directors including the CEO in the year 2012 are disclosed through the public business announcements.

Ethical Management

KR pursues transparent and trustworthy corporate through the realization of ethical management.

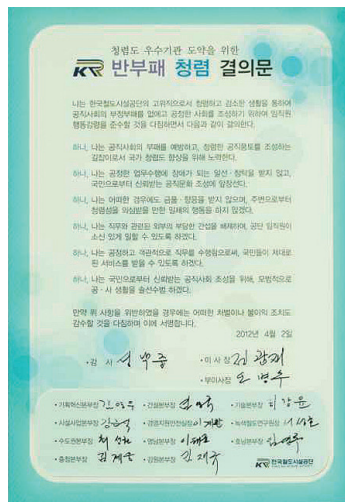
KR strives to grow into a public corporation, earning the citizens' support and trust through faithful practice of ethical management. KR held an Executives' Integrity Resolution Rally to emerge as an institution with an excellent integrity index score in April, 2012. KR also held an Integrity Resolution Rally for corruption-free construction of rail network in December to form a consensus between the executives and employees.

❖ Promotional System of Ethical Management

Strategic System of Ethical Management

KR has consistently organized its infrastructure and ethical guidelines to take the top position in the integrity ratings in 2013. Under the vision of the "Realization of Shinbaram KR, Transparent, Clean, and Trusted by the Public" for ethical management, the title for ethical management includes the word "shinbaram", meaning "exciting", to encourage all employees to participate in the realization of an exciting and trustworthy workplace. The determination of the CEO to promote ethical management resulted in the establishment of mid and long term promotional strategies and core strategies based on 3C*, and an operational system based on PDCA was implemented for the execution of these strategies.

<Anti-Corruption Resolution Statement>



<Naming of Shinbaram for Ethical Management>

Logo	Meaning
	Creating a Trustworthy Company for the Public and Exciting Workplace for Employees through Ethical Management

※ Name for the Ethical Management Selected through an Inside and Outside Open Contest for Publicizing KR's integrity and Encouraging Participation of All Employees

<Promotional Strategy of Ethical Management>

Ethical Management Vision	Realization of Shinbaram KR, Transparent, Flawless, and Worthy of the Public's Trust		
Mid and Long Term Promotional Strategic Execution Tasks of Ethical Management	Entry into the Institution with Excellent Integrity Rating (2012~2013)	Establishment of the System for the Maintenance of the Excellent Integrity Rating (2014~2017)	Maintenance of Excellent Integrity Rating for 10 Consecutive Years (2018~2020)
	Establishment of the Infrastructure and Ethical Norms Establishment of Ethical Promotional System for the Unification of Ethical Projects	System Improvement and Settlement of Integrity Culture Removal of Corruption Causing Factors and Efforts for Improving the Integrity Rating	Monitoring and Rewarding for achievements Performance Check and Reinforced Feedback through Evaluation and Rewards
Core Strategies (Based on 3C)*	Ethical Mandates Supplying Detailed Ethical Values	Evaluation Agency Creation of Practical Evaluation Agency	Formation of Consensus Formation of Ethical Practices and Ethical Awareness

<Ethical Management System>



Ethical Management System

KR monitors and checks its ethical management activities and integrity rating through operation of the Shinbaram Ethical Management System. Cases of anti-corruption and exemplary ethical activities are shared through the Ethical Management System. Ethical management activities are inspected in real-time, starting from the consultation and reported cases of corruption and public interests to the self-evaluation and self-integrity check. All ethical management activities of departments are monitored through an inside evaluation system to prevent corruption, starting from the roots of possible problems.

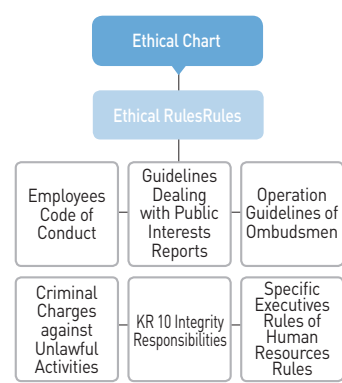
* 3 Points of Ethical Management

1. Code of conduct 2. Compliance check organization 3. Consensus by ethics education

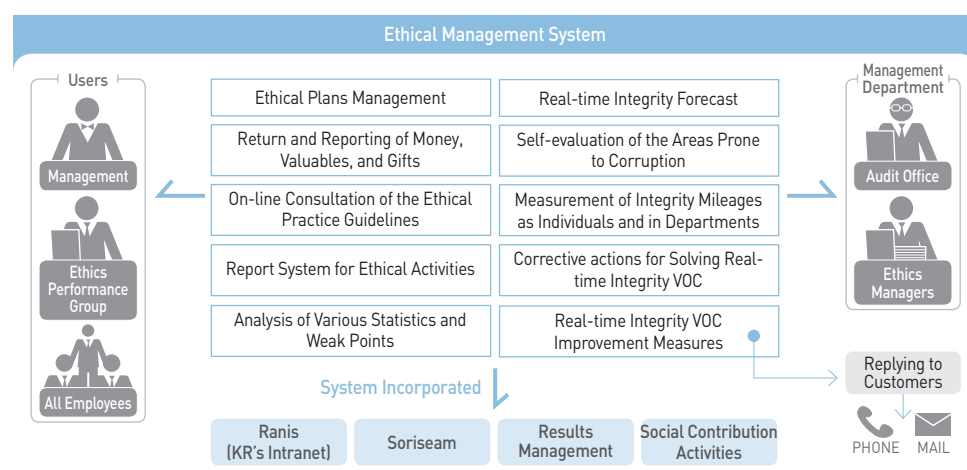
<Company-wide Ethical Management Structure from the Point of PDCA>

Classification	Promotional Organization	Major Role
Plan	Anti-corruption Ethical Management Committee (12 Members)	Distribution of Major Ethical Management Policies (Chairperson: Vice Chairperson)
	Ethics Management (3 Members)	Establishment of Ethical Management Plans, Monitoring and Review
	Integrity Auditors (7 Members)	Exposing Corrupt activities, Inspection, Eliminating Corrupt Activities
Do	Integrity Performance Group in Different Affiliations (3 Members)	Support of Ethical Activities in Different Affiliations, Performance and Management of Ethical Activities (Consisting of the Head, Ethical Performance Leader, Guardian of Integrity)
	Integrity Ombudsman (4 Members)	Advisory Body for the Chairperson, Audit Request, System Improvement and Corruption Monitoring
Check	Phone Line (2 People in Charge)	Self-evaluation of Integrity Rating and Phone Monitoring
	Human Resources Department (3 Ethics Instructors)	Reinforcement of All Employees' Ethical Capability and Mentoring of Employees with Poor Performance Rating
Action	Ethics Management and Ethics Performance Group	Sharing Achievements of Ethical activities and Carrying out Measurements for Improvement

<KR Ethical Rules System>



<Ethical Management System Operation>



Promotional Organization of Ethical Management

KR's ethical management is supervised by the Innovation/Ethics Sector of the Management Performance Agency and Planning and Innovation Department, and ethical activities are conducted company-wide with the establishment of annual ethical management promotional plans for the company and each department. In addition, the ethical activities of each department utilizing the Ethical Management System will be monitored in real-time. As for feedback of monitoring, rewards will be awarded to the departments producing outstanding results, and integrity mentoring will be provided for departments showing poor performance levels. The round-the-clock corruption monitor is handled by the Integrity Auditing Department, ensuring the prevention of corruption and the effectiveness of autonomous integrity activities.

❖ Practice Activities for Ethical Management

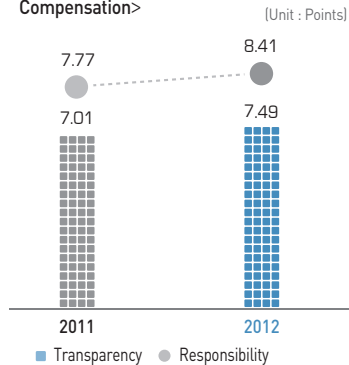
Organization of Ethical Management Infrastructure

KR has made continuous efforts to improve ethical guidelines through the establishment of an ethical charter, code of conduct for employees, guidelines on integrity ombudsman, guidelines on management of public interest disclosure and protection of corruption reporters, and amendment of guidelines on criminal actions for the settlement of ethical culture. Criteria were newly created for setting the amount of employees' lecture fees from outside offices: any amount exceeding the standard was required to be returned to reinforce the employees' integrity code of conduct. A system of notice for enactment and revision of guidelines was introduced to gather the stakeholders' opinions through the bulletin board in the web pages in case that the enactment and revision of guidelines has an impact on public life.

<Activities for Organization and Expansion of Ethical Norms Infrastructure of 2012>

Classification	Major Activities
Revision of Ethical Charter (3rd)	• Application of KR 2020 Management Strategies and Obligators of Ethical Charter Stated (April, 2012)
Revision of Employee' Code of Conduct (12th, 13th)	• Requirement of Integrity Education through Different Cycles of the Public Office and Addition of Forbidden Clause on the Transfer of and Money Valuables to the Spouses, and Linear Ascendants and Descendants of the Employees (April, 2012) • Establishment of Criteria for on the Employees' Lecture Fees and Duty to Return Any Amount Exceeding the Criteria (August, 2012)
Revision of Integrity Ombudsman Guidelines (6th)	• Creation of a Clause on Right to Request Audit on Corruptive Behaviors (April, 2012)
Enactment of the Public Interests Management and Public Interests Reporters Protection Guidelines	• New Enactment of Prevention and Corruptive Report of Violation of Public Interests related to Rail Network Safety (August, 2012)
Revised Guidelines on Report of Corruptive Behaviors and Criminal Actions (3rd)	• Compensation Newly Assessed for the Reporters (Maximum 100 million won) and the Amount of Rewards Modified to Maximum of 2 billion won (June, 2012)
Detailed Enforcement Rules of Human Resources Regulations (23rd and 24th)	• Limitation on the Voluntary Resignation and Honorary Resignation for the Persons in Violation of the Laws and Integrity Responsibilities (February, 2012) • Establishment of Disciplinary Provisions for Persons Requesting Personal Favors (October, 2012)
System of a Notice of Guidelines Enactment and Revision	• Collection of Stakeholders' Opinions on Enactment and Revision of the Major Guidelines Having an Impact on the Public Life (12 Cases including Operation guidelines on Planning Change Review Committee, May 2012)

<Transparency/Responsibility Index of Land Compensation>



<Activities of Integrity Ombudsman>



Program and Education for Expansion of Ethical Culture

KR implements various ethical programs such as semi-annual CEOs' Integrity letters on self-evaluation ethical management, ethical campaign called ethical wave movement touring the main headquarters and regional headquarters, integrity practice campaign for corruption-plagued period such as the holidays to spread company-wide ethical management and raise ethical awareness. All employees completed the cyber integrity education after the new system, which requires all employees to receive education according to different cycles of the public post, was introduced. Newly hired and promoted employees and executives above the level of directors received an additional 8 hours of integrity education. Additionally, mentoring was given to departments showing poor integrity performance ratings, and education was also given to business partners. All of these efforts were carried out to realize company-wide ethical education and operation of the integrity academy.

<Ethical Practice and Expansion Program>



❖ Monitoring Activities for Ethical Management

<Current Status of Integrity Ombudsmen>

Fields	Names
Law	Jeong Jun Hyun, Professor of Dankook University
Civil Engineering	Jang Byum Soo, Korea Infrastructure Safety and Technology Corporation
Finance	Kim Gyung Bok, Ilsin Accounting Firm
System	Kim Woo Jae, Professor of Seoul Science College

Corruption Monitoring through Integrity Ombudsman

KR has played a leading role in operating an integrity ombudsman system since 2007 to improve any unfairness in the system and practices from the perspective of the public. 9 regular meetings and 3 field activities in the year 2012 identified 8 cases of institutional improvement on land compensation. Additionally, participation in the meetings on land purchase countermeasure and field briefing sessions for land compensation reinforced field auditing activities, improving the transparency and responsibility index in the category of land compensation compared to the previous year.

Vitalization of Public Interest Reports

KR introduced an anonymous reporting system for disclosure of public interest and violations of law of rail network safety directly related to public safety, rail network construction, and facilities management laws for the first out of public corporations to respond to the governmental policy of improving public interest reporting. In addition, a professional confidential agreement was waived for the inside public interest disclosure so that employees will be exempt or partially exempt from facing disciplinary measures for voluntarily reporting their own violations to better protect the persons reporting public interests. Furthermore, persons receiving compensation for public interest reports were expanded to include persons who are not subject to compensation but contributed to the prevention of public interest invasion as part of the continuing efforts to encourage public interest reporting.

Reinforcement of Code of Conduct

KR strives to meet the government's policy on corruption prevention and improve its integrity level, fundamentally eradicating unlawful conduct by strictly enforcing disciplinary actions within the organization. Before, an expulsion was required in the cases of receiving money, valuables, or treats favors worth more than 3 million won, and a dismissal was required for more than 1 million won. Now, an expulsion is required for accepting more than 1 million won, and a dismissal is required for more than 100 thousand won. Stricter standards were created by unifying disciplinary standards for different amounts. As a result, strict punishments for the smallest corruption will contribute to the increase of KR's integrity level.

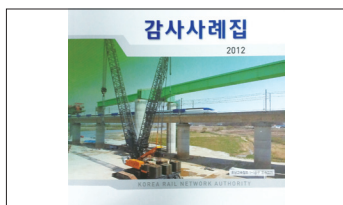
<Cross Audit Business Agreement>



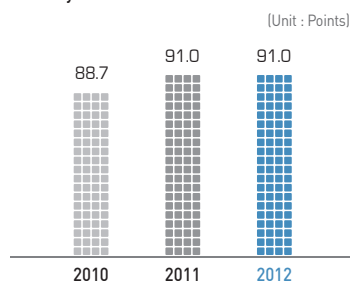
<Audit Result Review>



<Audit Cases>



<Quality Examination of Audit Activities>

**Constant Monitoring**

FGI (Focused Group Interview) is conducted semiannually in the first and second half of each year for the regular monitoring of ethical management performance, and has already collected 67 cases of integrity VOC of construction sites. In addition, the Help-line and an anonymous report system using QR codes for corruption and public interest disclosure submitted throughout the year was established. A constant monitoring system for the realization of "Just KR" is in operation with regular self-integrity inspections (7 sessions), and monitoring activities including quarterly meetings of integrity crisis management are hosted by the executives.

Results of Integrity Rating Inspection

KR is carrying out company-wide efforts to improve integrity ratings through various ethical management activities, constant monitoring of weaknesses, and immediate establishment of countermeasures. The results evaluated by the Anti-corruption and Civil Right Commission recorded an increase by 0.15 points in the area of internal integrity ratings compared to the previous year. In spite of these efforts, the outside integrity rating dropped by 0.67 points (12 cases in 2011 → 27 cases in 2012) in comparison to the previous year, but this can be attributed to increased penalty points for the prevention of fraudulent construction. KR will strengthen the reporting system of corruption and public rights, expand the one-strike-out system to business partners, and reinforce special auditing activities in the fields particularly prone to corruption to emerge as an institution with an excellent integrity rating through continued promotion of ethical management.

<Evaluation of the Integrity Rating in 2012>

Categories		2010	2011	2012	Average of All Institutions[2012]
Anti-corruption and Civil Rights Commission	Unified Integrity Rating	8.35	8.81	8.22	7.86
	Outside Integrity Rating	8.15	8.98	8.31	8.10
	Inside Integrity Rating	8.88	8.55	8.72	7.85
Performance Review of Corruption Prevention Policy of Anti-corruption and Civil Rights Commission		Poor	Excellent	Acceptable	Acceptable
Internal Inspection of Integrity Rating		81.9	86.7	94.2	-

Internal Audit System

KR established the Audit Office under the control of the auditor and reinforced the transparency of management by securing independence in the structure, human resources, and budget. The audit office performs strategic auditing duties to strengthen its role of self-checking and effectively prevent negligent management by attaining expertise, ethics, and autonomy of the business.

Effective Auditing Activities

The audit office established annual auditing plans early in 2012 to reflect the mid and long term audit strategies, audit report of the previous year, current state of affairs, and results of risk evaluation. This produced 2 cases of general audit, 13 cases of specific audit, and 3 cases of performance audit. The department subject to the audit received a checklist prior to the audit, earning the opportunity to voluntarily check for cases of negligent management. A constant monitoring system was also implemented to effectively prevent negligent management.

The audit office continually provides online/offline education to employees of the audit office to perform a professional auditing service, leading to high receptivity from the department subject to the audit. In addition, the business agreement with the Korea Water Resources Corporation for the administration of the cross audit facilitated mutual bench marking of cross audit methods, securing objectivity of audits.

Establishment of Audit Activities Feedback

The audit office holds a review for the department subject to audit upon the closing of actual auditing activities to share the results and posts the audit report on the internal bulletin board upon the signing of the audit report. Audit cases are published and contain major audit cases. A quality review of the pertinent year is conducted at the end of each year for internal feedback of auditing activities, along with a collective review of the performance level of the corrective measures. As a result, the audit office constantly improves its performance level and ends the recurrence of any cases of corruption.

Risk Management

KR efforts to prevent risk in advance and takes efficient action.

KR established a company-wide risk management structure and system to resolve financial and nonfinancial risks and builds a foundation to become a global rail network enterprise with efficient job performance.

<Management of Financial Risk>



<Management of Safety Accident Risk>



<Management of Information Security Risk>



<Types of Risks and Departments in Charge>

Fields	Types of Risks	Departments in Charge
Management Risks	Business Environment Risks	Planning and Budget Department
	Ethical Management Risks	Management Results Department
	Financial Risks	Planning and Budget Department
	Investment Risks	Assets Development Department
Disaster Risks	Natural Disaster Risks	Safety Office
	Terror Risks	Emergency Planning Department
	Computer System Failure Risks	Information Management Department
	Information Security Risks	Information Management Department
Communication (PR) Risks	Media Damage Risks	Public Relations Office
Business Risks	Construction/Facilities Management Risks (Conflicts, etc.)	Construction Planning Department, Rail Network Electricity Department, Facilities Management Department (Each Department's Risks)
	Safety Accident Risks	Safety Office
	Quality/Environment System Risks	Research Institute

※ Source: Company-wide Risk Management Guidelines

❖ Preventative Risk Management

An increase in the instability of the management environment due to natural disasters such as the earthquakes and floods, economic crisis, terrorist attacks, cyber-attacks, etc. called for the reinforcement of a company-wide risk management system. A risk conversion table was created in consideration of risk factors, such as occurrence probability and effects, and provided different risk countermeasures for 4 different stages of risks—Attention, Caution, Alert, and Serious—to strengthen preventative risk management.

Risk Conversion Table

Impact	Risk	Points	Occurrence Probability				
			Rare 1 Point	Low 2 Points	Average 3 Points	High 4 Points	Certain 6 Points
	Critical (Maximum)	11Points	11	22	33	44	66
	Significant (Large)	7Points	7	14	21	28	42
	Considerable (Average)	5Points	5	10	15	20	30
	Slight (Small)	3Points	3	6	9	12	18
	Minor (Minimum)	1Points	1	2	3	4	6

<Risk Level Standard>

Level 1	Level 2	Level 3	Level 4
Attention	Caution	Alert	Serious
1~4 Points	5~10 Points	11~21 Points	22~66 Points

<Risk Management Computer System>

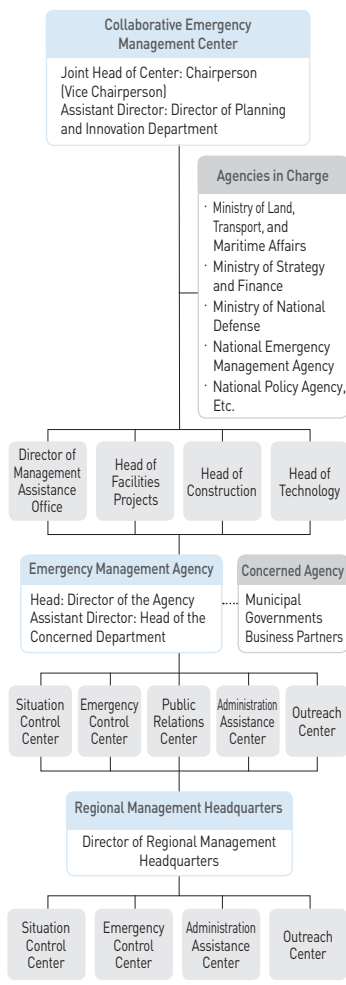
위험 ID	위험명	위험구분	위험수준	위험상태	담당부서
1001	환경오염위험	환경오염	중요	주의	환경안전팀
1002	재난위험	재난	중요	주의	안전관리팀
1003	인사(재)위험	인사(재)	중요	주의	인사관리팀
1004	재무(재)위험	재무(재)	중요	주의	재무팀
1005	기술(재)위험	기술(재)	중요	주의	기술개발팀
1006	법률(재)위험	법률(재)	중요	주의	법률팀
1007	정보(재)위험	정보(재)	중요	주의	정보관리팀
1008	물류(재)위험	물류(재)	중요	주의	물류팀
1009	공급(재)위험	공급(재)	중요	주의	구매팀
1010	품질(재)위험	품질(재)	중요	주의	품질관리팀
1011	환경(재)위험	환경(재)	중요	주의	환경안전팀
1012	안전(재)위험	안전(재)	중요	주의	안전관리팀
1013	사회(재)위험	사회(재)	중요	주의	사회관계팀
1014	경제(재)위험	경제(재)	중요	주의	경영지원팀
1015	문화(재)위험	문화(재)	중요	주의	문화팀
1016	스포츠(재)위험	스포츠(재)	중요	주의	스포츠팀
1017	기타(재)위험	기타(재)	중요	주의	기타팀

❖ Operation of Constant Monitoring System

KR developed ERM (Enterprise Risk Management), a company-wide risk management system to effectively resolve risks. Around-the-clock monitoring, which uses major risk indicators of major threats to the management, designates different response procedures for different levels of risks. For instance, the director of the relevant department is required to form an emergency management agency in each field when the risk level reaches Attention (Purple). The same is required for the assistant director for the Caution level (Green), as well as for the head of the department for Alert (Orange). In cases reaching the level of Serious (Red), the CEO himself will be leading the “Collaborative Emergency Management Center”.

❖ Recognition of Risks and a Response System for Emergencies

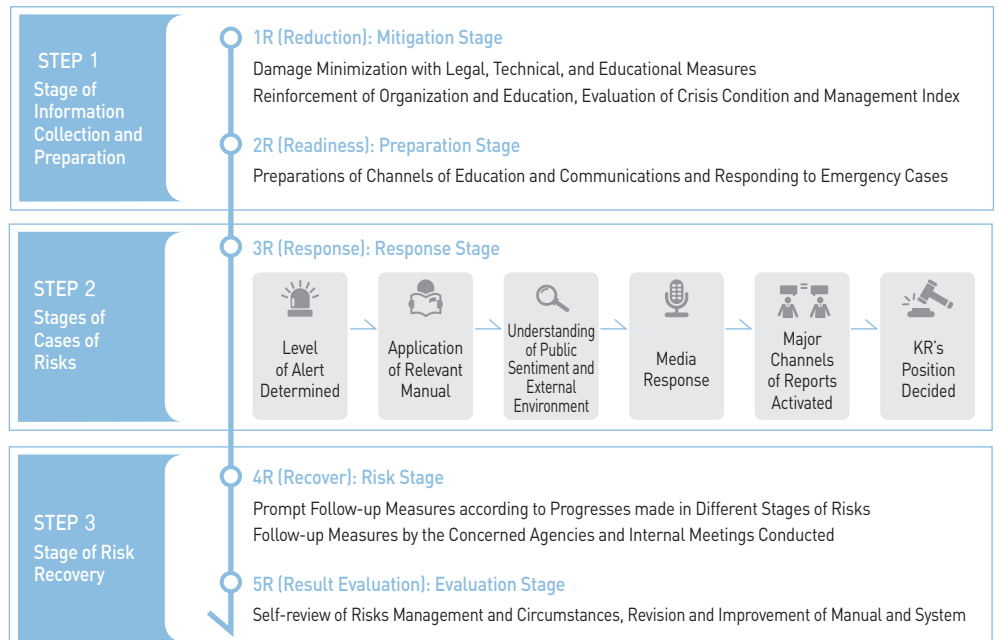
<Response Agency in Times of Risks>



The department in charge of major risk indicators prepared its own criteria for issuing levels of risk into 4 different categories of Attention, Caution, Alert, and Serious, managing potential risks according to the response manual for different levels of risks.

KR operates the 3STEP-5R system, following the company-wide risk management guidelines for cases in which a potential risk factor grows into a pending issue or an accidental issue unexpectedly arises. The risk categories of Attention, Caution, and Alert belong to Step 1 before the occurrence of risks while Steps 2 and 3 will come into play when the risk level reaches “Serious”. When a situation at the “Serious” level of risk happens, the chairperson of the board operates and leads the “Collaborative Emergency Management Center” to promptly respond to such risks. The Collaborative Emergency Management Center consisting of the management decides on the risk situation and operates an emergency management agency led by the director of the relevant department for different types of risks once a company-wide risk response system is determined. In addition, the computer system for risk management carries out effective monitoring of all current issues at different levels, departments, and categories of risks.

<Risk Response Matrix>



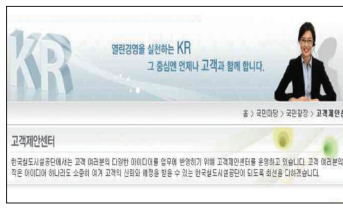
Participation by Stakeholders and Communication

KR efforts to communicate with stakeholders for sustainable growth.

KR fully understands the stakeholders' pivotal role in all corporate activities and sustainability management and fully considers their concerns and expectations.

❖ Definition of Stakeholders

<Customer Suggestion Center>



KR categorized the stakeholders into groups of value influencing customers (the government, media, NGO), value cooperation customers (business partners, local government agencies, Korail), value producing customer (employees), and value purchasing customers (citizens).

<Categorization of Stakeholders in terms of value cycle of different rail network project processes>

Projects Planning	Planning/Construction/Trial	Business Management such as Planning/Contracts/Procurement, etc.	Business Operation
Value Influence Government, Media, NGO	Value Cooperation Business Partners, Local Government Agencies, Korail	Value Producing Employees	Value Purchase Citizens
Relationship of Coordination	Relationship of Cooperation	Relationship of Trust	Relationship of Service

❖ Participation by Stakeholders and Communication Channels

<Emotional Communication between Employees>



KR mirrors the stakeholder's requests and the public expectation of KR's role in the planning stages of business activities. The company shares its promotional directives and accomplishments as part of its effective communication efforts. Organic communication with the government, congress, local governments, and civil organizations is steadily reinforced. KR reinvigorates channels of communication appropriate for the characteristics of each stakeholder and actively applies their suggestions to management activities.

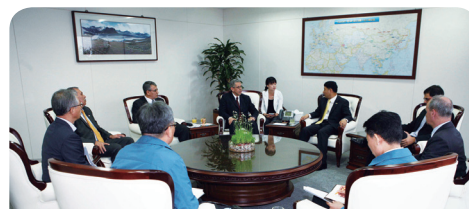
<Shared Growth Conference>



<Rail Network Construction Planning Review Committee>



<Paraguay Deputy Minister of Public Construction and Communication Meeting>

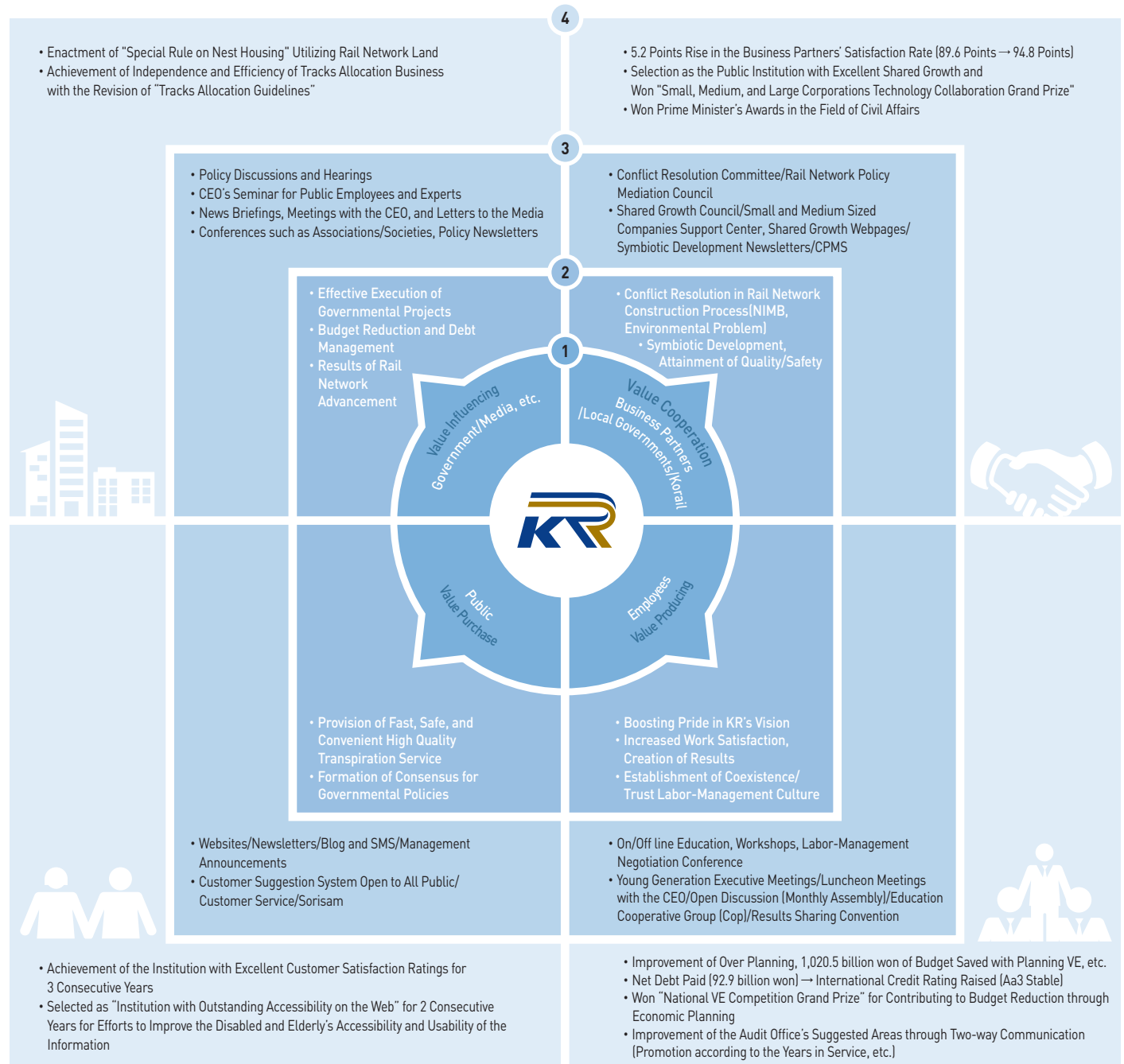


<World Consulting Engineering Conference>



Major Issues for Different Stakeholders and Communication Channels

1 Customer Types 2 Major Issues 3 Shared Channels and System 4 Results of Communication



Interview with Stakeholders

KR listens to various voices of stakeholders.

KR considers stakeholders in various fields as precious assets that are central to sustainability management. The opinions of major stakeholder groups such as the government, customers, business partners, local communities, employees, etc. will be collected and applied in management activities on an annual basis for more systematic and advanced sustainability management.

01 Government

Kim Dong Jun, Deputy Director of the Rail Network Construction Department of the Ministry of Land, Transport, and Maritime Affairs



The Korea Rail Network Authority is the organization with the most expertise in the Korean Rail Network Industry. Each individual employee holds great devotion to the rail network.

The rail network has been neglected as a means of transportation so far, but the role of the Korea Rail Network Authority is expected to be expanded as railways are likely to form a major national basic network in the future due to their speed, eco-friendliness, and mass transportability. The Korea Rail Network Authority needs to work with other transportation systems such as road authorities and airports for long-term growth and to form an efficient network for the Seoul metropolitan and national units. In addition, technology development meeting the global standard, organic relationships with external experts, and nurturing internal talent will help boost the international prestige of Korean Rail Network.



Arrangement of facilities considering the accessibility for rail network users' convenience, a new requirement for the location of the railroad station within the 50m transit distance from other means of transportation will help to expand the traffic network. Through the establishment of rail network planning criteria under Union International des Chemins de Fer (UIC) and high quality rail network construction, global competitiveness is guaranteed to make inroads into the overseas market.

02 Academia

Jang Soo Eun, Professor of Environmental Planning Department, Environment College, Seoul National University



The extent of the rail network's impact on the national economy is significant, and has created the term "KTX Economic Zone" with the introduction of high-speed rail networks. The stops that KTX makes will be playing a role in the economic activities of nearby cities. Therefore, KR should make construction plans, considering the fact that it is building new spaces for the nation's economic activities. For this purpose, KR does not only need to follow the government's agenda but also carry out the role of assisting its policy to see how it can be incorporated into the nation's middle and long term vision. Furthermore, KR should break off from its traditional roles as a supplier constructing high-speed rail networks and actively listen to the various demands and opinions of customers.



KR is building a "user-friendly productive rail network" by discovering rail networks that are likely to have a huge demand, are connected to high-speed railways, and correspond to the government's policies. The reflux process such as the continuous monitoring of changes in demand for rail network and reinforced legitimacy of investment plans, legitimization of the scale of facilities, and efficient construction of the rail network through improved construction methods will help maximize the efficiency of financial investments.

03 Customer

Yoo Soon Ja President, Women Striving for Brighter Tomorrow, Gyeongnam Society



KR achieved significant progress in accommodating the socially disadvantaged class in transportation such as the disabled who use the train stations. In particular, Jinju Station took great care in fulfilling the needs of wheelchair users. Nonetheless, the rail network has a long way to go in providing facilities and services for the handicapped compared to other traffic facilities. KR should make more efforts in designing facilities in consideration of the elderly and disabled as a basic requirement. Wheelchairs are equivalent to legs for the handicapped. As non-handicapped citizens are free to travel within the train stations, the handicapped in wheelchairs should also be able to enjoy freedom of movement there. Instead of merely following the government's policies, KR should be more pro-active in improving mobility for the disabled and convenience in using the facilities from their perspective.



KR received the "Barrier-Free (BF) Living Environment Certification" by clearing away encumbrances in the use of the rail network facilities for socially disadvantaged people in transportation such as the disabled as part of the efforts to improve the user friendliness of railroad stations. Jinju Station and Mykheon Station earned the highest levels of BF certification last year, and 12 newly built stations including Jeongeup Station in Honam High-Speed Railway are currently under construction to meet the BF standard. The entire process of planning, construction, operation, and closing has integrated an eco-friendly system, resulting in the use of new renewable energy, environmental pollution reduction, and revival of the ecosystem to lead environmental-friendly rail network construction.



04 Employee

Kim Seong Gyun, Branch
Manager of ChoongCheong
Labor Union Branch, Korea
Rail Network Authority



KR's operation of business is based on government funds and rail network fees, and therefore it has few ways to generate profits on its own. There is a limit in redefining the welfare with the government's budget, so it is necessary to actively engage in profitable projects such as the development of station-influenced areas and expansion into the overseas market. For this reason, the increased capacity of employees, adventurous corporate culture, and harmony between the management and union should be the foundation of all business. Primarily, labor and management should work together within the corporation to promote collaboration with external entities, local communities, and future generations. To satisfy the various needs of customers, labor and management should establish a sound corporate culture, initiating an affirmative cycle of structure as a rail network leader.



