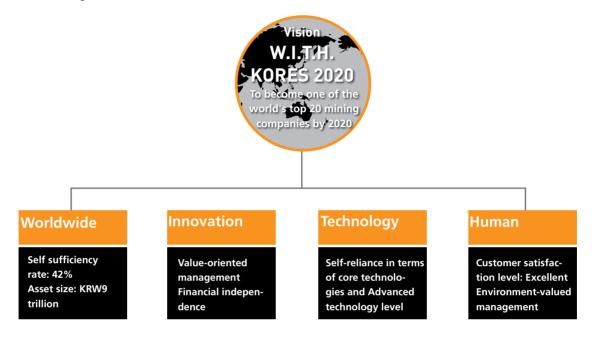
# UNLIMITED **EARTH**

KORES Sustainability Value Report 2011





Korea Resources Corporation (KORES) is committed to fulfilling the dream of becoming an advanced resources powerhouse through sustainable resources development.



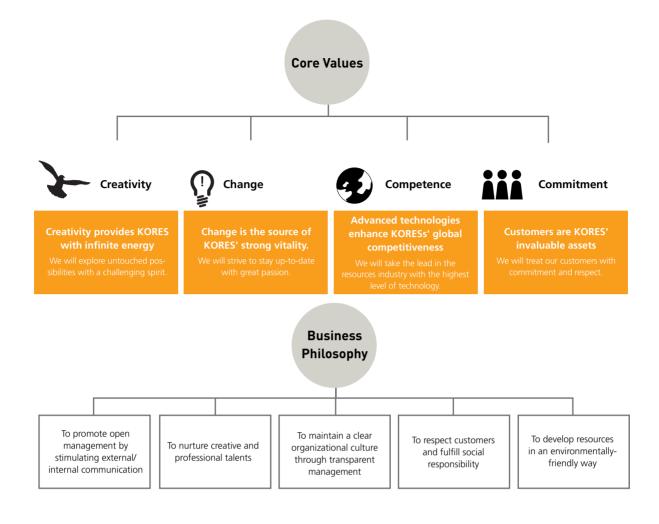


#### Reporting principles and scope

- This KORES Sustainability Value Report 2011 is the fourth edition on our sustainable management activities in the economy, society and environment. We are opening various opportunities to communicate with stakeholders through the publication of the sustainability value report each year.
- This report was drawn up based on the UN Global Compact's ten principles.
- The reporting scope includes the performance of KORES' head office and branch offices within Korea; the records of some workplaces abroad are included in terms of some indicators
- The reporting period is from Jan. 1 to Dec. 31, 2011. For performance indicators, data from the past 3 years were used to help the readers understand the relevant trends. All data is as of Dec.31, 2011 unless otherwise noted.
- This report contains some domestic mining statistics. This is due to the fact that KORES is fully aware of its considerable responsibility to the continuous growth in the domestic mining industry as a government owned corporation leading Korea's mining and resources development.

#### **Cover story**

• Infinity symbol(∞) is used to embody 'Unlimited Earth', the concept of resources being an object which should co-exist with the Earth and mankind indefinitely.





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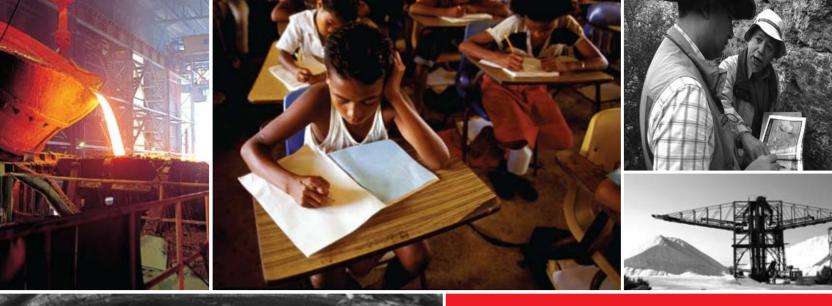
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# UNLIMITED EARTH



















### CEO Message



Korea Resources Corporation (KORES), as one of the government owned energy and resources corporation, has its roots in mining industry since it was established as the Korea Mining Promotion Corporation in 1967. In 2008, KORES was reborn with a vision to grow into global top 20 players in mining and resources sector by 2020. The ambitious transformation reflected the Korean government's strong commitments to meeting the ever growing natural resources needs of the Korean economies.

#### Fostering the development of the Korean resources industry

Korea had been one of the poorest countries in the world until a mere generation ago, but now as a member of the 20-50 club, Korea acquired competitive edge in manufacturing and trading sectors. In fact, Korea is world's fifth largest mineral resources consumer, mainly

due to the demands from steel, electronics, automobile, shipbuilding and chemical industries. As such, it is time to turn a new leaf and haul the Korean mining and natural resources industries to keep abreast of the pace with globally competitive manufacturing sectors of Korea.

#### Challenging the global market with our expertise and technology innovation

KORES stands at the center of realization of Korean government's strong commitments to fostering resources industries. We are exerting our utmost efforts to upgrade our expertise and to achieve the technology innovation and professional excellence in the shortest period of time, so as to be on a par with major global companies in resources industries.

What is more, we invite strategic partnerships and alliances with relevant entities and enterprises, both domestic and foreign, to represent Korea in international resources marketplace.

#### Becoming a true friend of the communities that we work in

KORES aims to create universal values for mankind through ecologically sound development. Therefore, we wish to become not only a good business partner and collaborator, but also a true friend of the governments of resources endowed countries and mining site communities around the world. For that, we are ready and willing to shoulder the load toward a common goal and to share the added value we will create together for a mutually beneficial co-existence.

We ultimately want to be your one-stop resources business window in Korea, maximizing each other's forte and meeting each other's needs.

We appreciate your interest in us and look forward to working with you.

Thank you.

2012.11 President and CEO Jung-Sik Koh

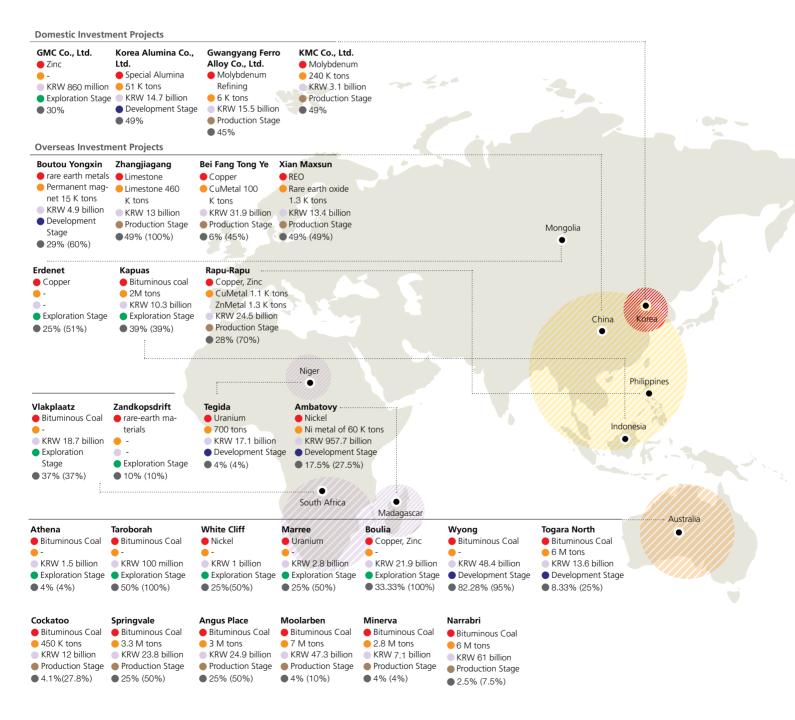
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# About the Company & Status of Business

#### KORES is a government owned resources development corporation.

As a government owned resources development corporation established in 1967, KORES contributes to national development by promoting the stable supply and demand of mineral resources. All this can be done by efficiently carrying out the following: exploration and development of mineral resources at home and abroad, support in the form of technologies and funds to develop mineral resources, stocking of scarce metals to cope with national crises, mineral ores tests, and analyses and valued-added technology development and dissemination.

The head office of KORES is located in Seoul, Korea. KORES operates 2 domestic branch offices and 10 overseas branch offices (as of the end of 2011). For the stable supply of the top 6 strategic minerals and new strategic ones, we are directly investing in 36 projects in 16 countries and maintaining a stable portfolio in 3 stages of exploration, development, and production.





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#### Headquarters & Offices at Home and Abroad

#### Seoul Headquarters 606 Siheung-daero, Dongjak-gu, Seoul Tel. 82-2-840-5600

#### Human Resources Development Center 750-1,Namdang-ri, Hamyeol-eup, Iksan-si, Jeollabuk-do

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#### Peru

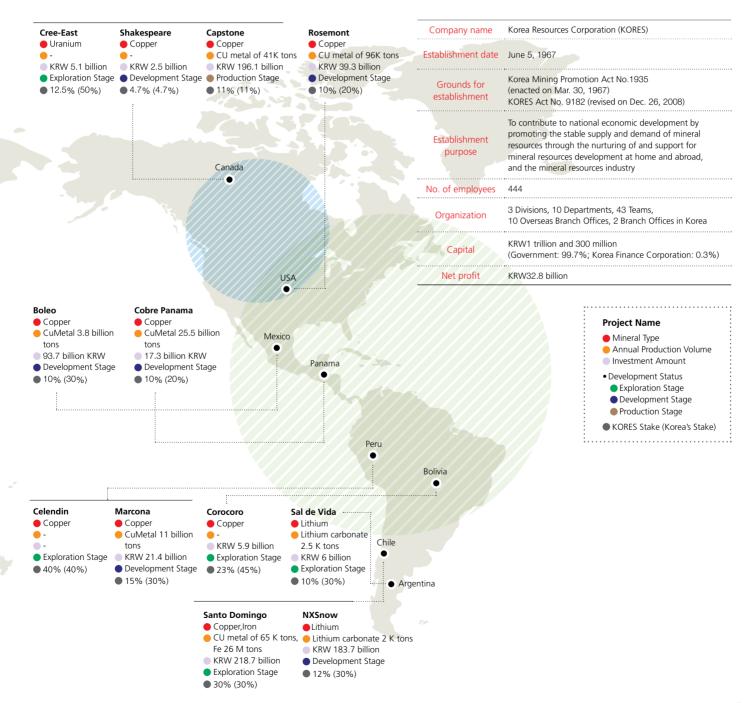
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#### DR Congo

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### **Corporate Governance**

#### Composition and operation of the board of directors

**Composition** The board of directors is the highest decision-making organization; the appointed non-standing director assumes the chairmanship of the board, and the ratio of non-standing directors is larger than the majority to enable them to fulfill their role faithfully in check and support. The president is selected at the recommendation of the Office Recommendation Committee and by the Act on Public Agencies' Operation, and standing directors are appointed by the president. The non-standing directors are selected and appointed by the same Act mentioned above at the recommendation of the Officer Recommendation Committee among the candidates meeting the competence criteria in each job for rational decision making and expertise in the economic, social, and environmental sectors. In 2011, the board meeting was held 15 times; 46 items on the agenda were handled including 34 cases of resolution and 12 cases of reporting.

