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Rail, Hope toward Tomorrow

Korea Rail Network Authority Sustainability Report 2015



242 Jungang-ro, Dong-gu, Daejeon
T +82-42-607-3156 / F +82-42-607-3169
<http://www.kr.or.kr>



About This Report

Characteristics of the Report

Korea Rail Network Authority (hereinafter “KR”) published its first sustainability report in 2008 and has published reports annually since 2010 to transparently share activities and accomplishments of KR’s sustainability management with our stakeholders. This is KR’s seventh sustainability report, and it contains all the company’s activities and results in the areas of economy, environment, and society.

Reporting Principles and Standards

This report is written in accordance with GRI (Global Reporting Initiative) guidelines G4 Core Option. As such, the report focuses on the material aspects identified through the materiality assessment, and the DMA (Disclosure on Management Approach) provides the material aspects in greater detail.

Reporting Period and Scope

This report is based on data from January 1 to December 31, 2014. The report covers sustainable management activities of the KR headquarters and local headquarters and partially includes partner company activities. Depending on the significance of the issues, data from first half of 2015 is also included. The currency unit used in this report is Korean won.

Verification of the Report

The credibility and accuracy of the data and content of the report were assured by third party verification. The independent assurance provider confirmed that the report meets the G4 Core Option guidelines.

Website http://www.kr.or.kr
Address (300-731) 242 Jungang-ro, Dong-gu, Daejeon Metropolitan City
E-mail csr@kr.or.kr
Phone 1588-7270
Fax 042-607-3629
Department Management Strategy Department, Management Performance Office, Planning and Financial HQ

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OUR PRIORITY

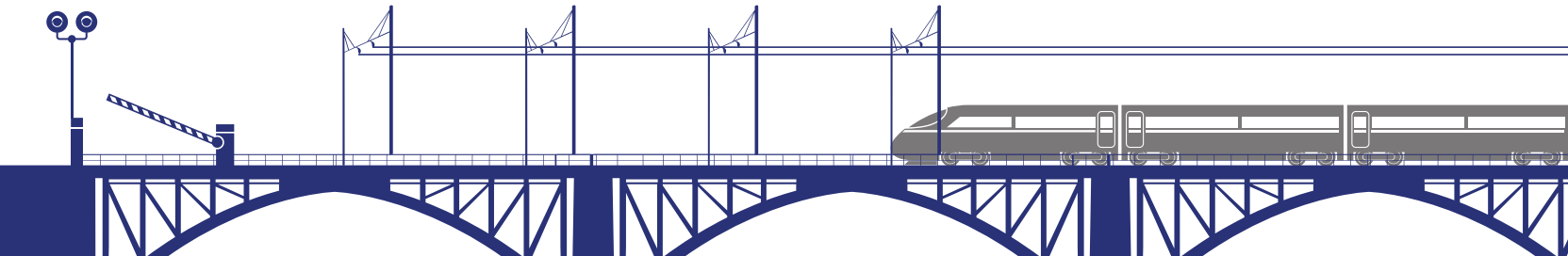
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KR is committed to fulfilling our basic duty and pursuing continued growth to realize the “continent of unity, continent of creation, continent of peace”.

Dear Stakeholders,

With your love and support, and the support of all our employees, we are happy to release the seventh Sustainability Report. Since we became a member of the UN Global Compact (UNCG) in 2007, we have continued to focus on socially responsible activities by communicating and cooperating with stakeholders in various areas including expansion of railway networks, management and operation of railway, regulation reform, and mutual growth with SMEs.

As a result, KR won the Sustainability Report Award for four consecutive years since 2011. In 2015, we were awarded the Management Innovation Award and the National Quality Management Presidential Award.

KR will use our railways as a medium for connection and continue to make railways more convenient for the public and contribute to the development of the economy. As a public institution, we will do our utmost to continue development and fulfill our duty and contribute to the unification of Korea and make Eurasia into a “continent of unity, continent of creation, continent of peace”.

We will fulfill our basic duty of expanding the railway network in a timely manner and enable access to all areas of the country and realize “a half-day life zone” objective.

In addition to Phase 1 of Gyeongbu High-speed Railway that went into operation and the Honam High-speed Railway that became operational in April 2015, we will construct and complete all the railroad projects we promised to the public in a timely manner, including the KTX Pohang direct line, Daejeon and Daegu city center zone, and Seoul Metropolitan area high-speed railway. We will aim to complete the 4,980km of railway extension by 2020, so that users will be able to conveniently reach anywhere in the country in 90 minutes, thus realizing the “half-day life zone” where return business trips can be achieved in half a day, and daily commuting to the capital becomes possible.

We will make improvements to outdated rail facilities to ensure public safety and continue to improve the surrounding environment.

We will improve facilities, install screen doors, and continue to modernize railway facilities to prevent accidents and make the facilities safe for the public. At the same time, we will continue to make efforts to upgrade facilities for people who have challenges accessing public transportation, installing soundproof walls along the tracks and public amenities on the train platforms for a more convenient experience.

We will establish an organization of integrity, creativity, and fearlessness in the face of challenges, based on autonomous innovation.

We will enable our employees to focus on their work by introducing autonomous innovative activity and encouraging them to “increase the quality of work and reduce unnecessary work”. We will instill a culture of integrity into our organization to gain public trust and become an efficient well-oiled organization that is appreciated by the public.

We will share and communicate with partners and customers, and create a culture of happiness.

We will actively work to rectify unfair practices, reform regulations to help our subcontractors and protect the socially weak, reform any inconveniences for the public, and engage in social contribution activities that are connected with our core business. We will continue to grow with the local community and create a culture of happiness for the public.

We ask for your continued support and encouragement for KR as we draw upon our ten years of experience and accomplishments and develop into a leader of sustainable management.

Thank you.



Korea Rail Network Authority
CEO **Kang Yeong Il**

강영일

2014 Sustainability Highlights



Honam High-speed Railway becomes operational, realizing half-day commute zone
In April 1, 2015, with the operation of Honam High-speed Railway, it will only take one hour and 33 minutes to travel from Yongsan, Seoul to Songjeong, Gwangju, realizing a truly half-day commute zone. Honam High-speed Railway is not only an innovation in transportation, but it will also have a significant influence on the economy, industry, and culture. In addition, Honam High-speed Railway will act as a catalyst for the development of the Chungcheong and Honam regions.



Best Consultant of Gyeongshim Line Project in China
The third work zone alliance, of which KR was part, for the construction of Liaoning zone on the Gyeongshim Line (length: 407km) connecting Beijing and Shenyang, was selected as the Best Consultant by a Chinese client in the 2014 2H Quality Safety Evaluation. Starting with consulting on the Suning-Chongqing line project in 2005, KR has continued to win contracts in thirteen projects and will continue to work on generating revenues in overseas business.



“Shintong Bangtong” Communications Event with New Employees and Management
KR held an event under the theme of “You are the Future of KR” for new employees in December 2014. The event, organized to provide a venue for young employees to communicate with senior management, featured executives sharing personal experiences and tips on working in a public institution. KR plans to continue creating similar events such as discussions with the CEO and empathy concerts that are focused on communications between employees and management.



Human Rights Management Declaration for Culture of Respecting Human Rights
At the Human Rights Management Declaration Ceremony, KR resolved to respect people’s rights, fight to protect and advance human rights, and work to instill human rights management in the entire industry. We plan to work with our partner companies and other institutions to help spread human rights management throughout the entire railroad industry.



MOU for “Pilot track construction” with train operator in Paraguay
KR entered into an MOU with Paraguayan train operator to construct a 5.5km pilot light rail transit track. Paraguay railroad institutions have recognized KR’s technological capabilities through KR’s work in the Asuncion transcontinental light rail feasibility studies since 2012. With this MOU, KR will cooperate with the Paraguayan officials on all tasks relating to the pilot track, including design, construction, test runs, and operations.

Family Day for Company Culture Experience
As part of the “work-life balance” program, KR invited 40 family members of employees for a company culture experience day. The event included Future CEO Experience, KR PR exhibition visit, Daechon Rail Bike experience, Coal Museum visit, and Ceramics Class in Gongju Ceramic Art Village for a fun family experience. We plan to develop and hold more family friendly programs for our employees, so that they may grow with the organization.



Government 3.0 Mutual Growth Forum
KR held the “Government 3.0 Mutual Growth Forum” with 150 partner companies to discuss eradicating corruption in the railroad industry, paying construction worker wages and making payments on time, stopping any unfair practices with contractors and subcontractors, and creating a clean, anti-corruption railroad construction environment. This event, based on the “Government 3.0” vision of transparency, information sharing, communication, and cooperation, was held to instill a new mutual growth culture and to discuss ways to enact ethical management and prevention of corruption.



Provision of scholarships to 112 students living in railroad adjacent neighborhoods
KR selected 112 students from disadvantaged households who live in the areas near railroads (hereinafter KR Youth Group) for scholarships. In 2015, we have donated 90 million KRW. With the cooperation of children’s foundations, KR created an annual Youth Group with 100~120 students. The KR Youth Group Hope Project activities include scholarships, donations of school uniforms and supplies, sharing activities during public holidays, and cultural events.



Establishment of cooperative structure with rail, land and property, roads, and water resources organizations
KR, with Korea Expressway Corporation, Korea Water Resources Corporation, Korea Land and Housing Corporation (hereinafter four major owners), entered into a cooperative agreement to ensure transparent and fair practices for contracts. This agreement is focused on strengthening communications to improve transparency in agreements with contractors, creating a comprehensive selection framework in bidding, holding joint workshops, and cooperating to change unfair contract structures. We expect that this agreement will be a watershed in creating a transparent and fair contract framework.

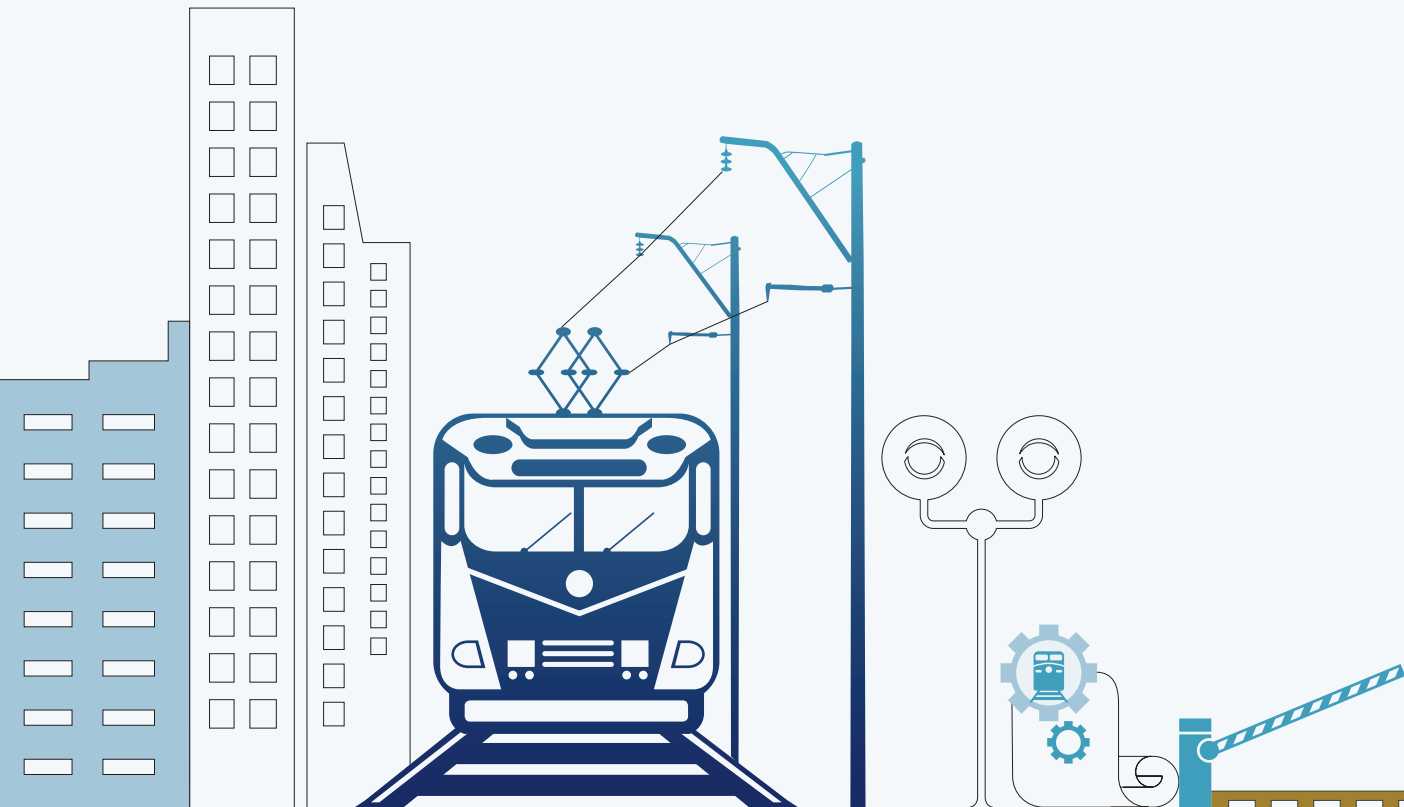


Public Sector Award at the Korean Innovation Frontier Award
KR won the Public Sector Award at the “2015 Korean Innovation Frontier Award”. KR was highly commended for vitalizing the local economy with the expansion of rail networks and Gyeongbu and Honam high-speed railways, engaging in knowledge innovation, and strengthening cooperative relationships with partner companies through the CEO’s site focused management.



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KR Overview

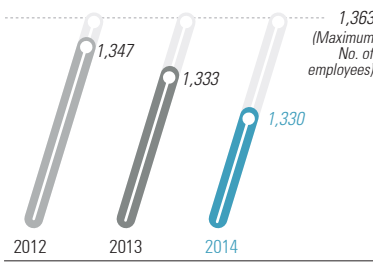
Introduction of KR

KR was established to efficiently construct railroad networks and systematically manage and operate rail facilities, thus providing a convenient mode of transportation for the public and contributing to grow economically. In line with the Second National Rail Network Plan, KR aims to provide safe and convenient railway services for the public. We aim to connect the railways to make it possible to reach any place in Korea in 90 minutes, and metropolitan areas in 30 minutes. From the first opening of the Gyeongbu high-speed Railway in 2004 to the recently completed Honam high-speed Railway, KR has continued with various projects including building mainline and metro rail network, and entering into overseas railway projects to lead the transportation industry in the 21st century and contribute to the national economy.

| General Status | | (As of June 30, 2015) |
|--------------------------------|--|-----------------------|
| 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 | Kang Yeong Il | |
| Formation | Quasi-Governmental Agency | |
| Current Status of Budget | 10,671,349 Million KRW | |
| Government's Investment (2014) | 50,32.2 Billion KRW | |
| Number of Employees | 1,330 employees | |
| Location | 242 Jungang-ro, Dong-gu, Daejeon Metropolitan City | |

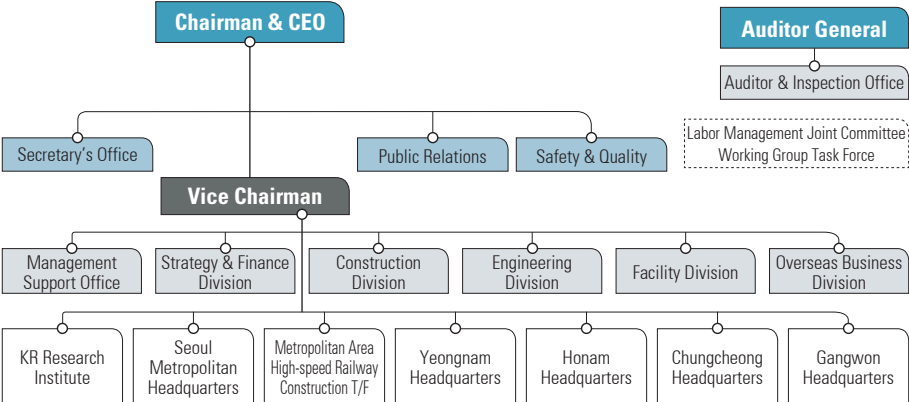
Status of Organization

Number of Employees



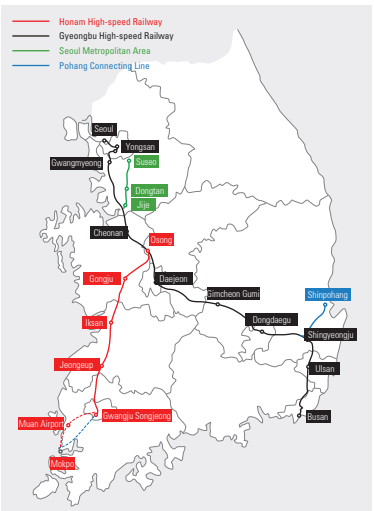
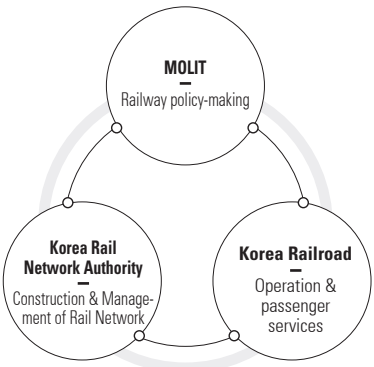
KR consists of its headquarters (five divisions and one office), one research institute and five regional offices. The regional offices are located in Seoul, Wonju, Daejeon, Busan, and Suncheon, to efficiently supervise the rail network construction projects and manage facilities located across the country. The China office is successfully carrying out the contracts obtained in China. KR operates under three main organizational principles: building a small yet strong organization, an innovative organization for future value creation, and a competitive organization specializing in technology.

Organizational Structure



Major Businesses and Role

Structure of Railway Industry

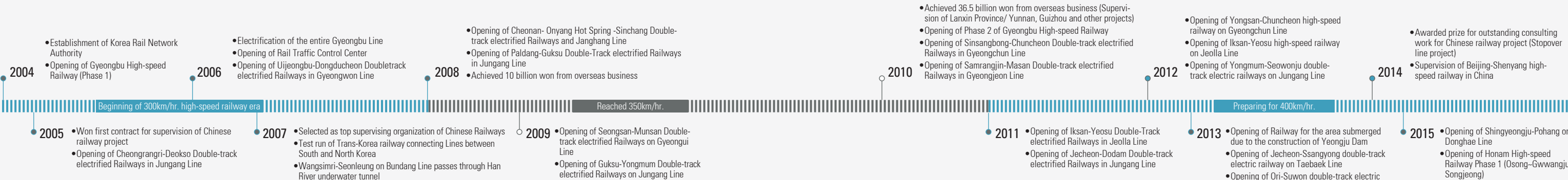


KR business is not limited to just railway construction. We are expanding the scope of our business to developing and maintaining surrounding areas adjacent to railway stations. In addition, we are leading the effort in the development of the railway industry by expanding outside of Korea, participating in overseas railway construction projects, and linking the Inter-Korean Railway and connecting with the Eurasia rail network. KR will continue to focus on pursuing transparent, responsible businesses in our role as a trusted public corporation.

| | |
|---|---|
| Railway construction | Business functions Construction of next-generation transportation networks such as high-speed railways, conventional railways, metro rails, and tilting and magnetic levitation railways Objective Construct rail networks to make any place in the country accessible in 90 minutes, and metropolitan areas accessible in 30 minutes |
| Safety management of railroad facilities | Business functions Safety review and maintenance of railway facilities, improvement and modernization of railway facilities including screen doors, multi-level crossing, continuous welded rail tracks and soundproof walls Objective Modernize rail facilities for safety and convenience for users |
| Railway asset management | Business functions Develop station adjacent areas and station complexes, build eco parks and bike paths, maintain and lease government-owned property, utilize unused land by closed lines Objective Efficient management of government-owned property and balancing public interest and profitability |
| Overseas railroad business | Business functions Identify overseas business opportunities, win contracts for foreign railway projects including construction planning, project management, construction planning supervision, participate in Official Development Assistance (ODA) projects, establish public and private collaborative networks, cultivate talent Objective Strengthen competitiveness in the global railway industry, increase profits |
| Development of Rail Network Technology | Business functions Develop and commercialize future rail network technology, localize railway products Objective Develop and advance future rail network technology |

Status of High-speed railroad

| Project | | Speed (km/hr.) | Extension (km) | Construction ratio (%) |
|---|-----------------------------------|----------------|----------------|------------------------|
| Gyeongbu high-speed phase 1 (Seoul ~Daegu) | | 300 | 281.6 | Operational |
| Gyeongbu high-speed phase 2 (Daegu ~ Busan) | | 300 | 124.2 | Operational |
| Gyeongbu high-speed Daejeon-Daegu city center | | 300 | 45.3 | 96.2% (completed) |
| Gyeongbu connecting line | Samnangjin ~ Masan | 200 | 42.2 | Operational |
| | Masan ~ Jinju | 200 | 53.3 | Operational |
| | Shingyeongju ~ Pohang direct line | 200 | 38.7 | Operational |
| Honam High-speed Railway (Osong ~Gwangju) | | 300 | 182.3 | Operational |
| connection | Jeolla Line (Iksan ~Yeosu) | 200 | 180.3 | Operational |
| Seoul Metropolitan Area High-speed Railway | | 300 | 61.08 | 85% |



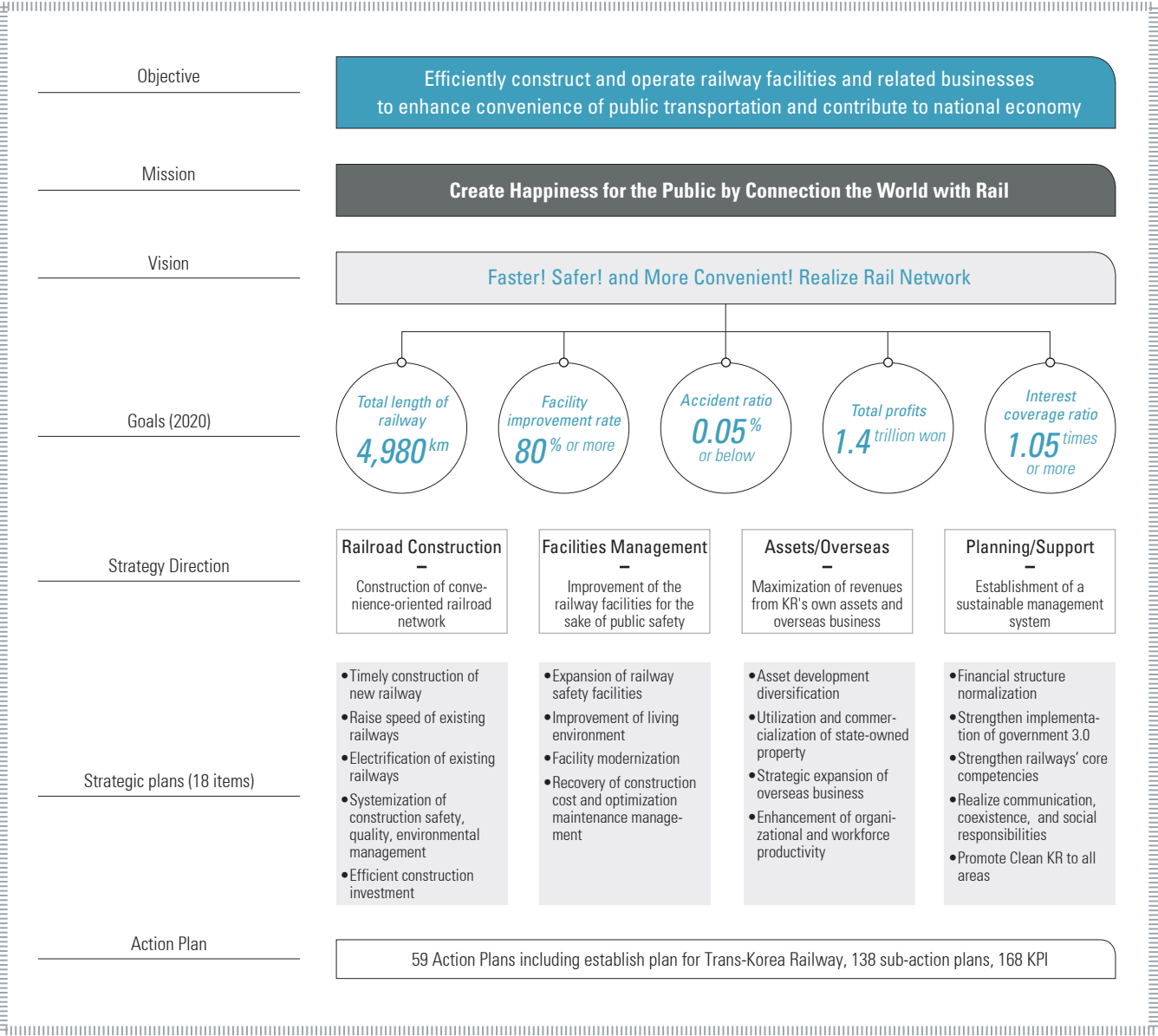
Vision and Strategy

KR 2020 Sustainability Management Strategy

KR established the “KR 2020 Sustainability Management Strategy” in July 2014, reflecting the changing environment in the global railway industry where the focus is high-speed railroads, and the future value of railroads as an environmentally friendly and energy efficient mode of transportation. We redefined our mission by incorporating our objective, and reflected our nation’s future values in 2020 to establish a new vision of “Realize a Faster, Safer, and More Convenient Rail Network”. We created our five key management objectives to focus on both public interest and profitability, including retaining the public interest nature of the railway industry, such as building railway networks and improving safety, and enhancing operational efficiency by removing waste from construction processes and increasing revenues.

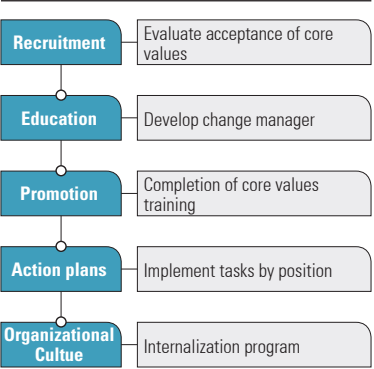
KR 2020 Sustainability Management Strategy was created with the participation of all our employees, as well as inputs from external experts, public idea contest, and other stakeholders. The strategy was shared company-wide through a Vision Announcement Ceremony and presentation for employees.

• KR 2020 Sustainability Management Strategy System



KR Core Values

Internalizing Core Values



Based on the three core values of sustainable management, mutual trust, and professionalism, we are promoting core value focused management strategy to realize our vision and achieve our strategic objectives. We have internalized our core values and incorporated them in our organizational culture and systems for employees to understand and encourage continuous results. We have also detailed the core values into action plans for senior management/manager level/working level staff, and reflected them in personnel management and training, thus ensuring implementation. During a company-wide organizational culture workshop, we developed 12 core value implementation programs, and we are carrying out core-value internalizing activities such as empathy concerts and young leaders programs.



Sustainability Management System



Human Rights Declaration Ceremony

The KR’s Sustainability Management system is overseen by the Department of Business Performance of Planning and Finance Division, and each business department is promoting various activities to fulfill its economic, social, and environmental responsibilities. In addition, the Social Services Committee, Future Development Advisory Committee, and other committees are assisting the sustainability efforts.

To strengthen social responsibility activities, we newly established a Human Rights Committee in June 2015 to not only protect and promote the rights of KR employees, but also to expand human rights management to our partner companies.

