

# Better Energy, Better World

B e y o n d L N G , G l o b a l K O G A S

Sustainability Report 2011



# Report Outline

In pursuit of our corporation's mission of 'Better Energy, Better World', KOGAS aims at developing into the world's leading energy company to support the co-development of its stakeholders. This is the sixth sustainability report issued by KOGAS and it incorporates our company's activities and performance, which strengthened stakeholder engagement in 2011. We at KOGAS will continue our efforts to reflect the interests of our stakeholders through constant communication.

## • Reporting Principles

This report is compiled in reference to the GRI (Global Reporting Initiative) G3.1 Guidelines. We have specified the reporting scope by examining the findings from the DJSI Korea survey in 2012, the company's surveys on stakeholders' opinions regarding KOGAS' sustainability management strategy, and a media analysis. We have also made our utmost efforts to ensure the transparent disclosure of information.

## • Reporting Scope

This report covers the operations of our headquarters, 12 domestic business locations, and KOGAS' R&D center. It includes summaries about the business performance of Korea Gas Technology Corporation (KOGAS-Tech). KOGAS' overseas branches and subsidiaries, however, are not covered by this report.

## • Reporting Period and Cycle

This report covers the period from January 1, 2011 to December 31, 2011 on an annual publication basis. It also contains business reports for the three years from 2009 to 2011 to help assess performance trends by sector. The information pertaining to 2012 is specified in this report.

## • Report Assurance

We have consulted with external economic, social, and environmental experts to enhance the reliability of the data stated in the report. We have also commissioned an outside agency to perform surveys to identify major issues of interest for our stakeholders, and obtained assurances from an independent third party assurance service provider.

## • Additional Information

Please contact us for more information or if you have any inquiries.

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## CEO's Message



## Dear Stakeholders,

Since our establishment in 1983, KOGAS has endeavored to improve the quality of life for the public through the stable and affordable supply of natural gas. We have reinforced our efforts to ensure the stable supply of gas imports by tapping into overseas energy resources. We have also opened many doorways for private Korean companies regarding gas-related businesses.

As a result of this work, the company has secured the world's largest LNG storage capacity, became the first in the energy industry and other public enterprises to obtain ISO 50001 certification, and maintained a leading position in customer satisfaction surveys for 5 consecutive years. We have also discovered a new gas in place at an ocean gas exploration site in Mozambique, which is the largest gas in place discovered ever in exploration activities by a Korean company, and established a sound footing for private companies to win gas plant projects in Iraq, Australia, and Uzbekistan.

KOGAS is also committed to expanding its natural gas storage capacity by building its fourth LNG Terminal in Samcheok and extending the reaches of its natural gas supplies to help sustain balanced regional growth and energy welfare.

In the course of our business activities, KOGAS constantly communicates with a variety of stakeholders to fulfill their diverse demands and continue our comprehensive efforts to protect the environment by cutting greenhouse gas emissions and building advanced safety practices and systems.

## KOGAS will act and cooperate globally for the public interest.

KOGAS will globalize its business operations through the vertical integration of its value chain (Broad & More), protect the environment for future generations (Green & More), continue to move forward with customers by improving communication with them (Talk & More), and share knowledge with the world (Share & More) as we 'act and cooperate globally for the public interest'.

### • Broad & More

KOGAS actively engages in securing overseas energy resources and developing mid-stream and downstream businesses. We will aggressively make inroads into North and South America, Africa, Oceania, and the Arctic Zone. We will also integrate our entire value chain, covering exploration/development and production/transport/supply, as we reshape into a leading global energy company.

### • Green & More

Fully aware of the responsibilities and roles for building an eco-friendly society, KOGAS makes comprehensive efforts to preserve the environment. We are committed to

expanding the supply of clean and environmentally friendly natural gas and reducing greenhouse gas emissions and energy consumption to enhance the environmental sustainability of our society. We have also designated biogas and other renewable energy businesses as our new green business opportunities in pursuit of eco-friendlier management.

### • Talk & More

KOGAS highly values communication with our external and internal stakeholders. We have expanded communication channels with our executives and employees for more communication-based operations and held about 80 on-site presentations and meetings to enhance customer satisfaction. These efforts allowed KOGAS to become the nation's first public enterprise to top the customer satisfaction survey for 5 years in a row. The company was also awarded by the Minister of Employment and Labor for our advanced relations with workers.

### • Share & More

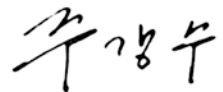
All of KOGAS' associates practice ethical management standards based on top-notch transparency and reliability. We have been raising our internal transparency standards, pursuing fair business transactions, and supporting the growth of small and mid-sized enterprises to help build a healthier corporate environment and a fair society. We are also providing gas utilities discounts, medical services, and scholarship funds to the socially underprivileged and engaging in our unique social accountability programs, including the sponsorships for East Timor's Youth Soccer Team and the preservation of cultural heritages, to reach out to communities.

KOGAS will continue our innovative efforts as we grow into a global energy leader, 'Global KOGAS'. We will continue our fair and transparent business activities, fulfill our responsibilities as a corporate citizen for the community, and make contributions to society in return for public support.

KOGAS' passionate and aspiring advances will enrich the lives of our stakeholders. Thank you.

Choo, Kang-soo

President and CEO of Korea Gas Corporation



# KOGAS 2011 Highlights



**Received the top grade in the Customer Satisfaction Survey for Public Enterprises for 5 consecutive years.**

KOGAS continues its efforts to enhance communication with customers to create an advanced customer-oriented management environment.



**Won the 2011 National Quality Competition Human Resource Development Award from the President.**

We focus our investments and resources in securing and developing skilled professional human resources to spearhead global energy businesses.



**Won the Disaster Control Award from the Prime Minister and Ministerial Anti-Disaster Safety Management Award.**

KOGAS places its top management priority on safety to build safe and healthy work environments.



**Revamped the construction project process to ensure reciprocity in partnerships with SMEs.**

KOGAS complies with fair business practices and supports inclusive growth with small and mid-sized partners to ensure business reciprocity.



**Joined the DJSI Korea Electricity/Gas Category for 3 consecutive years.**

KOGAS has been maintaining well-balanced management practices, which embrace financial performance and environmental and social values for higher sustainability.





**Discovered a supersized gas in place (approximately 680 million tons) in Mozambique.**

KOGAS was the first to make headway in the untapped East African region, which will enhance the nation's energy independence and ensure the stability of gas supplies.



**Developed the technology to design the first supersized (270,000 kl) storage tank in the world.**

This new technology will improve KOGAS' technical reputation, help cut construction costs, and expand the storage capacity.



**Nominated as Korea's Most Admired Energy Company for 5 consecutive years.**

KOGAS fulfills its social responsibilities as it grows into a reliable and well-respected global energy company.



**First to issue bonds denominated in Canadian dollars among Asian corporations.**

KOGAS has established a footing to tap into the Canadian energy sector and ensured stable local financing.



**First to obtain ISO 50001 certification in the energy industry and other public enterprises.**

As an ISO 50001 certified company, KOGAS will spearhead efforts to ensure the systematic management of energy supplies and reduce carbon emissions.



Better Energy, Better World  
Global KOGAS growing  
together with customers



An aerial view of an oil tanker deck, showing various pipes, valves, and structural elements. The deck is painted with white markings and has several cylindrical objects scattered across it. In the background, the sea is visible under a clear sky. A large, semi-transparent world map composed of white dots is overlaid on the upper left portion of the image. The text 'Global KOGAS' is written in a bold, white, sans-serif font on the left side of the deck.

**Global KOGAS**







# Company Profile

## Overview

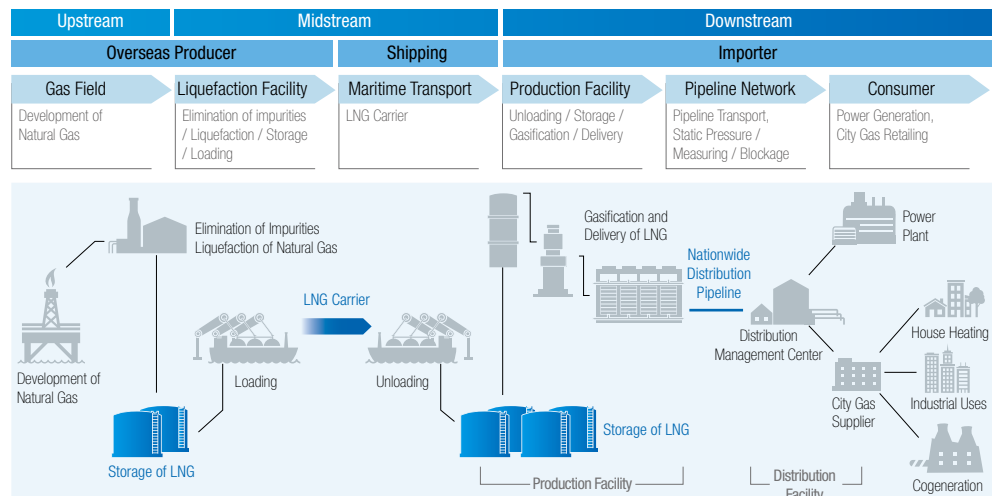
Established in 1983, KOGAS has been committed to improving public welfare by ensuring the safe and stable supply of clean natural gas.

|                          |   | (As of December 31, 2011) |
|--------------------------|---|---------------------------|
| <b>Company</b>           | Korea Gas Corporation   |                           |
| <b>CEO</b>               | Choo Kang-soo   |                           |
| <b>Establishment</b>     | August 18, 1983   |                           |
| <b>Industry</b>          | Production and Distribution of Natural Gas  |                           |
| <b>Head Office</b>       | Dolmaro 171, Bundang-gu, Seongnam-Si, Gyeonggi-do, Korea  |                           |
| <b>Major Businesses</b>  | 1. Production & distribution of natural gas and purification and sales of natural gas by-products<br>2. Construction and operation of natural gas plant and distribution network<br>3. Development and export/import of natural gas<br>4. Development and export/import of liquefied natural gas<br>5. Development of new and renewable energies using natural gas or its by-products, clean synthetic fuels, and eco-friendly businesses<br>6. Execution of projects commissioned by national and local governments<br>7. Exploration and development of petroleum resources and relevant businesses<br>(Approvals from the Minister of Knowledge Economy are required.) |                           |
| <b>Employees</b>         | 2,947   |                           |
| <b>Total Revenue</b>     | KRW 28,493.7 billion  |                           |
| <b>Total Assets</b>      | KRW 36,010.5 billion  |                           |
| <b>Natural Gas Sales</b> | 33,570 thousand tons  |                           |
| <b>IPO</b>               | Listed on the Korea Exchange in 1999  |                           |

## About Our Natural Gas Business

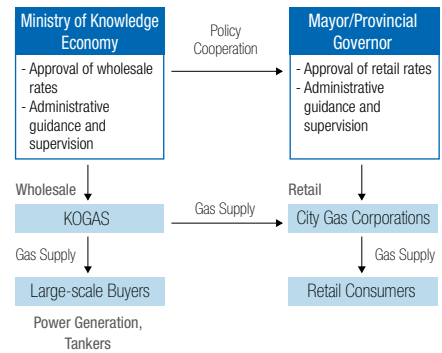
### Natural Gas Value Chain

The natural gas produced through gas fields are converted into LNG for maritime transport, and is then gasified for retail supplies. The gas supply chain is categorized into upstream, midstream, and downstream processes which refer respectively to the pre-liquefaction operations, the liquefaction and transport process, and the post-transport process. KOGAS, the world's largest LNG provider, engages in the transport and sales of gas. We are also extending our reach into overseas energy resource development and the construction and operation of local and overseas LNG plants and offshore gas supply networks to globalize our business.








### Domestic Natural Gas Business

For domestic natural gas supplies, KOGAS imports LNG from overseas producers as a wholesale buyer. We then provide it to power plants and regional city gas companies, which supply gas to end users countrywide. The pricings consist of wholesale and retail rates. Wholesale rates are authorized by the Minister of Knowledge Economy after joint deliberations with the Minister of Strategy and Finance. Retail rates are composed of wholesale fees and the supply costs of city gas suppliers, which are authorized by mayors or provincial governors.



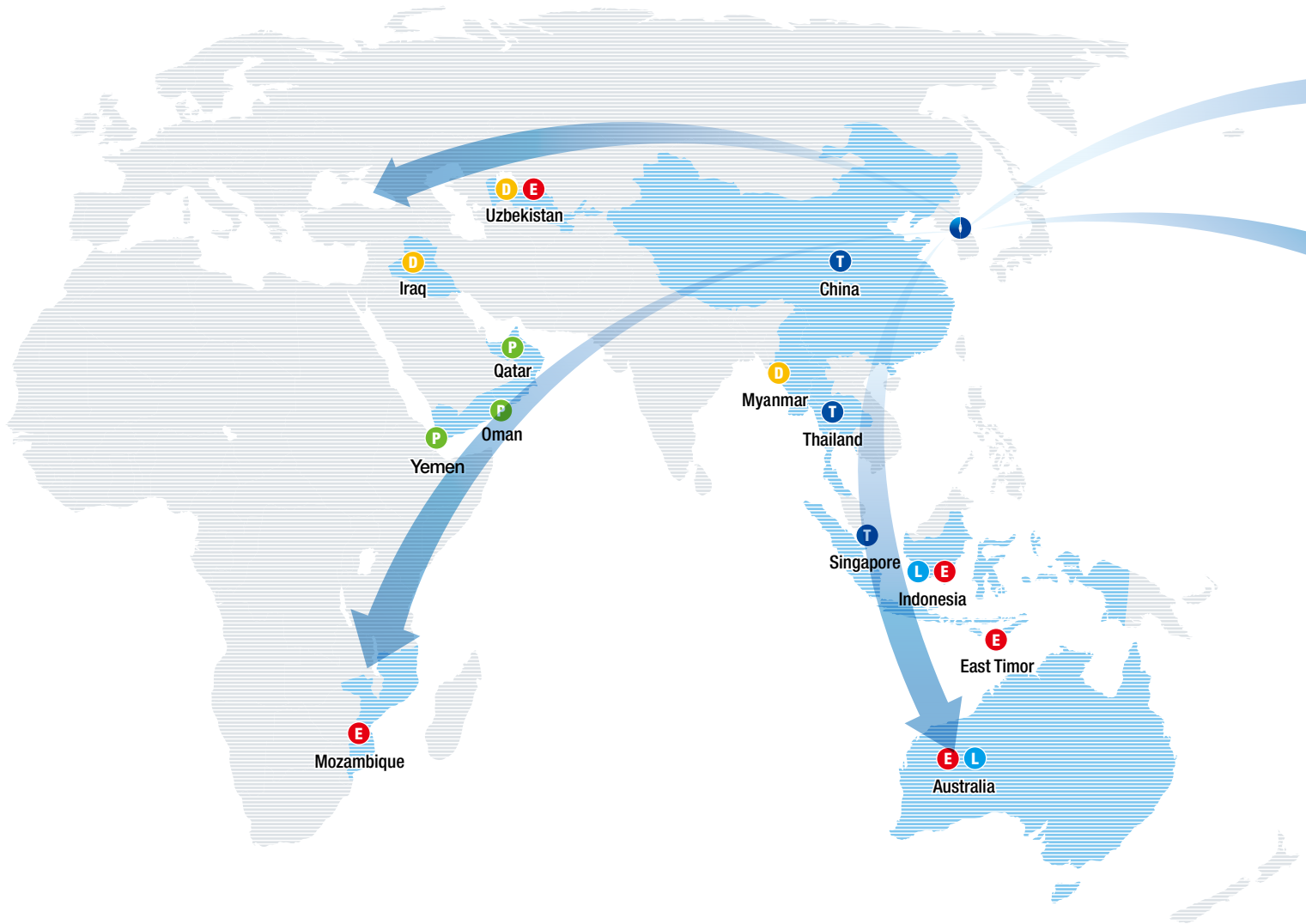
## Major Businesses

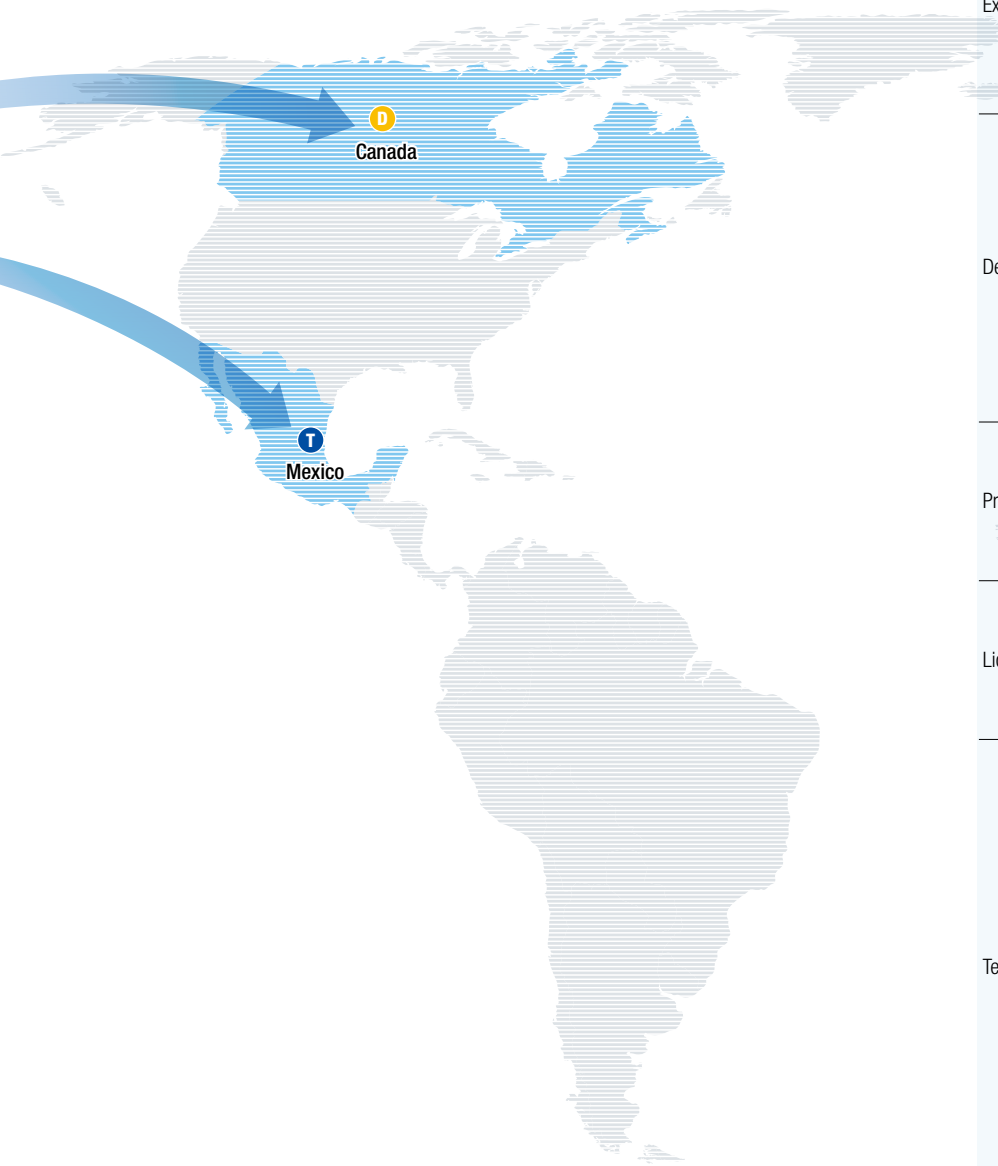
KOGAS develops and engages in a variety of businesses over the entire natural gas supply chain, from the upstream processes, which deal with the development and production of gas resources, followed by the downstream supply processes, and finally to end consumers. Expanding our business reaches from the imports and sales of LNG, we are vertically integrating the entire value chain of our gas business and diversifying our product line-up into petroleum and unconventional gas resources as we steadily develop into a global energy supplier.

|                         |   |  |
|-------------------------|---|--|
| Upstream                | <b>Exploration</b><br>2001~<br>                      | <ul style="list-style-type: none"> <li>Engaged in a total of 5 investment projects.</li> <li>Significantly expanded gas resources through successful exploration.</li> <li>Discovered gas fields in Myanmar in 2002 (Currently under development).</li> <li>Discovered a supersized gas in place in Mozambique in 2011.</li> </ul>   |
|                         | <b>Development/Production</b><br>1997~<br>           | <ul style="list-style-type: none"> <li>Engaged in a total of 9 investment and operation projects.</li> <li>Won 4 oil and gas development project bids in Iraq.</li> <li>KOGAS participated in Iraq's Akkas development project in 2011 as the first operator in the company's history.</li> <li>Acquired and sold the produced crude oil in Zubair, Iraq, in 2011.</li> <li>Tapped into the unconventional gas development projects in North America.</li> <li>Development projects in Horn River and West Cutbank in Canada and Cordoba, etc.</li> <li>Started producing unconventional gas in Canada in 2010.</li> <li>Integrated resource development project covering upstream/downstream businesses, construction/operation of gas chemical plants, production, and trading.</li> <li>Achieved progress in the Surgil Project in Uzbekistan in 2011.</li> </ul> |
| Midstream to Downstream | <b>LNG-Related Businesses</b><br>1997~<br>           | <ul style="list-style-type: none"> <li>Engaged in a total of 6 investment projects.</li> <li>Established a vertically integrated LNG value chain.</li> <li>Earned dividend incomes from O LNG, Rasgas, and Y LNG projects.</li> <li>First in the global industry to start LNG businesses based on unconventional natural gas.</li> <li>Participated in GLNG project in Australia in 2010.</li> </ul>   |
|                         | <b>Overseas LNG Terminal Operations</b><br>2008~<br> | <ul style="list-style-type: none"> <li>Engaged in 5 projects.</li> <li>Vertically and horizontally extended LNG plant businesses based on expertise from the operation of the world's largest LNG facility.</li> <li>Completed the construction of terminal in Manzanillo, Mexico in 2011, which is scheduled to start running in 2012.</li> <li>Raised profits from LNG terminal projects.</li> </ul>   |
|                         | <b>Domestic Gas Sales</b><br>1983~<br>               | <ul style="list-style-type: none"> <li>Sold LNG for household use and power generation.</li> <li>5 piers, tank storage capacity of 8,320,000k0, 3,022km-long pipeline network.</li> <li>Sold 33,570,000 tons of gas in 2011.</li> </ul>  |

## Overseas Businesses

KOGAS actively carries out overseas projects to secure a long-term stable energy supply and expand its business. We are continuing our efforts to expand our value chain into exploration/development/production/distribution. We are also participating in 25 overseas projects in a total of 15 countries around the world.





E Exploration    P Production    T Terminal    · 1Tcf = Approximately 22,580,000 tons (LNG)  
D Development    L Liquefaction    · 1bbl = 0.125 ton (Crude oil)

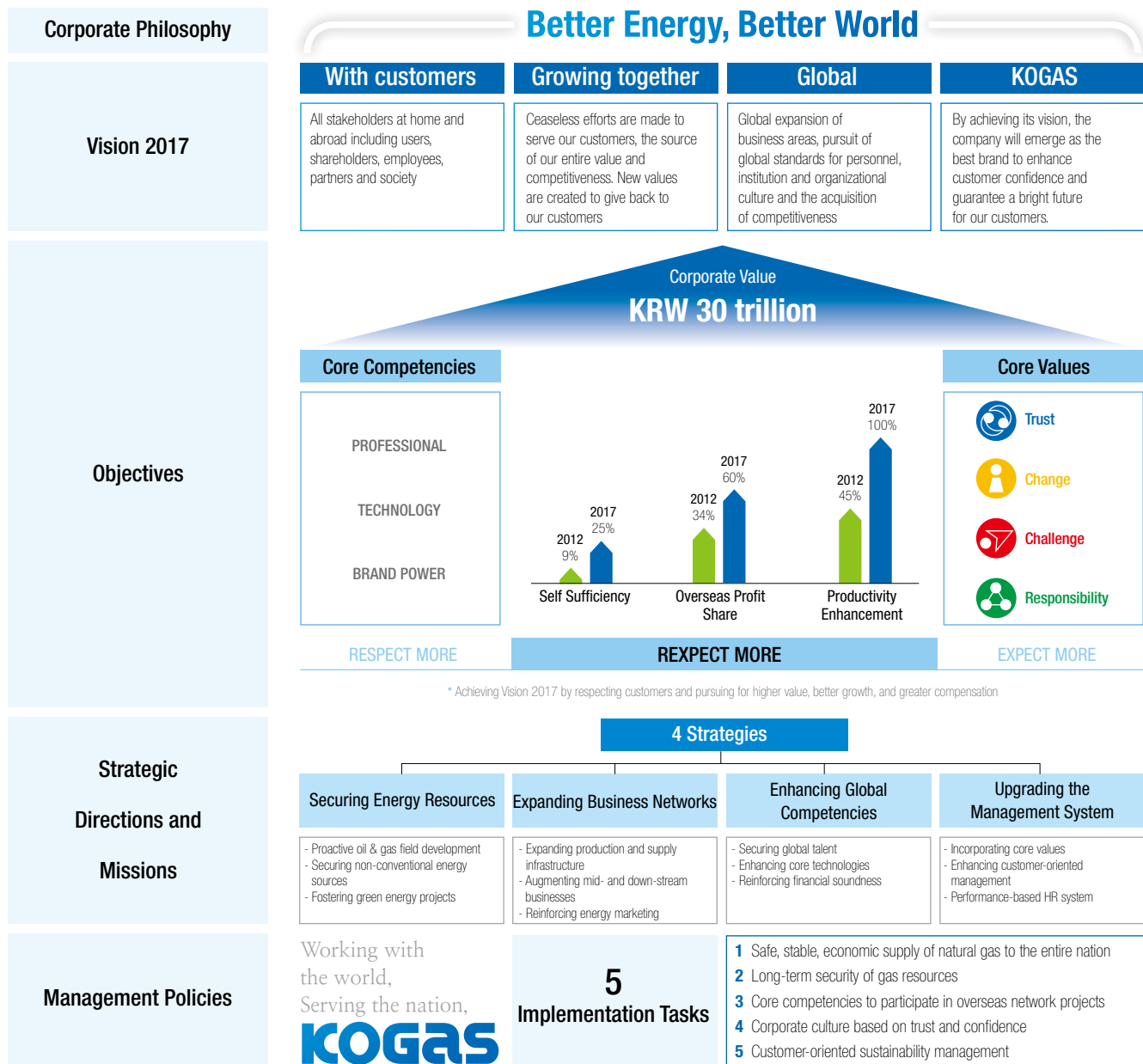
**Overseas Operations**

| Type         | Country    | Project  | Scale                                       |
|--------------|------------|--|---|
| Exploration  | East Timor | B,C,E,H Fields                                   | (In G&G Study)                              |
|              | Mozambique | Area 4 Field                                     | (Under drilling)                            |
|              | Uzbekistan | Uzunkui  | (In geophysical study)                      |
|              | Indonesia  | Krueng Mane Field                                | 0.23Tcf                                     |
|              | Australia  | Blue Energy                                      | (In technical review)                       |
| Development  | Myanmar    | A-1, A-3 Field                                   | 4.53Tcf                                     |
|              | Uzbekistan | Surgil Field                                     | 5.6Tcf                                      |
|              | Iraq       | Zubair Field                                     | 6.4 billion barrels                         |
|              |            | Badra Field                                      | 0.8 billion barrels                         |
|              |            | Akkas Field                                      | 2.6Tcf                                      |
|              | Canada     | Mansuriya Field                                  | 2.65Tcf                                     |
|              |            | Horn River/West Cutbank Field                    | 2.57Tcf                                     |
|              |            | Umiak Gas Field in Arctic Zone                   | 0.3Tcf                                      |
|              |            | Cordoba Field                                    | 4.5Tcf                                      |
| Production   | Yemen      | YLNG   | 6.7 million tons/year                       |
|              | Oman       | OLNG   | 7.2 million tons/year                       |
|              | Qatar      | Ras Laffan LNG                                   | 6.6 million tons/year                       |
| Liquefaction | Indonesia  | Joint Operation of DSLNG                         | 2.0 million tons/year                       |
|              | Australia  | GLNG   | 7.8 million tons/year                       |
|              |            | Prelude FLNG Project                             | 3.6 million tons/year                       |
| Terminal     | Mexico     | Construction and Operation of LNG Terminal       | 3.8 million tons/year (Processing capacity) |
|              | Singapore  | LNG Terminal Test Operation and Training         |   |
|              | China      | Jiangsu LNG Terminal Test Operation and Training |   |
|              |            | Dalian LNG Terminal Test Operation and Training  |   |
|              | Thailand   | LNG Terminal Test Operation and Training         |   |