**Operation of the Subcommittees** KORES has three subcommittees affiliated with the board of directors: Strategic Management Subcommittee, Investment Advisory Subcommittee, and Sustainability Management Subcommittee to consolidate the expertise, enhance the decision-making efficiency, and fulfill the social responsibility as a government owned corporation.

#### Assessment of the board of directors' performance and reward

The operation of the board of directors is externally assessed by a government each year. Internally, internal evaluation by board members and operation performance evaluation by the leader of agenda-setting team are carried out as well. Problems raised during these assessments are reflected on the following year's operation plan establishment. The KORES president presents specific management objectives to realize the corporate philosophy and visions, signs a management agreement with the Knowledge Economy Minister, and receives performance-based pay differentially depending on the management performance evaluation.

#### Activation and consolidation of the board of directors

KORES has established a management system centering on the board of directors to enhance the expertise in and efficiency of management. KORES has made efforts to activate the board of directors through the development of a system to use non-standing directors' expertise and support for their competence consolidation. In addition, KORES has strengthened the role of the board of directors by regularizing the board meeting's process, expanding the operation of subcommittees, and holding a pre-presentation on the items. KORES set five key performance indicators (KPIs) and objectives for the evaluation of board operation performances.

#### Consolidation of board's role

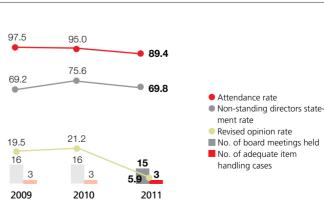
Category	Main activities in 2011
Regularizing the board meeting's process	<ul> <li>Enhance the opinion presentation rate by establishing a regular process for questions and debates</li> <li>Reflect the internal auditor's opinions by offering the auditor an opportunity to present his/her opinions (100% of auditor's attendance rate).</li> </ul>
Composition of balanced subcommittees and expanded operation	<ul> <li>Expanded operation of three subcommittees (7 sessions in 2010 10 sessions in 2011)</li> <li>Strategic Mgt. Subcommittee (1 session), Investment Advisory Subcommittee (6 sessions), Sustainability Mgt. Subcommittee (3 sessions)</li> </ul>
Support for timely decision making	<ul> <li>Regular board meetings to be held every fourth Thursday of the month and temporary board meetings to be held for the deliberation on pending issues related to emergency management</li> <li>A special report is made at a non-standing director's request on management conditions, resources environment and already decided items</li> </ul>
Regularizing non-standing directors' pre-presentation on the items	<ul> <li>Joint presentation at outside venues 2 days before the board meeting</li> <li>The direction for the supplementation / revision of items can be presented, and efficient debate is enabled in the board meeting</li> <li>Enhance the understanding of items and enrich the substance of decision making through the joint pre-presentation.</li> </ul>

#### Consolidation and use of non-standing directors' expertise

Support for compe- tence consolidation	<ul> <li>Orientation by field (3 sessions), offering management informa- tion (3 fields), enhancement of understanding of social contribu- tion through direct participation in relevant activities (2 sessions)</li> </ul>
Role	<ul> <li>Presenting rational alternatives(Specialized opinions (50 cases),</li></ul>
consolidation	revised opinions (2 cases), policy suggestions (4 cases)) <li>Consolidation of pre-deliberation thru subcommittee activation</li> <li>Checking thru revised opinions presentation on the items in the agenda</li>
Status enhancement	Visit to the resources development site (5 times), participation in management activities (2 times)
Development of a system to use non-	<ul> <li>Change in the governance of board of directors due to the increase in assets</li></ul>
standing directors'	-Chairmanship: appointed non-standing director <li>Consolidation of pre-screening of investment business items</li>

-Evaluation of investment business team, risk check, and legal contract review





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### **Risk Management**

#### **Risk management system**

**Risk management strategy** KORES has devised a system through which clear role and policy establishment can be reflected on the business during normal times based on the management's solid commitment to manage risks efficiently. We have also been pushing ahead with a strategy to enhance corporate values and promote sustainability management by implementing key businesses' successful operation and main functions without obstacles thru employees' voluntary participation in education/training programs for risk management competence consolidation by developing such programs.

**Enterprise risk management system (ERMS)** KORES operates a system to recognize, measure, evaluate, respond to, monitor, report, and feedback risks by building ERMS (Enterprise Risk Management System) to cope proactively with new types of risks according to business sector expansion. We completed the establishment of ERMS in 2011 and aim at operating the system efficiently and effectively in 2012.

**Risk management organization** The Risk Management Committee is the supervising and deliberating organization on overall risks generated in management activities. The committee deliberates on the basic enterprise risk policy, strategy and regulations, and risk management limit and comprehensive plan as well as risk-related items on the agenda. The Risk Management Team carries out risk policy strategy establishment, risk management system development, risk measuring model improvement and risk reporting system operation.

**Risk management and monitoring process** KORES develops its own risk assessment method, assesses the risks, and reports the assessment results to the Risk Management Committee and routinely carries out enterprise management for efficient risk management. We also monitor whether risk management is faithfully carried out in compliance with the defined strategies and regulations. We establish and operate a system through which the data created in the risk management process are converted into useful information for decision making and reported. Through this, we can cope with potential risks in advance.

# Enterprise risk management System



Risk Mgt. Committee

- Dept. in charge of risk Mgt.
- Work Unit to manage risks
- Process
- Risk identification
- ERMS establishment
- Establishment of policy to respond to risks
- System
- Establishment of risk reporting system
  Systematization of risk measurement and
- management
- Accumulate risk DB
  - .....

#### Status of 2011 Risk Management Committee meetings

Meeting sequence	Details	
1st	Plan to manage exchange risks of 2011 assets and liabilities denominated in foreign currency	
2st	Proposal to increase project investment limit	
3st	Proposal to establish risk management regulations	
4st	Proposal to plan project share sale	



Risk Managemnet System

#### Establishment of risk management regulations

KORES has tightened its previous risk management standards to establish the new risk management regulations in 10, 2011. The new regulations clarify the risk management organization and its role, stipulate the risk management procedure and system utilization, and also contain more contents including the appointment of outside experts, to secure the expertise and objectivity of the Risk Management Committee.

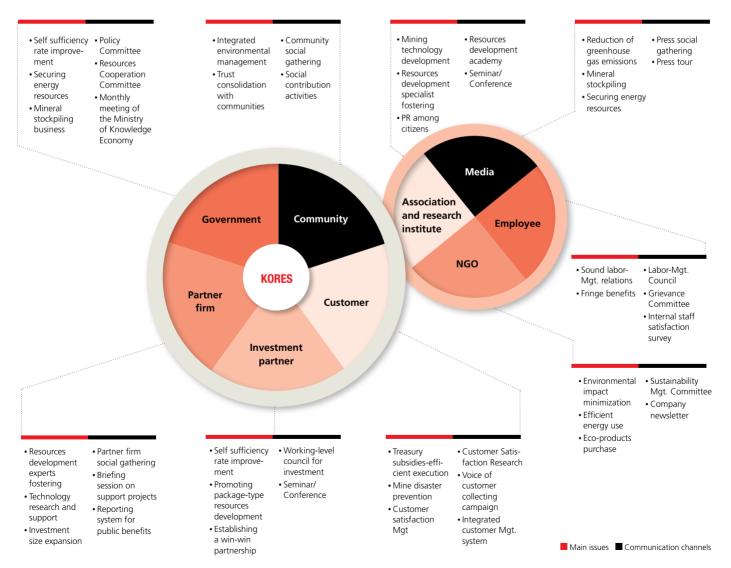
## Stakeholder Engagement

#### Stakeholder classification

KORES is fully aware that sustainability management is truly attainable only when we correctly understand and effectively respond to stakeholders' demand. Accordingly, we divide the stakeholders that wield huge economic, social, and environmental influence on the organization's management activities into customers, investment partners, partner firms, government, communities, associations and research institutes, media, employees, and NGOs. This enables us to effectively respond to stakeholders' demand by identifying each stakeholder group's main interests.

#### Stakeholder communication channels

KORES operates communication channels in line with stakeholders' characteristics, collects opinions and requirements, and continuously supplements and improves weaknesses through the feedback of stakeholders. We built a system for immediately responding to the Voice of Customer through the integrated management of all VOCs including a customer consulting section on the homepage, civil petition via telephone or by visit, electronic Shinmungo (through which citizens can lodge complaints), and customer suggestions. The accumulated customers' opinions are used as service improvement data by inputting them into a database. We will strive to achieve a higher level of sustainability management by maintaining a solid relationship on trust with stakeholders through more various communication channels.