Key Performance Index (KPI)

| Sector | KPI | Unit | 2012 | 2013 | 2014 |
|-------------|--|----------------------|-------|--------|--------|
| Economy | Total Rail Extension | km | 3,650 | 3,666 | 3,670 |
| | Electric Railway Ratio | % | 69.1 | 68.9 | 69.11 |
| | Budget Savings | Hundred thousand KRW | 7,769 | 10,064 | 11,885 |
| | Assets and overseas business profits | Hundred thousand KRW | 994 | 1,039 | 1,106 |
| Environment | Environmental Management Index | Points | 158.1 | 212.0 | 226.6 |
| | Greenhouse gas reduction ratio | % | 16.6 | 24.4 | 27.5 |
| | Ratio of facilities using renewable energy | % | 18.16 | 24.96 | 30.60 |
| Society | National customer satisfaction index | Points | 93.98 | 94.10 | 94.25 |
| | National integrity index | Points | 8.22 | 8.36 | 7.60 |
| | Employee satisfaction index | Points | 76.4 | 78.5 | 80.65 |
| | Greenhouse Gas Reduction Rate | % | 0.082 | 0.102 | 0.087 |

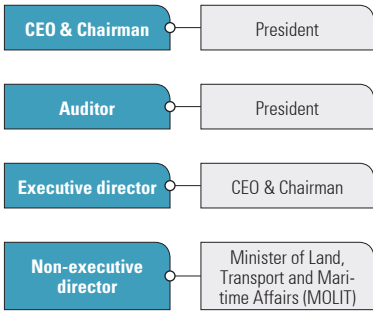
Corporate Governance

Structure of Board of Directors (BOD)

KR maintains a board of directors with experts to enhance governance transparency and ensure efficient management through prompt policy decisions. Non-executive directors account for more than half of the board of directors to ensure checks and balances and maintain independence. As of June 2015, there are six executive directors and seven non-executive directors on the BOD.

In order to strengthen the review function of the BOD, we have established non-executive committee meetings, sub-committees, and expert committees to efficiently put sustainability management into practice.

Persons with Appointive Powers at KR



Director Appointment Process

KR operates the Executives Recommendation Committee (ERC) to ensure the independent and transparent appointment of executives. The ERC determines the evaluation criteria of executive candidates and screens applications and conducts in-depth interviews of the applicants, received through an open application process. The ERC recommends the final candidates to the person with the authority to appointing, who then makes the final decision and selects the most suitable candidate. In order to maintain objectivity in the process, the number of non-executive directors on the ERC has increased from three to seven directors. In addition, the transparency of the process has been strengthened by conducting an employee perception evaluation when a private sector director is recommended.

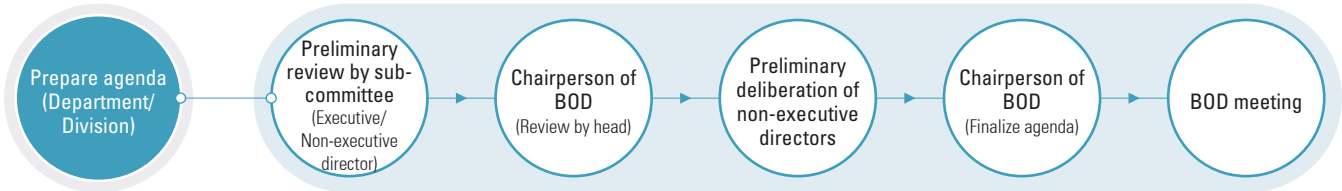
* Companywide employee perception evaluation: From twocandidates selected from a pool of 27 private sector executive candidates through a ranking representative meeting and two candidates recommended by the labor union, one person is selected from each group through a vote by all employees. The final appointment is made by the BOD.

Operation of BOD

The BOD is the highest decision-making body on key issues and policies. KR holds a monthly regular BOD meeting to discuss and provide updates on current issues, thus effectively strengthening the decision-making role.

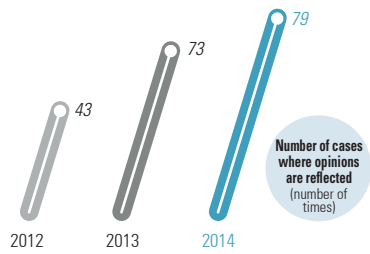
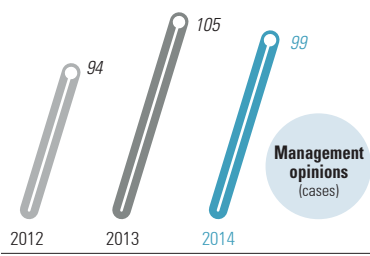
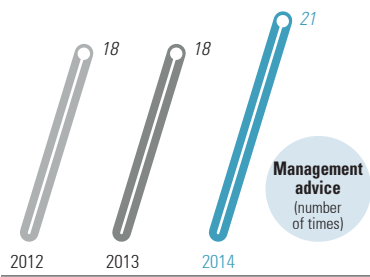
In order to encourage active participation, KR holds a regular meeting with the head in attendance, and enables real-time communication through mobile channels. We have also made it obligatory for the board of non-executive directors to meet seven days before the BOD meeting to hold preliminary discussions for items on the agenda to strengthen communication and enhance efficiency of the BOD.

BOD activities (5 Step)



Strengthen Non-Executive Directors' Participation in Management

Non-executive directors' recommendations on management issues



When making decisions on major issues, KR actively utilizes the expertise of non-executive directors, who are experts in finance, budgeting, construction, and auditing. We aim to create an inclusive, participatory environment, thus minimizing management risk by providing dedicated space for the BOD by providing BOD offices, a dedicated meeting room, and computers on the internal network. We have increased management consulting activities with the participation of non-executive directors such as the Executive Recommendation Committee and budget meetings for strategic management advice, and we are encouraging non-executive director participation by requiring the chairman to request a minimum of two opinions on agenda items.

Status of non-executive director opinions on management issues

| Strategy direction | Number of cases where opinions are reflected | Action taken |
|--|---|---|
| Build railroad focused on Public Convenience | <ul style="list-style-type: none">Need to emphasize KR's key function in the Eurasia railway projectConstruct infrastructure to enhance convenience to Gongju station | <ul style="list-style-type: none">Organization established under Future Business Planning Division<ul style="list-style-type: none">Korea-Czech, Korea -Poland Railway Cooperative Council Meeting (Jun. '14)Joint onsite due diligence of Baengma-goji on Gyeongwon Line, where the Trans-Korea rail is not linked (Ministry of Land and Transport, KR, KORAIL) (Nov. '14)Establish connected transportation system by operating a consultative group with Chungcheongnamdo (Dec. '14) |
| Modernize railway facilities to ensure public safety | <ul style="list-style-type: none">Safety concerns on railway facilities where there are sinkholes | <ul style="list-style-type: none">Joint inspection (Aug.-Sept. 14, 28 locations)<ul style="list-style-type: none">As a result of the inspection by independent experts, there was no location that required in-depth review or that showed any undesirable signs |
| Maximize asset / overseas business | <ul style="list-style-type: none">Prepare reasoning for issuance of asset backed short term bond to diversify fundraising methods, review issue of bond prior to interest rate increase | <ul style="list-style-type: none">At the 160th BOD meeting, complete discussion on issuance of asset backed short term bond and prepared detailed plan for issuing bonds in 2015, before the interest rate increases |
| Realize sustainable management system | <ul style="list-style-type: none">Responses to corruption issues in railroad industryReview decision to abolish policy to reflect completion of mandatory training course in promotion consideration | <ul style="list-style-type: none">Establish task force for recovery of confidence in railway industry and conduct integrity trainingMaintain policy to reflect completion of mandatory training course in promotion consideration, and revise HR policy. |

Committees in 2014

| Classification | Key objectives |
|--|--|
| Executive Recommendation Committee (ERC) | Transparent appointment process and operation of executive recommendation committee |
| Financial Risk Management Committee | Financial risk assessment for financial soundness |
| Audit Advisory Committee | Self-audit activities, Stronger fairness and professionalism, Mid to long-term audit strategy, review adequacy of audit results |
| Budget Execution and Advisory Committee | Management advisory on key budgeting issues including planning / settlement / execution |
| Planning and Management Subcommittee | 2014 The Second Construction Planning and Budget Revisions (Proposal) Review |
| Construction Subcommittee | Progress in Honam high-speed railway, Shinyeongju-Pohang, Wonju-Gangneung railway projects, and review quality management status |

Operation of BOD

| Classification | Unit | 2012 | 2013 | 2014 |
|--|--------|------|------|------|
| Number of BOD meetings | Number | 15 | 13 | 14 |
| Voting agenda | Cases | 34 | 33 | 37 |
| Reported agenda | Cases | 32 | 22 | 28 |
| Ratio of Preliminary Deliberation | % | 100 | 100 | 100 |
| Revised Agenda for Deliberation | Cases | 3 | 15 | 4 |
| Attendance Rate of Non-executive Directors | % | 96.2 | 96.7 | 89.7 |
| Share of Non-executive Directors' Statements | % | 54.1 | 67.9 | 73.1 |

The CEO enters into an incentive agreement with the executive directors in accordance with the Act on the Management of Public Institutions, and incentives are paid depending on job performance. Executive directors are evaluated on directors' performance indicators (60%) and CEO's assessment (40%). The CEO is evaluated by the government management evaluation criteria. The annual salaries of each member are decided on their performance evaluation. The annual compensation for CEO, auditor, and executive directors are provided in the 2014 management disclosures.

Evaluation and Compensation

Stakeholder Engagement

Stakeholder Engagement

Definition of stakeholders reflecting the characteristics of railway business

KR understands that our stakeholders are very important to the activities that we conduct. We categorized the stakeholders into the following groups—in line with the railroad business processes—for effective communication and collaboration: value influencing customers (National Assembly, government, media), value collaboration customers (partners, KORAIL, local community), value producing customers (employees, labor union), and value purchasing customers (general public).

• Stakeholder communication channels and teams in charge

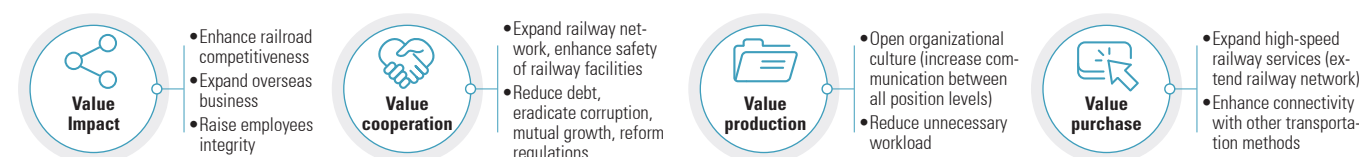
| | Value Impact (Business planning) | Value cooperation (Design/construction/ test operation) | Value production (Project management) | Value purchase (operations) |
|-------------------------------|--|--|---|---|
| Stakeholder | Government/ Media | Partners/KORAIL/ local community | Employees | Labor union |
| Needs | Expand railroad network, Eradicate corruption | Mutual growth, Collabora- tive structure, Development of local community | Open organizational culture | Improvement of employee welfare and benefits |
| Communication strategy | Achieve Responsible growth by establishing collaborative network | Achieve mutual growth with manage- ment focused on Social responsibility and mutual benefit | Realize autonomous and creative organiza- tional culture through conversation and communication | Solidify trust based relationship through communication and cooperation |
| Key Communication channels | <ul style="list-style-type: none"> •Strategy session/public hearing •National transportation/ railroad industry associa- tions •Press meetings •Integrity Ombudsman meetings | <ul style="list-style-type: none"> •Unfair Subcontract Resolution Center •Railway policy mediation council •Mutual growth Forum •Disaster management app/Fair management app | <ul style="list-style-type: none"> •Young Executives¹⁾ •KR Mailbox²⁾ •Empathy Concert³⁾ •Knowledge Golden Bell⁴⁾ •Head's Wish note (Monthly) | <ul style="list-style-type: none"> •Labor-management dis- cussion forum/ council •Labor-management Joint Committee for Organi- zational Development |
| Team in charge | Planning and Budget Office, Public relations | Planning and Budget Office, Safety and Quality | Performance Management Office | Management Labor Office |
| | | | | Construction Planning Office, Public Relations |

1) For people younger than 40 years of age, a communication messenger with management is used.
2) Anonymous suggestion box
3) Discussion event for internal and external people to share know-how
4) Employee quiz event for integrity and railway related topics
5) KR PR and experience group consisting of members of the general public

Communication for stakeholder engagement

Every year, KR utilizes stakeholder surveys, external expert advice, a public idea contest, company-wide workshop, and other channels to gather opinions from key stakeholder groups including government, customers, partners, local community, and employees, and identifies the aims and needs of the public and our employees. The results are reflected in KR's management activities, and appropriate communication channels are established for each group. We will continue to work on building cooperative relationships based on trust and be Open KR.

Key Needs



Issue Resolution Through Stakeholder Engagement

Case 1. Reformed structure of track usage fee with train operator

KR is a quasi-government organization that constructs and operates railroads and related facilities on behalf of the government. 50~60% of construction cost is funded by bond issuance. KR enters into a track access agreement with the train operator, and railway usage fees are used to fund the maintenance costs and repay construction costs. However, after the Gyeongbu High-speed railway became operational in 2004, the net track usage income, excluding maintenance fees, only covered 25.8% of total interest costs. The need to adjust the low track usage fee schedule, which was too insufficient to cover the cost of interest, was continuously raised, but due to the lack of communication with KORAIL and MOLIT and the fact that no solutions were raised, KR's debt continued to accumulate over the last ten years.

We have since actively communicated with KORAIL on the need to repay the construction debt and make general railroad maintenance costs more cost effective, persuading MOLIT(Ministry of Land, Infrastructure and Transport) and other relevant institutions. As a result, we were able to unlink the track usage fee and maintenance fee, and obtain higher share of government subsidies, thus establishing a foundation to ensure the safety of railways and achieve the cost efficiency of general railroad maintenance costs. In addition, we resolved the unnecessary conflict structure between KR and our train operators and reduced administrative burdens.



Gongdeok Station



Hongik University Station

Case 2. Collaboration with local government to provide to local community and generate profits

The construction of the underground Yongsan-Gajwa double-track electric project on the Gyeongui Line created land for railroad facilities near Hongik University and Gongdeok stations. The city planning approvals were obtained, and construction has gone underway since June 2014. KR concluded a mutual growth agreement with the local government, and for the past six years, we have already made pre-agreements on transportation impact plans, size, and façade of buildings through community town halls and consultations with city and construction joint committee. The local government's park project along the Gyeongui Line will create an open space ideal for pedestrians, and during the construction of Hongik University and Gongdeok Stations on the Gyeongui line, the project will create an estimated 500 thousand jobs. Once completed, the hotel operations will create an annual 4,000 jobs in the local community. Going forward, KR plans to continue to pursue development projects with the railway stations to obtain railway construction resources, develop local communities, and provide convenient facilities to the public.

Case 3. Obtained increased funding for facility improvement projects by strengthening external fundraising activities

KR conducts improvement projects for outdated railway facilities to increase durability of facilities and safe operation of our trains. After the Sewol ferry accident, the public's interest in safety has heightened significantly. This led to increased requests for facility improvements, but there have been difficulties in obtaining funding. Meanwhile, KR's debt burden has increased due to bond issuance. We thus conducted a detailed execution plan and a joint inspection with the MOLIT and other institutions, and worked closely with our partners to obtain funding of 469.4 billion KRW (Dec. 2014), an increase of 54% compared to the previous year. In 2015, we will deploy 309 billion KRW, or 65% of our total budget, during the first half, which we expect will have the effect of creating 4,100 jobs and vitalizing the local economy from the participation of local small businesses. KR will continue to prioritize the safety of our customers and increase investments in safe railway operations so that our customers may have a safe and convenient railroad travel experience.

Materiality Assessment Process

The results from the questionnaire analyses were used as key data for the materiality test. The materiality test followed the GRI guidelines to identify Core Aspects and boundary decision process, and each Aspect was considered for its business, economic, environment, and social Significance, its importance to stakeholders, and its Influence in decision-making for stakeholders. Key issues were identified according to the significance of each Aspect and used as key criteria in selecting the report content. KR has faithfully included the information on key issues in the Sustainability Report to meet the expectations of our stakeholders.

1 Identify sustainability management issues

3 Validation and Review

- Review vision and strategy of the business following the G4 Aspect list defined in the GRI guidelines to create materiality issue pool of 34 aspects
- Conduct stakeholder survey including the Aspects defined in the GRI G4 guidelines

- Assess and prioritize materiality of the issues in pool, based on business Significance and Influence on stakeholders

- Confirm selected core aspects provide a balanced reflection of economic environmental social influences
- Review key issues from prior reports and gather feedback from stakeholders for inclusion in the first step of next report

STEP 1
Identify Sustainability Management Issues

Media analysis

We analyzed 2,788 articles from Jan 2014 to March 2015 to identify internal and external perceptions of KR's sustainable management issues

Analysis of global benchmarking results

We analyzed important sustainable management issues in the global railroad industry

Internal/external

We conducted a survey for employees and external stakeholders to identify important issues that were impacting KR, or that KR was impacting

Review internal data

We collected and analyzed the CEO management policy, 2014 management objectives, and business plan and reviews, to identify KR's sustainable management issues

STEP 2 Prioritization

We conducted an online survey to prioritize the sustainable management aspects that we identified. Based on the results of the survey, we identified issues which had a large influence on stakeholders' decision-making. We considered our mission and strategy, sustainability trends, and business impact to decide issues of economic, social, environment significance and created a materiality test matrix.

Materiality Assessment Matrix

| Significance | Influence | | | | | | | | | |
|--|-----------|--|---------------------------|--|---|---|--|--|--|---|
| | | | | | •Support for partners and SMEs | | •Promoting industrial safety and health | •Safety and quality in railway construction projects | | |
| | | | •Indirect economic effect | | | | | •Eco-friendly design and construction | | |
| •Social contribution | | | | | | | •Fix noise and vibration issues | •Talent development | | |
| | | | | | •Managing CSR activities of partner companies | | •Increasing railroad safety facilities | •Modernization of outdated facilities | | |
| | | | | | •Managing stakeholder conflicts | | | •Timely construction of new railroads | | |
| •Support local community near railway construction sites | | | | | Minimizing damage to ecological system | | •Fair trade practices | •Strengthen integrity awareness and ethical management | | |
| | | | | | Reducing waste and resource waste | •Efforts to enhance customer satisfaction | Efforts in reducing environmental pollution | | | |
| Eco-friendly facilities near railway construction sites | | | | | | Energy usage and greenhouse gases | •Construction of Trans-Korea Railway (TKR) and Trans-Continental Railway (TCR) | | | •Upgrading existing railroads to high-speed and electrification |
| | | | | | | | •Railroad infrastructure for logistics | | | |
| | | | | | | •Strengthening work-life balance | | | | |
| | | | | | •Manage and develop KR's assets | | | | | |
| | | | | | •Financial stability and profitability | Advance labor and management relations | | | | |
| | | | | | | •Respect diversity and prevent discrimination | •Research and develop future rail technology | | | |
| | | | | | | | •Establish next-generation traffic network | | | |
| | | | | | | •Enter into strategic overseas businesses | | | | |
| | | | | | | | •Fair performance evaluation and compensation | | | |

STEP 3 Validation and Review Core

Aspects identified from the materiality test process was structured in the key contents for the 2015 Sustainability Report in consideration of definition, scope, boundary, reporting period, and limitations. We have published our report to provide transparent, logical, and objective information to our stakeholders.

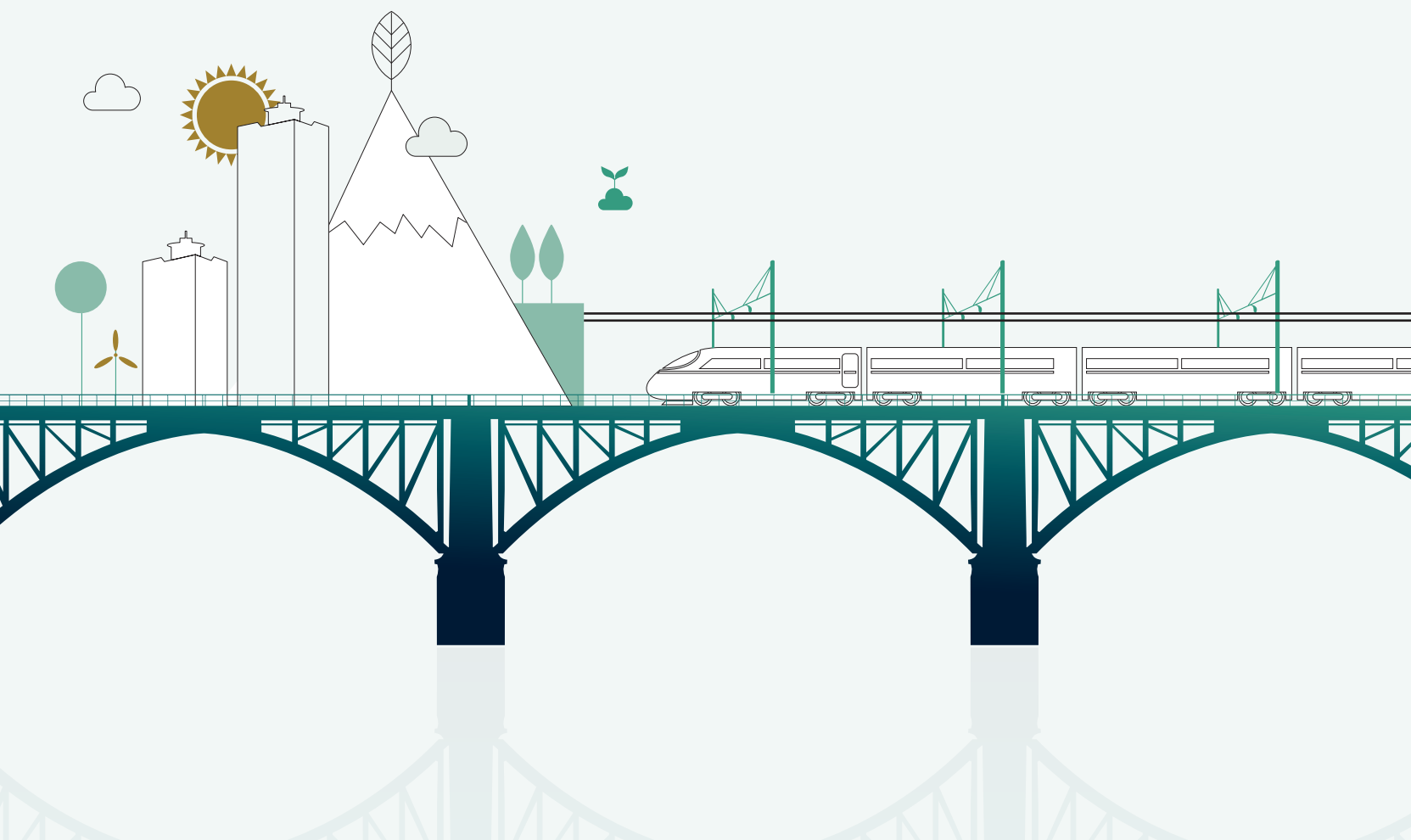
| Core Aspects | Key stakeholder | | | | Table of contents in report | Key reporting content | GRI Aspect |
|---|-----------------|-------------------|------------------|----------------|---|--|---|
| | Value Impact | Value cooperation | Value production | Value purchase | | | |
| Strengthen Integrity and ethical management | ● | ● | ● | - | Clean KR | <ul style="list-style-type: none"> ●Eradicate people related and institutional causes of corruption ●Efforts for fair contract ●Internalize integrity ethics mindset | Anti-corruption |
| Fair trade practices | | | | | | | |
| Timely construction of new railroads | | | | | Expand Railroads Focused on Public Convenience and Safety | <ul style="list-style-type: none"> ●Find new railroad project opportunities ●Timely completion and operation of projects ●Establish network to enhance speed competitiveness ●Electrification project to upgrade existing lines ●Establish investment plan for renovation projects to ensure public safety ●Expand railroad safety and convenient facilities | Economic performance, Indirect economic effect |
| High speed and electrification of existing railways | ● | - | ● | ● | | | |
| Expand railroad safety facilities | | | | | | | |
| Upgrade outdated facilities | | | | | | | |
| Railroad construction safety and quality | | | | | Construct Safe, High-quality, Eco-friendly railroad | <ul style="list-style-type: none"> ●Improve disaster and safety management system ●Strengthen preventative inspections ●Enhance level of safety , quality, environment management ●Enhance train operational safety by Strengthen quality management ●Construct eco-friendly railroad and minimize environmental impact | Customer Health and Safety, Occupational health and safety, Energy, Effluents and waste, Materials, Water, Environmental grievance mechanisms |
| Strengthen industry safety and welfare | - | ● | ● | ● | | | |
| Eco-friendly design and construction | | | | | | | |
| Improve noise and vibration | | | | | | | |
| Support partner companies and SMEs | - | ● | - | - | Mutual growth with SME partners | <ul style="list-style-type: none"> ●Establish fair trade guidelines ●Strengthen SME competitiveness ●Spread culture of mutual development | Supplier Assessment for Labor Practices, Anti-competitive Behavior |
| Talent development | - | - | ● | - | Talent management | <ul style="list-style-type: none"> ●Identify key roles and strengthen key competencies ●Flexible working system and family friendly management ●Socially equitable hiring policy and competency focused recruitment | Employment, Training and education, Diversity and equal opportunity, Non-discrimination |

* Value impact (Business planning): National Assembly, media, government
* Value production (Project management): Employees, Labor union

* Value cooperation (Design/construction/test operation): Partners, KORAIL, local community
* Value purchase (operation): General public

OUR PRIORITY

- 22 Clean KR
- 26 Construction of Convenience and Safety-Oriented Railroad Network
- 32 Construction of Safe, High-Quality, Eco-Friendly Railroads
- 38 Mutual Growth with SME Partners
- 42 Talent Management





Clean KR

Issue Background and Impact

The keyword in society today is “integrity”. The significance and impact of integrity extends to the growth and survival of an individual, organization, and even nations. As a quasi-government organization in charge of public railroad network construction, KR has many external counterparts such as construction companies and railroad-related manufacturers, and when there is an integrity related issue, it impacts not only the companies themselves, but all of society and the safety of the public. Therefore, KR holds integrity as our most important value and strives to keep our principles and promise to keep our public safe.

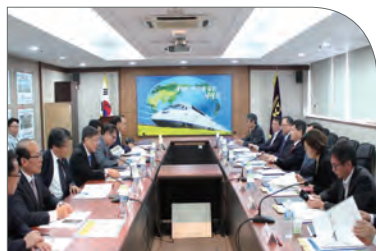
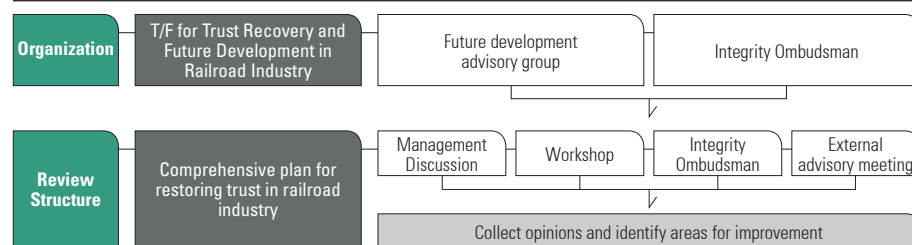
Key Activities

[Strategy] System of anti-corruption, clean culture

Establishment of organizational and review systems

KR installed a dedicated anti-corruption organization and review system for the purpose of eradicating corruption. KR created the T/F for Trust Recovery and Future Development in Railroad Industry, consisting of 32 people in five teams covering the contract system, corruption in supply, preferential treatment for retired public officers, ethics and integrity, and external oversight. This task force carries out activities for integrity awareness to prevent deep rooted corruption and wrongdoing. Furthermore, we worked to strengthen a culture of integrity by identifying the causes of corruption rooted in HR system and institutions and improving them. The Future Development Advisory Committee works to realize objectivity, expertise, and fairness, and reviewed progress in the improvement of our systems. We also held an Integrity Ombudsmen meeting every month to hear recommendations and advice regarding unreasonable regulations and procedures in the course of KR's operations (20 cases in 2014) for transparent oversight and assessment of the business.