# Vision & Strategies

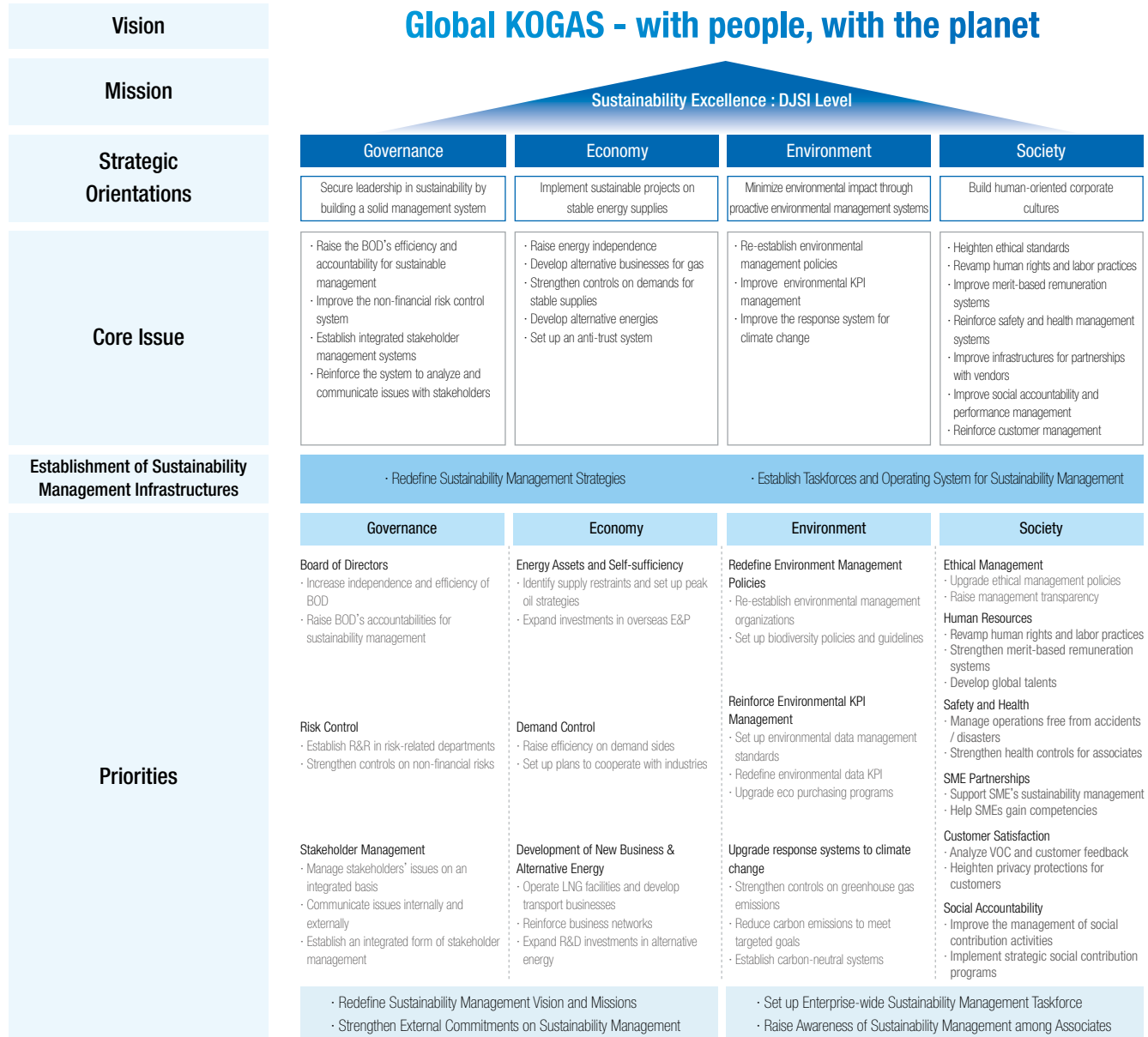
## KOGAS Vision 2017

We at KOGAS have been implementing our mid-term and long-term plan and corresponding strategies through 2017 to realize our corporate philosophy of 'Better Energy, Better World'. We have set out 4 major strategic goals of preemptively securing energy sources, expanding business networks, enhancing global competencies, and advancing our management system. We will raise energy self-sufficiency to 25%, increase the proportion of overseas profit share to 60%, double our productivity, and boost corporate value to 30 trillion won by 2017 through well-balanced growth. All of KOGAS' associates are working to achieve a 'Global KOGAS growing together with customers'.



## KOGAS Sustainability Strategy

KOGAS has set out our sustainability vision as 'Global KOGAS – with people, with the planet' to achieve Vision 2017. We've also established our categorical agenda to achieve our mid-term objective of 'ensuring sufficient management sustainability to be qualified for DJSI'.



## Implementation

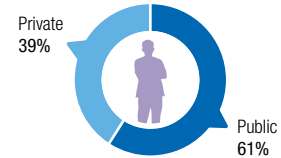
KOGAS' Management Strategy Team supervises our sustainability management and reports new strategies and ongoing progress to the Management Committee on a regular basis to review the major agenda and make necessary decisions based on such reviews.

# Corporate Governance

## Shareholders

KOGAS' shares are owned by public and private investors. Public entities such as the Korean government, Korea Electric Power Corporation, and local administrations aggregately hold a stake of about 61%.

| Shareholder       | Shares                | Proportional Ownership |        |
|-------------------|-----------------------|------------------------|--------|
| Public            | Government            | 20,758,110             | 26.86% |
|                   | KEPCO                 | 18,900,000             | 24.46% |
|                   | Local Administrations | 7,416,600              | 9.59%  |
| Private Investors | 30,209,800            | 39.09%                 |        |
| (Total)           | 77,284,510            | 100.00%                |        |

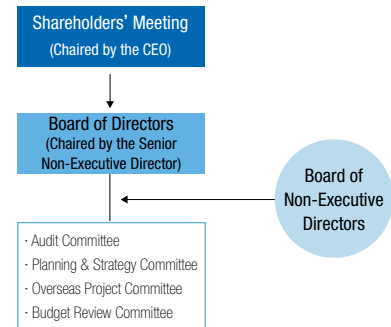


## Board of Directors

### Composition of BOD

The board of directors is KOGAS' highest decision-making organization, which consists of 12 directors, 5 executive, and 7 non-executive directors in compliance with the 'Act on Public Institution Operations' and our company's articles of incorporation. The director's information and the minutes of their meetings are released through websites. The Executive Nomination Committee is run to ensure the independence in the nomination of directors. The senior non-executive director is appointed as the chairman of the BOD to divide chairmanship from management leadership. The director's meetings are held every fourth Thursday to examine and determine the agenda stipulated in the regulations or articles of incorporation and material issues. This well-structured BOD operation system has been established to ensure efficient operations.

### Operations of BOD



### Subcommittees

KOGAS' BOD has four subcommittees - Audit Committee, Planning & Strategy Committee, Overseas Project Committee, and Budget Committee - under its wing to utilize the expertise of non-executive directors to examine the agenda in depth and improve checks and balances in management.

| Committee                     | Agenda   | Composition  | Meetings (2011) | Participation |
|-------------------------------|--|--|-----------------|---------------|
| Audit Committee               | - Operating and accounting audits<br>- Evaluation of internal accounting management systems<br>- Audit of directors' actions                         | - 2 non-standing auditors<br>- 1 standing auditor      | 8               | 93%           |
| Planning & Strategy Committee | - Long-term strategies and visions<br>- Major investment projects, budget (operation) schemes<br>- Management assessment, PR                         | - 2 non-executive directors<br>- 2 executive directors | 2               | 100%          |
| Overseas Project Committee    | - Development and production of overseas resources<br>- Export of plants and technologies<br>- Purchasing of natural gas and other overseas projects | - 3 non-executive directors<br>- 2 executive directors | 3               | 100%          |
| Budget Review Committee       | - Examination of 2012 budget (plan)  | - 7 outside (non-executive) directors                  | 3               | 100%          |



## Greater BOD Involvement

### BOD Targets More Active Involvement

KOGAS strengthens the BOD's examination and decision-making processes through periodically holding highly functional prior meetings, convening board meetings, and activating the subcommittees. Based on the results of the management environment analysis, we determine the operating objectives for the BOD and make use of our optimal operating and evaluation systems to enable more efficient BOD operations. Once we complete the establishment of the 'BOD and Subcommittee Meeting Management System', which is slated to be launched in the first half of 2012, the system will enable us to standardize BOD operations and manage data more systematically so that we can maximize the BOD's operating efficiency.

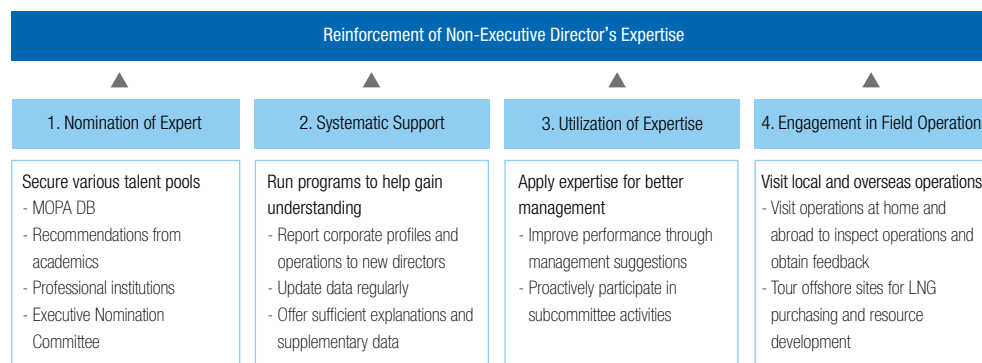
#### BOD Operating Data

|      | No. of Board Meetings (Case) | Prior Deliberation (%) | Revision of Opinions (%) | Participation (%) | Participation of Non-Executive Directors (%) | Voices of Non-Executive Directors (%) |
|------|------------------------------|------------------------|--------------------------|-------------------|--|---------------------------------------|
| 2009 | 18                           | 44                     | 10                       | 94                | 97   | 57                                    |
| 2010 | 16                           | 81                     | 14                       | 94                | 98   | 54                                    |
| 2011 | 16                           | 81                     | 5                        | 93                | 92   | 54                                    |

### Application of Non-Executive Director's Expertise

Professional and experienced experts from a variety of fields are nominated to be non-executive directors as recommended by the Ministry of Public Administration and Security, academic scholars, and Executive Nomination Committee. The company provides comprehensive and systematic support to improve their competencies and enable them to engage in field operations, which ultimately helps them make better decisions. They are also encouraged to make management suggestions to help improve business performance.

#### Reinforcement of Non-Executive Director's Expertise



## Evaluation of Directors and Executives

KOGAS is one of the first organizations among public enterprises to begin implementing individual evaluations of directors in December 2008. This was done to raise the awareness of the roles and responsibilities of directors and identify needs and loopholes through objective assessments. The BOD's overall operations and individual performances of directors are discretely evaluated to improve the efficiency of the BOD's operations.

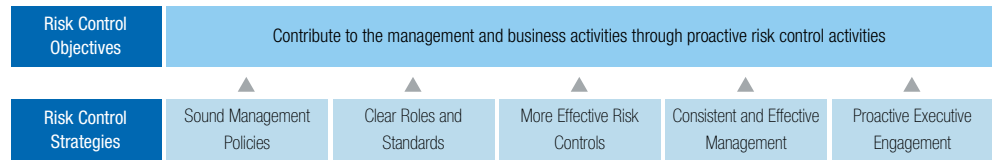
Remuneration for executives includes basic salary, incentives, and retirement allowances. The annual basic salary is determined by non-executive directors within the limits approved at the shareholders' meeting. The CEO shall propose specific management objectives to achieve KOGAS' corporate missions and visions and award incentives according to the performance assessments pursuant to the management contract formed with the Minister of Knowledge Economy. The executive directors shall form performance contracts with the CEO and receive incentives according to performance assessments.

# Risk Control

## Enterprise-wide Risk Control

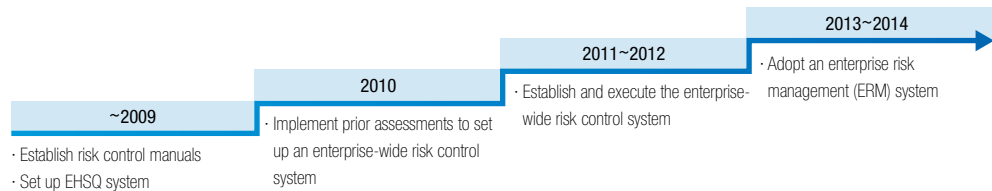
### Risk Control Strategy

KOGAS defines risk as the dangers or crisis factors which pose uncertainties or cause the loss of opportunities to disturb the accomplishment of strategic and business goals. The company is aimed at taking proactive risk controls to contribute to the management and business activities to create values for KOGAS.



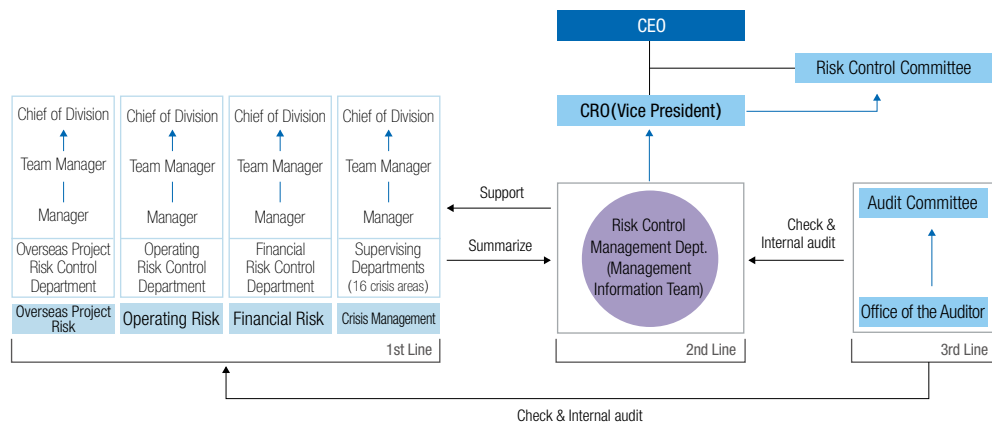
### Establishment of Enterprise-wide Risk Control System

In response to the rising external and internal demands for risk controls and overseas expansions, KOGAS has been establishing an enterprise-wide risk control system to ensure the integrated monitoring of risk control activities. Based on the prior assessments implemented in 2010, we have completed the establishment of our enterprise-wide risk control system in 2012 and plan to adopt an ubiquitous real-time monitoring system by 2014.



### Risk Control Organization

KOGAS has designed our risk control organization based on the '3 Lines of Defense' model, which is widely considered to be the best global practice for risk controls. The CRO is responsible for reporting to the Risk Control Committee as a supervisor of enterprise-wide risk controls. The Risk Control Committee is the highest decision-making institution that determines all issues related to risk controls under the direct control of the CEO. The Risk Control Committee holds a regular meeting at least once year to review the company's risk control status and responses and make the relevant decisions.



## Risk Response System

### Categorization of Risks

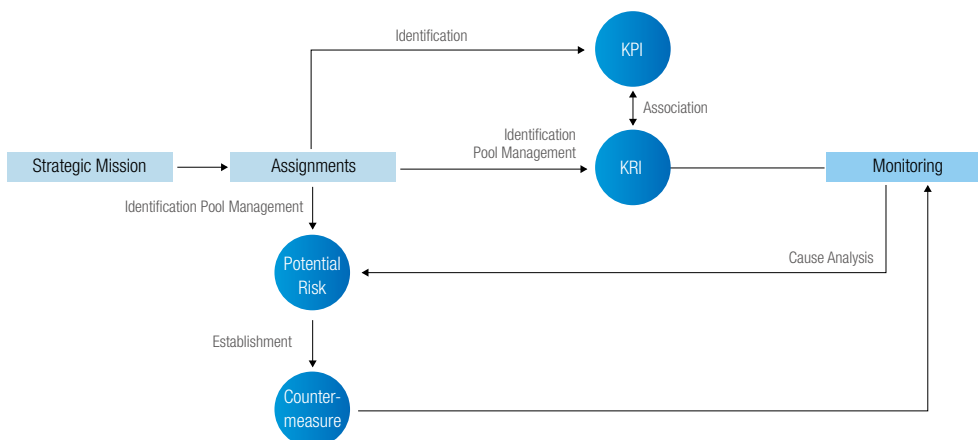
KOGAS categorizes risk factors into those under proactive monitoring systems and others under post-management. We have re-classified risk controls into the management of operating, overseas projects, and financial risks in accordance with the establishment of our enterprise-wide risk control system in 2012. We also set up respective management systems while maintaining the existing 16 crisis management sectors to upgrade our overall systems.

| Enterprise-wide Risk Control |                               |                        |                   |            |               |          |
|------------------------------|-------------------------------|------------------------|-------------------|------------|---------------|----------|
| Risk Control                 |                               |                        | Crisis Management |            |               |          |
| Operating Risk Control       | Overseas Project Risk Control | Financial Risk Control | Disaster          | Management | Communication | Conflict |

### Risk Control System

#### ● Operating Risk Control

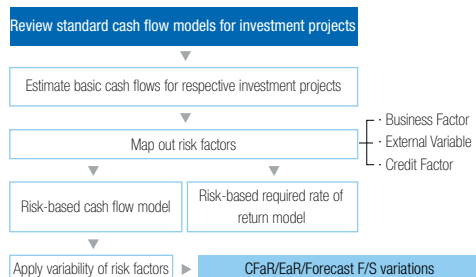
We identify and monitor risk factors that are obstacles to our achievement of strategic missions and assignments (KPI). We also prepare appropriate countermeasures to prevent operation risks on an enterprise-wide basis.



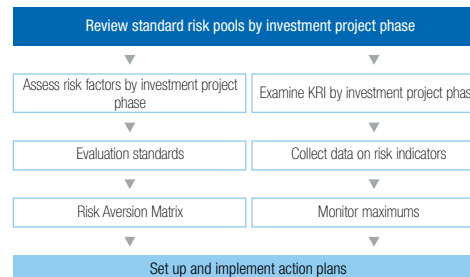
#### ● Overseas Project Risk Control

Risk control departments apply qualitative and quantitative risk control methodologies respectively to monitor potential risk factors in overseas projects and prevent actual risks.

#### Qualitative Risk Control

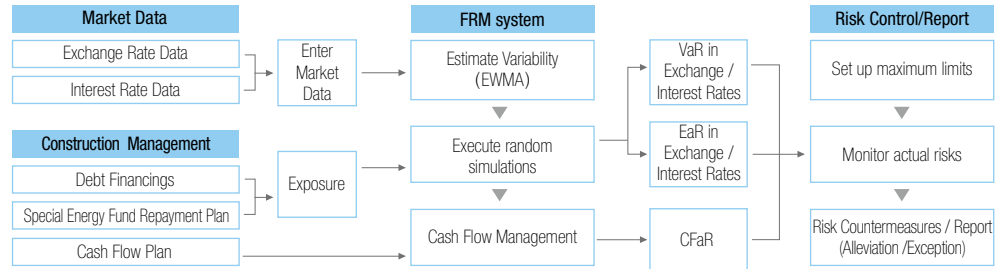


#### Quantitative Risk Control



● Financial Risk Control

The International Finance Team and Financing IR Team control financial risks and assess and manage the corporate financial indices on exchange rates, interest rates, and liquidity.



\* EWMA : Exponentially Weighted Moving Average

Crisis Management System

Several departments supervise the management of 16 different crisis categories and compose reports on crisis management activities to strengthen countermeasures and implement other government programs.

| Category   | Crisis                       | Definition   |
|------------|------------------------------|--|
| Disaster   | Environmental Crisis         | Environmental contamination caused by leaks from facilities or LNG carriers  |
|            | Facility Crisis              | Gas leaks and fire outbreaks caused by destruction of production or distribution facilities  |
|            | Disaster Crisis              | Disruptions to natural gas supplies caused by earthquakes, typhoons or floods  |
|            | Information System Crisis    | System malfunctions or operating disruptions caused by hacking attacks or virus terrorism  |
| Management | Regulatory Crisis            | Decrease of market presence due to appearance of new competitors<br>Deterioration of business environment due to the suspension of variable pricings on fuel costs |
|            | Overseas Project Crisis      | Inevitable changes or suspension of overseas projects  |
|            | Strategic Crisis             | Disruptions to the achievement of management objectives due to failures to procure resources for strategic implementations   |
|            | Supply Crunch                | Decline in LNG inventories due to supply disruptions or demand hikes   |
|            | Financial Crisis             | Deterioration of financial soundness or liquidity due to volatilities in exchange rates, oil prices, interest rates, or credit ratings                             |
|            | Social Accountability Crisis | Negligence in social accountability  |
|            | Human Resource Crisis        | Lower employee satisfactions   |
|            | Operating Crisis             | Occurrence of internal corruptions   |
|            | Marketing Crisis             | Bankruptcy of city gas supplier  |
|            | Communication                | PR Crisis  |
| Conflict   | Labor Strife                 | Disruptions to gas supplies due to walkouts or other labor strife (including illegal actions)  |
|            | Collective Complaints        | Disruptions to operations caused by collective complaints over facility operations or construction processes   |

Crisis Preventions

A total of 15 crises have taken place in 2011 alone, and they were classified to facilitate the implementation of appropriate countermeasures.

|      | Disaster Crisis | Facility Crisis | Strategic Crisis | Regulatory Crisis | Labor Strife | Financial Crisis | Information System Crisis | Supply Crunch | Collective Complaints | Total |
|------|-----------------|-----------------|------------------|-------------------|--------------|------------------|---------------------------|---------------|-----------------------|-------|
| 2009 | 4               | -               | -                | 1                 | 1            | -                | 2                         | 1             | -                     | 9     |
| 2010 | 3               | 2               | -                | 1                 | 1            | 1                | 4                         | 1             | 1                     | 14    |
| 2011 | 7               | 1               | 1                | -                 | -            | 2                | 3                         | -             | 1                     | 15    |

(Unit: Case)

# Stakeholder Communication

## Stakeholders of KOGAS

Aware of our public responsibilities as a public enterprise, KOGAS considers all society members to be our stakeholders. We engage in transparent and proactive communication with them to fulfill our social responsibilities. As our company takes the initiative in pushing for overseas projects, we also strive to communicate with global stakeholders and build effective communication channels. We will continue to listen to the voices of stakeholders at home and abroad as we improve the sustainability of KOGAS' businesses.

|  |  |  |
|--|--|--|
| <p><b>Internal Associates</b></p> <p><b>Major Issues</b><br/>Business expansion / Competence strengthening / Wages / Job security / Welfare / Safety and health / Labor-management relations</p> <p><b>Communication Channel</b></p> <ul style="list-style-type: none"> <li>- Field briefings for managers</li> <li>- Data on major businesses</li> <li>- Labor-management conferences and coordination meetings</li> <li>- Ombudsman, etc.</li> <li>- Strategy workshop</li> </ul>  | <p><b>Direct Customers</b><br/>(City Gas Suppliers, Power Plants, etc.)</p> <p><b>Major Issues</b><br/>Stable supplies / Sound facilities / Rates / Customer services</p> <p><b>Communication Channel</b></p> <ul style="list-style-type: none"> <li>- Customer meetings</li> <li>- Customer surveys</li> <li>- Pricing briefings</li> <li>- Technical information meetings</li> <li>- Customer service system</li> </ul>  | <p><b>Shareholders · Investors</b></p> <p><b>Major Issues</b><br/>Stock price / Investment / Safety / Dividend / Growth potential / Financial soundness / Corporate governance</p> <p><b>Communication Channel</b></p> <ul style="list-style-type: none"> <li>- IR activities</li> <li>- Electronic posting (ALIO, KRX, and FSS)</li> <li>- KOGAS Newsletter</li> </ul>    |
| <p><b>Citizens(Consumers)</b></p> <p><b>Major Issues</b><br/>Rates / Stable supplies / Thermal unit (Quality) / Social contributions and energy welfares</p> <p><b>Communication Channel</b></p> <ul style="list-style-type: none"> <li>- Pricing briefings</li> <li>- Newsletter, web postings</li> <li>- Campaigns and social contributions</li> <li>- Information disclosure request system</li> </ul>   | <p><b>Global KOGAS Growing Together with Customers</b></p>   | <p><b>Government · Authorities</b></p> <p><b>Major Issues</b><br/>Countermeasures to climate change / Corporate Governance / Stable supplies / Restructuring</p> <p><b>Communication Channel</b></p> <ul style="list-style-type: none"> <li>- Information disclosure request system</li> <li>- Business reports</li> <li>- Congressional or BAI audits</li> </ul>         |
| <p><b>Community · NGO</b></p> <p><b>Major Issues</b><br/>Social contributions / Ethical management / Safety and environment management / Sustainability management / ISO 26000</p> <p><b>Communication Channel</b></p> <ul style="list-style-type: none"> <li>- Campaigns and social contributions</li> <li>- Conferences</li> <li>- Newsletters</li> <li>- Web postings</li> </ul>   |  | <p><b>Business Partners</b></p> <p><b>Major Issues</b><br/>Business expansion / Support to SMEs / Financial soundness</p> <p><b>Communication Channel</b></p> <ul style="list-style-type: none"> <li>- Joint workshops and sports matches</li> <li>- Business information sessions</li> <li>- Surveys on contract satisfaction</li> <li>- Discussion meetings</li> </ul>  |

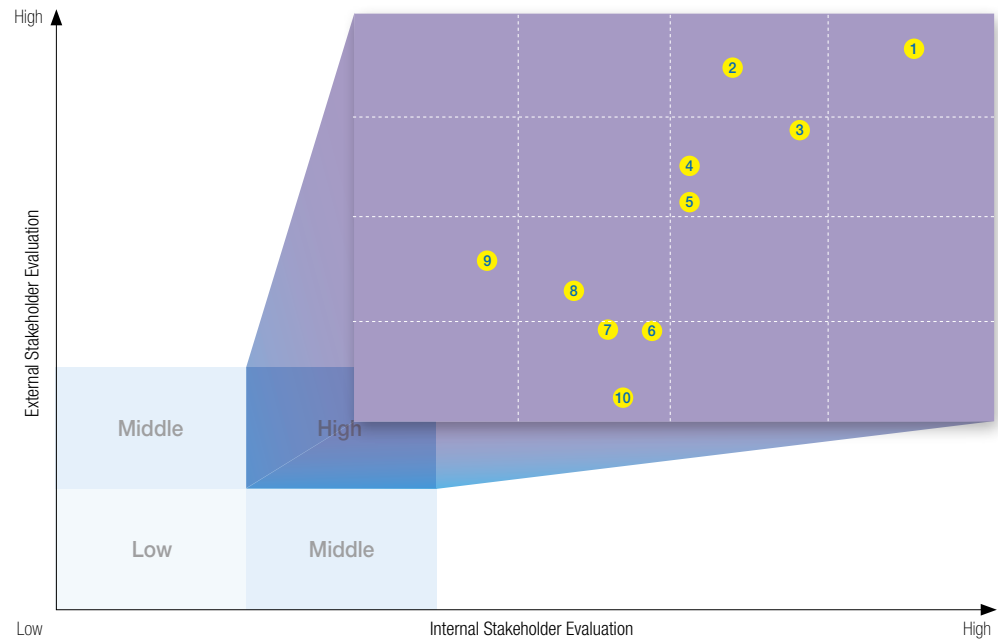
## Materiality Test

Materiality testing is a method to help identify and prioritize issues of high interest for stakeholders. KOGAS has been identifying critical sustainability management issues through management strategies, status analysis, media analysis, benchmarking, engagements of internal and external stakeholders, and specified core issues requiring proactive leadership from KOGAS through priority assessments for this report.