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### **Public Benefits**

#### Supporting resources development abroad

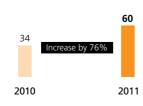
**Consolidation of exploration support and technology** KORES supports overseas resources development projects through overseas survey and exploration technology development. In 2011, through the expansion of the overseas survey project and enhancement of support efficiency, we secured and provided 32 promising private overseas projects and 17 follow-up projects in the form of subsequent exploration and investment which posted a year-on-year increase of 13% over the previous year. Meanwhile, thanks to the improvement of support system for mutual growth with overseas resources development SMEs, the support for SMEs has increased by 76% compared to the previous year. In the exploration technology field, KORES also strives to consolidate its support function through exploration technology enhancement such as conducting its first airborne magnetic exploration.

#### Support for overseas survey project

Category	2010	2011	Increase/decrease
Secure/provide promising private projects	28	32	14
Follow-up projects	36	39	8

Fund and technology support KORES implements a policy financing project to come up with the funds required for resources development abroad so as to foster the continual growth base of the overseas resources development project. KORES strives to achieve the target self sufficiency rate for 6 strategic minerals and rare metals and also induce more private corporations to participate in the overseas resources development. To that end, KORES provided financial support worth KRW68.4 billion in 15 projects for the development of strategic minerals and rare metals in 2011, and also improved the credit assessment system and loan support system such as preferential loan treatment for SMEs. As a way to consolidate technical support, we established a strategic roadmap for resources development technology, based on which we came up with world-class core technologies and set up guidelines for technology development. Currently, we are making an effort to secure and share technological prowess by conducting research on the development of key technologies for rare-earth metals processing and seeking to receive more accreditation from KOLAS (Korea Laboratory Accreditation Scheme) in order to secure global mineral

#### Support for overseas resources development SMEs



analysis technology with regard to our 6 strategic minerals.

#### Support for domestic resources development

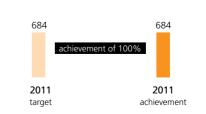
Exploration support and exploration technology consolidation KORES supports the drilling investigation for new mine development and existing mine redevelopment to secure essential minerals used for industrial raw materials. We have been carrying out a formal examination on potential mining areas nationwide to secure 410 million tons of mineral reserves only in 2011. To sum up, by probing 530 mining areas nationwide until 2011, we secured 16.26 billion tons of new reserves in total. Prospecting and drilling operations, with the purpose of securing reserves of private mines with development potential, seek to determine the status of natural resources of ore body and enabled us to secure 51.7 million tons of ore volume in 2011. Concerning direct exploration, we plan to secure domestic metal mines with redevelopment potential. We actually performed direct exploration of 10 mines from 2004 to 2011 and developed a couple of them. And we are working hard to improve our exploration technological competence: addressing 5 key technology challenges based on a roadmap for training exploration experts to enhance the exploration technology level to that of advanced countries.

#### Total results of formal examination

Category	2010	2011
No. of mining areas	480	530
Reserves	15.84 billion ton	16.26 billion ton
Total results of prospectin	ng and drilling operatio	ons
Catamami	2010	2011
Category	2010	2011

**Supporting the enhancement of the domestic mining industry's competitiveness** With the provision of comprehensive support that covers from exploration, modernized development, safety facilities, to funding, KORES established a stable supply base in the limestone market through 'Selection and Concentration' for the industrialization of raw materials and supported the construction of facilities for high value-addition and in underground mines. Based on these support activities, we laid the foundation for sustainable growth and



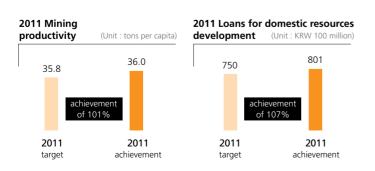


recorded the mining productivity of 36.0 tons in 2011, exceeding the goal of 35.8 tons per capita. Moreover, we are pushing ahead with the plan to build a mineral resources and materials center where we will be able to promote domestic mineral materials (processing) businesses and secure relevant development technologies. We also completed a master plan for the development of mineral resources in North Korea to create a supply and demand chain of industrial raw materials and energy minerals needed for the inter-Korean economic development. To prevent mine disasters, we are operating programs on mine security and disaster prevention. In 2011, we conducted mine safety education/training for 3,168 people and 490 cases of facility inspection.

Fund and technology support KORES disbursed support funds worth KRW80.1 billion in 2011 to raise domestic mining productivity and enhance competitiveness. KORES increased the amount of mineral processing funds by 138% compared to the original goal to promote higher value-addition in the materials industry while introducing a new fund with special purpose for the diversification of financial products and support for higher value-added business promotion. In addition, we improved the loan underwriting guidelines so as to provide preferential treatment to SMEs and consolidate the support for mines with development potential. Also, in order to consolidate technical support. we conducted research and development of key technologies needed for domestic low grade uranium ore development, and built an ore dressing pilot plant which maintains consistency from comminution to post-processing and is used as a venue for the demonstration of newly developed technologies and education/training of human resources.

#### Securing scare metals

Securing scarce metals through direct resources development In an effort to stably secure scarce metals which are necessary materials for green growth, KORES designated lithium and rare-earth metals as new strategic minerals and set the goal of achieving 31% of autonomous development rate by 2020. We are making various efforts to discover promising projects on rare-earth metals, the key materials in the high-tech industry. And those efforts have recently led to securing a project on rare-earth metals in the Republic of South Africa which



can be produced on a large scale for the coming 20 years. Looking at the figures, the self sufficiency rate with regard to new strategic minerals reached 12% in 2011.

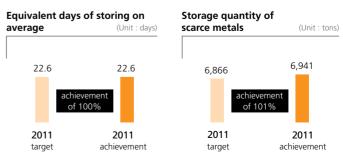
**Strategic storing of scarce metals** KORES is actively engaged in the establishment of foundation for storing scarce metals, improvement of purchase efficiency, and consolidation of storage site management. As of the end of 2011, we stockpiled 6,941 tons of 9 metals including rare-earth, chrome, molybdenum, and tungsten, which is equivalent to 22.6 days of consumption of Korea. And we plan to strategically stock up 78,400 tons or 60 days of Korea's consumption by 2016.

• Establishment of foundation for storage projects and improvement of purchase efficiency KORES is pushing ahead with the expansion of storage projects by securing a continuous increase in the budget allocation for storage based on the enhanced communication with related organizations including the government and National Assembly. To promote international cooperation on scarce metals, we strive to expand our network on information exchange home and abroad by participating in a number of international consultative groups on information exchange. We are conducting the following activities for efficient purchase of mineral reserves: analyzing business environment, setting reasonable performance goals with the help of consultative body, and enhancing the monitoring system with the publication of analysis reports on market trends.

• Securing new storage sites and management consolidation KORES laid a solid foundation for storage projects by building the world's first special storage only for rare-earth metals so as to preserve them intact for a long time and enable stockpiling without any problems thanks to its sufficient amount of space.

#### Storage capacity of scarce metals

Category	2010	2011
Storage quantity	1,905tons	6,941tons
Equivalent days of storing	15.1days	22.6days



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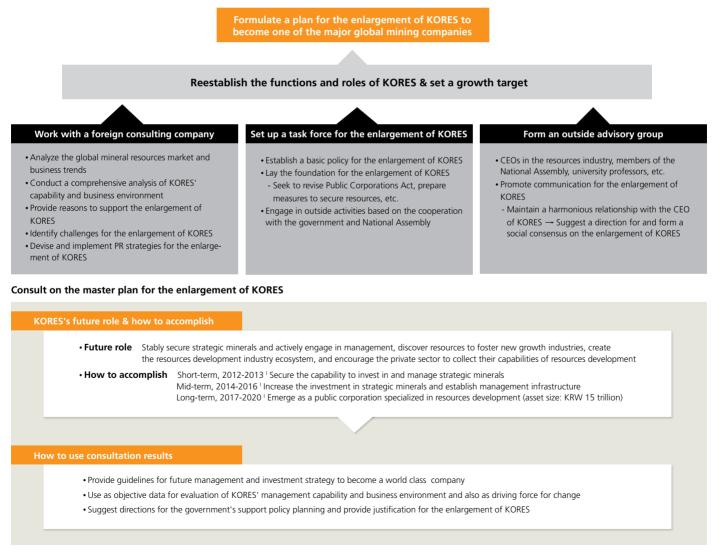
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# Growth

#### Pursuing enlargement to jump up to be a major global mining company

Currently, the global resources market is witnessing the creation of seller's market owing to mineral prices hike as well as deepening monopoly and oligopoly of major mining companies. Under this circumstance, we are having a difficult time discovering promising projects due to being less competitive than major companies in terms of capital and technology. In this respect, 'Enlargement of KORES' is inevitable in the resources market where size means competitiveness. For the enlargement of KORES, we are conducting a variety of activities as follows: objectively analyzing the business capacity and environment, identifying key challenges through case study on the enlargement of other companies/organizations, working with foreign consulting groups to come up with the reasons to support the necessity and justification for enlargement, and forming an internal task force to secure driving force and improve concentration on work. In addition, we are focusing our efforts on building an external consensus, such as promoting cooperation with the government and National Assembly, with the help of an advisory group consisting of outside resources experts, while concentrating all our capabilities on enlargement through the consolidation of external network. Based on such capabilities, we will prepare a revised bill of Public Corporations Act and take a leap forward to become one of the major global resources companies.

#### Plans for growth

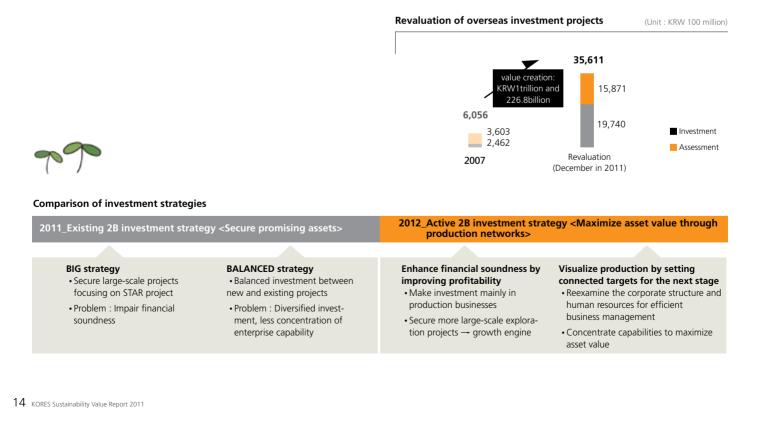


#### **Direct resources development expansion**

**New investment strategy** In 2011, KORES devised a short-term strategy, 'Big & Balanced' investment strategy, and a mid- and long-term strategy, '2-Track' investment strategy until 2020, to lay the foundation for balanced investment between new and existing projects. Based on these strategies, we will expand our representative profitmaking businesses, concentrate on minerals with high profitability, and secure and manage strongholds in strategic regions. In 2012, KORES will complete '2+2 plus a' strategy, set up measures to drastically increase the self sufficiency rate along with specific targets, and establish and promote the 'Active 2B' strategy to improve executive ability. Although sticking to the existing '2B' strategy, we will modify the details and clarify the objectives so as to improve executive ability, consolidate financial soundness, and concentrate on increasing production capacity.