Anti-corruption Organizational and Review Structures



Advisory body for Trust Recovery and Future Development



Declaration of Promise to Client

[Activities 1] Eradicating human resources and institutional causes of corruption

Human related causes of corruption

• Internalization of integrity mindset

KR employs diverse measures to eradicate HR related causes for corruption, such as instilling a mindset of integrity into our employees. We conduct various employee ethics training programs to spread our culture of integrity, and all members of senior management participated in the Anti-corruption & Civil Rights Commission (ACRC) Integrity Training Institute's customized training programs on two occasions. At the KR Integrity Event, we introduced measures to raise the level of integrity and declared promises to our clients. This was a firm show of our commitment to restore the public's trust in the railroad industry. We also created events such as the Employee Integrity Quiz that combined fun and integrity awareness among our employees.

• Efforts of external communication and innovative reorganization for integrity

We held an Anti-corruption and Integrity Commitment Event with 152 participants from partner companies to encourage external partners to join in integrity awareness. KR encouraged corruption prevention by committing with our partners to participate in anti-corruption and integrity activities. In addition, we established public-private cooperative anti-corruption integrity hub with like-minded institutions such as Korean Network on Anti-corruption & Transparency and Yunkyung SM Forum, so that our activities are not just limited to KR, and we communicate with other institutions to share information and benchmark them when possible. In particular, as a part of our HR related corruption prevention efforts, we conducted a two-phase reorganization so that people from the same schools are not concentrated in a direct managerial line, and we conducted innovative promotions by putting administrative employees in construction and engineering lines to minimize corruption from school relationships. .

Eradication of institutional causes of corruption

• Abolition of “1 company, 1 work zone” policy and development of collusion checklist

In addition to measures to prevent human corruption, KR operates procedures to prevent institutional corruption such as improving the contract system, corrupt supply practices, and preventing preferential treatment for retired public officers. To improve the contract system, we abolished the “1 company, 1 work zone” policy, which had raised questions about collusion in the bidding process. We also developed a collusion detection checklist to prevent such happenings, and put in place guidelines for identifying and handling cases of wrongful collusion. Our process was selected as the best example in collusion prevention for the construction industry, and is used as a benchmark for institutions under MOLIT.

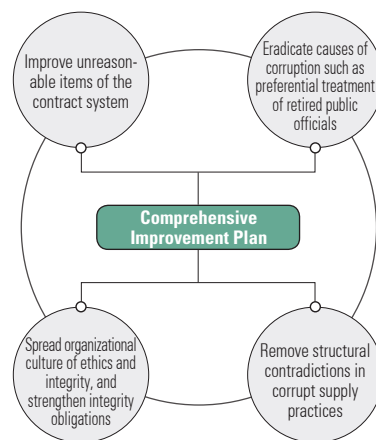
• Prevention of corrupt supply practices

KR currently has 20 action items, including standardizing materials and improving procurement procedures, to prevent corrupt supply practices. We strengthened standards for materials to prevent collusion and over competition, and opened the competition for supply of wood ties and rail fasteners from limited to general competition. We have pursued ways for materials dependent on foreign production to be made domestically to increase the market base and prevent monopoly and oligopoly. For monopolistic products in the domestic market such as high-speed railroad turnouts, we have expanded the bidding to international markets to prevent monopoly, maintain a market of competition, and reduce pricing bubbles. We have also standardized 41 types of materials and improved procurement procedures to ensure uniform quality, fair supply practices, and standardizations of materials procured with specifications. We are preventing price markups by creating a database of prices calculated at the time of order and calculating production costs.

• Prevention of preferential treatment for retired public officers

KR carried out three action items to prevent preferential treatment for retired public officers, including making changes to the current practice of railroad related associations monopolizing KR work. First, we changed the pre-operation railway construction quality inspection from association to KR, and revised the engineering contractor PQ (pre-qualification) criteria. We also reduced the number of acceptable institutions that can certify electrical engineering qualifications from three associations to the Korea Electric Engineers Association. In order to minimize causes of corruption in relation to technical assessment, we also revised the framework to achieve fairness in assessing the technical skills of the construction engineering contractor, and any irregularities found in the selection process by the evaluator are dealt with very strictly by dismissal or point reductions. In addition, we have reduced the scope of SOQ/TP (engineering assessment) and will only conduct the SOQ/TP assessment for more difficult services.

Comprehensive Improvement Plan in Four Areas



Implementation of strict verification and fair system

As part of realizing a Clean KR, we verified the adequacy of action items identified by the Task Force for Trust Recovery and Future Development of Railroad Industry at the External Advisory Meeting (Sept. 30) and Integrity Ombudsman (two occasions/ August 21 and Sept. 19), and created the Comprehensive Improvement Plan (33 action items in four areas including preferential treatment for retired officials) for trust recovery and future development of the railroad industry. In addition, we employed Anti-corruption & Civil Rights Commission Institutional Improvement Consulting (Aug. 2014–Mar. 2015) to identify and make improvements on issues across KR from an objective perspective. We are focused on causes of HR related and institutional corruption to restore trust in us among the public.

Strengthened reporting and audit practices

We established a linked system between ethical management and audit activities by integrating the Corruption Report Center run by the Ethics Division into the Corruption Act Reporting System run by the Audit Department, and any reported cases are strictly investigated without fail. The reporter's identity is kept confidential, which helped increase the number of cases reported to 14 cases (increased by 13 compared to the previous year). After we conducted special investigations for the case, the involved personnel were punished depending on the severity of the offense (1 reprimand, 1 warning, and 2 cautions). For effective internal supervision, we devised an annual audit plan following our mid to long-term audit strategy. We strengthened the audit function, and created an action plan to enhance efficiency and transparency for public institutions. To enhance the expertise of the audit department, we increased advanced training, set up the Audit and Advisory Committee, and carried out action items identified in a survey of the internal quality committee. Through these efforts, we earned an A ranking (86.1 points) in the audit quality assessment.

Our audit procedure policy has been revised to define the scope of routine audit and escalation stages, and we revised our corruption report guidelines to include retirees as offenders of preferential treatment. In addition, we have upgraded our audit system by standardizing our audit process, and sharing identified issues on our website and our audit casebook to prevent recurrences.



Electronic Procurement System
(<http://ebid.kr.or.kr/eproc01/main.jsp>)

Integrity Survey and Anti-corruption Policy Review Results

| Category | | 2012 | 2013 | 2014 |
|---|--|----------|----------|----------|
| Anti-corruption & Civil Rights Commission (ACRC) Integrity Survey results | Total integrity Score | 8.22 | 8.36 | 7.6 |
| | External integrity Score | 8.31 | 8.47 | 7.72 |
| | Internal integrity Score | 8.72 | 8.28 | 8.75 |
| | Policy client | - | - | 6.89 |
| ACRC Anti-corruption policy assessment results | Establish anti-corruption related infrastructure | 3rd rank | 3rd rank | 1st rank |
| | Enhance policy transparency and reliability | 2nd rank | 3rd rank | 3rd rank |
| | Eradicate/rectify causes of corruption | 3rd rank | 2nd rank | 1st rank |
| | Improve awareness and culture of integrity in public office | 1st rank | 3rd rank | 5th rank |
| | Prevention of corruption and promotion of corruption reporting | 3rd rank | 3rd rank | 1st rank |
| | Improve level of integrity | 3rd rank | 3rd rank | 4th rank |
| | Occurrence of corruption in office | 2nd rank | 1st rank | 5th rank |
| | Internal integrity survey results | - | 9.14 | 9.41 |

[Activities 2] Efforts for fair agreement

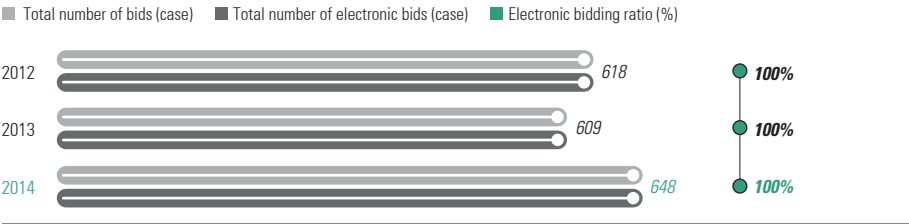
100% Electronic Bidding

KR operates an electronic bidding system for 100% of our contracts, and we enhanced counterparty satisfaction scores by resolving counterparty VOC through ensuring fair contracts. We ran 39 more bidding processes compared to the previous year, but all 648 cases were completed electronically. From the satisfaction survey of 149 companies, we obtained 94.07 points, an increase of 1.55 points from the previous year, showing that we are getting good responses. Along with the bidding process, we have also moved our entire administrative tasks, including request for bids and payment to an electronic format to maintain transparency in our processes.

Institutional improvements to prevent collusion

KR analyzed orders over the past five years, reviewed legal principles, and collected opinions to completely abolish the “One company, one work zone policy”, as we concluded that there was a possibility that the policy restricted competition between construction companies, which may encourage collusion. We also developed a collusion detection checklist, a first for a public institution, to establish a process for timely response to collusion in the wake of the case of the Honam high-speed railway, which occurred in 2009 but was only uncovered in 2015. The checklist will act as a preventive tool, rather than a response after the fact. For companies that qualify under the lowest bid system, we analyzed the distribution and pattern of the bidding amount to identify companies that may be guilty of collusion, and conduct quantitative and qualitative comparisons with bids of other companies to investigate signs of collusion. In regard to bidding for technical services, we conduct a qualitative assessment of the selection process, bidding ratio, and bid price, prior to signing the agreement. We also survey the evaluators and the department that oversees the technical assessment to detect signs of collusion. These efforts by KR have been selected as the best case by the Fair Trade Commission and best practice by Ministry of Strategy and Finance (MOSF).

Institutional improvements to prevent collusion



Institutional improvement for fair play in the bidding process

• Encouraging fair bidding by imposing stricter penalties

KR has worked extensively to make institutional improvements for a fair and transparent bidding and contracting process. First, we are imposing stricter penalties for companies that have employed people that have violated the retiree re-employment limit policy. The offending company will be prohibited from bidding for two years. For design/supervision contracts, companies that have hired KR retirees will be penalized with a three-point reduction on project capability evaluation. For electric/communications contracts, we abolished the policy of counting one year at KR as one year of related experience in the field. In addition, we impose stricter penalties for companies with integrity agreement violations (increase to five point reduction from three points) to emphasize the importance of implementing our integrity contract with the participating companies.

• Test result forging prevention system

KR installed a system to prevent counterfeit or forged test results so as to reduce faulty materials. Falsified test reports made it difficult to discern whether low-grade ingredients were used in the supplied materials. This undermined the fairness of the procurement process and increased risk of accidents. Therefore, KR, as the first institution under MOLIT, introduced anti-counterfeit technology used in currency and inserted holograms and anti-copy patterns for our test results and certificates, making it easy to judge their authenticity. In addition, we have newly instituted a policy to permanently prohibit companies that have provided counterfeit test results from submitting bids, thus ensuring train safety and fair contract procedures.

[Activities 3] Internalizing integrity ethical mindset

Employee integrity education

KR runs various ethical education programs to spread a culture of integrity. Instead of a one-sided lecture, we were able to reach our employees by putting on a play about an ethical dilemma in a public institution, holding a special class on Dasan philosophy, and other interactive activities regularly held over seven sessions to naturally instill a mindset of integrity among our employees. We created and announced “KR’s 10 Lessons on Being Clean”, an ethical code of conduct in an easy-to-understand illustration form, so that employees understand how to act with integrity in possible scenarios in the workplace. We have also prepared integrity guidelines to eradicate corruption by preparing employee guidelines on conduct and revising the employee code of conduct.



10 Lessons on Being Clean

Ethical Management Monitoring and Evaluation

KR operates the Shinbaram Ethical Management System for monitoring and evaluating ethical management. The system measures the levels of integrity from internal and external customers in real-time and details about anti-corruption efforts and the Clean Report Center are disclosed on the website. These are undertaken as part of our corruption prevention efforts.

Ethical Management Activities in 2014

| | |
|---------------------------|---|
| Ethical Management System | Integrity Happy Call Center (all year), Code of conduct Anonymous reporting (April), Integrity Ombudsman (monthly), Anti-corruption/ Ethical Management Committee (Every other month), Integrity workshop (March, July), Anti-corruption policy evaluation by department (December) |
| Evaluation/Follow-up | ACRD Integrity survey, Internal survey on level of integrity (Corruption risk detection for senior management has been extended to head of offices), awards for employees contributing to enhancing level of integrity, Shinbaram Integrity system message board |

Evaluation and Future Direction

KR was faced with a serious integrity crisis in 2014, brought to our attention by in-depth investigations by inspection agencies. In categories relating to integrity awareness, improvements in culture of public office, and corrupt public officials, KR received the first or second rank in 2012, but fell to the fifth rank in 2014, and received the lowest rank in integrity and trust. As a result, KR has set the recovery of integrity as our first priority and established a dedicated anti-corruption organization, the Task Force for Trust Recovery and Future Development of Railroad Industry. We also organized various efforts for corruption eradication, company-wide integrity education, communications with external parties, and ethical management monitoring. KR will use this crisis as an opportunity to firmly establish ethical management as part of our corporate culture, and continue to strive to lead a culture of integrity in public institutions by ensuring transparent work processes.



INTERVIEW

Seoul National University of Science and Technology, Department of Electrical Information | **Professor Lee Young-il (KR Integrity Ombudsman)**

KR’s Integrity Ombudsman group consists of independent experts related to different areas in the railroad industry. The Ombudsmen’s task is to provide transparent monitoring and assessment of KR’s business and to improve unfair systems and procedures. We have made multiple recommendations for improvements, and I can confidently say that KR’s Ombudsmen are more practical and effective than those in any other institution. Integrity Ombudsmen advised improvements in the evaluation system for design revisions, so that the cause and reason for revisions are clearly defined, and we encouraged publishing the “Onsite Design Revision White Paper”, which analyzed oft-occurring cases of design revision at railway construction sites, to minimize such occurrences. We reviewed the policy for compensation for land, and recommended improvement measures to reduce cases of complaints, and supplemented the code of ethics, thus contributing to enhancing KR’s integrity and ethical practices, as well as enhancing efficiency. Going forward, the Integrity Ombudsmen will focus on rooting out structural relationships ingrained in the railroad industry, finding measures for bid and procurement procedures and quality management, and actively carry out our monitoring and advising role to create a transparent, clean organization.

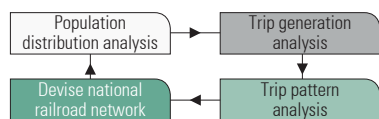
Construction of Convenience and Safety-Oriented Railroad Network

Issue Background and Impact

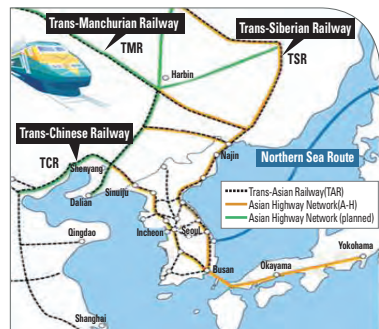
Railroads are more advantageous than cars as they are safer, environmentally cleaner, and do not incur the social costs of traffic congestion. As such, countries all over the world are increasing investments into railroads for a greener mode of transportation. For example, EU plans to expand its railroad network to 21,180km by 2020, and China has plans to construct a railroad network consisting of four vertical and four horizontal lines (over 12,000km in length). In line with the global trend, KR plans to expand the railroad network by 4,980km by 2020 to improve the convenience of our railroads for the public.

Key Activities

Analysis of the nation's spatial structure and travelling patterns



Number of new railroad projects (Unit: case)



Establish TKR and TCR networks

Mid to long-term plan for TKR and TCR network construction

| | |
|--------------------------------|---|
| Short-term (Foundation period) | <ul style="list-style-type: none"> Restore unconnected zones on TKR, restore and renovate North Korea railroad Establish South Korean railroad network to connect TCR Develop interoperable technology for TCR |
| Mid-term (Expansion period) | <ul style="list-style-type: none"> Modernize North Korea Railroad -Increase 150km/h. in speed Improve railroad system for interoperability with TCR |
| Long term (Growth period) | <ul style="list-style-type: none"> Upgrade North Korea Railroad to high-speed railroad -230~250km/hr. Strengthen railroad system interface to connect with Eurasian Railway |

[Strategy] National railroad network construction plan

KR's second national railroad network plan includes constructing X-shaped high-speed rail network and square-shaped network, which was developed after analyzing the nation's spatial structure and travelling patterns, and metro trains will be reorganized to be mostly express trains that can reach Seoul in only 30 minutes. Additionally, we will upgrade existing railroads and make them into high-speed trains to enhance our level of service and competitiveness. In order to shift the current road-focused transportation system to a railroad-focused system, KR plans to complete construction of the railway extension by 2020 and complete 85% of electrification. Our plan is to connect the country so that any part of the country can be accessed from any other part within 90 minutes. Our target is to increase railroad transportation users from 60% of the population in 2010 to 83%, and increase the transport share ratio from 15.8% in 2010 to 27.3%.

[Activities 1] Efforts to develop new railroad projects

Develop new economically viable projects

KR is carrying out efforts to find new economically viable railroad projects by conducting due diligence and optimizing the size of the facilities. New railroad project procedures include pre-planning and investigation, preliminary feasibility study, feasibility study and planning. In 2014, due to our in-depth pre-investigation and prioritizing in consideration of the wider national railroad network plan, six projects out of the seven we requested for preliminary feasibility study were accepted (acceptance rate of 85.7%). We also prepared plans for enhancing the project's economic efficiency, and we were thus able to identify four new railroad projects (6.2 trillion KRW), up 100% from the previous year.

Establish strategies for Trans-Korea Railroad and Trans-Continental Railroad network

KR is planning the foundation for unification in Korea and economic cooperation with countries in Eurasia with the construction of the Trans-Korea Railroad (TKR) and Transcontinental Railroad (TSR, TCR). We established a mid to long-term plan for the construction of the TKR and TCR and engaged in activities including due diligence of TKR, joint studies, and inclusion of the project in our national plans. We have established the Master Plan for Trans-Korea Railroad and Trans-Continental Railroad Connection in Preparation for Unification to define and carry out KR's role in the construction of the TKR.

Master Plan for Trans-Korea Railroad (TKR) and Trans-Continental Railroad (TCR) Connection in Preparation for Unification

| Plan | Key details |
|---|--|
| ① Devise plans for TKR connection | Connect unlinked zones such as Gyeongui Line, Gyeongwon Line, and Donghae Line on the TSR line and start electrification → KR suggested preliminary feasibility study to the government (Dec. 2014) |
| ② Devise plans for South Korea Railroad to link with TCR | Start preliminary work on North-South Axis (3 lines) and East-West Axis (one line) for TCR → Included in the Third National Railroad Network Plan currently under planning ★ 3 lines of North-South Axis: West Sea Gyeongbu Axis, Center Axis, East Sea Axis |
| ③ Prepare plans for railroad system improvements | Since the standard gauge is different for each country, there is a need for standardization → Consulted on study of the Eurasian Railway interoperability and connectivity technology development research |
| ④ Prepare plans for modernization of North Korean railroads | Analyze demand for North Korean railroads and Prioritize upgrades and carry out in stages → Suggest the government to raise funds through Inter-Korean Cooperation Fund and International Cooperation Fund |

[Activities 2] Timely construction and opening of projects

Timely construction of new projects

In 2014, we started construction in six stations for a total extension of 279.6km (8.6 times increase compared to the previous year) and developed a foundation for railroad expansion and more convenient transportation services to the public.

New Railroad Project Details

| Project name | Total project cost (hundred million KRW) | Extension (km) | Construction starting date | Expected outcome from project |
|-------------------------------|--|----------------|----------------------------|---|
| Dodam ~ Youngcheon | 36,474 | 41.4 | '14. 1 | Promote development and more convenient transportation to central inland region |
| Ulsan New Port | 1,745 | 9.3 | '14. 7 | Promote regional development by establishing transporting system for goods at new port |
| Dongducheon ~ Yeoncheon | 3,386 | 20.8 | '14. 9 | Provide electric train service in the northern Gyeonggi region, connect with Continental Railway |
| Improvements to Janghang Line | 9,106 | 32.4 | '14.11 | Improved convenience to users of Janghang Line and establish transportation network linked to high-speed railroad |
| Yeongdeok ~ Samcheok | 33,786 | 121.8 | '14.11 | Share traffic demand in East coast region and establish national railroad network |
| Icheon ~ Chungju | 19,248 | 53.9 | '14.12 | Improved convenience to users of Janghang Line and establish transportation network linked to high-speed railroad |



Honam High-speed Line Opening ceremony



Yongsan-Munsan Line Opening ceremony

Timely opening of Honam High-speed Line

In order to ensure the opening of the Honam High-speed Line on time, we newly established the Honam/Gyeongbu High-speed Railway Phase 2 Opening Management Group Task Force in April 2014 to manage process control, make comprehensive test runs (inspect facilities, test run), and manage issues related to the opening of the line. We held weekly meetings (from April 2014 to opening) chaired by the CEO to discuss key issues and reviewed progress and processes that were behind schedule. We also devised responses for issues and provided support on site to enhance the safety of the railroad facilities. When the Honam High-speed Railway became operational on April 1, 2015, the travel time between Seoul and Gwangju was shortened by 66 minutes, thus realizing the half-day life zone.

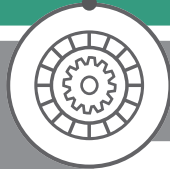
Timely Opening of KTX Airport Line and Yongsan-Munsan

KR built a connecting facility to the KTX airport line to enable direct connection from major cities including Daejeon, Daegu, Busan, and Gwangju to Incheon International Airport and enhance accessibility to the airport. In fact, the total number of users on the line has exceeded 30,000 in five months, which was 147% of expectations. In addition, when the Gyeongui Line (Yongsan-Munsan) became fully operational, the time to transverse the Seoul Metropolitan Area, from northwest Gyeonggido (Musan) to southeast Gyeonggido (Yangpyeong), was reduced by 30 minutes (from 185 to 155 minutes). As accessibility to the Seoul Metropolitan Area from regions northwest of Seoul (Munsan, Ilsan) improved, Gyeongui and Central line users have increased compared to the previous year.

Timely construction of Wonju-Gangneung Project for the Pyeongchang Winter Olympics

• Conflict resolution through cooperative structure

KR is putting a lot of effort into the Wonju-Gangneung project to support the success of Pyeongchang Winter Olympics and enhance transportation convenience to the Gangwon region. We have established close cooperative relationships with stakeholders to resolve all conflicts relating to the construction project prior to starting the project. Residents in Daehwamyeon, Jinbumyeon in Pyeongchang demanded underground construction of the Wonju-Gangneung transmission tower (which would require an increase of 24 hundred million KRW for the project budget) or to move the project to pass through another region. KR, the Olympic Organizing Committee, KORAIL, Gangwon Provincial Government, and Gangneung City Government created a consultative group, and through active negotiations, agreed to move the location of the substation (from Jinbumyeon to the entrance to the underlay shaft) and devised a method to construct the entire zone underground without increases in the project budget. In addition, conflicts from moving the folk flea market from the city center, and line change of Wolho-Pyeongdong zone, were smoothly resolved through this consultative group.



Construction of Convenience and Safety-Oriented Railroad Network

• Change in construction method and reduced construction period

When a cultural artifact (Old Palace of Yeguk) was discovered at the construction site in Gangneung, the site investigation would have delayed completion of the project by ten months. KR decided to change our construction process (from Open-Cut BOX to Shield TBM method) and adjusted the vertical alignment (from -12% to -20%). In this way we were able to offset the delay without increases in the budget. In order to create synergies within the project, KR agreed with the Gangneung City Government that KR will focus on underground construction while Gangneung City will take responsibility for above ground work, including removing the Yeongdong Line. This cooperation led to reduced construction period. In addition, we developed a mobile-based process control smart app which enables real-time monitoring of the construction progress, and reinforced our project management system.



Pohang KTX Opening Ceremony

[Activities 3] Construction of railroad network to strengthen competitiveness in speed

Speeding up the trunk lines

KR will invest 5% of the project cost to speeding up our existing trunk lines, which are around 100km/hr. per hour, to 200km/hr., up to the speed of the Shinkansen in Japan.

The Gyeongchun Line (Yongsan~Chuncheon) and three other projects are already fully operational (2012). In 2014, we completed the Shingyeongju~Pohang project on the Donghae Line and reduced the travel time from Seoul to Pohang by 83 minutes (KTX + bus 3 hours 35 minutes → 2 hours 12 minutes). The Shingyeongju~Pohang project was undertaken concurrently with the construction of the Donghae Line, which saved 98 hundred million KRW in the project budget (more money was saved when the line was upgraded to high-speed than when its construction was first completed). The economic effect that this railroad infrastructure project brought to Pohang area amounts to 1.175 trillion KRW.

Three other projects including the Cheonan~Gunsanong Janghang Line are currently underway. The high-speed Yongsan~Seowonju project to support the Pyeongchang Olympics obtained a total 1,539 hundred million KRW in funding (in Dec. 2014), and projects include speed enhancements as well as improvements in signaling facilities to expand the line capacity.

[Activities 4] Electrification projects to upgrade existing lines

Eco-friendly, highly efficient electrification for existing lines

KR completed the electrification of three projects including the connecting facilities for the Airport Line, which reduced greenhouse gas emissions and operating costs. Eight projects including the Seoul Metropolitan High-speed Line are currently underway, and electrification designs are being made for twelve additional projects including the Wonju~Gangneung, Hongseong~Songsan zone on the Seohae Line. Through our efforts to shift from diesel to the eco-friendly and highly efficient railway electrification system, we are targeting to achieve 85% of all our lines to be electric, which will make us the third most electric railway system in the world.

[Activities 5] Enhancing investment efficiency by improving design quality

Improved design standards for economic design and construction

KR has made timely revisions and improvements to design standards, standard plans, and standard specifications for railroad products, quantity and unit cost calculation standards and used the improved standards into the design which enhanced the design quality and reduced project cost. We conducted expert reviews, engaged with technology consultants, and held a review committee meeting to revise and amend 70 cases of design standards.

| Area | Engineering/ Railroad track | Construction/ Equipment | Electricity | Signal/ Communications |
|------------------|--|--|---|---|
| Key revisions | Lateral load standard for derailment protection wall and six other cases | 21 cases of installation standards for Air conditioning /air circulation/ firefighting | 24 improvements including improved aluminum grounding methods in grounding construction | 18 improvements including relocating video monitoring facilities at stations with weak visibility |
| Expected outcome | Strengthened safety in case train goes off tracks | Strengthened safety measures | Cost reduction and better construction of earth | Can monitor high-speed (control tower), and general (closest station) |

In addition, we have revised 28 items of safety related designs for accident prevention. Under civil engineering and construction, there were 12 items including air circulator cover installing standards. Under signaling, there were 16 items including adding all-in stop function of signal devices in stations. We are working diligently to create a safe railroad network.