### KOGAS Materiality Test Process



### 5. Materiality Test Results



|   |  |    |  |
|---|--|----|--|
| 1 | Development of Upstream Businesses and Overseas Operations     | 6  | Reinforcement of International Partnerships                        |
| 2 | Priority on Safety and Enhancement of Safety Accident Controls | 7  | Inclusive Growth with Business Partners                            |
| 3 | Customer-oriented Management                                   | 8  | Hiring and Development of Human Talents                            |
| 4 | Enhancement of Energy Self-sufficiency                         | 9  | Countermeasures to Climate Change                                  |
| 5 | Upgrade of Anti-corruption Ethical Management Practices        | 10 | Strengthening of Local and Overseas Social Contribution Activities |

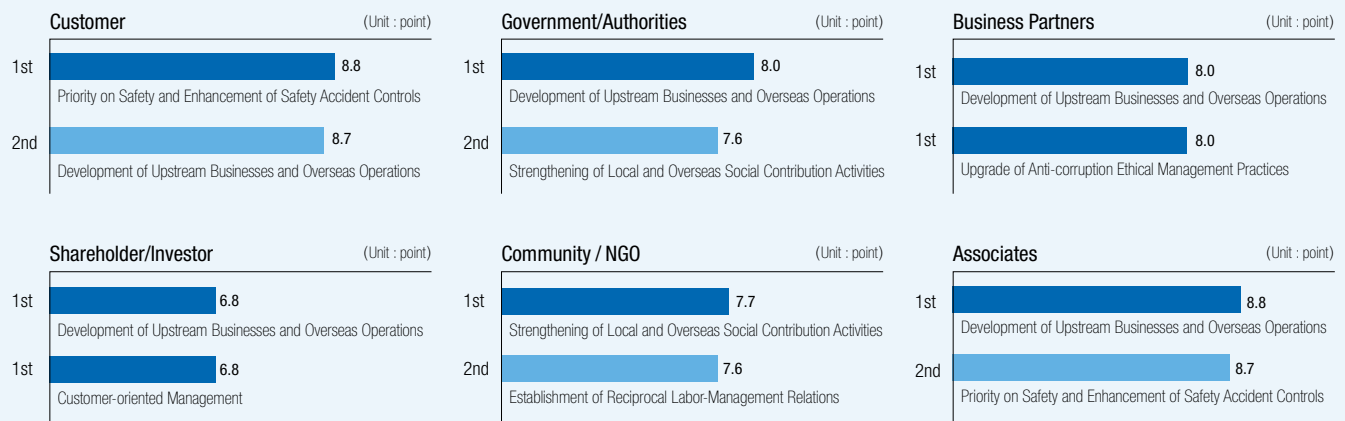
## Stakeholder Survey

### • Survey Outline

KOGAS has performed a stakeholder survey to reflect the major areas of interests and opinions of internal and external stakeholders in the 2011 Sustainability Report and apply them to the prospective sustainability management activities. The survey was performed for 15 days from June 14 to June 28, 2012 by using an email-based questionnaire. 141 internal stakeholders and 208 external stakeholders have participated in this survey. Our company plans to include global stakeholders in prospective surveys because of our growing overseas presence. We have interviewed global stakeholders in economic, environmental, and social respects this year. The details about the interviews are noted in pages 24, 38 and 50.

### • Core Issues for Stakeholders

According to the results of the materiality tests on 20 sustainability management issues, 5 respondent groups other than Community/NGO have chosen 'Development of Upstream Businesses and Overseas Operations' as one of their top 2 issues. These responses demonstrate that stakeholders are highly aware of and interested in KOGAS' global business expansion.



### • Material Issue Management Ratings

The evaluations of KOGAS' management of 6 material issues for sustainable development suggest that energy security has gained the largest advance from a year earlier. Although most of the evaluation categories have also shown improvement, the rating on the contributions to economic development posted a decline on a year-on-year basis. We will take measures to close loopholes and enhance KOGAS' sustainability.

### • Materiality of Core Values

'Transparency' was considered to be the most important core value for KOGAS' sustainable development by stakeholders, just as in the previous survey. 'Responsibility' exhibited the largest increase in materiality rating from a year earlier.

|                                      | 2010 | 2011 | 2012 |
|--------------------------------------|------|------|------|
| Establishment of Vision and Strategy | 4.12 | 4.06 | 4.41 |
| Energy Security                      | 4.26 | 4.15 | 4.69 |
| Contribution to Economic Development | 4.27 | 4.28 | 4.01 |
| Environmental Performance            | 4.22 | 4.23 | 4.48 |
| Social Performance                   | 4.15 | 4.11 | 4.32 |
| International Cooperation            | 4.01 | 4.07 | 4.44 |

|                        | 2010 | 2011 | 2012 |
|------------------------|------|------|------|
| Transparency           | 29.3 | 32.7 | 21.1 |
| Reciprocal Partnership | 16.0 | 16.3 | 18.4 |
| Trust                  | 15.3 | 15.3 | 19.7 |
| Change                 | 8.3  | 11.3 | 6.7  |
| Responsibility         | 13.3 | 9.7  | 14.4 |
| Challenge              | 8.7  | 6.3  | 10.0 |
| Cooperation            | 5.3  | 5.7  | 8.7  |
| Community Services     | 3.7  | 2.7  | 1.0  |

# Economic Performance



## Revenue in 2011



KRW **28.5** trillion

## Combined Storage Capacity



**57** Storage Facilities  
**8.32** million kℓ

## Nationwide Gas Pipeline Network



**3,022** km

## LNG Sales in 2011



**33.57** million tons

## Overseas Business



**25** Projects in  
**15** Countries





KOGAS is involved as an operator in the development and production project for Akkas gas fields in the western province of Anbar, about 400km northwest of Baghdad, Iraq. After submitting a preliminary development scheme, KOGAS has been implementing its obligations as scheduled. KOGAS has been making great progress with the project, and has demonstrated very impressive management techniques and passionate effort. I strongly believe that KOGAS will succeed in completing the project, despite the tough challenges ahead.



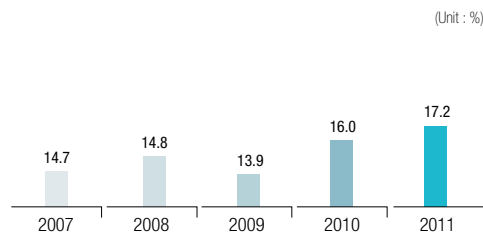
Akkas JMC Chairman Abdula KH. Zarzor

# Stable Supply of Natural Gas

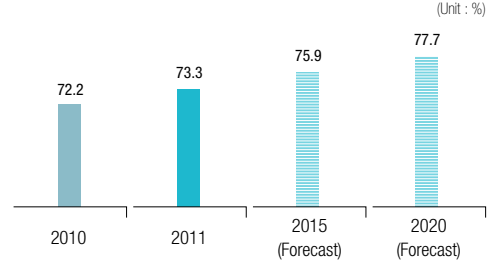
## Natural Gas as the Nation's Source of Energy

Natural gas accounted for 17.2% of Korea's primary energy consumption in 2011, and is one of the major national energy supplies along with petroleum, coal, and atomic energy. As the nation's city gas distribution network covers 73.3% of households (as of 2011), the natural gas provides highly important fuel supplies to homes.

Proportion of Natural Gas in Primary Energy Consumption



Households with City Gas Supplies



## Forecast on Natural Gas Demands

### Domestic Natural Gas Demands

Natural gas is in high demand in winter and in low demand in summer as households consume a large amount of gas supplies for heating due to seasonal temperature gaps. Natural gas producers usually prefer constant production throughout the year to recoup their massive facility investments early, which unbalances the supply and demand. Given this situation, KOGAS has been expanding its storage facilities to close the gap between supply and demand and is working to purchase gas at low costs by tracking spot price trends to meet the seasonal demands in winter. KOGAS is constantly endeavoring to ensure stable and affordable energy supplies.

### Higher Accuracy in Demand Forecast

KOGAS is continuously working to upgrade its forecast model to better reflect the ever-changing demand conditions and increase the flexibility of the model to facilitate the scenario-based demand forecasts in case of abnormal climate conditions, which aims to improve the accuracy in demand forecasts.

## Efforts on Stable Supplies

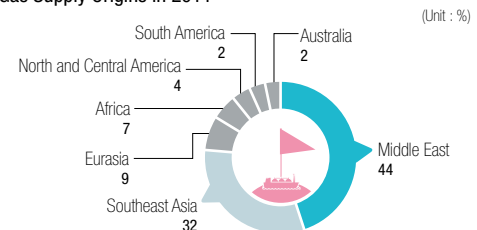
KOGAS secures natural gas supplies based on long-term contracts which usually last 10 years or longer to ensure the stable supply for the growing domestic natural gas demands. We are also flexibly making short-term spot purchases in line with the changes in demands.

As of 2011, we had 13 mid-term to long-term contracts with a validity of 4 years or longer, amounting to a total of about 25 million tons of natural gas, as well as many short-term contracts. We have purchased natural gas from 16 countries in 2011, and around 86% of our total supplies came from the Middle East and Asia. We have also executed new long-term contracts that amount to over 7.6 million tons to diversify the supply channels and maintain stable supplies.

New Long-term Contracts in 2011

| Type                | Country       | Volume                 | Contract Term |
|---------------------|---------------|------------------------|---------------|
| Long-term Contracts | Australia etc | 1 million tons/year    | 2013~2017     |
|                     |               | 3.64 million tons/year | 2017~2037     |
|                     |               | 1 million tons/year    | 2014~2017     |
|                     |               | 2 million tons/year    | 2017~2031     |

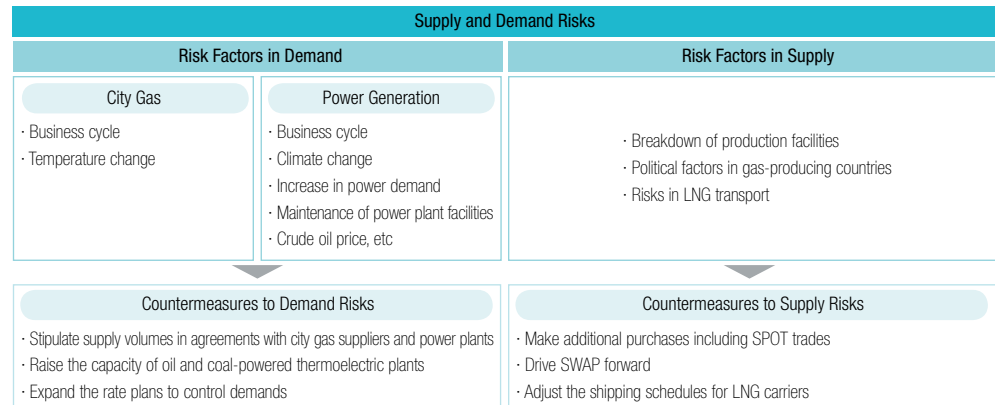
Gas Supply Origins in 2011



## Supply and Demand Management

### Supply Risks and Countermeasures

KOGAS forecasts and monitors the probabilities of supply and demand risks in advance and prepares appropriate countermeasures to better cope with effective contingencies in the natural gas supply.



### Expanding LNG Storage Capacity

As of the end of 2011, KOGAS' LNG storage rate stood at merely 11%, much below the storage capacities of other gas importers such as Japan (16 to 18%). KOGAS plans to increase the rate of storage to 21% by 2024 to ensure stable supplies in the future. Our company is pushing to build the 4th LNG terminal (Samcheok) that is scheduled to be completed in 2014 in addition to its three LNG terminals in Incheon, Pyeongtaek, and Tongyoung. We are also considering to build a new LNG Terminal base to maintain a stable supply for the high-demand in the Seoul Metropolitan Area. In preparation for the procurement of PNG from Russia, we're reviewing the plan to build a storage facility using the underground bedrock storage technology to store natural gas in gas form.

### Expanding Pipeline Networks to unreached Regions

We at KOGAS are extending our distribution pipeline network to unreached regions to close the regional energy gaps and diversify energy source options for consumers. We plan to add new pipelines, stretching to about 1,290km, with the existing 3,022km-long pipelines and raise our coverage from 168 cities and counties to 212 areas by 2016. Once this project is completed, natural gas supplies will additionally become available for 44 middle to small-sized cities across the country.

### Supply and Demand Management in 2011

Demands were highly volatile throughout 2011 due to the frequent occurrences of abnormal weather conditions and instability in the power generation sector. There have also been supply risks due to Iran threatening to block the Hormuz Strait and the terrorism attacks in Yemen. KOGAS has successfully overcome such challenges by setting up LNG procurement plans in advance based on demand forecasts according to climate conditions. We have also increased our monitoring of the geopolitical risks in the Hormuz Strait and updated our crisis management manual to maintain a stable supply.

#### Gas Supplies in 2011

|                     | Long-term | Mid-term | Short-term | SPOT  | Total  |
|---------------------|-----------|----------|------------|-------|--------|
| Volume (1,000 tons) | 22,539    | 2,065    | 6,649      | 2,721 | 33,974 |
| Number of Cargo     | 349       | 34       | 111        | 38    | 532    |

# Developing New Growth Potentials

## Promoting Overseas Resource Development Projects

### Securing Competitive Advantages in E&P Projects

KOGAS is looking to diversify energy sources into oil, conventional, and unconventional gas, and other resources, as well as integrate the value chains for oil and gas. We have secured gas reserves of 133,470 thousand tons, which amount to Korea's 4-year gas consumption, on a cumulative basis in 2011 as we tapped into new high potential areas in Africa, America, Oceania, the Middle East, and other frontier regions. KOGAS also discovered a supersized gas field with a gas in place of 680 million tons in Mozambique, which is the largest discovery in the history of Korean gas development and the world's second largest discovery made in 2011. As KOGAS made its first successful inroad into Mozambique, it has established a footing to tap further into the African market and develop other related businesses. This is expected to add economic momentum to both Korea and Mozambique and help local plant builders expand their overseas presence. The oil and gas projects in Iraq have also made tremendous progress in 2011, enabling KOGAS to recoup its investment of USD 100 million through the oil development project in Zubair. KOGAS has also executed its first operating license contract for the Akkas project, which is expected to help it grow into an E&P (Exploration & Production) company.

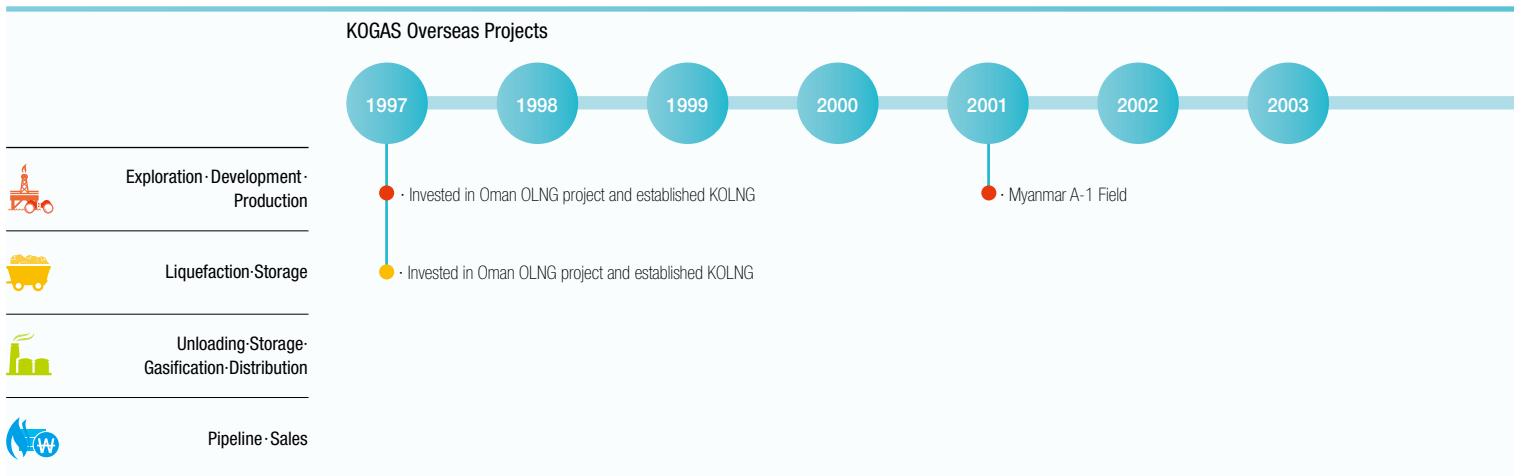
### Accelerating Unconventional Gas Businesses

Unconventional gas reserves are estimated to be over 5 times larger than the conventional gas reserves. KOGAS is planning to diversify energy sources and procure cost-effective natural gas sources by developing unconventional gas projects to enhance the stability in gas supplies. We achieved substantial progress in the unconventional gas business in 2011. We have increased our unconventional gas reserves in North America from 36 million tons to 61 million tons through collaborations with strategic partners. KOGAS has also increased the production of unconventional gas from 1.6 tons to 105,000 tons by launching the Cordoba project in Canada and GLNG CBM (Coal Bed Methane) project in Australia. We also tapped into gas hydrate projects as well as some undeveloped areas in Mongolia, Indonesia and Australia to expand our business.

### Integrating the Gas Business Value Chain

KOGAS creates high value-added business opportunities by extending its value chain into upstream and downstream sectors and accumulates technical and commercial expertise by developing LNG projects and operating plants to improve its brand value. We participated in a floating liquefaction terminal project using LNG-FPSO, a domestically developed technology, to strengthen our technical expertise and core values in trading. The Surgil Project, an upstream and downstream chemical package project in Uzbekistan, is also showing clear signs of development. We are set to make a final investment decision (FID) and commence construction in the first half of 2012.

### KOGAS Overseas Projects



## Expanding Overseas Midstream and Downstream Businesses

### Expanding the Gas Utility Business

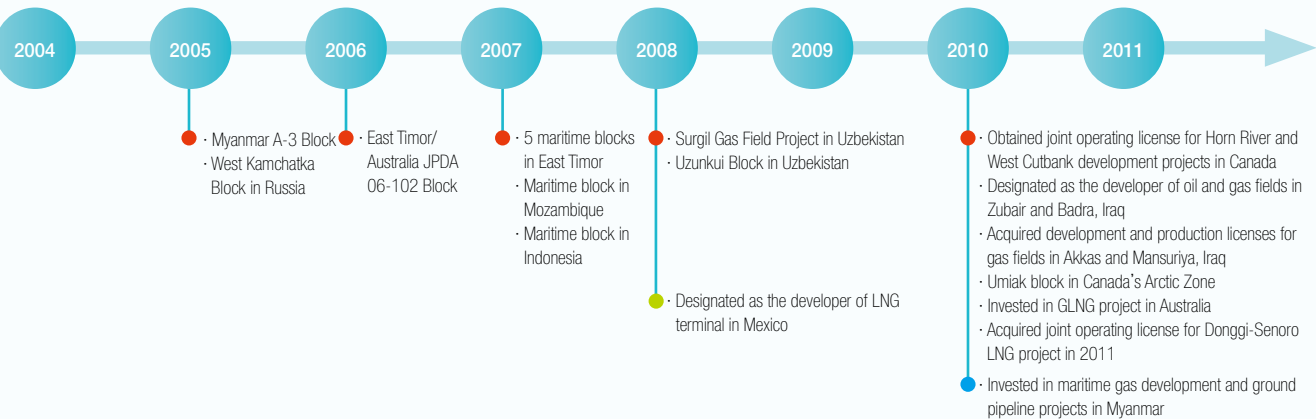
KOGAS invests in the development of overseas LNG terminals and pipeline networks and expands gas utility businesses to earn profits through constructing and operating facilities as part of our efforts to integrate the midstream and downstream value chains. We successfully completed the terminal construction project in Manzanillo, Mexico in 2011 and deployed highly trained staff to that facility through the local training program. We also successfully established and applied a new operating management system to the Manzanillo project, which formed the basis of our new business model for prospective overseas LNG terminal projects. After integrating KOGAS' expertise from the operation of the world's largest LNG terminal with our local partner's competencies in EPC (Engineering, Procurement & Construction), we are also seeking to tap into new offshore plant and EPC projects. We will further expand our business reach through developing new LNG terminal, gas pipeline, and liquefaction plant projects.

### Expanding the Technical Service Business

KOGAS sells its engineering technologies for the construction and operation of LNG liquefaction plants to overseas LNG terminal operators. We have won the bids for 6 new technical projects, including the test operation of an LNG terminal in Dalian, China, and technical advisory services for the UAE LNG terminal and Australia GLNG projects, which amount to a total of USD 8.62 million. We plan to maximize customer satisfaction through the systematic management of overseas technical projects and acquire more expertise to expand our technical service business.

### Broadening the Energy Trading Business

In addition to KOGAS' existing LNG procurement and domestic sales, we are expanding our trading business into LNG, crude oil, unconventional gas, petrochemical products (PE, PP), PNG, and DME in line with our strategy to diversify energy sources. We plan to develop our trading business and competencies through trading KOMAN LNG, gas, and petrochemical products produced in Surgil, Uzbekistan, crude oil productions in Iraq, and unconventional gas production in Canada. Our company also participates in the natural gas charging and cylinder project in Uzbekistan and other locations in bid to make more inroads into the overseas downstream market.



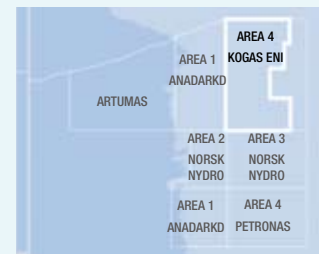
## Best Practice

### Discovery of a Supersized Gas Field in Mozambique

In July 2007, KOGAS started exploring natural gas resources in the Area 4 Ocean Block north of Mozambique in Africa, which has been considered highly likely to have a large-scale natural gas field, as part of its efforts to tap into overseas resources. The company finally discovered a gas field through its first rig, Mamba South-1, among the 4 rigs in Area 4 on October 20, 2011. This discovery confirmed the existence of supersized gas fields in the area.

#### Project Profile

- Block Name : Mozambique Area 4 Block
- Location : East of Mozambique (12,956km<sup>2</sup> in area)
- Ownership : Eni (Operator) 70%, KOGAS 10%, Galp 10%, ENH (Mozambique's State-run Company) 10%
- Gas in place : 47~52Tcf
- Investment : USD 49.6 million (cumulatively as of May 2012)



Location of Mozambique Area 4

#### Progress

The gas in place in the Area 4 block is estimated to contain at least 47 to 52 Tcf (about 1.17 billion tons) of natural gas. KOGAS is estimated to secure around 117 million tons of natural gas, which is equal to Korea's natural gas consumption for about 3.1 to 3.4 years. KOGAS plans to add 2 more rigs by 2012 to secure additional resources and assess the project. This gas resource discovery is expected to increase further in accordance with future progress in this area.

- 2011. 09~2011. 11 : Drilling at Mamba S-1 (22.5Tcf of gas in place)
- 2011. 11~2012. 01 : Drilling at Mamba N-1 (7.5Tcf of gas in place)
- 2012. 01~2012. 03 : Drilling at Mamba NE1 (10~12Tcf of gas in place)
- 2012. 04~2012. 05 : Drilling at Coral-1 (7~10Tcf of gas in place)
- 2012. 06 : Started drilling at Mamba NE2

#### Implications

KOGAS' successful exploration in Mozambique is the company's first groundbreaking achievement in East Africa, an area that has remained largely untapped. This discovery will help Korea gain more independence in energy development and stability in its natural gas supplies. This success is also expected to build a sound foothold for subsequent energy development projects in Africa.