KR strengthened formal and informal channels of communications to expand the gathering and sharing of information between labor and the management and to encourage consensus among members. In addition, a young executives council was created for the realization of a sound organization culture to seek ways to communicate, harmonize, and lead the growth of KR.

05 Partner

Cho Heon Il, Chief of
Policy Assistance Office,
Construction Association
of Korea



KR is the first among public agencies to sign a shared-growth MOU for general ordering agencies, resulting in separate ordering, prime contractor joint-venture, use of standard subcontractor agreements, payment confirmation of subcontract price, etc. to lay a foundation for small and medium construction companies to grow into strong enterprises. Amid the trend of emphasizing shared growth thanks to the government's new "hope ladder" advancement policy for small and medium companies, it is encouraging to know that KR is playing a pivotal role. KR, however, is the largest customer and ordering agency for small and medium companies, and the method through which KR awards contracts has a huge influence on business management. Therefore, it is imperative that KR make more efforts in fulfilling its social responsibilities to perform the function of fair distribution as a public agency.



KR entered into fair-trade agreements with 805 primary and secondary business partners all across the rail network construction sites. The company continually strives to eradicate all forms of unfair business practices from the construction sites. The prime contractor joint-venture method was introduced for companies in the same field of work with an estimated amount of sum of more than 50 billion won and a 5% share in the joint venture out of the estimated construction price. 6 cases will be applied and subcontracted in the double-track railways connecting Wonju and Gangneung, etc. in 2013. Furthermore, a results sharing system was introduced—the first among public agencies—to promote improvement of the process and development of new technology with business partners to share the benefits.

06 Local Community

Choi Myung Ok, Director
of Daejeon Regional Branch,
Children's Foundation



KR carried out nation-wide social service works for socially neglected children, not only in Daejeon but also around the country through the "KR Hope Project" activities. KR distinguished itself in conducting "KR Youth Group" satisfaction surveys from the beneficiaries to study the needs of the children and improve the effectiveness of aid. Likewise, two-way assistance through evaluating the desires and effects of the beneficiaries is a great example to follow in regard to future corporate social service works.

KR's continuous efforts in providing children with hope and dreams for the future would be deeply appreciated.



KR promotes user-friendly social service works through a systematic system, not limiting itself to one-time events, and also conducts continuous monitoring of the stakeholder's changes of needs. KR executes distinct projects of building eco resting spaces, rail bikes, etc. in connection with rail network engineering to contribute KR's capabilities and resources to local communities.

❖ Materiality Test Process

KR followed the ISO 26000 guidelines for the drawing of major sustainability issues that require attention from management to analyze the internal and external environments and select the most essential sustainability issues for KR and its stakeholders.

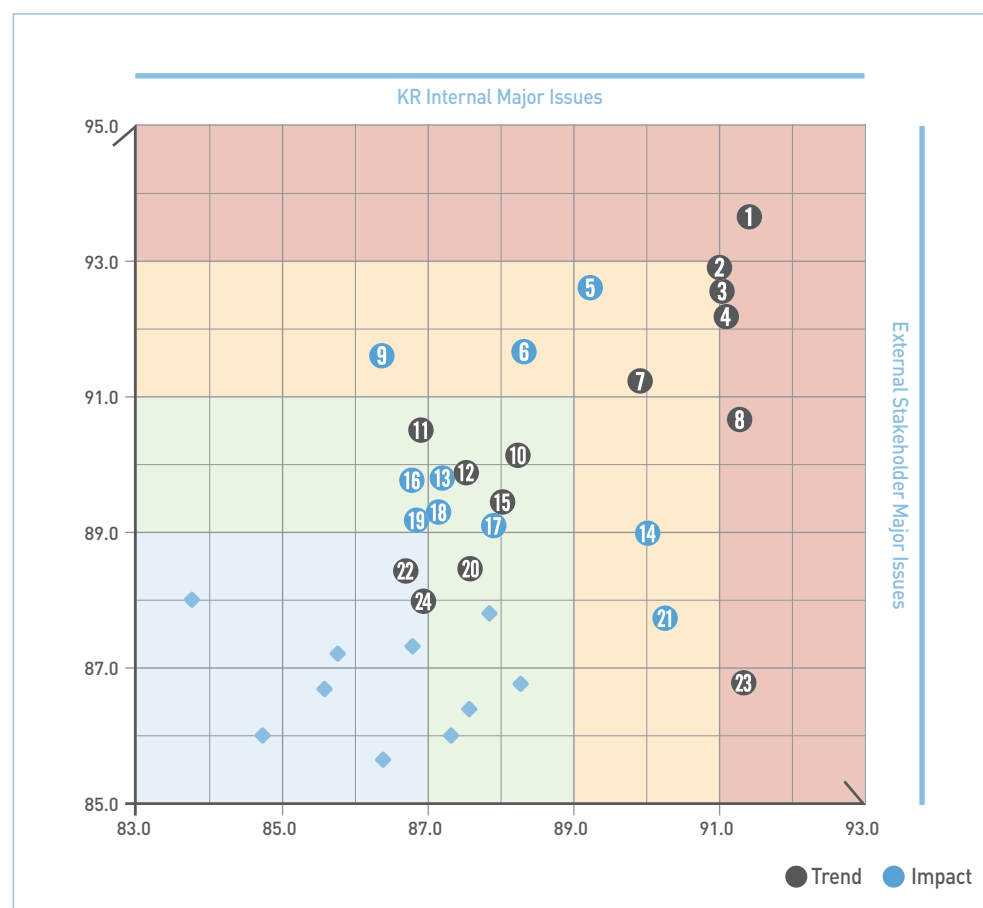


* Trend: External economic, social, and environmental trends that impact KR

** Impact: KR's external economic, social, and environmental impacts

❖ Major Core Issues

The materiality test was implemented through the relevance evaluation and importance evaluation of the initial 102 sustainability issues. As a result, 24 trend and impact issues receiving 87 points or more out of 100 were determined as the final core issues to be reported.

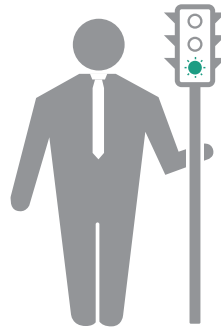


- | | |
|---|---|
| ❶ Increase in Demand for KR's Transparency (Ethical Management) | ❶❹ Workplace Healthcare and Safety Security |
| ❷ Increase in Demand for Fair Competition/Fair Trade | ❶❺ Increase in Attention for Command System (Responsibility Management) |
| ❸ Increase in Significance for Business Partners and Shared Growth | ❶❻ Potential Impact on Local Communities (Participation in the Development of Local Communities) |
| ❹ Increase in Demand for Safety (Responsibility) of the Good and Services | ❶❼ Conflict Resolution following Business Projects (Land Compensation, Noise Reduction, etc.) |
| ❺ Anti-corruption | ❶❽ Indirect Economic Effects for Public Interests (Social Overhead Capital) |
| ❻ Observance of Social Rules | ❶❾ Social Contribution to Local Communities (Education, Culture, Creation of Jobs and Income, etc.) |
| ❼ Increase in Various and Demanding Customers' Needs | ❷❶ Youth Unemployment and Increase in Temporary Jobs |
| ❽ Reinforcement of Importance in Human Resource Management | ❷❷ Education of Employees and Career Development |
| ❹ Customer Health and Safety | ❷❸ Tightening of Environmental Regulations |
| ❶❶ Increase in Demand for Customer Information Safety | ❷❹ Increase in Demand for Employees' Welfare and Rights (Balance between Work and Life) |
| ❶❷ Easy Access to Corporate Information (Internet, SMS) | ❷❺ Climate Change (Global Warming) |
| ❶❸ Environmental Damage (Air, Water, and Soil Contamination) | |
| ❶❹ Protection of Customers' Personal Information | |



II

Sustainable Rail Network



- The Importance of Investing in Rail Network
- Providing Public Transportation
- Safe Rail Network
- Overseas Projects
- Utilizing Resources and Revitalizing Development
- Reinforcing the Competitiveness of Rail Network Technology

KR will be the green traffic light in this economy.

Our Approach

KR is striving to provide the public with fast, safe, and convenient rail network service that will cover the entire nation within 90 minutes of travel time with efficient management of rail network construction and facilities. Based on years of experience and technology, KR will enhance the national prestige of Korea and boost the national economy by diligently expanding into the overseas market.

Our Strategy

Providing Public Transportation : 11 projects scheduled to be opened in 2012 were finished on time. The rail network will be efficiently constructed by 2020 to cover any place in the country within 90 minutes of travel time.

Safe Rail Network : KR operates unified management system (QESM) incorporating the management of quality, environment, and safety for the construction of high quality rail networks and accident-free safety construction. The accident rate at construction sites is projected to drop to 0.05% by 2020.

Overseas Projects : KR is preparing to lead the global rail network market by 2020 by establishing promotional strategies according to different cycles of overseas projects. The competitiveness of Korea's rail network industry will be boosted with the achievement of 700 billion won in accumulated profits from overseas projects by 2020.

Utilizing Resources and Revitalizing Development : KR strives to create profits and improve financial soundness through the diverse utilization and development of rail network assets owned by KR.

Reinforcing the Competitiveness of Rail Network Technology: KR is focusing its research and development efforts on expansion into the global rail network market and development of future rail network technology. 100% use of local materials for rail network goods will be accomplished by 2020.

Performance Progress

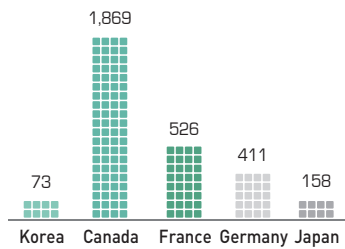
Key Indicators	Unit	2010	2011	2012
Total Length of Railways	km	3,618	3,637	3,650
Accident Rate on Construction Sites	%	0.128	0.142	0.082
Amount of Budget Saved	0.1 Billion won	4,722	5,299	6,532
Assets and Overseas Profits	0.1 Billion won	708	855	994
Rail Network Technology Level Compared to Developed Countries	%	73.57	75.04	78.83
Rate of Electrification	%	61.14	66.97	69.1

Energy and Environment! Keywords for the Nation's Continuous Development!

The means of transportation required for the 21st century must be able to respond to the increasing demand in transportation while receiving minimum investment and resolving environmental issues such as global warming. As sustainable transportation that supports social development, it must bring balanced development among regions and be a stepping stone as Korea becomes a central hub for Northeast Asia. This is why the role of rail networks as an efficient and eco-friendly means of transportation must be expanded.

❖ Necessity of Rail Network Investment

<Increased Railway per a thousand persons>
(Unit : m/a thousand persons)



* Source: UIC (International Union Internationale Chemins De Fer)

As the topics of energy crisis management and greenhouse gas reduction rise to the center of international attention, more people are interested in rail networks as an eco-friendly means of transportation. Icebergs are melting due to global warming, and the climate is changing. The increasing social cost of overcrowded cities also can no longer be ignored. As a result, countries around the world, including the advanced part of Europe that already have well-developed rail network infrastructures, recognize the importance of rail networks and actively invest in the expansion of rail networks to improve their quality and quantity. The rail network is the optimum means of transportation: it is eco-friendly and energy-saving and can help solve the issues of global warming, energy crisis, and traffic problems in metropolitan areas. Korea, however, lacks an effective rail network infrastructure in comparison due to the SOC development concentrated on roadways starting in the 1990s.

Korea ranked in 68th place in the category of rail network expansion per thousand persons, which is 35 times less than Canada's expansion in railways per thousand persons; Canada is currently in First Place.

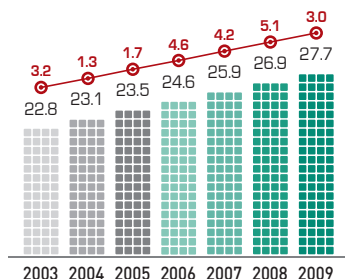
Therefore, Korea needs to increase investment in rail networks and raise long-term competitiveness by solving environmental and social cost problems through the establishment of a world-class infrastructure.

Increase in Demand for Transportation

The cost incurred by traffic congestion on Korean roads is estimated at 27.7 trillion won in 2009, and it increases every year. Traffic congestion in metropolitan areas, including the Seoul Metropolitan Area, is severe and reduces the speed of entry into downtown Seoul on a daily basis. Since the problem of traffic emerges as a social issue, there is a growing demand for the construction of a Great Train Express (GTX), an express railway in the Seoul Metropolitan Area. KR is promoting strategic activities such as persuading the government, congress, and the media by using different channels for the expansion of investment in rail networks.

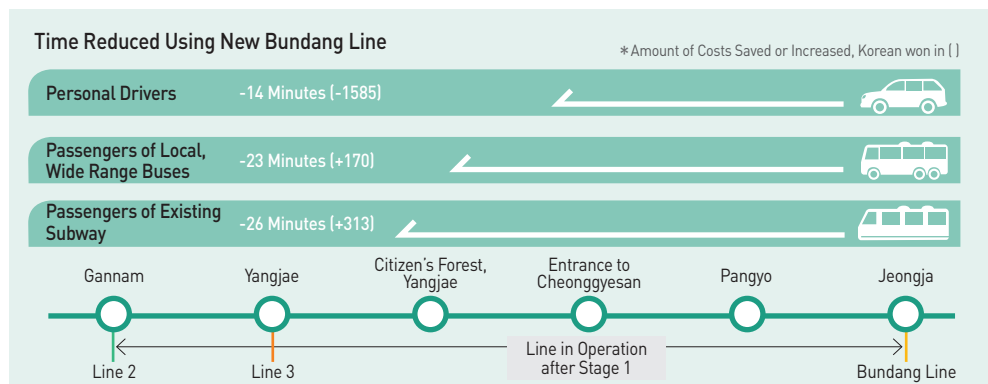
<Cost Incurred by Traffic Congestion>

(Unit : trillion won, %)



● Rate of Increase, Reduction Compared to the Previous Year (%)
■ Cost of Traffic Congestion

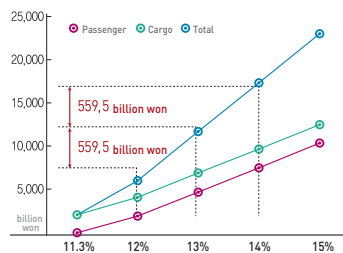
<Effects of Opening New Bundang Line (October, 2011)>



*(Unit: m/a thousand persons)

- Attention**
- Rail network consumes 1/9 energy of personal vehicles
 - Rail Network consumes 1/10 energy of commercial trucks

<Amount of Reduction in Energy Consumption per 1% Increase in Transport>



- 280.6 billion won per 1% increase in passenger transport load
- 278.9 billion won per 1% increase in cargo transport load
- Energy Cost Saving Effect of 559.5 billion won Annually

* Does not consider socioeconomic benefits including reduction of congestion cost and car accidents
 * Source : Eco-Rail 2015 Promotional Strategies for the Low-Carbon, Green Growth, Korail, 2008

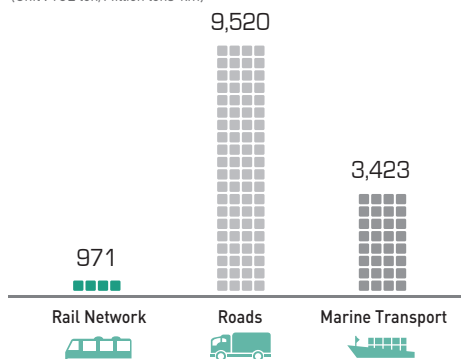
- Attention**
- Rail Network produces 1/6 CO₂ level of personal vehicles
 - Rail Network produces 1/8 CO₂ level of freight vehicles

Reduction of Transport Costs due to High Energy-Efficiency

In this era of high-priced oil, the importance of energy conservation is on the rise. Considering the energy consumption for different means of transportation, the rail network offers the highest energy efficiency and transportability. The rail network's energy consumption per km in transporting passengers is merely 41.8% of energy consumption for commercial buses' and 11.6% of that for personal vehicles. The energy consumption in transporting cargo per km is 10.2% of that for commercial trucks'. For this reason, 559.5 billion won of cost is estimated to be saved per 1% increase in the rail network's transport of passengers and cargo due to the outstanding energy efficiency of rail networks.

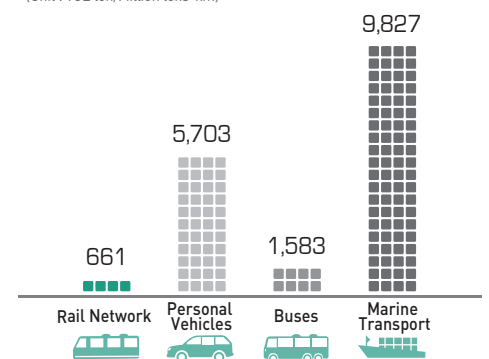
<Energy Consumption per Volume of Transport in the Field of Cargo>

(Unit : TOE ton/Million tons-km)



<Energy Consumption per Volume of Transport in the Field of Passengers>

(Unit : TOE ton/Million tons-km)



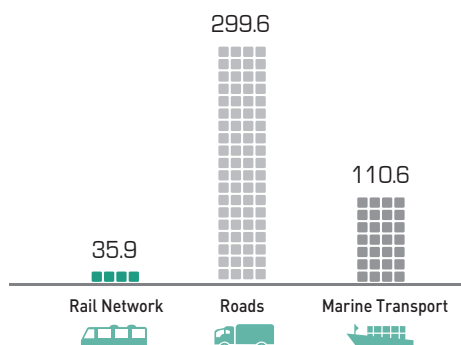
* Source : 'Study on National Rail Network Establishment Plan,' Ministry of Land, Transport, and Maritime Affairs, 2010

Eco-friendly Rail Network, Reduction in CO₂ Emissions

The international community is strengthening regulations on greenhouse gas emission by adopting climate change agreements in active response to climate change following global warming. Under these circumstances, the contribution to CO₂ emissions by different means of transportation reveals that 79.9% comes from roads, 10.9% by airliners, 3.9% from rail networks, 0.7% from marine transport, and 4.8% from miscellaneous means, proving the eco-friendliness of the rail network. The rail network's CO₂ emissions per unit in passenger transportation occupies 62.6% of commercial buses' emissions and 17.7% of that of personal vehicles, and the rail network's energy consumption per unit is only a mere 12% of commercial trucks'.

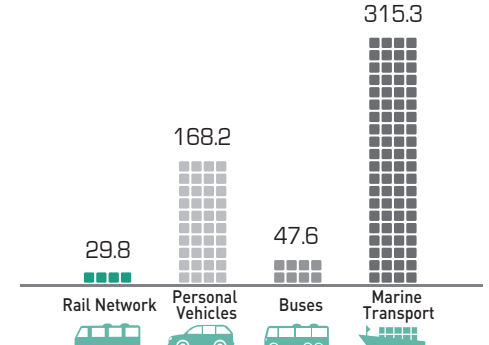
<CO₂ Emissions Per Unit in Cargo Transport>

(Unit : [Ton/Million Persons-km])



<CO₂ Emissions Per Unit in Passenger Transport>

(Unit : [Ton/Million Persons-km])



* Source : 'Study on National Rail Network Establishment Plan,' Ministry of Land, Transport, and Maritime Affairs, 2010

<Future Changes in Rail Network Indicators>

Note	2012	2020
Increase in Rail Network Full Length (km)	3,650	4,934.1
Rate of Double-tracks (%)	55.28	79.1
Rate of Electrified Tracks (%)	69.1	85.0

<Future Change in the Load Ratio of Rail Network in Transport>

Categories	2008	2020
Road (%)	81.4	69.3
Rail Network (%)	15.9	27.3
Aviation (%)	2.5	3.2
Marine Transport (%)	0.2	0.2
Total (%)	100.0	100.0

<Expansion of Areas Benefited by Rail Network Construction>

Categories	2010	2020
90 Minute Economic Bloc	Rate of the Number of Beneficiaries (%)	60 83
	Rate of Area Covered (%)	30 76
2 hour Economic Bloc	Rate of the Number of Beneficiaries in the Economic Bloc (%)	74 96
	Rate of Area Covered (%)	55 90

Preparing for Increased Exchange between North and South Korea and the Era of Northeast Asia Cooperation

May 17, 2007 marks the beginning of the trial run of the North-South Railway (Gyeongui Line and Donghae Line) in support of smooth exchange of human and material resources. To prepare for the unification of Korea and expansion into Europe and Asia in the long run, the construction of a main road connecting the North and South is necessary. Furthermore, Russia is promoting the connection of the Korea Trail Railway (KTR) to the Tran Siberian Railway (TSR), and it is necessary for Korea to build an international rail network transportation foundation to function as a gateway to Asia and Europe. This signifies the increasing importance of Korea's rail network as part of an international rail network transportation system.

❖ Face of the Rail Network in 2020

KR is carrying out efforts to a build fast, safe, and convenient rail network to integrate major hotspots of the country within a 90 minute travel time zone.

Major Hotspots in the metropolitan economic blocs will be connected by the rail network in 2020, establishing a transportation and distribution system centering on the rail network. 7.74 million tons of greenhouse gas emissions in transportation will be reduced, and 2.59 million TOE tons of energy will be saved on an annual basis. The rail network will provide a people-friendly and eco-friendly means of transportation, paving the way for sustainable growth.

Transformation into a Green Transportation System Based on the Rail Network

Major hotspots in the metropolitan economic blocs will be linked by the rail network, creating a transportation and distribution system based on the rail network. This will increase the ratio of the rail network's load in transport from 15.9% in 2008 to 27.3% in 2020.

Expansion of Areas Benefiting from Rail Network

The opening of the Gyeongbu-Honam-Seoul Metropolitan High-speed Railways and conversion of major regular railways into high-speed lines will result in travel times between major cities in the country that are less than 1 and a half hours, covering 83% of the population within 90 minute economic bloc. This will rapidly improve accessibility to create balanced growth among different regions.

Creation of Added Value with Rail Network

The construction of the national rail network will create direct benefits worth 6.8 trillion won on an annual basis. Such benefits include reduction in travel time and cost, vehicle operation costs, car accident costs, and environmental costs. The construction will also create great ripple effects in local economies. The process of rail network construction by 2020 is expected to generate 233 trillion won worth of production and 1.98 million new job openings. The benefit of improved accessibility for local production once the rail network enters the operational stage is expected to be approximately 91 trillion won.

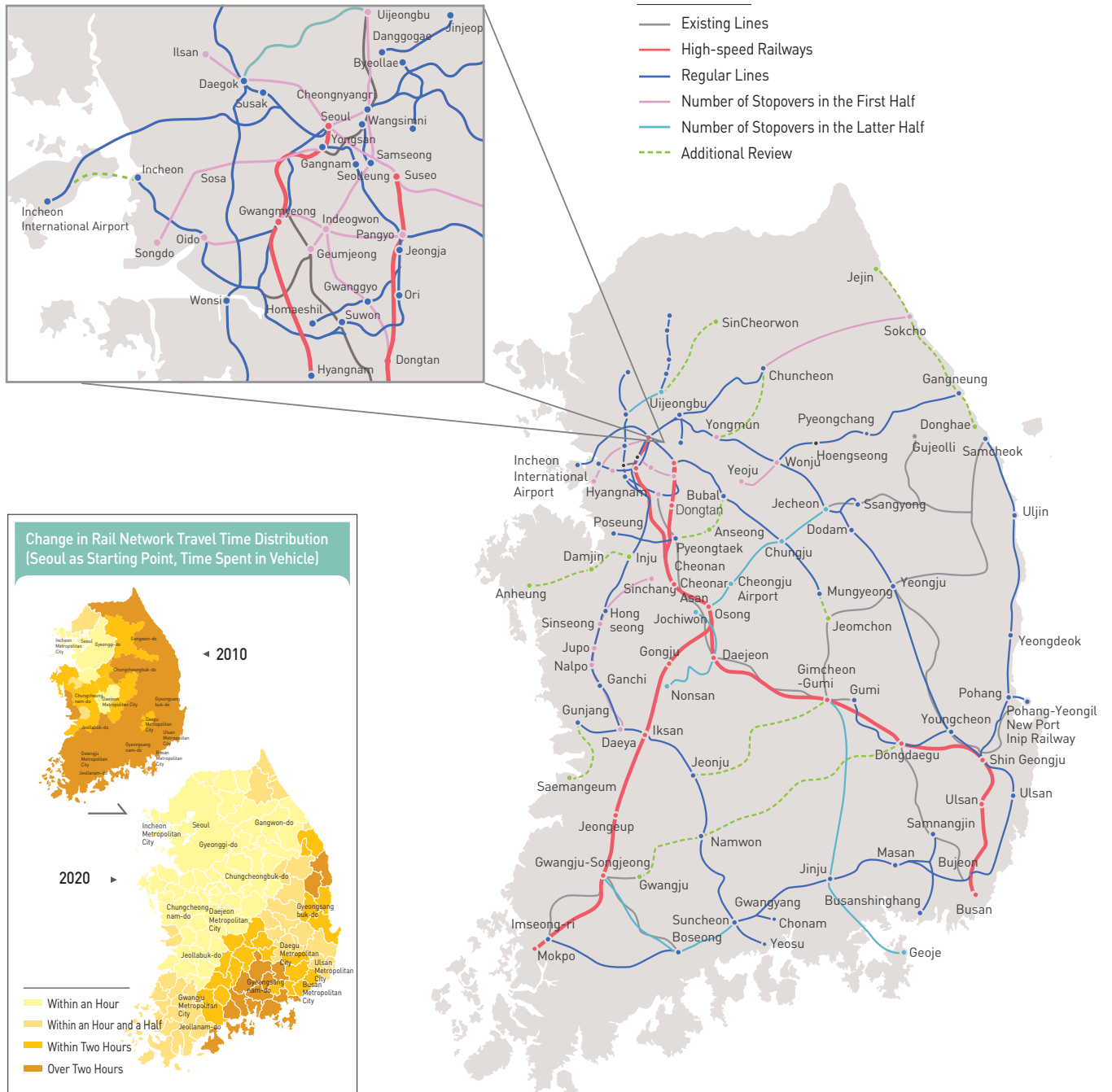
<Economic Benefits Following National Rail Network Construction>

Items	Content	Benefits (100 Million won/Year)
Reduction in Travel Time	Reduction in Travel Time	45,338
Reduction in Vehicle Operation Costs	Reduction in Oil Price and Depreciation Cost	14,715
Reduction in Car Accident Costs	Reduction in the Number of Death and Injuries	2,045
Reduction in Environmental Cost	Reduction in Air Pollutant Emission	6,217
Total		68,315

<Ripple Effects on Local Economy Following Rail Network Construction>

Items	Ripple Effects
Effect on Increasing Production	Approximately 233 trillion won
Stage of Construction	Effect on Job Creation
	Approximately 1.98 Million Openings
	Effect on Wages Inducement
	Approximately 3.5 Trillion won
Stage of Operation	Enhancing Gross Regional Domestic Product (GRDP)
	Approximately 9.1 Trillion won

<Map of National Rail Network Construction Plan for Year 2020>



Q&A

Q. What is KR doing to increase the benefits of public transportation?

A. KR is pushing to establish a national rail network, connecting any place in the country within 90 Minutes of Travel, and successfully completed openings of 11 projects scheduled for 2012.

❖ Efficient Construction of National Rail Network

What is a High-speed Railway?

- Railways Built to Enable Trains to Run at Speeds over 200km/h
- Current State of Affairs Gyeongbu High-speed Railway, Honam High-speed Railway (to be completed in 2014) Seoul Metropolitan High-speed Railway (to be completed in 2014)

Attention

Timely Construction of National Rail Network in Consideration of Business Priorities

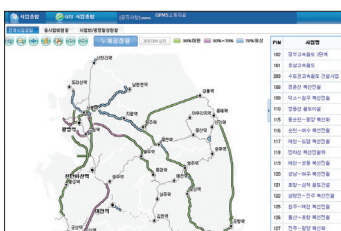
KR is building a national rail network according to the investment priorities that were chosen in general consideration of the investment effects of each project, efficiency of train operation, and major governmental policies to provide eco-friendly transportation to the public. The entire country will be connected through a 90 minute travel time zone by 2020 under the "Construction Plan of Building National Rail Network". 49 projects including the construction of the Honam High-speed Railway scheduled to be open in 2014 and Seoul Metropolitan High-speed Railway, etc. are in the process of planning or construction as of 2012.

<Business Management System PMS (Project Management System)>

1. EPMS



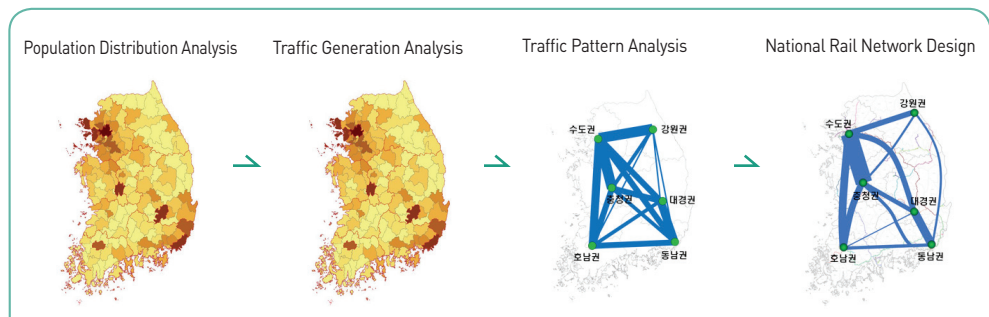
2. GPMS



3. CPMS



<Stages of National Rail Network Construction Plan>



* "Hub & Spoke" Structure Combining "x" Shape + "-" Shape

* Development of the High Speed Railways of approximately 250km/h for Increased Competitiveness and Fulfillment of Users' Demands

* Super Metropolitan Area in the "-" Shape, Application of 5 + 2 Metropolitan Economic Blocs and Corporate and Innovative City Plan

Project Management for Timely Openings

KR successfully completed openings of all 11 projects promised to the public through scientific process control based on the project management system and systematic monitoring, expanded management meetings, projects review meetings hosted by the CEO, and field inspection by the CEO, etc. Comprehensive test runs of the trains before their openings were conducted to ensure safety.

The management of conflicts is as crucial as managing safety and process in construction projects. KR operates a conflict resolution process to resolve any social and environmental conflicts occurring in the course of rail network construction to minimize impact on the environment and prevent construction delays. KR resolved all 4 cases of conflict in projects in 2012 and signed a "Baekdudaegan Environment Consultation Agency" in October, 2012, and proved its excellence in managing conflicts by winning the Prime Minister's awards in February, 2013 from the Anti-corruption and Civil Rights Commission in February, 2013.

<Opening Ceremony>



<Site of Rail Network Construction>



Major Effects of Completed Projects in 2012

A total of 11 rail network projects were completed on time, including 6 projects connecting Oido and Songdo, as well as Wangsimni and Seolleung in the Seoul Metropolitan Line, 2 projects connecting DongSuncheon and Gwangyang in the Honam area, and 2 projects connecting Yeongmun and Seowonju in the Gwangwon area.

<Major Benefits of Openings>

Areas	Projects	Opening Benefits
Seoul Metropolitan Area	Double-track Railway Connecting Oido and Songdo (June 30, 2012)	Track Capacity 163 times/day, Reduction of 48 minutes in travel time (70 minutes on Bus → 22 minutes via Rail)
	Double-track Railway Connecting Wangsimni and Seolleung (October 6, 2012)	Track Capacity 345 times/day, Reduction of 13 minutes in travel time (Compared to existing line)
	Restoration of Shintanri and Cheorwon Line (November 20, 2012)	Increased track capacity (0 times → 35 times)
	Double-track Railway Connecting Giheung and Mangpo (December 1, 2012)	Increased track capacity (0 times → 206 times)
	Double-track Railway Connecting Gongdeok and DMC (December 15, 2012)	Increased track capacity 152 times → 168 times (Seoul Station as starting point)
	Transfer of the Gyeongchun Line Connecting Yongsan and Chuncheon into the High-speed Railway (February 28, 2012)	Reduction of 55 minutes in travel time (114 minutes → 59 minutes)
Gwangwon Area	Railway Shifting of Yeongdong Line (June 27, 2012)	Reduction of 20 minutes in travel time (36 minutes → 16 minutes), Increased track capacity (30 times → 35 times)
	Double-track Railway Connecting Youngmun and Seowonju (September 25, 2012)	Increased track capacity (51 times → 136 times), 95 minutes → 60 minutes (Reduction of 35 minutes, Cheongryangri-Wonju)
Honam Area	Double-track Railway Connecting Dongchuncheon-Gwangyang (June 21, 2012)	Increased track capacity (21 times → 112 times), Reduction of 2 minutes in travel time (9 minutes → 7 minutes) Increased number of passengers (in Suncheon Station) [Increase of 390,641 passengers, 30.17%]
Youngnam Area	Transfer of the Jeolla Line Connecting Iksan and Yeosu into the High-speed Railway (May 1, 2012)	Reduction of 76 minutes in travel time (158 minutes → 82 minutes)
	Double-track Railway Connecting Masan and Jinju (December 5, 2012)	Increased track capacity (40 times → 104 times), Reduction of 43 minutes in travel time (77 minutes → 34 minutes) Increase in Number of Passengers (306,936 → 544,580 people)

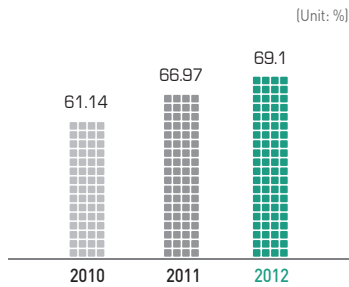
Turning the Trunk Line into High-speed Railways to Improve Speed Competitiveness

KR has steadily promoted the renovation of existing lines into high-speed railways to improve the speed competitiveness of the rail network. The 2 projects of turning Gyeongchun Line and Jeolla Line into high-speed railways were completed in 2012, and 4 other projects are in the works, including the Jungang Line for hosting 2018 Pyeongchang Winter Olympic Games. These efforts will result in the reduction of travel time for the public and balanced growth between different regions.

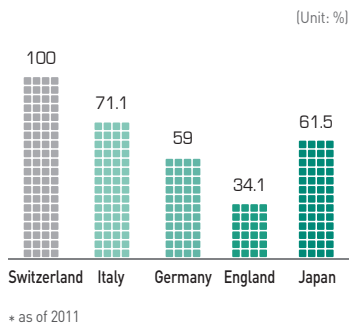
<Expected Benefits Following the Operation of High-speed Railways in the 6 Lines Including Gyeongchun Line, etc>

Lines	Sections	Target Speed	Opening Date (Estimated)	Changes in the Operation Time(minutes)		
				Original Operation Time	After Building High-speed Railway	Time Reduced
Gyeongchun Line	Yongsan-Chuncheon	180km/h	February 28, 2012	114	59	55
Jeolla Line	Iksan-Yeosu	200km/h	May 1, 2012	158	82	76
Joonang Line	Cheonrangri-Wonju	230km/h	Year 2017 (for the Winter Olympic Games)	95	33	62
Gyeongjeon Line	Samnangjin-Jinju	230km/h	In Connection with the opening of Jinju-Gwangyang Section in 2015	129	49	80
Donghae Line	Pohang-Samcheok	230km/h	In Planning	113	54	59
Janghang Line	Cheonan-Shingunsan	250km/h	In Planning	136	57	79

<Domestic Electrification Rate>



<Electrification Rate of Developed Countries>



Certification of Barrier-free (BF) Living Environment

A Certification Evaluating System is used for checking the floor plan (preliminary certification), as well as the plan for providing trouble-free service for the disabled. Final certification is awarded for construction in compliance with the design under the preliminary certification.