Optimization of project cost and enhance quality of design

KR continues to enhance design quality and optimize size of facilities with low project costs. We reduced the project cost by 2,742 hundred million KRW by optimizing the facility size of five projects including Yeongcheon ~ Shhingyeongju, and reduced the project cost by 3,937 hundred million for 24 projects by improving construction methods for high-speed and general railroads. In addition, we have published and shared "Onsite Design Revision White Paper" (Nov. 2014), which analyzes cases of design revision at railway construction sites by construction type and causes in the last five years, and led providing feedback on examples of cost reduction.

Cost reduction and value enhancement through Value Engineering

KR reduced the project cost by 4,695 hundred million KRW through design VE and review to identify areas of improvement, including enhancing constructability. We created a VE team of 718 academics, researchers, technicians, and other relevant experts, and followed the process of 'site research → analyze function → generate ideas → evaluate ideas → prepare proposal → reflect in design'. With the Pohang~Samcheok Railroad Construction Design VE, KR won its fourth consecutive MOLIT Minister Award in the National VE contest out of 19 participating teams.

| Category | Project costs (hundred million KRW) | 2014 planned reductions (ratio) | 2014 actual reductions (ratio) | Compared to plan |
|---------------------|--|------------------------------------|-----------------------------------|------------------|
| Design VE(76 cases) | 68,600 | 2,750 (4.0%) | 2,801 (4.1%) | 102% |
| Review (106 cases) | 72,181 | 1,800 (2.5%) | 1,894 (2.6%) | 105% |
| Total | 140,781 | 4,550 (3.2%) | 4,695 (3.3%) | 103% |

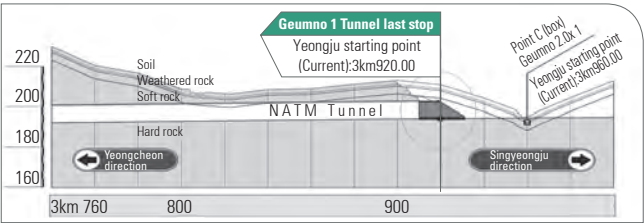


INTERVIEW

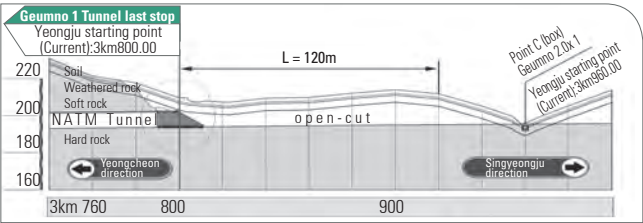
Korea Transport Institute, Railroad Policy/ Technology | **Jae Hoon Lee** Department Head

KR has the goal to establish a national railroad network to enable access to major cities and locations all over the country within 90 minutes travel. By providing railroads to previously unconnected areas, KR is helping to increase regional interaction and leading social integration and economic development. In order to continue to strengthen our competitiveness in the railroad industry, we need to obtain the feasibility of railroad projects and R&D to enhance the safety and convenience of our trains. It is imperative that we conduct in-depth research into the issues that the current railroad projects are facing and devise solutions to those issues, as well as secure feasibility of electrification projects. There is a need to develop measures to prevent railroad related deaths and to ensure safety for waiting passengers. Information systems for immediate response to emergencies or accidents must be developed and made available. For KR to expand its reach to global markets, all stakeholders—government, public institutions, private companies—need to cooperate and first collect information from different channels. Furthermore, we need to establish a framework to evaluate and verify the data and in the mid to long-term, and develop a system to collect and manage such information.

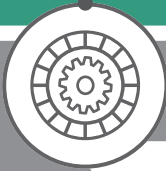
Yeongcheon~Shingyeongju Project Improvement Case Study



(Original plan) Designed as tunnel, 36 hundred million KRW



(Improved plan) low depth open-cut method, 14 hundred million KRW



Construction of Convenience and Safety-Oriented Railroad Network

[Activities 6] Establishment of investment plan for improvement projects to ensure public safety

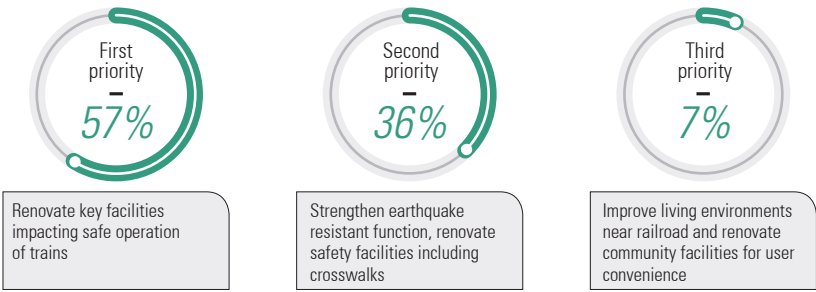
Decided direction for investment in improvement projects

With 27% of bridges and tunnels over 50 years old and 55% of electrical facilities which have exceeded its life, the number of outdated railroad facilities continues to increase. However in 2013, the ratio of investment in improvement was at a low 18.5%. KR garnered support for increasing investments in improvement projects to ensure public safety, and prioritized projects for maximum investment efficiency. We have decided to increase improvements in outdated facilities such as electrical facilities that are nearing the end of their life.

Calculated volume of facilities needing improvements through total inspection survey of facilities and prioritized investment

We conducted a total inspection survey by inspecting status of railroad facilities, life, and breakdowns, and calculated that there are improvements needed at 25,149 locations. We put safe train operation as the first priority and allocated investment into four stages depending on the level of risk of the facilities. We decided on the priority of projects by a selection and focus strategy, thus enhancing investment efficiency.

Established investment priority

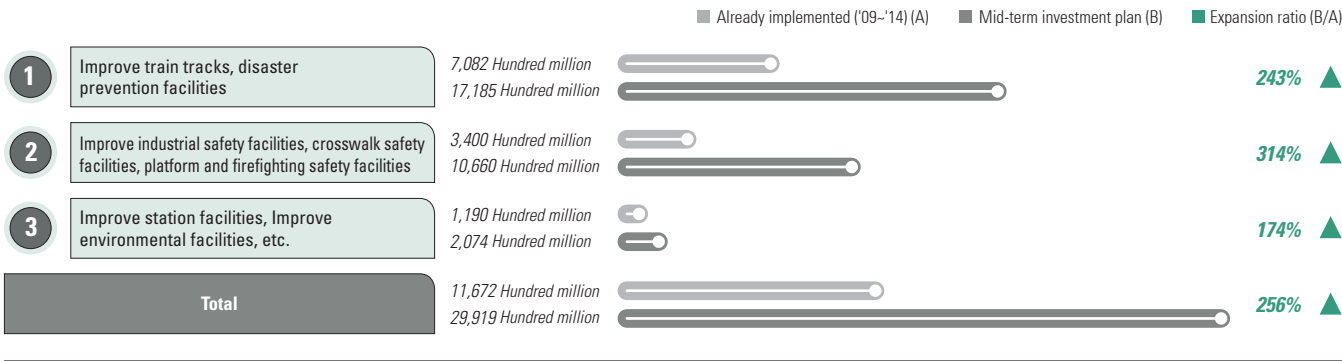


Established mid-term investment plan for improvements and created foundation for implementation

In order to make timely improvements to outdated railroad facilities, KR prioritized projects and created a mid-term Five Year (2015–2019) Investment Plan. This plan will fund 2.29919 trillion KRW of improvement projects, 2.5 times the size of historical projects. The plan is to make improvements at 20,959 locations out of 25,149 facilities requiring upgrades (83.3%), by 2020.

Moreover, KR will strengthen PR activities to the public with opinions and materials to achieve a consensus on the need for improvement projects. We increased external fund raising facilities and raised 4,694 hundred million KRW for improvement projects, a 54% increase compared to previous years, and established a mid-term human resources plan to carry out the increased load of improvement projects. In addition, we are looking into introducing private investment into improvement projects to lessen the burden on the government budget. In pursuing railroad improvement projects, we focus first and foremost on public safety.

Improvement projects



Before the reformation of passage box



After the reformation of passage box



Before the installment of escalators



After the installment of escalators

[Activities 7] Expansion of railroad safety and convenient facilities

Timely improvements to outdated safety facilities

Following the 2014 Project Plan, KR prioritized projects in consideration of the nature of railroad project areas such as structure, track, and electrical facilities, and made timely improvements to outdated and safety facilities including installing 323 protective walls, 844 emergency power systems, and 10 landslide prevention facilities.

| Improvements | Improvements and performance |
|---|---|
| Improvements in outdated track facilities and structure | <ul style="list-style-type: none">• Usage of heavier rails (50kg→60kg) for 12.8km, 15.6km of continuous welded rail, 66 thousand concrete sleepers, 1.2km concrete trackbed, 31 turnouts• 14 bridge performance improvements, 18 tunnels, 22 bridges, 3 platforms, 323 protective walls |
| Improvements in outdated electrical facilities | <ul style="list-style-type: none">• 17 railway substations, 34 overhead lines, 72 power distribution lines, 844 emergency power systems• Point switch at 510 locations, interlocking devices at 7 locations, track circuit at 587 locations, axle detecting device at 6 locations• Communications networks at 36 locations, wireless devices at 9 locations, communications devices at 31 locations |
| Expand disaster prevention facilities | <ul style="list-style-type: none">• Retaining wall at 14 locations, landslide prevention facilities at 10 locations, wastewater facility installations at 6 locations, reinforced roadbed at 2 locations |

Expand safety facilities at railway crossing to reduce crosswalk accidents

We turned existing level crosswalks into multi-level crosswalks to prevent accidents at the source (two stations at Gangwon and Yongseong), expanded crosswalk safety facilities (36 crosswalk protection facilities and 55 signal analyzers) for areas that were difficult to turn into multi-level crossings, and allotted 700 people at 189 crossings where visible distance is insufficient. Due to these efforts, accidents at crosswalks decreased by 36%, from 11 cases last year to seven this year.

Enhance convenience of railroad facilities by continuous improvement of station facilities and noise issues

KR continues to make improvements to station facilities to make it more convenient for disabled, old, weak, and other people with difficulties using public transportation. We constructed Braille block and bathrooms for disabled people in the stations, installed screen doors for user convenience and safety. We also constructed noise proof walls near railroads that exceeded the noise standards from trains, and expanded the passageway for the residents to pass through more comfortably.

| Improvement items | Improvements and performance |
|--|---|
| Facility improvements for people who have difficulty accessing public transportation | <ul style="list-style-type: none">• Construct Braille block, staircase handrail, disabled bathrooms, restroom for pregnant women, and other facilities in stations (improvements in 28 stations including Wondang Station)• Install three lifts (E/V, E/S) in Bumgye Station on Gwacheon Line |
| Improvement of amenities on platforms | <ul style="list-style-type: none">• Install 9 roofs on platforms at nine stations including Dobong Station on Gyeongwon Line• Replace three asbestos buildings including buildings in Guro Station on Gyeongbu Line• Installed screen doors at eight stations including Taepyeong Station on Bundang Line (plan to expand to 116 installments from 2015–2019)• Install trial MAGIBANG (waiting room) at Hongseong and Yeasan stations on Janghang Line (plan to expand to 114 installments from 2015–2017) |
| Installation of soundproof walls | <ul style="list-style-type: none">• Reduce noise level with soundproof wall near railroad (27 installments including Osan–Jineui zone on Gyeongbu Line)• Improve soundproof walls to harmonize with the surroundings (Oct. 2014) (improvement) achromatic color → vines, colors |
| Expansion of tunnels under railroads | <ul style="list-style-type: none">• Expand two tunnels under elevated railroad (Sangdong-gu Bridge in Milyang City, Hangeoriecheon Bridge in Okcheon-gun) for improved pass through for local residents |

Evaluation and Future Direction

KR started construction on six new projects totaling 279.6km in 2014, and the KTX airport railroad connecting the facility and Yongsan–Munsan zone on the Gyeongui Line became fully operational. On April 2015, after six years and spending 8.3529 hundred million KRW, the Honam High-speed Railroad became operational. The ripple effect of the Honam High-speed Railroad amounts to 24.9 trillion KRW, and the railroad reduced travel time from Seoul to Gwangju by 66 minutes to 93 minutes. This realized the half-day life zone, increased train travel convenience, and contributed to the balanced development of the nation. We are also continuing to make timely improvements to existing, outdated facilities and actively increasing safety related public facilities so that our users may enjoy a safe and convenient railroad experience. KR is committed to creating a faster, more convenient, and safer rail network and take a center role in the public's happiness.



Construction of Safe, High-Quality, Eco-Friendly Railroads

Issue Background and Impact

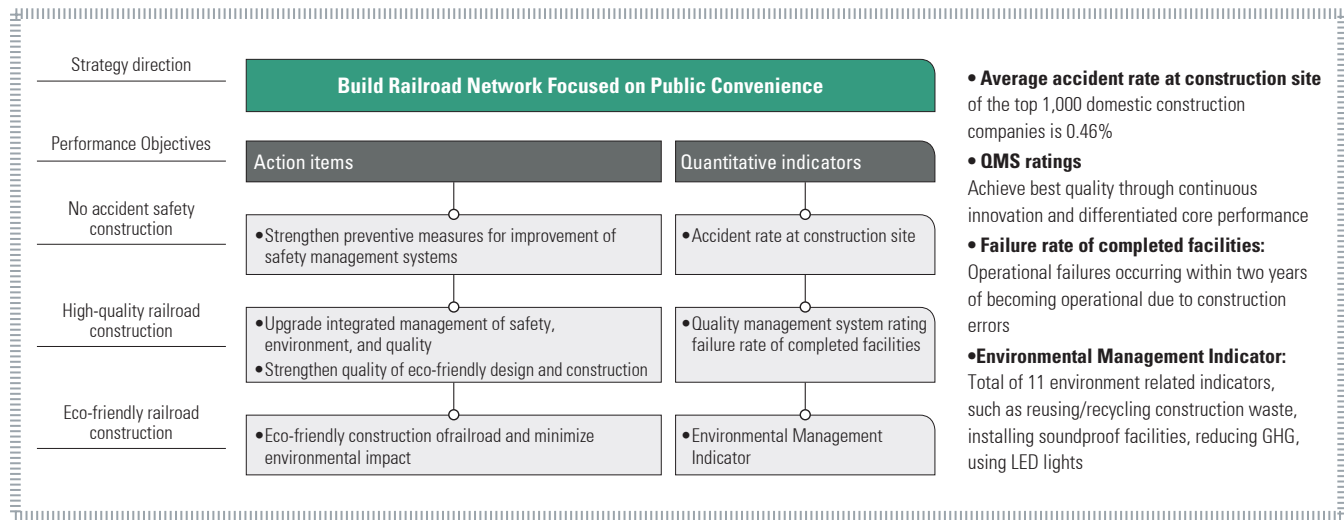
Since the Sewol ferry accident, Techno Valley vent collapse, the sinkhole incident, and other accidents that impacted public safety, the safety paradigm is shifting to focus on accident prevention. In addition, with the public's expectations on railroad transportation service becoming higher, we need to maintain preventive safety management and strict quality control, especially in consideration of faster train speeds and shortened construction periods for the timely completion of projects.

Key Activities

[Strategy] No accident, High Quality, Eco-friendly

KR strives to minimize environmental impact from railroad construction activities such as noise, vibration, and environmental conflicts and provide railroad services focused on public convenience. We conduct systematic management from planning, building, operating, and renewal to enhance the safety, environment, and quality of our railroads. We have revised our safety standards to strengthen the functions of the control tower which includes the preventive inspection and recovery system, and strengthened our organization and installed a Safety Project Department (Dedicated team) in our regional locations. In addition, as we are seeing increases in railroad construction processes, we adopted a safety management system to reduce human error, prevent re-occurrence of similar accidents, and ensure a safe construction environment. We are also focused on building high quality railroads by improving our quality management system in design and construction to realize zero train operational failures.

• Strategic objective



Disaster/Safety Management Comprehensive Plan

| Category | Key activities |
|-----------------------|---|
| Efficient reporting | Establish efficient reporting system for concise reporting and dispatch in the shortest period of time |
| Disaster response | Improve emergency response system to strengthen initial response of disasters and accidents and to unify party in command |
| Disaster response | Strengthen safety management at construction sites for preventive activity against serious accidents |
| Strengthen capability | Conduct training for employees and partners to instill safety awareness and develop expert capabilities |

[Activities 1] Improvement of disaster and safety management system

Strengthened disaster management system

KR identified twenty-two action items for four major themes and created a disaster and safety management plan and held a total of 200 emergency drills across the organization. In addition, to ensure efficient and standardized responses to real life emergencies, we strengthened organizational system in the disaster situation room. In May 2014, we published and distributed the disaster and accident initial response handbook manual detailing scenarios and appropriate responses to ensure effective responses in the initial stage immediately after an accident (golden time). In addition, we increased safety training designed for construction sites and developed a mobile app for disaster management, and we continue to work to enhance safety awareness.

* Disaster Response Safe Korea: Joint government simulations under the same conditions as an actual disaster site (Oct. 2014)

* Joint drills with related institutions: Emergency drills held jointly with KORAIL and fire department (23 times)

* Onsite drills: Define individual roles in case of accidents, heavy rain, or other disasters (167 sites)



Built "KR Disaster Alert App" (July 2014)

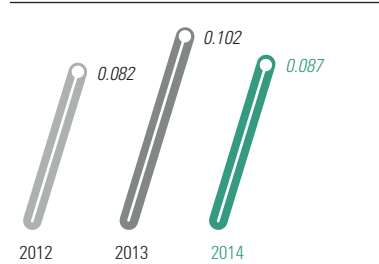
Continuous institutional improvement to prevent accidents at the source

KR continues to pursue institutional improvement by analyzing the three major issues relating to accidents – cost, personnel, and system to prevent onsite accidents. Taking the Daegu Station train accident in August 2013 as a lesson, we prepared standards for train safety facilities and defined the safety analysis standards of signaling facilities, which is directly related to train operation, from the design stage (Dec. 2014). We analyzed the risks such as possibility of conductor error, braking distance by speeds, and obligated response measures for each risk. We also revised our internal regulations on railroad construction safety and guidelines on handling failures for completed facilities, focusing on safety. After the Sewol Ferry accident, we have developed a disaster alert app to ensure efficient response to accidents in the initial stages (golden time). In addition, we have established a one-stop reporting structure to ensure efficient immediate reporting and maximized the practicality of emergency response.

Institutional improvements

| Category | Problem | Improvements |
|--|---|--|
| Lack of funds (safety management cost) | <ul style="list-style-type: none"> Practice to bid low by cutting safety management costs to win orders Lack of safety management cost leads to lack of safety equipment | <ul style="list-style-type: none"> Improved system to reflect construction cost minus safety management costs in bidding Pohang-Samcheok roadbed construction and 18 other projects, increased cost of 76 hundred million KRW |
| Lack of work force (safety supervisor) | <ul style="list-style-type: none"> Inspection is focused on quality of construction, but if there is a lack of safety experts on site, then accident prevention is insufficient | <ul style="list-style-type: none"> Supervisor with safety expert qualifications onsite is mandatory (adopted in 9 projects including Wonju-Gangneung) Reside onsite: Construction Safety Engineer; Reside part-time: Professional Engineer Construction Safety |
| Lack of system (system scaffolding) | <ul style="list-style-type: none"> Falling is the most frequently occurring accident (falling accident in domestic construction industry account for 33.1%, deaths from falling account for 51%) | <ul style="list-style-type: none"> Plan to install system scaffolding which is effective in preventing falling (steel pipe → system scaffolding) * Expect 35% decrease in falling accidents |

Railway construction site accident rate (Unit: %)



[Activities 2] Strengthened preventive inspections

Preventive safety management activities

In order to create a no-accident railway construction site, KR analyzed the type, age, length of period, weather, and other factors in the last 11 years (2004–2014) and established reoccurrence prevention measures and customized review plans. We then identified 1,717 cases of dangerous factors such as cracks in the infrastructure at 1,684 construction sites and rectified the issues. We are conducting trend analysis of site inspection results and sharing results, and at the same time, strengthening feedback activity by following up. We are also focusing on managing weak locations and identifying and removing construction risk factors. These efforts have resulted in an accident rate of 0.087%, down by over 15% compared to the previous year.

Prevention of human error and promotion of safety culture

KR conducts customized preventive activities for construction workers to create a safe working environment and to reduce accidents on site. For regular workers on site, we target completion of one safety training session a year, and require refresher training at least once a year so that the workers will be more safety aware and internalize safety awareness. Of all workers in accidents in 2013, 43% were new workers. Therefore, since June 2014, we hold mandatory safety training sessions for new workers before starting work on site, and workers who have not completed training are prohibited from working on high altitude and tunnel face projects. Through these efforts, the 2014 construction site safety training has achieved 120% of the planned training goal, and systematic safety activity such as focused management of weak processes, inspection team resulted in reducing the rates of death in industrial accidents from 2.41% the previous year to 1.53% this year, down 36%. Going forward, to prevent occurrence of similar accidents, we plan to hold site focused special training to subcontractors and strengthen supervision in all local headquarters to enhance safety awareness.

Travelling Safety Training for Foreign Workers! (May 2015)

KR conducted the Travelling Safety Training for Foreign Workers program for foreign workers in Zones 1 and 2 at the safety training room at Sosa-Wonsi Double Electrification Zone 2 site. This training was customized for foreign workers. We gave an explanation of accident risk factors in the current projects and provided examples of accidents that have happened to foreign workers. We had the support of four translators from Human Resources Development Service of Korea and focused on providing an effective training session. A total of 122 workers from Vietnam (50 people), Myanmar (29 people), Cambodia 16 (people), and Thailand (28 people) participated in this training.



Construction of Safe, High-Quality, Eco-Friendly Railroads

[Activities 3] Enhancing safety, quality, environmental management

Strengthening Quality, Environmental, and Workplace Safety Management (QESM)

KR implements Quality, Environmental, and Workplace Safety Management (QESM) in all the stages of railroad facility construction and operation to provide safe, convenient, and high quality railroad transportation services to the public. We integrated the safety and quality functions which were separate functions in the headquarters into one Safety and Quality Division and newly established a dedicated safety department in the local headquarters to strengthen construction site focus. In addition, we conduct QESPI of 154 construction sites on an annual basis, and expanded our existing quality evaluation to quantitative evaluation of QESM. To that end, we conducted a feedback activity for the participating companies' construction evaluation scores, such as awards for outstanding sites and special management for underperforming sites. In addition, through annual ISO/OHSAS internal and external assessment, we improved on the identified 76 items for improvement in the design, construction, and operation stages, thus we have obtained and maintained our ISO9001 (quality), ISO14001 (environment), OHSAS18001 (safety) certifications, and we continue to work on improving our quality standards.

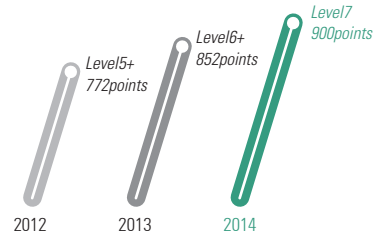
Quality Management System (QMS) ratings

| Category | Key activities |
|--|---|
| Establish management system with signal lights (New) | Evaluate construction accidents, operational failures, penalties for weak construction, and other key weak items by each regional office - Results will be posted on internal network with lights (red, yellow, blue) to share with all employees |
| Safety and quality Shinmungo (New) | Establish Shinmungo for reporting and collection of opinions from general public and all construction participants - Improved regular safety inspection and other diagnosis Institution VOC (strengthen review of client, implement experience management system) |
| Lively Safety Forum (New) | Hold two-way safety forum for communications and cooperation under the theme of 「The answer is at the site」 - Local headquarters (8.19) → site manager/contractor (8.24) → partner executive forum (10.28) - Identify the best safety examples and institutional improvements such as installation of toxic gas detectors in the tunnel, Safety Watch-Man system (safety supervisor on site at all times at high-risk locations) (64 cases) |
| Safety First Cooperation agreement by head of institutions (New) | KR, KORAIL, and Korea Transportation Safety Authority signed an agreement and increase cooperation on safety issues and to spread a "safety first" culture, which is a part of the government policy - Promote safety culture, strengthen safety management in construction sites near operating lines, enhance safety features of railroad facilities |
| Equipment sticker and accident prevention poster | Derive improvement measures to resolve site issues and shared safety management technology with public institution clients (12 institutions) - Obtained appropriate construction time, increased safety management costs, increased safety training for new workers |
| Public institution construction safety consultative group | Derive improvement measures to resolve site issues and shared safety management technology with Public institution clients (12 institutions) - Obtain appropriate construction time, increased safety management costs, increased safety training for new workers |



Won Presidential Award at the National Quality Management Convention

Quality Management System (QMS) Ratings

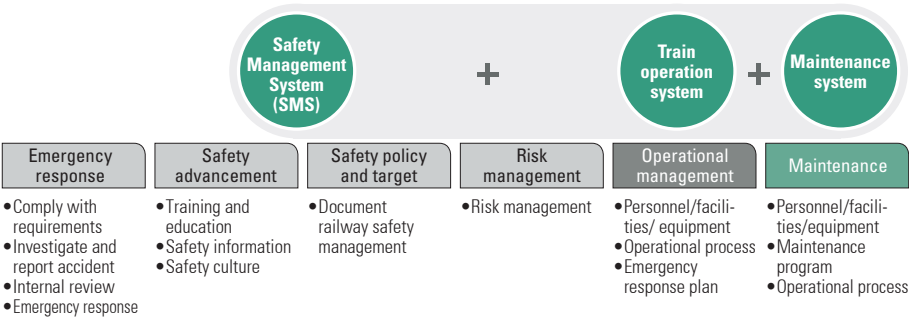


※ Most public institutions are around Level 5~5+, Level 7 is the highest for public institutions

Establishment of railroad safety management system and safety quality assurance system

KR established the railroad safety management system (SMS) to provide safe and efficient railroad facilities to the public through clear and systematic preventive safety management activities. The SMS, which received final approval from MOLIT in February 2015, consists of railroad safety management system, train operation program, and maintenance program. In order to remove all risk factors at construction sites, we documented and managed guidelines by topic such as railroad facility safety inspection and safe operation of trains, thus making risk analysis-based safety verification obligatory. In addition, we eradicated the contradictory structure of the supply process for stricter quality management and strengthened the supply process for materials with special specifications. We have identified 20 task items including a review of materials to be supplied internally, making institutional improvements for accident prevention and focusing on managing weak construction processes. These extensive innovation activities helped us earn 900 points (Level 7) at the Quality Management System Assessment by KSA (Sept. 2014), the highest score for a public institution. In addition, KR was awarded the Presidential Award for Environment Safety Quality at the National Quality Management Convention, and recognized for our railroad quality internally as well as externally. KR is committed to continue to provide safe, convenient high-quality railroads to the public.

Railway Safety Management System



[Activities 4] Enhancing train operational safety with strengthened quality management

Efforts to enhance quality of construction projects with institutional improvements by stage

KR is strengthening the quality management processes of railroad construction through institutional improvements in all stages, design, materials, and construction.