## Eco-Friendly Technology Business

### DME, the Emerging Global Clean Energy Source

DME (Dimethyl ether) is an emission-free clean energy source, and KOGAS is one of the four global companies securing DME technologies. We have developed source technologies for the DME production process and basic design engineering for commercial plant construction. We are reviewing plans to build DME plants and commercialize projects in Middle Eastern and African countries such as Saudi Arabia, Mozambique, and Nigeria. We are also preparing for DME plant and DME-FPSO projects in Malaysia, Australia, and other Asian countries.

### Household Fuel Cell Monitoring Program for Eco-Friendly Home Environments

Household fuel cells are eco-friendly and high-efficiency renewable energy power generators that transform natural gas into hydrogen, and then it react with oxygen to produce electricity and thermal energy. As of the end of 2011, a total of 210 household fuel cells were installed and operated to prepare for prospective commercialization. They were installed at the Blue House and the office of the Green Development Committee to promote this new technology to the public. These installations have made great contributions to the 'Fuel Cell Installations at 100,000 Homes' project in line with the government's '1 Million Green Homes by 2020' project.

### Research on Biogas Development to Turn Organic Wastes into Energy

Biogas is a new renewable energy source produced through the anaerobic digestion of organic wastes such as food wastes. This new energy source can be compatible with natural gas and help process contaminants to generate energy without any carbon emissions. KOGAS formed a research partnership over natural gas, biogas, and bio DME with Sweden-based Business Region Gothenburg in a bid to accelerate its biogas project. The company also began to conduct joint research on the commercialization of biogas fuels with a local partner and the Gangwon Province Government in 2010. KOGAS aims to contribute to eco-friendly economic growth by developing alternative fuel technologies on biogas and other energy sources for vehicle and industrial use. We play a leading role in biogas plant engineering and CDM (Clean Development Mechanism) businesses.

### Natural Gas Vehicle Project for Clean Air in Cities

The natural gas vehicle is an eco-friendly technology that emits fewer pollutants than diesel powered vehicles. Natural gas buses and garbage trucks are in service in Korea while CNG hybrid buses and HCNG buses will become available in the coming years. KOGAS actively engages in technological research on Natural Gas Vehicle (NGV) and charging stations (CNG and LNG). Our company has already developed an LNG container design (450 0, 'KOGAS LNG Container') through domestic research.



DME Facility



DME Bus



Fuel Cell Installation Ceremony at Prime Minister's Residence



Installation and Operation of Fuel Cell at the Blue House



Biogas Purification Facility



Liquefied Carbon Dioxide Storage Facility



CNG Hybrid Bus Profile



CNG Hybrid Bus

# Continuous Management Innovations

## Innovative Brand Best & First

### Best & First, KOGAS Innovative Brand

Aware of the importance of consistent and continuous innovation, KOGAS enthusiastically promotes BnF (Best & First), our field-oriented operating innovation initiative, as our innovative brand as we grow into a global energy company.



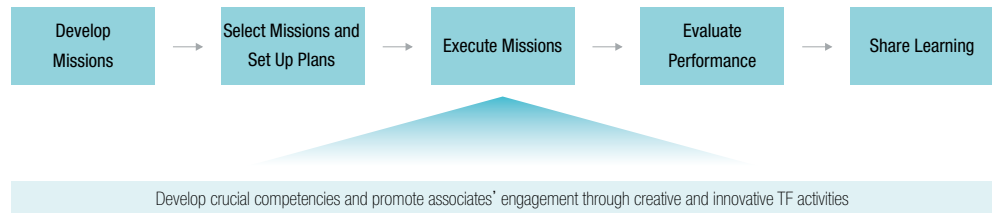
### BnF 3.3.3 Program

Our 11 bases and regional divisions selected 3 action programs for each of our 3 major missions under the 3 BnF strategic orientations to implement a total of 297 innovative activities under the BnF 3.3.3 Program every year. We also map out measures for improvement on the implemented BnF activities through a qualitative and quantitative analysis of past performance in comparison with their initial plans, and then include them in the next year's plan for BnF 3.3.3.

| Strategic Orientations | Global Management   | Management for Public Interests  | Creative and Innovative Management   |
|------------------------|---|--|--|
| Major Missions         | <ul style="list-style-type: none"> <li>Enhance global competencies</li> <li>Global organizational cultures</li> <li>Prepare for global warming</li> </ul> | <ul style="list-style-type: none"> <li>Build reciprocal labor-management relations</li> <li>Strategic social contributions</li> <li>Top priority on customers</li> </ul> | <ul style="list-style-type: none"> <li>Improve operating practices</li> <li>Reduce costs</li> <li>Safe and stable facility operations</li> </ul> |

### BnF Activity Process

Each operating group in charge of implementing the BnF 3·3·3 programs determines the annual project missions every March and compiles reports over the outcomes of program implementation. Each report includes two best practice cases to be shared and communicated to the other groups through case competitions. The BnF Program has proven to be effective on the back of the proactive support and engagement of all our associates and is developing into KOGAS' representative innovation practice through appropriate compensation and encouragement.



### Best Practice

#### 2011 KOGAS BP Competition

KOGAS has held the '2011 KOGAS BP Competition' in November 2011 to systemize our hands-on experience and accelerate our drives to improve work processes. Incheon Terminal Division has won the Grand Prize with the 'SOS Level 1 Project', which can reduce costs by KRW 14.1 billion by improving the functionality of existing gasification facilities to raise the maximum output without facility expansion.





## Knowledge-based Management

### Learning Community CoP

KOGAS creates an advanced body of collective knowledge and we encourage our associates to improve their troubleshooting skills through the activities of CoP (Community of Practice), a voluntary learning community program, to share the outcomes across the company and enhance operating efficiency.

In 2011 alone, 519 CoPs were established and 99 out of the newly established practices were designated as Advanced CoPs according to fair and strict reviews. 9 out of 3,931 knowledge items were rated as highly valuable. These knowledge-based management activities have created financial benefits with a total worth of KRW 156,207 million. We currently review plans to patent the 99 advanced CoPs and the 9 highly valuable knowledge items to capitalize valuable knowledge assets.

#### Best Practice

##### Awarded an 'Innovation Prize' in the Knowledge Innovation Award

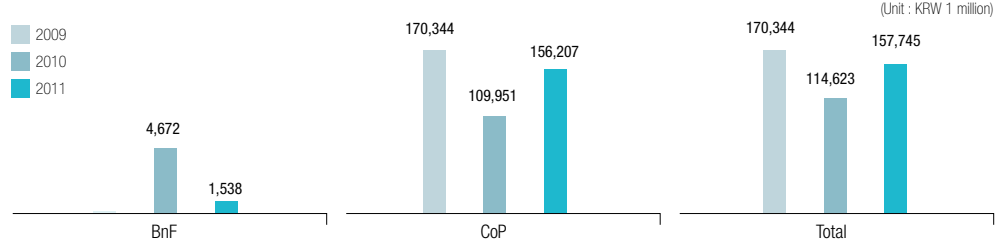
KOGAS has received an 'Innovation Prize' in the public sector of the 12th Knowledge Innovation Award in March 2011. Our company has earned high ratings for conducting innovative activities based on our strategic objectives and core competencies, adopting a professional management system, continuously developing core competencies, and promoting field innovations in our organizational culture and systems.



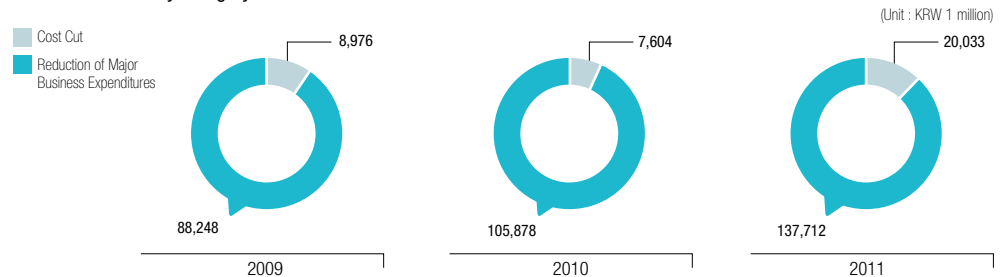
## Benefits of Innovation Programs

BnF activities and knowledge-based management practices have returned financial benefits worth KRW 157,745 million in 2011, up 38% from the previous year. Cost reductions account for 12.7% of the benefits while the reduction of major business expenditures account for the remaining 87.3%.

### Financial Benefits by Program



### Financial Benefits by Category



# Upgrading Core Technologies

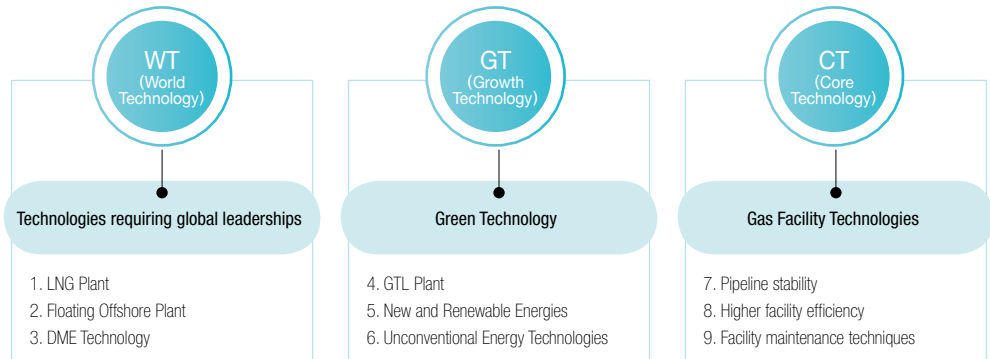
## Establishing the R&D Roadmap

KOGAS is set to develop advanced core natural gas technologies by 2020 to accomplish our mid-term and long-term R&D objective. Our company has set up three basic strategies for making selective investments, reinforcing the roles of the profit center, and revamping the R&D system to develop our R&D center into one of the world's top-notch energy research institutions.

|                |   |  |  |
|----------------|---|--|--|
| Vision         | Leading Future Values, World First Class R&D of KOGAS   |  |  |
| Objective      | Upgrading Core Natural Gas Technologies   |  |  |
| Strategy       | Selection and Concentration   | Reinforcing Profit Center Role   | Revamp R&D System  |
| Priority Areas | <ul style="list-style-type: none"> <li>Select priority research areas on selection and concentration</li> <li>Restructure R&amp;D portfolio</li> <li>Continuously expand R&amp;D investments</li> </ul> | <ul style="list-style-type: none"> <li>Develop profit opportunities</li> <li>Adopt and systematize processes</li> <li>Set up R&amp;D system</li> <li>Commercialize R&amp;D outcomes</li> </ul> | <ul style="list-style-type: none"> <li>Overhaul research project selection procedures</li> <li>Overhaul research project evaluation system</li> <li>Expand research project dropout system</li> <li>Heighten management of commissioned research projects</li> </ul> |

## R&D Sectors

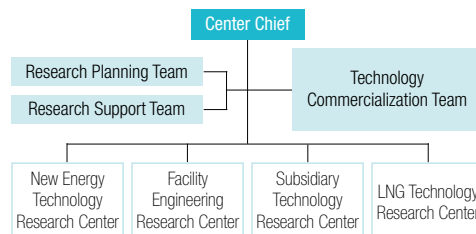
The KOGAS R&D Center selects several core technology development projects in 3T-9F (3 Technologies 9 Fields) in consideration of the economic feasibility and strategic suitability of technologies and makes intensive investments in developing such technologies.



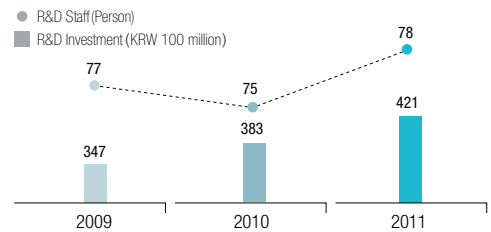
## Promoting R&D

The KOGAS R&D Center was staffed by 78 research professionals as of the end of 2011 and invested KRW 42.1 billion in R&D projects. In response to the strong demands for renovating and strengthening our R&D functions in line with new business environments, KOGAS plans to raise our R&D investments to 4% of total revenue, approximately KRW 96.4 billion in 2015.

R&D Center Organizational Chart



R&D Staff and Investment



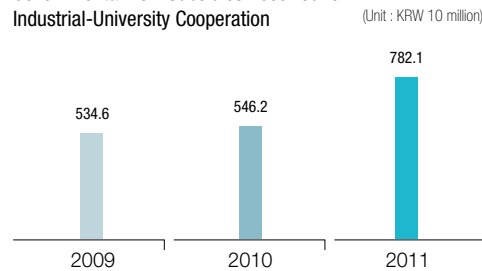
## R&D Results

The KOGAS R&D Center has achieved significant technological advances in LNG storage tanks, LNG warehouse, DME technologies, the IP (Intelligent Pig) sector, the gas field, and new energy technologies in 2011. Our company has also participated in state-sponsored research projects and received KRW 7,820 million in state financings to conduct crucial research projects for the nation's economy. We have also obtained 21 patents and official certifications for 8 programs, which helped expand our intellectual property assets.

### Major Technological Advances in 2011

| Research Areas Key Technological Advances | Key Technological Advances   |
|---|--|
| R&D on LNG Tank/Warehouse                 | <ul style="list-style-type: none"> <li>Developed 270,000kℓ LNG storage tank technologies</li> <li>Developed and patented new LNG liquefaction process technologies</li> </ul>  |
| R&D in DME                                | <ul style="list-style-type: none"> <li>Developed basic designs for commercial KOGAS DME plant</li> </ul>   |
| R&D in IP                                 | <ul style="list-style-type: none"> <li>Secured and commercialized intelligent pig technologies</li> </ul>  |
| R&D in Gas Field                          | <ul style="list-style-type: none"> <li>Completed CBM exploration drilling in the Mongolian project</li> <li>Conducted a state research project on shale/tight gas field developments</li> </ul>  |
| R&D in New Energy Technology              | <ul style="list-style-type: none"> <li>Researched the development and application of hydrogen station control system programs</li> <li>Developed footholds for fuel cell businesses through the household fuel cell monitoring project</li> <li>Developed biogas purification device technologies</li> </ul> |

### Governmental R&D Subsidies Received for Industrial-University Cooperation



### Intellectual Property Acquisitions

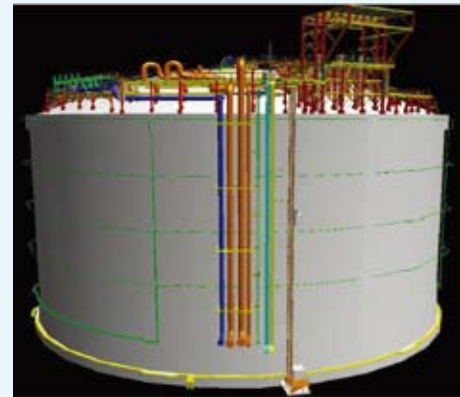
(Unit : Case)

| Intellectual Property | 2009       | 2010      | 2011      |    |
|-----------------------|------------|-----------|-----------|----|
| Patent                | Pending    | 37        | 17        | 32 |
|                       | Registered | 21        | 19        | 21 |
| Program               | Pending    | 3         | 5         | 8  |
|                       | Registered | 3         | 11        | 8  |
| Technology Transfer   | 3          | -         | -         |    |
| <b>Total</b>          | <b>67</b>  | <b>52</b> | <b>69</b> |    |

## Best Practice

### Development of the World's Largest LNG Storage Tank

KOGAS developed the technology for building the world's largest 270,000kℓ LNG storage tank on March 21, 2011. The newly developed LNG tank can be installed at LNG terminals and liquefaction plants and features a 35% larger capacity than existing 200,000kℓ storage tanks: this makes it possible to reduce construction costs by KRW 23.5 billion (15%) per tank. This larger capacity will also help streamline operating and maintenance expenditures. We are currently working on the final designs to apply this new technology to the construction of the No. 10, 11, and 12 tanks in Samcheok LNG Terminal starting July 2011. We expect this technology to reduce building costs by about KRW 70.5 billion compared to existing storage tanks and also expand their capacity by 210,000kℓ.

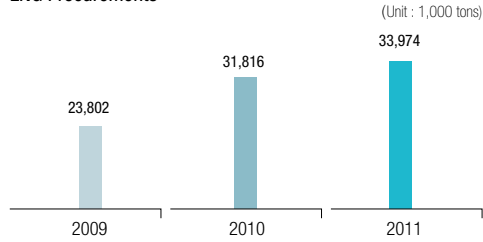


# Major Economic Performance

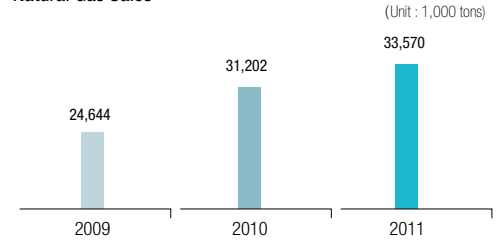
## Domestic Business

### Natural Gas Trading

#### LNG Procurements

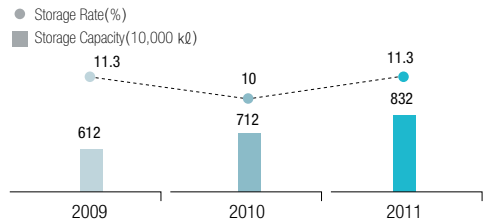


#### Natural Gas Sales

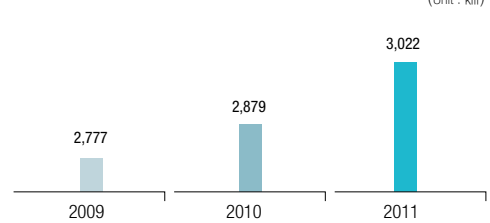


### Gas Infrastructure Development

#### LNG Storage



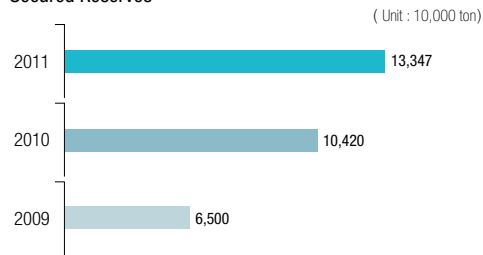
#### Gas Distribution Pipeline



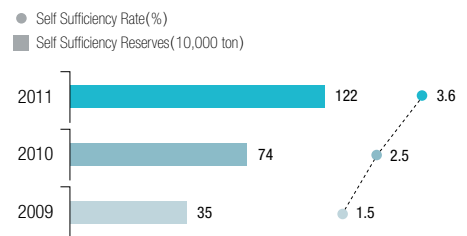
## Overseas Business

### Overseas Resource Development

#### Secured Reserves

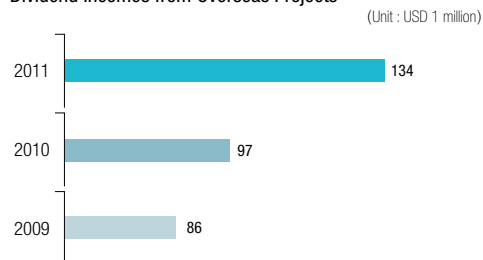


#### Self Sufficiency

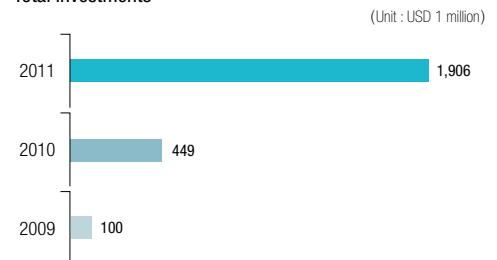


### Overseas Projects

#### Dividend Incomes from Overseas Projects



#### Total Investments



## Finances

### Major Economic Performance

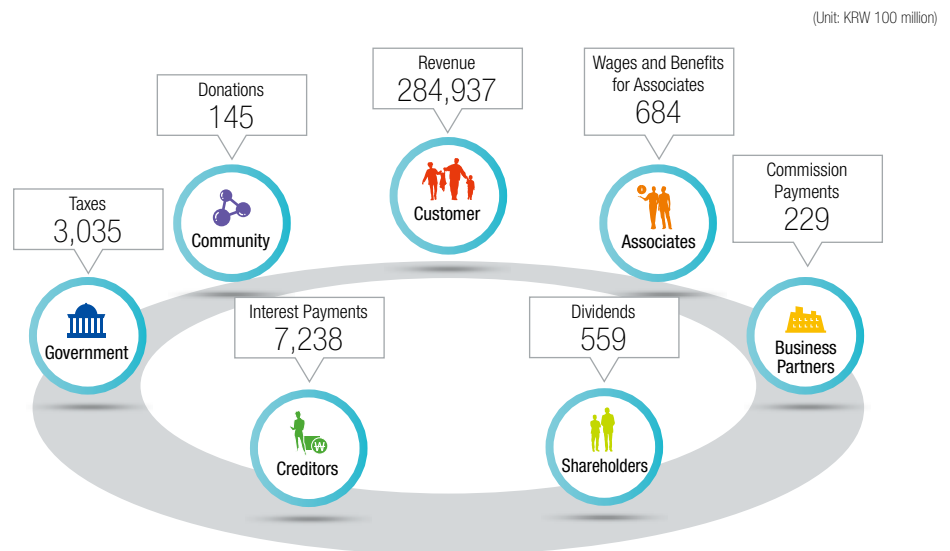
|                  | Unit            | 2009           | 2010           | 2011           |
|------------------|-----------------|----------------|----------------|----------------|
| Revenue          | KRW 100 million | 193,918        | 227,405        | 284,937        |
| Operating Profit | KRW 100 million | 7,940          | 9,701          | 10,182         |
| Debt Ratio       | %               | 63.4           | 52.0           | 55.7           |
| Credit Rating    | -               | AAA (Domestic) | AAA (Domestic) | AAA (Domestic) |
|                  |                 | A2 (Moody's)   | A1 (Moody's)   | A1 (Moody's)   |

※ The 2009 data is subject to the K-GAAP Financial Reporting Standards while the 2010 and 2011 data was compiled pursuant to the K-IFRS Consolidated Reporting Standards.

### Key Financial Indicators

| Category          | Indicators                  | 2009   | 2010 | 2011 |
|-------------------|-----------------------------|--------|------|------|
| Safety            | Current Ratio (%)           | 132    | 138  | 147  |
|                   | Debt Ratio (%)              | 344    | 288  | 348  |
|                   | Interest Coverage (Ratio)   | 1.2    | 1.5  | 1.4  |
| Profitability     | Return on Assets (%)        | 1.0    | 0.9  | 0.5  |
|                   | Return on Equity (%)        | 4.6    | 3.6  | 2.2  |
|                   | Operating Margin (%)        | 4.1    | 4.3  | 3.6  |
| Growth Potentials | Revenue Growth (%)          | △ 16.3 | -    | 25.3 |
|                   | Tangible Asset Growth (%)   | 23.5   | 6.6  | 7.7  |
|                   | Operating Profit Growth (%) | 24.9   | -    | 5.0  |
|                   | Total Asset Growth (%)      | 4.5    | 4.9  | 19.9 |

## Distribution of Economic Benefits



# Environmental Performance

Investment in Environmental Projects



KRW 27.2 billion

GHG Emission Reductions by Building New Renewable Energy Facility



470 tCO<sub>2</sub>eq

First in the Energy Industry to Obtain ISO 50001 Certification

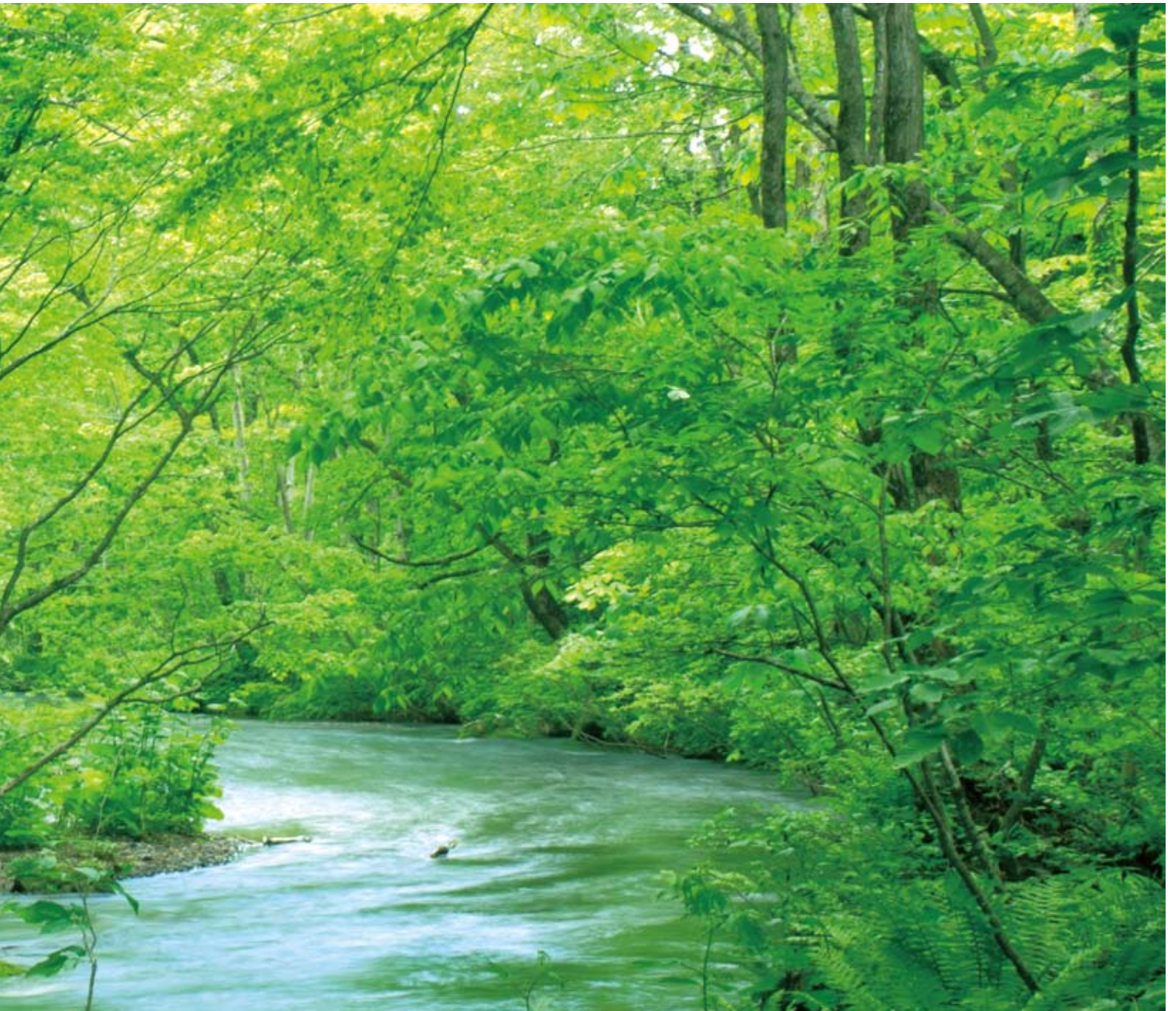


Engaged in the Carbon Disclosure Project



Participated in Biodiversity Protection Initiatives





KOGAS invested in Mexico's Manzanillo LNG terminal project as a constructor and the operator, and I am in charge of managing the safety and health of the project site and workers, their training, and work environment on the project site. KOGAS demonstrated good field performance in terms of all the sectors related to environment, safety, and health. The company can also be considered to have fully complied with the regulations. KOGAS is scheduled to operate the facility for 20 years from 2011 to 2031. I expect the company to bring new advances to the safety and health management systems to help reduce accident risks on site during the project period.