Attention

<Rolling Stock for Honam High-speed Railway>



Creation of 30 Minute Broad Range, High-speed Rail Network

Various efforts are being carried out for the construction of the Great Train eXpress (GTX) to relieve the traffic congestion problem in the Seoul Metropolitan Area. KR has formed a consensus among the relevant parties by holding policy discussion meetings, persuading the relevant agencies, and making suggestions for optimizing the total business cost, etc. The government is now conducting a preliminary legitimacy review.

Electrification of Existing Lines for Modernization

The electrification rate of railways as of 2011 is at 66.97%, which is a higher level compared to the average rate of 45% of Union Internationale Chemins De fer (UIC) member countries, but KR plans to raise the rate up to 85%, the standard for developed nations, by 2020 to build a more eco-friendly and energy-efficient rail network infrastructure.

Finding Economic New Rail Network Lines

KR possesses a reflux process to improve the legitimacy of pre-existing investment plans through continuous monitoring of the changes in the demands of rail network users for the purpose of maximizing the effectiveness of financial investments and finding new rail network projects. This will lead to the finding of rail network lines that are expected to have a larger volume of user demand to produce an outstanding investment outcome. These new lines will connect with existing high-speed railways and be built in line with governmental policies (such as the hosting of Pyeongchang Winter Olympic Games) to realize the construction of a "user-friendly, economic rail network".

❖ Enhanced Benefits for Rail Network Users

Improvement of Installation Standards of Train Stations and Transit Accommodations

KR recreated the standard for the location of the train stations and connecting transportation facilities in 2012 to provide rail network users with easy access to other means of transportation and convenient transfers. KR also promotes the legislation of the construction of connecting transportation facilities such as the buses, taxi, and rental cars when building new train stations.

Expansion of Barrier-Free (BF) Living Environment Certification

KR earned the "Barrier-Free (BF) Living Environment" certification for the socially disadvantaged such as the disabled to experience no difficulties in using the facilities to improve the user friendliness of train stations. Jinju Station on the Gyeongjeon Line and Mukhyun Station on the Gyeongchun Line, which both have higher user demand, received the highest level of certification in 2011 after BF design was applied for the first time in the rail network history for both the disabled and non-disabled to enjoy easy access to the facilities. Currently, 12 new stations such as Jeongeup Station on the Honam High-speed Railway are under construction using BF design.

Improvement of Quality of Rolling Stock in Honam High-speed Railway

KR plans to complete the Honam High-speed Railway project, which is scheduled to be opened by 2014, and employs a systematic management system to ensure the highest quality rolling stock to run on the new lines. The quality of train cars is directly proportional to the safety of passengers. From the design and manufacturing stages of the cars, the opinions of the operators, manufacturers, and the public are gathered and reviewed by the advisory committees and technology review committees consisting of external experts to supply comfortable rolling stock. This will be in done in a timely manner so as avoid any delays in the opening of the Honam High-speed Railway.

❖ Boosting Investment Efficiency through Optimal Design and Construction

Establishment of Rail Network Construction Standard under International Union of Railways (UIC)

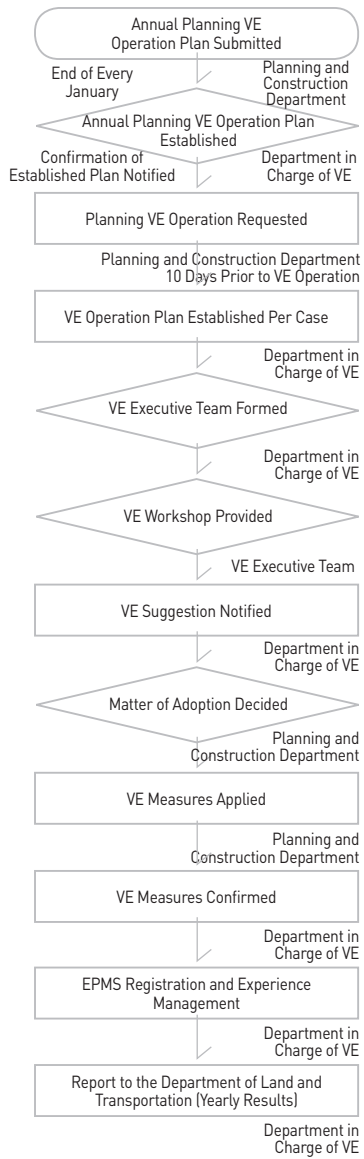
KR systemized the rail network planning guidelines and manual codes in conformity with the UIC's rail network planning standards. This was done to increase expansion into the overseas market and improve KR's global competitiveness. KR also modernized the rail network construction standards by reserving the unit price of rail construction.

Planning Standards Improvement for Efficient Design and Construction

137 cases of unreasonable and inefficient design factors were found and resolved in 2012 to achieve economically effective construction. Major improvements include the optimization of the inner sections of tunnels and correction of dome-typed roofs for natural ventilation within the station.

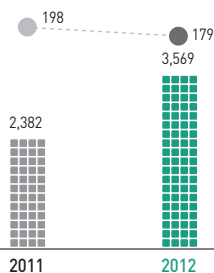
* Preliminary Legitimacy Review: In-depth review system of large-scale new publicly invested projects has set a standard for deciding the feasibility of projects.

<Planning VE Operation Process>

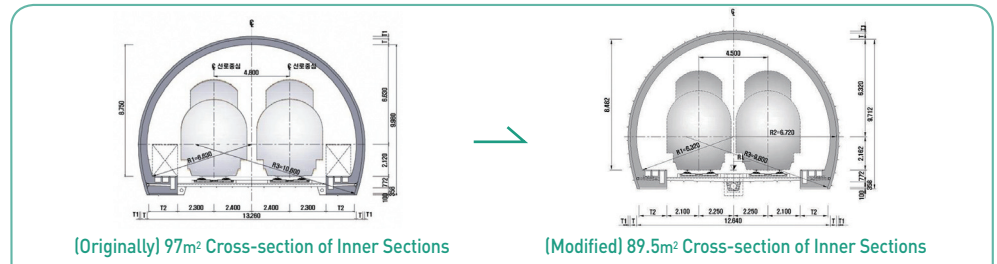


<Amount of Budget Saving through Planning VE and Review>

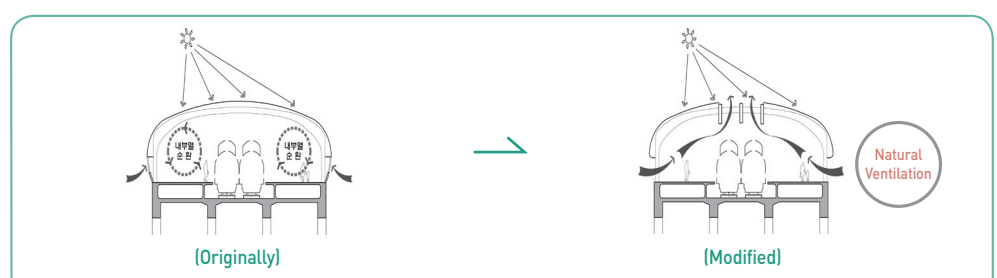
- Amount (100 Million Won)
- Number of Cases (Cases)



<Optimization of Tunnel Inner Sections>



<Dome-typed Roofs>



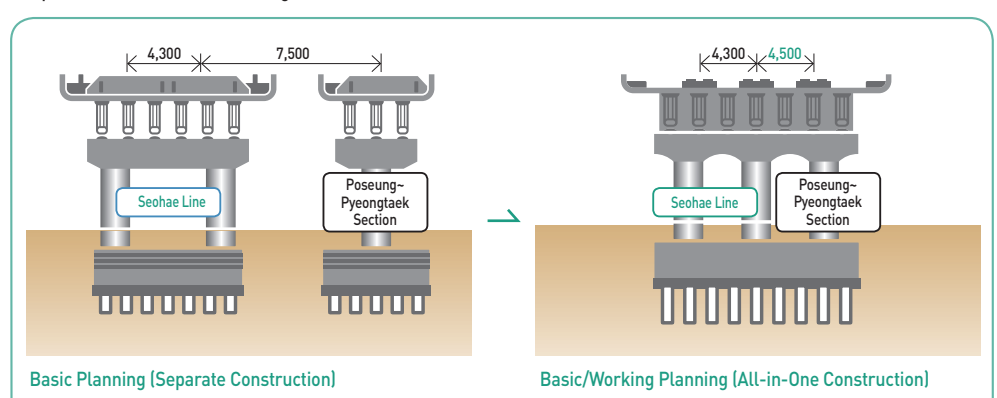
Enhancement of Design Quality with Design VE* and Review of Design

KR strives to identify improvements in construction methods during the planning stage before reviewing the design. This led to quality improvements and business expense reduction, saving a total of 356.9 billion won in budget through design VE and review in 2012. These efforts earned recognition from the Ministry of Land, Transport, and Maritime Affairs, winning the Grand Prize in the National VE Competition of 2012.

Economic Rail Network Construction with Optimization of Facilities Scale

KR has set annual budget saving goals and promoted systematic cost saving activities to avoid the building of excess facilities for the efficient construction of the rail network and optimizing facility scale. Construction methods were improved through the application of new technology and methods for boosting quality, and expenses were reduced by improving the investment efficiency of rail network construction. As a result, a total of 601 billion won was saved by reviewing the legitimacy of 31 projects during the planning and construction process in 2012.

<Improvement of Seohae Line Design Plan>



* VE Design: Value Engineering Design (Review of Design Efficiency)

Q&A

Q. What is KR doing to build a safe and trustworthy rail network?

A. KR is operating a unified system of Quality, Environment, and Safety Management (QESM) and working to realize its goal of a high-quality rail network through safe, accident-free construction and continuous improvement efforts.



❖ Methodical Quality, Safety, and Environment Management System

KR runs QESM, a unified system of management for the areas of quality, environment, and safety, for the safe and accident-free construction of a high quality rail network. This system ensures efficiency to improve of quality, environment, and safety and prepares a solid foundation for a safe rail network.

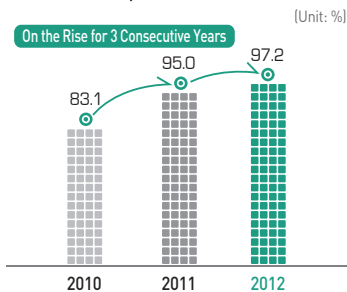
71 improvements were made after the internal and external ISO/OHSAS review in 2012, and 69 cases were handled, reaching a 97.2% improvement rate. As a result, KR scored "Level 5 Plus" (772 Points) in the Quality Management System (QMS) Operation Level Review hosted by the Standard Association in 2012, which is a 7 point improvement from the preceding year.

Reformation of KR's internal structure was made according to suggestions by external specialists to clarify the division of work between the Quality Assurance Department (Seoul Headquarters) and Quality Management Department (Regional Headquarters). The role of corporate managers of the Quality Management Department (Regional Headquarters) was reinforced to solidify the management system for quality, safety, and environment.

<Promotion System for Quality, Safety, and Environment Management>



<ISO/OHSAS Improvement Rate>



<Operating Level of Quality Management System>

Items	Scores	2011	2012
Quality Management System	125	98	98
Management Responsibilities	125	108	113
Resource Management	100	63	63
Product Realization	338	260	260
Measurement and Analysis Improvement	312	236	238
Total	1,000	765	772
Grade		5+	5+

<Safety Management Examination System>

Management Targets in Different Stages	Beginning of Construction	Completion of Construction	Opening
Safety Management of Construction Sites Traffic Safety Act	Safety Check-up		
Safety Management by Regional Headquarters Safety Management Rules	Comprehensive Safety Examination		
Facilities to be Opened Railroad Safety Act		General Trial Run	
Facilities After the Completion of Construction Facilities Safety Management Special Act		Safety Check-up of Facilities	

Q&A

Q. What is KR doing to ensure the safety of rail network users?

A. Safety Management of rail network facilities is carried out through continuous inspections and repairs to ensure the quality of facilities. Regular training is enforced to swiftly respond to emergencies such as natural disasters.

❖ Uniform Safety Management for Rail Network Users

<Joint Drill with Related Organizations>
– Accident Restoration Simulation Training



Drive for Passenger Safety and Quality Improvement

KR is realizing continuous quality improvements through cause analysis of defects found in the planning and operation stages. This analysis is based on the QESM combined management system and upgraded design standards for the construction of a high quality rail network. Compliance with the safety standards has helped to prevent accidents, and the safety levels of all stages of construction were inspected. Certain sites were designated to receive intensive management to rule out quality defects. Regular general safety inspections, close inspection of facilities, and comprehensive trials conducted prior to openings increased and safeguarded quality.

The materials used in the rail network construction undergo a strict quality examination. KR operates international certification agencies such as the Korea Laboratory Accreditation Scheme (KOLAS) and state quality examination agencies, and insists on using high quality materials for passenger safety by concluding academy-business operation and continuously securing special test equipment.

Results of Safety Assurance Efforts

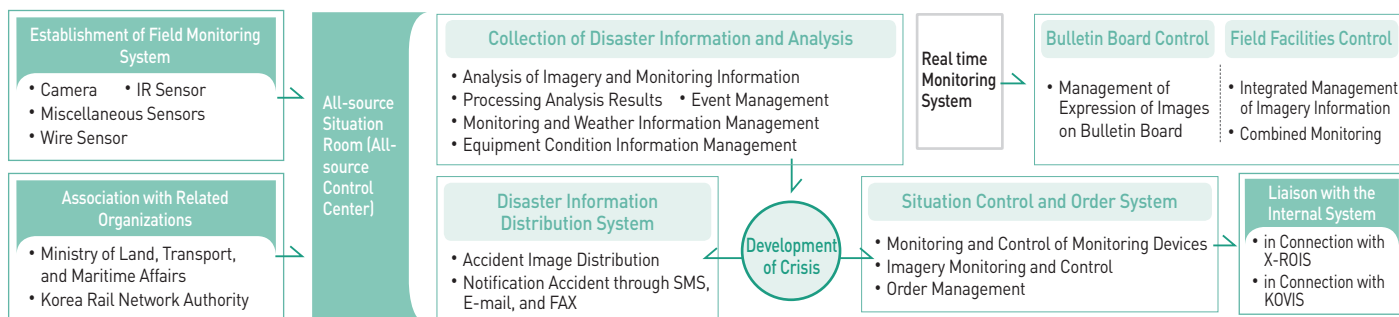
KR greatly increased the number of sites for preventative inspection from 886 in 2011 to 1,602 in 2012. This led to achieving, 1,457 cases of improvement to resolve potential quality and safety problems. The CEO and the management performed 479 field inspections as part of the field management drive, sharing expertise with all business partners through a presentation of cases of outstanding improvement.

In 2012, a total of 10 cases of planning standard improvements were made to resolve the root causes of defects. The quality level was improved through an analysis of deficiencies in the rail network facilities and the implementation of 23 planning and construction improvements. As a result, no more than 15 cases of safety accidents occurred in 2012, dropping by 25% compared to the previous year. The hazard rate of completed facilities was 0.004%, a dramatic decrease in comparison to 0.024% of last year.

Reinforced Response to Disaster

KR constantly improves its response to disaster to secure the safety of rail network users. Emergencies resulting from extreme weather conditions such as heavy rain or snow, earthquakes, etc. are simulated to provide the related organizations with an opportunity to conduct regular training exercises, such the Joint Anti-disaster Drill (joint training exercises with the government) and the Joint Drill with Related Organization (KORAIL, Fire Department, etc.). Safety facilities are continuously repaired for disaster prevention, and an anti-landslide monitoring system is in operation.

<Landslide Monitoring System>



* Governmental indicators measuring the quality level of the planning and construction of rail network facilities

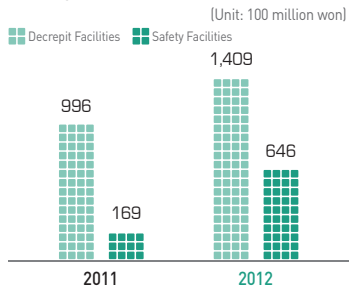
* Formula: Number of difficulties in train operation due to facilities/Increase in number of completed rail networks

<Disaster Management Agency Operation>

Winter Season: December	Rainy Season	Regular Season
December 1 ~ March 15	May 16 ~ October 15	March 16 ~ May 15 October 16 ~ November 30

※ Open throughout the Year

<Expanded Investment in Improving Decrepit Safety Facilities>



<Transmission and Transfer of Electric Power System>

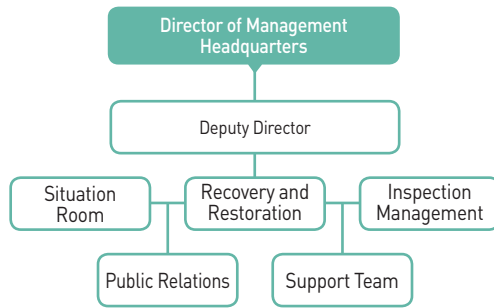


<Wireless Rail Network System>

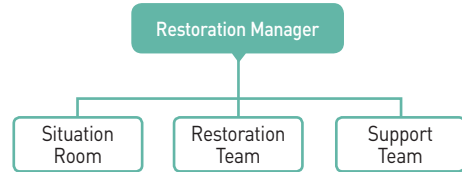


<Structure of Disaster Management Headquarters>

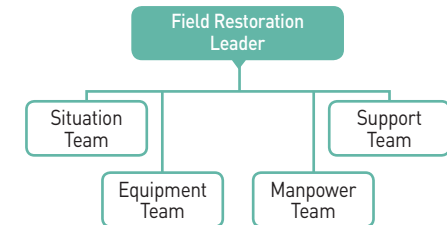
• Headquarters



• Regional Headquarters



• Regional Fields



Expansion of Safety Facilities

KR has built and operated a state-of-the-art electrification system for the safe operation of trains, placing passenger safety as its first priority. The Rail Network Control Center is equipped with a cutting edge system in the areas of electrification, electricity, signals, and communication to secure safety and punctuality of train operation through intensive control. KR has consistently invested in the supplementation of rail network facilities for passenger safety. The investment cost in repairing decrepit facilities and expanding safety facilities recorded 205.5 billion won, a 76% increase compared to the previous year, and is scheduled to be increased further in the future. Accident-free train network facilities will be provided with the expansion of disaster prevention facilities, reinforced seismic resistance capacity, expansion of firefighting resources, safe pedestrian crossings, and repair decrepit facilities. As a result, accidents occurring at crossings dropped by 35.7%, compared to the previous year in 2012.

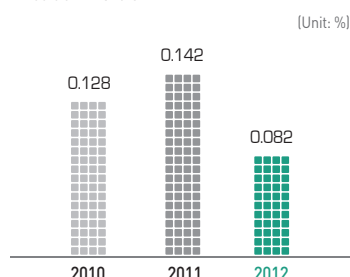
<Electrical System>

Area of Subway Electricity	Area of Signals	Area of Communication
Transmission and Transfer of Electric Power System Traction Line System Power System	Centralized Traffic Control (CTC) Automatic Train Control (ATC) Interlocking Device (IXL)	Train Radio System Exchange and Transport Network System Service Communication Equipment

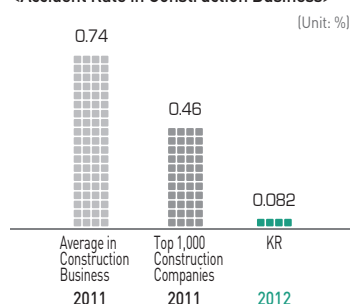
<Rail Traffic Control Center>



<Accident Rate of KR>



<Accident Rate in Construction Business>



<Employees' Safety Practice>



* Number of Employees that Completed Safety Education in 2012: 30,467 (Compulsory Every Year)

<Outcome of Facilities Safety Reinforcement Efforts in 2012>

Categories		Content of Promotion
Disaster Prevention	Disaster Prevention Facilities	<ul style="list-style-type: none"> Facilities improvement for the prevention of damage from natural disasters, including flood and wind - 16 bridge expansions, 18 sewage installations, 6 landslide prevention facilities, 12 retaining wall installations, etc.
	Seismic Function Enhancement	<ul style="list-style-type: none"> Richter scale 5.5D6.0 [54 bridges and tunnels]
	Firefighting Safety Facilities	<ul style="list-style-type: none"> Supplementation of tunnels' damage prevention facilities (8 places)
	Traffic Signal System	<ul style="list-style-type: none"> Device installed within trains for the assurance of a safe distance
Safety Improvement	Screen Doors	<ul style="list-style-type: none"> Installation of screen doors for the prevention of passenger safety accidents (4 stations)
	Concern for the Disadvantaged in Transportation	<ul style="list-style-type: none"> Installation of elevator facilities: 33 units (24 escalators, 9 elevators)
	Safe Pedestrian Crossings	<ul style="list-style-type: none"> Railway crossings designed to prevent accidents (10 crossings) * Results: Decrease in the number of railway crossing accidents (14 cases in 2011 → 9 cases in 2012, Δ35.7%)
	Through Road under Railway	<ul style="list-style-type: none"> Securing travel routes for local residents isolated by rail network (12 places)
Improvement of Decrepit Transportation Facilities	Track, Stations, Structures, Electricity	<ul style="list-style-type: none"> Increase in rail weight, elongation of rail length, precast concrete ballast (8 bridges), burying power lines underground, etc.
Improving Living Conditions	Soundproof Walls	<ul style="list-style-type: none"> Installation of soundproof walls to reduce the noise level in areas surrounding railways (20 units)
	Burying Power Lines Underground	<ul style="list-style-type: none"> Burying power lines passing through residential areas to improve living conditions and resolve public complaints

<Improvements for Pedestrian System>



Before



After

<Screen Doors on Platforms>



Before



After

Prevention of Safety Accidents at Construction Sites

KR runs a systematic safety management system through checking safety in all stages of construction¹⁾, creation of a safety accidents database²⁾, work danger level analysis³⁾, work safety suitability examination⁴⁾, vulnerable sites management⁵⁾, and a wireless remote radio imagery monitoring system⁶⁾.

Speedy recovery after an accident is achieved by issuing a safety alarm to employees, field head supervisors, and on-site engineers in cases of accidents, dangers of disaster, and special weather reports. Systemized government training exercises and joint drills with relevant agencies are regularly executed to strengthen response to disasters while field workers are required to receive special and practical safety education and to increase safety awareness as part of the various safety accident prevention efforts.

As a result, KR registered an accident rate of 0.082% in 2012, which is 1/9th of the average accident rate on construction sites (0.74%, year of 2011). This earned KR an award for excellence in the field of safety management from the Korea Occupational Safety and Health Agency.

1) Compulsory Safety Confirmation before Launching Projects 2) Information Sharing by Data Review of Different Accident Types

3) Establishment of High Risk Plans through Preliminary Review of Danger Factors

4) Regular Examination Using a Checklist Prior to Work (Weekly) 5) Designation after Review of Damage Extent and Danger Levels at Site 6) Operation of 266 Units on 86 Sites

Q&A

Q. How far have we come in expanding into the world?

A. KR advances towards the future and into the international stage, never settling to be satisfied with its current successes. To become a global rail network enterprise, KR enacts various efforts to expand into the overseas rail network market by acquiring world-class technology and expertise. As a result, KR produced 15 billion won of profits, the highest amount since the establishment of the corporation.

❖ Competitive Overseas Projects

Strategies for Expansion into the Global Market

KR entered the world rail network market, drawing on the wealth of expertise knowhow from its domestic rail network to create profits and to promote the excellence of Korean rail network industry.

Shortly after its establishment in 2004, KR obtained the first construction supervision contract for the Chinese passenger train Sootuseon in 2005. Since then, technical service projects such as the construction supervision of Chinese High-speed Railways and working design of Nepal electric railways were promoted as part of its overseas projects. The scope of overseas expansion will be gradually increased to encompass future international Project Management PM¹⁾, Engineering, Procurement, and Construction (EPC)²⁾ and quota investment business to boost its overseas share.

Promotion Results of Overseas Projects

Increased Obtainment of Contracts

KR utilized its national rail network technology to win contracts by cooperating with domestic and international private corporations and participating in the Official Development Assistance (ODA) projects to increase the number of international markets from 6 to 9 in 2012 and earn 12.7 billion won in new contracts.

KR's high level of competence and technology bolstered its reputation in existing markets, awarding KR additional projects in Nepal (7.7 billion won) and in China (2.6 billion won).

Development of Profitability Analysis System

KR developed the Profitability Analysis System, taking into consideration the characteristics of rail network business to analyze project feasibility and build a cost-estimating database appropriate for each country to be used in the legitimate decision making processes for overseas projects. The Profitability Analysis System was applied to Nepal, India, and KOICA PMC³⁾ projects to improve the profitability of overseas projects in 2012.

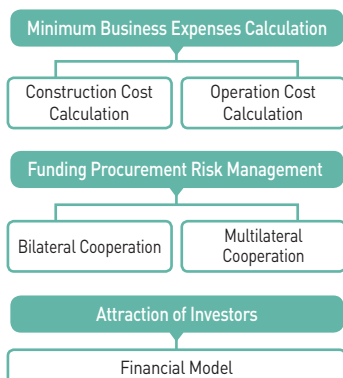
Diversification Efforts for Expansion into the Global Rail Network Market

KR is engaging in various activities to find new overseas projects and lay the foundation to win contracts for major businesses.

<Promotion Strategies in Different Overseas Business Stages>

- **Capability Bolstering Stage (2012 ~ 2014/3 Years)**
 - Expansion of Contract Obtainment and Bolstering Capabilities with Participation in the Service Business such as the Construction Supervision, Consulting, Planning, and ODA Projects
 - Involvement in the Low Risk Government Financed Projects
 - Entry into PM Business including Larged Scale Projects
- **Business Expanding Stage (2015 ~ 2017/3 Years)**
 - Increase in the Capabilities and Sales with the Expansion of Existing Market
 - Expansion of PM Business
 - Entry into EPC, Quota Investment Business
- **Growth Stage (2018~ 2020 / 3 Years)**
 - Leading Service (Construction Supervision, Consultation, Planning, and PM) Market
 - Expansion of EPC and Quota Investment Business and Full Range of Project Performance
- **Stabilization Stage (2021 ~)**
 - Gradual Expansion of Full Range of Projects
 - Leading Global Rail Network Market

<Profitability Analysis System>



<Contract Winning Efforts in International Markets>

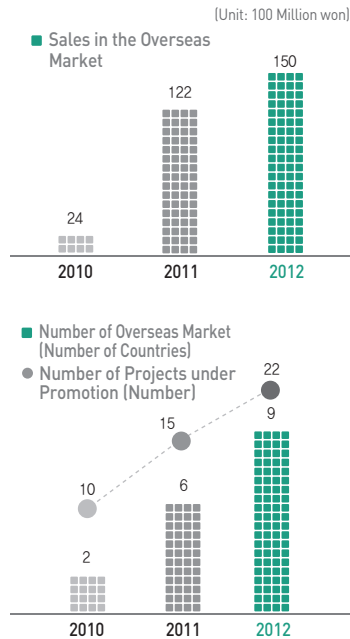
Bangladesh	Enhancement of Railway Depot	<ul style="list-style-type: none"> • CEO's Field Marketing and Contact Obtainment Efforts • Improved Profitability (Originally 40 billion won → Increased to 63 billion won)
U.S.A.	Technology Consultation for California High-speed Railways	<ul style="list-style-type: none"> • Prime Alliance Selection and Discussion regarding Participation • Signing of a Team Agreement with Parsons JV
Brazil	High-speed Railways Construction	<ul style="list-style-type: none"> • Attending Business Public Hearings and Discussing Conditional Modification of Request for Proposal (RFP)⁴⁾ • Application of Conditional Modification in the Announcement of RFP

¹⁾ Project Management, Business Management ²⁾ Incorporated Bidding Method of Engineering, Procurement, and Construction

³⁾ Project Management Consultant, Developing Countries' Business Management Experiences Passed Down to Developing Countries

⁴⁾ RFP (Request for Proposal), Document prepared by the sellers that is clearly organized to provide buyers with information about functions, specifications, and characteristics of the goods to be purchased.

<Overseas Projects Outcome>



Record Sales in Overseas Market

KR has carried out a total of 22 overseas projects, utilizing its construction knowhow based on rail network engineering as of 2012. As a result, KR produced 15 billion won in sales in 2012, its highest sales record in the overseas market since its establishment. KR will not settle for past achievements but strive to increase the Korean rail network industry's competitiveness to achieve accumulated profits of 700 billion won in 2020.

Global Network

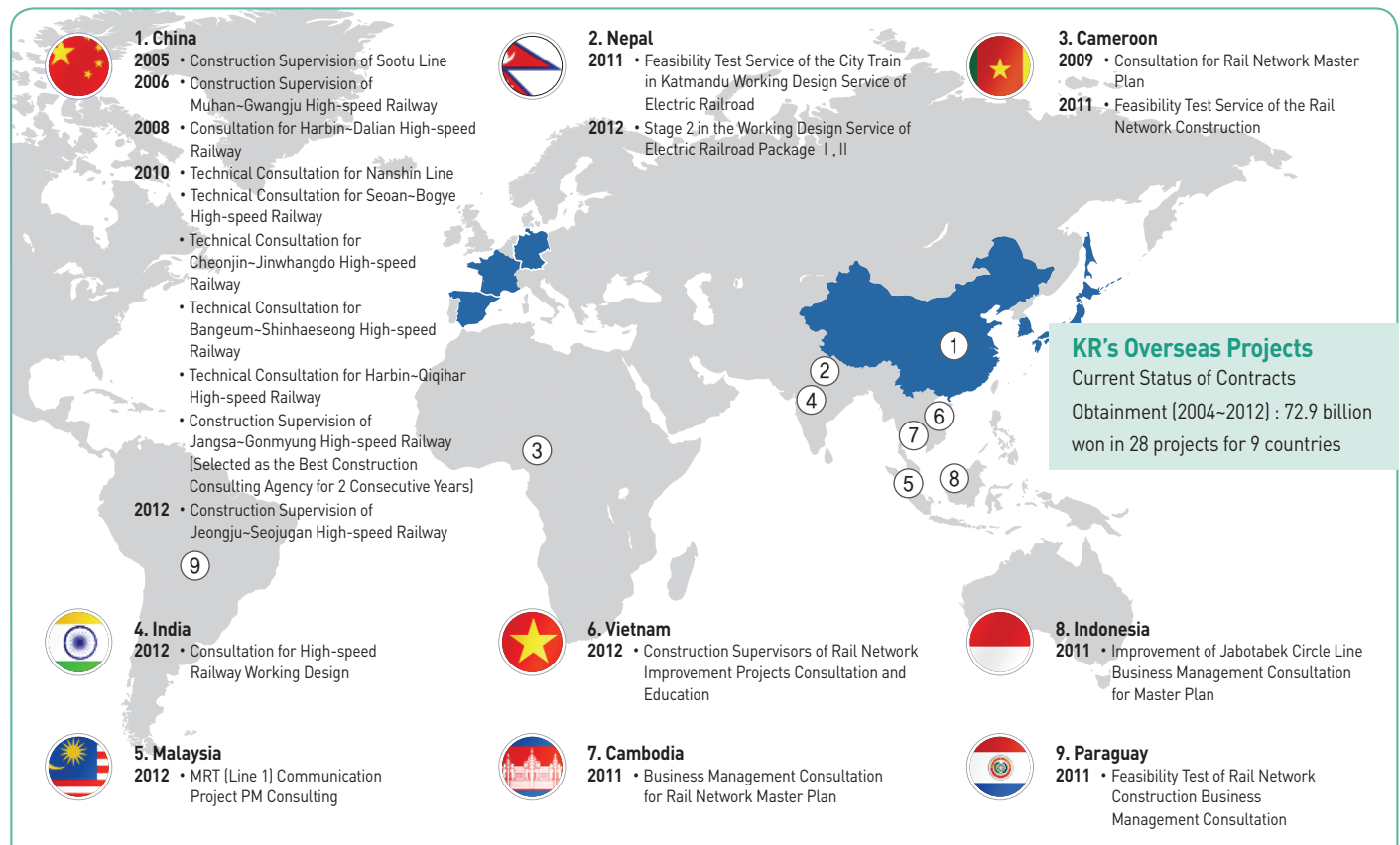
Building a Foundation for Business Expansion through International Relations and Cooperation

KR raises the brand power of KR and probability of winning contracts through steady expansion of international relations and collaborations. KR took part in the Union Internationale Des Chemins de fer (UIC) project to raise the level of technology to the international standard and gave 3 presentations at international events on the excellence of Korean rail network technology. KR also served as an accommodating host to the Ministers of Transportation from Oman and Nepal for the active promotion of international relations.

Involvement in the Official Development Assistance (ODA)

KR secured a foothold to expand into the market for developing countries' rail networks after signing an MOU with Korea International Cooperation Agency (KOICA) and Korean Export-Import Bank. KR publicizes Korean rail network's outstanding technology through research and management of Public Private Partnership (PPP) cases, management of 3 KOICA PMC projects, and offering training by invitation to Indonesia and Cambodia.

<Results of Overseas Business Projects>



Q&A

Q. What is KR doing for the efficient management of rail network assets?

A. KR strives to recover investment cost as early as possible by establishing collection standards for rail network fees, reducing maintenance and repair costs, and generating profit through diverse utilization and development of rail network assets.

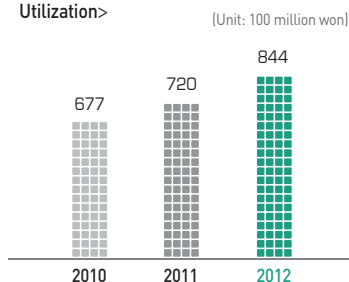
❖ Efficient Management of Rail Network Assets

Recovery of Investment Cost

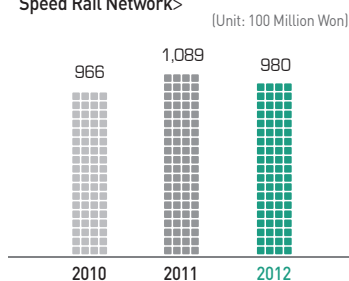
Collection of Track Access Charges

KR signs an agreement on Track Access Charges with KORAIL annually and intends to recover part of the investment cost through timely collection of Track Access Charge. The unrealistic standard of Track Access Charges estimation, however, made the recovery of the investment cost a challenge. For this reason, KR launched the project to create a realistic standard for Track Access Charges estimation in October, 2011. The company then recovered the investment cost in rail network construction in a reasonable manner so that it could be used as a source of revenue to attain financial soundness. The originally delayed contracting and payment of Track Access Charges every year since 2004 (collection made at the end of 2011) was changed into an early signing of agreements and collection through active negotiations with the relevant agencies, resulting in a 3.6 billion won reduction in the annual interest rates and the collection of 347.1 billion won in Track Access Charges, which is 14% higher than the intended goal. In addition, the Iksan-Sinri section of the Jeolla Line promoted under the Build Transfer Lease (BTL) was subject to a standard of Track Access Charges estimation for new lines contributing to the recovery of investment cost with a collection of 1.4 billion won. KR will continue its efforts to improve the appropriate standard for Track Access Charges estimation and introduce an additional charge system in case of railroad accidents, thus maximizing the recovery of rail network investment cost.