• (System) Eliminating sources of fake test results with system improvements of material management

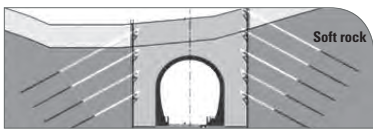
KR as the first test certification institution under MOLIT, introduced test result certificates with "anti-counterfeit currency technology" used by Korea Minting, Security Printing & ID Card Operating Corporation (KOMSCO). Of 840 test results issued by public certification corporations, we asked the 22 testing institutions for assistance in identifying fakes, and found one case of a fake test certificate including Korea Railroad Research Institute. Therefore, by introducing the anti-counterfeit technology for paper certificates, we can prevent attempts to fake results, even during the period certificates are registered into the construction support information system (CALSPIA). KR will continue to make inspections on materials for railroad construction to ensure the supply of high quality materials.

• (Design) Establishment of position as Rule-maker by enhancing design standards

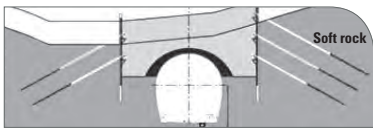
KR identified and made improvements to unreasonable items such as conventional designs to upgrade railroad design standards. (69 items in 2013, 98 items in 2014)

| Area | Improvements | Expected outcome |
|-------------------------|---|---|
| Roadbed/railroad | • Clarify Lateral load standard for bridge derailment protection wall • Unify culvert and bridge load factor | • Strengthen safety with newly established standards • Encourage standardization of design product |
| Construction/ equipment | • Minimize installation of signs by using roof columns • Suggest clear ventilated air volume, and newly establish standards for renewable energy facilities | • Create more convenience for users • Clarify design standards |
| Train electricity | • Establish calculation standards for span formulation of underwater channel inside the tunnel • Prepare minimum power requirement (17.5kv, 2 minutes) for train line as emergency power | • Encourage standardization of product design • Obtain safety and enhance level of quality |

Samyul Tunnel Design VE Example



(Original) temporary facility method at shallow depth zone



(Improvement) changed to semi-cut and cover method

• (Construction) VE activities for high-quality, low-cost construction method

VE (Value Engineering) refers to the effort to maximize the value with the least cost by using an examination of function of the project, at the 60% stage of design. KR identified 77 improvement measures including using the semi-cut and cover method on the middle open-cut for the Samyul tunnel on Pohang-Samcheok line. For the Samyul Tunnel, we were using the temporary facility construction method at the shallow depth zone, but changed to the semi-cut and cover method. This minimized faults in the structure and made it easier to maintain, which reduced construction cost by 2.4 hundred million KRW. This achievement was acknowledged by MOLIT, and we won the Top Excellence Award at the National Design VE Competition.

• (Materials) Strengthening management of Railroad materials standards (KRSA) and standardizing key materials

KR newly designated KR Standard (KRSA) for 44 items used in construction to ensure the quality and transparency of materials received. The same materials previously had different prices, which made it difficult to discern the quality of the materials and transparency of the procurement process. With the new KRSA standards, we will be able to maintain the same quality for our products. The R-Bar was previously dominated by Switzerland, France, and Spain in the Korean market, but with the new standards designated by KR in 2014, it is possible to produce them with domestic technology. Going forward, KR will continue to improve standards for railroad materials in line with global technology advancements and international standards to enhance the quality of our materials and ensure transparency of the supply process.



INTERVIEW

Korea Rail Network Authority, Safety & Quality Office | **Hyun Il Shin Deputy General Manager**

KR strengthened our safety management system to prevent major accidents such as the Sewol Ferry and ventilator falling in Pangyo. In regard to quality, we introduced a systematic verification framework to eradicate the structural contradictions in our supply system. In addition, we conducted activities to reduce vibrations and noise and prevent environmental conflicts from our construction sites. We not only try to enact improvements in the areas of safety, quality, and environment, but we are also working diligently to strengthen our integrated safety, quality, and environment management framework. To this end, we have obtained and continue to maintain our ISO/OHSAS certifications, and continue to improve with a stage-based system of trend analysis/internal analysis/external analysis. Our efforts led us to obtain the highest level of quality of a public institution in the Quality Management System evaluations. Going forward, KR will continue to uphold safety, quality, and environment as our most important values and become a company that people can trust.

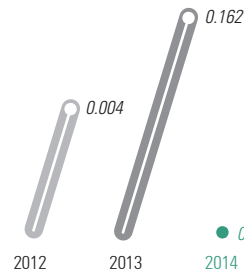


Construction of Safe, High-Quality, Eco-Friendly Railroads

Enhancing safety and achieving zero train operating failure by strengthening quality management

KR is focusing on enhancing quality management at each stage of construction to minimize operating failures and ensure safety. We have conducted regular reviews of operating failures and analyzed causes of failures (16 signal errors, 2 emergency power issues) in the last three years (total of 21 cases) to prevent reoccurrence of errors, and we have strengthened inspections during construction with regular safety checks and initial inspections. After completion, we work with railroad safety organizations and conduct a comprehensive pilot test of all facilities and test runs to verify safety and suitability to minimize operating failures and ensure public safety. Nine projects including the Airport Railroad connecting facility expansion and Honam High-speed Railway, Yongsan–Munsan double-track electric railways (Yongsan–Gongdoek) have completed verification, and we plan to continue facility improvements to enhance safety of our train operations.

Failure rate of completed facilities (Unit: %)



| Category | Activity Details |
|--|---|
| Disaster prevention and increased safety | Strengthened earthquake-proof design <ul style="list-style-type: none">Strengthen earthquake-proof design in operating facilities - (Gyeongbu High-speed) 5.4km at 10 locations including Gutan Bridge, (Test Line) 4.9km at 5 locations including Baebang Bridge |
| | Upgraded disaster prevention facilities <ul style="list-style-type: none">Upgrade facilities to protect against from damages by wind, water and natural disasters - Expanded bridge at 21 locations, installed protective wall at 14 locations, 10 landslide prevention measures, buffered roadbed at 12 locations |
| | Upgraded fire safety facilities <ul style="list-style-type: none">Improve disaster prevention in tunnels: 3 locations including Gwacheon Line and Ilsan LineImprove facilities for convenient transportation including elevator: 3 stations including Gyeongui Line (Bumgye station, Hangshin station, Bupyeong station) |
| | Platform safety facility <ul style="list-style-type: none">Install screen doors to prevent passenger accidents (8 stations) - Gwacheon Line (Seonbawi, Seoul Racecourse Park), Gyeongin Line (Bugae, Guil), Bundang Line (Taepyeong, Jukjeon, Ori), Gyeongwon Line (Uijeongbu) |
| Upgrade outdated operating facilities | <ul style="list-style-type: none">Upgrade outdated facilities such as railway infrastructure, station facilities, electric railway facilities, signaling, and communications facilities |
| Safety Management | Management of railroad protection area <ul style="list-style-type: none">Pre-investigation of railroad safety when constructing or excavating within 30m of railway (In 2014, handled 1,036 reported cases and conducted 839 special safety inspection) |
| | Management of steep areas <ul style="list-style-type: none">Inspect 2,086 locations following the disaster risk evaluation standards for areas with steep inclines (National Emergency Management Agency) |

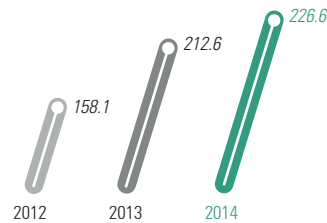
[Activities 5] Building eco-friendly railroads and minimizing environmental impact

Minimization of environmental impact at design and construction stages

KR aims to engage in eco-friendly railroad construction activities by conducting an environmental impact assessment prior to starting the project and investigate, estimate, evaluate and reflect the results in the designing stage. In addition, we aim to minimize environmental impact and damage to the ecological environment during our construction projects by implementing an environmental impact minimization plan at the design and construction stages.

| Category | Activity Details | Expected outcome |
|---------------------|--|--|
| Design | Non-point pollution facilities <ul style="list-style-type: none">Non-Point pollution reduction Facilities in design (125 locations including Dongducheon–Yeoncheon) | Reduce water pollution level |
| | Ecology focused design <ul style="list-style-type: none">Designed ecological corridor for minimal environmental impact to small animals (mammals, amphibians, reptiles) (48 locations) | Reduce ecological damage |
| | Renewable facilities <ul style="list-style-type: none">Increase renewable energy facilities including solar energy, thermal heat (14 stations including Suseo) | Reduce energy use |
| Construction | Environmental pollution reduction facilities <ul style="list-style-type: none">648 water pollution prevention facilities and 661 air pollution prevention facilities355 waste storage facilities, 305 temporary soundproof wall (54,936m) | Reduce environmental pollution during construction |
| | Ecological corridor <ul style="list-style-type: none">14 locations including wildlife crossing (bridge type/ box type), trespassing prevention fence | Reduce ecological damage |
| Monitoring/feedback | <ul style="list-style-type: none">Conduct special investigation into environment (improved 44 cases including scattered dust reduction facilities) | Reduce environmental impact |

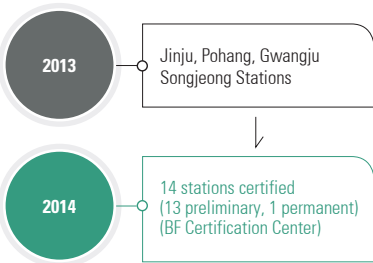
Environmental management index (Unit: points)



Promotion of construction waste recycling

| Category | Activity details |
|-----------------------------------|--|
| Recycle disused railway wood ties | <ul style="list-style-type: none">Reduce 19 hundred million KRW by recycling 21,936 PC ties and 4,349 wood tiesContinued recycling railway wood ties by using material management system |
| Forest wood waste | <ul style="list-style-type: none">Recycle 16,703 tons of forest wood waste and saved 7 hundred million KRW in waste treatment costsUse for landscaping or crush and recycle for compost, wood chips, firewood, and sawdust litter |
| Construction waste | <ul style="list-style-type: none">Increase recycling of construction waste by using 62,849 tons of cyclic aggregate (97.3%→98.1%)Recycled construction waste for smoothing foundation, back filling, covering for hume pipe, and temporary road |

Increased Barrier Free Living Environment certifications



Evaluation and Future Direction

Systematic response to environmental conflicts

In conducting railway construction projects, there can be many conflicts with environmental groups if there is a lack of communication and early awareness. KR is preventing environmental conflicts by increasing communications with such groups at the design stage of a new project in areas where we expect conflicts and try to reflect their opinions on the environmental impact assessment to minimize damages and respond systematically to conflicts.

Case study

We discovered that the Railroad Test Track zone was inhabited by a protected species (narrow-mouthed toad and Korean golden frog – Class II endangered wild fauna), and conducted a joint investigation with environmental groups and amphibian experts at the environmental impact assessment stage and reflected the results in the assessment report and completed agreement (Oct. 2014)

Minimizing and recycling construction waste

KR recycles wood and other waste to minimize generation of waste in the course of our railroad construction and improvement activities, and we redevelop land from disused railroads to increase the utilization of resources. Wood waste is typically used for landscaping or broken down to be used as wood chips, compost, firewood, and sawdust litter, but in the Wonju–Gangeung project, instead of treating the wood, we supplied the wood waste generated to the local community free of charge, thus saving waste treatment cost and reducing GHG emissions from recycling forest wood. In addition, to effectively treat the increasing amounts of construction waste, we recycled waste into cyclic aggregate, which was used for smoothing foundation for hume pipe and temporary roads and covering purposes, thus increasing our recycling rate to 98.1%. At the 40th National Quality Management Convention, in the Environment Safety Quality category, we won the Presidential Bronze Award for “reducing construction waste by improving treatment of waste gravel from disused railroad”.

Establishing railroad system of resource recycling

Due to the increase in disused railroads and land as railroads are constructed and moved, KR is focusing on ways to transform these sites for other uses, such as ecological restoration sites, rail bike, and solar energy generation facilities, thus realizing a virtuous cycle of resources through construction projects. We completed four projects including ecological restoration on the Ilsan Line in 2013, and we are currently conducting a restoration project in Boryung on the Janghang Line. When the project is complete, it will connect with nearby cultural and ecological resources such as Boryung Culture Center, Daecheon-cheon Stream Waterside Park, and Daecheon-cheon Stream Eco Bridge and improve the living environment of the local community. In addition, we have installed solar energy generation facilities on roofs of unused stations and closed lines in 17 locations, which is producing approximately 43 thousand MW, which we expect will reduce 19 thousand tCO2.

Enhancing energy efficiency and reducing greenhouse gases in train stations

KR is planning to construct an eco-friendly railroad station by enhancing energy efficiency and recycling resources. We established standards appropriate for stations to enable efficiency in energy consumption and CO2 reduction. In designing the station, we limited windows to less than 50% of the façade to minimize loss of heat. In addition, we added LED, ventilation equipment, and other high efficiency certified products into the design and increased renewables energy facilities such as solar energy to over 15%. Design guideline for energy efficiency will be applied to 13 stations including Wonju–Gangneung double electric line’s Pyeongchang Station, which is currently being designed. We will also conduct monitoring activities including room temperatures and facility improvement (LED, etc.) and continue to work to reduce energy and GHG emissions.

In 2014, while continuing with construction on major projects such as the Honam High-speed Railway, KR was able to vastly improve safety related indicators such as train operation failure rate, accident rate, and death rate. The accident rate for 2014 was 0.087%, 15% lower than the previous year, and due to our continued innovative activities, we were able to generate key results, which led us to a record 900 points in the QMS assessment, the highest score for public institutions. This is the result of company-wide efforts to create high quality railroads, which is also in our new 2020 vision to create “Safer railroads” announced in May 2014. KR will continue to try our best to enhance safety quality environmental areas to build safer, more convenient railroads.



Mutual Growth with SME Partners

Issue Background and Impact

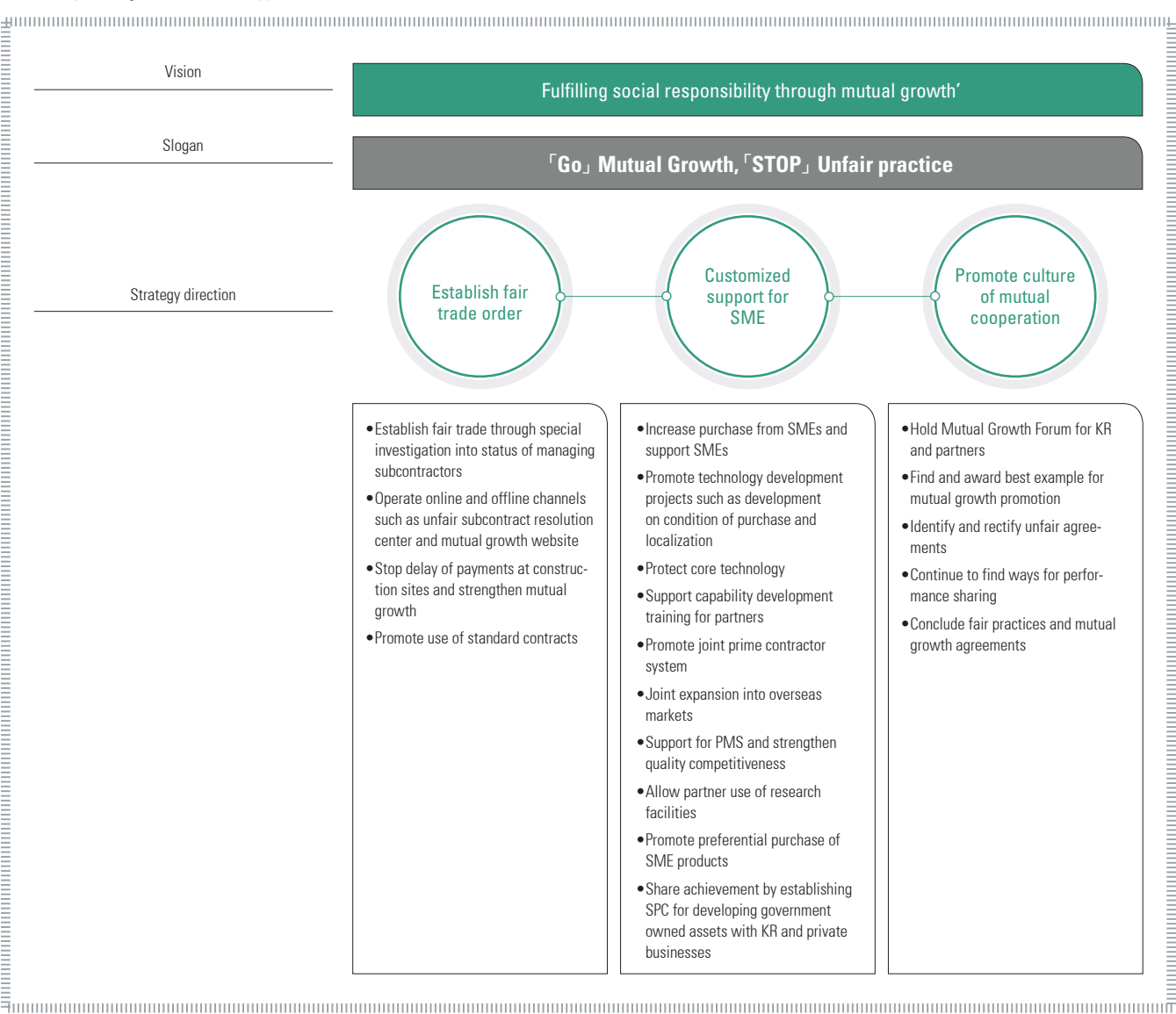
Due to the continued slump and lagging performance in the domestic construction industry, there have been increased calls for fair trade and assisting SMEs for mutual growth. KR has strived to promote a culture of mutual growth and fair trade all the way to secondary and tertiary partners to prevent the domino effect of damages from late payment and other unfair practices in construction.

Key Activities

[Strategy] Mutual growth strategy and organization

Under the vision, “Fulfilling social responsibility through management for mutual growth”, KR aims to maintain fair cooperative relationships with partners through concluding fair trade agreements, improving contract systems, and other efforts to achieve mutual growth. Mutual growth related issues are undertaken by the Creative Economy Department, which establishes mutual growth, oversees execution of mutual growth promotion plans, and works to promote a culture of mutual growth.

• Mutual growth promotion strategy

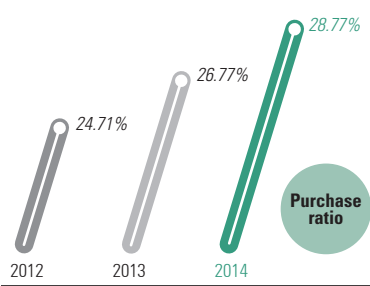
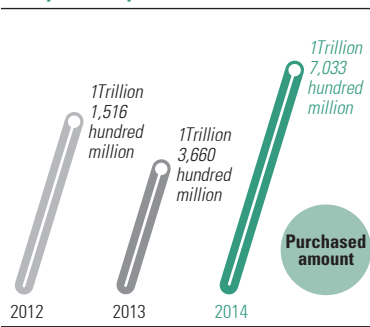


Mutual Growth Forum



One Heart Discussion

SME products purchased



[Activities 1] Establishment of fair trade order

Strengthening supervision on payments

We used the Unfair Subcontract Conflict Resolution Center to continuously communicate with subcontractors and end users (equipment/material suppliers, construction workers), and conducted a special inspection into subcontractor management and resolved 51 cases of overdue construction fees and wages in 2014. In addition, for the prevention of overdue wages for construction workers, we are constantly monitoring payment of construction fees flowing through a computer system to verify that fees are paid on time. We have also conducted unfair trade prevention activities including a review of the status of subcontractor management, where we found and rectified 39 violations.

Two-way communication with partners

KR has conducted 48 mutual growth forums, discussions, and interactive communication programs to hear the grievances of SME partner companies. At the Mutual Growth Forum with partners, we were able to come to an agreement on eliminating unfair trade practices such as the use of standardized subcontract agreements. At the Regulation Reform Forum, we were able to rectify 27 issues, including shifting responsibility of complaints to subcontractors and issuing double penalties for poor construction.

Improved support for SME partners

KR, after discussions and opinions with SMEs, implemented a bold institutional improvement project regarding factors that were hindering mutual growth. We strengthened our procedures on areas of concern that may undermine safe construction, such as permanently prohibiting companies that submit fake or counterfeited test results in a bid. We revised five bid qualification criteria including extending the validity period of a company’s past experience from three years to five years, and abolished the double sanctions clause in the credibility assessment, thus expanding opportunities for SMEs to participate in bidding. In addition, we purchased 1.7033 billion KRW of products from SMEs, an increase of 24.7% compared to the previous year, to support SMEs competitiveness and financial stability.

Institutional Improvements for Enhanced Level of Safety and Quality

| Revision items | Key details |
|--|---|
| Permanently prohibit companies that have provided counterfeit test results from submitting bids (5.28) | Prohibit corrupt companies that have submitted counterfeit test results from participating in bids run by KR (new) |
| Limit bidding by companies that have violated Retiree (executives) re-employment restrictions (5.28) | According to Article 17, Clause 1 of the Ethics in Government Act, if a company hires a retiree who is restricted from re-employment, the offending company will be prohibited from participating in bids for two years |
| Stricter criteria related to Integrity contract (10.29) | Increase point deduction penalties for violation of KR integrity contract (-3 points → -5 points) |
| New regulation on companies that have not executed contractual obligations (10.29) | Newly establish regulation on companies that have not concluded or executed on contractual obligations without justifiable reasons (average penalty: -3 points) |

Institutional Improvements to Lower Entry Barrier

| Revised items | Issue | Revision |
|---|--|--|
| Removed double restriction in the credibility criteria | By having evaluation criteria not used by Public Procurement Service or other institutions, it can be misconstrued as payback for disciplinary action against KR employees | Remove point deduction on the person that caused disciplinary action |
| Relaxed criteria for evaluating subcontractor’s management status under the prime contractor’s management methods | Relative weaker party, the subcontractor (construction specialists), are unable to participate in public procurement bidding as not meeting requirements | Due to relaxed criteria, expand opportunities for bidding by construction specialists |
| Lengthened the validity period of construction experience (experience per industry) | SME construction companies were unable to participate in public procurement bidding as not meeting requirements | Expand opportunities to SMEs by extending the validity period of companies’ experience from 3 to 5 years |
| Excluded from evaluation project experience undertaken to make inroads into market at the start of business | For new companies without little project experience, technical evaluation scores will be too low to be selected | For small companies whose estimated value is less than the listed amount (2.3 hundred million KRW), exclude project experience from evaluation |
| Increased upper limit amount for private contracts for preferential purchase and service, which is a recommended policy by the government | Low standard amount for private contract creates small amount of preferential purchase (companies with female CEOs, social enterprise, green products) | Increase private contract standard amount to 50 thousand KRW for preferential purchase products |



Mutual Growth with SME Partners

[Activities 2] Strengthening SME competitiveness

Supporting SMEs to enter global markets

KR supports SMEs' expansion into global markets by using our project management capabilities and international recognition and forming a consortium with SME partners. We share overseas procurement bidding information on the railway industry information center. In 2014, we submitted twelve proposals and letters of intent for projects in nine countries, including India and Saudi Arabia, in cooperation with SME partners. We received an order for a consulting project on LRT-2 Eastern section extension in Manila in the Philippines. (62 hundred million KRW). We are working with SME partners and building our network when railway industry officials visit from Oman, India, Thailand and other overseas countries. We continue to provide support to advertise and build networks for SMEs, such as listing SME partners on e-newsletters we send to overseas clients.

Localization of railroad materials and promotion of product development on condition of purchase

KR entered into a localization agreement with five local SMEs, with the condition of purchase of electric railroad materials (153 parts) which are dependent on imports. We have been able to localize the materials a hundred percent, and KR purchased 129 hundred million KRW of such materials from SME partners. As part of the new product development with the condition of purchase program, we bought 193 hundred million KRW worth of materials from SMEs, and as part of the material localization on condition of purchase program, we bought a total of 332 hundred million KRW of materials from SMEs.

Active efforts for shared growth

KR has in place a performance sharing system to support SMEs and to achieve our mutual goals of reducing cost, improving quality, and enhancing productivity. In particular, in addition to the existing technology development projects (public private joint investment, on condition of purchase, localization), we have developed a new service quality agreement model (maintenance service) and expanded areas of performance sharing and incentives to SMEs for facility management, upgrades, and improvement projects. In addition, we have created a public private joint cooperation fund of 25 hundred million KRW and support technology development by SMEs, such as when we jointly supported with the SMBA (Small and Medium Business Administration) the development of 29kv load breaker switch for electric railroads, and strengthened cooperation by holding the Public-Private Performance Sharing Joint Academy with eleven organizations including the Large & Small Business Cooperation Foundation and SME partners in attendance.



Products developed with localization



KR's shared growth activity in the media

서울신문

2014년 08월 29일 (금)
20면 정재

공사대금 1457억 추석 전에 지급

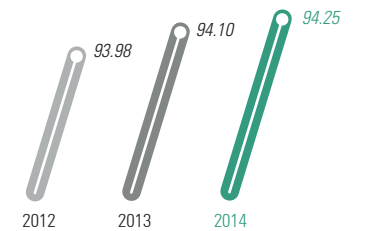
한국철도시설공단은 건설 협력업체의 유동성 지원 및 지역경제 활성화 등을 위해 1457억원 규모의 공사대금을 추석 전에 지급하기로 했다. 원활한 대금 지급을 위해 28일부터 9일간 헬프 데스크와 전자조달·예산·회계·건설 사업 등 관련 담당자들로 특별지원반을 구성해 가동에 들어갔다. 공단은 지난 21일부터 5일간 전국 281개 건설 현장에서 임금채불과 장비 임대료 및 하도급 대금 미지급 등을 특별 점검했다.

"Let's make the holidays warm and cheerful by paying on time"

With the nation's biggest holiday Chuseok coming up, KR decided to pay construction payment of 1,457 hundred million KRW before the holidays to support partner companies' liquidity situation and help the local economy. To ensure efficient payment, KR created a special support team of employees in payment system help desk, electronic procurement, budget, accounting, and construction projects for nine days starting from August 28. KR conducted a special inspection at 281 sites across the country to discover cases of late wages, unpaid equipment rental fees, and subcontractor payments.

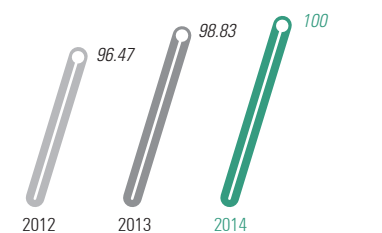
Partner Satisfaction

(Unit: points)



Local companies' construction participation rate

(Unit: %)



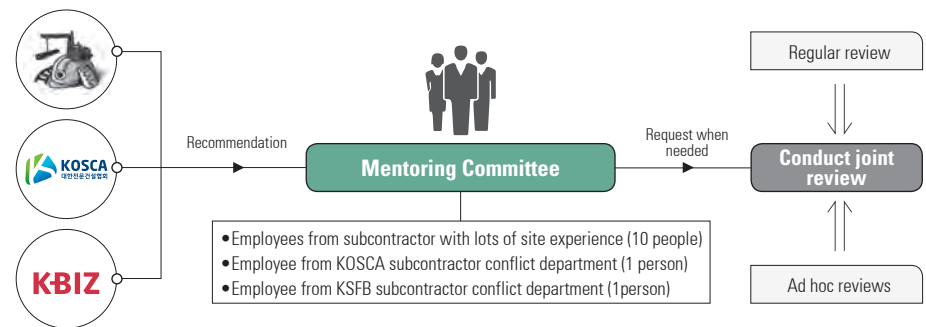
Supporting partner capability development

KR -established six new training programs to help improve partner's technological capabilities and strengthen their autonomy. 143 employees from partner companies took part in the training programs. We also held an introductory session on Productivity Management System (PMS) certification to small subcontractors, and we are supporting their PMS certification a hundred percent, with evaluation cost and technological assistance. For partners lacking facilities, we allow them to use our metal testing equipment and automatic freezing and thawing apparatus, thus contributing to their cost savings.