Representative of the Ministry of Labor and Social Welfare, Colima, Mexico\_ José Daniel Rodríguez Herrera

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# Environmental Management System

## Environmental Infrastructure

Clearly aware of the responsibilities and roles for addressing climate change as an energy company, KOGAS works to minimize the environmental impact caused by the construction and operation of natural gas facilities and diminish global climate change.

### Computerized Environmental Management System

KOGAS establishes an integrated environmental management system within the company's intranet in line with ERP (Enterprise Resources Planning). We then use this to control access to data about environmental contaminants and improve the accuracy of data.

### Environmental Performance Evaluation (EPE)

KOGAS has established an EPE (Environmental Performance Evaluation) system in accordance with domestic and overseas guidelines in December 2007. We manage environmental performance indicators as a tool for sustainable management to enhance the effectiveness of environmental management. Our company also monitors environmental performance indicators through annual evaluations to facilitate the qualitative controls of environmental management performance.

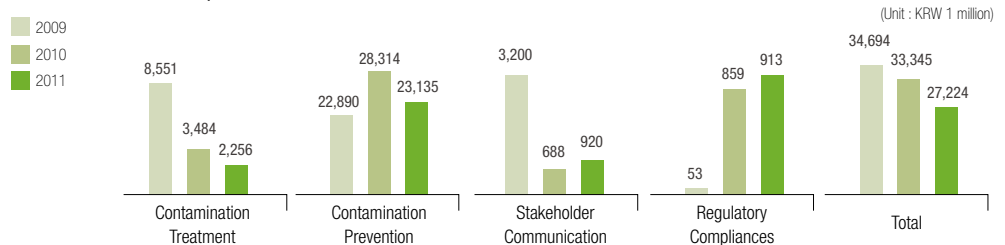
### Environmental Crisis Management System

KOGAS has compiled our 「Ocean Pollution Management Manual」 in December 2007 to cope with maritime disasters and set up an efficient system to handle crises in a fast and efficient manner. Our company also continuously trains our staff and prepares more anti-disaster supplies than legally required as contingencies to minimize the environmental aftermath of such crisis.

## Environmental Cost Management

KOGAS manages expenditures on environmental programs under four different activity categories - contamination prevention, contamination management, stakeholder communication, and regulatory compliances - pursuant to our environmental spending guidelines. Our company has spent about KRW 27.2 billion won for environmental activities in 2011, about 37% of which was disbursed for preventing and managing air pollution.

### Annual Environmental Expenditures



### 2011 Environmental Expenditure Statement

| Category            | Activities | Contamination Treatment | Contamination Prevention | Stakeholder Activities | Regulatory Compliance and Restoration | Total  |
|---------------------|------------|-------------------------|--------------------------|------------------------|---------------------------------------|--------|
| Air                 |            | 203                     | 9,844                    | -                      | -                                     | 10,047 |
| Water               |            | 1,392                   | 415                      | -                      | -                                     | 1,807  |
| Waste               |            | 70                      | 19                       | -                      | -                                     | 89     |
| Noise and Vibration |            | 0.5                     | 641                      | -                      | -                                     | 641    |
| Soil                |            | 3                       | 56                       | -                      | -                                     | 59     |
| Others              |            | 588                     | 12,160                   | 920                    | 913                                   | 14,581 |
| Total               |            | 2,256                   | 23,135                   | 920                    | 913                                   | 27,224 |

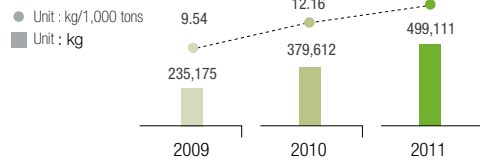


# Environmental Management Performance

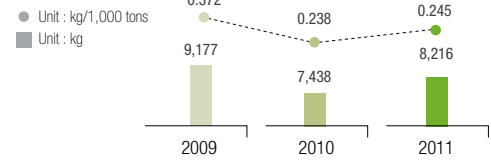
## Air Pollutant Management

Submerged combustion vaporizers (SMV), gas heaters, cogeneration facilities, boilers, and air conditioners are KOGAS' main air-polluting production and distribution facilities. KOGAS operates these facilities to minimize the emission of contaminants. Cogeneration facilities are managed so as not to exceed 75ppm in pollutant density, which is half the domestic emission standard of 150ppm. We also monitor and control NOx density and emissions by using the TMS (Tele-Monitoring System) installed at stacks on a real-time basis.

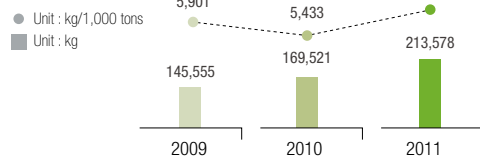
### NOx Emissions



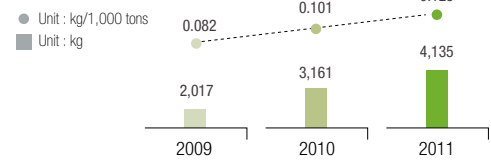
### SOx Emissions



### CO Emissions



### Dust Emissions



## Water Pollutant Management

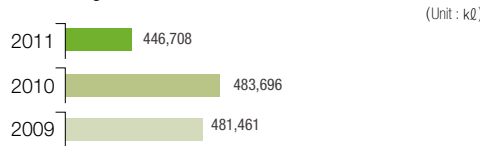
### Sewage

KOGAS manages sewage through sewage treatment facilities at our waterfront production plants in Pyeongtaek and Incheon LNG Terminal before discharging it into seawater. The sewage from Tongyoung Terminal and the valve stations of the Trunk Line Operation Department is sent to local sewage treatment plants for processing. The pollutant concentration of wastewater effluent is controlled so that it does not exceed the legal limit of 20ppm.

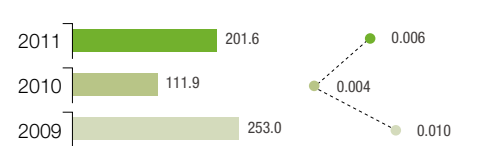
### Wastewater Management

As KOGAS' natural gas production processes consume a limited amount of water, they have little impact on water environments. Incheon LNG Terminal operates its own water and waste oil treatment facilities while other plants recycle the water supply for all the processes within their facilities to prevent the discharge of contaminants. The seawater used for LNG vaporizers is discharged into the ocean without any harmful effects after being used for heat exchanges.

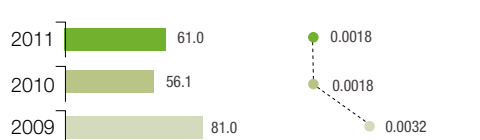
### Water Usage



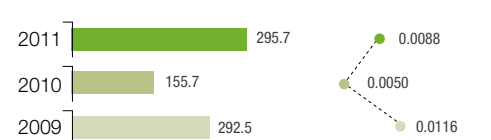
### BOD Emissions



### COD Emissions



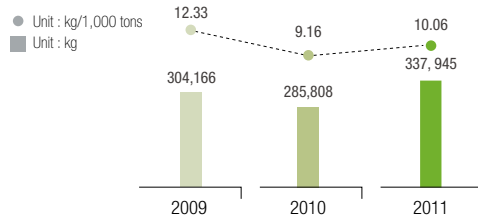
### SS Emissions



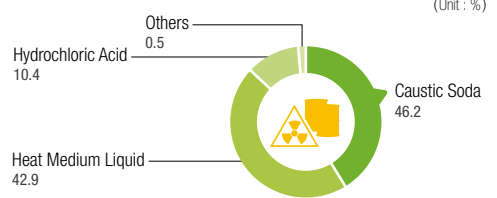
## Control of Hazardous Chemicals

Caustic soda (NaOH) and hydrochloric acid (HCl) are the major hazardous chemicals used in KOGAS' production processes. These substances are applied to control the acidity of the contents in the tanks of submerged combustion vaporizers (SMV), which are LNG gasification facilities. We have researched measures to reduce the use of such chemical counteragents for submerged combustion vaporizers.

### Hazardous Chemical Emissions



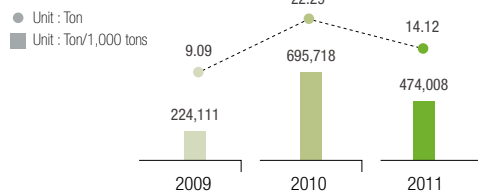
### Proportional Emissions by Category (2011)



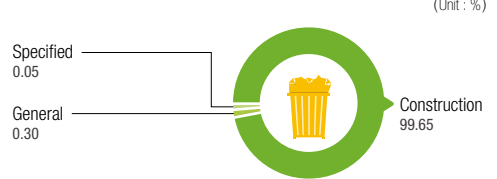
## Waste Management

KOGAS applies stricter standards to the management of our waste production than the applicable regulations, and we perform periodical inspections on waste management service providers.

### Waste Discharges



### Proportional Emissions by Category (2011)



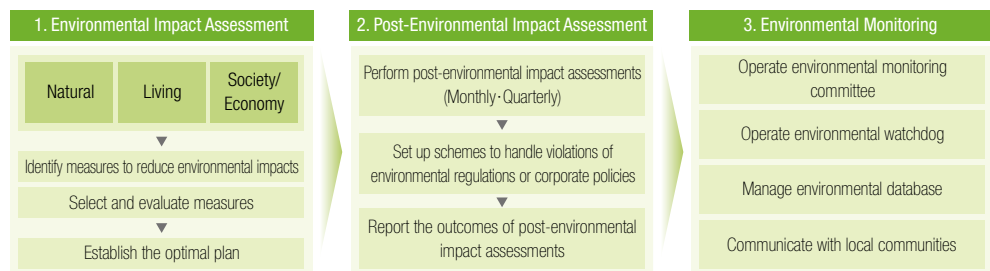
## Biodiversity Management

Aware of the importance of biodiversity in addressing climate change, assuring sustainable energy supplies, and building an eco-friendly society for future generations, we, at KOGAS, apply strict standards to the construction and operation of terminals to preserve biodiversity.

Our company performs environmental impact assessments to prevent environmental degradations, assesses post-environmental impacts to handle environmental degradations in a timely manner, monitors environmental conditions to manage environmental data, and alleviates the anxieties of local communities as part of our efforts to preserve biodiversity. We are committed to protecting local biodiversities and preventing topographic and ecological damages as much as possible.

As KOGAS is expected to become increasingly involved in overseas resource developments, we are monitoring international energy and environmental initiatives to carry out stricter environmental controls than legally stipulated.

### KOGAS Biodiversity Management System



# Environmental Practices

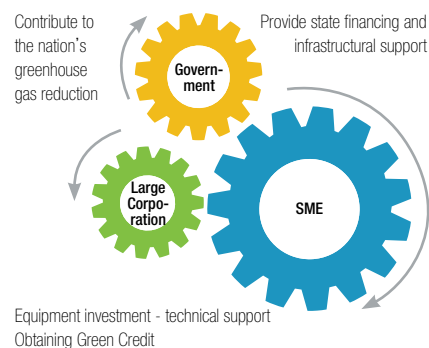
## Green Partnerships

### Supporting Eco Initiatives of Partners

Our company periodically inspects the regulatory compliance and environmental management of our partners, based on the environmental management plans on the compliance and implementation of KOGAS' environmental management system. These plans include the handling and storage of wastes and prevention of scattering dust. We also take measures to make necessary corrections and provide technical guides, equipment, training data, and instructions to help our partners enhance their environmental management performance.

### Green Credit Program

Under the Green Credit Program, large corporations provide financing and technical support to help SMEs reduce greenhouse gas emissions and receive a portion of credits for emission cuts in return for such support. The program provides a win-win mechanism through which large corporations can reduce carbon emissions cost-effectively while SMEs can cut their greenhouse gas emissions and raise energy efficiencies through receiving support. At KOGAS, we plan to fulfill our social responsibilities as a public enterprise by cutting greenhouse gas emissions and upholding the growth of SMEs through the Green Credit Program.



## Environmental Education Programs

KOGAS commissions a professional education service institution to provide environmental management education to all our associates, helping them improve their environmental management performance by raising awareness of the values of environmental protection.

### Environmental Management Education Curriculums

| Course                                | Trainee                                    | Agency            | Contents  | Note              |
|---------------------------------------|--|-------------------|---|-------------------|
| Air Environment Professional          | Air Environment Manager                    | KEPA              | · Air pollution regulations<br>· Operation and management of prevention facilities  | Legally required  |
| Water Environment Professional        | Water Environment Manager                  | KEPA              | · Water pollution regulations<br>· Operation and management of prevention facilities                                      | Legally required  |
| Hazardous Substance Management        | Hazardous Substance Manager                | KCMA              | · Hazardous Substance Management Act, etc.  | Legally required  |
| Ocean Pollution Prevention            | Ocean Pollution Prevention Manager         | MERTI             | · Ocean pollution management  | Legally required  |
| In-house Training                     | Environmental Managers or Management Staff | R&D Division      | · ISO 14001 practices<br>· ISO 14001/9001 internal audit program<br>· Environmental management accounting and regulations | -                 |
| External Training                     | Environmental Managers or Management Staff | KEPA              | · Environmental preservation  | -                 |
| Environmental Expert Session          | Entire Staff of Terminal Base              | KEMCO             | · EnMS  | -                 |
| In-house Staff Training Program       | Entire Staff of Terminal Base              | Green Growth Team | · Energy-saving activities<br>· Low-carbon green growth<br>· Contaminant-reduction plans                                  | In-house training |
| In-house Environmental Staff Training | Environmental Managers                     | EHSQ Team         | · Environmental regulations and procedures<br>· Environmental accounting<br>· Environmental labeling                      | In-house training |
| Bunkering Staff Training              | Bunkering Staff                            | EHSQ Team         | · Cautionary information on bunkering<br>· Ocean Pollution Prevention Act, etc.   | In-house training |

## Green Communication

Aware of the importance of autonomous practices and contributions in preventing global warming, KOGAS actively engages in maintaining green communication with other corporations, social partners, and local communities.

- **Gas Science Museum**

KOGAS runs the Gas Science Museum at its LNG terminal base to promote the environmental benefits and values of LNG for environmental protection. The museum is one of the major cultural attractions in the region, receiving a cumulative total of 1.2 million visitors. About 100,000 visitors come to visit this museum annually.



- **Green Bazaar**

KOGAS participates in a joint green bazaar project, 'Green Life Together', with the Hangang Environmental Agency and Green Company Council. Together, we collect and donate recyclable items to help raise public awareness of the green lifestyle and the importance of energy savings and recycling.



- **Cultural Heritage Preservation**

KOGAS inspects the safety of gas facilities, repairs any malfunctioning facilities, and cleans the environments of cultural heritage sites to contribute to the preservation of local heritage and enhance its reputation as a community-friendly corporation.



- **Beach Cleaning Day**

We collect garbage and trash on beaches and roadways along our LNG terminal bases to help protect the clean and beautiful environments on Beach Cleaning Day.



### Best Practice

- **The New Green Headquarters Project**

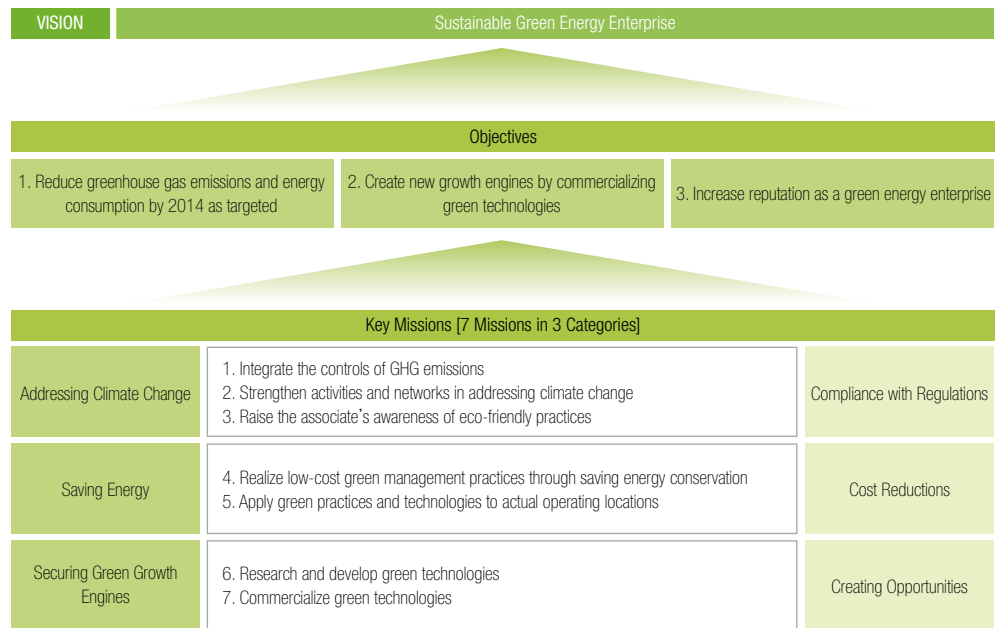
KOGAS plans to build a new head office building as we relocate our headquarters to Daegu. This new building is designed to reduce about 2,700 tons of greenhouse gas emissions by satisfying the requirements of Building Energy Efficiency Level 1, enabling an energy savings of over 50% compared to regular office buildings (approximately KRW 1.1 billion/year). It will also be considered Top Eco-Friendly Construction Grade, Intelligent Construction Level 1 to minimize the building maintenance costs, and Preliminary Certificate for Top High-Speed Information Communication Grade. The building is also designed to use renewable energy sources (solar power, geothermal heat) for all its interior lighting, meeting the company's reputation as an eco-friendly energy company.



# Strategic Green Growth

## Green Growth Strategy

KOGAS has established green growth strategies as Korea's leading eco-friendly energy company to actively engage in the government's 'Low-Carbon Green Growth' drive. This is because we believe that the green growth strategy is not an option but a requirement for our company's survival and sustainable growth. Under the vision of becoming a 'sustainable green energy enterprise', KOGAS is pushing forward 7 missions and 52 action plans in three categories: 'addressing climate change', 'saving energy' and 'securing green growth engines'.



## Green Growth Organization

KOGAS' green growth strategies are determined and implemented through a two-step deliberation process. The Green Growth Execution Council, which consists of the directors of the related departments in charge, reviews the agenda on the green growth initiative. Afterward, the Green Growth Committee comprised of executives sets up the final strategic plans and deliberates on key issues in addressing climate change.



# Addressing Climate Change

## Low-Carbon Natural Gas Energy

As natural gas emits less carbon and air pollutants than other fossil fuels, it will be an effective clean energy source in bridging the transformation into renewable energy-dependent environments. The demands for natural gas are expected to further increase as the Korean government pushes for low-carbon green growth drives in line with global efforts to address climate change. KOGAS will continue to fulfill its responsibilities as a clean energy provider.

## Establishing the GHG Inventory Control System

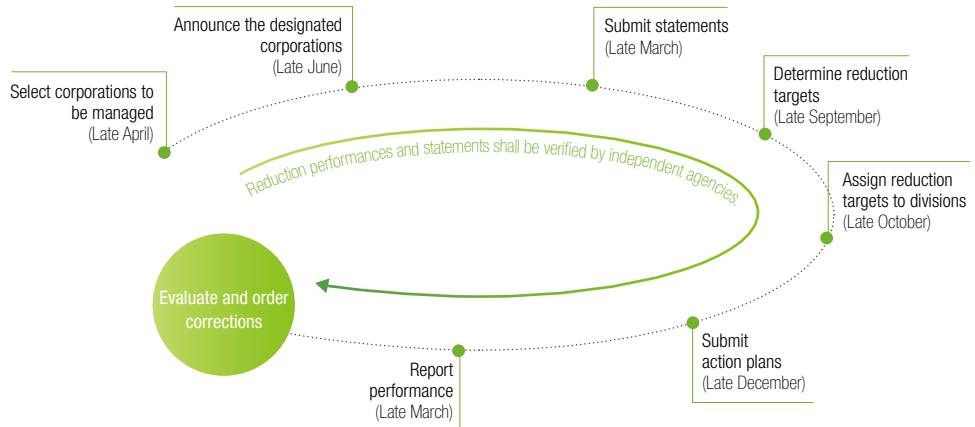
KOGAS has been working to identify direct and indirect greenhouse gas sources within our operations. We also assess the respective emissions to secure a footing for further efforts to reduce GHG emissions by clearly tracking the GHG data. Our company also developed and applied a GHG inventory guideline to facilitate the efficient control of GHG emissions. In addition to KOGAS' GHG inventory controls, we plan to build an IT system to manage GHG gas emissions and energy consumption, as well as reduce the emissions more effectively and contribute to the global initiatives to stop climate change.

## GHG & Energy Management Guidelines

KOGAS submitted a GHG & Energy Statement for the years between 2007 and 2011 and was assigned a 2012 GHG reduction target from the government in accordance with the 'Guidelines for GHG & Energy Management', one of the government's key policies for the low-carbon green growth initiative. KOGAS has compiled these reduction plans from our divisions and submitted a new plan to the government in December 2011. We have been executing the plan as scheduled to achieve our energy reduction targets.

The guideline program is designed to assign GHG and fossil fuel consumption reduction targets to corporations that cause large GHG emissions or consume a lot of energy. Performance assessments are then used to manage and support such corporations. The government sets GHG and energy consumption reduction targets for these companies, and then uses incentives and penalties (instructions, fines, etc.) to help them accomplish these goals.

### Guidelines for GHG & Energy Management



### Natural Gas Incentives

KOGAS offers incentive grants to promote the use of eco-friendly natural gas to encourage industries to reduce greenhouse gas emissions. Categorizing the incentive program into those for industrial use and cogeneration use, we provide a variety of subsidies, installation incentives, and design incentives to reduce heavy cost burdens for the initial installations of natural gas facilities. The incentive program leads many companies to replace Bunker C Oil - which has high amount of pollutants - with natural gas to fuel their operations and build eco-friendlier systems. We also promote cogeneration systems to allow corporations to reduce their energy consumption through efficient energy use and improve efficiency in the country's energy network. We have granted KRW 4,842 million in 2011, up 70% from a year earlier.

### Carbon Disclosure Project

KOGAS has been participating in the Carbon Disclosure Project (CDP) since 2008. Our company provides accurate KOGAS data to financial institutions and investors across the world to help them clearly assess the investment risks and opportunities related to climate change through the data disclosure project. The project's ultimate goal is to help minimize the relevant investment risks.

### GHG Emissions

In 2011, KOGAS has emitted a total of 622,750tCO<sub>2</sub>eq in greenhouse gases, 305,215tCO<sub>2</sub>eq directly and 317,535tCO<sub>2</sub>eq indirectly, up 18.6% from the previous year. The emission per unit of natural gas sales stood at 18.6 (tCO<sub>2</sub>eq/1,000 tons), up about 1.8 (tCO<sub>2</sub>eq/1,000 tons) from a year earlier.

| Category   |              | 2009    | 2010    | 2011    |
|--|--------------|---------|---------|---------|
| Natural Gas Sales (1,000 tons)                                     |              | 24,644  | 31,202  | 33,570  |
| Greenhouse Gas Emissions (tCO <sub>2</sub> eq)                     | Direct GHG   | 144,406 | 232,164 | 305,215 |
|  | Indirect GHG | 245,889 | 292,730 | 317,535 |
|  | Total        | 390,295 | 524,894 | 622,750 |
| Greenhouse Gas Emissions per Unit (tCO <sub>2</sub> eq/1,000 tons) |              | 15.8    | 16.8    | 18.6    |

\*The GHG emission data specified above may differ from the data released by GfR (Greenhouse Gas Inventory & Research Center of Korea) due to the difference in rounding methods.

### Best Practice

#### The Pyeongtaek Terminal Division Earns a Carbon Emission Certificate

KOGAS' Pyeongtaek Terminal Division has obtained the gas industry's first Carbon Emission Certificate. The certificate program calculates the carbon emissions generated from the entire production and service processes, and then affixes labels with this carbon data to products. The certificate program aims to promote low-carbon production and consumption practices as part of the efforts to address climate change. KOGAS is set to expand the certificate program to other operations to spearhead the industrial efforts to reduce greenhouse gas emissions.



# Efficient Use of Energy

## Energy Saving Committee

As KOGAS' greenhouse gas emissions are directly related to the energy input into our production process, our company runs an Energy Saving Committee to promote the efficient use of energy across our operations. We set enterprise-wide energy saving targets and assign specific goals to our 14 operating locations on an annual basis. The Green Growth Team, which is in charge of managing energy consumption, regularly analyzes and assesses energy consumption data and encourages the company's associates to conserve more energy by granting prizes to energy-efficient operations.

## Establishing the Energy Management System

KOGAS was the first in the domestic gas industry to set up a pilot energy management system (EnMS) at the Incheon Terminal Division in 2011. We did this in an effort to reduce greenhouse gas emissions and establish an energy management structure. Our company is ready to gradually expand the coverage of EnMS over the entire organization by 2014 in accordance with our mid-term management blueprint to conserve more energy.