**Global resources network expansion** To secure a stable source of supply in the highly competitive resources market, KORES makes coinvestment through the linkage with domestic agencies while focusing on the consolidation of networks between countries. In particular, for the efficient implementation of the '2+2 strategy', we strive to build a network of high-ranking executives and expand the working-level network through cooperation with the government for the penetration of the Africa and South America markets, along with securing uranium and copper, which are insufficient in terms of self sufficiency. **Consolidation in finding overseas projects and leading investment in domestic projects** As part of the efforts to discover promising projects abroad, we expanded the copper belt in the Americas, increased the number of strongholds in the African continent by securing uranium in Tanzania, and diversified investment regions and supply lines by securing the Indonesian bituminous coal project. By bolstering leading investment to enhance the domestic self-reliance rate, we promoted mine redevelopment through direct exploration, redeveloped the iron ore mine in Yangyang, and built a nickel smelting factory. Through all these activities to stimulate the domestic mining industry, we laid the foundation for value chain expansion and actively induce private companies' investment.

**Improvement of project management effectiveness through revaluation of investment projects** We carried out the revaluation of investment projects to objectively analyze the performance of overseas investment projects. As a result, it turns out that a value of approximately KRW1.2 trillion was created compared to 2007. This can be attributed to the increase in mineral prices, addition of reserves based on KORES' advanced technology, effective linking of development stages, and acquisition of promising assets through investment in new projects. KORES will make continuous efforts to stably secure the mineral resources of Korea in the years ahead.



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# **Economic Efficiency**

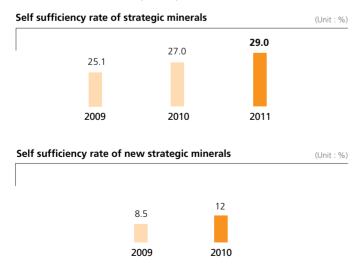
#### Self sufficiency rate improvement

**Importance of self sufficiency** Self sufficiency rate refers to the resources amount secured by domestic companies through overseas resources development, and acts as an indicator of the stability of securing resources in resources supply crisis situations. Actually, the importance of self sufficiency is very high in terms of national resources security, coping with disturbing situations in the resources market such as mineral price hikes, deepening monopoly and oligopoly of major mining companies, and using resources as a weapon stemming from new resources nationalism. We recognize national economic stabilization through the stable procurement and supply of mineral resources as our economic responsibility and set a self sufficiency rate target to build a stable supply system of energy and mineral resources. To this end, we concentrate all our capabilities on mineral resources development abroad.

· Strategy to enhance the self sufficiency rate

KORES concentrates on ensuring internal stability through balanced investment in new and existing projects along with securing largescale profitable projects from the short-term perspective and on investing in the development and production of strategic minerals from the mid-and long-term perspectives. Simultaneously, we are expanding the investment in scarce metals and large-scale exploration businesses to secure a growth engine.

• **Six strategic minerals** Bituminous coal, uranium, iron, copper, zinc, and nickel are six major strategic minerals selected according to the basic plan for overseas resources development. Although the impact of these minerals on the national economy is high with more than USD 100 million of import size, they have an unstable supply structure with more than 90% of import dependence, and thus are selected and



managed by the Ministry of Knowledge Economy. The self sufficiency rate of strategic minerals refers to the ratio of autonomous development amount to the total national import amount. In 2011, it posted 29.0%, up 2.0%, compared to the previous year, and KORES plans to raise the rate to 42% by 2019. Toward this end, we have established and have begun operating a strategy to achieve the target through demand and supply analysis and outlook by mineral.

• New strategic minerals Although demand for scarce metals such as lithium and rare-earth metals is rising due to the recent industrial advancement, their supply is unstable because of the increasing control by countries with those resources. KORES continually expands the investment in new strategic minerals to cope with demand pattern change, and has achieved a self sufficiency rate of 12.0% in 2011. We will take the leading role in developing scare metals which will serve as a foundation for the development of new growth engine industry of Korea.

**Status of achievements and implementation** The financial crisis in the Eurozone and increasing uncertainty of global economy caused the investment from the private sector to decrease while that from the public sector to increase in 2011. In particular, KORES accounts for 56% of Korea's total investment in overseas resources development by making aggressive investments in large-scale development projects, such as Boleo and Ambatovy, and discovering 4 new projects including Capstone and Santo Domingo. Moreover, we entered various other regions by making intensive investments in minerals and regions of low investment. We have been working hard to secure 7 promising projects in 7 countries since 2008 as part of the efforts to establish a stable supply base of copper, which suffers from low autonomous development rate. As a result, we could expand and establish the copper

#### Copper belt in the Americas

The self sufficiency rate of copper is expected to reach 38% by 2019 by securing 7 projects in 7 countries of the region with the world's largest copper reserves and production which is created along with the western region of North and South Americas.



belt in the Americas by making new investments in copper mines in Canada and Chile through our first M&A of FWM, a resources development company specialized in copper, and secured an opportunity to dramatically raise the self sufficiency rate of copper. In addition, we completed the lithium triangle market in Latin America: Chile NX Uno Development Project, Argentina Sal de Vida Exploration Project, and Bolivia Lithium Resources Co-development, by making diversified efforts to acquire lithium, which is a key raw material in rechargeable battery.

Once our lithium project gets off the ground and enters the production stage, we are expecting to meet more than 70% of domestic demand for lithium by 2020. Additionally we established a stronghold to penetrate the African market by securing a new uranium project in Tanzania and have launched a new bituminous coal project in Indonesia. In this way, we are making all-out efforts to stably secure and supply mineral resources.

#### Current status of the self sufficiency rate of each mineral

KORES establishes and implements customized strategies considering each mineral's features to achieve the target self sufficiency rate.

(1 Init · 94)

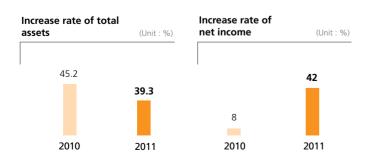
Income tax expense

Net income

			(Unit: %)
Category	2009	2010	2011
Bituminous Coal	43.7	48.3	52.2
Uranium	1.1	3.4	6.6
Iron	14.2	16.5	15.3
Copper	5.1	6.0	10.2
Zinc	33.8	32.3	24.7
Nickel	32.6	36.8	30.5

#### Economic value creation and distribution

**Economic value creation** KORES adopted IFRS (International Financial Reporting Standards) in 2011 and began to use consolidated financial statements as its main financial statements. KORES recorded sales of KRW 247.9 billion and net profit of KRW32.8 billion in 2011 based on consolidated financial statements



Summarized 2009-2011 income sta	tements	(Unit : KRW1 million)
based on IFRS consolidated financia	statements	<b>2011</b> (the 45th period)
Sales		247,913
Cost of sales		191,660
Gross profit		56,253
Other income		2,256
Selling and administrative expenses		18,302
Other expenses		2,119
Other profit		-3,287
Operating profit		34,801
Financial income		10,205
Financial costs		4,485
Gross income and loss		40,521
Income tax expense		7,739
Consolidated net income		32,782
Net income attributable to controlling in	terest	32,781
Net income attributable to non-controlli	ng interest	1
Based on K-GAAP separate finan- cial statements	<b>2010</b> (the 44th period)	<b>2009</b> (the 43th period)
Sales	166,213	147,702
Cost of sales	128,091	113,528
Gross profit	38,122	34,174
Selling and administrative expenses	16,067	15,136
Operating profit	22,055	19,038
Non-operating income	7,884	4,700
Non-operating expense	3,725	2,453
Gross income and loss	26,213	21,284

 $^{\ast}$  2011 income statement is separately presented due to the change of accounting standards (K-GAAP -> IFRS)

3,176

23,038

21,284

**Distribution for stakeholders** KORES distributes the economic value created through business activities to stakeholders in various forms including tax payment, job creation, contribution to communities and win-win partnerships with partner firms.

Distribution to stakeholders	Amount(KRW 1 million)	Ratio(%)
Capital expense	115,992	46.8%
Taxes	128	0.1%
Investment in communities	2,115	0.9%
Dividends	2,350	0.9%
Wages and benefits	25,170	10.2%
Economic value reserves	102,158	41.2%

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## **Ethical Management**

#### KORES-unique ethical management model

KORES strives to put ethical management into practice as a resources development company by establishing an ethical management model consisting of transparent & fair management, social responsibility, economic responsibility, and environmental responsibility.

#### **Ethical management activities**

Our ethical management is based on ethical norms consisting of the charter of ethics, the most significant norm, code of ethics, code of conduct, executives' job integrity regulations, and other standards of conduct. We also created an anticorruption organization composed of insiders and outsiders to put ethical management into practice.

#### **Ethical management monitoring**

KORES evaluates the ethical management activities of each department through internal management evaluation to make sure that our ethical management is implemented with responsibility by each department. We link the hours to complete the program on integrity and ethics and the result of efforts to improve the anticorruption system with personal mileage points, team bonus, and performance ratings. Externally, the Institute for Industrial Policy Studies, Strategy and Finance Ministry/Knowledge Economy Ministry, and Anticorruption &

#### The KORES management's efforts to promote ethical management



Civil Rights Commission of Korea (ACRC) regularly evaluate our ethical management system and integrity level, and we continually improve the internal systems and institutions based on the evaluation results.