[Activities 3] Fostering a culture of mutual growth

Based on the CEO's commitment to mutual growth, KR has strived to spread mutual cooperation to internal and external partners. In February 2014 the CEO emphasized cooperation for mutual growth with partners in his inauguration speech and incorporated "mutual growth" in the management strategy. We established the "Railway Industry Mutual Growth Plan" that fits KR's characteristics (in May 2014) and held the "Mutual Growth Forum for Shared Growth and Fair Trade Culture", where we made improvements on 56 regulations that were causing inefficiency. In addition, we established the Unfair Subcontract Conflict Resolution Center and regularly conducted reviews of subcontract arrangements, which enabled us to resolve 51 cases of unfair practices. We also established the Subcontractor Review Mentoring Committee, with both site workers and experts serving as mentoring committee members, and conducted joint reviews and other activities to prevent unfair trade.

Subcontractor Review Mentoring Committee



Evaluation and Future Direction

We strengthened communication channels, online and offline, with partner companies such as the Mutual Growth forum, discussions, and online help desk, and continued to provide customized support for SMEs. We revised 56 practices and procedures we found to be unfair to provide equal opportunities to partners and create an environment for fair competition. In addition, we expanded investment into railroads in 2014 and created 65,823 jobs for the private sector, up 28% from the previous year. We purchased 1.7033trillion KRW of products from SMEs, further supporting SMEs mutual growth. KR will continue to find new businesses to create private sector jobs and make institutional improvements to establish fair trade practices.



INTERVIEW

Seoul Metropolitan High-speed Railway Zone 2 Roadbed Supervisor | **Yongdae Lee Team Leader**

My company provides to KR the people needed in construction, quality, safety, and environmental management functions for the smooth operation of the metropolitan high-speed railroad construction project. From among KR's various activities for shared growth with partners, I found the safety training, which includes case studies on safety and quality control, very helpful to my work. I believe that there need to be incentives for railroad construction projects with a program which enables more sharing of performance in new technology, new products, construction, quality, safety, environment, process management and other areas. In addition, KR and partner companies share information through KR's ERP system, and I hope that there will be a communication channel to provide and collect opinions from people from all walks of life in the railroad construction industry.



Talent Management

Issue Background and Impact

The starting point in building competitiveness is having talented people, and therefore talent focused management is an important issue for global companies. There is recently more focus on creative problem solving rather than promotions based on seniority and years of service, and it has become important to find and develop creative, talented individuals to strengthen corporate competitiveness. In addition, in line with the global efforts to protect not only the socially marginalized but to protect and respect the rights of all people, KR has adopted human rights management in our operations.

Key Activities

[Activities 1] Socially equitable recruitment and Skill based hiring

Equitable hiring policies and competency-focused hiring

KR, under the hiring target system, has exceeded the government guidelines for socially equitable hiring. We also hired interns with a possibility of becoming permanent employees, and of our 52 interns, 73% (38 people) were hired as full-time employees. Of these, there were 18 gender equality hires (37.5% of total new employees in 2014) and 21 hires from non-metropolitan area (43.8% of total new employees in 2014). We also adopted the National Competency Standard (NCS) for skill-based hires rather than academic record based hiring, and we also analyzed functions and required competencies (Dec. 2014). We continued to develop NCS based competency based recruitment system, and in 1H 2015, we conducted a written test (personality test) and interviews based on basic competencies, and we plan to incorporate functional competency in the entire hiring process from 1H 2017.

Increasing number of in female employees and female managers

As KR is an organization in the construction industry, KR has had a relatively lower percentage of female employees. We have adopted female hiring targets (20% of all hires), and we are working to increase the ratio of females in the organization. In 2014, females accounted for 159 out of 1,330 employees, which is 11.95%, an increase of 10.75% from the previous year. In 2014, of 48 new hires, 18 employees were female, accounting for 37.5%. We have established female manager development targets to increase the percentage of females in managerial roles, and provided female mid-level managers at public institution training with programs for female employees who were deputy managers and above. Of the 22 employees who qualified for the training, 20 employees (91%) completed the training program. KR plans to increase the ratio of female managers and reflect gender equal perspectives to KR's decision making, and to establish a work-life balance culture.

The goal of cultivating female managers

(unit : %)

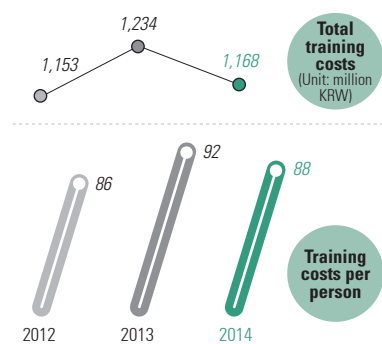


Number of male and female employees by position

(As of April 2015)

| Position | | Executive | Senior | Head of division | Head of department | Manager | Deputy manager | Staff | Special service | Technical | Professional | Total |
|---------------------|----------------------|-----------|---------|------------------|--------------------|---------|----------------|---------|-----------------|-----------|--------------|---------|
| Role | | Executive | General | General | General | General | General | General | Special service | Technical | Professional | |
| Number of employees | Male | 7 | 5 | 43 | 161 | 537 | 295.75 | 82 | 3 | 25 | 5 | 1163.75 |
| | Female | 0 | 0 | 0 | 2 | 21 | 32 | 44 | 0 | 53.5 | 0 | 152.5 |
| | Percentage of female | 0% | 0% | 0% | 1.23% | 3.76% | 9.76% | 34.90% | 0% | 68.20% | 0% | 11.60% |

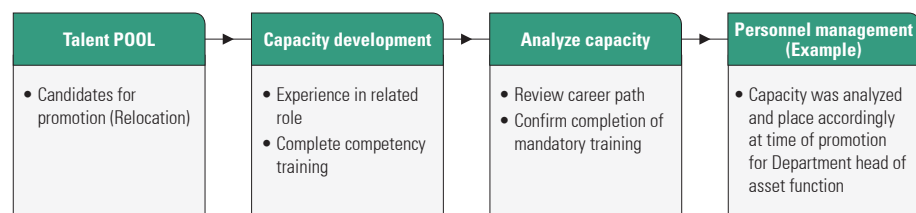
Education and training status



[Activities 2] Enhancing and developing Employee capacity development

Capability development and CDP based talent management

KR has identified core competencies and skills based on analysis of KR's objectives and functions, and diagnosing and strengthening weak areas. In addition, we have established the CDP talent management process based on our management strategy, thus connecting the education and training and HR functions.



In-house clubs



Employee cultural experience



KR Electronic library

Capacity and Needs based Customized Talent Development

Based on the results of the GAP analysis of our core business in railroad construction, railroad asset management, facility management, and overseas business, we linked the required competencies in those business segments with our training programs to strengthen capabilities for our core businesses. We are also systematically verifying the effectiveness and applicability in work process of the internal and external training programs to enhance the efficacy of training. We have expanded engineering and masters and PhD programs for employees to achieve our mid-term management target of developing core talent up to 50% by 2020. In 2014, the percentage of core talent has increased by 1.5% from the previous year to 35.6%. We conducted internal and external leadership training for all positions, managers, promoted employees, female employees, and new employees. In addition, we have established a culture of continuous education for capacity development with information sharing and communication on job performance and mentoring programs.

Improving training feedback framework and enhancing quality of training

KR's core competency course undergoes education training assessment and evaluation every six months, where the results are analyzed and feedback is adopted. In 2014, we analyzed 172 courses (internal 37 courses, external 135 courses) of the level of satisfaction of our training programs and applicability to jobs, and we implemented four alternatives to training courses, four operational improvements, and applied external best cases to internal courses. As a result, we saw the quality of our programs enhanced with employee satisfaction rising from 78.9 in 2013 to 81.5 in 2014.

[Activities 3] Flexible working system and Family-friendly management

Promotion of flexible working hours appropriate to the characteristics of the organization

KR adopted flexible working hours that is suitable to KR's characteristics to improve the quality of the lives of our employees. In 2014, 157 employees have opted for flexible working hours (11.95% of employees in 2014), 153 has flex-time work arrangements, and 4 employees are part-time employees (15 to 35 hours a week). Childcare leave was extended from six to eight years of age to promote flexible working systems, reduced working hours in the child caring stage (15 to 30 hours a week), and developed 18 positions in seven functions suited for flexible working hours. For part-time employees, we instituted HR guidelines to ensure equal opportunity with full-time employees in terms of welfare, promotion, evaluation, and training, and for flexible working employees, we are providing benefits such as preferential selection for external training (once a year), additional points for department evaluation (0.05—5 points per person), preferential placement in region and position, reflect annual holiday usage (1 point), to encourage the flexible working system to take root in the organization.

Promotion of family-friendly management for work-life balance

• Family-friendly policy and childcare support

As part of our family-friendly management policy, KR has a "family day" every Wednesday, requiring all employees to leave on time when the "Family Song" plays so they can spend time with their family. We also hold bring-your-family-to-work day twice a year under the theme of "healthy workplace, happy household" (2011—current). This helps increase loyalty to the company and forges closer relationships with colleagues for employees, and gives children a better understanding of their parents' work and increases understanding and cooperation from families. To support our employees with childcare, we have increased day care facilities (capacity of 30 kids) in addition to our existing childcare facility (capacity of 40 kids), reduced working hours for pregnant employees without decrease in pay (two hours a day), and increased maternity leave from 90 days to 120 days for mothers with many babies.

• Support for self-development and leisure activities

KR provides electronic library service for easy borrowing and return of books, and an academic paper service for employees who seek knowledge for self-development. We have also introduced continuous learning programs as well as home coffee making, dance sports, online and phone English tutoring programs, and have held bread making courses for employees planning the next phase of their lives in retirement. In addition, we are supporting clubs (39 groups) which employees have voluntarily created for activities outside of work. In addition, we are working to enhance benefits including promoting annual holidays, yearly physicals, and group insurance for employees. We provide welfare manuals for employees with all the related information so that employees can take advantage of our various welfare programs.



INTERVIEW

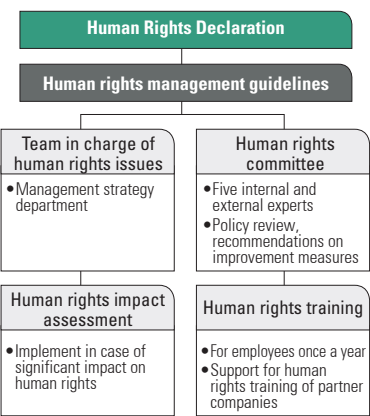
Korea Rail Network Authority, Management Support Department Human Resources Division | **Hak-ryeol Kim, deputy general manager**

The biggest issue in 2014 is the peak wage system, which has been implemented in positions of department head and above under the Public Institution Advancement Policy, but it may be extended to all employees pending review by the Labor Management Joint Council. KR has established the top three talent profiles to realize the 2020 management strategy reflecting the CEO's philosophy of "Talent First", and have shared the idea that talent management is at the center of sustainable development. Going forward, we will continue to strive to hire people based on equality and competency, to operate welfare programs focused on employee health, leisure, and self-development, and to run family friendly welfare programs.



Talent Management

Human rights implementation framework



| Employee | |
|---|---|
| System | Labor management communication channels for employee complaints |
| Detailed basis and tools for resolution | <ul style="list-style-type: none">• HR policy enforcement rules• Sexual harassment prevention guidelines• Discussion with CEO• Labor management committee, labor management discussion |

| External stakeholders | |
|---|--|
| System | Customer service system Partner complaint handling procedure |
| Detailed basis and tools for resolution | <ul style="list-style-type: none">• Customer service regulations• Public misconduct reporting• Unfair Subcontract Conflict Resolution Center• Discussion of mutual growth with partners |



Human Rights Declaration Ceremony

Evaluation and Future Direction

[Activities 4] Introduction and Promotion of Human Rights Management

Introduction of Human Rights Management

Since KR joined the UN Global Compact (UNGC) in February 2007, we have followed UNGC’s ten principles in four areas of human rights, labor, environment, and anti-corruption, and strived to create an organizational culture where diversity is respected with no discrimination due to gender and academics, based on the CEO’s philosophy of “Talent First” and “win-win management”. We continue to improve the treatment of subcontractors and other socially marginalized groups on which we have been focusing, and we have also introduced human rights management to spread our ethics culture and to advance human rights for more stakeholders.

Promotion of Human Rights management

KR instituted the Human Rights Implementation Guideline in June 2015, which details the organization in charge of human rights, structure of Human Rights Committee, and human rights training, to set a system to implement our Human Rights Declaration. Human rights functions are managed by the Management Strategy Department of Management Performance Division at Planning and Finance Division, and the team establishes and implements annual human rights advancement plans, yearly human rights training, and spread human rights management to partner companies. The function of the Human Rights Commission includes review of annual plans for the advancement, promotion, and protection of human rights of stakeholders and employees, and recommendations on human rights issues. To ensure the neutrality of the committee, we have structured the committee to have an equal number of internal and external committee members. In addition, we have put in place prevention measures for human rights violations to implement human rights impact assessments in case our regulations and policies impact the rights of our stakeholders

Human Rights Declaration

KR held the “Human Rights Declaration Ceremony’ on July 3, 2015 to advance the human rights of stakeholders and to develop into a sustainable institution by spreading our culture of respecting human rights. The Declaration reflects the opinions of various stakeholders collected through two advisory meetings with human rights experts, partners, and labor unions, and from public opinion gathered through public announcements on our website. The Declaration consists of nine items, expressing the will of our employees to protect and advance the human rights of our stakeholders, including employees as well as partners and the local community.

Enhance accessibility to relief measures

KR has worked to protect and advance human rights of our employees by eradicating discriminatory hiring practices, creating a safe working environment, and promoting mutual growth with partner companies. In addition, we have established relief measures for human rights violations including employee grievance and customer complaint systems. We also conduct human rights training and partner discussion sessions to increase access to remedies for human rights violations and to enhance awareness of human rights. KR created the Human Rights Declaration, under a democratic process, with the participation of various stakeholders including human rights experts, partners, and labor unions. In addition, we have prepared a foundation for the systematic promotion of human rights management by instituting “Human Rights Implementation Guideline” for the implementation of the human rights declaration, installing a dedicated body in charge of human rights and the Human Rights Committee, and conducting human rights training for employees and partners.

Despite the decreasing number of new hires in general, KR has continued to increase the number of new hires: there were 15 new hires in 2012, 21 in 2013, and 48 hires in 2014. We continue to create a supportive corporate culture for our employees who are our future with our family friendly policies, childcare support for work life balance, and competency development for our employees. KR will continue to systematically implement human rights management for employees and partners, and expand human rights development and investment to secure catalysts for future growth.



Korea Rail Network Authority Human Rights Declaration

We declare, as stated below, that we will follow the Global Human Rights Declaration and respect our own as well as other people’s rights, and with the participation of our employees’ as well as our stakeholders, we will work to protect and advance human rights and champion human rights across our industry.

- First,

We support and respect the international standards and regulations to support the values of human rights, labor, environment, and anti-corruption.
- Second,

We do not discriminate between stakeholders on the basis of race, religion, disability, gender, birthplace, and political views.
- Third,

We guarantee the right of association and collective bargaining for the protection of our employee human rights.
- Fourth,

We do not permit any forms of forced labor and child labor.
- Fifth,

We create safe and sanitary work environment and guarantee industrial safety.
- Sixth,

We support and cooperate with partner companies to enable all partners to implement human rights management.
- Seventh,

We respect and protect human rights of the local community in areas where we conduct our business operations.
- Eighth,

We strive to protect the environment for healthy happy lives for our nation and future generations.
- Ninth,

We commit ourselves to not endanger the safety of public and to protect the confidentiality of the personal information collected in the course of our operations.

To fulfill these promises, we declare our commitment to guaranteeing universal freedom and rights and human integrity for all our stakeholders, including our employees, and that we will work together to ensure sustainable development.

Korea Rail Network Authority
By all employees

GENERAL ISSUES

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Expansion of Presence in Overseas Markets

Competitiveness in Overseas Business

Current status of overseas training projects

| Category | Name | Amount (million KRW) | Contract date |
|----------|---|----------------------|---------------|
| 1 | (Indonesia) Training program for Railroad-Related Officials | 20 | Jun.16, 2014 |
| 2 | (Nepal) Training program for Railroad-Related Officials | 35 | Agu.11, 2014 |
| 3 | (Sudan) Training program for Railroad-Related Officials | 30 | Oct. 2, 2014 |

Setting objectives and strategies for entering new markets

The main markets for KR's overseas business in the past ten years were mainly China and the Asian region, and we have a high business dependency on that region. Therefore, we are pursuing sustainable overseas business rather than short-term profits and establishing mid to long-term strategies to enter new target markets. We are focusing on diversification of overseas markets to emerging markets such as South America and Africa.

Establishing foundation for sustainable orders

To establish a stable foundation for our overseas business, we are building a potential customer base and expanding our reach through ODA (Official Development Assistance) projects. We have received ODA projects such as KOICA (Korea International Cooperation Agency) sponsored training programs from emerging countries that may not have short term construction projects due to lack of funds but have long term growth potential. We have been able to establish networks, interact with counterparties, and obtain potential customers, thus establishing a foundation for sustainable orders. In addition, we have strategically focused on areas with high potential of large orders (Middle East, India, Southeast Asia) and invited key personnel, held seminars and railroad training schools to increase cooperation between Korea and the target regions. Based on KR brand recognition on the international stage, we are helping establish cooperative relationships between Korean private companies and high potential local companies and contributing to job creation by helping private companies enter overseas markets.

Strengthening Competitiveness and Capabilities for Overseas Business



Egypt railroad technology transfer program

Establishing international railroad design standards

At times, we have had conflicts with overseas companies as we did not have international design standards that can be adapted to overseas markets. KR, with the cooperation of Korea University of Technology and Education's Industry-University Cooperation Foundation and the Korea Railroad Research Institute, has prepared international design standards. We then coded and translated the standards into English to strengthen our competitiveness in global markets.

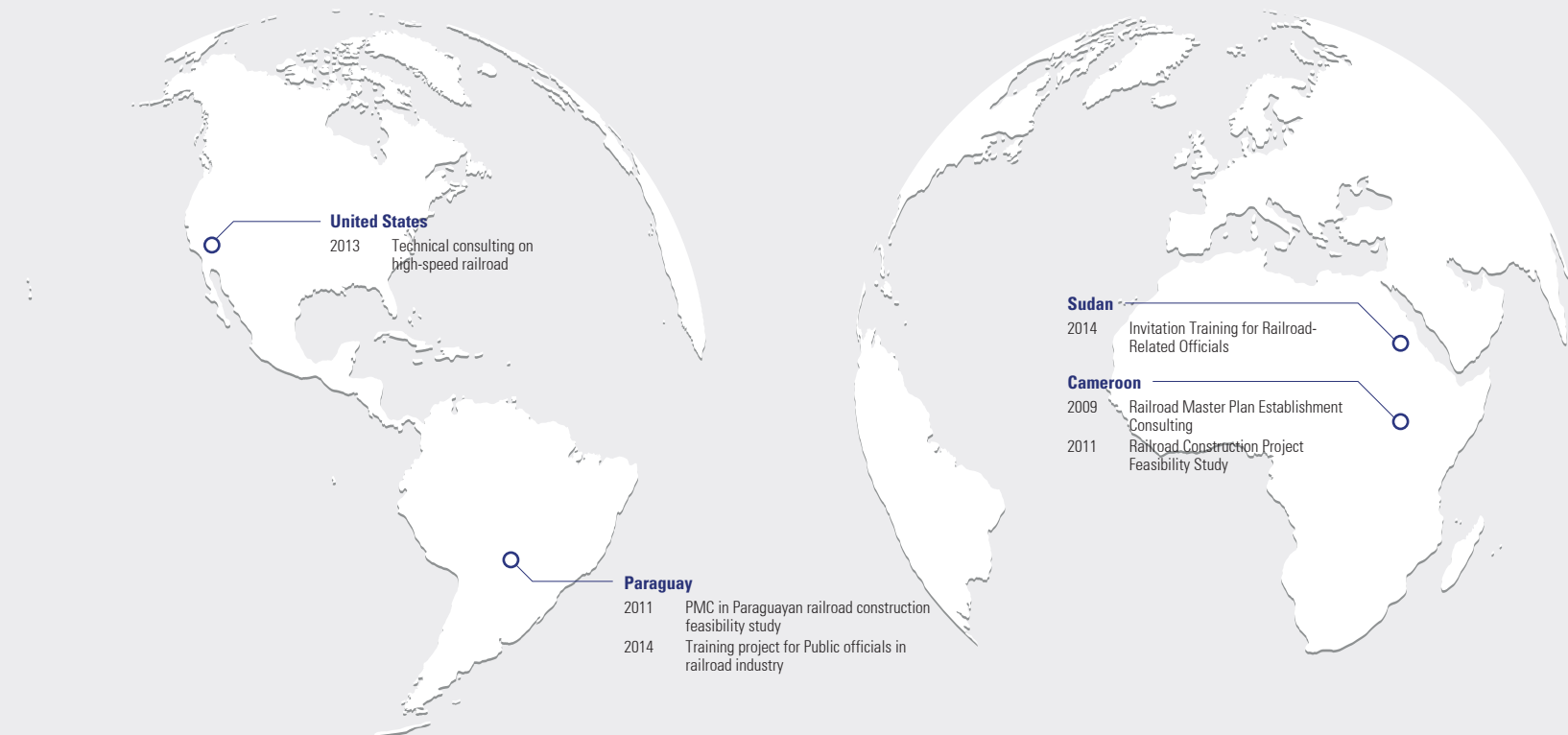
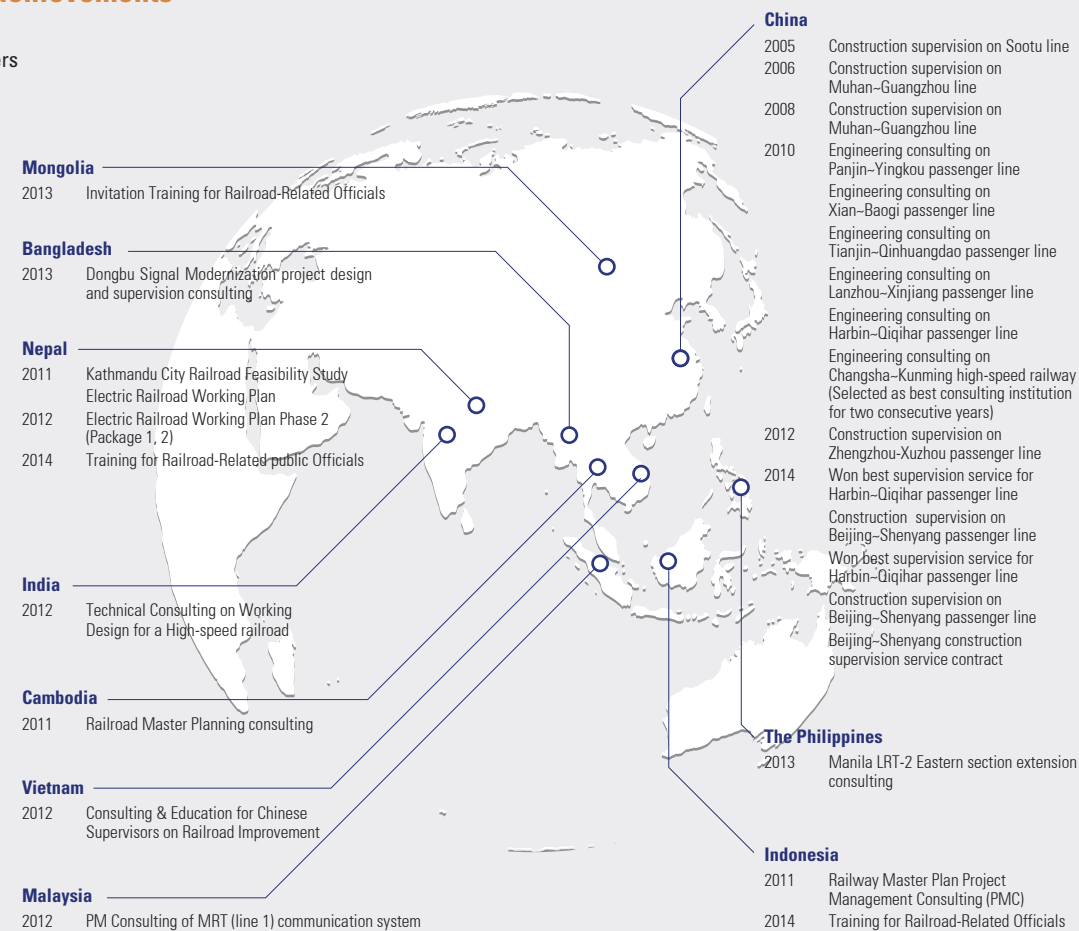
Continued Strengthening Competitiveness and Capabilities for Overseas Business

KR continues to strengthen our competitiveness by systematically training experts for overseas business. We continue to hire business management and engineering experts to maintain a pool of talent in project analysis, engineering, and contract management for overseas projects, and train them so they may be ready to support or work on overseas projects. In addition, we are running a customized training program for experts in overseas business. Our target is to train 100 experts in business management and technical areas over the next three years. We continue to train people in weak areas such as overseas construction, finance, foreign exchange, claims, and risk management. We are also conducting language programs for personnel to get involved in overseas projects.

Overseas business achievements

Overseas railroad project orders (2004~2014)

14 countries
37 projects
890 hundred million KRW

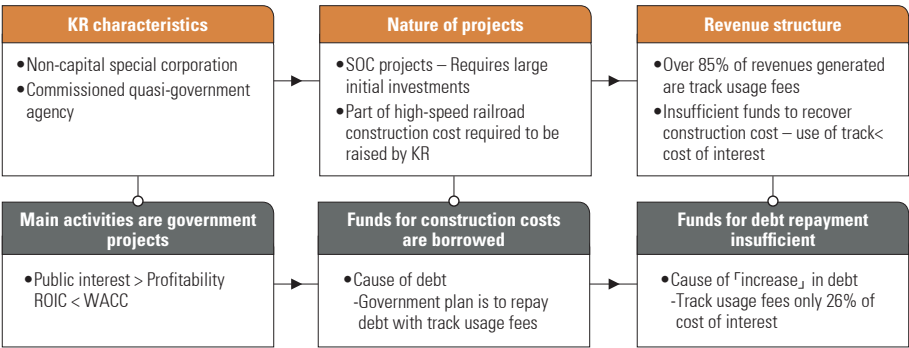


Strengthening Financial Soundness

Causes of Increase in Debt

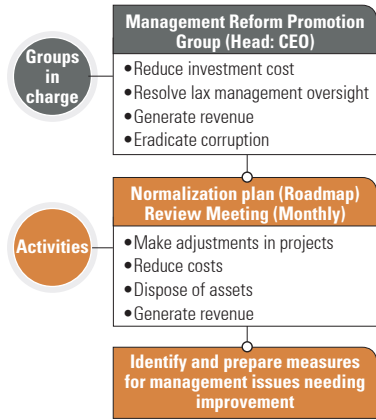
KR is a quasi-government agency founded to provide transportation to people on behalf of the government. KR constructs railroads across the country with capital from the government budget and funds raised by KR. We issue bonds according to the funding ratio decided in the railroad plan (Gyeongbu Phase 1: 65%, Gyeongbu Phase 2/ Honam High-speed Railway: 50%, Seoul Metropolitan Area High-speed Railway: 60%) to raise funds for construction costs. While the plan is structured to recover the investment costs and repay construction debt by imposing track usage fees to train operators, the track usage fees were set too low, making it difficult for us to recoup our investment costs.