### Energy Management System ISO 50001 Standard

#### 1. Management Responsibilities

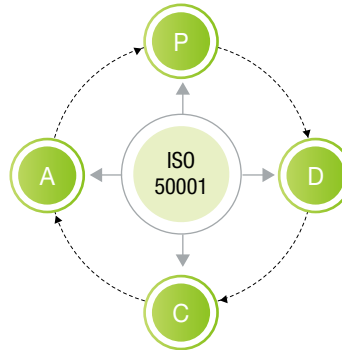
- Management Determination
- Energy Policy
- Energy Executive Committee
- Strategic Planning
- Energy Management Supervisor
- Energy Management Team

#### 5. Management Review

- Management Review

#### 4. Inspection and Evaluation

- Energy Monitoring and Assessment
- Management of Monitoring and Assessment Devices
- Evaluation and Inspection of Compliance
- Performance Management
- Corrective and Preventive Measures on Non-compliance
- Internal Audit



#### 2. Energy Management Planning

- Energy Data Analysis
- Regulatory Requirements and Others
- Energy Targets and Specific Goals

#### 3. Implementation and Operation

- Resources, Roles, Responsibilities and Authorities
- Eligibility, Training and Awareness
- Purchasing
- Equipment, Facility and Process Management
- Application of Energy-conscious Design
- Energy Management Project
- Management of Outsourced Energy Services
- Communication
- Documentation
- Record Management

## Adopting Green Facilities

KOGAS is adopting new eco-friendly facilities and systems to enhance its energy efficiency. We invested KRW 732 million in installing renewable energy facilities at our 6 regional offices in 2011 alone to produce 115.2kW of electricity. As of March 2012, the newly installed facilities generated 2,500kWh of electricity, which amounted to the greenhouse gas emissions of 470tCO<sub>2</sub>eq on an annual basis. We also plan to build small-scale wind power generators, develop hydrogen fuel cell technologies, and install thermal energy-based air conditioners at our production facilities to conserve more energy and further increase our energy efficiency.

### Renewable Energy Facility Installations in 2011

| Location                     | Type       | Capacity (kW) | Investment (KRW 1,000) | Power Generation (kWh) |
|------------------------------|------------|---------------|------------------------|------------------------|
| Pyeongtaek Terminal Division | Sunlight   | 3.0           | 21,360                 | -                      |
| Tongyoung Terminal Division  | Sunlight   | 27.0          | 176,000                | 4,188                  |
| Gyeongbuk District Division  | Sunlight   | 0.5           | 6,279                  | 96                     |
| Gangwon District Division    | Solar Heat | 4.6           | 42,075                 | -                      |
| Jeonnam District Division    | Sunlight   | 30.0          | 204,067                | 12,900                 |
| Jeonnam District Division    | Sunlight   | 0.1           | 6,623                  | -                      |
| Gyeongin District Division   | Solar Heat | 0.01          | 4,110                  | -                      |
| Gyeongin District Division   | Sunlight   | 50.0          | 271,067                | 2,500                  |

\* Power generation data was compiled as of March 2012.



## Reducing Energy Consumption for Transport and Travel

KOGAS procures residual heat from heat producers neighboring its distribution stations to reduce fuel consumption for gas heaters and conserve energy usage for the transport of materials and products. Having adopted this approach, our company's Joongdong station has cut greenhouse gas emissions by 15% from a year earlier. KOGAS also operates commuter shuttle buses (6 for head office, 17 for regional offices) and an alternating driving day program to encourage our associates to reduce energy consumption and carbon emissions caused by their commuting and business travel. We have also designated November 11 as 'Car-Free Day' to encourage commuters to use public transit services.

## Energy Consumption

In 2011, KOGAS has consumed 12,129TJ of energy, 6,000TJ directly and 6,129TJ indirectly, up 18.9% on a year-to-year basis. Our company also consumed 0.361 (TJ/1,000 tons) of energy for each unit of natural gas sales, up 0.034(TJ/1,000 tons) from a year earlier.

| Category                                    | 2009            | 2010   | 2011   |        |
|---|-----------------|--------|--------|--------|
| Natural Gas Sales (1,000 tons)              | 24,666          | 31,202 | 33,570 |        |
| Energy Consumption (TJ)                     | Direct Energy   | 2,835  | 4,562  | 6,000  |
|   | Indirect Energy | 4,732  | 5,636  | 6,129  |
|   | Total           | 7,567  | 10,198 | 12,129 |
| Energy Consumption per Unit (TJ/1,000 tons) | 0.307           | 0.327  | 0.361  |        |

\* The energy consumption data specified above may differ from the data released by GIR (Greenhouse Gas Inventory & Research Center of Korea) due to the difference in rounding methods.

### Best Practice

#### The Incheon Terminal Division is ISO 50001 Certified for its Energy Management System

KOGAS' Incheon Terminal Division has obtained ISO 50001 certification for its energy management system from the Korea Energy Management Corporation on December 28, 2011. This energy management system is a new energy management paradigm designed to enhance energy efficiency, and it is rapidly gaining popularity in the U.S. and Europe. It was officially registered and proclaimed as a new international standard (ISO 50001) in June 2011. The Incheon Terminal Division has standardized its energy management processes and enhanced the energy efficiency in processing and facility operations by conducting PDCA (Plan-Do-Check-Act) programs to make use of energy for facility operations more efficiently. Based on such efforts, The Incheon Terminal Division has established and been operating the energy management system pursuant to international standards and became the first among domestic public enterprises and energy corporations to have its system officially certified. This certified system will be a great role model for KOGAS' initiative as we expand our overall energy management system. We expect this system to develop into a well-structured management scheme to help promote eco-friendly growth.



# Social Performance



## Executives and Employees



**2,947** persons

## The General Transparency Survey of the Anti-corruption & Civil Rights Commission



Ranked **12** notches higher from the previous year

## Topped the Public Enterprise Customer Satisfaction Survey



For **5** consecutive years

## Social Contribution Mileage



Up **86.3%** from the previous year

## Industrial Accidents in 2011



**0** case



It has been five years since KOGAS started sponsoring East Timor's Youth Soccer Team. When KOGAS disclosed its sponsorship plan, East Timor had just ended the civil war that severely devastated the country. The company's support has been a great aid for the young, barefooted soccer players of East Timor. KOGAS currently provides us with accommodations, meals, and practice grounds during our training trip in Korea and also grants soccer supplies to our team. The trips to Korea have been particularly valuable experiences for our players. I deeply appreciate KOGAS' sponsorship and try to tell others about such contributions because the company doesn't seem to advertise this sponsorship program much. I hope that our partnership continues for a long time and that the company will also pay attention to the poor educational environment in East Timor in the future.



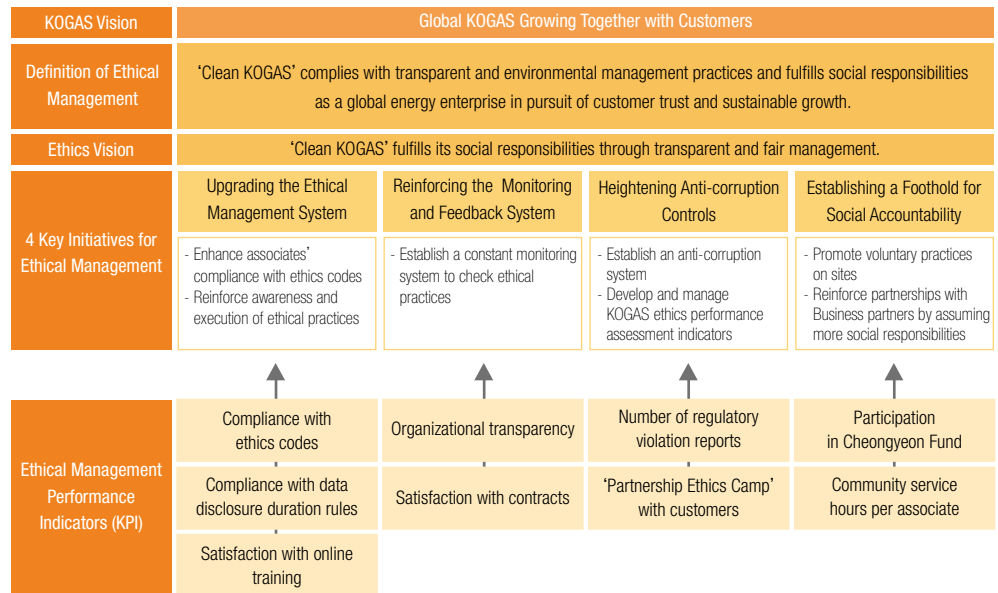
Head Coach of East Timor Youth Soccer Team \_Kim Shin-hwan

# Fair and Transparent Management

## Transparent Management System

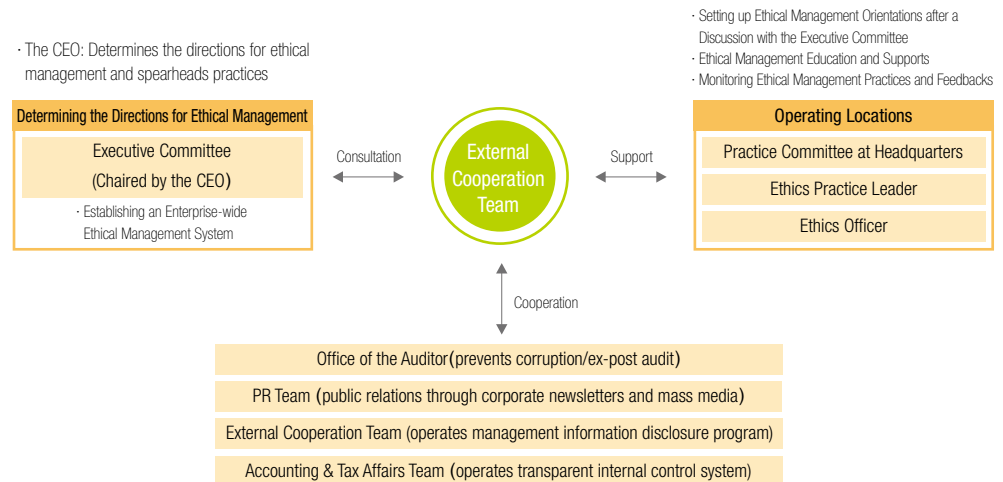
### Initiatives

We at KOGAS establish and execute four ethical management strategies under our ethical vision of becoming a 'Clean KOGAS', a socially accountable enterprise based on transparent management. We also periodically examine the strategic progress and update our strategic initiatives.



### Implementing Organization

The External Cooperation Team is in charge of the company's ethical management, supervising the establishment and revision of ethics codes and the establishment and operation of our ethical management practice programs. This team also periodically monitors the progress to enhance its executions and ethical standards as well. Based on the close collaborations with the Executive Committee, Office of the Auditor, and field organizations, the team acts as KOGAS' ethical management hub to improve the company's ethical management practices and standards.



### Strengthening Anti-corruption Practices

#### Reinforcing Anti-corruption and Governance Innovation Taskforce

KOGAS sets up and operates the Anti-corruption Transparency Committee as part of our efforts to prevent corruption and build transparent organizational cultures. Under this committee, the Transparency Action Committee and field subcommittees are established to promote ethical management practices.



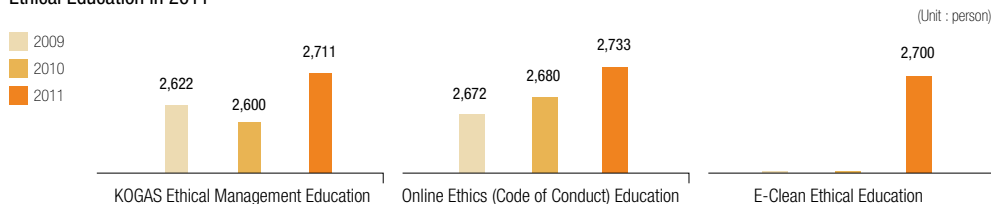
#### Major Performance of Anti-corruption Transparency Committee in 2011

| Category  | Descriptions   |
|---|--|
| Adopting HR Verification Program                    | <ul style="list-style-type: none"> <li>· Prevent the promotion or transfer of low-integrity associates to key positions</li> </ul>   |
| Renovating High Risk Areas                          | <ul style="list-style-type: none"> <li>· Establish and execute 112 action plans to prevent corruption and upgrade system practices</li> <li>- Accounting : 22 plans including the management of vehicle sales</li> <li>- Contracting : 22 plans including the receipt of specification statements for bidding</li> <li>- Construction : 68 plans including the compensations to workers</li> </ul> |
| Expanding Disclosures of Discretionary Expenditures | <ul style="list-style-type: none"> <li>· Disclosing Personnel : President → All executives</li> <li>· Disclosure Method : Annual disclosure of total amount → Monthly disclosure of specific expense items</li> </ul>  |
| Transparency Assessment of High-ranking Officers    | <ul style="list-style-type: none"> <li>· Purpose of Assessment : Enhance the transparency of high-ranking officers and encourage them to spearhead transparent practices</li> <li>· Assessment Subjects : Ethical compliance of high-ranking officers</li> </ul>   |
| Executing Voluntary Property Registration Program   | <ul style="list-style-type: none"> <li>· Purpose : Prevent illegal accumulation of wealth and ensure fair operating practices</li> <li>· Subjects : Directors and managers at Officer Level 1 or higher</li> <li>· Property Registration : Properties of officer and his/her spouse (End of March)</li> </ul>  |
| Others  | <ul style="list-style-type: none"> <li>· Establish internal standards to assess transparent practices</li> <li>· Include ethics questions in the Level 3 promotion test</li> <li>· Revamp subcontracting systems to raise transparency in construction practices</li> </ul>  |

#### Ethical Education for Associates

KOGAS provides ethical education sessions for all associates every year. Our company aims to educate them about the negative impact of corruption and train them to appropriately address such corruption to better cope with ethical dilemmas and enhance overall ethical standards.

#### Ethical Education in 2011



## Clean Management Practices

### External Independent Anti-corruption Reporting Center

In addition to our internal anti-corruption reporting center, Cheongseung, KOGAS is the first among public enterprises to run an external independent reporting center to protect whistle-blowers and corruption reporting. Since an outside agency runs the reporting center, the whistle-blower's privacy is completely protected. We have received 6 reports over unfair practices of construction contractors in 2011 and taken disciplinary actions on those cases. We have also raised the ceiling of rewards for reporting from KRW 200 million to KRW 1 billion and established stricter disciplinary systems to encourage insiders to report more corruption and fraud and prevent such occurrences.



### Reciprocal Management Ethics Camp with Customers

KOGAS executes a special ethical management education program every year to raise the ethical awareness of our customers and partners and build a foothold for anti-corruption reciprocal management practices. We have held 4 ethical education camps in construction, piping maintenance, contracting, and facility maintenance in 2011. Based on such efforts, we are reinforcing our leadership in ethical management as a public enterprise and promoting ethical management practices among our partners.



### Transparency Vows of Associates

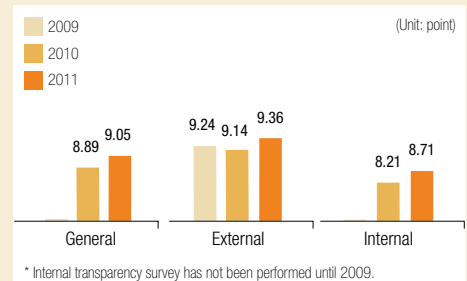
KOGAS has all our executives and employees take transparency vows and execute written pledges to raise their awareness of clean management practices and expand transparency in the company's system as a clean energy provider. We also hold rallies to show our resolve to lead the efforts to eliminate corrupt practices and build a clean and fair society, as well as carry out joint campaigns with private organizations to promote the ethical practices.



## Best Practice

### Rated 'Good' in the Public Institution Transparency Survey

KOGAS ranked 3rd in the 'Public Institution Transparency Survey' performed by the Anti-corruption & Civil Rights Commission to enhance the nation's transparency by building cleaner and more transparent public sectors in 2011, compared to our rank as 15th in 2010. We have earned high ratings for our continuous anti-corruption initiatives such as our Anti-corruption Taskforce. We will continue our pursuit for internal improvements to further upgrade KOGAS' transparency.

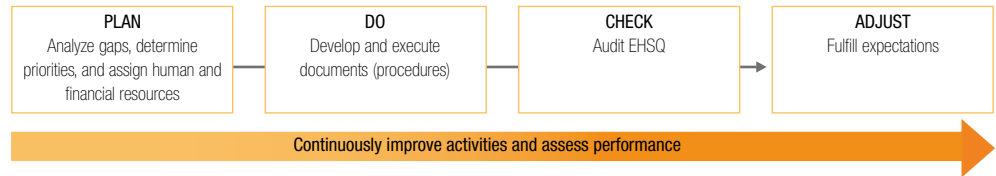


# Safe Work Environments and Healthy Associates

## Operation of the EHSQ System

### EHSQ Operation System

KOGAS manages safety, health and the environment on an integrated basis through our EHSQ (Environment, Healthy, Safety & Quality) System. Since adopting this system in 1997, KOGAS has been making continuous efforts to develop it into an integrated management system. We are also continuing to upgrade the system through the P-D-C-A cycle.



### Establishing the Occupational Health Management System

KOGAS started operating a newly established occupational health management system in September 2011. This system covers the safety control area - including personal protection gear, material safety data sheets (MSDS), and health exposure assessments - and the health management area - including the management and reservation of medical examinations, surveys, and management of patients. We aim to maintain comfortable work environments and ensure compliance with regulations and restrictions such as the Occupational Safety and Health Act by identifying safety and health risks and then controlling and removing these risks by using this system.



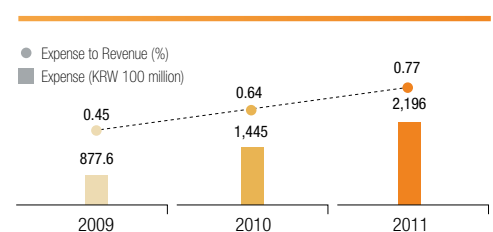
### EHSQ Education & Training in 2011

KOGAS executes medium to long-term roadmaps on EHSQ education and training programs to raise safety awareness among executives and associates and train some associates into EHSQ experts. We have also systematized training data management and launched new in-house training courses in 2011 to improve our operating efficiency.

| Category                              | Curriculums  | Trainees |
|---------------------------------------|--|----------|
| Improvement of Safety Practices       | Gas Fire Control Training  | 481      |
|                                       | Internal Training (3 courses including the EHSQ Field Practice Program)                      | 105      |
| Improvement of Vocational Competences | Internal Education (3 courses including the Accident Inspector Program)                      | 71       |
|                                       | Short-Term Commissioned Training (16 courses including the ISO 9001 System Practice Program) | 43       |

### Safety and Health Expenditures in 2011

KOGAS has spent KRW 219.6 billion in safety and health programs in 2011, up 52% from the previous year. These expenditures amount to about 0.8% of our total revenue. It is expected to increase further as our company plans to build more terminals and expand overseas projects in the coming years.



## Accident-free Work Environments

### Promoting Safety Practices

Given the commitment of our CEO to promote safety practices throughout our company, KOGAS proactively brings attention to safety practices through the joint efforts between labor and management.

#### Vision and Directions of Safety Practices



### Disaster Management System

KOGAS operates a 24-hour monitoring system over gas facilities at the headquarter-based central control room, 8 regional control centers, and 3 control rooms at production plants. We also ensure the safety system, run the cooperation network with related institutions, prepare case-by-case contingency manuals, perform regular emergency drills to promptly handle disasters, and maintain a fast and systematic disaster control program.

We have held 258 disaster control training sessions, including 9 in-house contingency drills and 28 joint training sessions with related institutions, in 2011 to test our company's competency in disaster control and check the cooperation network with affiliates.

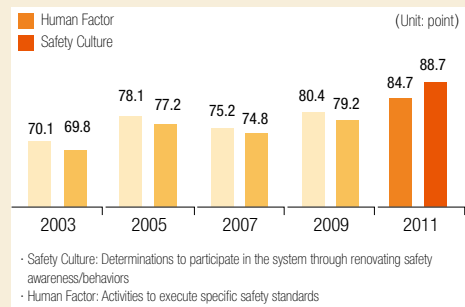
### Risk Factors Management

KOGAS identifies risk factors in the construction, expansion, or alteration of gas facilities and work processes and develops and applies measures to reduce or remove such risks through safety assessments. Using the work safety analysis data accumulated over more than 10 years, we have built a risk factor inventory system to communicate risk data with associates and determine priority safety control targets for safer work environments.

#### Best Practice

##### The 2011 Safety Culture & Human Factor Survey

KOGAS conducts safety culture and human factor surveys every two years to study the safety awareness and behavioral standards. Our company applies the survey results to upgrade the systems and programs to ensure safety in work environments. We saw large increases in the ratings for both safety culture and human factors, which demonstrated that the continuous execution of the EHSQ system has helped promote these practices and resulted in visible outcomes.





**Accident Prevention**

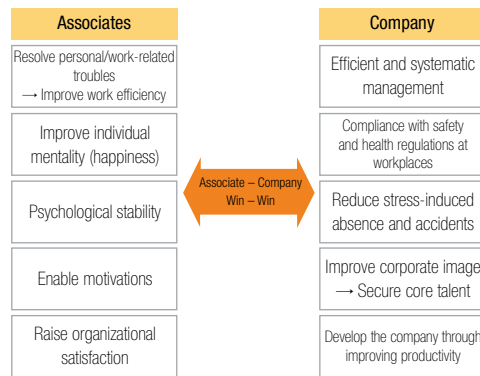
KOGAS conducts safety management practices customized for field operations to ensure an accident and disaster-free work environment, which is the ultimate goal of safety management. The company holds an annual 'Safety Inspection Day' program, which requires the involvement of all associates including the CEO; manages field operations pursuant to approved procedures; and assesses facility safety every five years to remove potential risks in advance and proactively carry out safety practices.

**Health Management**

**Employee Assistance Program**

KOGAS has been implementing the EAP (Employee Assistance Program) since 2009 to help associates resolve various problems and alleviate their stress to achieve higher operating efficiency. 82 executives and employees have received a total of 402 counseling sessions in 2011.

**Expected Benefits from the EAP Service**



**EAP Service Categories**



**Industrial Safety & Health Committee**

KOGAS has set up the Industrial Safety & Health Committee co-chaired by the representatives of labor and management to discuss and determine the major safety and health agenda as part of our efforts to ensure disaster-free work environments. Each committee has the same number of members, representing employees and employers equally. They hold meetings at least once a quarter at the company's 12 operating locations.

**Best Practice**

**The Obesity Control Program for Associates**

KOGAS launched an obesity control program in 2011 to help our associates improve their health and reduce the risks of chronic illnesses as the obesity rate has recently been on the increase among them. We have conducted a joint research on the obesity control program with Bundang Seoul National University Hospital. Their professional medical staff has also offered four educational sessions to the associates. We have also performed periodical obesity assessment programs and provided customized health counseling services to 52 program participants, among whom 41 participants, 79%, have successfully lost their weight. We plan to develop customized programs for small groups, upgrade existing programs and systems, encourage associates to reduce redundancy in dinner parties, and improve the company's cafeteria diet to ensure healthier lifestyles for our executives and employees.



# Human Resource Management

## Executives and Employees

KOGAS recruits and hires executives and employees in accordance with fair and transparent procedures in compliance with the Labor Standard Act, Equal Employment Act, and other regulations. A total of 2,947 associates were in service as of the end of 2011. The wage for newly employed college graduates amounts to about 234% of the legal minimum wage. We see no gender gap in terms of wages.

The number and proportion of female, disabled, and veteran associates are increasing, thanks to KOGAS' growing gender equality and affirmative action. The employee turnover rate also stood at 1.2%, and the actual rate is estimated at 0.6% in consideration of retirement and resignation upon the completion of term. Forced or child labor is completely prohibited pursuant to the Labor Standard Act and the regulations specified by the International Labour Organization (ILO).

(As of December 31, 2011)

|                 |  | Unit    | 2009  | 2010  | 2011  |
|-----------------|--|---------|-------|-------|-------|
| Total Employees |  | Persons | 2,796 | 2,862 | 2,947 |
| Employment Type | Full-time                                  | Persons | 2,768 | 2,830 | 2,914 |
|                 | Temporary                                  | Persons | 28    | 32    | 33    |
| Gender Equality | Female Associates to Full-time Employees   | %       | 7.70  | 8.80  | 8.24  |
|                 | Female Managers to Full-time Employees     | %       | -     | 0.04  | 0.03  |
| Socially        | Disabled Associates to Full-time Employees | %       | 2.28  | 2.33  | 2.37  |
| Underprivileged | Former Veterans to Full-time Employees     | %       | 8.85  | 8.87  | 8.79  |
| Turnover        | Number of Retirees                         | Persons | 28    | 44    | 35    |

\* Perpetual contract workers belong to full-time associates while temporary associates include only dispatched workers other than interns and short-term contract workers.

## Open Employment Opportunities

### Systematic Employment Program

Based on business forecasts, KOGAS establishes systematic employment plans and hires qualified talent through fair and transparent evaluations. Our demands for human resources are rising as our company taps into new energy projects and expands business networks at home and abroad. We expand our global talent pool for key projects and attract talented resources with appropriate compensation to enhance efficiency in human resource management.

### Affirmative Action for Local Talents

KOGAS runs an affirmative action program for local talents as part of the effort to provide more socially equitable employment opportunities. We currently hire 20 to 30% of our new employees among applicants from local communities to close the regional gaps and promote performance-based corporate cultures. We have hired 37 local applicants in 2011 alone through our affirmative action program.

### Hiring High School Graduates

KOGAS hires high school graduates to expand job opportunities to the socially underprivileged class and promote competence-based corporate cultures. We also analyze the associate's operations to identify appropriate areas for them. We've also revamped the hiring procedures to attract more applicants and encourage applications from high school graduates. We have hired 20 high school graduates, 20% of our new employment, in both 2010 and 2011.

## Human Resource Development

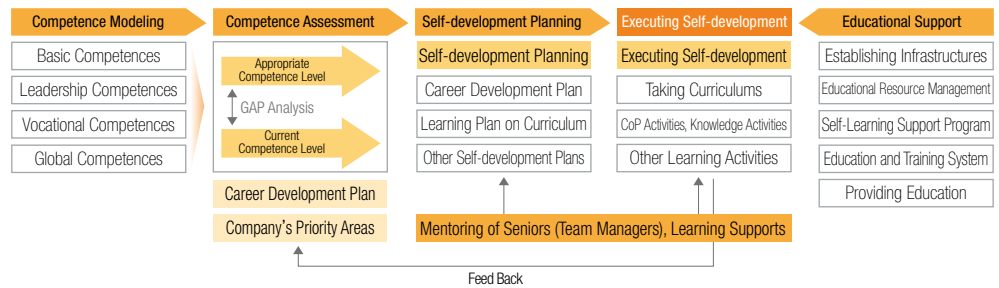
### Human Resource Development Strategy

KOGAS has set up a human resource development system based on our four major competence categories to ensure the well-balanced development of organizational and individual competences. Our company is also implementing customized human resource development roadmaps and providing educational programs.

|                     |   |                       |                                       |  |   |   |
|---------------------|---|-----------------------|---------------------------------------|--|---|---|
| Vision              | Global KOGAS Growing Together with Customers  |                       |                                       |  |   |   |
| Core Values         | Trust   | Change                | Challenge                             | Responsibility   | Role Model                                      | <ul style="list-style-type: none"> <li>People taking on new challenges and leading the trends</li> <li>People pursuing to be the top in their respective fields</li> <li>People seeking to demonstrate reliability and succeed in collaborations</li> </ul> |
| HRD Missions        | Providing HRD infrastructures   |                       | Providing human performance solutions |  | Establishing performance-oriented organizations |   |
| HRD System          | Reinforcing organizational competitiveness (OD)   |                       |                                       | Strengthening individual competencies (SD)   |   |   |
|                     | <ul style="list-style-type: none"> <li>Basic Competences</li> <li>Leadership</li> </ul>   |                       |                                       | <ul style="list-style-type: none"> <li>Vocational Competences</li> <li>Global Competences</li> </ul> |   |   |
| HRD Strategies      | Strategy-oriented   | Creating performances |                                       | Self-initiated   | Field-oriented                                  |   |
| HRD Infrastructures | Competence-based educational system, e-HRD system, Self-development Planning, Institutional Support for Education and Development |                       |                                       |  |   |   |

### Customized Competence Development on Career Development Planning

KOGAS provides procedures and tools for our associates to assess their competences and plan their competence development through education and self-motivated learning to offer customized ways to learn and develop competences.