<Profits from Governmental Property Utilization>



<Maintenance and Repair Cost of High-Speed Rail Network>



Categorization	Major Activities of 2012
Promoting the Improvement of Appropriate Standard of Track Access Charges Estimation	(Currently) High-speed Railway: 31% of Business Profits, Regular Railway: 70% of Maintenance and Repair Cost (Improved) Railway Usage Fees Per Cost = Railway Usage Fees Train Factor x Policy Factor ± Incentives and Penalties
Introduction of Additional Charge System in Case of Railroad Accidents	<ul style="list-style-type: none"> Additional Railway Usage Cost = Additional Number of Injuries + Additional Number of Accidents Charged in the Case of an Accident, a Lump Sum Collection Annually in February, Following Year

Maintenance and Report Cost Saving

KR unified 2 guidelines in the area of rail network maintenance and repairs and succeeded in the cost reduction by improving rail network maintenance and the repairs standard, reflecting the research results. The reviews of international maintenance and repair technology in countries such as France (SNCF) and Belgium (SNCB) and the introduction of advanced methods of maintenance and repairs resulted in cost savings of 29 billion won in maintenance and repairs in 2012. KR achieved a 28.23% rate of maintenance and repairs cost to sales, surpassing its cost reduction goal by 31.6%

Diversification of Assets Management

Efficient Management of Governmental Property

KR conducted a large scale analysis of the current state of profits made from fees and rent from utilizing rail network assets. The company reformed the existing passive farming land lease method, implementing active revenue generation strategies that include small scale investment and marketing. KR also established effective improvement measures to prevent payment delays and minimize outstanding bonds in addition to imposing rent on existing train stations, building a foundation for revenue creation through the innovative use and development of assets. These efforts achieved 84.4 billion won of profits in the utilization and development of assets, which is a 17% increase from the previous year.

<Promotion Status of Development Projects>



<Gangchon Rail bike>



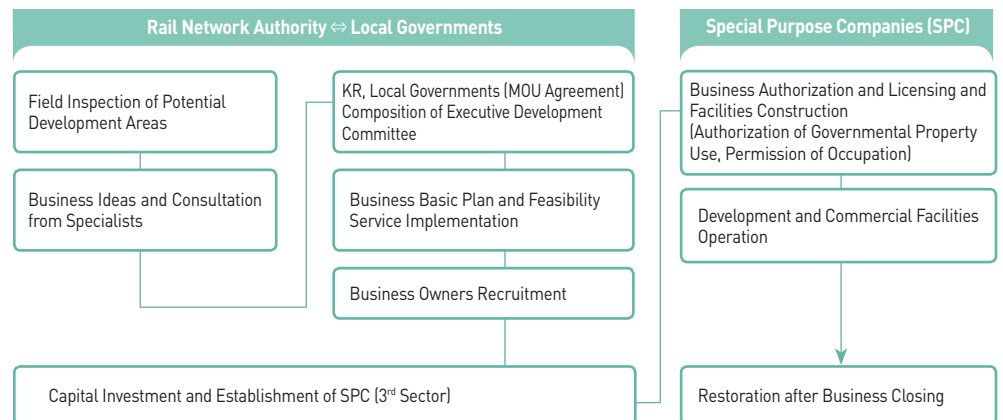
<Construction of RV Campsites>



Development of Station-influenced Areas and Idle Land

KR established a middle and long term road map for the diversification of rail network assets development, such as station-influenced areas and idle land. Part of the development project included signing MOUs with the local governments to build an executive committee and recruiting business owners to build Special Purpose Companies (SPC) from which KR collects fees and rent.

<Development Promotion Road Map>



KR embarked on a new project of developing the abandoned land created by the closing of the Gyeongchun Line into a theme park, offering rails, rail bikes, wine tunnels, and theaters in a single area after the establishment of a company jointly invested by the city of Chuncheon and private entrepreneurs. The project was completed, and all involved parties celebrated the start of its commercial operation in 2012. Operations would be carried out over 3 stages, producing a profit of 1.70 million won for the first development project for abandoned rail network areas. After the closing of all developmental projects in 2013, approximately 25.2 billion won of additional profits is expected, contributing to the invigoration of the local economy. KR is in the process of jointly developing the abandoned rail network areas of the Gyeongjeon Line (Jinju section) and Donghae Southern Line with the cities of Jinju and Busan, building momentum from the success of the Gyeongchun Line abandoned area development project. Along with the development project of idle land, the development of the station-influenced area around Gwangmyeong Station in 2012, the first project of its kind, was commenced with the opening of commercial operation. This project is expected to produce 82.2 billion won in reliable profits (76.1 billion won in rent, 6.1 billion won in development profits). Once the development projects around Hongik Univ. Station, Gongdeok Station, and Seogang Station are completed as planned, an additional 330 billion won in profits is likely to be created.

<KTX Kwangmyung Station Multi-Transit Facility>



Q&A

Q. What is KR doing to secure rail network competitiveness at the global level?

A. KR is directing a significant part of its energy into executing work-oriented research projects, as well as research and development of practical technology to obtain sustainable sources of growth in the Korean rail network industry.

❖ Reinforced Development Rail Network Technology

KR is conducting research for national R&D projects and practical technology to develop technology for expansion into the global rail network market and ensuring the future of the rail network industry. Through these efforts, Korea's rail network technology level will rise from 78.83% for rail network technology to that of advanced countries by 2020. The usage rate of domestic materials in rail network goods will also increase from 83.2% to 100% by 2020.

<Maximum Operational Speed of Major Countries>

China	France, Germany
350km/h	320km/h
Japan, Spain, England, Korea, Poland	Turkey, Russia
300km/h	250km/h

<Technology Development Promotional Direction>

Categorization	Establishment of Global R&D (~2013)	Cultivation of R&D Leadership by Each Step (2014~2017)	Achievement of World Best R&D Capacity (2018~2020)
Rail Network Technology Level Compared to Developed Countries (78.83)	82.73	96.73	100
High-speed Railways	High-speed 350km/h Regular 180km/h	High-speed 370km/h Regular 210km/h	High-speed 400km/h Regular 250km/h
Safety	Reduction Rate in Railroad Accidents 1.8%	Reduction Rate in Railroad Accidents 4.5%	Reduction Rate in Railroad Accidents 20%
Usage Rate of Domestic Material	Usage Rate of Domestic Components 80.9%	Usage Rate of Domestic Components 89.2%	Usage Rate of Domestic Components 100%
Economical Value	Saving Rate in Construction Cost 1.8%	Saving Rate in Construction Cost 8.1%	Saving Rate in Construction Cost 20%
Eco-friendliness	Decrease in Greenhouse Gas 22,000 tons	Decrease in Greenhouse Gas 210,000 tons	Decrease in Greenhouse Gas 820,000 tons

<Energy Efficiency Comparison of Different Transport Mode>

Transport Mode	CO ₂ emissions per individual (g/Individual/km)	Volume of Transportation (Individuals/Time)
High-speed Rail Network	8	1~30,000
Buses	19.4	6~9000
Small Vehicles	44.6	3000

Time-saving Rail Network Technology

The traffic congestion cost of Korea in 2009 is estimated to be 27.7 trillion won, and this figure increases every year. KR is trying to relieve this situation by improving infrastructure, designing railroads suitable for high-speed lines. A safety test run of the next generation's high-speed train capable of reaching the maximum speed of 430km/h, HEMU, was conducted. HEMU is planned to be used in the high-speed rail network in 2016 to provide faster rail network service with trains that can travel at speeds of 300km/h.

Rail Network Technology for Safety

Numerous trials and authentication courses are required to perfect rail network technology. The successful conclusion of these process lead to the recognition of rail network technology that can ensure our safety and future. KR created a quality certification system for rail network goods to ensure safety and is carrying out steady efforts in railroad technology research and development for the safe operation of the rail network system.

Rail Network Technology Protecting the Environment

The Rail Network Industry is eco-friendly. The CO₂ generated in the course of rail network operation is remarkably low, and the impact on the environment in the process of rail network construction is minimized through eco-friendly planning and cutting-edge construction methods. KR strives to reduce the level of CO₂ emission through eco-friendly rail network planning and the development of better construction technology.

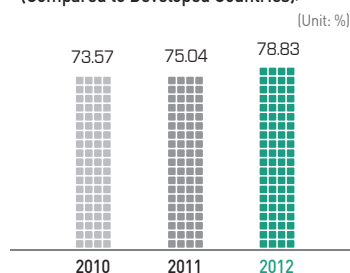


Characteristics of Magnetic Levitation Railways

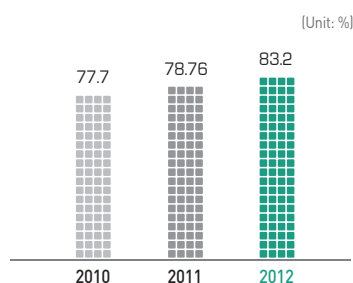
- High ride quality: Little vibration, noise (zero traction with rails)
- Safety: No risk of derailment (train cars surrounding the tracks)
- Localization: Saving of maintenance and repair cost
 - Alternative to urban mass transportation
 - Expansion into the international stage (accumulation of magnetic levitation rail network construction technology)

Attention

<Level of Rail Network Technology (Compared to Developed Countries)>



<Localization Rate of Rail Network Goods>



<100% Localization of High-Speed Railway Tracks material>

Suspension Clamps



Supporting Clamps



Rail Network Technology for the Future

Magnetic Levitation Railway

KR has promoted and is currently conducting a comprehensive test and commissioning of the urban magnetic levitation railway (6.1km) in Incheon International Airport (Yongjeondo). Korea is planning to operate the commercial magnetic levitation railway in September, 2013 and will be the second country in the world to operate urban magnetic levitation railways. The magnetic levitation train uses magnetic force generated by electricity and is levitated a short distance away from the guide rail, propelling the train forward without using wheels. Since it moves up in the air, there is little noise and vibration and zero risk of derailment.

KR will make continuous investments in realizing future technology, working in close relationship with relevant agencies such as the Korea Railroad Research Institute to expand into the international stage and preserve the environment.

Accomplishment of Rail Network Technology Development

KR carried out 13 cases of national R&D tasks in 2012, including 9 tasks in progress and 5 completed tasks.

As a result of KR's continuous research and development efforts, a total of 25 projects were completed in 2015, saving 40 billion won in future business expenses. KR's R&D accomplishments include the development of a low-frequency orbital technique, enhancement of power induction, and establishment of blending rate in steel fiber-mixed concrete. Major rail network materials such as the parts for high-speed traction lines and pre-made concrete tracks were built with domestic materials to attain ownership of world-class rail network technology and reduce reliance on imports. The quality of rail network goods developed using domestic technology will be under strict scrutiny by a comprehensive train network trial line scheduled to be completed in 2016. There, domestically made train cars and components will be subject to a reliability examination and certification.

<Outcome of Rail Network Technology Development in 2012>

* Including Ongoing 2013 Projects

Promotion Direction	High-speed	Safety	Localization	Efficiency	Eco-friendliness
Number of Cases	6	5	10	17	5
Total			43		

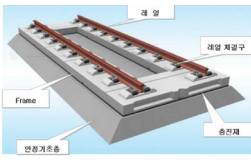


<Possession of New Technology and Intellectual Property Rights>

(Unit: Cases)

	Prior to 2011	2011	2012	Total
New Technology ¹⁾	130	35	32	197
Intellectual Property Rights ²⁾	40	9	4	53

Localization of Core Technology - Pre-made Concrete Tracks

Trains running at high speed increase the vibration of cars and make the journey more uncomfortable. They also have a higher change of causing track irregularities, increasing the maintenance and repair costs of the rail network. KR will expand the use of pre-made concrete tracks³⁾ to solve this problem and construct a part of the Gyeongjeon Line using this method in July, 2012 for a test and commissioning. The company plans to finish the functional qualification for this technology within the year. At the competition of the functional qualification, the 10km-long Iksan-Jeongeup section of the Honam High-speed Railway will be constructed by using this same method. This will not only secure rail network safety and reduce maintenance and repair costs, but will also greatly increase the competitive edge of KR's technology for expansion in the international market.

	Pre-made Concrete Tracks	Gravel Tracks	Field Construction (Concrete) Tracks
Structure			
Characteristics	<ul style="list-style-type: none"> • Low track irregularities and vibration • Reduction in maintenance and repair cost (0.6 million won/km) • Construction cost (11.6 million won/km, 92%) • Improvement in feasibility (22%) 	<ul style="list-style-type: none"> • Convenient linear alternation and maintenance and repair • Increase in maintenance and repair cost (2.3 million won/km) • Construction cost (8.8 million won/km, 70%) 	<ul style="list-style-type: none"> • Low track irregularities and vibration • Reduction in maintenance and repair cost (0.6 million won/km) • Construction cost (12.6 million won/km, 100%)

1) New Technology Applicable to Rail Network Technology

2) Intellectual Property Rights Directly Developed by KR (Patents, Utility Model Rights, Design, Program, and Trademarks)

3) Track structure where concrete tracks are pre-made at the factory, transported to the construction site, built, and constructed



III

Green Rail Network



- Response to Climate Change and Environmental Management
- Construction of Eco-friendly Rail Network

KR builds the green future.

Our Approach

KR created a middle and long term roadmap in response to climate change, working to resolve global warming by actively promoting efforts to cut down greenhouse gas. The establishment of low carbon rail network facilities and the development of eco-friendly technology will ensure a reduction of 820,000 tons of greenhouse gas emissions by 2020 to lead environmental management in the field of rail network construction.

Our Strategy

Response to Climate Change : Continual reductions of greenhouse gas emissions are being achieved through the establishment of low carbon rail network facilities, calculation of carbon footprints, and utilization of renewable energy.

Environmental Management : The environmental management review system, consisting of 12 core indicators related to the environment, was introduced for the continual administration of environmental management. This system prevents environmental conflicts in advance through smooth communication with stakeholders.

Construction of Eco-friendly Rail Network : The eco-friendly construction of rail network is being promoted in consideration of the entire life-cycle of the rail network including planning, construction, and closing.

Our Performance Progress

Core Indicators	Unit	2010	2011	2012
Environmental Management Indicators	Points	105.4	113.1	158.1
Reduction Rate of Greenhouse gas emission	%	-	5.8	16.6
Violations of Environmental Regulations	Cases	0	0	0
Recycling rate of Construction Waste	%	92.57	95.6	97.2
Application Rate of Renewable Energy	%	-	13.76	18.16

Q&A

Q. What is KR doing to reduce greenhouse gas emissions, which is a global issue?

A. KR is executing various projects to expand carbon rail network facilities and create profits by using equipment with carbon greenhouse gas emission to cut down 820,000 tons of greenhouse gas emissions during rail network construction by 2020.

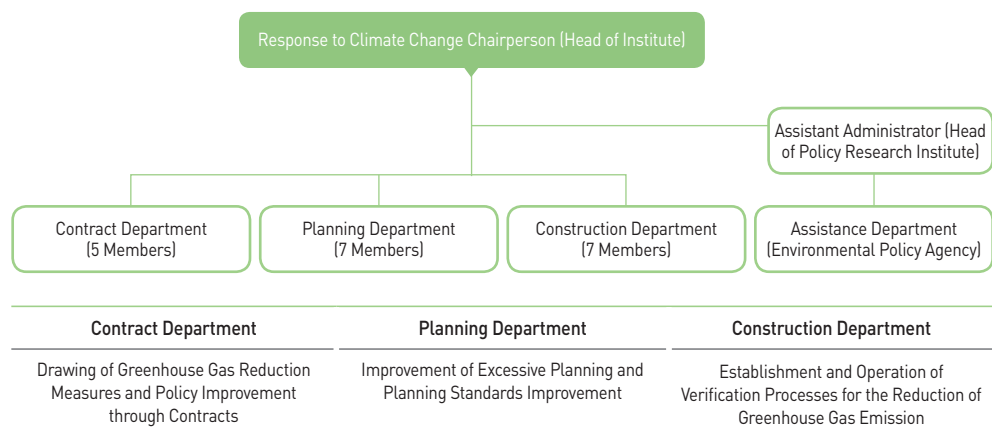
❖ Responding to Climate Change

Response System to Climate Change

The Kyoto Protocol took effect in 2005 of to drive developed countries to reduce carbon emissions, which is a major cause of climate change on a global scale. Various discussions have been in progress on the launching of the post-Kyoto regime after 2012, and Korea is part of the movement in demanding renovation in the areas of building, transportation, industry, development, and living by achieving the reduction goal of national greenhouse gas emissions (30% of the emission estimates by 2020) in October, 2009. The policy requiring the management and reduction of greenhouse gas emissions under the Low Carbon Green Growth Act that went into effect in April, 2010 led to the establishment of a greenhouse gas and energy target management system and emission trading system, raising awareness of this issue both at home and abroad. Consequently, KR established the "Middle and Long Term Promotion Plans to Respond to Climate Change (December 2012)" to reduce 820 tons of CO₂ by 2020. KR also assembled a response system to climate change with internal and external specialists, initiating progress for green growth through greenhouse gas reduction in the field of rail network construction.

Promotional Structure in Response to the Climate Change

KR's environmental management is led by the Policy Research Institute, and the operating agency carries out eco-friendly planning, construction, and management projects in different stages under its promotion plans. The Environmental Policy agency is the leading agency of this institute, and the "Response to Climate Change T/F Team", consisting of 3 departments of internal and external specialists, is operated for the systematic execution of the "Middle and Long Term Promotion Plans for the Response to Climate Change". This contributes to the various efforts to reduce greenhouse gas in the rail network planning and construction processes through research and the establishment of greenhouse gas reduction measures and policy improvement, as well as the establishment and operation of the verification process for reducing greenhouse gas emissions.



<Opening Effects of Rail Network Openings in 2012>

(Units: km, 10 Thousand Ton)

Name of Business	Increase	Reduction
DongSuncheon~Gwangyang	10.7	6.0
Track Shifting of Yeongdong Line	17.8	10.0
Oido~Seongdo	13.1	7.4
Yongmum~Seowonju	28.0	15.7
Wangsimni~Seollung	6.8	3.8
Shintanri~Cheorwon	5.6	3.1
Giheung~Mangpo	7.4	4.2
Masan~Jinju	53.3	30.0
Gondeok~DMC	6.1	3.4
Total	148.8	83.6

<Promotional Goals in Response to Climate Change>

820 Thousand Tons of Greenhouse gas CO₂ Reduction in the Rail Network Construction by 2020

1

Establishment of Low-Carbon Rail Facilities

Accelerated Green Rail Network Infrastructure

Profits through Low-Carbon Facilities

Development of Green Rail Network Technology

Middle and Long Term Roadmap for the Response to Climate Change

KR established the “eco-friendly rail network construction guidelines” to actively support the national response plan to climate change following global warming. These guidelines have led to the building of an eco-friendly rail network foundation, promotion of ecosystem restoration projects that use closed rail network land and construction waste, analysis of current greenhouse emissions in rail network construction sites and preparation of reduction measures, use of renewable energy such as solar energy and geothermal heat, and expansion of the introduction of high efficiency equipment. These efforts have dramatically decreased greenhouse gas emissions. The certified emission reductions of greenhouse gas occurring in the process of rail network construction will be secured as part of the various measures for eco-friendly rail network construction and greenhouse gas reduction. 4 major tasks, such as the establishment of carbon rail network facilities, promotion of green rail network infrastructure, creation of profits using carbon planning, and technology development of the green rail network based on the middle and long term roadmap, will realize the goal of 820 thousand tons of reducing CO₂ by 820 thousand tons (7.1% decrease compared to the estimates) by 2020 in the field of rail network construction.

<Middle and Long Term Roadmap for the Response to Climate Change>

	Extensive Promotion Period				Middle and Long Term
	2012	2013	2014	2015	2016 ~ 2020
Establishment of Low-carbon Rail Network Facilities	High-speed Railways (2 Projects including Honam High-speed Railway) – 289km				Honam High-speed Railway – 49km
	Regular Railways (12 Projects including Deokso-Wonju Double-track Lines in Joonang Line) – 103km				(18 Projects including the Rail Network Construction Project of Wonju-Gangneung Section) – 542km
	Metropolitan Railways (5 Projects including Yongsan-Munsan Double-track Lines) – 108km				(8 Projects including Bansan-Ulsan Double-track Lines) – 285km
	Application of Renewable Energy (Solar Energy Equipment, Wind Energy Equipment, Etc.)				
	Research of Carbon Footprint Calculation	Revision of Carbon Reduction Guidelines	Voluntary Agreement on Greenhouse Gas Reduction		Participation in Carbon Market
Development of Greenhouse Gas Management system for the Low-carbon Construction of Rail Network					
Promotion of Green Rail Network Infrastructure	Establishment of Roadmap	Founding and Continuous Promotion of Ecosystem Restoration Project Candidates (Minimum 2 Cases annually)			
	Purchase of Green Goods (Minimum 90% of the Promotion Goal)				
	Greenhouse Gas Energy Reduction in the Public Sector (20% of Current Emission)				
Creation of Profits Using Low carbon Planning	Solar Energy Generation Plants (20 New Plants)		Expanded Application of Relevant Projects Applicants (Minimum 3 Cases Annually)		
	Green ODA Projects (3 Projects)			Development of New Projects (Minimum 1 Case Annually)	
Technology Development of Green Rail Network	R&D Development (Eco-friendly Electricity Planning) Addition of Research Function to the Environmental Agency (Establishment of Feedback System)		R&D Development (Founding of Minimum 2 Cases Annually)		
	Eco-friendly Facilities Review	Development of Construction Methods	Modification of Guidelines and Specifications	Trial Application	Expanded Field Application
	Installment of High-speed Battery Charger for Electric Cars (Sooseo Station in High-speed Railway and Songjeong Station in Gwanju)				Increased Application of Monitoring

<Planned Emissions of Greenhouse Gas>

Categorization	Standard Emission	Emission (Target)
2010	5,803tCO ₂	6,203tCO ₂
2011	6,071tCO ₂	5,719tCO ₂
2012	5,737tCO ₂	4,786tCO ₂
2013	5,796tCO ₂	4,753tCO ₂
2014	5,796tCO ₂	4,637tCO ₂
2015	5,796tCO ₂	4,637tCO ₂ *

* 20% Reduction of the Standard Emission

Major Responses to Climate Changes

KR carried out various activities including the establishment of carbon rail network facilities, unit calculation of greenhouse gas (carbon footprints), and profit creation using low carbon equipment (utilization of renewable energy).

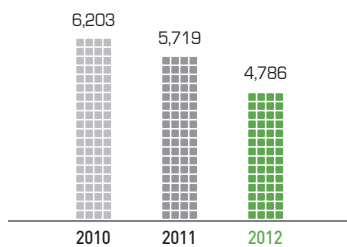
Target Management System of Greenhouse Gas and Energy

KR studied the greenhouse gas emissions of business sectors, such as buildings and vehicles, and set the standard of emission at 5,737tCO₂ in anticipation of the government's greenhouse gas reduction plan for public agencies. To reduce greenhouse gas emissions by 20% compared to the current standard by 2015, specific executive plans such as the efficient planning of building spaces and equipment, energy-saving efforts through compliance with government-recommended indoor seasonal temperatures, and the operation of eco-friendly vehicles were enacted through monthly strict monitoring. As a result, greenhouse gas emissions were recorded at 4,786tCO₂, which is 16.6% lower than the goal of 5,737tCO₂.

Calculation of Carbon Footprints

KR promoted the "Calculation of Carbon Footprints in the Rail Network Construction Sites" from May 2011 through December 2012 to realize sustainable and "Eco-friendly Rail Network Construction" by assessing the greenhouse gas emissions at rail network construction sites and establishing systematic field management measures. The method of calculating carbon emission per unit was suggested in various stages of construction, such as the civil engineering, architecture, rails, electricity, signals, and communications. The development of the carbon emission management guidelines for rail network construction sites will result in the reduction of on-site greenhouse gas emission through estimating carbon emissions at new rail network construction sites and of improving the guidelines and specifications.

<Greenhouse Emissions>

(Unit: tCO₂)

<Research on Carbon Footprint Calculation – Carbon Emissions in the Case of 1km Construction of Rail Network>

(Unit: tCO₂/km)

Categorization	Civil Engineering	Rails	Architecture	System (Electricity, Signal, Communication)	Total
Carbon Emission	18,251	1,568	341	119	20,279

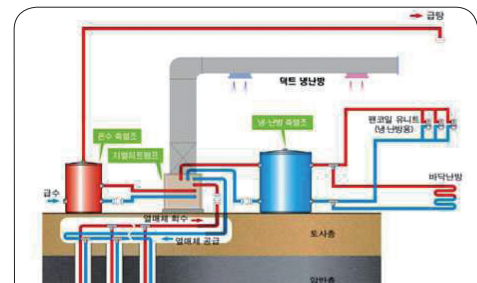
Application of Renewable Energy

KKR conducted research on the expanded application of renewable energy in the field of rail networks such as the solar, wind, and geothermal energy from 2012 through 2011. 67 solar energy structures in platforms, railway vehicles bases, and spoil areas, 33 geothermal energy structures in the Sooin Line, etc., 8 wind energy structures in Pohang~Samcheok, etc. are being planned and promoted. Once these renewable energy applications are completed, greenhouse gas will be reduced by 1,540tCO₂ on an annual basis. The generation of 17.1MWp electricity through solar energy generation plants is expected from these newly built solar energy structures.

<Solar Energy>



<Geothermal Energy>



Q&A

Q. What is KR doing to preserve Earth?

A. KR has strengthened its environmental management capabilities through its environmental management evaluation system. The systematic management of rail network construction sites will minimize environmental impact. Maintaining close channels of communication with stakeholders will also prevent environmental conflicts in advance.

❖ Environmental Management

Attention
KR-EMI, Environment Management Index

- KR's unique environmental index that compares and evaluates yearly accomplishments in environment management
- KR-EMI

$$= EMI_{2013} + (EMI_{2012} \times \sum (SEPI_i \times \text{Weight}_i))$$
 - EMI_{2012} : Environment Management Index of the previous year
 - $SEPI_i$: Points in each indicator of environment management

<Evaluation Indicators of Environment Management>

Environment Management Indicator	Environment Operation Indicator
Competition Rate of Environmental Education	Recycling Rate of Rail Ties
Improvement Rate of Internal and External Suggestions	Recycling Rate of Construction Waste
Amount of Penalties	Installation of Sound-Proof Devices
International Recognition of Environment Management Results	Purchase Rate of Eco-friendly Goods
Number of Green Rail Network Advisory Committee Meetings	Construction Waste Production per Unit
Number of Nonfulfillment of Environmental Impact Evaluation Discussions	Reduction Rate of Greenhouse Gas

<Beautiful Playground Movement>



Eco-friendliness and Evaluation System

KR introduced the environmental management evaluation system in 2010. This system includes, 10 indicators such as the recycling rate of construction waste, purchase rate of eco-friendly goods, etc. to understand and disclose the results of environmental management and continually improve the company's eco-friendliness. 2 indicators were added in 2011 to improve the credibility of the evaluation system and to reflect new issues. The quarterly monitoring of results contributes to the establishment of redemption measures for areas that were found to be weak according to the indicators. As a result, the environmental management index incorporating the evaluation system achieved 105 points in 2010, 113 in 2011, and 158 in 2012.

Environmental Education Program

KR operated an educational program for KR stakeholders and business partners and succeeded in educating 3,551 people in the 3 areas of quality, safety, and general environment, as well as 2 specific areas related to the environment, to reduce carbon emissions and noise level during rail network construction, control vibration, and manage construction waste on sites for eco-friendly construction and high quality.

<Environmental Education Program>

Category	Title of Education	Recipients	Frequency
General (Quality, Safety, Environment)	General Manager	KR	Annually
	ISO/OHSAS	KR	Annually
	Field Special Training	Business Partners	Quarterly
Environment	Environment Management System	Business Partners	Annually
	Environment Business	KR	Year-round

Resolution of Environmental Conflicts

KR has operated a collaborative network with environmental organizations such as the NGO, etc. since 2005 to prevent unnecessary environmental conflicts through continuous communication and to maximize environmental conservation effects. Starting from 2008, KR jointly hosted events with these groups: together, these groups went beyond mere collaborative relationships and ran the Green Rail Network Advisory Committee to reflect the opinions of environmental organizations in KR's policies. The semiannual Green Rail Network Advisory Committee meetings were expanded to be held 6 times a year, inviting participation from various stakeholders such as the NGO, religious circle, academic circle, corporations, public agencies, etc. to discuss and resolve KR's current issues. In addition, KR was extensively involved in the Beautiful Playground Movement (repair and renovation of a total of 18 playgrounds after the agreement signing with the Korean Federation for Environment Movement in June 2007) as part of its efforts to preserve the environment, working with the NGO to improve its corporate brand power as an eco-friendly corporation with international creditworthiness.

Q&A

Q. What is KR doing to reduce the impact on the environment from rail network construction?

A. KR is promoting eco-friendly rail network construction in consideration of all life cycles of the rail network and understands that environmental factors are crucial points in the stages of planning, construction, and closing of the rail network.

❖ Eco-friendly Planning and Construction

Attention

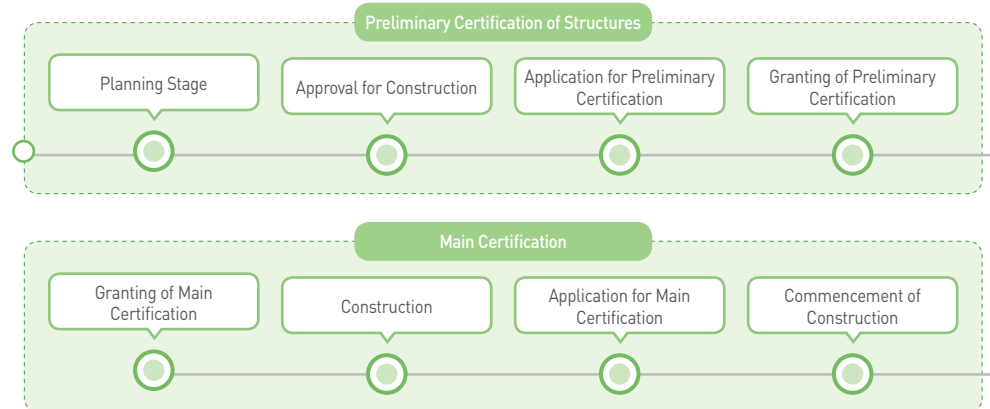
Eco-friendly Structure Certification

- Base: Article 65 of Building Codes, Rules of Green Building Certification Program
- Certification Agency: Korean Research of Energy Institute, LH Public Corporation, Crebiz Certification, Korean Educational Environment Research Institute
- Certification Review : Evaluated according to the specific standards set by the certification agencies assigned by the operating agency (Operating Agency: Ministry of Land, Transport, and Maritime Affairs/ Ministry of Environment on Rotation Biannually)
- Types of Certification: Planning Stage
- Preliminary Certification/After Construction - Main Certification

Eco-friendly Structure Certification

KR built the "middle and long term master plan for eco-friendly rail network structure" for the harmonious development of the economy/environment in April, 2010. This was not only done to reflect eco-friendly planning in the planning guidelines, but also to apply renewable energy to all stations, expand eco-friendly planning to the ecological environment and indoor environments, and expand the application of electric energy-saving systems for the purpose of realizing an eco-friendly structure. KR also pursued the "Eco-friendly Certification System" in accordance with the construction laws, earning international recognition for its efforts and the preliminary certification for eco-friendly structure for the Gwangju Railway Vehicle base in Honam High-speed Railway in 2011. KR applied for the preliminary certifications of 3 stations (Gongju, Jeongeup, Gwangju-Songjeong) in December, 2012 and plans to continually expand the system for other rail network structures.

<Process of Certification for Eco-friendly Structures in Different Stages>



<Aerial View of Gwangju Rail Vehicle Base>



<Aerial View of Gwangju-Songjeong Station>



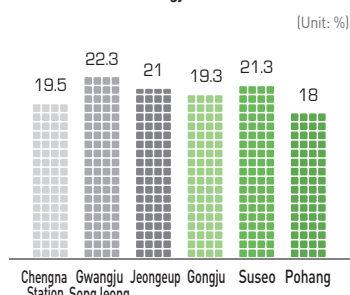
<Aerial View of Gongju Station>



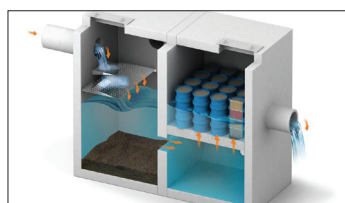
Eco-friendly Rail Network Facilities

KR saves energy by applying renewable energy and builds an eco-friendly rail network through the removal of obstacles for users. KR installed the minimum legally required amenities until 2009, but starting in 2010, KR established the "Eco-friendly Rail Network Structure Master Plan" and reinforced eco-friendly planning factors. As part of this plan KR expanded the use of renewable energy devices, eco-friendly design of ecological and indoor environments, and promotion of obstacle-free environments in stations. In 2012, KR doubled the 10% mandatory renewable energy supply rate by the government in its application and used eco-friendly devices including geothermal cooling and heating systems, cooling systems using recycled rainwater, solar energy panel installations on the outer walls of buildings, etc.

<Aerial View of Gwangju Rail Vehicle Base>



<Non-Point Contamination Prevention Facilities>



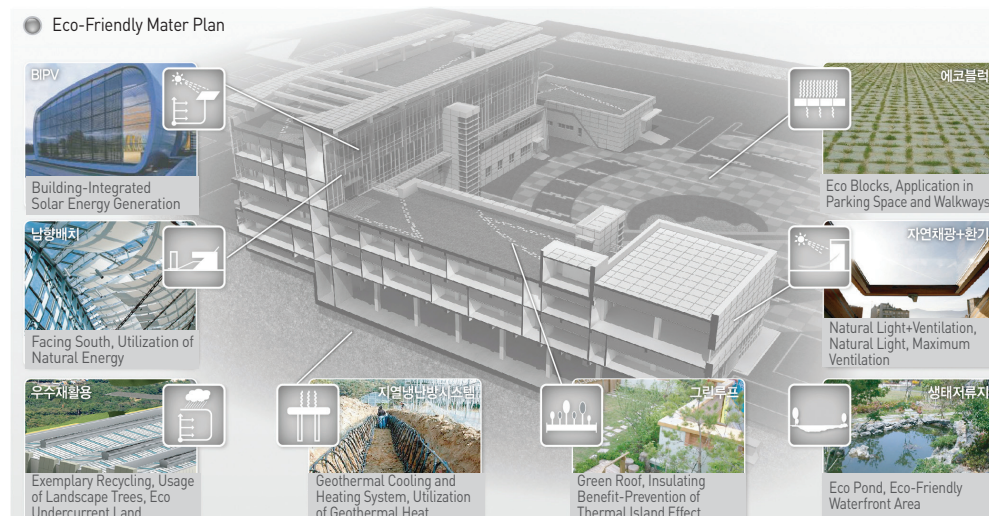
• Treatment Facilities of Undetermined Water Contaminants at Unspecified Locations in Railways and Roads

<Current Status of Environmental Pollution Prevention Facilities>

Category		Number of Units
Total		1,885
Air Quality	Seryun Car Wash	377
	Temporary Arrester	220
	Tunnel Ventilation Facility	95
Waste	Construction Waste Storage	146
	Designated Waste Storage	172
Noise · Vibration	Temporary Noise Barrier	268
Water Quality	WasteWater Treatment Facilities	169
	Sewage Treatment Facilities	123
	Silt Protectors	101
	Settling Basin	214

※ Source: 119 Sites of 31 Projects

<Eco-friendly Planning Example of Deokha Rail Vehicle Base>



* Utilization of geothermal energy as source for heating and cooling, installation of solar panels on the outer wall of buildings (40kw)

Prevention of Environmental Pollution

Periodic Environmental Checkups

KR plans to limit the impact on the environment through eco-friendly planning and construction in consideration of the ecosystem by installing environmental pollution reduction facilities to improve water quality, air quality, waste, noise, and vibration. The company conducts periodic checkups, and 104 cases for improvement were found and handled in 2012 through a uniform checkup of dust scattering and air pollution prevention facilities. The "Baekdudaegan Environment Advisory Committee", comprised of the government, KR, and NGO, is in operation to limit the impact on the Baekdudaegan environment, resulting in the reduction of the impacted area from 1,881m² to 1,330m² during the course of the Wonju-Gangneung Rail network construction. The operation of the ecosystem monitoring committee of Honam High-speed Railway is part of the efforts to build an eco-friendly rail network to prevent Gyeryongsan environmental conflicts.