Causes of increase in debt



Debt Reduction Efforts

Debt reduction efforts



Ongoing Performance Monitoring

| | |
|---------------------------|---|
| CEO chaired meeting | Review construction site and presentation |
| Group Finance Review team | Management of asset/ construction targets |
| Budget reduction team | Review and analysis of budget execution |
| Weekly Report | Operation of budget reduction center |

Short and long term strategy to reduce debt

KR has implemented debt reduction strategies to strengthen financial soundness. We have established a management innovation group with the CEO as the head, and installed an organization focused on reducing debt consisting of four teams in charge of business reorganization, cost savings, profit generation, and asset sales. We are also working towards financial soundness by analyzing the causes and characteristics of debt, project statuses, and other KR characteristics to create short-term strategies for immediate implementation and long-term strategies requiring government support.

| Short term* (Initial KR effort) | | Mid to long term ** (Latter stage government support) |
|--|---|---|
| Cost reduction | Adjustment in projects | Restructure track usage fee schedule |
| •Reduce non-essential management costs •Reduce strategic procurement and management financial costs | •Optimize timing of operational high-speed railway •Identify measures to reduce investment costs | •2015: KR 34% (주)SR 50% •2017: Restructure track usage fee |
| Profit generation | Asset sales | Debt recovery with asset sale proceeds |
| •Increase profits from increased overseas business •Asset development, rental income, etc | •Sale of Honam High-speed KTX train cars •Sale of Honam High-speed KTX transport depot | •Made institutional changes to use proceeds from sales of assets bought with KR funds for debt recovery |

* Short-term, aggressive effort by KR to generate revenues by reducing construction costs and using assets

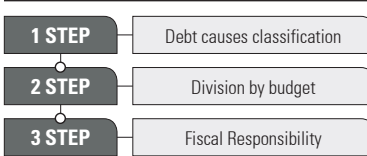
** Mid to long term, Restructure track usage fee scheme to recover high-speed railroad construction costs in mid to long-term, and improve institutional policy to enable usage of asset sale proceeds for debt recovery

Establishing asset sales plans

In accordance with the Framework Act on Railroad Industry Development, assets which KR obtains through our railroad construction business become the property of the nation, thus,unlike other public institutions, KR does not own any saleable assets. Therefore, KR established our own asset sales plan according to the debt reduction plan and pursued institutional revisions to enable the use of proceeds from asset sales to repay debt. We have identified two assets from these efforts. KR, KORAIL, and MOLIT have held eighteen discussions to reach an agreement on sale schedule, asset cost and debt calculation, method of proceeds. As a result, we expect to achieve early repayment of debt.

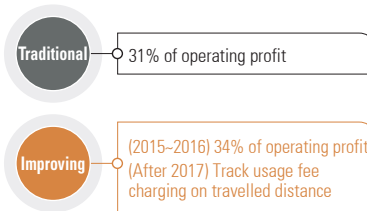
- The 22 Honam High-speed KTX train cars and Gwangju train depot are operating facilities, as such, it was judged that these assets should be sold to a train operator to reduce KR's debt, rather than remain in government ownership.
- Car sales in 2015 (4,283 hundred million KRW), establish and execute transportation depot sales plan in 2016 (1,989 hundred million KRW)

Step utilization in the segment accounting system



* Debt causes divisions by focusing on identifying

Track usage fee revision (proposal)



Budget reduction targets and performance

(Unit: hundred million KRW)

| Category | | 2012 | 2013 | 2014 |
|----------------|-----------------------|--------|--------|--------|
| Costs | Budget size | 1,599 | 1,637 | 1,601 |
| | Reduction target | 31 | 68 | 77 |
| | Reduction performance | 97 | 114 | 108 |
| Capital budget | Budget size | 65,483 | 76,200 | 72,061 |
| | Reduction target | 3,260 | 3,033 | 2,733 |
| | Reduction performance | 3,575 | 4,914 | 4,023 |

Budget reduction ratio

(Unit: hundred million KRW)



Introduction of separate accounting system

KR categorized our financial debt from high-speed railroad construction by Gyeongbu, Honam, Metropolitan lines, and implemented the separate accounting system in May 2015, to easily see the financial status and management performance by separating income profit by project and train line. In particular the main business of debt accrual, high-speed railway construction is broken down into detailed subcategories by train line. The system, which reflected the nature of KR's financial status and internal and external opinions, was designed with a mid to long-term perspective to provide information that can be easily understood by the public, as well as enable management of data internally. In addition, the separate accounting system enables KR to manage project financial information down to 190 subcategories, thus creating a foundation for responsible accounting.

Restructuring track usage fee calculation scheme

KR constructs high-speed railroads and provides the track for use by train operators, and charges track usage fees under an agreement. However, the low track usage fee schedule has caused KR to continue to accumulate debt. Therefore, we have continuously raised the need for a more reasonable track usage fee calculation scheme. As a result of continuous negotiations and persuading of MOLIT and other relevant institutions to devise a reasonable mutually beneficial plan for KR and train operators, from 2017, the unit track usage fee will be calculated on travelled distance (km), which is similar to the scheme in advanced countries, and we adjusted the fees higher, from 31% to 34% of the operating income of train operator. With these changes, we expect our operating income will increase by 441 hundred million KRW.

Enhancing budget transparency

KR established a budget plan with the goal of reducing and executing the budget early. We have enhanced the transparency of our budget by making institutional improvements such as review and analysis of the budget, installing the Budget Execution Working Subcommittee, and ongoing audit and monitoring of the budget.

| Plan | Establish reduction target | Establish operating plan | Operate filtering system | Incorporated in department evaluation |
|------------------|---|--|--|---|
| Current expenses | •Reduction target 77 hundred million KRW (per item of expenditure 2.4-15.0%) | •Establish management plan for each item of expenditure •Establish reserve amount •Strengthened revenue and expenditure allocation | •Review. Analyze budget execution •Budget Execution Working Subcommittee •Revise budget execution guidelines | •Review reduction and execution performance monthly, and evaluate at year end |
| Budget | •Reduction target 2,733 hundred million KRW (total amount targeted for reduction: 10%) •Early budget execution 59.7% | •Establish budget early, and devise execution plan by project | •Budget execution special review committee •Ongoing audit monitoring •Budget-saving incentive system | |

Budget Reduction Performance

KR optimized high-speed railroad projects (Gyeongbu, Honam, Seoul Metropolitan), reduced cost, generated revenue, and reduced 1.2806 trillion KRW of debt, up by 23.3% from the previous year.

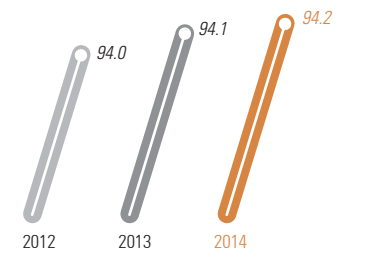
| Internal efforts | Key activities | 2014 Performance Results |
|--|--|-----------------------------------|
| Adjust project | •Adjust optimal timing to start operation of high-speed railway, optimize size of facilities such as train station and main and sublines to reduce total construction cost and size of debt issuance | Reduce 11,657 hundred million KRW |
| Reduce cost | •(Expenditures) Control budget, review and analyze execution, and minimize unnecessary expenses •(Financial cost) Issue low interest bond, reduced debt issuance by reducing project costs | Reduce 425 hundred million KRW |
| Generate revenue (enhance competitiveness) | •Enhance value and development of assets by systematic management of government owned assets •Realize overseas projects and realized profit of Suseo Station adjacent area | Reduce 4 hundred million KRW |
| Total | | Reduce 12,086 hundred million KRW |

Customer and Stakeholder Satisfaction

CS Activities for Customer Satisfaction

Customer Satisfaction

(Unit: points)

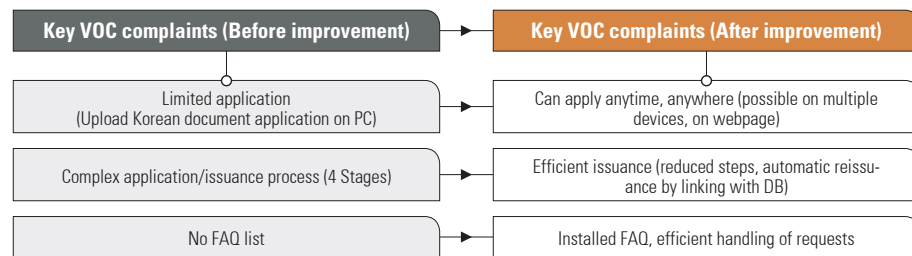


Special training for CS

Operating Customer VOC Collection System

With a stronger focus on customer satisfaction, KR implemented a customer VOC system to listen to the opinions of our customers and make improvements where necessary. We have multiple channels for customer engagement, including the Customer Management Center (Sorisaem), which receives and manages customer VOC, Customer Suggestion Center, which collects opinions and ideas from customers, and the Complaint Management System, through which stakeholders can file recommendations and complaints that do arise in the course of railway construction business. There is also an offline channel for communication in person. We adopt customer VOC, which was instituted to resolve customer complaints, to compile a list of items for improvement. The complaints we receive are categorized into nine sections including response attitude, facilities, expertise, efficiency, and handled as efficiently as possible and incorporated into our operations at the first possible opportunity.

Improvements on Performance Record System based on Customer VOC



Improved CS Capacity and execution

KR has implemented a company-wide CS plan with appropriate CS activities for each department. In addition, we strengthen CS activities through VOC improvements, and train CS baristas*, who are departmental CS activity experts. We also hold regular workshops to present the direction of our CS and compare activities of each department for fair and objective evaluation of our activities. We are strengthening our CS capacity and execution by holding internal satisfaction surveys each month and providing customized mentoring to departments with low monitoring results.

* CS experts that provide customized service based on customer requirements and preference (started in 2011, one person per office, currently operating 11th class)

Progress on CS management

KR has strived to communicate with our customers, and adopted customer opinions in various institutional improvements and customer support activities. These efforts resulted in five consecutive excellent rankings in customer satisfaction survey conducted by the government. The customer satisfaction survey results showed an increase from the previous year, validating our CS management performance internally and externally. KR will continue to work to become the one of the best public institutions in CS management.

Information disclosure for the public's right to know

KR discloses management information on our website and other channels to increase management transparency, expand opportunities for public participation, and increase the quality of our service to the public. We have renovated our website to make it more user friendly, revised our information disclosure guidelines to enable more information to be shared and disclosed, and posted the entire list of the documents we produce. We have also contributed to fulfilling the public's right to know by disclosing the information on 218 cases of KR specific tasks.



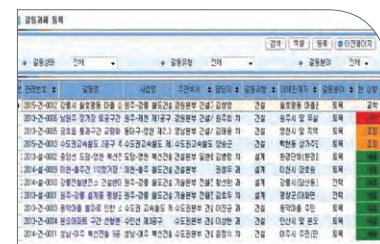
Top 8 popular items



Resolving Conflicts with Increased Communication



Concluded MOU with Presidential Committee for National Cohesion

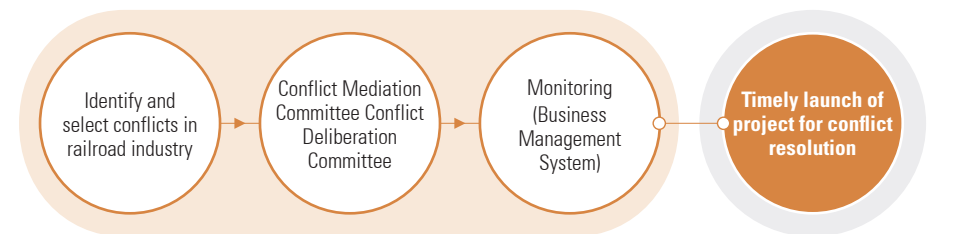


Conflict prevention management system

Conflict Prevention System

Increase in the need to prevent conflicts arising from railroad construction projects requires continuous and systematic conflict management. As such, we established a comprehensive conflict resolution plan and procedures and changed from conflict resolution system to a conflict prevention system. Our Conflict Mediation Committee prevents social conflicts that can arise from construction projects. When conflicts do occur, we aim to resolve them quickly through conflict assessment, which involves analysis of causes, diagnosis, collecting opinions from experts, and investigation of the facts and stakeholder analysis.

Conflict management process



Promotion of conflict resolution prevention mechanism

KR revised the guidelines for conflict prevention and resolution for railroad construction projects to prevent and systematically manage conflicts, and signed MOUs with specialized public and private conflict management institutions to cooperate and share conflict management resources. We also held a contest for best examples of conflict management for all the employees to contribute to spreading a culture of conflict management.

| Activities | Key details |
|--|---|
| Revise guidelines for conflict prevention and resolution (Nov. 2014) | <ul style="list-style-type: none"> Change department oversight for conflict management, newly installed Conflict Mediation Committee, and revised structure in consideration of operational efficiency → Effort to systemize conflict management system in the mid to long term |
| Conclude MOU with Presidential Committee for National Cohesion for conflict management (Jun. 2014) | <ul style="list-style-type: none"> Conclude MOU with Presidential Committee for National Cohesion to devise effective conflict management and resolution measures → Establish and utilize public conflict management infrastructure, and find and share examples of conflict mediation |
| Evaluate best examples of conflict management (Dec. 2014) | <ul style="list-style-type: none"> Find and reward best examples of conflict management to promote Government 3.0 based culture of conflict management. → Strengthen feedback by sharing cases of conflict resolution |

Key cases of conflict resolution

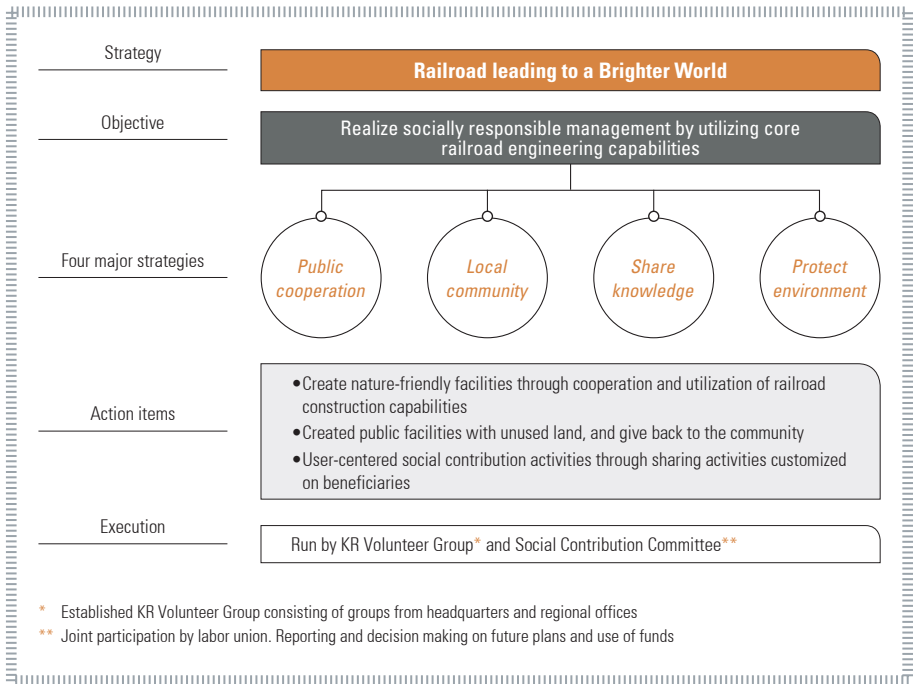
KR established the Conflict Prevention Management System to resolve social conflicts, and identified tasks for each department. As a result, we resolved five cases, including the opposition to Wonju to Gangneung transmission tower.

| Conflicts | Efforts for resolution |
|--|--|
| <ul style="list-style-type: none"> Opposition to construction of transmission tower in Wonju-Gangneung Pyeongchang Province area | <ul style="list-style-type: none"> Adjust the electricity supply system and moved location of transmission tower to outskirts and moved it underground |
| <ul style="list-style-type: none"> Opposition to construction of Wonju-Gangneung Electric Railway Substation | <ul style="list-style-type: none"> Continue to provide basis of understanding for selection of substation location |
| <ul style="list-style-type: none"> Complaint of noise and vibration from explosions in Dongmak Village of the Seoul Metropolitan Area | <ul style="list-style-type: none"> Resolve complaint by paying Dongmak Village damages for their inconvenience |
| <ul style="list-style-type: none"> Request of change in track layout at Bonoh Apartment on Suin Line (Cost of track layout change will be paid by local government) | <ul style="list-style-type: none"> Decide track layout after negotiations with neighborhood representative and Ansan City Government |
| <ul style="list-style-type: none"> Conflict with environmental organization due to Dodam-Yeongcheon Line passing through Sobaeksan mountain range | <ul style="list-style-type: none"> Joint visit and discussion with environmental organization resulted in change in location of incline shaft and reviewed other requests |

Social Contribution

Establishing strategy for social contribution

Since KR's establishment in 2004, all KR employees have been involved in heartwarming social contribution activities to realize the firm's vision of becoming a "Railroad leading to a Brighter World". Rather than making simple donations, we established three action items to give back to the community through customized activities using our core capabilities and railroad infrastructure. To this end, we find and engage in appropriate social contribution activities that will be beneficial to both the receiving and the giving parties.



High1 Choochoo Park



Rail bike

Construction of nature-friendly facilities through cooperation and utilization of railroad construction capabilities

KR uses railroad construction capabilities to transform disused line locations left from railroad improvement projects into nature-friendly facilities. This project has enabled us to revitalize local communities that are lagging behind economically. With the cooperation of public and private parties, we created railroad culture experiences, such as rail bikes on closed lines, and also installed eco-friendly spaces for environmental pollution reduction facilities, public safety, recovery of ecological environment, and solar power generation, to enhance the interest of the public. This activity helps us effectively manage disused land, creates jobs, and contributes positively to everyday life. We plan to continue such development projects and contribute to the local communities.

| Category | Key activities |
|---|--|
| Rail bike | •High1 Choochoo Park (opened October 2014) – Co-funded with KR and Gangwon Land. Built train experience resort around Shimpori–Tongri in Dogye-eup •1.5km long Ajung Station to Ajung 2 tunnel on Jeolla Line |
| Solar power generation facilities | •Utilization of disused railways in two areas – Youngju and Gyeongsan in Gyeongbuk (total area 24,915m ²) •Utilization of roofs of five locations Gongju station, Jeongeup station, Gwangju Songjeong station, Gwangju transportation depot, Pohang station – Total of 16,845m ² |
| Environmental pollutionreduction facilities | •Wastewater treatment and water pollution prevention (262 locations), air pollution prevent ion (216 locations), waste treatment (120 locations), soundproof wall installations (124 locations, 15,381m) |
| Safety facilities | •86 safety facilities for the community including 40 wells for groundwater depletion control, ramp, pedestrian walk, new road for railway crossing, multi-level crossing |
| Ecological restoration | •City forest under the Gu-am elevated railroad on Gyeongjeon Line, six buffer green zones by railroads in Ilsan and other places, seventeen ecological corridor and water channel, 135 fences to prevent trespassing |

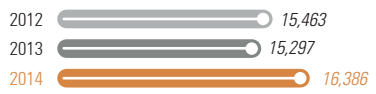


Constructed Exercise Park at lower Mangwoo Line

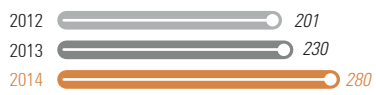
Social Contribution Activities in 2014

| |
|--|
| Blood Drive of Love |
| Bazaar of Love |
| Financial assistance |
| Coal Briquettes of Love |
| Assisting the socially marginalized |
| Support for underprivileged living near railroad |
| Sharing food and supplies in poor slum village |
| One company, One village volunteer work for rural town |
| One group, One facility Regular volunteer work |
| KR Youth Hope Project |
| Support for scholarships, school uniforms, and supplies |
| Railroad camp of love and cultural experience |
| Railroad construction site visit and cultural experience |
| KR Green Forest clean-up |

Hours of participation (Unit: hour)



Fund Accumulation (Unit: KRW million)



Corporate Social Responsibility Award

Construction of public facilities with unused land

In order to improve the quality of life in improving the living environment of the local community, KR has taken unused land near railroads, such as under elevated railroads, and created trekking paths, exercise areas, and other facilities for public use to give back to the local community. Through these activities, we are fulfilling both our social responsibility and conducting environmental management.

| Category | Activities |
|-----------------------------------|---|
| Park, trek path, and leisure park | •Create 11,889m ² park in Jungwhadong Jungnanggu Mangwoo Line and 12,615m ² park at lower part of Heogi elevated road on Jurgang Line → Six projects including parks and walking paths with a total area of 88,041 m ² |
| Exercise and parking facilities | •Bicycle path from Banseong Station to Sumokgwon Station on Gyeongjeon Line → Eight projects including bicycle paths, exercise facilities, and public parking lots 153,008m ² |

Social contribution activities customized for beneficiaries

KR is engaged in sharing activities with disadvantaged classes living in neighborhoods near railroads to fulfill our social responsibility as a public institution and promote a culture of sharing. Our KR Youth Hope Project activities include visits to welfare facilities, blood drives, and KR Youth Group, a group with 120 disadvantaged youths providing scholarships, school uniforms, and cultural experience events. In addition, through the "One Company, One Village Cooperation Program", we help people in rural villages plant chilli seedlings and harvest potatoes and sweet potatoes. The Sharing Kimchi of Love program, one of our representative social contribution activities at KR, involves employees in the entire kimchi making process from planting cabbage seedlings to harvesting cabbage and gimchang (making a big batch of kimchi for the winter), and sharing the kimchi with the disadvantaged. We have also been providing warmth to marginalized classes living near railroads, and a sense of reward to our employees, with Our Sharing Coal Briquettes of Love program since 2006. KR plans to continue sharing activities with local communities that need a warm helping hand.



KR Green Forest Clean-up



Bazaar of Love



Sharing Coal Briquettes of Love



Nazareth House – Sharing with the underprivileged



Sharing Kimchi of Love

CSR performance

KR convenes a CSR Committee to decide on management of funds, activity, and future plans. We are using our Sharing Fund, Spare Wage Fund, and other voluntary donations to carry out our CSR activities. Our company's capabilities and regionally customized/specialized activities were recognized when we received the honor of winning the Korea Corporate Social Responsibility Award (December 5, 2014). We will continue to work actively to fulfill our social responsibility as a public institution and win the trust and support of the local community.

Performance Data

Economic Performance Summary

Summary Financial statements

Summary Statement of Financial Position

| Category | | | Unit | 2012 | 2013 | 2014 |
|-------------|----------------------------|-----------------|------|----------|----------|----------|
| Assets | Current assets | Hundred million | | 2,521 | 7,365 | 5,786 |
| | Non-current assets | Hundred million | | 194,760 | 156,169 | 165,028 |
| | Total assets | Hundred million | | 197,280 | 163,534 | 170,814 |
| Liabilities | Current liabilities | Hundred million | | 47,207 | 25,602 | 26,283 |
| | Non-current liabilities | Hundred million | | 126,199 | 156,381 | 163,509 |
| | Total liabilities | Hundred million | | 173,406 | 181,983 | 189,792 |
| Capital | Basic property | Hundred million | | 42,834 | - | - |
| | Loss | Hundred million | | (18,838) | (18,438) | (18,728) |
| | Other capital components | Hundred million | | (122) | (12) | (251) |
| | Total shareholders' equity | Hundred million | | 23,874 | (18,450) | (18,980) |

Summary Income Statement

| Category | | Unit | 2012 | 2013 | 2014 |
|-------------------------|-----------------|------|-------|-------|--------|
| Sales | Hundred million | | 7,806 | 8,105 | 10,704 |
| Cost of sales | Hundred million | | 4,688 | 4,877 | 7,023 |
| Gross profit | Hundred million | | 3,118 | 3,228 | 3,681 |
| Operating profit | Hundred million | | 3,118 | 3,228 | 3,681 |
| Non-operating income | Hundred million | | 499 | 515 | 441 |
| Non-operating expenses | Hundred million | | 4,549 | 4,701 | 4,412 |
| Net loss for the period | Hundred million | | 932 | 958 | 290 |

Receipt of Government's Contributions

(Unit: hundred million KRW)



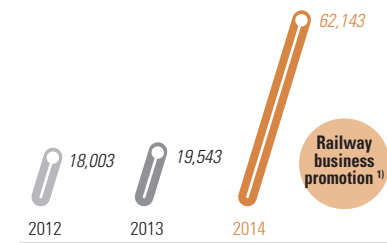
Economic Value Distribution

| Category | | Unit | 2012 | 2013 | 2014 |
|-----------------------------|--|-----------------|--------|---------|---------|
| Economic Value Creation | Sales, government contributions, bond issuance | Hundred million | 87,792 | 101,538 | 103,639 |
| | Partners (investment business orders) | Hundred million | 62,042 | 70,972 | 79,424 |
| Economic Value Distribution | Finance costs (including principal and interest) | Hundred million | 24,850 | 33,804 | 23,848 |
| | Employees (labor cost) | Hundred million | 1,013 | 998 | 1,139 |
| | Government (taxes and dues) | Hundred million | 26 | 513 | 76 |
| | Operating expenses (overhead, etc.) | Hundred million | 26,608 | 24,860 | 25,357 |

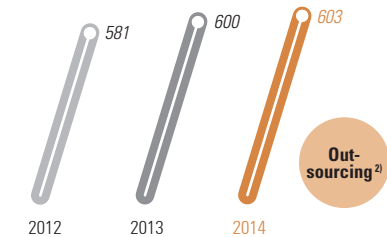
Indirect economic effects (Job creation)

(Unit: person)

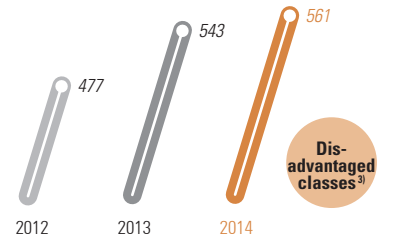
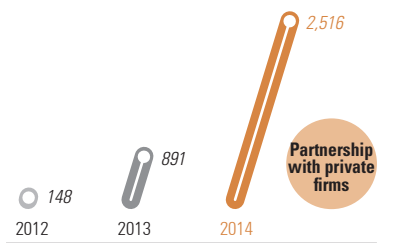
- 1) Railway business promotion: The results are different compared to last year's reports due to the change in calculation methodology
- 2013: Survey of workers at construction sites overseen by five local headquarters (Dec. 19, 2013~Jan. 29, 2014)
 - 2014: Used 2012 Bank of Korea's employment inducement coefficient by industry (10.56 people per 10 hundred million KRW)
 - 2014 project funds from national budget 48,323 hundred million KRW; project funds from private capital 11,114 hundred million KRW4; created 62,143 jobs



- 2) The outsourcing of non-core, non-specialized functions (building management, outsourcing and management of call center, IT systems maintenance, etc.) created 603 jobs.