#### Anticorruption organization

	Organization	Personnel	Role
Internal	Integrity Reform Committee	5 external members 3 internal members	<ul> <li>Establish anticorruption and integrity policies</li> <li>Establish preventive measures for sectors prone to corruption</li> </ul>
	Compliance Officers	7 internal members	Supervise law and regulation compliance of employees
Exter- nal	Integrity Ombudsman	3 external members	<ul> <li>Audit contracts worth more than KRW50 million</li> <li>Assess the audit investiga- tion of projects receiving the government subsidy</li> </ul>
	Clean Monitor- ing Group	10 external private businessmen	Monitor and report corrupt     acts of employees



• Win-win cooperation

#### Strengthen ethics at the corporation level

Education	<ul> <li>Special education on integrity and ethics for executives(June, July)</li> <li>Cyber education on integrity and ethics for all employees (October)</li> </ul>
System	<ul> <li>Integrity meal coupons for customers who visit KORES(October)</li> <li>Code of conduct to be included in the promotion examination for level 3(November)</li> </ul>
Activity	All employees' oath of integrity and display of the written oath(September)     Clean KORES notice board(throughout the year)     Integrity essay and slogan contest(November)
Examination	<ul> <li>Publication and distribution of integrity essay collection(January)</li> <li>Publication of sustainability report(October)</li> <li>Examine the performance of Environmental Safety and Health(ESH) standards(December)</li> </ul>

## **Employees**

#### Status of employees

Policy of employees With emphasis on fair HR management, KORES strives to reduce discrimination between regular and irregular employees and improve the treatment of irregular employees. Discriminatory treatment on the grounds of gender, religion, race, and age upon recruitment and promotion is banned in KOERS. We also make efforts to create a work environment where human rights are respected: banning child labor and coercive labor at all workplaces pursuant to ILO's Child Labor Prohibition Agreement and Pact on Coercive Work Abolishment along with Korea's Labor Standards Act, and there has been no report of such violation so far.

Personnel status The total number of employees at KORES as of the end of 2011 is 444, increasing by 75 compared to the previous year. Of these, 442 are regular workers and 2 are contract ones. The proportion of women is 22.75% (101 persons), which is on a sharp rise compared to 19.5% (72 persons) as of the end of 2010. KORES plans to continually increase the hiring of newcomers and expert employees, and forecasts the total number of employees in 2015 to reach approximately 680.

Employment of the socially underprivileged **KORES** operates various programs to employ the socially underprivileged; thus promoting an employment policy that respects diversity and shuns discrimination. We also implement a recruitment policy considering the socially underprivileged (granting additional points on document) including disabled people and patriots and veterans. As of the end of 2011, we employ 26 patriots and veterans, and the employment rate of the disabled is 2.9%, and that of patriots and veterans is 5.9%.

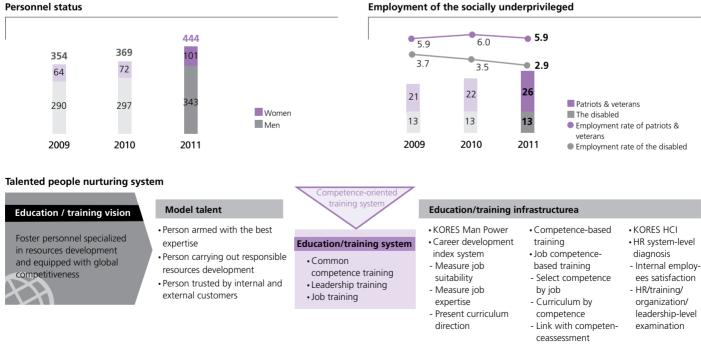
Industrial disaster rate KORES discloses the statistics on the employee's industrial disaster rate as of the end of June each year and supports all labor union members in receiving compensation for various disasters. The industrial disaster rate from July in 2010 to June in 2011 was 0.12%, and that from July in 2011 to June in 2012 is 0.11%.

#### Nurturing talented people

KORES carries out education and training programs for the improvement of the employees' expertise in resources development, global competence, and change competency, aiming at nurturing personnel specialized in resources development and armed with global competitiveness. KORES has adopted 'KORES Man Power', a career development index that improved the existing career development system in order to analyze each individual's expertise and career development direction and support their growth as job experts.

Fair performance evaluation KORES fairly evaluates all employees' performances and gives benefits to high-performing people in the HR rating such as promotion and reward. Among those who get

#### Employment of the socially underprivileged



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85 or higher points in the work assessment, KORES selects trainees at graduate schools at home and abroad and nurtures them as core personnel. For those who are specially supervised after having garnered 60 points or less in the personnel assessment for two years in a row, their basic annual salary is reduced, and performance-based annual salary is not paid.

**Education/training to enhance individual competence** KORES maps each individual's competence factors and curriculums and registers them in the education/training system so that employees can receive self-leading education/training by selecting the courses that can help them strengthen their weak points.

#### Benefits package for employees

2011 education/training achievements

**Benefits for WLB (Work-Life-Balance)** To promote the productivity through employees' work-life-balance, KORES offers various and

Basic course Intermediate course Language course New recruits: 42 Practical training: 12 • Learning English Basic course: 25 over the phone: • Overseas training on 65 minina: 12 Advanced course Professional course • Domestic M.S/Ph.D: 3 Resources development academy: 8 • Experts in overseas regions: 2 Overseas M.S/Ph.D: 2 Short-term overseas practical training: 5 • MBA: 4

WLB(Work-Life-Balance) program for employees

specialized general benefits package. We strive to increase each employee's satisfaction through health promotion and self-improvement and also maximize their value and role at home and workplace through family support and social contribution.

#### **Benefit system**

• **Customized benefit system** KORES operates a customized benefit system 'a la carte' wherein employees can select benefit items by themselves. We operate the home loan and Cheonsei (lease of home paying key money) loan system for non-home-owning employees as well as living expenses loan system. In addition, we provide various benefit programs including annual physical examination, resort rentals, and club activities support.

**Retirement preparation programs** KORES provides an occupational transfer support program targeting retirees who wish to change their occupation as well as re-employment training to help them design their second life after retirement. Moreover, we pay allowances each month for up to 21 months to retirees from overseas construction sites until they get a job.

**Maternity protection activities** KORES conducts a variety of maternity protection activities for female employees' working condition improvement: leave for infertility treatment such as in-vitro fertilization, measures to protect health during pregnancy and leave for regular medical check-up(once a month), money gift for child birth and adoption (KRW600,000), spouse's paternity leave (paid leave for 3 days) and adoption leave(20 days), extension of criteria for miscarriage and stillbirth, and acknowledgement of breastfeeding time (an hour a day). Over the past 3 years, 100% of female employees have returned to work after their maternity and childcare leave, and we do not allow any discrimination against them in terms of employment, salary, and career path.

_			
Health improvement $^{\parallel}\mbox{Health}$ improvement	Family-oriented <sup> </sup> Family support	Volunteer work <sup> </sup> Social contribution	Self-improvement Self-improvement
<ul> <li>Promote no-smoking programs <ul> <li>Support in the form of nicotine</li> <li>replacement therapy and money gift for smoking cessation</li> </ul> </li> <li>Reselect health examination centers and increase the number of exam items increase <ul> <li>Selection of multiple examination centers</li> <li>Establish plans to continue daily</li> </ul> </li> </ul>	Publication of company e-newsletter (Pine Tree) - New section 'Messenger of love' Home delivery of newsletter (Resources & Life) - Feature articles titled 'Family' throughout the year Invitation of retirees families Promotion of annual leave use	<ul> <li>One company for one village campaign Corps</li> <li>KORES Volunteer Service</li> <li>Participation in Beautiful Store</li> <li>Public benefit activities in investment project sites</li> <li>Support for elementary schools close to mines</li> </ul>	<ul> <li>Improve educational/training system</li> <li>Analyze the actual conditions of education/training and identify tasks for improvement</li> <li>Operate online education contents</li> <li>Operate the Mine-Edue credit system</li> </ul>

Work and Life/Individuals and organizations with competitiveness

**Support for work-life balance** KORES actively promotes the work-life balance of employees through various methods as follows: providing all employees with metabolic syndrome examination, granting a leave for physical examination, guaranteeing flexibility of working hours through part-time and flexible work schedule, permitting child-care leave for children of older age, allowing leave of both parents, and leave for family care

#### Sound industrial relations

**Establishment of partnership through mutual trust and respect** While we conduct a joint-analysis of internal and external environments with the union and readjust the strategy for the advancement of industrial relations; we strive to create sound relations by complying with laws and principles through a customized and cooperative conflict management system. We are building up partnership with the unionized employees by increasing the communication channels and establishing mid and long term plans to strengthen our capability to manage industrial relations. Active labor-management communication KORES pursues the common goal with the union based on mutual understanding and trust and recognizes them as a partner by sharing management information and encouraging bottom-up communication. Also, KORES-unique mutually cooperative labor-management culture enables the management to resolve employees' complaints by themselves; to accept employees' ideas from the field; to create an environment that encourages job commitment and; to foster the spirit of group sharing a common destiny.

**Labor union status** All KORES employees except grade 2 or higher, team leaders of grade 3, staff in charge of HR, labor, pay and audit, and secretaries and drivers of the CEO and the chief auditor can freely join and engage in labor union activities. Such an open labor-management culture allows the Corporation to record zero labor disputes for 23 years from 1988 when the labor union was founded to 2011.