Facilities for Preventing Environmental Pollution

KR established various facilities to prevent environmental contamination in the rail network construction sites to minimize impact on the environment. In 2012, 3 Bupal rail vehicle bases in Seonnam-Yeosu, 23 devices, and natural non-point contamination prevention facilities in the Wonju-Gangneung double-tracks were built. The plan was for KR to expand the application of non-point contamination facilities to 428 units over a total of 77 sites. Additionally, 607 contamination prevention facilities and 692 air pollution prevention facilities such as ventilation devices, 318 waste deposit units, and 268 temporary noise barriers are planned to be installed for the realization of an eco-friendly rail network.

Implementation of Environmental Impact Assessment

KR conducted an environmental impact review in the planning stage to study, predict, and evaluate the environmental impact of rail network construction and to prepare ways to minimize the impact. KR completed environmental impact reviews of three projects including Wonju-Gangneung Rail Network Construction Project and Seongnam-Yeosu Bupal Vehicle Base Construction Projects and is in the process of conducting environmental impact reviews of nine other projects.

Q&A

Q. What is KR doing to protect the ecosystem during rail network construction?

A. KR executes plans in consideration of ecosystem protection in the course of rail network construction and promotes restoration projects to return rail network land after the closing it to the ecosystem and local communities.

❖ Eco System Protection

<Bridge-type Eco Tunnel>



<Yeongdong Line Switch Back Resort>



<Rail bikes of Gyeongchun Line>



<Solar Energy Generation using Closed Rail Network Land>



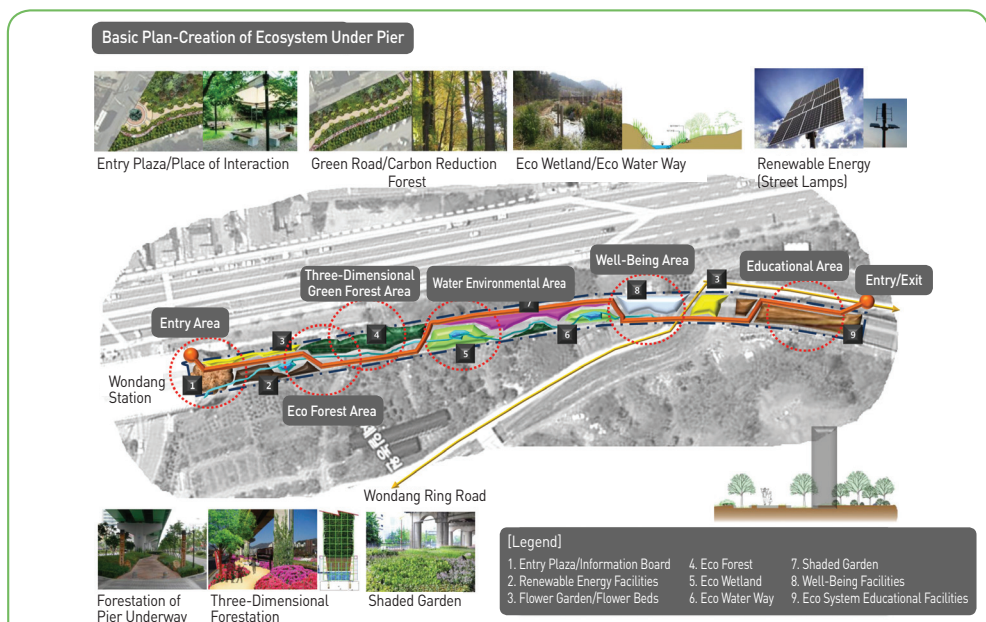
Plan in consideration of the ecosystem

KR executes a rail network plan reflecting the devices of the eco tunnels (escape slopes), fences blocking the wildlife and inducement fences, eco ponds in consideration of contamination purification, and scenery to prevent isolation or difficulty in travel for wildlife caused by rail network construction.

Eco system restoration

After closing rail lines, KR returns to local residents through ecosystem restoration. The first of these efforts was the ecosystem restoration project of Daechon stream, the city of Boryeong on the Daechon Line in 2009. The increasing number of closed lines gave rise to the pursuit of eco-friendly measures to restore the land on which they were built. In February, 2012, the "Middle and Long Term Roadmap for the Ecosystem Restoration of Closed Rail Network Land and Idle Land" was established to promote the building of an eco-friendly train network in consideration of mankind and the ecosystem through efforts such as the "Goyang Wondang City Eco-Network Creation Project". In addition, recycling efforts of closed rail networks with respect to the specific conditions of the land, such as the bike paths, rail bikes, resorts, and RV camp grounds, provided local residents with new leisure and living spaces. The "Switch Back Resort Development Project", utilizing the switch-back Yeongdong Line in Samcheok, Gangwon, will take advantage of the cultural value of rail network facilities to provide a tourist spot that can offer various cultural activities. Solar energy generation plants made through collaboration with the private and local governmental agencies will be installed to respond to climate change and create profits. 7 facilities using the natural environment of the closed Gyeongchun Line and 5 solar energy generation plants using the Jecheon~Dodam closed land will also be developed in 2012.

<Project of Wondang City Eco-Network Creation>



Q&A

Q. What is KR doing to effectively utilize limited resources?

A. KR is enthusiastic in recycling used resources such as closed sleepers to reduce waste and raise the rate of resource usage through the re-development of closed rail network land.

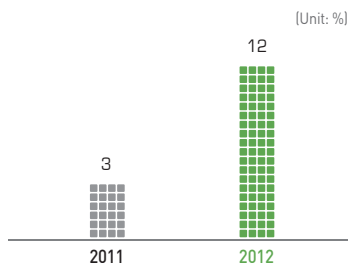
<Forest Tree Load Standard Improvement>



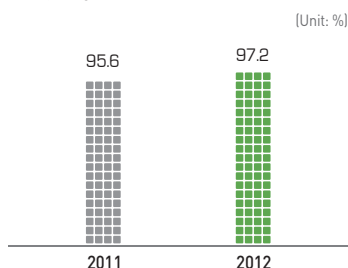
<Forest Tree Recycling Categorization Standard>

Grades	Uses
A	Main tracks and side tracks
B	Lead below 30km/h
C	Retaining walls, etc.
D	Waste treatment

<Forest Tree Recycling Rate>



<Recycling Rate of Construction Waste>



<Used Sleepers Information System Sharing Business Cycle>



* RFID (radio frequency identification): Wireless data transmission device with antenna with goods information in stored microchips

❖ Sustainable Utilization of Resources

Recycling of Used Resources

KR strives to minimize the waste generated in the improvement and construction of rail network facilities through various efforts such as analyzing the recycling material and current status of businesses, improving the recycling standards of construction waste and utilization rate, and preventing environmental pollution.

Reuse of Used Sleepers

Used PC sleepers were used in the side tracks and rail vehicle bases of the rail network to improve the planning standard of tracks. The initial categorization standards in the reuse of sleepers in different conditions was changed from 2 types (A, B) to 4 types (A, B, C, D), and the RFID* process was implemented in their use. This improved the business procedures for expanding the recycling of used sleepers. As a result, 108,333 of PC sleepers were reused in 2012, increasing the reuse rate sleepers by 3% from the previous year to 12% and saving 5.4 billion won in the budget.

Recycling of Demolished Material on the Closed Rail Network Land

The material from the closed line due to rail network improvement projects such as the rails from the closed section was left to be used for rail bikes, resorts, and bike paths to provide residents with leisure and living spaces to increase convenience and reduce spending. 3 rail bikes and 1 resort and bike path were created to save 14.2 billion won in budget.

<Budget Saving through the Re-development of Closed Rail Network Land>

Category	Section	Increase	Closed Sleepers	Used Gravel	Amount Saved
Rail Bikes	Gyeonggang-Kimyujeong	14.4km	24,480 units	49,896m³	3.7 billion won
	Yangdong-Dongwha	12.7km	21,590 units	44,006m³	3.2 billion won
	Mipyong-Yeosu	1.6km	2,720 units	5,544m³	400 million won
Resort	Dongbaeksan ~ Dogye	16.5km	28,050 units	57,173m³	4.2 billion won
Bike Paths	Maseok ~ Gapyeong	10.8km	-	37,422m³	2.7 billion won

Forest Tree Waste and Construction Waste

Forest trees that are felled in rail network construction are used in gardening or smashed to be reused as compost woodchips, firewood, or stable sawdust, saving waste processing expenses by 122,569 thousand won with the recycling of 8,344 tons of forest tree waste in 2012. This construction waste was used in temporary roads, fume pipe ground work, back filling, and covering up to improve the recycling rate of construction waste. 310 thousand tons of recycle aggregate was raised compared to the previous year.

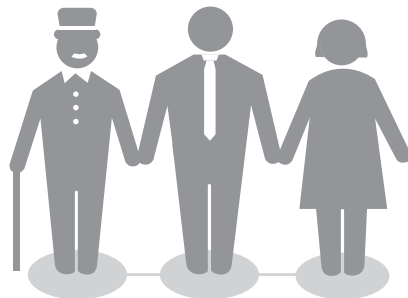
수평적 건설생태계 조성을

KR 한국



IV

Harmonizing Rail Network



- Coexisting Cooperation for Shared Growth
- Customer Satisfaction

을 위한 상생토론회

한국철도시설공단



Customer Satisfaction is the Way to a Happy Tomorrow.

Our Approach

KR pursues harmony with business partners and clients, working together as a member of the same community. Customized assistance for small and medium businesses and establishment of fair trade will form a culture of shared growth while the consideration of customers' opinions through various communication channels will surpass mere customer satisfaction by earning their loyalty.

Our Strategy

Coexisting Cooperation for Shared Growth : KR has reinforced communication channels with business partners and expanded customize assistance to the small and medium businesses is being implemented. Unfair practices are being rooted out, and systems for protecting the environment and offering equal opportunities are in operation.

Customer Satisfaction : The incorporated customer management system, "Sorisaem", will listen to the voices of customers and operate conflict resolution processes to prevent conflicts resulting during the course of business in advance and remedy the situation early.

Our Performance Progress

Core Indicators		Unit	2010	2011	2012
Business Partners	Satisfaction Rate of Business Partners	Points	86.95	89.76	93.27
	Purchase Rate of Goods Made by Small and Medium Businesses	%	31	28	25
	Number of Participations in the Joint Research and Development/Number of Participating Corporations	Cases/Number	1/3	2/6	6/7
Customers	Satisfaction Rate of Complaint Management	Points	69.5	72.5	74.6
	Public-service Customer Satisfaction Index (PCSI)	Points	93.21	95.43	93.98
	Satisfaction Rate of Information Disclose	Points	84.3	90.0	92.3

Q&A

Q. How is KR promoting shared growth?

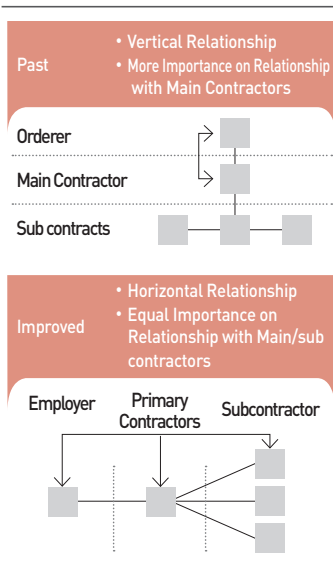
A. KR establishes shared growth promotional strategies based on mutual trust and coexistence. KR also extensively promotes customized assistance for small and medium businesses, building order of fair trade, and reinforced collaboration to nurture a culture of shared growth.

❖ Shared Growth Promotional Structure

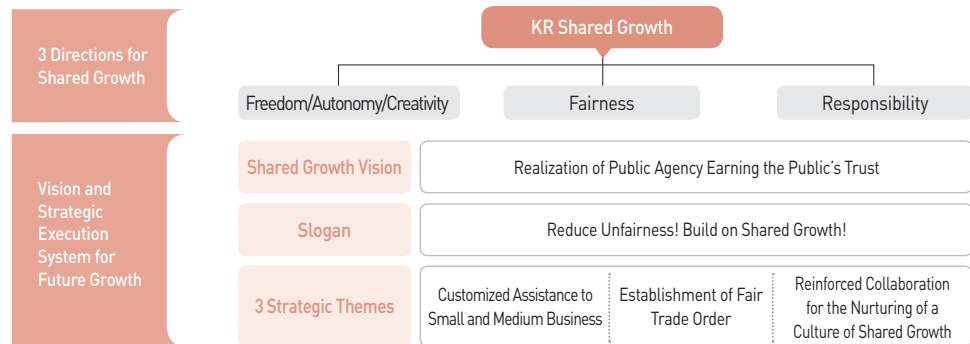
Shared Growth Promotional Strategies

KR is building a culture of shared growth by creating systematic shared growth promotional strategies. KR establishes a fair trade culture in the rail network industry, eliminating unfairness by providing customized assistance to small and medium businesses. KR is striving to promote harmony and boost shared growth to emerge as a public agency worthy of the public's trust.

<Eradication of Unfair Practices in Rail Network Industry>

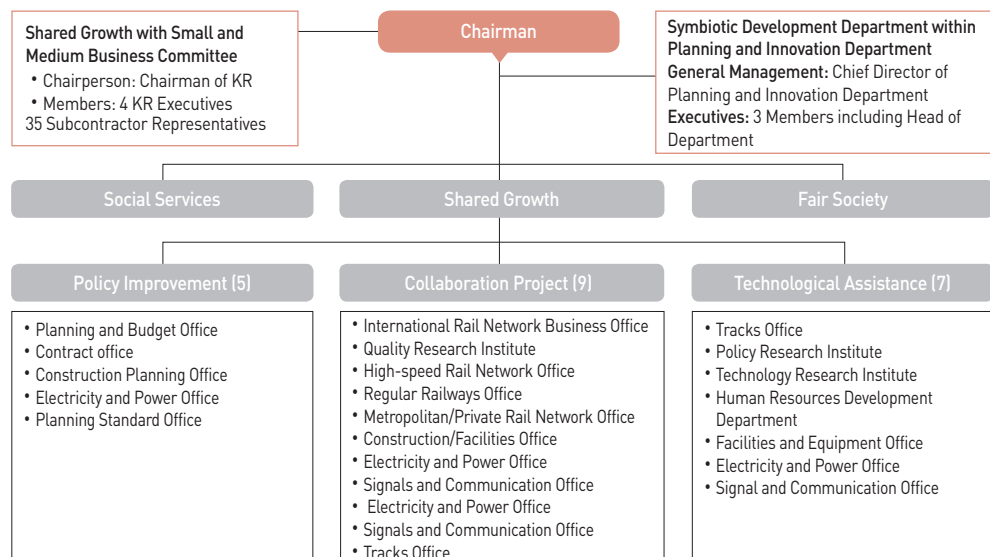


<Shared Growth Promotion System>



Structural System for the Advancement of Shared Growth

KR expanded and reformed the Shared Growth Promotion Team T/F that was in operation since 2009 into the Symbiotic Development Department in charge of shared growth as part of the Planning and Innovation Department in 2011 to establish a promotional base for systematic shared growth. KR also formed a 3 sub-department (shared growth, fair society, and social services) promotional system, assigning the management of indicators to the relevant department. The Symbiotic Department is in charge of general shared growth business.



<Shared Growth Committee>



<Shared Growth Conference>



<Shared Growth Rally>



Communication Channels with Business Partners

KR operates various online and offline channels such as the "Shared Growth with Small and Medium Business Committee" with the CEO sitting as the chairperson and business partner representatives joining as members, "Symbiotic Growth Conference" with 805 primary contractors, subcontractors, and material and equipment businesses, "Shared Growth Cyber Assistance Center", and "Shared Growth Rally". KR builds flexible communication systems with business partners to listen to the voices in the field based on the CEO's leadership and improve relevant policies so that they reflect business partners' complaints. The collection of small and medium corporations' complaints through KR's communication channels revealed the problems of oppressive relationships between the parties, unfair business practices, and delayed payments for construction costs. To resolve these matters, the parties covered by the free trade agreement were extended to secondary and third -level business partners. Penalty measures for unfair practices were also strengthened. Furthermore, the primary contractors' joint contracting system was expanded and implemented to provide more bidding opportunities for small and medium companies.

<Communication Channels with Business Partners>

Shared Growth with Small and Medium Business Committee	<ul style="list-style-type: none"> • Discussion of Promotional Directions of Shared Growth and Complaints, Semiannual Hosting (first and second half) • 5 KR Executives, Primary Contract and Subcontractors, Material and Equipment Businesses Consisting of 35 Business Partner Representatives
Symbiotic Growth Conference	<ul style="list-style-type: none"> • Establishment of Shared Growth and Voluntary Free Trade Order through Mutual Collaboration • Consisting of Small and Medium Corporation Council and 805 First, Second, and Third Level Business Partners
Shared Growth Cyber Assistance Center* (Online)	<ul style="list-style-type: none"> • Management counseling of small and medium companies and technological assistance, solving difficulties through collection and dealing of unlawful acts of subcontractors • Establishment of small and medium companies assistance centers in the Seoul headquarters and each regional headquarters
Sorisaem (VOC System)	<ul style="list-style-type: none"> • Gathering of Business Partners' VOC and Founding and Treatment of Improvement Tasks <div> <div>Gathering of Business Partners' VOC</div> <div>→</div> <div>Selection of Policy Improvement Tasks and Execution</div> <div>→</div> <div>Inspection and Review of Improvements</div> <div>→</div> <div>Answering Back through E-mail and SMS</div> </div>
CEO's Visit to Field (212 Cases in 2012)	<ul style="list-style-type: none"> • Visited 5 regional headquarters and construction sites, gathered opinions from business partners and construction workers <p>※ Visits to 212 construction sites in 2012</p>
Shared Growth Rally	<ul style="list-style-type: none"> • Sharing of results and exemplary cases • Rewards for outstanding cases

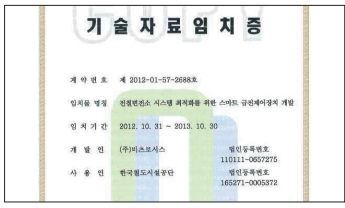
<Examples of System Improvement Using Communication Channels with Business Partners>

Complaints of Small and Medium Companies	Improvements
<ul style="list-style-type: none"> • Oppressive culture and unfair business practice • Unfair contract with subcontractors • Delayed payment of construction cost • Vertical relationship between primary contractor and subcontractors 	<ul style="list-style-type: none"> • Expansion of free trade agreement to secondary and third level business partners • Disclosure of unfair trade business, harsher penalty for overdue wages and late equipment payments • Monitoring of payment of price • Expansion of primary contractors joint contracting method (1 case in 2011 → 5 cases in 2012)

<Launching of Management Doctor Program>



<Technology Documents Deposit>



<Joint Private-Government Investment in Technology Development Agreement>



❖ Promotion Efforts for Shared Growth

Customized Assistance for Small and Medium Companies

KR carries out various customized assistance activities to bolster the competitiveness and viability of small and medium companies by giving them practical support. The company provides career development assistance such as the green rail network graduate school and management doctoring system. KR offers "capital fluidity assistance" by giving timely fund assistance through the expansion of the system for direct payment of a contract price to subcontractors. KR also runs technological assistance programs, such as those involving government-private joint investment in technology development, as well as the "joint launch into overseas market" with small and medium companies.

Capital Fluidity Assistance

KR has expanded the down payment system for contract prices to provide smooth capital assistance to small and medium companies. KR also operates a direct payment system for contract prices for which KR paid the subcontract price in case the primary contractor could not make a payment due to poor financial standing. A special assistance team for making payments in preparation of delayed payments during holidays also supports billing and financial work.

Capital Fluidity Assistance	Expansion of Down Payment System	Payment made within 5 days of request (2.1580 trillion won paid to in)	<p>8Cases → 18Cases</p> <p>2011 2012</p> <p><Direct Payment of Subcontract Price></p>
	Direct Payment of Subcontract Price	KR pays subcontract price when primary contractor delays due to poor financial standing	
	Special Assistance Team for Making Payments	Prevention of overdue payments during holidays and assisting billing and financial work	

Career Development Program for Business Partners

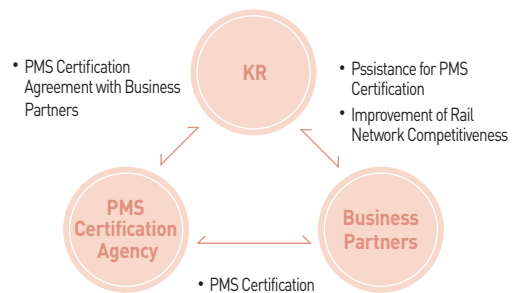
KR cannot grow without its business partners. KR established the green rail network graduate school, offering masters and doctorate programs to business partners. In addition, the symbiotic growth academy and educational programs on the practical business of quality, environment, safety and health management, and international rail network specialists are provided to nurture global rail network experts among business partners.

KR also runs the management doctoring program jointly with the Federation of Korean Industries to conduct a customized management review of business partners and resolve any inconveniences in providing support for business partners suffering from management crisis. Furthermore, KR paid a certification cost of 36 million won for business partners to establish the Product Management System (PMS) for small and medium companies to improve their quality competitiveness.

<Business Partners Educational Program>

Education Process	Results	
	Days	Hours
Shared Growth Academy	1	7
Quality Management	2	14
Environment Management	2	15
Safety and Health Management	2	15
Safety Control	22	22
Overseas Projects	1	4
Total	30	77

<Educational Assistance Program for Business Partners>



Technological Assistance to Business Partners

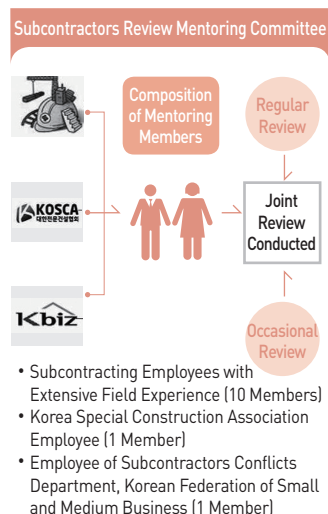
KR set aside the R&D Cooperation Fund in the amount of 2 billion won to push forward joint government-private investment in the development of technology such as high-speed insulation separation devices. The Technology Deposit System is implemented to protect the core technology of small and medium companies. KR also operates 15 construction sites technology assistance teams managed by five regional headquarters to deliver the new technology from conglomerates to small and medium companies, producing 97 cases of construction site technology assistance and safety examinations of major structures.

* Technology Deposit System: System depositing and protecting small and medium companies' technological information in the custody of a 3rd certification agency (Collaborative New Product Development)

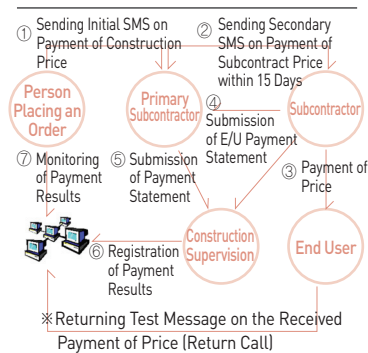
<Fair Trade Agreement Signing Ceremony>



<Subcontractors Review Mentoring Committee>



<Monitoring of Price Payment (Return-call)>

**Joint Technology Development and Expansion into the Overseas Market**

KR built an assistance system for small and medium companies by revising the research and development rules in March 2011 to provide assistance for such companies. The R&D fund was created (1 billion won invested by KR and the Small and Medium Business Administration) to promote joint private and government investment in technology development, such as the development of high-speed insulation separation devices. The collaboration with small and medium companies for the performance of joint R&D projects not only improved the quality of rail network construction but also increased the viability of those companies. 4 new joint research projects with 5 companies in the scale of 1.97 billion won were promoted in 2012.

KR formed a consortium of private business partners to successfully expand into the overseas market to boost global competitiveness, shared information on international contract obtainment, and build a human resources network to increase mutual collaborative works. KR built a consortium of 20 small and medium companies to win 5 contracts in countries such as Oman and Bangladesh in 2012. The company also created a database of international contact obtainment and state of affairs, as well as human resources of major international relevant agencies to maintain public relations with small and medium businesses for joint expansion into overseas markets.

<National R&D Tasks for Joint Research Development in 2012>

New Tasks of 2012

- Development of Standard for Track Irregularities for Feasible Maintenance and Repair of Regular Railways
- Structure-Earthworks Connector Rigidity Alleviation Measure
- Establishment of Disaster Prevention Standards for Great Train eXpress Underground Stations and Research of Measures and Eco-friendly, Collaborative Management Method
- Standard System and Functional Evaluation of Wireless Communication Based Rail Network Control System in City Rails

<Joint Private and Public Investment in Technology Development in 2012>

Categorization	Education Process
Tasks	<ul style="list-style-type: none"> • Development of field welding technology through localization of thermit welding material • Development of high-speed insulation separation device
Cooperation Fund	<ul style="list-style-type: none"> • KR's 96 million won assistance in 2012 out of 2 billion won for 3 years

<Status of Overseas Contract Obtainment with Small and Medium Business>

Projects of 2012

- Rail network modernization of Azerbaijan (330 billion won)
- Planning and construction supervision of Oman (10 billion won)
- 1st & 2nd Phases of New Line construction in Mongolia (5.2 trillion won)
- Construction and operation of Rio-Campinas Brail high-speed railway (22 trillion won)
- Consulting services and construction supervision of Bangladesh rail network signals improvement project (3.3 billion won)

Expansion of Shared Growth Culture

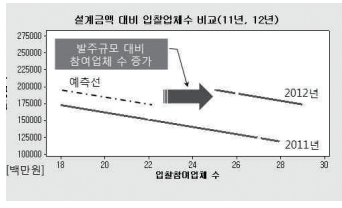
KR uses a system to eliminate unfair practices to realize a fair society and become a "public corporation earning the public's trust". KR promotes a company-wide fair trade drive to boost awareness for fairness. KR also signed the "Fair Trade Agreement" with 805 organizations including the Rail Network Relevant Agencies Association, primary contractors, and subcontractors to expand the voluntary fair trade movement and culture of shared growth. All of these groups agree to comply with desirable contracting guidelines and utilization of monitoring and prevention through KR's system for eliminating unfair trade, rooting out oppression, and promoting sincerity and trust.

Reinforced Supervision of Authorized Payments to Secondary and Third Level Business Partners

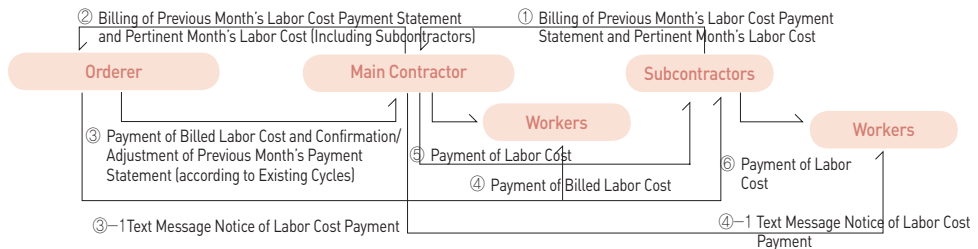
KR works with the Korea Specialty Construction Association and subcontractors to inspect overall on-site subcontractor trade, reinforce supervision of improvements, and price payments. KR also built a Return-Call system through which the end users send SMS messages to confirm received payment of contract price to prevent delayed wages and payments. Direct labor cost is separately managed from construction expenses to prevent undue wages being paid to construction workers.

All employees including those newly employed on the site and by labor contract since January 1, 2012 received a notice of wages payment to special labor cost accounts that were opened by the recipients (such as subcontractors) to monitor the monthly payments of wages.

<Increase of Bidding Companies>



<Separate Management of Labor Cost>



System Improvement for the Eradication of Unfair Trade Practice

KR strives to sign trustworthy agreements by securing fairness and transparency through a modernized contracting system. Practical relaxation of standards for accomplishment recognition, development of a minimum cost feasibility review program, system for the registration and automated deliberation of business partners, and online contract obtainment information sharing to resolve the unequal information opportunities will drive out unfair trade practices. These efforts will also lower the entry wall for small and medium businesses and enable KR to lead the way in forming objective and trustworthy contracts and transparent and fair contract agreements.

Relaxation of Standards for Accomplishment Recognition	Lowered Examination Standards for Equivalent Services Performance Level, Manager's Performance Level, Participating Specialists' Performance Level
KR's Damage Insurance* and Improvement	Construction Companies Private Contract & KR's Open Competitive Method [Securing Trade Transparency and Budget Saving] * First Operation among Public Corporations
Sharing Various Bidding Information	Free Sharing of Bidding Information Using KR's Webpage, E-Procurement Service, and Government's ALIO System
Minimum Cost Examination and Review Program	Boosting Satisfaction Rate among Business Partners through Securing Review Credibility and Simplified Review Process
Registration and Preliminary Review System for Business Partners	Prevent Unfair Practice of Business and Review Errors by Preventing Submission of False Documents and Screening

<Feasibility Review Program of Lowest Bidding Price>



Introduction of Shared Results System

KR is the first among public corporations to introduce a shared results system to establish the fair distribution of outcomes. KR became an example for other agencies to follow by being recognized as the "leading corporation in sharing results" by the Korean Collaborative Small and Medium Business Association. KR was chosen from out of 115 private and public corporations in May, 2012 because of the effectiveness of its practical operation and outcomes.

<Introduction of Shared Results System>

Introduction	Selected as Leading Corporation	Promotion of Shared Results Tasks	Significance and Outcome
<ul style="list-style-type: none"> Establishment of Operating Method of Shared Results System and Promotional Plans First Public Agency Introducing Shared Results System 	<ul style="list-style-type: none"> Selected as Leading Corporation out of 115 Private and Public Agencies (May, 2012) 	<ul style="list-style-type: none"> Tasks Registrations and Authorized Certification in the Shared Results General Management System of Korean Collaborative Small and Medium Business Association (6 Cases) 	<ul style="list-style-type: none"> Fair Distribution of Profits Saving Expenses through Development of New Technology and Localization Contributing to Pioneering into New Markets

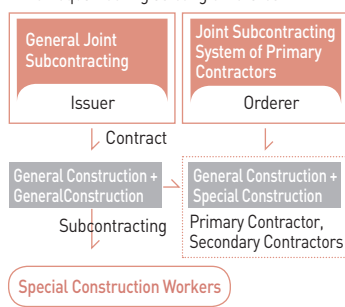
Prioritized Purchase of the Socially Disadvantage's Goods

KR initiates the purchase of the goods made by small and medium businesses, as well as businesses headed by or employing females or the disabled, to encourage their participation. KR also awards more points to local businesses that participate in the projects and increase subcontracting quantity to revitalize the local economy. The company offers equal opportunities, leading the nurturing of shared growth and the realization of a fair society that fully considers the socially disadvantaged.

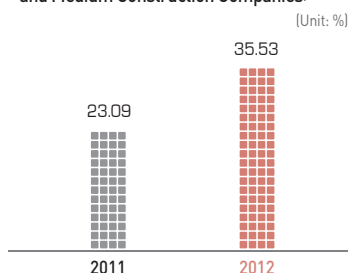
* Insurance offering security for damage to the facilities to be constructed on site and liability of compensation by a 3rd party.
Required for large corporations such as Turnkey with estimated assets of 20 billion won

<Joint Subcontracting System of Primary Contractors>

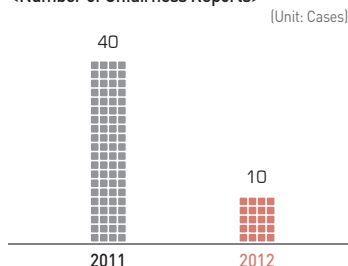
- Joint subcontracting system of primary contractors: 5 cases in '12 in the amount of 66.5 billion won
- Distribution of equal opportunities and increased participation in the rail network projects by small and medium businesses by reforming the system and inviting the small and medium businesses to participate on equal footing as conglomerates



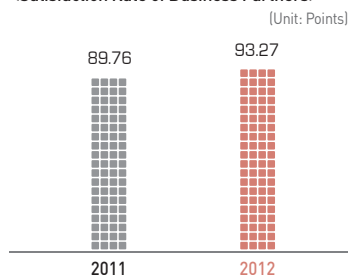
<Increased Share of Participation by Small and Medium Construction Companies>



<Number of Unfairness Reports>



<Satisfaction Rate of Business Partners>



<Purchase of the Socially Disadvantaged's Goods>

Category	Purchase Amount of 2011	Purchase Amount of 2012	Increase from the Previous Year
Small and Medium Business	1,111,843 million won	1,151,610 million won	3.6% ↑
Female Business	12,830 million won	26,275 million won	2times ↑
Disabled Business	100 million won	3,016 million won	30times ↑
Social Corporation	207 million won	400 million won	2times ↑

Active Participation by Small and Medium Businesses

KR newly established an incentive system for small and medium business participation by awarding additional points according to the participation in cases of bid consortium, encouraging involvement with services from small and medium businesses. The joint contracting system of primary contractors and separate placement of orders were expanded to contribute to the growth of small and medium construction companies, raising the share of participation from 23.09% in 2011 to 35.53% in 2012.

Incentives were also given to local businesses to level the differences between different regions, increasing the participation rate of local corporations to 96% and contributing to the vitalization of local economies.

<Increased Participation by Small and Medium Businesses>

Category	Major Content
Establishment of Incentives for Small and Medium Business' Participation	<ul style="list-style-type: none"> • Awarding additional points according to the share of participation in cases of bid consortium (maximum 4 points) • 10 Points Deducted in Cases of Exclusion of Small and Medium Business in Bid Consortium
Expansion of Joint Contracting System of Primary Contractors*	<ul style="list-style-type: none"> • 5 cases of participation by small and medium special construction companies (66.5 billion won) → 1 case in 2011(8 billion won), a 731% increase in the amount from the previous year
Separate Placement of Orders in Construction, Electricity, and Communication	<ul style="list-style-type: none"> • 376 cases of separate placements of orders for the growth of small and medium special construction companies

<Leveling of Regional Differences and Vitalization of Local Economies>

Category	Major Content
Points Deducted or Awarded to Local Business Extension of Application Period	<ul style="list-style-type: none"> • Points deducted or awarded through revision of PQ and eligibility review standards (April, 2012) - Maximum of 15% additional points awarded for participation, 10% deduction for non-participation - Extension of 3-year application period (throughout 2014)
Increased Subcontracting Quantity for Local Business	<ul style="list-style-type: none"> • (More than 30 billion won) prioritized assignment to local business of more than 50% of subcontracting quantity • (Below 30 billion won) review of subcontracting participation rate of local small and medium business during eligibility examination

Participation Rate of Local Construction Companies of 96.47% [82 Cases of Participation out of the Total of 85]

Promotion Result of Shared Growth and Fair Society

Reduced Number of Reports of Unfairness at Construction Sites and Improved Satisfaction Rate of Business Partners

KR steadily promoted the drive for shared growth with conglomerates, small and medium businesses, and realization of a fair society, reducing the number of reports of unfairness at construction sites from 40 cases in 2011 to 10 cases in 2012 while greatly raising the satisfaction rate of business partners from 89.76 points to 93.27. These efforts earned KR recognition from the Ministry of Knowledge Economy by being selected as an "excellent public agency for shared growth", receiving the honor for 2 consecutive years while also winning excellence awards in the fields of individuals and technological collaboration (area of source of demand) in the "Large, Small and Medium Business Technological Collaboration Grand Prize" in 2012 hosted by the Small and Medium Business Administration.

* Method of construction in which the issuer signs a contract through bid consortium between general construction business (primary party) and special construction workers (members) to resolve the problem of a pyramid subcontracting structure.