- 3) Provided employment for basic livelihood security recipients, the disabled, women, and other socially disadvantaged classes in areas such as administrative support, security, and cleaning, creating 561 jobs.



Performance Data

Social Performance Summary

Employee status by roles

| Category | Unit | 2012 | 2013 | 2014 |
|-------------------|--------|------|------|------|
| Administrative | person | 412 | 410 | 421 |
| Civil engineering | person | 410 | 417 | 415 |
| Construction | person | 80 | 77 | 78 |
| Electrical | person | 228 | 225 | 219 |
| Communications | person | 55 | 52 | 48 |
| Machinery | person | 104 | 99 | 96 |

Employment status

| Category | Unit | 2012 | 2013 | 2014 |
|--------------------------|---|------------|------------|-------------|
| Total employees | person | 1,363 | 1,363 | 1,363 |
| By employment type | Regular worker | person | 1,347 | 1,333 |
| | Indefinite contract workers | person | 21 | 21 |
| | Non-regular worker | person | 20 | 27 |
| By age | 20~29 | person | 33 | 29 |
| | 30~39 | person | 297 | 218 |
| | 40~49 | person | 712 | 696 |
| | 50~59 | person | 304 | 380 |
| | Over 60 | person | - | 8 |
| | | | | 2 |
| Minority employees | Female | person (%) | 154(11.43) | 144(10.75%) |
| | Females who are deputy managers and above | person (%) | 17(1.26) | 17(1.27) |
| | | | | 22(1.65) |
| | Disabled | person (%) | 47(3.49) | 46(3.43) |
| | | | | 44(3.31) |
| | Total | Person | 15 | 21 |
| New employees | Disabled | person (%) | - | - |
| | | | | - |
| | Female | person | 6 | 10 |
| | High school graduates | person | 2 | 4 |
| | From specialized high schools | person | - | - |
| | | | | - |
| | Majors in science and engineering | person | 6 | 11 |
| Retired persons | Local talent | person | 9 | 9 |
| | | | | 21 |
| | Retired persons | person | 2 | 11 |
| | Early retired persons | person | 23 | 29 |
| Average years of service | year | person | 17.7 | 18.9 |
| | | | | 18.5 |
| Disabled (percentage) | person | 47(3.49) | 46(3.43) | 44(3.31) |

Recruitment of Non-regular workers

| Category | Unit | 2012 | 2013 | 2014 |
|--|--------|------|------|------|
| Young internship program | person | 79 | 99 | 52 |
| Contract-based professionals | person | 5 | 8 | 3 |
| Contract-based workers with high school diplomas | person | - | - | - |
| Part-timers | person | - | - | - |

Industrial Safety

| Category | Unit | 2012 | 2013 | 2014 |
|---|------|-------|-------|-------|
| Construction accident rate* | % | 0.142 | 0.102 | 0.087 |
| Average in construction industry | % | 0.43 | 0.46 | 0.45 |
| Railroad facility related accident (train, crossroad, platform) | case | Case | 34 | 32 |

*Adjusted average accident rate of top 1,000 construction companies

Support for SMEs

| Category | Unit | 2012 | 2013 | 2014 |
|--|----------------------|-------|-------|-------|
| Percentage of SME product purchases | % | 24.71 | 26.77 | 29.12 |
| Applications for joint R&D projects/ participating company | Application/ company | 6/7 | 10/13 | 6/7 |

Transactions with partners

| Category | Unit | 2012 | 2013 | 2014 |
|--|---------------------|-------|------|------|
| Purchased materials (supplied materials) | Hundred million KRW | 1,199 | 635 | 468 |

Training hours and investment

| Category | Unit | 2012 | 2013 | 2014 |
|------------------------------------|------------------|-------|-------|-------|
| Hours of training per person | hour | 126 | 132 | 120 |
| Investment on education per person | Ten thousand KRW | 96 | 92 | 88 |
| Core talent recruitment rate | % | 33.38 | 36.67 | 35.60 |

Employee Welfare and Workplace Safety

| Category | Unit | 2012 | 2013 | 2014 |
|-----------------------|-------|------|------|------|
| Employee Satisfaction | Point | 76.4 | 78.5 | 81.6 |
| Accidents | case | 1 | 1 | - |

Customer satisfaction

| Category | Unit | 2012 | 2013 | 2014 |
|---|-------|-------|-------|-------|
| Customer Satisfaction Index | point | 74.6 | 74.9 | - |
| National Shinmungo Customer Satisfaction Index | point | - | - | 46.55 |
| Partner satisfaction | point | 93.25 | 94.85 | 93.10 |
| Public institution Customer satisfaction Index (PCSI) | point | 93.98 | 94.1 | 94.2 |

*Since complaint filing (and handling) process has changed to be filed through ACRC Shinmungo System from August 2013, Customer Satisfaction Index is no longer in use and National Shimungo Customer Satisfaction Index is newly used.

Other

| Category | Unit | 2012 | 2013 | 2014 |
|--------------------|------------------------------------|-------|------|------|
| Ethical Management | ACRC comprehensive integrity score | Point | 8.22 | 8.36 |
| Local community | Volunteer hours per employee | hour | 11.4 | 5.8 |
| Society | Violation of laws | Case | - | - |



Labor union Overview

Name of labor union
Korea Rail Network Authority Labor Union

Establishment date of labor union
2005.05.25

Number of union members (eligible employees)
1,235

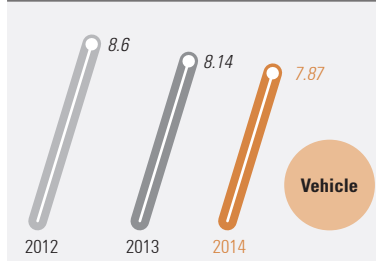
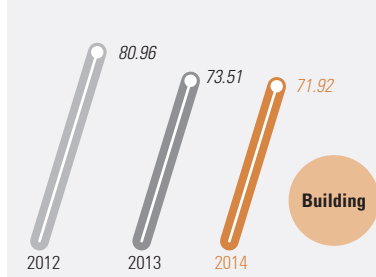
Number of full-time union members (admission rate)
5

Umbrella labor union
Korean Confederation of Trade Unions/Korean Public Service and Transport Workers' Union

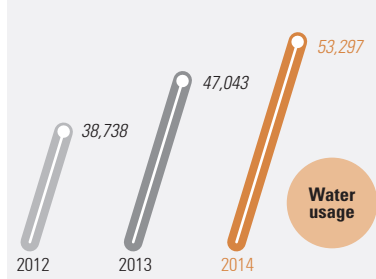
Performance Data

Data from KR headquarters and local headquarters

Energy Usage (Unit: TJ)



Water Usage (Unit: ton)



Environmental Performance Summary

Railway Construction Site (partner)

Energy Usage

| Category | Unit | 2012 | 2013 | 2014 |
|------------------------|------|----------|--------|--------|
| Building | TJ | 584.83 | 478.61 | 161.78 |
| Vehicle | TJ | 184.92 | 190.70 | 160.89 |
| Construction machinery | TJ | 3,233.69 | - | - |

Material Usage

| Category | Unit | 2012 | 2013 | 2014 |
|---------------|--------------|---------|-----------|-----------|
| Steel bars | ton | 710,336 | 880,432 | 1,045,654 |
| Rail | New material | ton | 32,659 | 33,431 |
| | Reuse | ton | 1,360 | 1,329 |
| PC sleepers | New material | Number | 130,824 | 176,635 |
| | Reuse | Number | 17,344 | 23,046 |
| Neck sleepers | New material | Number | 621 | 4,404 |
| | Reuse | Number | 377 | 4,283 |
| Aggregates | General | ton | 5,149,954 | 3,452,853 |
| | Circulation | ton | 309,033 | 331,811 |
| Mold | Wood | m2 | 3,398,301 | 3,031,012 |
| | Alternative | m2 | 3,015,981 | 1,951,122 |

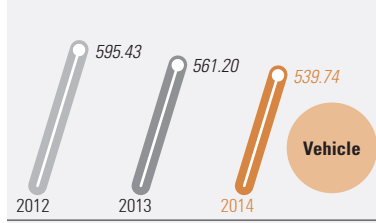
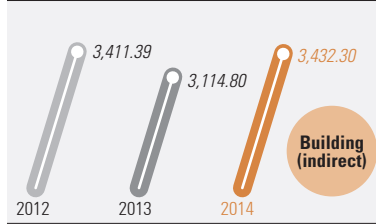
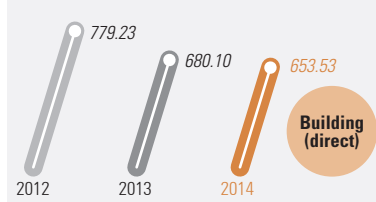
*Unit of usage of PC tie and wooden ties have change from ton to piece

Water Usage

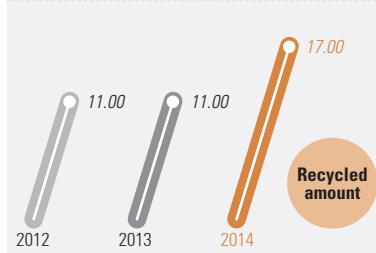
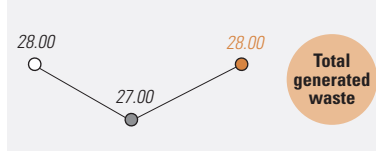
| Category | Unit | 2012 | 2013 | 2014 |
|----------------|------|-----------|-----------|-----------|
| Total | ton | 2,673,165 | 2,507,456 | 5,155,088 |
| Recycled water | ton | 37,736 | 28,135 | 37,524 |

Data from KR headquarters and local headquarters

Greenhouse Gas Emissions (Unit: tCO₂eq)



Generated Waste (Unit: ton)



Railroad construction site (Partner companies)

Greenhouse gas emissions

| Category | Unit | 2012 | 2013 | 2014 |
|------------------------|----------|---------------------|------------|-----------|
| Building | Indirect | tCO ₂ eq | 27,984.27 | 23,354.82 |
| | Direct | tCO ₂ eq | 3,012.67 | 1,900.90 |
| Vehicle | Direct | tCO ₂ eq | 12,834.84 | 13,257.74 |
| construction machinery | Indirect | tCO ₂ eq | 7,329.35 | - |
| | Direct | tCO ₂ eq | 217,728.38 | - |

Air Pollutant Emissions

| Category | Unit | 2012 | 2013 | 2014 |
|---|------------------|-------|-------|-------|
| Annual dust emissions | kg | 2,049 | 2,526 | 2,942 |
| Number of places with facilities that emit air pollutants | Number of places | 24 | 22 | 16 |

Water Pollutant Emissions

| Category | Unit | 2012 | 2013 | 2014 |
|---|------------------|-------------|-------------|------------|
| Annual discharged wastewater | Ton | 4,697,721.0 | 7,176,449.0 | 10,944,822 |
| Number of places with wastewater discharge facilities | Number of places | 103.0 | 92.0 | 156.0 |

Generated Waste

| Category | Unit | 2012 | 2013 | 2014 |
|--------------------|-------------------|------|------------|--------------|
| Construction waste | Generation amount | ton | 889,831.40 | 1,402,839.00 |
| | Recycled amount | ton | 865,108.58 | 1,390,682.00 |
| Industrial waste | Generation amount | ton | 389,709.79 | 464,812.70 |
| | Recycled amount | ton | 229,515.13 | 276,992.80 |
| Designated waste | Generation amount | ton | 1,129.15 | 5,646.50 |
| | Recycled amount | ton | 15.53 | 876.00 |

Key Environmental Indicators

| Performance indicator | Unit | 2012 | 2013 | 2014 |
|--------------------------------------|--------|-------|-------|-------|
| Environmental management index | points | 158.1 | 212.6 | 226.6 |
| Greenhouse gas reduction rate | % | 16.6 | 24.8 | 27.5 |
| Violations of Environmental laws | Case | - | 4 | - |
| Recycling rate of construction waste | % | 97.2 | 99.1 | 98.1 |

APPENDIX

63

GRI G4 Content Index

66

Independent Assurance Statement

68

Recognitions and Affiliations

69

Sustainability Report Organization


GRI G4 Content Index

| General Standard Disclosure | | | |
|--|---|--------------|--------------------|
| GRI | Description | Page | Externally assured |
| Strategy and Analysis | | | |
| G4-1 | CEO's Message | 4–5 | ● |
| Organizational Profile | | | |
| G4-3 | Name of the organization | 12–13 | ● |
| G4-4 | Primary brands, products, and services | 12–13 | ● |
| G4-5 | Location of the organization's headquarters | 48–49 | ● |
| G4-6 | Number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report | 12–13 | ● |
| G4-7 | Nature of ownership and legal form | 12–13 | ● |
| G4-8 | Markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries) | 12–13, 50–51 | ● |
| G4-9 | Scale of reporting organization | 12–13 | ● |
| G4-10 | Employment information, by type of employment, type of contract and by region | 60 | ● |
| G4-11 | Percentage of total employees covered by collective bargaining agreements | 60 | ● |
| G4-12 | Key characteristics of the supply chain relating to key activities, products and services of the reporting organization | 8–9 | ● |
| G4-13 | Significant changes during the reporting period regarding the organization's size, structure, and ownership | 12–13 | ● |
| G4-14 | Explanation of whether and how the precautionary approach or principle is addressed by the organization | 14–15 | ● |
| G4-15 | List of externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses | 70 | ● |
| G4-16 | Memberships of associations (such as industry associations) and national or international advocacy organizations to which the organization is affiliated | 70 | ● |
| Identified Material Aspects and Boundaries | | | |
| G4-17 | Operational Structure of the reporting organization including key business departments, operating companies, affiliate companies, and joint venture companies | 12 | ● |
| G4-18 | Process for defining report content | 20–21 | ● |
| G4-19 | All material Aspects identified in the process for defining report content | 20–21 | ● |
| G4-20 | Aspect Boundary within the organization | 20–21 | ● |
| G4-21 | Aspect Boundary outside the organization | 20–21 | ● |
| G4-22 | Explanation of the effect of any restatements of information provided in previous reports, and the reasons for such restatements | 59 | ● |
| G4-23 | Significant changes from previous reporting periods in the Scope and Aspect Boundaries | 2 | ● |
| Stakeholder Engagement | | | |
| G4-24 | List of stakeholder groups engaged by the organization | 18, 21 | ● |
| G4-25 | Basis for identification and selection of stakeholders with whom to engage | 18, 21 | ● |
| G4-26 | Organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group | 18–19 | ● |
| G4-27 | Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns | 18–19 | ● |
| Report Profile | | | |
| G4-28 | Reporting period for information provided | 2 | ● |
| G4-29 | Date of most recent previous report | 2 | ● |
| G4-30 | Reporting cycle | 2 | ● |
| G4-31 | Contact point for questions regarding the report or its contents | 2 | ● |
| G4-32 | GRI Content Index | 65–67 | ● |
| G4-33 | Policy and current practices with regard to seeking external assurance for the report | 68–69 | ● |
| Governance | | | |
| G4-34 | Governance structure of the organization | 16–17 | ● |
| Ethics and Integrity | | | |
| G4-56 | Description of the organization's values, principles, standards and norms of behavior | 24–27 | ● |

| Specific Standard Disclosures | | | |
|------------------------------------|--|--------|--------------------|
| CATEGORY : ECONOMIC | | | |
| GRI | Description | Page | Externally assured |
| Economic Performance | | | |
| | Generic DMA | 12–13 | ● |
| G4-EC1 | Direct economic value generated and distributed | 59 | ● |
| G4-EC2 | Financial implications and other risks and opportunities for the organization's activities due to climate change | 39 | ● |
| Indirect Economic Impacts | | | |
| | Generic DMA & Aspect-specific DMA | 28 | ● |
| G4-EC4 | Financial assistance received from government | 59 | ● |
| G4-EC7 | Development and impact of infrastructure investments and services supported | 29–31 | ● |
| G4-EC7 | Significant indirect economic impacts, including the extent of impacts | 59 | ● |
| G4-EC9 | Development and impact of infrastructure investments and services supported | 29–31 | ● |
| CATEGORY : ENVIRONMENTAL | | | |
| Materials | | | |
| | Generic DMA | 34 | ● |
| G4-EN1 | Materials use by weight or volume | 62 | ● |
| G4-EN2 | Percentage of materials used that are recycled input materials | 62 | ● |
| Energy | | | |
| | Generic DMA & Aspect-specific DMA | 34 | ● |
| G4-EN3 | Energy consumption within the organization | 62 | ● |
| G4-EN4 | Energy consumption outside of the organization | 62 | ● |
| Water | | | |
| | Generic DMA | 34 | ● |
| G4-EN8 | Total water withdrawal by source | 62 | ● |
| G4-EN10 | Percentage and total volume of water recycled and reused | 62 | ● |
| Emissions | | | |
| | Generic DMA & Aspect-specific DMA | 34 | ● |
| G4-EN15 | Direct greenhouse gas (GHG) emissions (Scope 1) | 63 | ● |
| G4-EN16 | Energy indirect greenhouse gas (GHG) emissions (Scope 2) | 63 | ● |
| G4-EN19 | Reduction of greenhouse gas (GHG) emissions | 63 | ● |
| Effluents and Waste | | | |
| | Generic DMA | 34 | ● |
| G4-EN23 | Total weight of waste by type and disposal method | 63 | ● |
| Environmental Grievance Mechanisms | | | |
| | Generic DMA & Aspect-specific DMA | 34 | ● |
| G4-EN34 | Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms | 33 | ● |
| CATEGORY : SOCIAL | | | |
| Employment | | | |
| | Generic DMA & Aspect-specific DMA | 44 | ● |
| G4-LA1 | Total number and rates of new employee hires and employee turnover (by age group, gender, region) | 44, 60 | ● |
| G4-LA2 | Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operations | 45 | ● |

| GRI | Description | Page | Externally assured |
|---|---|--------|--------------------|
| Occupational Health and Safety | | | |
| | Generic DMA & Aspect-specific DMA | 34 | ● |
| G4-LA6 | Type of injury and rates of injury, occupational diseases, lost days, absenteeism, and total number of work-related fatalities (by region, gender) | 35, 60 | ● |
| G4-LA7 | Workers with high incidence or high risk or diseases related to their occupation | 35 | ● |
| Training and Education | | | |
| | Generic DMA | 44–45 | ● |
| G4-LA9 | Average hours of training per year per employee (by gender and employee category) | 61 | ● |
| G4-LA10 | Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings | 44–45 | ● |
| Diversity and Equal Opportunity | | | |
| | Generic DMA | 44–45 | ● |
| G4-LA12 | Composition of governance bodies and breakdown of employees per employee category (gender, age group, minority group membership, and other indicators of diversity) | 44–45 | ● |
| Supplier Assessment for Labor Practices | | | |
| | Generic DMA | 44–45 | ● |
| G4-LA15 | Significant actual and potential negative impacts for labor practices in the supply chain and actions taken | 42 | ● |
| SOCIETY | | | |
| Anti-corruption | | | |
| | Generic DMA & Aspect-specific DMA | 24 | ● |
| G4-S03 | Total number and percentage of operations assessed for risks related to corruption and the significant risks identified | 25–26 | ● |
| G4-S04 | Communication and training on anti-corruption policies and procedures | 27 | ● |
| Anti-competitive Behavior | | | |
| | Generic DMA | 40 | ● |
| G4-S07 | Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes | 41 | ● |
| PRODUCT RESPONSIBILITY | | | |
| Customer Health and Safety | | | |
| | Generic DMA & Aspect-specific DMA | 34 | ● |
| G4-PR1 | Percentage of significant product and service categories for which health and safety impacts are assessed for improvement | 33–38 | ● |

Ten Principles of UNGC 10

| UN Global Compact | Classification | Principles |
|---|-----------------|--|
|  | Human rights | 1. Businesses should support and respect the protection of internationally proclaimed human rights |
| | | 2. Ensure that they are not complicit in human rights abuses |
| | Labor | 3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining |
| | | 4. The elimination of all forms of forced and compulsory labor |
| | | 5. The effective abolition of child labor; and |
| | | 6. The elimination of discrimination in respect of employment and occupation. |
| <p>KR joined the UN Global Compact, an international agreement on corporate social responsibility, and abides by the ten principles in the four major sectors of human rights, labor, environment, and anti-corruption.</p> | Environment | 7. Businesses should support a precautionary approach to environmental challenges; |
| | | 8. Undertake initiatives to promote greater environmental responsibility; and |
| | Anti-corruption | 9. Encourage the development and diffusion of environmentally friendly technologies. |
| | | 10. Businesses should work against corruption in all its forms, including extortion and bribery. |

To: The Stakeholders of Korea Rail Network Authority

Introduction and objectives of work

IMCSR (the ‘assurance provider’ hereafter) has been engaged by Korea Rail Network Authority (KR) to conduct an independent assurance of its Korea Rail Network Authority Sustainability Report 2015 (the ‘Report’ hereafter). This assurance statement applies to the related information included within the scope of work described below. The information and its presentation in the Report are the sole responsibility of the management of KR. The assurance provider was not involved in the drafting of the Report. Our sole responsibility was to provide independent assurance on its content.

Scope of work

The assurance process was conducted in line with the requirements of the Assurance Standard AA1000AS (2008) Type1 assurance. The scope of work included:

- Data and information included in the Report for the reporting period;
- Appropriateness and robustness of underlying reporting systems and processes, used to collect, analyze and review the information reported;
- Evaluation of the Report against the main principles of the AA1000 Assurance Standard (2008);
 - Inclusivity
 - Materiality
 - Responsiveness
- Evaluation against GRI G4 ‘In Accordance’ Criteria;

The moderate level of assurance has been applied.

Methodology

As part of its independent assurance, the assurance provider undertook the following activities:

- Interviews with relevant personnel of KR;
- Review of documentary evidence produced by KR;
- Audit of performance data;
- Site visits;
- Review of data and information systems for collection, aggregation, analysis and review;
- Review of stakeholder engagement activities;

Our work was conducted against standard procedures and guidelines for external assurance of sustainability reports.

Our findings

On the basis of our methodology and the activities described above, it is our opinion that:

- KR has established appropriate systems for the collection, aggregation and analysis of relevant information. The information and data included in the Report are accurate, reliable and free from material mistake or misstatement;
- The Report properly reflects the organization’s alignment to and implementation of the AA1000 Assurance Standard(2008) principles of Inclusivity, Materiality and Responsiveness in its operations. Further detail is provided below;

Alignment with the principles of AA1000AS (2008)

AA1000AS (2008) Principle Application

Inclusivity

KR has gathered major concerns and opinions from key stakeholders including government, media, business partner, local community, employee and union through stakeholder engagement programs.

Materiality

The Report addresses the range of environmental, social and economic issues of concern that KR has identified as being of highest material importance. The identification of material issues has considered both internal assessments of risks and opportunities to the business, as well as stakeholders’ views and concerns.

Responsiveness

The Report properly reflects the organization’s response to the material issues which are defined through process for identifying material issues. The Report presents related performances in its Disclosures on Management Approach (DMA) sections.

- Based on our work, it is our opinion that the Report has been prepared in accordance with the ‘Core Option’ of GRI G4. Further detail is provided below;

General Standard Disclosures

The assurance provider reviewed General Standard Disclosures, and believes that the Report meets the Core Option requirements of General Standard Disclosures.

Specific Standard Disclosures

The assurance provider reviewed Material Aspects, DMAs and Indicators, and believes that the Report meets the Core Option requirements of Specific Standard Disclosures.

Key areas for ongoing development

Based on the work conducted, we recommend KR to consider the following:

- KR is advised to consider development of Key Performance Indicators against areas and issues of concern where they do not already exist and monitoring the progress;
- In order to integrate the material issues recognized from the stakeholders engagement into the sustainability strategy, it is recommended to organize and operate a highest organization system such as a sustainability management committee;

Statement of independence, impartiality and competence

No member of the assurance team has a business relationship with KR. We have conducted this assurance independently, and there has been no conflict of interest. The assurance team consists of the best experts equipped with sufficient knowledge and expertise in the relevant areas.





AA1000
Licensed Assurance Provider
000-171

July, 2015
CEO&Founder, IMCSR
Hyun Lee

Recognitions and Affiliations

2014 Awards and recognitions

| Achievement | Significance | Sponsor |
|---|--|---|
| Korean Sustainability Report Award | Recognized for achievements in economic, environmental, social management for sustainable development (Sept. '14) |  KSA 한국표준협회 |
| Top Excellence Award in National Quality Working Group Competition | Recognized as best example of training and achieving results through CoP activities (May '14) |  KSA 한국표준협회 |
| Outstanding and Participation Awards in Daejeon Quality Working Group Competition | Recognized as best example of resolving onsite issues by improving processes in safety/environment/quality (Jun. '14) |  대전광역시 |
| Award for Development of Idle Railway Land | Recognized for contribution and active cooperation in city development project (Oct. '14) |  송파구청 |
| National Quality Convention Presidential Award (One Silver, One Bronze) | Recognized for creative and innovative activities and promoting CoP and process improvement (Nov. '14) |  산업통상자원부 |
| Contribution to Mutual Growth Award | Recognized for contribution to economy and strengthening competitiveness by promoting large and SME cooperative activities (Nov. '14) |  대구·중소기업협력재단 |
| Contribution to Mutual Growth Award | Recognized for contribution to development of local welfare programs (Nov. '14) |  청주시 |
| Social Responsibility Award Grand Prize (Local community development category) | Recognized for customized social contribution activities including rail bike and solar energy projects, and “One company, One village” volunteer program (Dec. '14) | Korea Social Responsibility Award Organizational Committee |
| Fourth consecutive Minister of Land, Transport and Maritime Affairs Award in National Design VE Competition | Recognized for project cost reduction through design VE of trackbed for Pohang–Samcheok railway construction project (Dec. '14) |  국토교통부 |
| Obtained 7 Grade in 7 PI (QMS) | Raised level of QMS operation through continuous improvement activities (Dec. '14) |  KSA 한국표준협회 |
| DB Retirement Pension Grand Prize sponsored by Korea Economic Daily | Recognized excellence in profitability, stability, portfolio, education, and pension management committee organization (Dec. '14) |  한국경제신문 |
| Social Contribution Award | Recognized for active participation in local community contributions (Dec. '14) |  대전광역시 |
| Minister of Land, Transport and Maritime Affairs Award for Public Information Disclosure Assessment | Recognized as outstanding example of information disclosure, by analyzing items which have had repeated requests and disclosing such information prior to receiving request (Dec. '14) |  국토교통부 |
| Top Excellence Award, Korea Idea Management Conference | Recognized for achievements in enhancements in quality and productivity, cost reduction, process improvements (Dec. '14) |  KSSA 설립 한국제안활동협회 |

Affiliated Organizations

| | | | | |
|---|--|---|--|---|
| UIC (International Union of Railways) | 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 Society of Archives and Records Management | UN Global Compact Korea |
| Korean Association for Audit | Yunkyung SM Forum | Korea Association of Record | Korea Society of Management Information | |

Sustainability Report Organization

Korea Rail Network Authority Framework of Sustainability Management Implementation

The KR Sustainability Management is supervised by the Management Performance Division of the Strategy & Finance Department, and eleven teams cooperated to produce the Sustainability Report.