#### Strategy to build up partnership-based labor-management relations

#### Partnership-based labor-management relations

#### Readjust the strategy to advance labor-management relations

- Revise strategic directions by analyzing environments Analyze internal and external environments and perspectives of labor and management
- Re-establish the strategy to advance industrial relations Collect opinions by operating task forces and opening a debate on the strategy for advancement
- Check whether to carry out strategic tasks and action plans Hold ad-hoc meetings to check the status of management (9th round)

### Strengthen the capability to manage HR communication and industrial relations

- Establish a variety of communication channels Make communication channels reach all types of workers
- Increase work efficiency by listening to complaints of employees Listen to the grievances of vulnerable workers such as irregular workers
- Strengthen the capability to manage labor-management relations in the mid and long term Nurture internal experts/take more advantage of external experts

#### Stimulate communication between labor and management



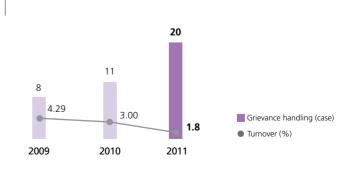
Establish legitimate and cooperative labor-management relations

- Manage industrial relations in compliance with laws and principles Correct irrational practices by conforming to Labor Law
- Resolve management issues through cooperative conflict management KORESunique cooperative conflict management system
- Achieve common goals by declaring cooperation for co-prosperity Declare labor-management cooperation to overcome the economic crisis (3times)

Improve collective agreements in a reasonable way

- Maximize collective bargaining power and promote productive negotiations Execute joint-trainings for labor and management
- Overcome conflicting issues at negotiations Utilize communication channels/ labor-management joint organizations/meetings, etc.
- Make a reasonable collective-bargaining agreement on wages Sign a collective bargaining agreement on wages according to laws and principles

#### Efforts to encourage job commitment



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### Customers

#### Goals

To maintain the excellent grade in Public-service Customer Satisfaction Index(PCSI), KORES sets strategic directions and identifies relevant challenges as follows: to create a customer-oriented corporate culture by implementing company-wide customer satisfaction management and systematizing customer activities, enhance the VOC management system, and strengthen the CS capability at customer contact points.

#### Activity to create customer-oriented corporate culture

KORES promotes customer satisfaction management through CS Management Committee and Open KORES Committee. We also host CS social gatherings to strengthen communication between Customer Contact Team and Support Team. We have monitored the telephone etiquette of all employees three times a year to improve their communication skills with customers.

#### Activity to enhance Voice of Customer (VOC) management system

KORES manages the VOC in a systematic way through our Happy Call System which measures the level of customer satisfaction with services. In 2011, a total of 228 Happy Calls were carried out and recorded an average 4.9 out of 5.0 points. Also, the VOC collected through Happy Call were reflected upon to dramatically improve the procedure of issuing mineral analysis reports: In the past, customers had to pay a visit to KORES and request for report issue. Nowadays, however, they may make a phone request, and once the report is issued, notification service is provided to them known as Report Issue Reservation System.

#### Activity to strengthen the capability of CS at customer contact points

KORES opened a customer reception called 'Haengbok Maroo' at the lobby of the head office to provide better services to visiting customers. Also, we published and distributed leaflets on our six representative services of exploration, development, domestic and international loan, investigation and mineral test. We made strenuous efforts to improve the quality of customer services by conducting CS '2+2 plus a campaign' in which employees think twice and explain twice when they respond to customers and collect their feedback.

#### **Customer Satisfaction Management System**

Goal	Advancement of CS Management to maintain the excellent grade in Public-service Customer Satisfaction Index					
Objective	Create a corporate culture with emphasis on CS management and improve customer satisfaction through the enhancement of VOC management system					
How to	Create a ci	Create a customer-oriented corporate culture				
	Enhan	ce the VOC managemen	t system			
	Strengthen the	capability of CS at custo	omer contact points			
Major task	5					
	<ul> <li>Strengthen communication capability</li> <li>Consolidate social contribution activities with customers</li> </ul>	Diversify VOC collection channels Improve services by reflecting VOC	Build more infrastructure for customer support Provide more and better services at customer contact points			

#### **Report Issue Reservation System**



#### Maintain excellent grade in Public-service Customer Satisfaction Index(PCSI) for 2 consecutive years

Based on the result of 2010 Customer Satisfaction Analysis and a series of measures for improvement, KORES improved "overseas investigation support system", such as simplification of the documents for submission, and also provided customer-oriented services, such as "preferential loan treatment for SMEs". As a result, in 2011, we acquired Excellent Grade in PCSI for 2 years in a row.

#### **Result of PCSI**

Category	2009	2010	2011
Grade	Good	Excellent	Excellent

# **Win-Win Management**

#### Win-win growth with partner firms

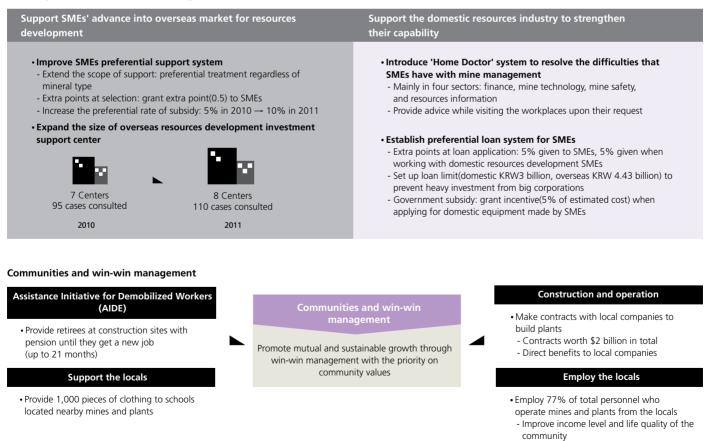
KORES recognizes the importance of mutual growth with and strategic promotion of its partner firms through win-win cooperation, thus supporting the enhancement of their capabilities. To be specific, we have set an objective of preparing the measures to help SMEs in the resources industry to penetrate into international markets and of strengthening the capability of the domestic resources industry. Also, we established and have operated a 'Task Force team for Win-Win Growth' which consists of team leaders of each department.

#### **Community development support**

As resources are developed for a long period of time, the neighboring communities naturally expect to have some part of business profits.

Therefore, KORES makes an effort to share its profits with such communities, while developing and running a series of programs customized for each community so that damages occurring during our operation can be minimized. We predict the impact on community members in terms of asset, income, living conditions and social relations and strive to support them in these terms: we provide aids to community members moving to other areas due to mine development and plant building, hire locals first through training, procure local resources, build more social infrastructure, and come up with the measures to help the locals to live better. In the case of Ambatovy, Madagascar, in particular, we provide the local workers with living expenses during their re-employment preparation period through Assistance Initiative for Demobilized Workers (AIDE).

#### 2011 major achievements for win-win growth



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### **Health and Safety**

#### EHS (Environment, Health, Safety) management

KORES developed an EHS management system in 2010 for enterprisewide sustainable management by controlling and eliminating potential risk factors in the environment, health, and safety areas while promoting resources development projects.

**EHS management guidelines** KORES monitors and analyzes the results of performance on a regular basis according to the EHS management guidelines which are applied to both Head office and domestic and overseas workplaces. We added more regulations to improve the level of safety and health management for all employees: all workplaces are required to provide medical examination to employees working in the environments with high risks such as dealing with hazardous materials and to have equipment for emergency situations.

**Strengthen safety management at overseas workplace** As the number of overseas workplaces is expected to continuously increase in

the near future, the importance of health and safety management for employees and community members is being ever more emphasized. At the workplaces in underdeveloped countries into which KORES is set to advance, yellow fever, parasite infection, malaria, HIV/AIDS and other endemic diseases persist. In this regard, KORES plans to collect information as much as possible about the diseases that may break out at those workplaces and carry out activities of education, consultation, prevention, and treatment for deployed employees and their family members, and members of the community.

#### Support for accident prevention

KORES operates a variety of programs for mine security and accident prevention by analyzing the types of accidents for sustainable development. In 2011, the number of safety-related accidents at domestic mines decreased by 6 to 28 compared to the previous year, and we will continuously execute prevention activities to reduce the mine accident rate.

#### Inspection checklist

Environment	<ul> <li>Consumption of fuel, energy, and water</li> <li>Amount of waste water and waste materials</li> <li>Carried-in hazardous materials and their consumption</li> <li>Emissions of green house gas (GHG)</li> <li>Status of compliance with environmental laws and regulations</li> </ul>
Health	Regular check-ups for all employees     Health improvement programs     Training/education on health
Safety	Facility safety check     Safety-related accidents     Education/training on accident prevention

#### No. of domestic mine accidents



#### Accident prevention program

Promotion of organized and safe operation	<ul> <li>Mine safety education/training: 3,168 persons</li> <li>Technology training: 15 mines</li> <li>Mine facility inspection: 490 cases</li> </ul>
Diversified activities to prevent mine accidents	<ul> <li>Prevent safety-related accidents by executing mine safety campaign</li> <li>Emergency drill to cope with large-scale mine accidents</li> <li>Construct shotcretes</li> </ul>
Training of mine safety experts	<ul> <li>Field training at mine development sites (domestic/overseas)</li> <li>Contents for mine special rescue skills</li> <li>Participation in overseas mine safety trainings</li> </ul>
Advanced mine rescue skills	<ul> <li>Participation in mine safety trainings held in countries renowned for advanced mining</li> <li>Benchmarking of advanced education/training programs and materials, and mine safety management systems</li> </ul>
Mine se	ecurity and accident prevention

# **Social Contribution**

#### Enterprise social contribution activities system

**Strategy** KORES carries out a series of company-wide social contribution activities through the joint participation of labor and management. We set up a cooperative system with communities and specialized NGOs and actively engage in volunteer services and social contribution activities mainly in four areas including social welfare, community, environmental conservation, and education & culture.

**Organization** KORES engages in a series of social contribution activities mainly led by KORES Volunteer Service Corps in which all employees participate. We established a Steering Committee which audits social contribution activities, evaluates relevant suggestions, and provides ideas for better services so that more transparent voluntary work can be done. As of 2011, there are 15 KORES Volunteer Service Corps consisting of all employees at the head office and branch offices, and the time of volunteer service per person records 14.3 hours, 7% up from the previous year

**Status of social contribution activities** We established basic plans for systematic social contribution activities in 2005 to strengthen our social safety net function as a government owned corporation and to engage in various social contribution activities; and in 2006, we launched KORES Volunteer Services Corps to more actively participate in such activities. In 2011, we earmarked KRW 244 million to 18 social contribution projects and executed the budget of KRW 255 million, approximately 31% up from the last year.