Q&A

Q. What is KR doing to improve customer service?

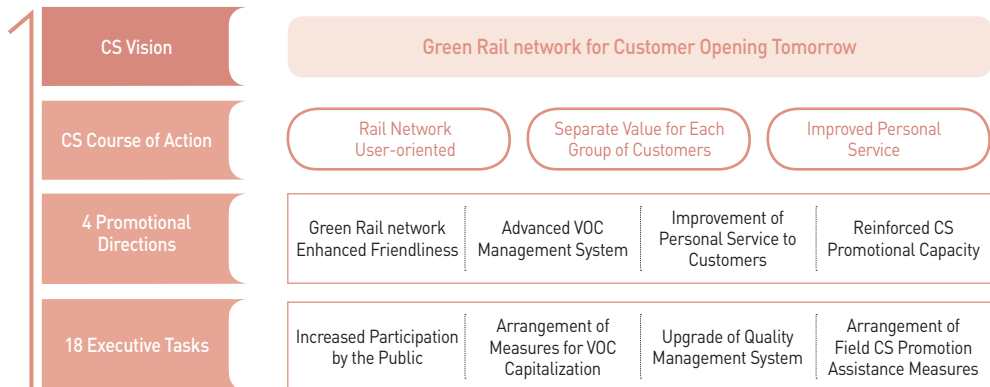
A. KR established the CS vision system for customer service and operates the CS structure at a company-wide scale. KR also fulfills an incorporated management and application of customers' concerns by using "Sorisaem", a uniform customer management system that is the first of its kind to be patented by a public corporation.

❖ CS Management System

CS Vision System

KR established 4 promotional directions and 18 executive tasks to realize its CS vision of becoming a 'green rail network for customers opening tomorrow'. In The CS course of direction was set for each stakeholder in consideration of the characteristics of the agency, and the best customer service is provided through optimal channels of communication.

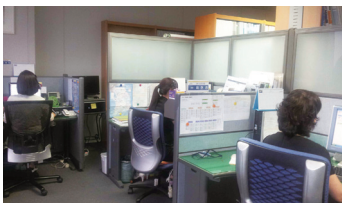
<CS Vision System>



<Integrity Customer Service Center>



<Call Centers>



CS Promotion Organization

KR operates an effective CS structural system to provide the highest quality of customer service. The Strategy/Management Review Deliberation Committee decides on the core CS strategies, and the Customer Service Department creates and operates the company-wide CS promotion plan. KR also employs CS Barista* in all departments under the CS promotional plan to carry out CS activities for each department while the Integrity Customer Service Center and call centers in the Seoul Metropolitan Headquarters and Regional Headquarters respond to the suggestions of customers in real-time.

Settling Efforts of CS Management

KR promotes voluntary CS management through CS baristas deployed in each department, and quarterly barista workshops are held to improve weak points and reinforce strong points. KR compares and reviews the CS activities of different departments to guarantee the transparency and objectivity of the review.

The Seoul Metropolitan Headquarters monitors each department's voluntary CS activities quarterly to analyze and examine weaknesses to provide customized mentoring and carry out improvement. KR uses internal CS instructors produced by the company to enhance the effect and receptivity of this education.

* CS Barista: KR's CS specialist and leader promoting customer service activities on a company scale

<Pop-ups on the Website>



<Main Page on the Mobile Civil Affairs Website>



<Sorisaem>



CS Activities for Customers

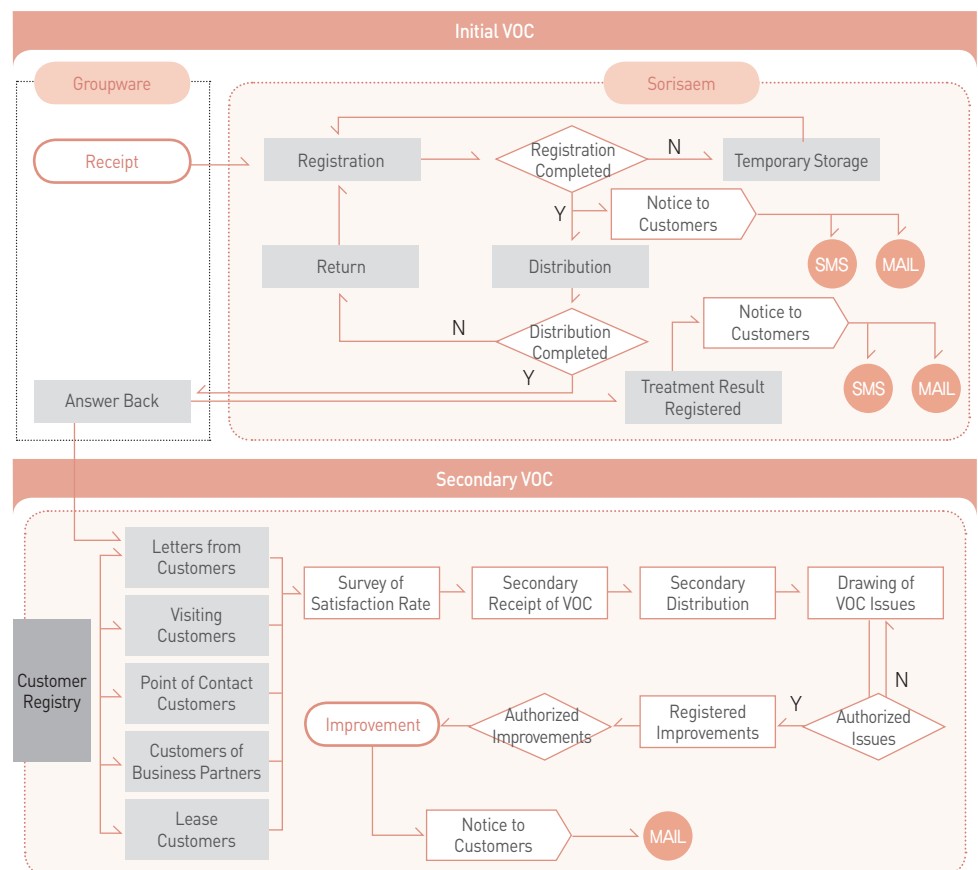
Operation of Characterized VOC Collection System

KR operates various VOC collection systems such as Sorisaem, a uniform management system of customer opinions, Customer Suggestion Center, an outlet for various suggestions, Civil Affairs Office, which collects stakeholder's complaints and improvement suggestions, and offline communication channels of face-to-face communication to understand and interact with customers. KR then uses this data to conduct specialized research for each group of customers.

Establishment of VOC Response System

KR provides more public transportation through timely completion of rail network construction projects and manages customer VOC in a systematic manner to reduce public inconvenience. KR resolved major issues reported through VOC by using 6 Sigma Innovative Tasks in a timely manner, removing the root cause of civil complaints.

<VOC Treatment Process using Sorisaem>



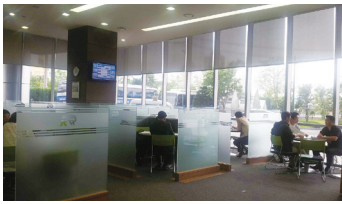
Supply of Digital Civil Affairs Service

KR developed and operated a civil affairs system (KR mobile civil affairs system, minwon.kr.or.kr) based on the mobile web, providing a way for customers to make complaints. This system also enables customers to view and follow the progress of the resolution of their complaints anywhere and anytime by using smartphones or tablet PCs. KR also expanded the implementation of visit-free performance certificates by issuing approximately 9 thousand certifications within a day (8 hours) with its digital civil affairs service on an annual basis. The time necessary for resolving civil affairs was reduced, and all the requests received were fully resolved within the required period, achieving a zero rate of delay in resolving civil affairs.

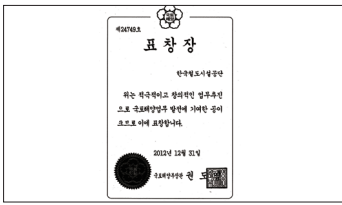
<Outside of Integrity Customer Service Center>



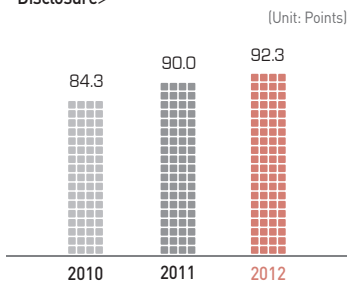
<Inside of Integrity Customer Service Center>



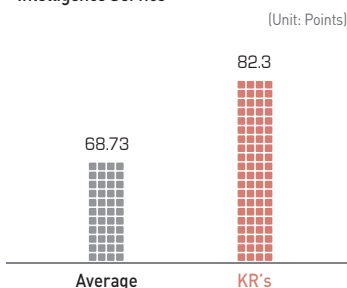
<Selected as the Excellent Agency in Information Disclosure by the Ministry of Land, Infrastructure and Transport in 2012>



<Increased Satisfaction Rate in Information Disclosure>



<Information Security Review by the National Intelligence Service>



Customer-friendly Amenities and Service

KR implemented various amenities and goods such as office devices in the Integrity Customer Service Center for the convenience of visiting customers and provides customer-friendly service by opening the conference room for customer use. All visiting customers were served within 5 minutes to reduce waiting time and increase customer satisfaction.

Active Customer Suggestions

KR collects the customers' ideas in real-time through Customer Suggestion Center on its webpage and aggressively reflects them in management. KR is promptly updating customers with results through emails and SMS after internal reviews of related departments. Customers are also rewarded for outstanding ideas that are applied to the policies, and KR thus gains more voluntary participation from them.

Promotion Result of CS Management

Highest Rating for 3 Consecutive Years in the Customer Satisfaction Survey Conducted by the Government

KR enacted tremendous efforts to go beyond customer satisfaction to earn their true loyalty in 2012. The CEO visited 212 sites to directly interact with customers through various online and offline channels. The customers' opinions were then applied to numerous system improvements and customer assistance programs, resulting in achieving the highest level of customer satisfaction for 3 consecutive years in a survey hosted by the government. KR also earned a higher satisfaction rate compared to the previous year in a separate survey conducted through Sorisaem, earning recognition internally and internationally for its accomplishment in CS management. KR will strive to realize CS management of the highest level among public agencies.

<Major Customer Satisfaction Survey Results>

Items	2011	2012	Compared to Previous Year
Satisfaction Rate of Visiting Customers	93.72	95.87	+2.15
Satisfaction Rate of Customers Corresponding through Letters	87.87	97.46	+9.59
Satisfaction Rate of Business Partners	89.76	93.27	+3.51
Level of Hospitality in Customer Service Via Phone	86.12	86.71	+0.59
Satisfaction Rate in Civil Affairs Treatment	72.50	74.60	+2.10

Transparent Disclosure of Information

The Selection of "Outstanding Agency in Information Disclosure" by the Ministry of Land, Infrastructure and Transport in 2012

KR disclosed management information through a variety of channels such as the webpage, electronic announcements, and SNS under the domestic laws for the management of public agencies on information disclosure. Notably, KR satisfied the customer's right to know by voluntarily disclosing information in advance and providing full disclosure of production documents. The items disclosed involve major projects, bidding information, rail network statistics, contract information, investment status, business status, etc. These efforts earned recognition from the Ministry of Land, Infrastructure and Transport as KR was selected as an "Outstanding Agency in Information Disclosure" in 2012. KR was also selected as an "Outstanding agency in Web Accessibility" in 2012 by the Ministry of Security and Public Administration.

Protection of Customer Information

KR's Information Security Awarded the Level of "Satisfactory" by National Intelligence Service in 2012

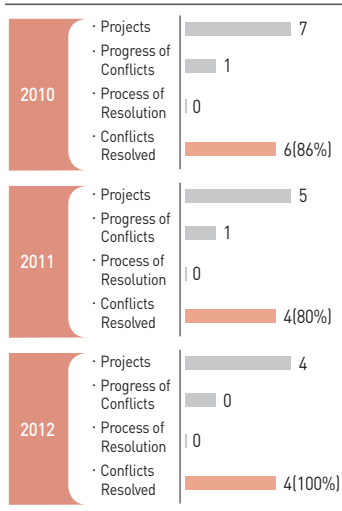
KR abides by the information protection rules of personal information and pays careful attention in this matter. KR established internal rules such as the business guidelines on personal information protection and business guidelines of information security. The company also operates 3 kinds of cyber security systems including a system for the prevention of personal information leakage, system for blocking DDoS attacks and harmful traffic, and a network security system. All employees are required to conduct periodic security checkups and simulation training to reduce security accidents in advance. As a result of these efforts, KR was selected as an "Agency at the Satisfactory Level" in the information security review by the National Intelligence Service in 2012.

'Conflict Impact Analysis' Projects

1. History of higher frequency of conflicts
2. Intensity of conflicts is significant enough to cause a greater and longer impact
3. Risk of excessive social cost is likely due to conflict
4. Line passes near excellent ecosystem area or through downtown
5. Construction of vehicle bases

<Current Status of Conflict Resolution>

(Unit : Cases)



<Process of Conflict Resolution>

Local Government's Demand for Station over Tracks or Underpass (Excessive Scale)

Intensive persuasion of excessiveness, comparing the case to other metropolitan cities such as Daejeon Station

Negotiation with relevant agencies, compromise, and persuasion
 → Promotion of construction on optimal level
 (savings of 18.9 billion won)

<Negotiation with Heads of Local Governments>

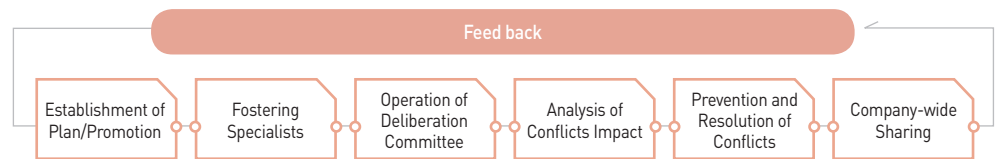


❖ Conflict Resolution through Reinforced Communication

Conflict Resolution Process

KR operates the "Conflict Resolution Process", focusing on interaction with the public for the resolution of social conflicts occurring in the process of rail network construction to prevent the conflicts in advance or resolve them as early as possible. KR put together and operated the Conflict Management Deliberation Committee and Conflict Management Team under the "Guidelines on Prevention of Rail Network Conflicts and its Resolution" and formed a conflict mediation conference for each case to minimize the social cost of conflicts. KR conducts "Conflict Impact Analysis"* when excessive social cost is likely to result from extensive impact on public life and conflict of interests before making a decision on the jurisdiction of a project. KR also fosters conflict management specialists by operating the "public conflict management program" to provide customized education that is specialized in the rail network field.

<Operation Flow of Conflict Management Process>



* Source: 'Guidelines on Prevention of Rail Network Conflicts and its Resolution'

Major Outcome of Conflict Resolution of 2012

KR experienced a total of 4 cases of conflicts concerning rail network construction in 2012. The conflicts involved excessive demand on the scale of stations, demand of mass immigration due to rail network construction, demand of excessive compensation, and demand for stopping construction due to noise. The management engaged in direct persuasion of the involved parties for the resolution of 4 cases of conflicts, and resolution of conflicts were achieved through the activities of the Conflict Management Deliberation Committee and Conflict Management Human Resources. As a result, the successful resolution of "Group Civil Complaints on the Construction of Jeongeup Station" in Honam High-speed Railway won awards from the Prime Minister (Anti-corruption and Civil Rights Commission) in the area of civil affairs.

<Best Practice of Conflict Resolution>

Conflict Resolution Process of Jeongeup Station in Honam High-speed Railway

KR applied the opinions of local residents in the planning of Jeongeup Station of Honam High-speed Railway, which is scheduled to be opened in 2014, and designed the station to be larger in scale than the practical number of users. After an inside review, the planning was deemed excessive and the planning scale of Jeongeup Station was reduced. As a result, local governments and civil organizations formed an alliance to object the reduced scale of the station, delaying the commencement of the KTX Jeongeup Station construction by more than 6 months. This led to worries of national financial loss. The interaction and settlement efforts between the stakeholders, however, led to a consensus between the residents and local governments. This agreement resulted in a reasonable alternative for the shared growth of the country and the region. The timely opening of Honam High-speed Railway was made more feasible in this way and boosted credibility in national policies.

<Arial View of Jeongeup Station with Excessive Planning>



- Construction of backside plaza and connecting passageways to undeveloped areas
- Excessive scale of Jeongeup Station (disproportionate to amount of users) → Wasted budget

<Arial View After Modification>

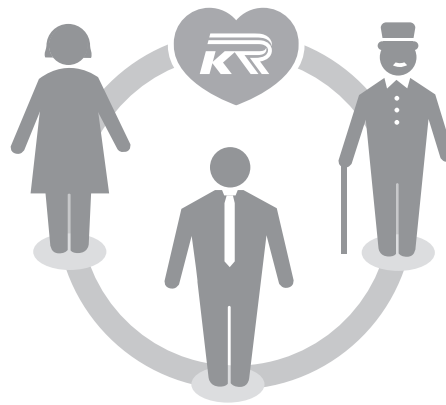


- Conditional construction of backside plaza and passageways (constructed in case of the development of the western downtown area)
- Reduced scale of station

* Foreseeing and analyzing conflict factors that impact society in promotion of projects under the laws and drawing measures for the expected cases of conflicts



Sharing Rail Network



- Employees
- Local community

KR connects hearts to one another.

Our approach

To fulfill our social responsibility by reducing unemployment among young adults and expanding hiring of excellent personnel, KR practices open employment by alleviating the employment barrier and eliminating discrimination. We strive to improve the lives of our employees through mutual communication and promote sharing for a better world through social contributing activities that are based on our rail engineering capability.

Our strategy

Employees : We established the talent training promotion system to secure global level railroad technology capability by introducing our effective personnel management and talent training system. We operate various communication channels to establish advanced industrial relations that are reasonable and promote stable work environments by invigorating family-friendly programs aimed at balancing work and family.

Local Community: We have established a social contribution activities strategy system based on 6 major strategies under our mission of "Realizing a Brighter World Connected with Railway." We encourage employee participation through social contribution activities and aid in invigorating the economy for the working class by contributing to price stabilization and job creation as we revitalize the railroad industry.

Our Performance Progress

	Key Indicators	Unit	2010	2011	2012
Employees	Rate of securing major talent	%	30.77	31.51	33.38
	Time of training per employee	Hour	135	119	126
	Employee satisfaction	%	74.75	73.70	76.40
	Return rate after parental leave	%	92.86	92.31	95.24
Local Community	Community service hours per employee	Hour	10.7	9.8	11.4

Q&A

Q. What is KR doing to create an organization culture that is people-oriented?

A. KR practices open employment by easing the employment barrier and eliminating discrimination. KR also considers underrepresented groups by applying a fair employment target system during recruitment.

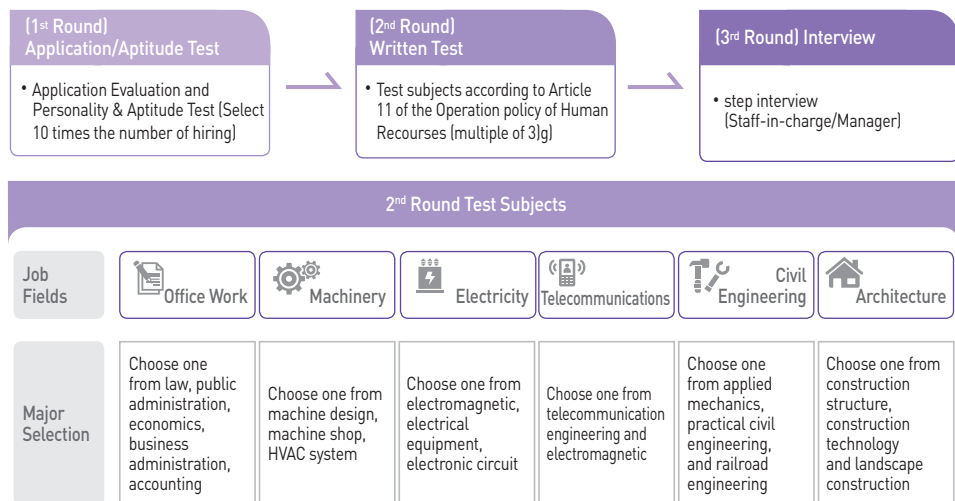
❖ Recruitment and Training

Organizational system and Human Resources Policy

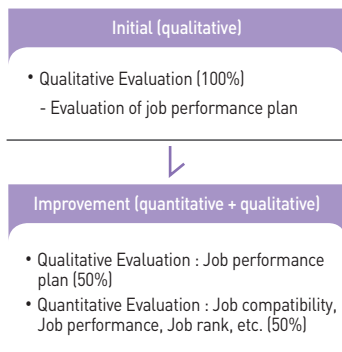
KR has established standard departmental quota and has implemented efficient quota management by introducing and operating the flexible quota system, which distributes the labor force in consideration of the core departmental strategy direction. KR has a total of 1,347 working employees as of December 31, 2012, which is a decrease of 49 employees compared to previous year. We anticipate the operation of an efficient and a rational organization by quickly predicting the labor demands of core departments and establishing a mid-term labor force management plan.

KR has established a fair and advanced hiring standard and procedure by eliminating irrational elements in each step of employment screening to fulfill its social responsibility, reduce unemployment among young adults, and expand the recruitment of excellent personnel. We have secured new hiring positions by alleviating the surplus of current employees through the implementation of systems aimed at improving management efficiency, such as our salary peak system and maximum salary cap. We also practice open employment to fulfill our increased quota due to the expansion of overseas contracts and railroad industry environmental changes.

<New Recruitment Procedure>



<Fair Personnel Management>



Fair Personnel Management

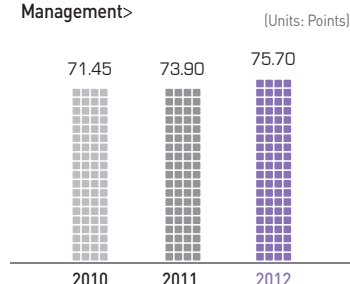
KR does its best to realize fair personnel management based on ability and productivity. First, to eliminate unfair elements reported through VOC, the internal and external customer management system (SORISAEM) will be used to analyze problems, carry out improvements, and enforce transparent and rational personnel management.

To operate personnel management based on ability and productivity, the executive job posting system has been improved by increasing the weight of quantitative elements in the executive job posting evaluation standard. The job compatibility section was added to the quantitative evaluation to reflect the individual characteristics and personality types needed by the organization, thus facilitating appropriate personnel allocation.

<Participated in Public Company Recruit Fair>

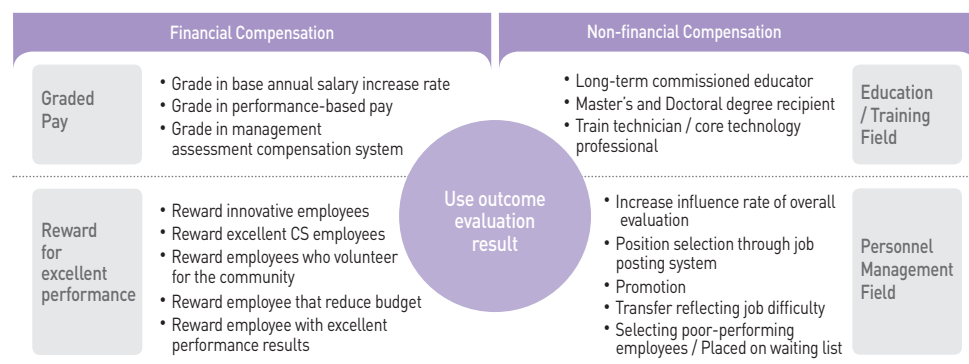
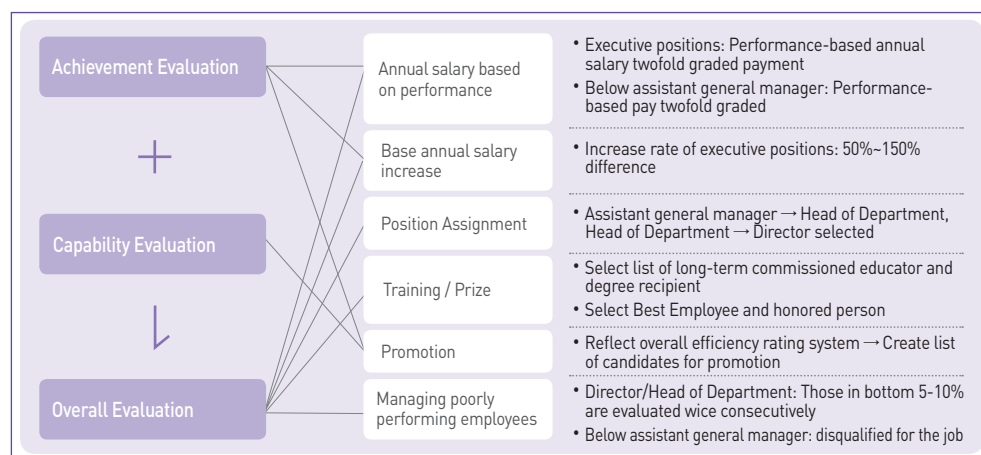


<Satisfaction Rate of Accomplishments Management>

**Rational Performance Compensation**

KR clearly designates assignments as department goals and individual goals (MBO) to achieve strategic management. We established and operate a virtuous cycle of strategy, innovation, evaluation, and compensation to evaluate and compensate employees. To realize a fair compensation culture based on outcomes, graded compensation is implemented by using organization, personnel, and outcome evaluation results to realize a results-based incentive system. Comprehensive compensation, including both financial compensation and non-financial compensation such as training and promotion, is implemented upon considering evaluations of results and capability. These efforts ensure that this is a continuous compensation system instead of just a temporary one.

<Compensation System>



<Open Recruit>

**Open Recruitment**

KR has been expanding socially representative recruitment by implementing open hiring to fulfill its social responsibility. To expand the hiring of high school graduates, regulations eliminating discrimination are established to give equal opportunities for promotion. To reduce unemployment among young adults, KR has expanded hiring of young adult interns and has exceeded the government quota (4% of total employees, 58 persons) by hiring 79 employees.

KR is also doing its best to practice open employment by applying its own socially representative recruitment target (that exceeds the governmental standard). Wages, which are 260% of the minimum wage, are paid equally to both hired men and women; sexual discrimination is prevented through sexual harassment training provided to all employees.

<Socially Representative Recruitment Record>

Categories	Recruitment goal	Recruitment record	Achievement Status
Veterans	6% of quota (85 people)	89 hired (6.2%)	4 people over
Handicapped	3% of quota (41 people)	47 hired (3.36%)	6 people over
High school graduates	20% of new recruitment (3 people)	2 (13%)	1 person under
Females	20% of new recruitment (3 people)	6 (40%)	3 people over
Applicants from small cities	20% of new recruitment (3 people)	9 (60%)	6 people over

* Although the recruitment goal of high school graduate was 4, only 2 were hired because they fell short of the minimum requirement.

<CDP System>



<Recruitment record and workforce situation of past 3 years>

Classifications		2010	2011	2012
Quota (persons)		1,347	1,352	1,363
Current number of employees (persons)		1,440	1,396	1,347
Retirement (persons)		1	5	2
Voluntary Resignation, etc. (persons)		36	39	63
Full-time Newly Hired	Woman	9	-	6
	Disabled	-	-	-
	Personnel from small city	15	-	9
	High school graduate	-	-	2
	Vocational school graduate	-	-	-
	Engineering graduate	26	-	8
	Total	36	-	15
Temporary Position Recruitment scale (persons)	Young adult intern	70	90	79
	Seasonal	-	-	-
	Contract	7	3	5
Total From Current Employees (%)	Number of women (rate)	135 (8.88)	150 (10.17)	154 (11.01)
	Women in higher position than Team Leader (rate)	-	-	-
	Handicapped rate	3.15	3.24	3.36

Efforts to Develop Personnel Capability

Human Resources Development Strategy

To secure railroad technological capability that meets the global standard, which is the business strategy task for year 2020, KR has established its vision of human resources development and top 3 ideal types of candidates. The company has also planned 9 strategic tasks that include 4 strategic directions, enforcement of professional capability, and management of systematic training outcome.

The capacity of members has been continuously improving through management of the training system, which reflects the educational needs and ability of employees, and support via a virtuous cycle of capability development involving plan-action-analysis of result-feedback.

KR is establishing a solid position as a specialized agency, which nurtures railroad human resources, by operating a consumer-oriented human resources policy and Human Resources Development Strategy, reflecting the feedback of employees via continued training and post-training satisfaction evaluations.

Efficient Human Resource Administration and Human Resource Development

Systematic career development is supported by rational career development course proposals using the e-HRD system. Through KR's CDP system, each member is encouraged to set up job-oriented career goals after completing the capability assessment for self-development plan, and career development is executed with coaching by supervisors. Upon the capability assessment for the desired job, the employee's weak points are improved through training.

Feedback for setting the next career goal, is encouraged to strengthen the link with personnel and continue support for development, and it is also considered in personnel transfer.

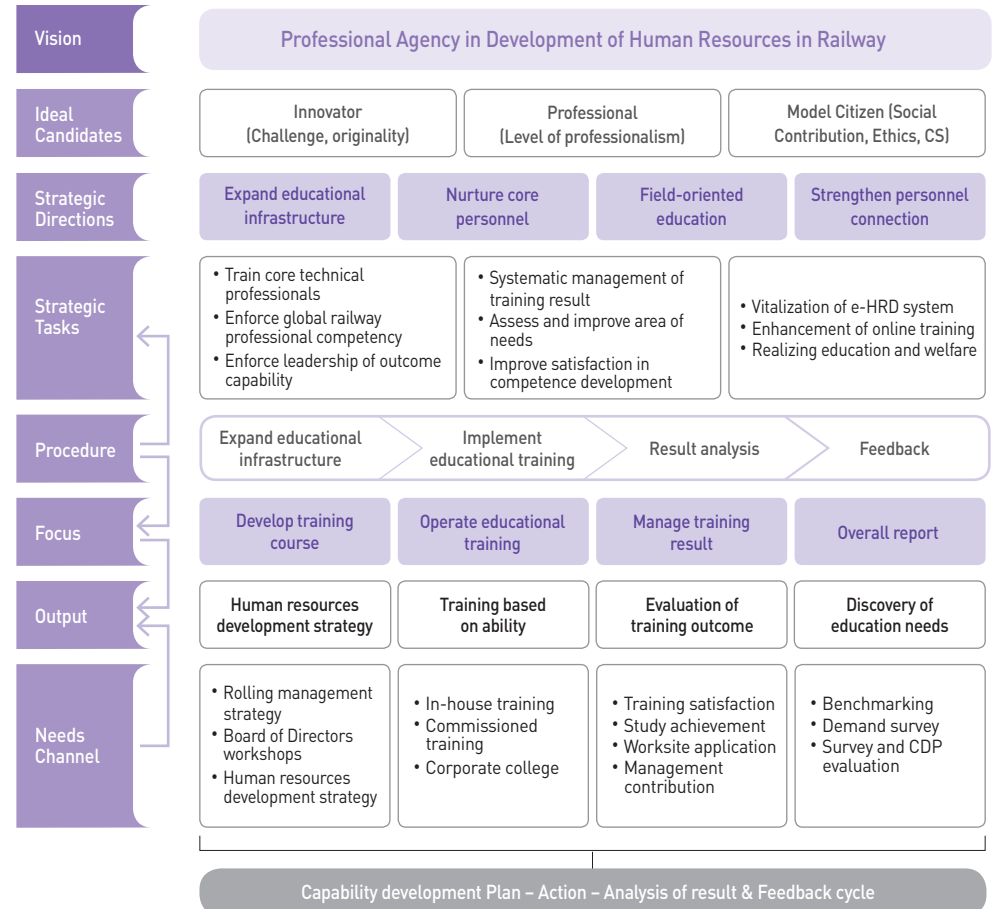
<Establishing Capability Development Plan>

The screenshot displays the 'Establishing Capability Development Plan' interface. It features a table with columns for 'Category', 'Item', 'Value', and 'Unit'. The table lists various metrics related to employee development, such as 'Training hours', 'Training cost', and 'Training satisfaction'. Below the table, there is a section titled 'Establishing Capability Development Plan' with a circular graphic and text about career development. The background features a city skyline.

<MOU Signing Ceremony>



<Human Resources Development Strategy>



<Average Annual Training Hours per Employee>



Operating Various Educational Programs

KR defined the ideal types of candidates—innovator, professional, and model citizen—and operates various educational programs to satisfy the needs of individuals and the organization.

The global training of talented individuals is carried out to secure railway technical skills. The "Green Railway Graduate School" has been established through an industrial-educational agreement between the industrial complex and Woosong University and offers master's degrees in railway engineering (2012, 15 people from company, 10 people from affiliated companies). Commissioned education and technician training courses within the company have produced 74 trainees and 96 trainees from 13 commissioned degree training and technician training courses within the country. To ensure that the training continues to be applied on the job, on-site and actual job-based customized education through professional courses, including finances, facility management, land compensation, collective management of quality, safety, construction, and environment, and management of business processes, such as planning and inspecting, are operated.

There are educational programs for directors and those in higher positions to reinforce their capabilities. Programs to foster leadership competence have been expanded offline to include management of executives' outcome, special anti-corruption training, commissioned college, and research courses (2 in 2011 → 5 in 2012).

Q&A

Q. What is KR doing to prevent conflict between labor and management and promote coexistence?

A. For coexistence based on trust, KR expanded the labor-management communication channel by sharing pending conflicts between the management and labor with all employees.

<Efforts to Advance Labor-Management Relationship>



1. Labor-Management Committee



2. Labor-Management Planning Session



3. Meeting to discuss pending issues

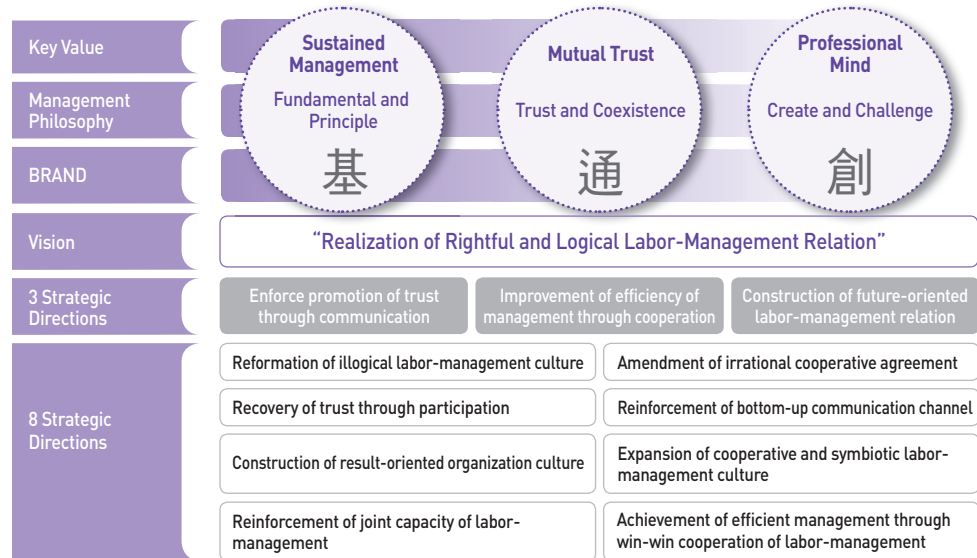
<3rd Negotiation Regarding Performance Pay>



❖ Open Labor-Management Culture

KR built its strategy system and vision to further improve the labor-management relationship, reflecting the analysis and assessment of the quickly changing internal and external labor environment and the employees' determination to unite. Furthermore, KR defined specific tasks by combining business strategies and key values in order to secure management capability.