### Providing Curriculums on Associate's Needs

KOGAS provides a variety of curriculums to help our associates change their career tracks. We have run 875 educational courses for 18,665 trainees in 2011 alone. We seek to build organizational practices that will lead our associates to develop their self-development plans on competence assessments and become more educated. We are also increasing our budgetary support to help satisfy our associate's needs for competence development opportunities. An average of 122 hours of educational service was offered for each employee in 2011, up 20 hours from the previous year. Our company was estimated to have spent KRW 2.8 million in education and training for each employee on average.

### Best Practice

#### KOGAS Wins the Presidential 'HR Development Award' at the 2011 National Quality Management Competition

KOGAS has won the presidential 'HR Development Award' at the 37th National Quality Management Competition in December 2011. This prize is the nation's most prestigious award in human resource development, which is usually granted to corporations that show great performance in helping develop the lifetime competences of associates and improve organizational competences. KOGAS was nominated as the final prize winner because the company has earned high ratings in leadership, infrastructure, human resource management, human resource development, and business performance according to document and field surveys.



## Fair Personnel Management

### Competence and Performance-based Personnel Management

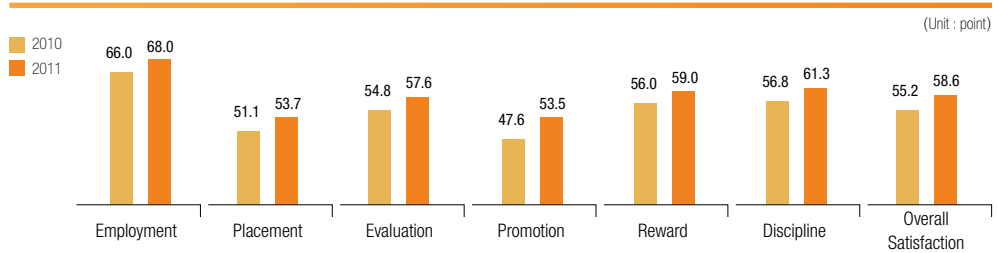
KOGAS has established a virtuous cycle of evaluations and compensations based on our fair performance evaluation system. Our company's basic objective in human resource management is to set up a competence and performance-based personnel management system to address the loopholes in promotion programs. We are working to encourage low-performance associates to improve their performance by implementing a gradual renovation management program and hire talent through public recruiting programs and special appointments to induce healthy competition among associates.

### Enhancing Fairness in the Promotion System

KOGAS heightens fairness in promotion to allow our associates to better accept personnel management decisions. Candidates are examined by multiple evaluators to test their qualifications while organizational and personal performance is assessed at the same time to more clearly identify the better candidates. We have also raised the transparency in evaluation processes by disciplining the candidates involved in unfair behaviors related to promotion, applying strict standards to the nomination and management of evaluators, and reinforcing the qualification reviews of auditors.

### Personnel Management Satisfaction on the Rise for 4 Consecutive Years

KOGAS conducts annual personnel management satisfaction surveys of our associates to evaluate our personnel management and operations and identify measures to continuously improve the personnel management system. The overall satisfaction was estimated at 58.6 in 2011, up 3.4 points (6.15%) from the previous year. The category of promotion particularly saw a large advance of 5.9% thanks to our company's efforts to improve fairness in the promotion programs.



## Core Value-led Organizational Culture

KOGAS has been building a healthy and energetic corporate culture through the proactive engagement of our executives and employees based on our priorities on communication and harmony. Based on our core values 'Trust, Change, Challenge, Responsibility', our company is conducting a variety of core value-inspired activities to unify our associates.

### Activities to Build the Organizational Culture in 2011

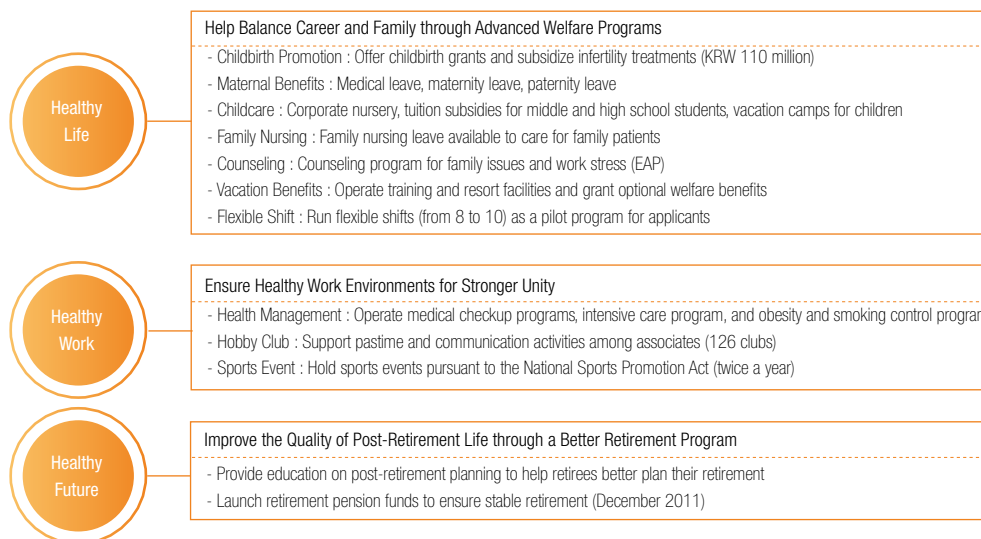
| Category                                     | Description   |
|--|---|
| Internalizing Visions and Core Values        | <ul style="list-style-type: none"> <li>- Core value team-building workshop</li> <li>- Assess the internalization of core values</li> <li>- Provide online education on core values</li> </ul>   |
| Promoting Communication                      | <ul style="list-style-type: none"> <li>- Conversations between the CEO and employees</li> <li>- Hold strategic discussions, executive meetings, and vision workshops and operate intranet</li> <li>- Management executive's visits to overseas operations and countries in which the company runs major projects</li> </ul> |
| Building a Culture of Harmony and Trust      | <ul style="list-style-type: none"> <li>- Enhance organizational unity through divisional or team sports competitions</li> <li>- Hold a meeting between workers and executives on 'Labor Management Cooperation Day'</li> </ul>  |
| Establishing a Global Organizational Culture | <ul style="list-style-type: none"> <li>- Overseas Project Information Conference</li> <li>- Provide classes on foreign cultures and global etiquette</li> </ul>   |

## Welfare Program

### Welfare System

KOGAS has established an advanced welfare program and helps our associates plan promising futures under our strategic mission of 'Planning Career and Life for a Healthy Future'.

#### Performance in 2011







## Building Better Labor-Management Relations

### Establishing the Labor-Management Relations Committee

We have renamed the Labor-Management Cooperation Committee as the Labor-Management Relations Committee in March 2011 and improved its functionality to reinforce risk control and upgrade labor-management relations amid fast-changing labor environments. The Time-Off Program was newly adopted in July 2010, and multiple labor unions began to be available as a single corporation in July 2011.

### Promoting Labor-Management Communication

We are operating a variety of conversation channels to induce well-balanced opinions and enable effective coordination. We have worked to promote the bilateral, top-down, and bottom-up communication and enhance leadership and followship through the CEO's direct communications in 2011.

|  <p>Bilateral Communication</p>                               |  <p>Top-Down Communication</p> |  <p>Bottom-Up Communication</p> |  <p>CEO Communication</p>  |
|--|---|--|---|
| <ul style="list-style-type: none"> <li>- Labor-Management meetings (66 sessions)</li> <li>- Labor-Management conference (54 sessions)</li> </ul> | <ul style="list-style-type: none"> <li>- Briefings of the CEO, executives, and managers (98 sessions)</li> </ul>  | <ul style="list-style-type: none"> <li>- Forums by rank, job type, location, and hierarchy (35 sessions)</li> </ul>  | <ul style="list-style-type: none"> <li>- Labor-Management hot line</li> <li>- Labor union meetings (21 sessions)</li> <li>- Labor-Management TFT</li> </ul> |

### Finding Reciprocal Solutions for Labor-Management Agenda

Placing top management priority on stable and cooperative labor-management relations, KOGAS and the trade union are committed to building a productive and cooperative partnership. We have launched a retirement pension program with a special labor-management coordination taskforce and taken the necessary measures ourselves as specified by the Board of Audit and Inspection to reinforce our collaborations.

# A Partnership for Inclusive Growth

## Inclusive Growth Initiatives

### Inclusive Growth Strategy

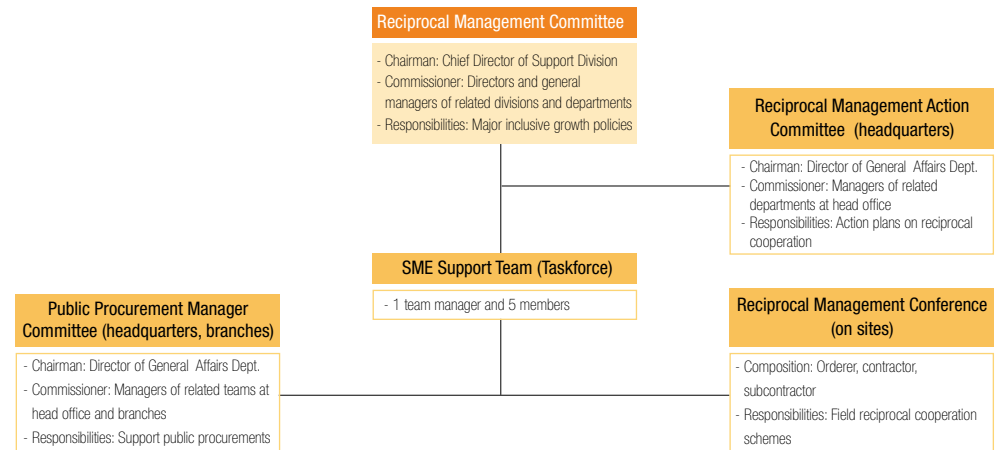
KOGAS established four strategic missions of strengthening inclusive growth infrastructures, expanding procurements from SMEs, promoting collaboration over technology developments, and building fair trade practices, as well as 16 action programs to ensure inclusive growth and reciprocal partnerships with SMEs. We seek to build a sound business ecology in the natural gas industry and enhance the competitiveness of both KOGAS and SMEs.

|                                      |  |   |   |   |
|--------------------------------------|--|---|---|---|
| Mission                              | Build a sound business ecology in Korea's natural gas industry to enhance the competitiveness of KOGAS and SMEs by seeking inclusive growth with SMEs  |   |   |   |
| Strategy                             | Promote social investments through inclusive growth initiatives and reciprocal partnerships  |   |   |   |
| Strategic Missions & Action Programs | Strengthening Inclusive Growth Infrastructures   | Expanding Procurements from SMEs  | Promoting Collaborations on Technology Developments   | Establishing Reciprocal Cooperation and Fair Trade Practices  |
|                                      | <ul style="list-style-type: none"> <li>- Management's determination on inclusive growth</li> <li>- Promote the Inclusive Growth Committee</li> <li>- Expand inclusive growth missions and incentives</li> <li>- Promote reciprocal partnerships and inclusive growth cultures</li> </ul> | <ul style="list-style-type: none"> <li>- Expand opportunities for SMEs' direct engagements</li> <li>- Execute public procurement program more effectively</li> <li>- Expand procurements from SMEs</li> <li>- Expand purchases of technological developments</li> </ul> | <ul style="list-style-type: none"> <li>- Expand technical project bidding opportunities for SMEs</li> <li>- Establish and operate joint technology development institutions</li> <li>- Finance technology development projects from both private investors and the government</li> <li>- Promote technology development projects</li> </ul> | <ul style="list-style-type: none"> <li>- Help SMEs enhance competencies</li> <li>- Heighten cooperation between large corporations and SMEs</li> <li>- Expand field support to SMEs</li> <li>- Execute fair contracting practices</li> </ul>  |
| Mid-Term to Long-Term Roadmap        | Building Trust   | Strengthening Cooperation   | Expanding Inclusive Growth Potential  | Promoting Reciprocal Development  |
|                                      | <ul style="list-style-type: none"> <li>- Set up a new taskforce</li> <li>- Operate a reciprocal partnership committee</li> <li>- Expand procurements from SMEs</li> <li>- Strengthen fair trade practices</li> </ul>   | <ul style="list-style-type: none"> <li>- Promote cooperation on technology developments</li> <li>- Help SMEs enhance their competences</li> <li>- Promote fair trade practices</li> <li>- Operate technology development committees with SMEs</li> </ul>                | <ul style="list-style-type: none"> <li>- Provide customized support by business phase</li> <li>- Expand technology transfers and support commercialization</li> <li>- Help SMEs enhance competitiveness</li> <li>- Strengthen fair trade practices</li> </ul>   | <ul style="list-style-type: none"> <li>- Support local and overseas joint marketing</li> <li>- Help improve overseas competitiveness</li> <li>- Diversify cooperation systems</li> <li>- Help SMEs become global competitive players</li> <li>- Promote fair trade practices and strengthen collaborations</li> </ul> |
|                                      |  |   |   |   |

### Implementing Organization

KOGAS has set up the SME Sponsorship Team as an implementing organization in charge of the inclusive growth scheme. Our company has also established the Inclusive Growth and Reciprocal Partnership Committee in 2011 to provide more systematic support to SMEs.

### The Inclusive Growth and Reciprocal Partnership Committee



## Transparent and Fair Trade

### Executing Fair Trade Pacts

In December 2011, KOGAS and the Korea Gas Technology Corporation, a KOGAS subsidiary, have formed the 'Inclusive Growth and Fair Trade Pacts' with 54 small and mid-sized partners in the natural gas industry. The agreement procedures and sponsorship criteria of the Fair Trade Commission applied to this pact in consideration of each company's situation. KOGAS ensures full compliance with anti-trust and fair trade regulations. We will make further efforts to promote fair trade practices and raise the awareness of inclusive growth as a public enterprise.

### Establishing Subcontracting Guidelines

KOGAS has set up subcontracting management guidelines specifying the subcontracting payment confirmation program, exclusion of low cost subcontractors (72% or less), stricter inspections on the subcontracting business, and operation of reciprocal cooperation conferences in February 2011 to establish fair trade practices in the construction sector. Our company has also inspected the subcontracting practices in natural gas piping projects across the country and corrected unfair contracts with 89 vendors and subcontractors.

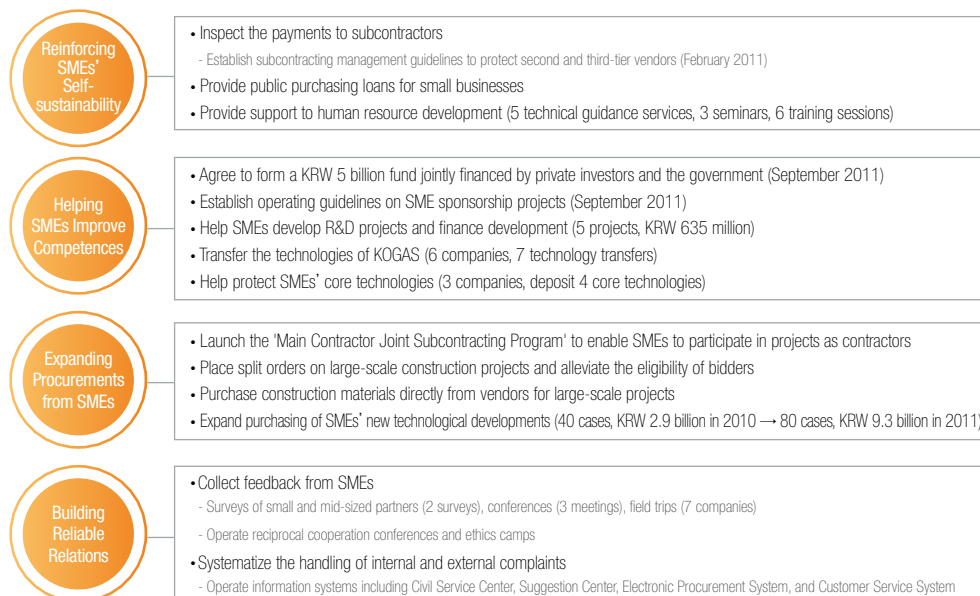
### Promoting Electronic Bidding

KOGAS operates an electronic bidding system to completely prevent fraud and unfair practices that may occur in the course of bidding and contracting. We have computerized the entire post-contracting processes, including invoicing and payments, to ensure a transparent and fair contract execution procedure. We also adopted our 'Fingerprint Verification Tender System' for the electronic bidding procedure in July 2011 to apply stricter identification processes to bidders and prevent fraud, such as the illegal lending of public authentication files and proxy bidding.

## Reinforcing SMEs' Competitiveness

KOGAS increases our physical and policy support to help SMEs strengthen their self-sustainability and provides aid to technology development to enhance their corporate competitiveness. We also expand opportunities for the direct business engagements of SMEs and implement public purchasing programs to help them attain more self-sustainability.

### Sponsorships for SMEs in 2011



# Customer Satisfaction Management

## Creating Customer Value

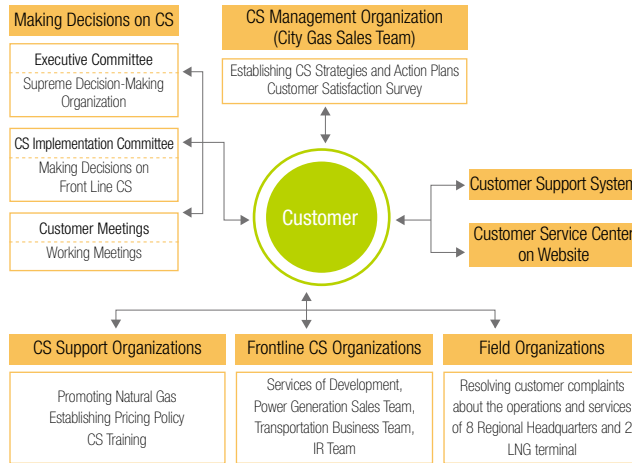
### Customer Satisfaction Management Strategy

KOGAS runs CS management practices under our four key strategic orientations - enhancing customer satisfaction, improving expertise in CS, strengthening management of core services and quality, and maximizing satisfaction with frontline services - to realize our CS (Customer Satisfaction) vision of 'KOGAS Pursuing Customer Value for More Happiness'.

| CS Vision              | KOGAS Pursuing Customer Values for More Happiness  |   |   |  |
|------------------------|--|---|---|--|
| Strategic Orientations | Enhancing Customer Satisfaction  | Improving Expertise in CS   | Strengthening Management of Core Services and Quality   | Maximizing Satisfaction with Frontline Services  |
| Strategic Missions     | <ul style="list-style-type: none"> <li>- Increase customer satisfaction surveys</li> <li>- Expand energy welfare and services</li> </ul> | <ul style="list-style-type: none"> <li>- Upgrade CS organization and system</li> <li>- Run KOGAS CS School</li> </ul> | <ul style="list-style-type: none"> <li>- Improve customer-oriented practices and regulations</li> <li>- Strengthen monitoring on service implementations</li> </ul> | <ul style="list-style-type: none"> <li>- Promote the use of VOC (Voice of Customer)</li> <li>- Increase CS activities for major customers</li> </ul> |

### Establishing Enterprise-wide CS Networks

KOGAS is establishing CS service networks throughout our organization with the City Gas Sales Team as the center of the overall network. We are also operating the CS Service Committee with customer commissioners to facilitate direct communication with customers. We began to operate this customer support system in addition to our website-based customer service center in 2011 to improve our frontline customer services.



Customer Service Center on the Website

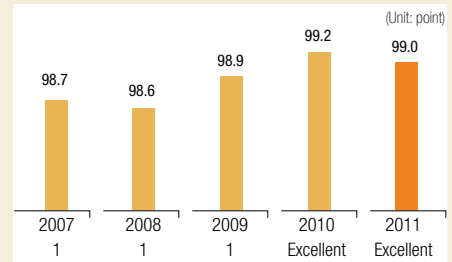


Customer Support System Page

## Best Practice

### KOGAS Tops Public Enterprise Customer Satisfaction Survey for 5 Consecutive Years

KOGAS earned a 99.0 rating in the 2011 Public Enterprise Customer Satisfaction Survey, making it the fifth year in a row in which our company ranked the top. According to the individual interviews with 379 customers of KOGAS services including city gas suppliers, private power companies, and direct suppliers, KOGAS was highly rated for our efforts to help revitalize the economy of underdeveloped regions and expand public welfare through improving energy welfare and expanding distribution networks into untapped regions.



\* The grading system replaced the ranking system starting in 2010.



## Promoting Communication with Customers

### Heightening Online and Offline Communication

KOGAS has been establishing various communication channels on its customer service frontlines to reinforce customer communications. We are listening to the voices of customers through the Wednesday Development Conference, Pricing Policy Public Hearing, Customer Meetings, Technical Information Seminar, Wednesday Development Workshop, and Day of Field Operations events. We also listen to the voices from our major clients, including city gas suppliers, electric power companies, and direct suppliers, through a wide variety of direct communication channels. We have held road shows at the client offices in 2011 to identify their needs and find resolutions together.

We are monitoring the voices of customers on a real-time basis and improving the statistical and analytic functions over VOCs through promoting customer support system and revamping our web-based customer service center. We aim to strengthen our bilateral communication through advanced IT-based customer management and service systems.

### Upgrading Customer-oriented Energy Marketing

In response to the growing demands for early commencement of natural gas supplies in many newly established industrial complexes and industrial towns, KOGAS has set up new distribution branches to provide natural gas earlier than scheduled. We also built satellite terminals to supply natural gas using tankers for regions where the supplies through pipelines are unavailable. This improves public welfare in underdeveloped regions in terms of energy supplies and contributes to the regional economy. We are expanding incentives on gas-powered cooling facilities and implementing a fixed quantity program for collective energy businesses as part of our customer-oriented marketing initiatives. We have also revamped the pricing program for semi-residential facilities to alleviate their cost burden. The invoicing procedure for natural gas supplies for power generation and the refund procedures of consumption tax on natural gas supplies were revamped and the validity of surety insurance on the industrial buyers of tank truck supplies was shortened to reduce financial burdens on customers and enable us to lower pricings.

### Enhancing Expertise in CS

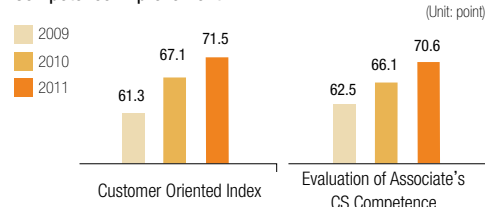
KOGAS is offering CS education according to the CS Competence Enhancement Roadmap established on priorities through the assessment of the CS competence system. We provided customized education through the 'KOGAS CS School', our special education program to help enhance CS competences, in 2011. We also offer demand forecast training programs to city gas suppliers, our customers, and jointly operate Customer Satisfaction Manager Courses with them to promote the improvement of CS competences for the development of the city gas supply industry.

### CS Expertise Development Program

| 2010 : Priority Competences  | 2011 : Competences Requiring Improvement  | 2012 : Competences to be Maintained and Reinforced  |
|--|---|---|
| <ul style="list-style-type: none"> <li>Customer management skill</li> <li>Team leadership</li> <li>Mass communication skill</li> <li>Ability to improve customer services</li> <li>Sharing the CS vision</li> <li>CS analysis</li> </ul> | <ul style="list-style-type: none"> <li>Ability to manage changes in CS</li> <li>Ability to handle customer complaints</li> <li>Ability to manage quality issues</li> <li>Ability to describe products and services</li> <li>Ability to establish customer-oriented policies</li> <li>Ability to manage the quality of frontline services</li> </ul> | <ul style="list-style-type: none"> <li>Business etiquette</li> <li>Self-control skill</li> <li>Ability to maintain expertise</li> <li>Internal customer mindset</li> <li>External customer mindset</li> </ul> |

Our performance in our efforts to improve CS competences is assessed through the survey on field applications conducted two months after CS trainees complete their sessions, annual assessment of internal associate's CS competences, and customer oriented index survey.

### Competence Improvement



# Social Contributions

## Social Contribution Strategy

### Strategies

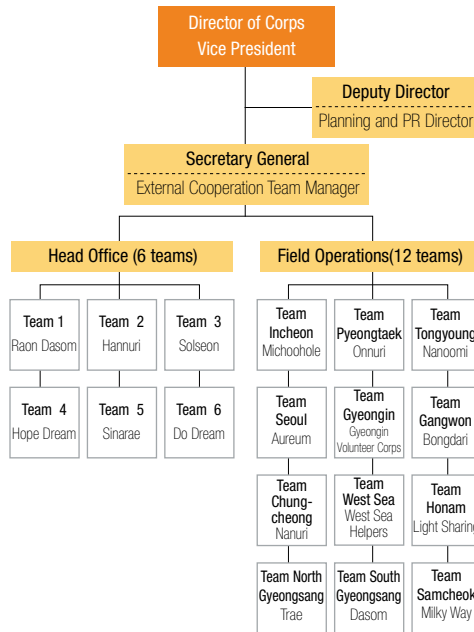
KOGAS executes social contribution strategies to fulfill our corporate social responsibilities and increase our brand value.

|            |   |   |
|------------|---|---|
| Mission    | Humanitarianism, Sharing, Happy Society |   |
| Purpose    | Increasing KOGAS' brand value           | Fulfilling Corporate Social Responsibilities      |
| Strategies | Develop a brand representing KOGAS      | Expand regionally customized social contributions |
| Businesses | Onnuri Love Project                     | Onnuri Hope Project                               |
|            | Onnuri Harmony Project                  | Volunteer 5UP Campaign                            |
| Slogan     | Clean Energy, Happy World               |   |

### Implementing Organization

KOGAS has established the Social Contribution Team to maximize the effects of our social contribution activities. We have also established cooperation networks with local governments and welfare centers to raise our social reliability and expertise in social responsibility programs.