Participation in soci	ial		(Unit : Hours)
Category	2009	2010	2011
Achievement	12.4	13.4	14.3
Contribution activit	ties and its cost		(Unit : KRW1 million)
Contribution activit	ties and its cost 2009	2010	(Unit : KRW1 million) 2011

#### Status of social contribution activities

KORES has carried out a variety of domestic social contribution activities mostly led by KORES Volunteer Service Corps, and provided KRW 255 million in support of 672 people in four major areas in 2011. As for overseas activities, KORES established and has implemented region-specific plans for social contribution activities based on the linkage with major overseas projects and office regions. In addition, we strive to build partnerships with developing countries for win-win cooperation: in 2011, we set up a sisterhood relationship with Bolivia on '1 global company 1 partnership' and conducted SOC support activities in nearby communities where we implement our projects.

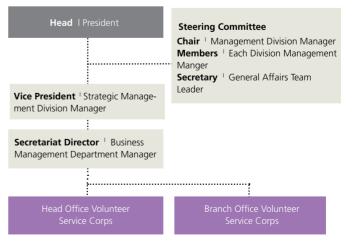
#### PR activities to announce the importance of securing resources

KORES is engaged in a series of PR activities through various media to let people know about the importance of securing mineral resources and to improve the image of the resources industry. KORES abides



#### Strategy for social contribution activities

#### **KORES Volunteer Service Corps**



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by the 'Autonomous Deliberation Rules on Advertising' of the Korea Advertising Review Board in relation to advertising, and there has been no violation of the rules so far. Through various media, such as public TV network, newspapers, online, and SNS, we will strive to increase the public awareness of the importance of the resources industry while carrying out PR activities to deal with some negative images of the mining industry.

#### Results of support for social contribution activities

Category	Support amount (KRW million)	No. of beneficiaries	
Social welfare	9,400	211	
Community	6,700	348	
Environment conservation	2,300	39	
Education & Culture	7,100	74	

	Social welfare	Community	Environment	Education
Domestic	<ul> <li>Help pneumoconiosis-affected workers and underprivileged mine workers</li> <li>Support projects on mine accident prevention</li> <li>Support welfare facilities for the disabled and the elderly</li> <li>Support to recover from national disasters</li> </ul>	<ul> <li>One Mine One Village 'Campaign: volunteer service in Jangchimi Village, Jecheon</li> <li>Help meal-skipping households and the elderly living alone within the district</li> <li>One Company One Village' Campaign: provide a helping hand to Batdo Naemaeul, Yeongwol, Gangwon-do and open a farmer's market</li> <li>Free meals to multicultural migrant workers and the homeless</li> </ul>	<ul> <li>Support 'Beautiful Store': donate unused items</li> <li>Environment conservation campaigns</li> <li>Eco-campaigns with children's foundations</li> <li>Environmental projects on the energy sector</li> </ul>	<ul> <li>One Company One School in Mine Areas' Campaign</li> <li>Support outstanding university students living in mine areas and majoring in resources</li> <li>Provide a study room for theunderprivileged children</li> <li>Provide children's foundations with 'Happy Learning Place'</li> </ul>
_	<ul> <li>Coro Coro Project, Bolivia</li> <li>Construct access roads and reservoirs</li> </ul>	• Zhangjiagang Project, China - Support for the elderly living alone(15,000 yuan)	Warilla 2 Project, Australia     Public hearings on the environment     with local residents	• Zhangjiagang Project, China - Scholarship support (3,000 yuan)
Overseas	<ul> <li>Panama Project, Cobre</li> <li>Sign an agreement to support USD 5 million per year</li> </ul>	<ul> <li>Marcona Project, Peru</li> <li>Support for natural disaster restoration</li> </ul>	• Ambatovy Project, Madagascar - Deal with soil pollution,	<ul> <li>Rapu-Rapu Project, Philippines</li> <li>Free education for elementary, middle, and high school students</li> </ul>



variety of social contribution activities

# **Integrated Environmental Management System**

#### **Environmental management system**

**Environmental management strategy and organization** KORES makes all-out efforts to respond to increasing environment-relevant risks and create new environmental values by establishing environment management systems and identifying environmental impacts during the process of management and resources development, through which development can be harmonized with the environment. We actually consider the environment in business management. The Sustainability Management Subcommittee under the Board of Directors (BOD) discusses major environmental issues and the BOD deliberates and makes a decision on the issues. Sustainability Management Subcommittee inspects environmental achievements every year, sets up goals based on the results, and monitors them on a regular basis.

#### Compliance with international certification system and guide-

**lines** Workplaces abroad comply with the IFC, EHS Guidelines and Equator Principles and carry out environmental management activities. In 2008, the Xian Maxun rare-earth metals project in China acquired ISO 14001 certification. KORES will strive to promote international environmental certification acquisition for each workplace.

#### Eco-friendly resources development system

Eco-friendly	/ mine dev	velonment
Eco menun		reiopinent

#### **Consultation on mine environment**

- Monitoring of soil and water quality, and mining waste treatment
- Technological support for the improvement of working environment in mines
   Enhance customer satisfaction through technological support

### Technological support for direct investment projects and mine environment

- Review and trend analysis of environmental risk factors such as soil and mine drainage
- Securing background value in major points of mines
- Enhance investment success rate via environmental risk analysis

#### Commercialization of patented mine technologies

- · Supply of apparatus for eliminating dust by wet in mine
- Inspection of 5 mines after effects analysis
- Improve employees' working conditions and productivity

### Research on the methods to deal with environmental and social risks

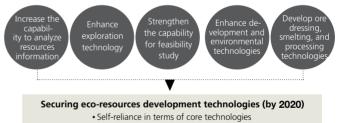
- · Risk management system in regard to environmental hazards
- Analysis of support policies for overseas mining industry and dispute cases
   Provide the guidelines for proactive response

#### **Environmental management direction**

**Establishment of eco-resources development system** KORES has built an environment-friendly green mine base through technological support for mine environments. We support an increase in the competitiveness of the mining industry based on mine environment consulting, commercialization of our patented technologies, support of environmental technologies for direct investment projects, and research on the methods to deal with environmental risks. Through all this, we seek to establish an eco-resources development system in the domestic mining industry.

Securing eco-resources development technologies The productivity of resources-related companies is constantly improving through technological advancement including resources development and highly sophisticated screening techniques. As the public awareness of the environment has increased, the adoption of eco-resources development methods is now inevitable. KORES aims at securing technological prowess that is on par with that of major mine companies and independence with regard to core technologies, and thus pushes ahead with the plans to develop and acquire such technologies by sector. Through this, we wish to create added value and secure industrial competitiveness, not to mention the base for a sustainable resources development environment.

#### How to develop and secure technologies



• Key technologies on a par with those of major mine companies

#### **Environmental management system**

#### Plan

 Establishment of environmental management strategies and systems

#### Act

Stakeholder communication
Revision and improvement of strategic direction

### Do

Establishment of action plans by sector
Research on eco-technologies

#### Check

- Internal assessment of environmental management achievements
- Management evaluation by the government
   International certification system and
- guidelines
- ISO 14001
- IFC EHS Guideline - Berlin Guideline

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### **Eco-friendly Resources Development**

#### Mine development process

There exist a variety of factors that may affect the environment during resources development. KORES evaluates such environmental effects in advance during the stage of exploration and proceeds resources development in consideration of those effects. During the development process, KORES makes strenuous efforts to mitigate environmental impacts: it protects biodiversity including habitat protection and migration; uses energy efficiently at the production stage; reduces emissions of GHG and air pollution materials and; controls waste water and waste materials. Also, KORES performs environmental inspection to remove potential environmental risks by implementing environmental analysis on mines which stopped resources development activities or finished development while developing technologies to restore the environment as it was prior to such development.

#### **Exploration**

**Environmental impacts review** KORES carries out an assessment of future environmental impacts due to mine development along with exploration of economically valuable minerals in the exploration stage. KORES carefully reviews the factors that can affect the environment and seeks methods to prevent or minimize them. Toward this end, it manages the environment beyond the legal regulations by applying mine industry-and environment-related international initiatives including ICMM, Berlin Guidelines, and World Bank Guidelines. In the case of the Ambotovy project in Madagascar, more than 50 environment

Exploration
Process

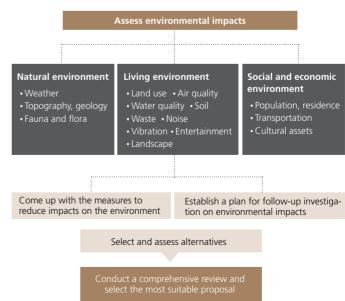
Image: Sector Secto

experts of KORES evaluated environmental impacts from exploration, development, production to end stages and proposed solutions in its report on environmental effects evaluation. The report was approved by the Madagascar government and KORES has implemented mine development in the country since then.

#### Development

**Biodiversity protection** KORES recognizes biodiversity as a core factor in coping with climate change, securing sustainable mineral resources, improving the quality of life for mankind, and realizing a green economy. We apply strict criteria to preserve biodiversity around mines. We scientifically analyze the impacts on the surrounding ecosystem of mine development sites from the planning stage, preserve biodiversity as much as possible, and apply the design and construction methods that minimize topographic change and vegetation damages. Among various alternatives, we carry out an examination on environmental impacts prior to the launch of development so that we can select an environmentally sound and sustainable alternative. After the launch, we monitor the changes in the surrounding region's ecosystem through a follow-up investigation on environmental impacts. In the case of our head office and domestic branch offices, there have been no regions where environmental problems related to biodiversity occurred. Concerning overseas projects, we make various efforts for habitat preservation and migration in the project areas that may affect biodiversity.





#### Biodiversity Protection Activities in the Ambatovy Nickel Project Site in Madagascar

#### Environmental damage risk avoidance

KORES re-designed the slurry pipeline to be laid underground between the mine and plant so that the pipeline route detours forest protected areas. By doing so, we could protect regions that were expected to see environmental damage thereby could avoid negative environmental impacts.