<Business Strategy for Advancement of Industrial Relations>



Construction of Rational Labor-Management Relations

KR has planned and executed various measures to improve the system to maintain a rational and appropriate labor-management relationship based on the law and ethical principles. The integrity of union activities has been enhanced by establishing control standards for exemption of worker's hours. Overtime and stipend for unused annual leave, which were unfairly incorporated into base pay, have been excluded from the base pay and paid according to individual work performance. The automatic promotion system based on the number of years worked regardless of performance or capability has changed to promote only 60% of the promotion candidates through review by personnel committee to realize a performance and capability-oriented group organization culture.

Win-win Communication

KR strengthened formal and informal communication channels to help create consensus among members and to expand the sharing of information and opinions through honest communication channels. In addition to sharing expert knowledge through the operation of departmental Community of Practice (CoP) and sharing management information through online communication channels, offline communication channels, such as regular meetings between labor-management representatives, are held to share current labor issues. An improved user-friendly system promotes the organization culture by resolving issues quickly, and field-centered outreach consultation realizes an open organization culture, thus fostering unity through mutual understanding. KR also operates various channels to quickly resolve complaints within a proper timeframe to ensure the competitiveness of the organization. Accessibility and utilization of the grievance system have improved due to the upgraded and user-friendly system. Personal issues have been resolved and work was improved due to the operation of free legal services through advisory lawyers.

<Scoop-Rice Event>



<Arbor Day Event>



<Union Admission Rate>

Classifications	2010	2011	2012
Union Admission Rate (%)	93.3	93.1	92.1
Union members joined (persons)	1,206	1,130	1,058
Membership candidates (persons)	1,292	1,214	1,149

* Main reason for decrease in membership rate is the increase in retirement

Official Channels

Classification	Contents	2011	2012	Note
Online	Hotline consultation with CEO	10 times	12 times	• Directly consult about personal grievances and ideas to improve work through company's intranet
	CEO e-mail operation	4 times	12 times	• Suggest current management issues and solution plan
	Grievance operation	31 times	119 times	• Assign to place of relation, improve work environment, and resolve grievance • Concurrently improve accessibility of system and in-person consultation by visiting the site
Offline	Host all employee workshop under chairmanship of CEO	5 times	5 times	• Workshop for board of directors (bi-annual), • Management meeting (monthly) • Management strategy meeting (weekly) • Council of Policy (as needed)
	Labor-Management Committee	3 times	3 times	• Resolved 13 out of 17 cases, 2 cases pending, 2 cases others
	Mentoring Programs	-	1 times	• Induce improvement of adaptability to organization and work (15 people, operate for 5 months)

Unofficial Channels

Classifications	2011	2012	Note
KR Young Executive Meeting	-	3 times	• Workers (13 people), Composed headquarters unit (49 people) • Established 13 years transcriptional direction and activity plan per department
Productive conversation with CEO	-	50 times (350 people)	• Listen to voices on site and immediately reflect their input
Labor-Management athletic event and volunteer event	12 times	16 times	• New employee food share volunteer activity • Planting tree of hope at Arbor day event
Affiliation labor-Management meeting	151 times	207 times	• Gathering of onsite opinions organized by departmental executive directors

Enrichment of Capability to Further Improve Labor-Management Relationship

KR operates various training programs, such as mid/long-term labor training, cyber training, and labor-management capability enrichment programs, to nurture service professionals. Internally, consensus on labor-management issues is formed through operation of a regional education tour on labor-management issues, workshops to strengthen negotiating ability, and other customized training tours. Externally, a balanced view of labor and management is formed through diverse commissioned educational programs, such as participating in labor-management cooperation processes and labor-management relations outlook seminars through the labor-management advancement foundation. KR also enforced professionalism by hiring labor experts and placed executives in charge. By constructing a systematic cooperation system with internal and external experts, KR is doing its best to promote stability in labor-management relations.

<Educational activities related to labor-management relationship>

Classification	Educational Training	Training Contents	Note
External	Cyber Labor Training	• Change of understanding of labor-management relationship	• 50 completed • Organized by Employment & Labor Training Institute
	Labor-Management Win-win Cooperation Introduction/Intensive courses	• Promoting understanding of advanced labor-management relations • Collective bargaining training	• 5 executive members of union out of 13 completed (annual, 6 total) • Organized by Labor-Management advancement foundation
	Workshops for Labor-Management Personnel of Public Institutions in Daejeon area	• Enforcement of cooperation between interagency through sharing of labor-management relations issues and outlook (Mar. 2012) • Workshop for labor-management personnel in public institutions in Daejeon (Nov. 2012)	• Over 30 people participated including from Ministry of Land, KOWACO, KORAIL, Korea Mint Corporation, etc.
Internal	Regional educational tour on labor-management issues	• Formation of consensus among all employees through explanation of labor-management issues	• Oct. 2012 (203 employees)
	Workshop to strengthen negotiating ability	• Strengthening of effective collective bargaining countermeasures and strategic response	• June 2012 (20 employees)
	Educational tour on pension plan	• Customized retirement plan consulting and cultivation of financial capability for stable life after retirement	• Aug. - Dec. 2012 (100 employees) • Head office and regional headquarters applicants

Q&A

Q. What is KR doing to improve the employees' quality of life?

A. KR is doing its best to create a harmonious organization and stable work environment by operating family-friendly programs aimed at balancing work and family life for employees.

❖ Harmonized Culture of Work and Life

<Flexible Work System>

Part-time System

15 ~ 35 hours per week
(Over 1 month)

Flexible Work Hour System

2 forms of work hours
(Daily 08:00~17:00, 10:00~19:00)

Working Hour Selection System

Intended for those with burden of childcare and housework who needs independent performance of duties

Development of culture to improve quality of life

KR does its best to provide a stable work environment and harmonious organization by operating various family-friendly programs to balance work and family. To improve the quality of life of our employees, KR operates family-friendly programs such as Family Day, an optional welfare system, and take-your-child-to-work events. The system improvement plan has been prepared and is operated to help realize a flexible workplace, as well as boost the productivity and morale of employees by diversifying the current unified work patterns and promoting job satisfaction through satisfying and healthy balance between work and family. KR also does its best to provide a stable work environment for employees by eliminating irrational factors and unfair disadvantages in human resources and inducing smooth reinstatement to work after childcare leave.

<Reinstatement and Maintenance Rate after Childcare Leave According to Type>

Classification	2010	2011	2012
Employee on maternity leave	19 people	8 people	12 people
Rate of return after maternity leave	100%	100%	100%
Employee on nursing leave	14 people	13 people	21 people
Person (s) returned after nursing leave	13 people (1 retired)	12 people (1 retired)	20 people (1 retired)
Rate of return after nursing leave	92.86%	92.31%	95.24%
Rate of partner maternity leave use	100%	100%	100%
Users of partner maternity leave	33	30	38

Welfare Programs

Continued education and job training to support retiring employees

To ensure stable and secure lives for prospective retirees after retirement, various continuing educational programs, such as outplacement support program, real estate transaction practice, presentation, and programming, have been established and are now in operation.

Expansion of pension plan

KR recommends employees to join the pension plan to improve their finance management and secure a retirement income. KR expanded the guarantee of selection by diversifying the existing pension plan, which paid according to the average of number of years worked, to include the defined benefit (DB) plan managed by the company and defined contribution (DC), which is managed by individual. As a result, the current actual membership rate of pension is 85.03% as of Dec. 31, 2012.

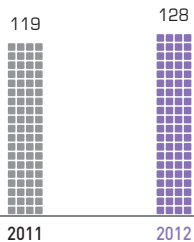
<Pension Plan Enrollment Status>

Retirement Pension			Non-members	Total	Note
Total	Defined benefit retirement pension (DB)	Defined contribution retirement pension (DC)	Current Pension		
971	520 people	451 people	171 people	1,142 people	Ratio of membership: 85.03%

* Contract workers excluded from total number of employees * Public employee annuity members are excluded from membership rate calculation

<Flexible Work System Membership>

(Unit: Persons)



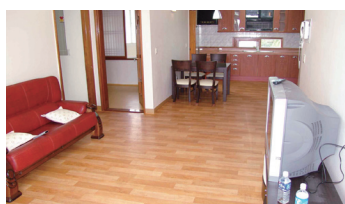
<Cultural event for families of employees>



<Physical training room>



<Vacation home in Mang Sang>



<Hazard rate of all construction sites>

Classification	2012
Number of Injuries	29 Persons
Number of full time employees	35,476 Persons
Hazard Rate (%)	0.082%

<Employee safety accident occurrences according to year and type>

Year	Number of People	Type	Note
2008	3	Industrial accident	
2009	2	Industrial accident	
2010	N/A		
2011	N/A		
2012	1	Industrial accident	
Total	6		Industrial accident approval status of Korea Labor Welfare Corporation

Programs Supporting Employees, Family, and Local Residents

KR operates various compatible culture programs so that employees can unite with not only their families but also the residents of the local communities. KR does its best to practice family-friendly management and share with the community by participating in cultural experience events, family vacations for excellent employees, and local community events.

Classification	Program Content
Life	<ul style="list-style-type: none"> Operate flexible work system to balance work and family <ul style="list-style-type: none"> - Part-time, Flexible system, Work Hour Selection Continued operation of optional welfare system from 2006 <ul style="list-style-type: none"> - Self-improvement, family-friendly, cultural activities
Nurture	<ul style="list-style-type: none"> KR operated daycare and daycare fee support <ul style="list-style-type: none"> - Family leave (5 days) granted to husbands at time of childbirth - Encouragement for using childcare leave (below 6 years old, maximum of 3 years)
Family	<ul style="list-style-type: none"> Operate 'Family Day' every Wednesday and enforce leaving work on time Cultural experience event for family of employees: 2 times, 77 people participated Special themed social contribution activities with families: Manage gardens, make Kimchi, etc. Run family-friendly educational training including KR parent training (2 times) Family vacation for excellent employees: 2 times, 30 people participated
Consultation	<ul style="list-style-type: none"> Run complaint management system <ul style="list-style-type: none"> - Labor-management grievance committee, operate human resources grievance consultation (12.7), Chatroom with the Chairman Expansion of free legal consultation service: 40 people (17 personal, 23 work-related)
Health	<ul style="list-style-type: none"> Guarantee against personal injury and illness through collective insurance renewal Expand checkup items of physical examination: 15 items 10 years 15 items → 11 years 20 items → 12 years 22 items Run health counseling office: Total 134 times, 548 people used ['11.4 - '12.12]
ETC	<ul style="list-style-type: none"> Run various clubs and weight room Dorm assistance for employees away from hometown (402 units, 426 people) and KR-operated vacation centers (Busan, Mokpo, Mangsang) Run Financial Loan for Life Safety fund (Sept. 2012, 39 people / 390 million won)

Activities to boost employee satisfaction

KR surveys employee satisfaction each year by using the internal survey system, Sorisaem, and reflects the results in the improvement plan. Since KR has been running various programs to harmonize work and family, the satisfaction level regarding benefits increased by 3.6 points compared to the previous year. KR will continue to operate diversified pension plans to improve the quality of life and benefits for our employees.

<Points reflecting satisfaction level of family-friendly programs and benefits>

Classification	2011	2012	2011	2012
Childcare leave (person)	14	36		
Grievance settlement (case)	36	118	69.6Points	73.2Points
Childbirth, nursing, vacation	3Days	5Days		
Health, examination, items	20Points	22Points		
Family, Friendly, Education	-	4times		

Safety and Health Management System

KR works diligently to improve the health and safety of employees in accordance with the Labor Standard Act and Occupation Safety and Health Acts through the Occupational safety and Health Committee. Health examinations are conducted each year, and cancer screening for employees over 35 years of age has been added to expand the health examination. Safety is our highest priority for all management, and KR is doing its best to prevent safety accidents. To prevent any possible disasters on the job, an efficient inspection plan has been established by analyzing site conditions and various other conditions. KR will do its best for the safety and health of our employees by building a high quality management environment that is disaster-free.

Q&A

Q. What kinds of social service has KR done to promote the local community?

A. KR's social contribution activities are carried out according to 6 implementation themes, which are local community, educational culture, public interest, sharing of talent, protecting the environment, and volunteer service.

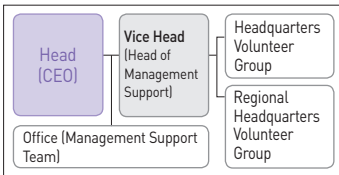
❖ Social Contribution

Social Contribution Strategy

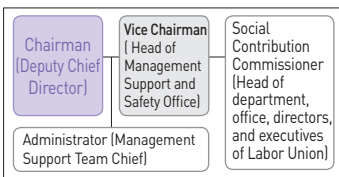
KR selected its most fulfilling tasks for social responsibility as a public institution as part of its strategy for company-wide implementation when establishing its 2020 Global Management Strategy. KR established the implementation strategy for the fulfillment of strategic tasks and then updated its organization and infrastructure. KR set 6 implementation themes and implementation tasks to fulfill its social responsibility by using KR's unique railway engineering.

<Organizational System of Contribution to Society>

• Structure of KR Social Service Works Organization



• Social Contribution Committee



<Strategy system for social contribution activities>



Organization of contribution to Society

KR operates KR Volunteer's Group which promotes continuous social contribution activities throughout the company, and the Social Contribution Committee that increases the transparency and efficiency of the social contribution fund. The CEO leads the contribution activities as the head of KR Volunteer's Group, while the Deputy Chief Director is in charge of establishing action plans and deliberating budgets as the chairman of the Committee.

System to Vitalize Social Contribution Activity

Establishment of Social Contribution System

KR has established its social contribution system to encourage voluntary participation and critical assistance in activities of social contribution. Employees log into the social contribution system to check important information including mileage, future volunteer activity schedule and social contribution donation status in real-time.

<Social Contribution System>



<Sharing Briquette of Love>



<Scoop-Rice event near Railway>



<Flophouse Sharing Activity>



<Resident near Railway Improvement Project>



<Taking Care of Garden of Love>



<Sharing Kimchi of Love>



Mileage System for Social Contribution Activities

KR sets an annual social contribution goal and converts social contribution activities of employees into social contribution mileage. It reflects the result of mileage achieved in the department evaluation to enforce action. Employees are expected to earn 200 points of mileage each year to invigorate social contribution by providing motivation for voluntary contribution and improving the system. 10 mileage points are accrued for 1 hour of social contribution activities, and employees must work 20 hours in social contribution activities per year to earn 200 mileage points. To encourage active participation in social contribution, selected departments and individuals are awarded at the end of the year for their excellent social contributions, and seminars and workshops led by social contribution experts are organized to raise awareness and increase consensus on social contribution.

<Programs to invigorate Social Contribution>

Classification	Main Contents
Reward System	• Reward excellent social contribution department (2) and individuals (4)
Evaluation System	• Apply individual obligatory mileage • Reflect in departmental reports

Social Contribution Activities in Local Community

KR headquarters and 5 regional headquarters have each made sisterhood ties with one rural village near the railways. For these sister villages, they execute various volunteer activities and purchase agricultural products from sister-tied farms to contribute to rural household incomes. Various programs have also been implemented to realize national welfare and to protect the environment and construct environment-friendly railways so that the areas near the railways can be transformed into more attractive communities.

Promotion to Improve Local Communities near Railway

KR is cooperating with the Welfare Institution Mandure in Daejeon and other private companies to work on the flophouse community improvement project and other love sharing activities, such as supporting welfare institutions. KR also promotes the improvement of local communities and welfare for local residents by painting murals, replacing playground equipment for children living near railways, and other activities through close cooperative relations with NGO, Green Railway Advisory Committee, and other interested parties.

<Programs to Improve Local Community>

Classification	Main Note
Sharing of love with flophouse communities near railway	• Signing of agreement with Welfare Institution Mandure in Daejeon • Support flophouse counseling center, resident improving project, jointly promote sharing briquette of love with Daejeon • Scoop-rice sharing activities near railway
Sharing of love with welfare institutions near railway	• Promote volunteer work of 1 institution by 1 department • Formed sisterhood ties with 8 institutions near railways to provide continuous aid, carry out activities to share during holidays and end-of-the year
Creating beautiful playground with NGO	• Replace playground equipment for children near railway and implement renovation, including painting, in cooperation with NGO

One Institution – One Community

KR formed 1:1 sisterhood ties with rural communities near railways and contributes to the invigoration of farming communities by operating the farm life experience program, "Gardening garden of Love," which practices the sharing of agricultural produce after harvest, and "Sharing Kimchi of Love," in which we grow ingredients and share kimchi with the less fortunate in the community. KR strengthens relations with rural local communities by visiting them regularly and operating various volunteer programs.

<KR Youth Committee Scholarship Awards>



<KR Youth Committee Sharing on Holidays>



<CEO Sharing on Holidays>



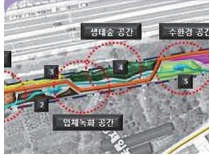
<KR Efforts for Green Forest>



Making Citizen-friendly Spaces by Using Railway Lots

KR is converting unused lots, which were hotbeds of illegal farming and waste dumping, into bike roads, ecology exploration areas, and rail bike roads, to give back to the citizens and provide environment-friendly living areas and environments.

Ecology Exploration Area



- Establish medium-and long-term roadmap to restore ecological system near Ilsan and Wondang station

Rail Bike



- Implement rail bike at 3 stations from Kyunggang to Kimyujung abandoned stations of Kyungjun line (28.7 km)

Bike Road



- Create environment-friendly bike road after tearing down abandoned sections from Masuk to Gapyeong of Gyeongchun Line (10.8 km)

Switchback Resort



- Commercialize sections from Dongbaeksan to Dogae of Yeongdongsun line into railway theme park (only switchback in the country)

Physical Education Center and Rest Area



- Provide rest area to residents near railway by using the area below bridge track to maximum

Auto Campsite



- Construct auto camping site at unused lot near Jukdo beach in Yangyang, Gangwon-do (6,716m²)

Traditional Market



- Opened traditional market by renovating the unused lot near Masan station

Sharing Talent using Railway Capability

KR is continuously promoting the sharing of talent (pro-bono) to renovate the houses of the less fortunate and replace worn-out electrical equipment. KR also promotes the "KR Young Adults Hope Project" to provide scholarship aid, uniforms when enrolling for high school, necessities for holidays such as New Year's and Thanksgiving, and cultural experience programs.

<KR Talent Sharing Programs>

Classifications	2012 Main Notes
House Renovation of Love	<ul style="list-style-type: none"> Maintain light of hope (12 households), flophouse community restoration from fire (1 institution), replace worn-out electrical system (10 households), fix storage for briquettes of love (2 households), house restoration for disadvantaged class in community of 1 institution-1 community
Make Green Forest	<ul style="list-style-type: none"> Maintain KR forest of love (2 places, 5 times)
Love Railway Camp	<ul style="list-style-type: none"> Railway field trip for teens living near railway (4 times)
KR Young Adult Hope Project	<ul style="list-style-type: none"> Award scholarships, provide uniforms and school supplies Provide household necessities during holidays such as New Years, Thanksgiving Day and hold end of the year share events (100 people, 80 million won annually)

Q&A

Q. As a public institution, what is KR doing to fulfill its social responsibility and invigorate the local economy?

A. KR is working to invigorate the railway industry to create jobs, and thus invigorate local economies. KR is also lowering rail fares and implementing various improvements and budget reducing methods.

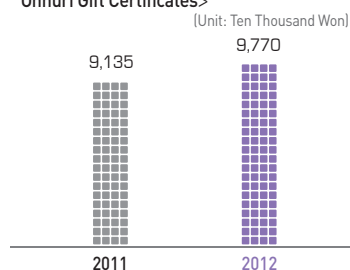
<4 Strategic Directions to Create Jobs>



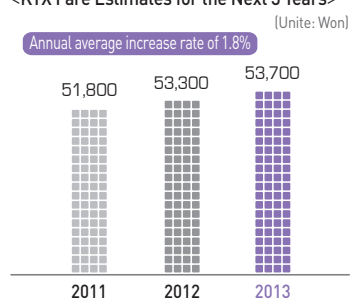
<Status of Job Support to the Disadvantaged in Various Regions>

Classification	Number of Hires
Seoul Metropolitan Headquarters (Seoul, Gyeonggi)	96 people
Gwangwon Headquarters (Gangwon, Jecheon, Youngju)	80 people
ChungCheong Headquarters (Sejong, Daejeon, Chungcheongbuk-do)	48 people
Honam Headquarters (Gwangju, Jeollanam)	72 people
Yeongnam Headquarters (Busan, Daegu, Gyeongsangbuk-do, Ulsan)	82 people
Total	378 people

<Purchase Status of Traditional Market's Onnuri Gift Certificates>



<KTX Fare Estimates for the Next 3 Years>



* Based on Seoul-Busan KTX one way

❖ Contributing to Local Community

Creating Public Jobs

Creating New Jobs through Invigoration of Railway Industry

To fulfill its social responsibility as a public institution, reduce unemployment, and invigorate local economies by creating new public jobs, KR has planned and implemented strategies to create public jobs. By implementing railway construction operation true to its establishment goal, KR is securing sustainable growth power and actively implementing 4 strategic directions to create new jobs. In 2012, 88,442 jobs were created through the proper use of expenses, 9,037 jobs through the invigoration of railway private investment business (BTL/BTO), and a total of 190 jobs through the development of unused lots, use of facilities, and expansion of station area development.

<Detailed Information on Job Creation in 2012>

Classifications	Main Contents for 2012
Timely spent budget (88,442 jobs)	<ul style="list-style-type: none"> Execution of 6.4556 trillion won as business expenses in 2012 - 59 railway business underway (3 high speed, 28 regular, 9 metropolitan, 19 commissioned) - total of 11 railway business opened
Vitalization of Railway Private Investment (9,037 Jobs)	<ul style="list-style-type: none"> Execution of 6.596 trillion won as private business expenses in 2012 - Total of 5 private business underway (Yongsan-Gangnam, Sosa-Wonsi, Haman-Jinju, Iksan-Shinli, Jungja-Gwanggyol)
Unused lots, use of Facilities (190 jobs)	<ul style="list-style-type: none"> 62 approved permits to use as parking lots and garage Building auto camping site connected to vacation spots in the eastern coast of Korea Advancement of solar business using 67 railway facilities Bike road in Gosung-Gun and centerline rail bike
Expansion of Station Area Development (484 jobs)	<ul style="list-style-type: none"> Opening of parking complex in Gwangmyeong station (Dec. 2012) Opening development ventures of previously called Gyeongchun line (Aug. 2012)

Vitalization of Economy of Common Citizens

KR promotes security of life of those in disadvantaged groups by providing jobs the railway construction sites throughout the country and revitalizes and promotes traditional marketplaces by setting goals for Onnuri gift certificate purchases and monitoring their monthly purchases. KR is also carrying out various efforts to financially help common citizens by decreasing rail fares through a budget reduction and economical railway construction. KR is implementing job support to those in disadvantaged groups by providing jobs in construction site technical work, security, office assistance, and restaurants to disadvantaged groups, which includes those receiving government subsidies, elderly, disabled, and women, in 243 communities near railway construction sites.

Vitalization of Traditional Markets and Contributing to Price Stabilization

KR promotes the purchase of Onnuri gift certificates used at traditional markets and monitors monthly purchase status to revitalize local traditional markets. KR made efforts to help traditional markets by purchasing 977 hundred thousand won of Onnuri certificates in 2012, which is a 9% increase from 913.5 hundred won in previous year. KR is also carrying out various efforts to realize housing welfare for the disadvantaged by forming the Home Preparation Committee in August of 2012 to actively promote house construction using railway lots. The company has also researched possible lots and planned an evaluation standard to choose the order of development priority. Moreover, KR contributed to the stability of railroad fares by improving tasks through creative innovation, VE vitalization of plan, and efficient railway construction, increasing the rail fare annual average of 1.8% within the last 3 years (based on Seoul-Busan KTX one-way).

VI

Appendix

Outcome of Sustainability Management

Assessment on Application Level of ISO 26000

Third Party's Assurance Report

GRI G3.1 / ISO 26000 Index

System for Implementation of Sustainability
Management

Recognitions and Affiliation

Economic Performance

Overseas Credit Rating 'Aa3 [Stable]'

Reduced 1.0205 trillion won through company-wide efforts including financial cost reduction, design value engineering (VE) evaluation, and excess facilities improvement.

2012 Reduction of Expense

(Unit: Hundred million won)

Construction method improvement, facility size adjustment	6,010
Design VE evaluation and misc.	3,569
Wage and current cost	220
Financial cost reduction	406
Total	10,205

* Expansion of generated revenue through development of new assets, expansion of overseas business,
Expansion of profit created from reformation of business

Distribution of Sales

(Unit: Hundred million won)

Classifications	Track Access Charges	Profit from Leasing	Overseas Business	Other Profits	Total Profit
2011(a)	6,480	684	122	40	7,326
2012(b)	6,821	731	150	104	7,806
Increase (b-a)	+341	+47	+28	+64	+480

Financial Statement Summary

Balance Sheet Summary

(Unit: Hundred million won)

	2010	2011	2012
Liquid Asset	4,575	5,000	2,521
Noncurrent Asset	188,034	201,547	194,760
Total Asset	192,609	206,546	197,280
Current Liability	30,494	32,478	47,207
Noncurrent Liability	109,303	123,196	126,199
Total Liability	139,796	155,674	173,406
Endowment	68,931	68,931	42,834
Accumulated Comprehensive Amount	-128	-155	-122
Deficient Amount	-15,991	-17,904	-18,838
Total Capital Amount	52,812	50,872	23,874

Government Contribution

(Unit: Hundred million won)

2010	2011	2012
33,003	35,136	41,590

Profit and Loss Account Summary

(Unit: Hundred million won)

	2010	2011	2012
Profit Amount	5,896	7,326	7,806
Sales Cost	4,669	5,140	4,688
Gross Profit on Sales	1,227	2,186	3,118
Sales and Administrative Expenses	-	-	-
Operating Profit and Loss	1,227	2,186	3,118
Non-operating Income	320	443	499
Non-operating Expense	4,722	4,542	4,549
Net Profit (Loss) Before Income Tax	-3,174	-1,913	-932
Tax Expense	-	-	-
Continuing Income	-3,174	-1,913	-932
Current Profit (Loss)	-3,174	-1,913	-932

* Yield of current term loss due to interest fee of high-speed railway self-supplied business expenses (loan)

Distribution of Economic Value

(Unit: million won)

		2010	2011	2012
Creation of Economic Value	Sales Amount			
	Government Contribution	7,699,075	7,970,924	8,779,291
	Bond Issued			
Distribution of Economic Value	Affiliated Companies (Investment award)	5,565,101	5,433,166	6,204,257
	Financial Expenses (Principal, interest, etc.)	1,887,640	2,439,205	2,485,080
	Employees (Wage)	81,834	92,584	101,325
	Government (Tax)	616	185	26
	Organization Operating Expense (Current Cost, etc.)	40,819	31,697	26,608

* Difference in financial value created and value distributed due to carry-over of deposit prepayment amount from previous year

* Affiliated companies and organization operating expenses are expenses from relevant year

Indirect Economics Effect

Creation of Jobs

(Unit: Persons)

	2010	2011	2012
Total number	97,738	82,350	99,359
Investment Award	96,954	81,365	98,153
Private partnership	26	103	148
Outsourcing	467	491	581
Disadvantaged class	291	391	477

Social Performance

	Classifications	Unit	2010	2011	2012
Current Employment Status	Maximum number of employees	Persons	1,347	1,352	1,363
	Current employees	Persons	1,440	1,396	1,347
	Temporary position	Persons	14	15	20
	Retirement	Persons	1	5	2
	Voluntary Resignation, etc.	Persons	36	39	63
	Average service training	Year	16.25	17.2	17.7
Employee Distribution by Age Group	20~29	Persons	53	41	33
	30~39	Persons	403	332	297
	40~49	Persons	719	743	712
	50~59	Persons	264	280	304
	Over 60	Persons	1	-	-
Minority Group Status	Number of Women (%)	Persons (%)	135(8.9)	150(10.2)	154(11.0)
	Number of Women higher than General Manager (%)	Persons (%)	-	-	-
	Handicapped (%)	Persons (%)	3.15	3.24	3.36
Full-time Position Recruitment	Women	Persons	9	-	6
	Handicapped	Persons	-	-	-
	From small cities	Persons	15	-	9
	High school graduates	Persons	-	-	2
	Vocational school graduates	Persons	-	-	-
	Engineering graduates	Persons	26	-	8
	Total	Persons	36	-	15
Temporary Position Recruitment	Young Adult Intern	Persons	70	90	79
	Contract	Persons	7	3	5
	Job Contract (high school graduate)	Persons	-	-	-
	Hourly employee	Persons	-	-	-
Training Hours and Investment	Training hour per person	Hours	135	119	126
	Training investment per person	Thousand Won	975	1,062	859
	Rate of guarantee of core personnel	%	30.77	31.51	33.38
Welfare and Job Security	Employee Satisfaction	Points	74.75	73.70	76.40
	Rate of Return after Nursing Leave of Absence	%	92.86	92.31	95.24
	Safety/Security Accidents	Case	0	0	1
Ethical Management	Anti-corruption and Civil Rights Commission Integrity Index	Points	8.35	8.81	8.22
Customer Satisfaction	Customer Service Satisfaction	Points	69.5	72.5	74.6
	Affiliate Companies Satisfaction	Points	86.95	89.76	93.27
	Public-service Customer Satisfaction Index (PCSI)	Points	93.21	95.43	93.98
Local Community	Community Service Hour per employee	Hours	10.7	9.8	11.4
Small Business Support	Rate of Purchasing Goods from Small Businesses	%	31	28	25
	Cooperation Research Development Number Supported/Participating Companies	Case / Companies	1 / 3	2 / 6	6 / 7
Society	Regulation Violations	Case	0	0	0
Human Rights	Construction Site Accident Rate	%	0.128	0.142	0.082

Environmental Performance

Systemization of Environmental Management

KR systematically manages the total amount of substances that are input, including energy use and material use, and total amount of substance emitted, including greenhouse gas emission and waste discharge. Data was collected from 267 construction sites in 2010, 264 sites in 2011, and 211 sites in 2012. Compared to the previous year, the total number of sites for data collection has decreased because a number of construction sites had completed railway construction, thus decreasing the number of construction sites.

Input

Railway Construction Sites (Affiliated Companies)

Amount of Energy Used

(Unit: TJ)

Classification	2010	2011	2012
Buildings	527.32	430.51	584.83
Automobiles	258.15	879.31	184.92
Construction Machines	3,108.42	3,263.93	3,233.69

Amount of Raw Materials Used

(Unit: ton)

Classification	2010	2011	2012
Steel bar	1,163,417	485,283	710,336
Rail (new)	61,272	29,595	32,659
Rail (recycled)	3,940	559	1,360
PC bedding (new)	111,178	108,934	130,824
PC bedding (recycled)	7,127	3,495	17,344
Wood bedding (new)	232	342	621
Wood bedding (recycled)	60	866	377
Aggregate (general)	2,228,104	2,606,046	5,149,954
Aggregate (recycled)	191,365	72,381	309,033
Form mold (lumber)	3,201,033	2,603,792	3,398,301
Form mold (substitute)	1,543,861	1,319,416	3,015,981

Amount of Water Used

(Unit: ton)

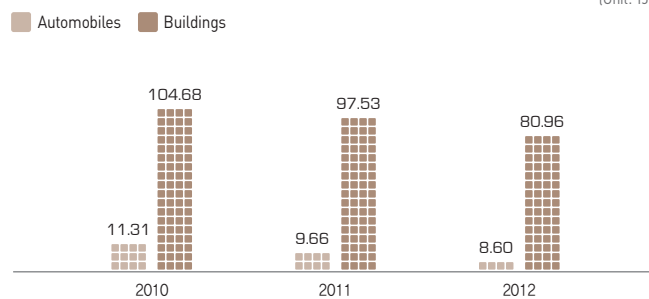
Classification	2010	2011	2012
Total	3,525,171	2,782,504	2,673,165
Recycled water	279,338	158,117	37,736

Korea Rail Network Authority

(Headquarters and regional headquarters)

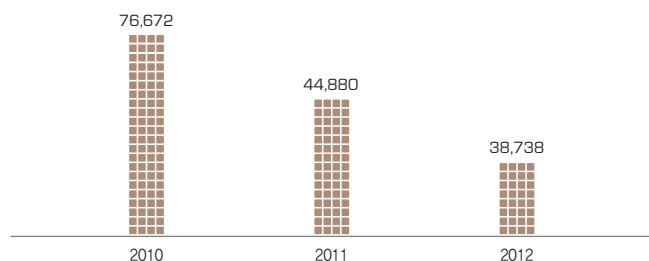
Amount of Energy Used

(Unit: TJ)



Amount of Water Used Tap Water

(Unit: ton)



Output

Railway Construction Sites (affiliated companies)

Amount of Greenhouse Gas Emitted

(Unit: tCO₂eq)

Classification		2010	2011	2012
Buildings	Indirect	22,218.40	18,710.91	27,984.27
	Direct	6,700.64	4,963.27	3,012.67
Automobiles	Direct	17,944.90	61,191.69	12,834.84
Construction Machines	Indirect	7,943.41	7,061.07	7,329.35
	Direct	208,090.79	220,084.09	217,728.38

Amount of Waste Discharged

(Unit: ton)

Classification		2010	2011	2012
Construction Waste	Amount Produced	798,501.07	718,088.00	889,831.40
	Amount Recycled	739,643.82	686,594.00	865,108.58
Worksite Waste	Amount Produced	62,145.89	71,677.95	389,709.79
	Amount Recycled	44,683.73	39,659.63	229,515.13
Designated Waste	Amount Produced	831.07	7,235.08	1,129.15
	Amount Recycled	19.97	8.96	15.53

Amount of Air Pollutants Emitted

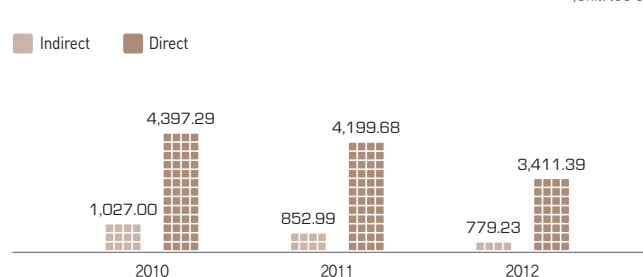
Classification	2010	2011	2012
Annual Dirt Output (kg)	14,742	3,141	2,049
Number of Air Pollutant Control Facilities in Operations	17	17	24

Amount of Water Pollutants Emitted

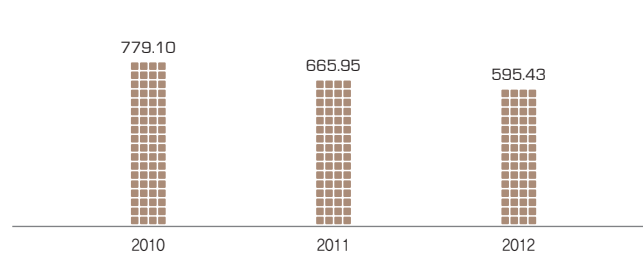
Classification	2010	2011	2012
Annual Wastewater Output (ton)	4,821,362	4,868,269	4,697,721
BOD(mg/l)	3.9	4.4	4.9
COD(mg/l)	6.4	6.8	9.4
SS(mg/l)	9.7	8.9	12.0
Number of Wastewater Control Facilities in Operation	101	107	103

Korea Rail Network Authority (Headquarters and regional headquarters)

Amount of Greenhouse Gas Output Buildings

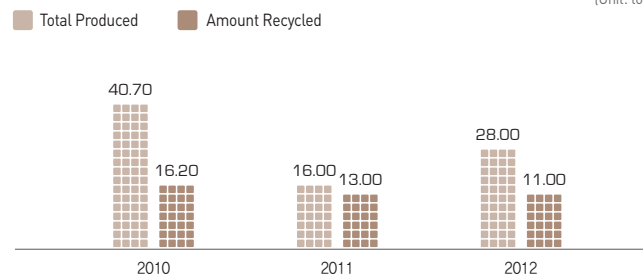
(Unit: tCO₂eq)

Amount of Greenhouse Gas Output Automobiles

(Unit: tCO₂eq)

Amount of Designated Waste

(Unit: ton)



Assessment on Application Level of ISO 26000



Messrs. Employees and Stakeholders of Korea Rail Network Authority

Evaluation Level

Korea Standard Association (KSA) has published the "Social Responsibility Fulfillment Level Evaluation Checklist" under ISO 26000, which is the international standard for social responsibility. The ISO 26000 checklist includes the outcome evaluation for the implementation process of social responsibility and 7 core topics (organization governance, civil rights, consumer issues, participation and advancement of local community). KSA evaluated KR's social responsibility implementation level according to the ISO 26000 checklist.