#### Minimization of environmental impacts

By using a directional clearing method, KORES helped fauna living in forests during mine development to migrate to nearby habitats and secured time for endangered flora and fauna to be prepare a for migration to new habitats.

#### Ecology restoration

After ore mining, KORES created a nursery within the mine in an effort to restore multi-functional forests by growing 100 kinds of regional saplings. Beginning with 134,000 saplings in 2011, KORES has run a long-term tree-planting program to secure 723,000 saplings necessary for the first mine site to be restored by 2017.

#### Offsetting program

Through a biodiversity offsetting program of the Ambatovy project, KORES contributed to increasing the size of habitats for flora and fauna from 12,000 ha in 2010 to 18,000 ha in 2011. KORES is leading environment-friendly mine development by offsetting the environmental impacts due to development with environmental conservation activities: the size of forest protected areas has grown bigger than that of damaged areas by development.

#### • Environmental compensation

KORES is running a comprehensive program to endangered species before and after mine development by cooperating with the communities and the Madagascar government. A Prime example is: attaching GPS sensors to Lemur monkeys and monitoring their migration routes due to logging so that we can minimize ecological impacts and increase the population of the monkeys.



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#### Production

Development and application of eco-production technologies In the production stage of resources development, using highly efficient equipment and technologies is very important not only to deal with cost effect but also to respond to climate change. To improve the quality of the copper concentrates produced in the Rapu-Rapu Copper Mine in the Philippines funded and operated by KORES, the Corporation used NaCN, a toxic substance thereby exposing the copper concentrates to environmental pollution risk. To solve the problem, the Corporation developed an ore dressing method that suppresses arsenic and instead uses eco-friendly SMES, and effectively cut off the source of environmental pollution by monitoring the acidity of surface water. As a result, KORES won the Mother Nature Award granted by PCAPI in 2011. KORES pursues continuous growth through technology development and applications suitable for the project's characteristics with priority on the environment. In addition, KORES is doing its best to enhance business management efficiency as well as the economic efficiency of projects.

#### **Discharged materials control**

• Greenhouse gas and air pollutants KORES supports the greenhouse gas inventory establishment for Korean mines to reduce GHG emissions in the mine industry and minimize in advance any shock following Korea's designation as a country for green growth base establishment and mandatory GHG emissions reduction. We plan to implement the CDM project together with mines and create a new source of income so that we can build a foundation for sustainable and eco-mine development.

• Mine waste KORES carries out R&D to prevent environmental pollution due to mine waste, such as waste stone generated during mine development and ore remnants generated in the ore dressing and smelting processes. KORES also implements projects to purify soil polluted by heavy metal in line with technological development. We have been carrying out soil and underground water pollution treatment at Jinhae Naval Base for 17 months since June 2010 and Taereung shooting range for 34 months since January 2010.

• Water for mine KORES regularly checks the mine's water quality and provides technology support for wastewater treatment so that water pollution may not be caused by polluted water flowing from the mine tunnel as well as foul water and wastewater from the ore dressing area. In the Gagok mine, Gangwon province, Korea, the Corporation built up a water purification and drainage system for the water flowing from the old mine tunnel by using eco-friendly materials so that it can prevent nearby rivers from being polluted.

#### Restoration

**Environmental damage caused by mine development** Mine damage involves damaging nature and people due to ground subsidence, polluted water discharge, mine waste discharge, airborne dust, noise and vibration caused by land drilling (boring), destruction and crushing of rocks, transportation, and ore dressing in the process of mine development. The extent of mine damages differs depending on the method of development, level of development, kinds of ores, geographical environment, and industries surrounding the mine. Mine damage occurs persistently and on a long-term basis. Unless actions on the environment are taken in a timely manner, chronic damage occurs in the natural and artificial environment in the area concerned. In this regard, KORES strives to minimize the impacts on the environment at all stages of mine development.

**Closed mine management** When a mine, whose development was suspended owing to uneconomical reserves or economic inefficiency, is neglected, environmental problems such as soil pollution, water pollution, and ecosystem destruction may occur. KORES carried out investigations to identify potential environmental impacts targeting suspended or closed mines; at the same time, it develops technologies related to environment restoration. Also, as a part of the efforts to enhance the domestic self-sufficiency rate, we promote the redevelopment of closed mines through direct exploration of those closed metal mines in Korea. In 2011, we carried out a redevelopment review and implemented projects involving the Gagok and Geumho mines (lead and zinc), Pocheon and Yangyang mines (iron) and Daehwa and Donsahn mines (molybdenum). We plan to redevelop 22 mines through direct exploration of 50 mines involving 10 kinds of minerals by 2020.



## **Environmental Management Achievements**

#### **Energy conservation**

KORES set the annual energy use target for energy conservation and devised the top 8 measures to eliminate energy waste factors and 10 major action plans to put into practice by department. To increase energy efficiency, the Corporation operates centralized cooling system (operated by hour) and strictly complies with cooling and heating standards. Also, it reinforces and monitors in-house notification of renovating and fixing poor facilities, turning off lights automatically, and daily electricity consumption, etc.

Electricity consumption target and results			(Unit : KWh)
	2009	2010	2011
target	1,300,800	1,356,610	1,497,990
achievement	1,327,990	1,431,203	1,434,644

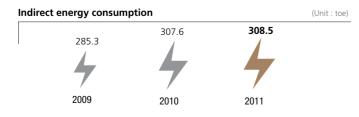
#### **Green product purchase**

The government certifies products that reduce environmental pollution and minimize the use of hazardous substances as green products. Thus, KORES purchases green products preferentially to put its green management into practice. In 2011, the Corporation spent KRW398 million or 75.8% of the total product purchase worth KRW525 million on green products.

Green product purchase		(Unit : KRW	/ of a million,%)
	2009	2010	2011
Purchase amount	179	434	398
Purchase rate	75.4	75.4	75.8

#### Efficient resources use

Direct energy consumption using kerosene, city gas, and gasoline at KORES' head office in 2011 was 77.0 toe, only 0.8% up compared to the previous year. We also used electricity of 308.5 toe (1,435 Mwh) or 0.3% more compared to the consumption in 2010. This can be attributed to our energy conservation efforts such as flexible electricity operation during peak times and mass transportation use when our employees make business trips. The amount of water used recorded 11,895 m<sup>3</sup>, increasing by 2.33% compared to the previous year, which might have been caused by the increasing number of employees. The used water flows out to the sewer treatment plant nearby for purifica-



tion. We strive to reduce water use persistently through internal PR activities and adoption of more efficient equipment.

Direct energy consumption			(Unit : toe)
	2009	2010	2011
Kerosene	9.8	16.1	12.7
City gas	31.3	36.6	41.3
Gasoline	18.9	23.7	23.0
Total	60.0	76.4	77.0

#### Strict control of discharged materials

The waste volume discharged from KORES' head office in 2011 was 85.7 tons, up 21% compared to 2010. All the waste was discharged by a designated waste processing company according to the Waste Management Laws. The amount of wastewater was 78 tons, 26% down compared to the previous year. Direct GHG emissions from the use of kerosene, city gas, and gasoline were 200.3tCO2eq, and indirect GHG emissions from electricity use were 613.7tCO2eq. Therefore, the total GHG emissions stood at 814tCO2eq, up 1.4% compared to 2010. The Corporation strives to reduce GHG emissions by using energy more efficiently, installing highly efficient energy equipment, and replacing vehicles for business with light vehicles and hybrid cars.

2010	2011	
71	2011	
71	85.7	
	(Un	it : tons)
2010	2011	
106	78	
	(Unit :	tCO2eq
2	010	2011
19	95.9	200.3
	06.5	613.7
0		0.0.0
	106	2010 2011 106 78 (Unit : 2010



# **Sustainability Initiatives**



#### **UN Global Compact**

The UN Global Compact was established in 2000 by the UN to ensure that corporations fulfill their social responsibilities based on the principle of voluntary participation. In the four major areas of human rights, labor, the environment, and anti-corruption, the UN Global Compact presents ten principal guidelines and promotes the continuous balanced development of the global economy. KORES joined the UN Global Compact in October 2007 and has incorporated ethical management into its corporate strategies. It has also tightened supervision to prevent human rights violations and corruption.



#### ICMM(International Council on Mining & Metals)

The ICMM is an alliance of mining industry corporations, aligned to improve their member's management strategies and performances. The council has presented ten principal guidelines to achieve sustainable growth. Its principles are composed of details relating to corporate ethical management, stakeholder engagement, environmental protection and social contribution. KORES conducts business based on these guidelines as part of its commitment to achieve sustainable management.



#### ISO 26000

ISO 26000 is an international standard aimed at supporting organizations in contributing to sustainable development by carrying out the following: offering guidelines for social responsibility integration, implementation, and promotion based on the concept, terminology, background and trends, characteristics, principles and practices, core themes and disputes, and organizations of social responsibility for all types of organizations regardless of the organization's size and location as well as for communications on the organization's obligations and performance related to the identification and engagement of stakeholders and social responsibility.



#### **Berlin Guidelines**

The Berlin Guidelines are a collection of environment related guidelines for sustainable growth of the mining industry and presents principles pertaining to environmental management systems and environmental laws and regulations. It presents the basic guidelines for the mining industry to protect the environment. In order to fully comply with the environmental principles presented in the Berlin Guidelines, KORES has established an environmental management system through which its environment strategies are established and associated environmental risks are managed.



### World Bank General Environment Guideline

#### World Bank Operational Directive- Involuntary Resettlement

These guidelines are established and presented by the World Bank to minimize the environmental damage caused during the development process and to stabilize the relocation of residents in the event of an involuntary resettlement. KORES carries out its resource development at its overseas project sites in full compliance with this environmental guideline. In Ambatovy, the Corporation has implemented relocation procedures in accordance with the World Bank Operational Directive Involuntary Resettlement. As such, it is in full compliance with the World Bank guidelines in all of its overseas resource development processes.



This report can be downloaded in the format of a PDF file from KORES website (http://eng.kores.or.kr). For inquiry or request for additional information, please contact us at below address.

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