Evaluation limitation

KSA evaluated KR's overall external/internal activities, medium and long term strategies, social responsibility activities, and sustainability management strategy implementation processes. The evaluation result was made by reviewing open internal documents on policy and activities, outcome data, and calculation system.

Evaluation Method

KSA implemented the following based on data, collected from each department, related to sustainability report publication according to an objective evaluation standard.

- Review of internal documents on activities and outcome of sustainability management of KR
- Interview with staff in charge of each social responsible management issue at KR

Evaluation Result

KR received 896 points out of 1,000 points upon evaluation, and confirms the application of social responsibility implementation level IV of ISO26000. This indicates a high understanding of social responsibility by members, and that the organization management system, policy, and practice are well organized.

Core Topic	Total Distribution	Evaluation Point
Process	360	310
Outcome	640	586
Total	1000	896

I. Evaluation of Social Responsibility Process: 310 points attained / 360 points

Based on the management team's determination to practice sustainability management, KR declares and enforces internal and external sustainability management. The overall implementation level has therefore been found to be satisfactory. The organization's devotion to sustainability management is clarified through an international initiative such as the UN Global Compact. It is recommended to regularly monitor future sustainability management outcomes and plans and to continuously implement systematic practices and management of activities.

<Assessments of Social Responsibility Process>		(Unit : Points)
Awareness of Social Responsibility		84.0
Identification and Engagement of Stakeholders		93.3
Analysis of Core Subjects and Issues		86.7
Prioritization and Establishment of Execution Strategy and Plan		83.3
Execution		80.0
Communication		95.0
Verification		86.7
Improvement		80.0

II. Evaluation of 7 Core Topics: 574.9 points attained / 640 points

KR's Implementation level for anticipated issues on 7 core topics of ISO 26000 is satisfactory overall. The implementation level of fair management practice is excellent, and the implementation level of local community participation and improvement is satisfactory.

<Assessment of Social Responsibility Performance>		(Unit : Points)
Organizational Governance		90.0
Human Rights		93.1
Labor Practices		90.6
Environment		88.6
Fair Operating Practices		94.7
Consumer Issues		91.7
Community Involvement and Development		93.8

III. Departmental Recommendation

Upon a detailed departmental evaluation, the recommendation is as follows.

① Organization governance

The management structure of KR, according to its board regulation, is satisfactory overall and makes decisions by reviewing issues related to "social responsibility" based on sustainability management, which is one of its core values. In the future, the operation of a sustainability management committee (sub-committee within Board of Directors) is recommended to provide support decisions made by the Board of Directors.

② Civil Rights

KR stipulates policy on civil rights, fair employment, and prohibition of discrimination in its human resource regulation and code of ethics, and understands issues related to the grievance system. In the future, it is recommended that KR establish an actual standard to investigate actual conditions related to civil rights violations (harassment, sexual harassment, occupational safety, observe Labor Standard Law, overdue wage, maternity protection), implement civil rights policies with affiliate companies, and actively provide support through training and monitoring.

③ Labor Practice

KR's work environment, personnel training, and support system for retirement candidates are excellent. However, labor-management issues continue to arise due to differences in opinion. In the future, it is recommended to strengthen communication between internal stakeholders to bring about amicable agreement between labor and management.

④ Environment

KR demonstrates a decrease in greenhouse gas emissions each year through active efforts to decrease energy, and it is excellent that KR uses renewable energy technology such as solar development through environment-friendly plans for stations and generation of geothermal energy. However, compared to the size of the organization, environment personnel are lacking. In the future, it is recommended to reinforce departments and personnel related to environment and to strengthen biodiversity and natural habitat protection activities.

⑤ Fair Management Practice

KR's systematic management standard for fair management systems, such as a system to regularly complete anti-corruption training, and level of clarity related to contracts with affiliate companies is very high. However, it is recommended that departments susceptible to corruption are determined and managed with priority, and an internal reporting system needs to be implemented.

⑥ Consumer Issue

KR operates a collective customer management system, the first to be patented by a public institution, and has achieved the highest level in government institution customer satisfaction for 3 years. In the future, maintenance of safety equipment for customers (especially disabled customers) of railway and stations need to be continuously strengthened, and awareness of rail safety should be promoted through public campaigns.

⑦ Participation and Improvement of Local Community

KR implements the "KR Young Adult Hope Project" to provide scholarships and uniforms to children and teens living near railways and operates cultural experience events. However, there are too many one-time activities and the resources secured for social contribution seem to be limited. In the future, active efforts to expand resources for social contribution need to be made. Instead of sporadic volunteer activities, goal-oriented programs to resolve macroscopic social issues need to be operated.

Evaluation Conclusion

According to the result of the ISO 26000 Implementation Evaluation, KR received 310 out of 360 points in process and 586 points out of 640 in outcome, which qualifies KR for SR level 4. KR is in the process of expanding its understanding of social responsibility and sustainable capability to all parts of the organization. The company is also improving its and development of civil rights and enforcement of its fair management policy, and its participation within local communities have been excellent. In the future, it is recommended to incorporate the themes and principles of social responsibility into the company's unique management strategy so that KR can develop into a trusted institution by strengthening social communication with stakeholders.



August 1, 2013
KSA Chairman
Kim Chang Ryoung

김창룡

Third Party's Assurance Report

To the Readers of Korea Rail Network Authority Sustainability Report 2013 :

Foreword

The Korea Management Association Registration and Assessments (KMAR) has been requested by Korea Rail Network Authority (KR) verify the contents of its Sustainability Report 2013 (the Report). KR is responsible for the collection and presentation of information included in the Report. Our responsibility is to carry out assurance engagement on specific information in the assurance scope stipulated below.

Our independence

With the exception of providing third party assurance services, KMAR is not involved in any other KR business operations that are aimed at making profit in order to avoid any conflicts of interest and to maintain independence.

Assurance scope and standard

KR describes its efforts and achievements of the sustainability activities in the Report. KMAR performed a type 2, moderate level of assurance using AA1000AS (2008) as an assurance standard. That is, the assurance team assessed whether inclusivity, materiality, and responsiveness were observed, and verified the followings to assess the reliability of the assertions and performances specified in the report.

• Assurance of the economic section:

Reviews whether the financial performance data has been extracted appropriately from KR's 2012 financial statements and public notification data

• Assurance of the environmental and social section:

Reviews whether the environmental and social information included in the Report is presented appropriately

"Appropriately presented" means that the actual data and original information are appropriately reflected in the Report with consistency and reliability. For the economic section, we based our evidence-gathering procedures on reasonable assurance. It is a higher level of assurance than that of the limited assurance in terms of characteristics and the extent of performed tasks.

The team included the confirmation of the application level of GRI G3.1 utilized as the report criteria in the scope of assurance.

Assurance process

In order to verify the contents of the Report within an agreed scope of assurance in accordance with the assurance standard, KMAR's assurance team visited the KR's headquarter and carried out an assurance engagement as follows:

- Reviewed systems and processes used in producing data
- Assessed internal documents and materials
- Interviewed people in charge of disclosed activities and performances
- Reviewed the GRI G3.1 application level which was used as a reporting framework

Conclusion

Based on the results we have obtained from material reviews, relevant department visits, and interviews, we had several discussions with KR on the revision of the Report. We reviewed the Report's final version in order to confirm that our recommendations for improvement and our revisions have been reflected. When reviewing the results of the assurance, the assurance team did not find any inappropriate contents related to the compliance with the principle in the Report.

• Inclusivity

Inclusivity is the participation of stakeholders in developing and achieving an accountable and strategic response to sustainability.

- KR is developing and maintaining stakeholder communication channels in various forms and levels in order to make a commitment to be responsible for the stakeholders. The assurance team did not find any critical stakeholder group left out during this procedure

• Materiality

Materiality is determining the relevance and significance of an issue to an organization and its stakeholders. A material issue is an issue that will influence the decisions, actions, and performance of an organization or its stakeholders.

- KR is determining the materiality of issues found out through stakeholder communication channels through its own materiality evaluation process, and the assurance team did not find any critical issues left out in this process

• Responsiveness

Responsiveness is an organization's response to stakeholder issues that affect its sustainability performance and is realized through decisions, actions, and performance, as well as communication with stakeholders

- The assurance team did not find any evidence that KR's counter measures to critical stakeholder issues were inappropriately recorded in the Report

In addition, the assurance team checked that the KR complied with the GRI G3.1 in preparing the Report, and that the Report fulfills the requirements of GRI application level 'A+'.

Recommendation for improvement

We hope KR's publication of the Report is actively used as a communication tool with stakeholders and recommend the following for improvements.

- We verified that KR is making efforts to monitor the sustainability management strategy and to make quantified management of the performance. However, in reporting the sustainability management activities and performances, KR is required to focus more on important issues and to make efforts to help easy understanding of important information in the point of views of stakeholders
- It is needed to improve significance evaluation process into an original process according to the circumstances and characteristics of KR. Especially, as KR is currently utilizing various and effective stakeholder communication channels, we recommend develop a more systematic approach to use the information obtained from those channels in the significance evaluation process during the reporting period
- We recommend document the reporting process in order to make the process more systematic. This will effectively resolve the problems probable to occur during sustainability report publication and improve the quality of the Report

July 29, 2013



CEO / Ki Ho Park

K. H. Park

Korea Management Association
Registrations & Assessments Inc.

GRI G3.1 / ISO 26000 Index

● Reported ● Partially Reported ○ Not Reported N/A Not Applicable

GRI	Description	ISO 26000	Core Subject and Issue	Page	Reported
	Stakeholder Engagement Principle	6.8.2	Engagement of community	24-25	●
	Border Protocol	6.6.5	Promotion of social responsibility in value chain	2	●
Strategy and Analysis					
1.1	Statement from the most senior decision maker (e.g. CEO, chairman, or other equivalent executives)of the organization about the relevance of sustainability to the organization and its strategy.	6.2	Organizational governance	6-7	●
1.2	Description of key impacts, risks, and opportunities	6.2		22-23	●
Organizational Profile					
2.1	Name of the organization			12	●
2.2	Primary brands, products, and/or services			13	●
2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures	6.2	Organizational governance	12	●
2.4	Location of organization's headquarters			12	●
2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report			13	●
2.6	Nature of ownership and legal form			12	●
2.7	Markets served (including geographic breakdown, sectors served, and types of customers/ beneficiaries)			12	●
2.8	Scale of the reporting organization			12	●
2.9	Significant changes during the reporting period regarding size, structure, or ownership			12	●
2.10	Awards received in the reporting period			102	●
Report Parameters					
3.1	Reporting period for information provided (e.g. financial year/calendar year)			2	●
3.2	Date of most recent previous report (when available)			2	●
3.3	Reporting cycle (annually, biannually, etc.)			2	●
3.4	Contact point for questions regarding the report or its contents			2	●
3.5	Process for defining report content (Determining materiality, prioritizing topics within the report, and identifying stakeholders the organization expects to use the report)			28-29	●
3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers)			2	●
3.7	State any specific limitations on the scope or boundary of the report			2	●
3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations			2	●
3.9	Data measurement techniques and the bases of calculations			2	●
3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement			2	●
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report			2	●
3.12	Table identifying the location of the Standard Disclosures in the report			96-100	●
3.13	Policy and current practice with regard to seeking external assurance for the report. Scope and standards of external assurance. Relationship between the organization and assurance service provider.	7.5.3	Assurance	94-95	●
Governance, Commitments, and Engagement					
4.1	Governance structure of the organization	6.2	Organizational governance	16-17	●
4.2	Indicate whether the Chair of the highest governance body is also an executive officer	6.2		16	●
4.3	For organizations that have a unitary board structure, state the number and gender of members of the highest governance body that are independent and/or non-executive members	6.2		16	●

● Reported ● Partially Reported ○ Not Reported N/A Not Applicable

GRI	Description	ISO 26000	Core Subject and Issue	Page	Reported
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	6.2	Organizational governance	16~17	●
4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives, and the organization’s performance	6.2		17	●
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided	6.2		17	●
4.7	Process for determining the composition, qualifications, and expertise of the members of the highest governance body and its committees	6.2		17	●
4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation	6.2		14~15	●
4.9	Procedures of the highest governance body for overseeing the organization’s identification and management of economic, environmental, and social performance	6.2		16~17	●
4.10	Processes for evaluating the highest governance body’s own performance (particularly with respect to economic, environmental, and social performance)	6.2		16~17	●
4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization	6.2		22~23	●
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses	6.2		102	●
4.13	Memberships in associations such as industry associations and/or national/international advocacy organizations	6.2		102	●
4.14	List of stakeholder groups engaged by the organization	6.2		24~25	●
4.15	Basis for identification and selection of stakeholders with whom to engage	6.2		24~25	●
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group	6.2	28	●	
4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting	6.2	29	●	
Economic Performance Indicators (Disclosure on Management Approach)				31	●
EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments	6.8 / 6.8.3 / 6.8.7 / 6.8.9	Community involvement and development / Wealth and income creation / Social investment	88	●
EC2	Financial implications and other risks and opportunities for the organization’s activities due to climate change	6.5.5	Climate change mitigation	52~53	●
EC3	Coverage of the organization’s defined benefit plan obligations.	6.4.4 / 6.8		80	●
EC4	Significant financial assistance received from government.			88	●
EC5	Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation	6.4.4 / 6.8	Condition of work and social protector / Community involvement and development	75	●
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	6.6.6 / 6.8 / 6.8.5 / 6.8.7	Promoting social responsibility in the value chain / Community involvement and development / Employment creation and skills development / Wealth and income creation	66~67	●
EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation	6.8 / 6.8.5 / 6.8.7	Community involvement and development / Employment creation and skills development / Wealth and income creation	74	●
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement	6.3.9 / 6.8 / 6.8.3 / 6.8.4 / 6.8.5 / 6.8.6 / 6.8.7 / 6.8.9	Economic, social and cultural rights / Community involvement and development / Community involvement / Education and culture / Technology development and access / Wealth and income creation / Social investment	36~39, 84	●
EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts	6.3.9 / 6.6.6 / 6.6.7 / 6.7.8 / 6.8 / 6.8.5 / 6.8.6 / 6.8.7 / 6.8.9	Economic, social and cultural rights / Promoting social responsibility in the value chain / Respect for property rights / Access to essential services/ Community involvement and development / Employment creation and skills development / Technology development and access / Wealth and income creation / Social investment	85	●

GRI G3.1 / ISO 26000 Index

● Reported ● Partially Reported ○ Not Reported N/A Not Applicable

GRI	Description	ISO 26000	Core Subject and Issue	Page	Reported
Economic Performance Indicators (Disclosure on Management Approach)				51	●
EN1	Materials used by weight or volume			59, 90	●
EN2	Percentage of materials used that are recycled input materials			59, 90	●
EN3	Direct energy consumption by primary energy source			90	●
EN4	Indirect energy consumption by primary source			90	●
EN5	Energy saved due to conservation and efficiency improvements.			90	●
EN6	Initiatives to provide energy-efficient or renewable energy-based products and services, and reductions in energy requirements as a result of these initiatives	6.5 / 6.5.4	Environment / Sustainable resource use	56	●
EN7	Initiatives to reduce indirect energy consumption and reductions achieved			54, 56	●
EN8	Total water withdrawal by source.			90	●
EN9	Water sources significantly affected by withdrawal of water			57	●
EN10	Percentage and total volume of water recycled and reused.			90	●
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas			58	●
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	6.5 / 6.5.6	Environment / Protection of the environment, biodiversity, and restoration of natural habitats	58	●
EN13	Habitats protected or restored			58	●
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity			58	●
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk			57-58	●
EN16	Total direct and indirect greenhouse gas emissions by weight			54, 91	●
EN17	Other relevant indirect greenhouse gas emissions by weight	6.5 / 6.5.5	Environment / Climate change mitigation	91	●
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved			53-54	●
EN19	Emissions of ozone-depleting substances by weight			Minuscule Emission	N/A
EN20	NOx, SOx and other significant air emissions by type and weight			91	●
EN21	Total water discharge by quality and destination.			91	●
EN22	Total weight of waste by type and disposal method	6.5 / 6.5.3	Environment / Prevention of pollution	91	●
EN23	Total number and volume of significant spills			Not applicable	●
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally			-	N/A
EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff	6.5 / 6.5.4 / 6.5.6	Environment / Sustainable resource use / Protection of the environment, biodiversity and restoration of natural habitats	59-60	●
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	6.5 / 6.5.4 / 6.6.6 / 6.7.5	Environment / Sustainable resource use / Promoting social responsibility in the value chain / Sustainable consumption	58	●
EN27	Percentage of products sold and their packaging materials that are reclaimed by category	6.5 / 6.5.4 / 6.7.5	Environment / Sustainable resource use / Sustainable consumption	-	N/A
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	6.5	Environment	53	●
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations	6.5 / 6.5.4 / 6.6.6	Environment / Sustainable resource use / Promoting social responsibility in the value chain	54, 59	●
EN30	Total environmental protection expenditures and investments by type	6.5	Environment	59	●

● Reported ● Partially Reported ○ Not Reported N/A Not Applicable

GRI	Description	ISO 26000	Core Subject and Issue	Page	Reported
Labor Practices (Disclosure on Management Approach)				73	●
LA1	Total workforce by employment type, employment contract, and region.	6.4 / 6.4.3	Labor practice/Employment and employment relationships	76	●
LA2	Total number and rate of employee turnover (by age group, gender, and region)			76	●
LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees (by operating location)	6.4/ 6.4.3 / 6.4.4	Labor practice / Employment and employment relationships / Condition of work and social protector	80, 81	●
LA4	Percentage of employees covered by collective agreement.	6.4 / 6.4.3 / 6.4.4 / 6.4.5 / 6.3.10	Labor practice / Employment and employment relationships / Condition of work and social protector / Social dialogue / Fundamental principles and rights at work	79	●
LA5	Minimum notice period(s) regarding significant operational changes (including whether it is specified in collective agreements)	6.4 / 6.4.3 / 6.4.4 / 6.4.5	Labor practice / Employment and employment relationships / Condition of work and social protector / Social dialogue	78	●
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees	6.4 / 6.4.6	Labor practice / Health and safety at work	81	●
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities (by region and gender)			81	●
LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases	6.4 / 6.4.6 / 6.8 / 6.8.3 / 6.8.4 / 6.8.8	Labor practice / Health and safety at work / Community involvement and development / Community involvement / Education and culture / Health	81	●
LA9	Health and safety topics covered in formal agreements with trade unions	6.4 / 6.4.6	Labor practice / Health and safety at work	81	●
LA10	Average hours of training per year per employee by employee category	6.4 / 6.4.7	Labor practice / Human development and training in the workplace	77	●
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	6.4 / 6.4.7 / 6.8.5	Labor practice / Human development and training in the workplace / Employment creation and skills development	80	●
LA12	Percentage of employees receiving regular performance and career development reviews	6.4 / 6.4.7	Labor practice / Human development and training in the workplace	75	●
LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity	6.3.7 / 6.3.10 / 6.4 / 6.4.3	Discrimination and vulnerable groups / Fundamental principles and rights at work / Labor practice / Employment and employment relationships	16	●
LA14	Ratio of basic salary of men to women by employee category	6.3.7 / 6.3.10 / 6.4 / 6.4.3 / 6.4.4	Discrimination and vulnerable groups / Fundamental principles and rights at work / Labor practice / Employment and employment relationships / Condition of work and social dialogue	75	●
LA15	Return to work and retention rates after parental leave, by gender		Prohibition of discrimination against vulnerable group / Guarantee of economic, social, and cultural rights of corporate and community members	80	●
Human Right (Disclosure on Management Approach)				57, 73	●
HR1	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening	6.3 / 6.3.3 / 6.3.5 / 6.6.6	Human right / Due diligence / Avoidance of complicity / Promoting social responsibility in the value chain	65	●
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken	6.3 / 6.3.3 / 6.3.5 / 6.4.3 / 6.6.6	Human right / Due diligence / Avoidance of complicity / Employment and employment relationships / Promoting social responsibility in the value chain	62, 65-66	●
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	6.3 / 6.3.5	Human right/ Avoidance of complicity	20, 77	●
HR4	Total number of incidents of discrimination and actions taken	6.3 / 6.3.6 / 6.3.7 / 6.3.10 / 6.4.3	Human right / Resolving grievances / Discrimination and vulnerable groups / Fundamental principles and rights at work / Employment and employment relationships	74-75	●
HR5	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights	6.3 / 6.3.3 / 6.3.4 / 6.3.5 / 6.3.8 / 6.3.10 / 6.4.3 / 6.4.5	Human right / Due diligence / Human rights risk situations/ Avoidance of complicity / Civil and political rights / Fundamental principles and rights at work / Employment and employment relationships / Social dialogue	78-79	●
HR6	Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor	6.3 / 6.3.3 / 6.3.4 / 6.3.5 / 6.3.7 / 6.3.10	Human right / Due diligence / Human rights risk situations/ Avoidance of complicity / Discrimination and vulnerable groups / Fundamental principles and rights at work	80	●

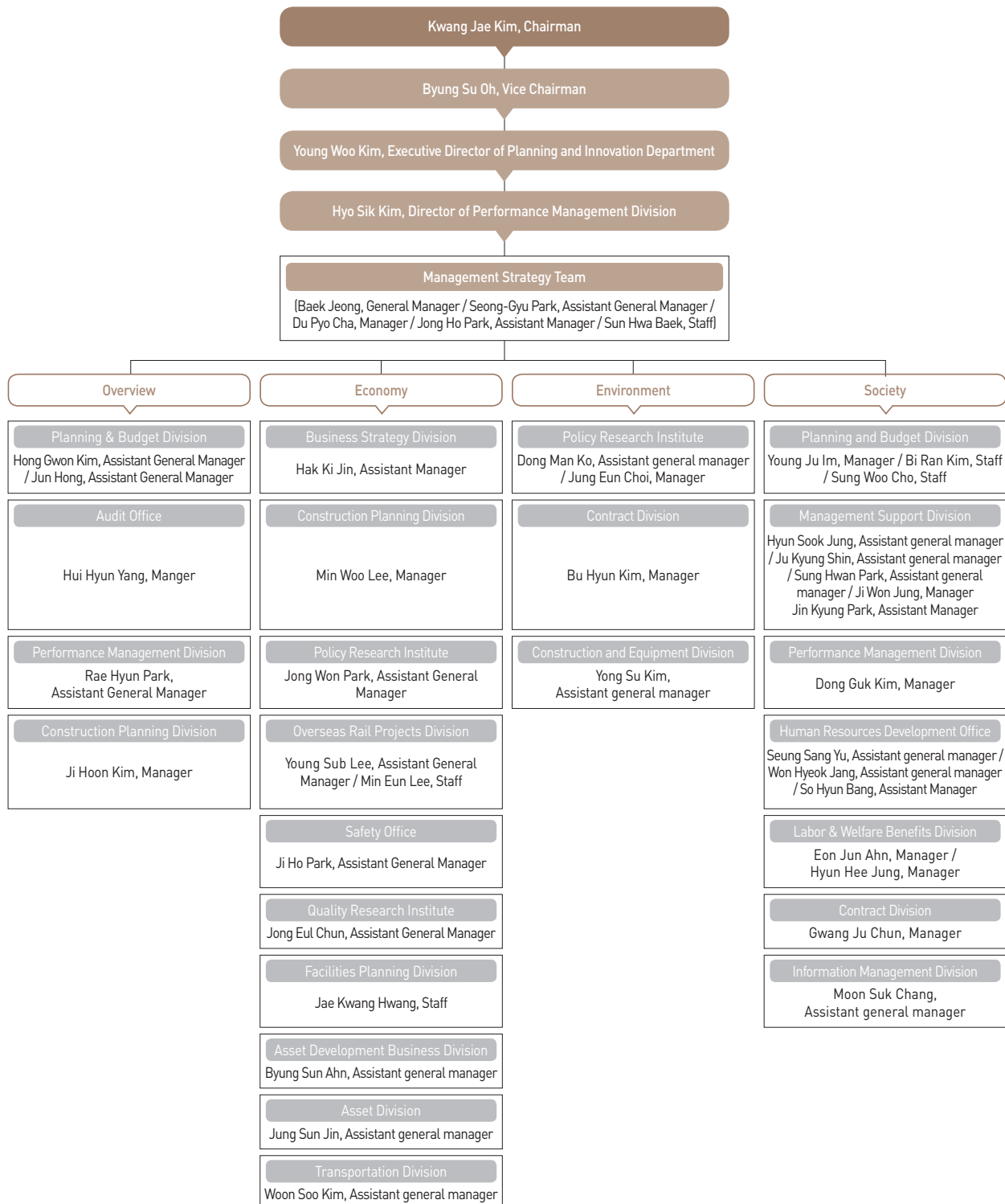
GRI G3.1 / ISO 26000 Index

● Reported ● Partially Reported ○ Not Reported N/A Not Applicable

GRI	Description	ISO 26000	Core Subject and Issue	page	Reported
HR7	Operations identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of forced or compulsory labor	6.3 / 6.3.3 / 6.3.4 / 6.3.5 / 6.3.7 / 6.3.10	Human right / Avoidance of complicity / Employment and employment relationships / Promoting social responsibility in the value chain	80	●
HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations	6.3 / 6.3.5 / 6.4.3 / 6.6.6	Human right / Resolving grievances / Discrimination and vulnerable groups / Fundamental principles and rights at work / Employment and employment relationships	20	●
HR9	Total number of incidents of violations involving rights of indigenous people	6.3 / 6.3.6 / 6.3.7 / 6.3.8 / 6.6.7	Human right / Resolving grievances / Discrimination and vulnerable groups / Civil and political rights / Respect for property rights	71	●
HR10	Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments		Due diligence / Human rights risk situations	65-66	●
HR11	Number of grievances related to human rights filed, addressed, and resolved through formal grievance mechanisms		Resolving grievances	78	●
Social Performance Indicators (Disclosure on Management Approach)				73	●
S01	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting	6.3.9 / 6.8 / 6.8.5 / 6.8.7 / 6.6.7	Economic, social, and cultural rights / Participation in and development of regional society / Creation of jobs and functional developments / Creation of wealth and income / Respect for property rights	83-85	●
S02	Percentage and total number of business units analyzed for risks related to corruption			18-19	●
S03	Percentage of employees trained in organization's anti-corruption policies / procedures	6.6 / 6.6.3	Fair operation practice / Anti-corruption	20	●
S04	Actions taken in response to incidents of corruption.			20-21	●
S05	Public policy positions and participation in public policy development and lobbying			25	●
S06	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country	6.6 / 6.6.4 / 6.8.3	Fair operation practice / Responsible political involvement / Community involvement	-	○
S07	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices	6.6 / 6.6.5 / 6.6.7	Fair operation practice / Fair competition / Respect for property rights	65-67	●
S08	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	6.6 / 6.6.7 / 6.8.7	Fair operation practice / Respect for property rights / Wealth and income creation	89	●
S09	Operations with significant potential or actual negative impacts on local communities		Community involvement and development	71	●
S010	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities		Community involvement and development	71, 85	●
Product Responsibility (Disclosure on Management Approach)				61	●
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures	6.3.9 / 6.6.6 / 6.7 / 6.7.4 / 6.7.5	Economic, social and cultural rights / Promoting social responsibility in the value chain / Consumer issue / Protecting consumers' health and safety / Sustainable consumption	40-43	●
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle by type of outcomes			40-43	●
PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements	6.7 / 6.7.3 / 6.7.4 / 6.7.5 / 6.7.6 / 6.7.9	Consumer issue / Fair marketing, factual and unbiased information and fair contractual practices / Protecting consumers' health and safety / Sustainable consumption / Consumer service, support, and complaint and dispute resolution / Education and awareness	70	●
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes			89	●
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	6.7 / 6.7.4 / 6.7.5 / 6.7.6 / 6.7.8 / 6.7.9	Consumer issue / Protecting consumers' health and safety / Sustainable consumption / Consumer service, support, and complaint and dispute resolution / Access to essential services / Education and awareness	68-70	●
PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship	6.7 / 6.7.3 / 6.7.6 / 6.7.9	Consumer issue / Fair marketing, factual and unbiased information and fair contractual practices / Consumer service, support, and complaint and dispute resolution / Education and awareness	68-71	●
PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications			89	●
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	6.7 / 6.7.7	Consumer issue / Consumer data protection and privacy	70	●
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	6.7 / 6.7.6	Consumer issue / Consumer service, support, and complaint and dispute resolution	89	●

System for Implementation of Sustainability Management

Sustainability management of KR is supervised by the Planning and Innovation Department, and staff from 19 departments worked together to produce the sustainability report.



Recognitions and Affiliation

2012 Recognitions

International recognitions	Organizing Institution	Major Significances
Awarded Grand Prize for Innovative Manager Award of 2012, Sustainability Management section	Joong Ang Ilbo	Recognized for continued preparation of groundwork for growth, Reduction of Budget by modifying over-planning [Mar. 2012]
Chosen as Excellent Institution Showing Accompanied Growth	Ministry of Knowledge Economy	Recognized for leading the path to growth in cooperation by providing support to small and medium companies [Mar. 2012]
Gold Medal for Civil Structure of 2012	Korean Society of Civil Engineers	New Construction Development Method [Mar. 2012]
Most Web Accessible Public Institution	Ministry of Public Administration and Security	Recognized for improving convenience of disabled and elderly in receiving information [Mar. 2012]
Grand Prize for CEO of the Year, Leadership section	The Korea Economic Daily	Selected as model professional manager, creating the path for future-oriented development and advancement of Korean economy [Jun. 2012]
Attained Overseas Credit Rating of Aa3 (stable) International Credit Evaluating Agency	Moody's	Advanced to Aa3 (stable), highest within national institutions [Aug. 2012] * Aa3 A1 (stable) in 2011 → A1 (stable) in Apr., 2012 → Aug. 2012
Excellent Award in both Individual and Organization section for Capability Cooperation of Small, Medium and Large Institution of 2012	Small and Medium Business Administration	Recognized for providing support to medium companies by purchasing products [Sept. 2012]
Grand Prize for Model Institution of 2012 (Anti-corruption section)	Sisa Journal	Ethical management/ Anti-corrupt institution to lead the future of Korea [Sept. 2012]
Participation Award for Public Institution Affiliated BP Competition of 2012	Ministry of Land, Transport, and Maritime Affairs	Recognized for innovative management quality and recycling of tree waste key to green growth [Oct. 2012]
Korea Sustainability Award (KRCA)	Korea Standard Association	Recognized sustainability management outcome [Oct. 2012]
President's Award at national QCC Competition	Korea Standard Association	Contributed to strengthening of quality competitiveness [Nov. 2012]
Grand Prize at VE Competition of 2012	Ministry of Land, Transport, and Maritime Affairs	Budget reduction and improvement of construction site quality through efficient VE [Nov. 2012]
Grand Prize for Environment	Korea Environment Plan Development Association	Recognized as excellent institution leading the way for ecology restoration [Nov. 2012]
Grand Prize for Leadership of Korea	Monthly Central, Inc.	Recognized finance management ability through increased overseas credit rating, etc. [Dec. 2012]
Award for public institution with excellent information disclosure	Ministry of Land, Transport, and Maritime Affairs	Received certification from Ministry of Land, Transport, and Maritime Affairs for striving to protect citizen's right to know [Dec. 2012]
Excellent case for advancement of public institution (organization, human resources section)	Ministry of Strategy and Finance	Recognized for management competitive capability [Dec. 2012]

External Affiliated Organization

Union Internationale Chemins De Fer (UIC)	Korea Railway Association	International Association for Construction	Korea Railway Construction Association	Korea Association of Management Projects
Korea Industrial Technology Promotion Association	Korea Association for Railway	Traffic Institute of Korea	Korean Society of Civil Engineers	Architectural Institute of Korea
Korea Institute of Electrical Engineers	Korea Association for Disaster Prevention	Korea Association for Tunnel Underground	Korean Society of Environment Education	Korea Railway Cultural Foundation
UN global Compact Korea Association	Korean Association for Audit	Yunkyung SM Forum	Korea Association of Record	Korea Society of Management Information

Reader's Survey

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We wait for your valued comments

In order to publish an improved sustainability report in the future, we look forward to your valued comments about the 2013 sustainability report. Please complete the following survey and mail or fax it to the appropriate office.

1. To which of the following groups do you belong?

- ☐ Customer ☐ Employee ☐ Government ☐ Local Resident ☐ Business Partner
☐ NGO or Community Organization ☐ Professional Organization ☐ Others ()

2. How did you hear about this report?

- ☐ Corporate homepage ☐ Newspaper or Media ☐ Internet ☐ Corporate employee ☐ Seminar / Lecture ☐ Others ()

3. For what purpose do you intend to use this report? (You may choose multiple boxes)

- ☐ To gain information about the corporation
☐ To understand sustainability management activities
☐ To compare and analyze the business of the corporation
☐ Research and educational purposes
☐ Other ()

4. Which issues in this report interest you?

- ☐ I . Introduction ☐ II . Sustainable Rail Network ☐ III . Green Rail Network ☐ IV . Harmonizing Rail Network ☐ V . Sharing Rail Network

5. If there is a section that needs to be supplemented, which section would it be?

- ☐ I . Introduction ☐ II . Sustainable Rail Network ☐ III . Green Rail Network ☐ IV . Harmonizing Rail Network ☐ V . Sharing Rail Network

6. Was this report helpful in understanding the Korea Rail Network Authority's sustainability management activities?

- ☐ Very helpful ☐ Somewhat helpful ☐ Average ☐ Not helpful ☐ Useless

7. What is your evaluation of this report?

- | | | | | | |
|--------------------------|---------------------------------------|---|----------------------------------|--------------------------------------|----------------------------------|
| Degrees of Understanding | <input type="checkbox"/> Very helpful | <input type="checkbox"/> Somewhat helpful | <input type="checkbox"/> Average | <input type="checkbox"/> Not helpful | <input type="checkbox"/> Useless |
| Accuracy of Information | <input type="checkbox"/> Very helpful | <input type="checkbox"/> Somewhat helpful | <input type="checkbox"/> Average | <input type="checkbox"/> Not helpful | <input type="checkbox"/> Useless |
| Amount of Information | <input type="checkbox"/> Very helpful | <input type="checkbox"/> Somewhat helpful | <input type="checkbox"/> Average | <input type="checkbox"/> Not helpful | <input type="checkbox"/> Useless |
| Design format | <input type="checkbox"/> Very helpful | <input type="checkbox"/> Somewhat helpful | <input type="checkbox"/> Average | <input type="checkbox"/> Not helpful | <input type="checkbox"/> Useless |

8. Please feel free to give your opinion on Korea Rail Network Authority's sustainability management activities and/or contents/format of the overall report.



Thank you for answering the questions





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