#### KOGAS Onnuri Volunteer Corps






#### Cooperation with the Private Sector

##### Developing Social Trust and Enhancing Expertise in Social Contributions

- **Thermal Efficiency Improvement Project (From 2010 to 2011)**  
- Community Chest of Korea, Korea Social Welfare Association
- **Clean Zone Project (From 2009 to 2011)**  
- Corporation Leftovers Love Sharing Community
- **Medical Project (From 2009 to 2011)**  
- Bundang Seoul National University Hospital, Community Chest of Korea
- **Global Fellowship Program (From 2010 to 2011)**  
- Graduate school partners (Seoul National University, Korea University, Sogang University, KDI, HUIFS)
- **Blue Sky Pact (From 2005 to 2011)**  
- Daejeon City, Green Union
- **Community Social Contribution Pact (From 2010 to 2011)**  
- Tongyoung City (Since 2011), Gimhae City (Since 2010)
- **Love Embrace Pact (From 2010 to 2011)**  
- Ministry of Knowledge Economy, 13 local childcare centers
- **Hope Village Sponsorship Project (Since 2011)**  
- Korea Energy Foundation

## Social Contribution Brand, Onnuri

We at KOGAS have developed our own social contribution initiative brand, 'Onnuri', to establish a social contribution model customized for public energy enterprises. 'Onnuri' is a combination of 'On', which means warmth, and 'Nuri', which means the world. This term carries the meaning of 'making the entire world warm and peaceful.' We are currently running three key initiatives - the Onnuri Love Project, Onnuri Hope Project, and Onnuri Harmony Project.

|   |  |  |
|---|--|--|
|  <p><b>Onnuri Love Project</b><br/>To provide more energy welfare to the underprivileged class</p> |  <p><b>Onnuri Hope Project</b><br/>For the better future and public welfare</p> |  <p><b>Onnuri Harmony Project</b><br/>For local communities and global citizens</p> |
|---|--|--|

### Onnuri Love Project

KOGAS carries out thermal efficiency enhancement projects and offers gas utility discounts to help the low income class improve their quality of life and gain more energy sufficiency.

|  |   |
|--|---|
| <b>Onnuri Thermal Efficiency Enhancement Project</b>   | <ul style="list-style-type: none"> <li>• Renovate the heating systems of low income households and welfare facilities (floor heating, insulating wall, replacement of windows)</li> <li>• Improve the environments of local childcare centers around operating locations (building maintenance and renovations)</li> <li>• Created 613 jobs and develop 15 social enterprises, providing residential and welfare services in addition to the direct subsidies of KRW 1.9 billion in 2011</li> </ul> |
| <b>Energy Welfare Program for the Low Income Class</b> | <ul style="list-style-type: none"> <li>• Provide gas utility discounts to low income households, disabled customers, and (over 13,000) welfare facilities</li> <li>• Granted subsidies of KRW 33.5 billion in 2011</li> </ul>   |

### Onnuri Hope Project

KOGAS contributes to a better future and better public welfare through its 'Onnuri Hope Project' in a variety of ways.

|                                       |  |
|---------------------------------------|--|
| <b>Medical</b>                        | <ul style="list-style-type: none"> <li>• Provide rehabilitative assistive devices to disabled children and teenagers suffering from brain lesions (61 patients, KRW 300 million)</li> <li>- Execute 「Onnuri R-Bank Pact」 with Bundang Seoul National University Hospital (R-Bank: Deposit facility for customized assistive devices for growing children)</li> </ul> |
| <b>Scholarship</b>                    | <ul style="list-style-type: none"> <li>• Provide scholarships to low income high school students around operating locations</li> <li>- Grant tuitions to 183 students at 137 schools (KRW 1.6 million/person, KRW 300 million in total)</li> </ul>   |
| <b>Cultural Heritage Preservation</b> | <ul style="list-style-type: none"> <li>• Preserve cultural heritages around operating locations countrywide</li> <li>- Inspect safety and clean the environment (semiannually / 205 volunteers have worked for 20 national treasure sites across the country)</li> </ul>   |
| <b>Blue Sky</b>                       | <ul style="list-style-type: none"> <li>• Has been conducting environmentally responsible programs since 2005</li> <li>- Examine air quality, build bike lanes, and provide environmental education</li> <li>- Partners: Daejeon City, Daejeon &amp; South Chungcheong Green Union</li> </ul>   |
| <b>Traditional Market Sponsorship</b> | <ul style="list-style-type: none"> <li>• Each operating location forms a partnership with nearby traditional markets and holds a Traditional Market Day Event. (monthly)</li> <li>- Onnuri Coupon Purchases: KRW 760 million</li> </ul>  |

### Onnuri Harmony Project

KOGAS runs the 'Local Community Relations' projects to build reliable relations with local communities and expand customized support. Our company also pushes for 'International Community Relations' projects to help successfully carry out overseas projects and fulfill our responsibilities as a global corporate citizen.

|  |  |
|--|--|
| <b>Local Community Relations</b>         | <ul style="list-style-type: none"> <li>• Rural Town Sponsorship: Each operating location provides customized support to a village under the program</li> <li>• Hope Town Sponsorship: Provides heaters to low income households</li> <li>• Open facilities to the public: Jeongseon Training Center (934 visitors), Gas Science Museum (110,267 visitors), Gas Training Center (287 visitors)</li> <li>• Love Embracement: Supports 13 local childcare centers across the country in partnership with the subsidiaries of the Ministry of Knowledge Economy (facility renovation, cultural programs, educational tools and materials, etc.)</li> <li>• Local Cooperation: Operates local Volunteer Corps and supports nearby facilities in local communities (Incheon Ice-Rink Sponsorship, etc.)</li> </ul>   |
| <b>International Community Relations</b> | <ul style="list-style-type: none"> <li>• Global Fellowship (Scholarships to students from countries in which KOGAS runs resource development projects)                     <ul style="list-style-type: none"> <li>- Universities: Seoul National University, Korea University, Sogang University, Hufs, KDI</li> <li>- Maximum Grant: KRW 50 million/person, 2 years</li> <li>- Beneficiaries: 5 students (Beneficiaries of 1<sup>st</sup> Scholarship Program from Russia, Mongolia, Uzbekistan, China, and Nigeria)</li> </ul> </li> <li>• Sponsorship for Foreign Heart Disease Child Patients                     <ul style="list-style-type: none"> <li>- Beneficiaries: Child patients with heart disease in developing countries including Vietnam and Uzbekistan</li> <li>- Partner: Inje University Paik Hospital</li> </ul> </li> <li>• Sponsorship for the East Timor Youth Soccer Team                     <ul style="list-style-type: none"> <li>- Sponsor training camp expenses including accommodations, meals, ground facilities, and sporting goods</li> </ul> </li> </ul> |

## Promoting Involvements and Donations

### Volunteer 5up Campaign

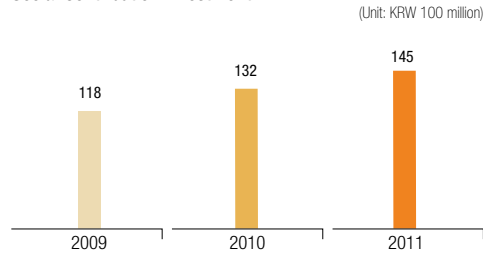
KOGAS runs the Volunteer 5up Campaign to encourage associates to increase their social contribution mileage by over 5% every year to promote donations.

|  |   |
|--|---|
| <b>Social Contribution Mileage Program</b>       | <ul style="list-style-type: none"> <li>• Rewards in the electronic database of associate's social contribution activities</li> <li>• Associated with the internal management evaluation program</li> </ul>  |
| <b>Matching Grant Program</b>                    | <ul style="list-style-type: none"> <li>• Match corporate donations to associates' contributions for the underprivileged class (55 organizations, 9 individuals)</li> <li>- Total Donations: KRW 127 million (donated by 62.1% of 2,947 associates)</li> </ul> |
| <b>Onnuri Volunteer Corps</b>                    | <ul style="list-style-type: none"> <li>• Operate 18 local volunteer corps for various monthly community services</li> </ul>   |
| <b>Social Contribution Day</b>                   | <ul style="list-style-type: none"> <li>• Joint labor-management community services (quarterly)</li> </ul>   |
| <b>Associate Participation Programs</b>          | <ul style="list-style-type: none"> <li>• Family volunteers, blood donation, book donation, etc. (participated by 4,103 volunteers)</li> </ul>   |
| <b>Expanding Communication and Participation</b> | <ul style="list-style-type: none"> <li>• Distribute 6 Social Contribution Newsletters</li> </ul>  |

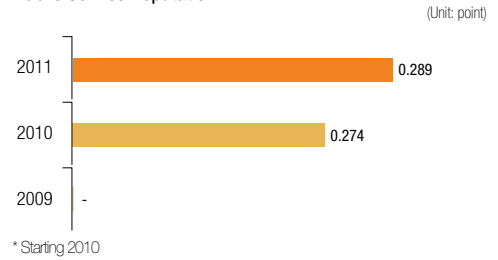
\* Social Contribution Mileage: Calculated by totaling the volunteer service hours and donations

## Social Contribution Performance

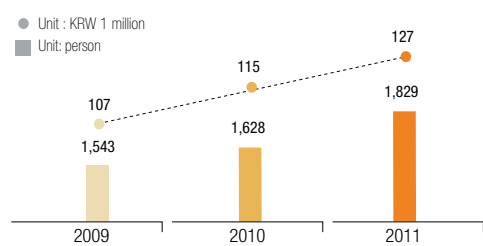
### Social Contribution Investment



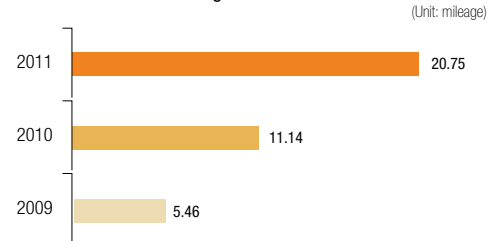
### Public Service Reputation



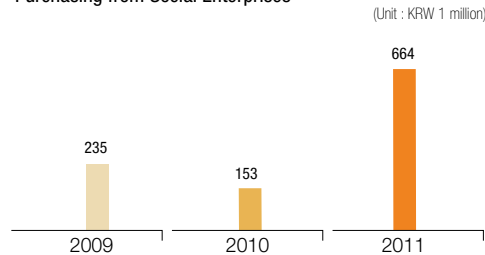
### Matching Grant



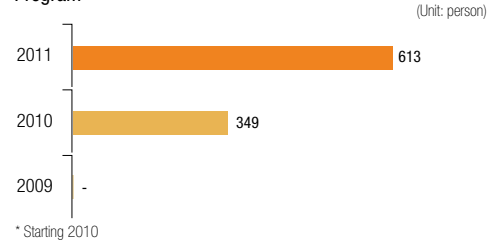
### Social Contribution Mileage



### Purchasing from Social Enterprises



### Jobs Created through the Thermal Efficiency Enhancement Program



### Social Contribution Calendar

## January



Rice-cake soup Party  
(Hansol Welfare Center)

January 27

## February



Clothing Donations for the  
Homeless

February 9

## March



Blood Donation Event

March 18

## April



Assistive Rehabilitation Device Sponsorship Agreement  
(Bundang Seoul National University)

April 20

## May



Grant Onnuri Scholarship  
Certificates

May 19

## June



Volunteer Services for Suwon  
Veteran's Hospital

June 29

## July



Family Saturday Volunteer Service  
(Bethany Village)

July 9

## August



East Timor Youth Soccer  
Team Sponsorship

August 8

## September



Chuseok (Thanksgiving)  
Half-Moon-Rice Cake Party

September 9

## October



Mobile Meal Service  
(Suwon Station)

October 26

## November



Cultural Program for a Local Childcare  
Center (Trip to Kidzania)

November 11

## December



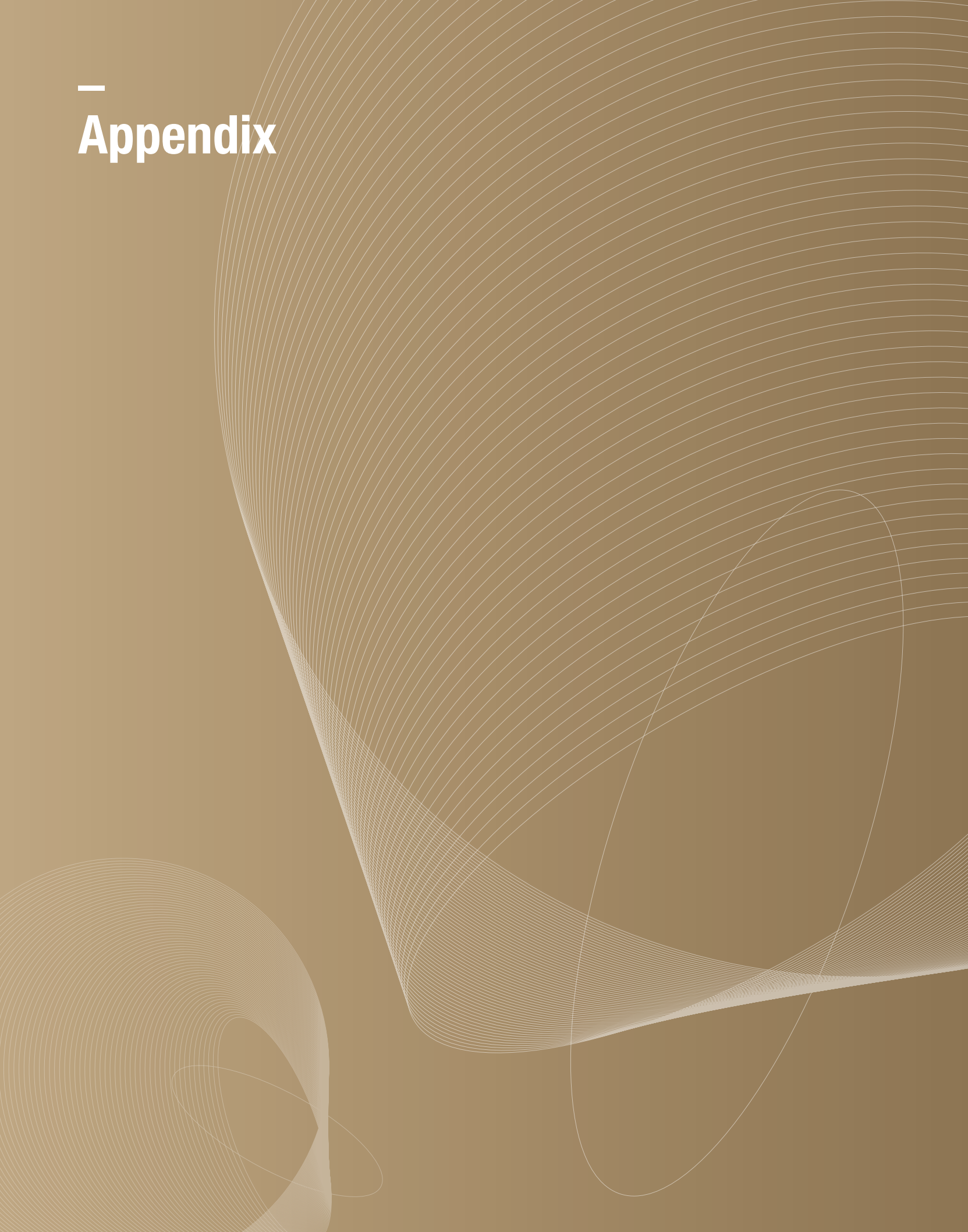
Rice Donations  
(Hansol Welfare Center)

December 23



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# Appendix



# History

## 2010~

- 2011 Discovered a supersized gas field in Mozambique (the world's second largest discovery in 2011)  
Topped the Public Enterprise Customer Satisfaction Survey for 5 consecutive years  
Nominated as Korea's most admired energy company for 5 consecutive years  
Won the Presidential Human Resource Development Award in the National Quality Competition
- 2010 Ranked 4th in the World's Most Admired Energy Company category by Fortune  
Selected as an operator of the Akkas gas project in Iraq

## 2000~

- 2009 Acquired an oilfield in Zubair and Badra in Iraq  
Joined DJSI Korea
- 2008 Participated in the Surgil Project in Uzbekistan
- 2007 Declares the 2017 Vision  
Issued the first Sustainable Management Report
- 2006 Awarded the Grand Prize in the "Enterprise of the Year" Category
- 2004 Received the Environmental Management Award  
Ranked 1st in customer satisfaction among public corporations
- 2003 Established agreement of cooperation with Gazprom
- 2002 Completed construction of nationwide supply pipes
- 2001 Organized the 'LNG 13' Conference  
Acquired the equity of A-1 Block in Myanmar

## 1990~

- 1999 Listed on the Korea Stock Exchange
- 1997 Completed construction of the Incheon LNG Terminal
- 1996 Announced a second foundation of KOGAS  
Established KOLNG(1997), Established KORAS(1999)
- 1994 Placed a national flag carrier for LNG transport in service
- 1993 Established Korea Gas Maintenance & Engineering Co., LTD.
- 1992 Initiated construction of the Incheon LNG Terminal
- 1991 Established a long-term plan to supply natural gas

## 1980~

- 1988 Established the master plan for the nationwide natural gas distribution
- 1987 Commenced city gas supply to the Seoul metropolitan area
- 1987 Commenced terminal and distribution facilities at Pyeongtaek
- 1986 Commenced natural gas distribution to power plant operations

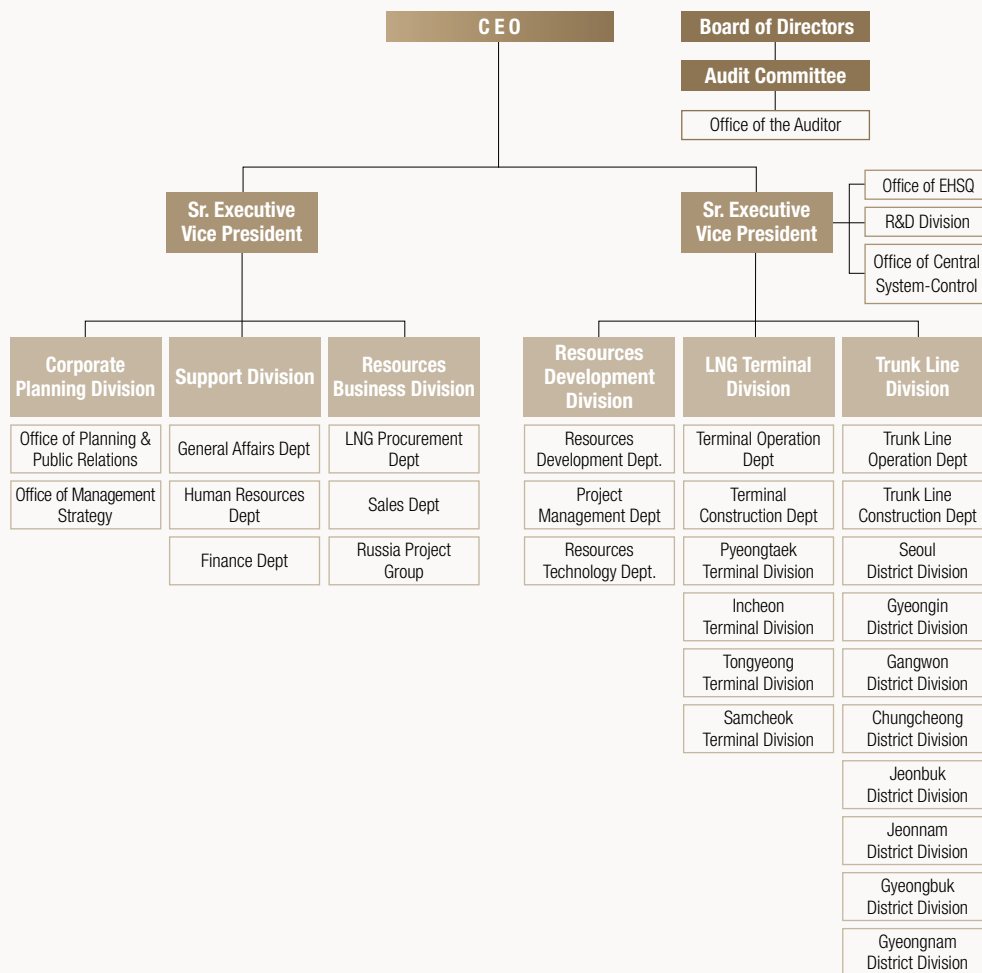


# Organization Chart, Affiliates & Subsidiaries

## Organization Chart

6 Division, 18 Departments and 12 District/Terminal Division, 1 Control Center

(As of April, 2012)



## Affiliates & Subsidiaries

### Major Affiliates & Subsidiaries

| Country  | Company                                  | Business                                 | Establishment | Ownership (%) |
|----------|--|--|---------------|---------------|
| Korea    | Korea Gas Technology Corporation         | Maintenance & Engineering                | 1993          | 100           |
|          | KOGAS Iraq B.V.                          |  | 2009          | 100           |
| Iraq     | KOGAS Badra B.V.                         | Development & Production of Oil and Gas  | 2010          | 100           |
|          | KOGAS Akkas B.V.                         |  | 2010          | 100           |
|          | KOGAS Mansuriya B.V.                     |  | 2010          | 100           |
| Overseas | Australia KOGAS Australia Pty Ltd.       | Exploration & Development · Liquefaction | 2008          | 100           |
|          | Canada KOGAS Canada Ltd.                 | Development & Production of Oil and Gas  | 2010          | 100           |
|          | Mexico KOGAMEX Investment Manzanillo B.V | Construction & Operation of LNG Terminal | 2009          | 100           |
|          | Oman KOMAN ENERGY                        | LNG Trading                              | 2008          | 50            |
|          | Russia KOGAS Vostok LLC                  | Gas Exploration & Inspection             | 2009          | 100           |



# Subsidiary Performance (Korea Gas Technology Corporation)

## KOGAS-Tech Profile

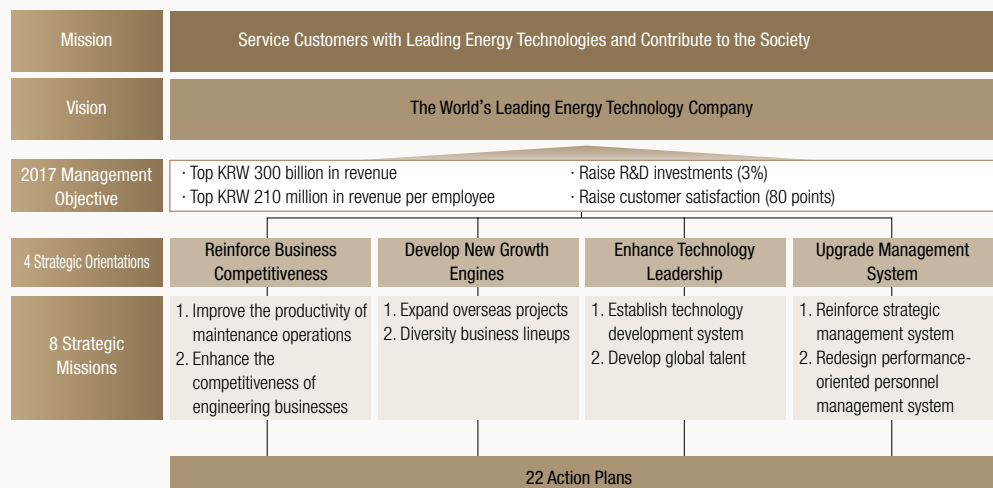
|                      |   |
|----------------------|---|
| <b>Company</b>       | Korea Gas Technology Corporation                                |
| <b>Establishment</b> | May 27, 1993  |
| <b>Head Office</b>   | 1227 Daedeokdaero, Yuseong-gu, Daejeon, Korea                   |
| <b>Businesses</b>    | Inspection and maintenance of gas facilities                    |
|                      | Renovation and repairs of gas facilities and related businesses |
|                      | Safety inspections and maintenance of gas pipe networks         |
|                      | Plant engineering services and plant facility maintenance       |
| <b>Employees</b>     | 1,032 (As of Dec. 31, 2011)                                     |
| <b>Investment</b>    | Capital: KRW 10.6 billion                                       |
|                      | KOGAS Ownership: 100%   |

## KOGAS-Tech Business Performance

| Category               |                                    | Unit            | 2009   | 2010   | 2011   |
|------------------------|------------------------------------|-----------------|--------|--------|--------|
| Finance                | Sales                              | KRW 100 million | 1,627  | 1,467  | 1,605  |
|                        | Net Profit                         | KRW 100 million | 94     | 80     | 66     |
|                        | Current Ratio                      | %               | 278.3  | 180.4  | 170.6  |
| Management             | Debt Ratio                         | %               | 51.8   | 55.2   | 58.7   |
|                        | Revenue per Employee               | KRW 1 million   | 163.2  | 147.1  | 153.8  |
|                        | Value Added per Employee           | KRW 1 million   | 82.3   | 83.1   | 92.8   |
| Quality of Maintenance | Labor Cost per Employee            | KRW 1 million   | 60.7   | 62.7   | 76.3   |
|                        | Suspension of Gas Supply           | Case            | 0      | 0      | 0      |
|                        | Piping Damages                     | Case            | 0      | 0      | 0      |
| Education & Training   | Facility Repairs                   | Case            | 3,438  | 3,104  | 2,519  |
|                        | Investment in Education & Training | KRW 1 million   | 1,715  | 1,713  | 2,068  |
|                        | Investment/Revenue                 | %               | 1.05   | 1.17   | 1.29   |
| Growth Potential       | Overseas Sales                     | KRW 1 million   | 8,819  | 10,448 | 12,262 |
|                        | R&D Investment                     | KRW 1 million   | 530    | 436    | 444    |
|                        | R&D/Revenue                        | %               | 0.3    | 0.3    | 0.3    |
| Credit Rating          | Korea Investors Service            |                 | P- AA- | P- AA- | P- AA- |
|                        | Korea Ratings                      |                 | P- AA- | P- AA- | P- AA- |
|                        | Korea Enterprise Data              |                 |        | AA-    | AA-    |

\* The 2009 data is subject to the K-GAAP Financial Reporting Standards while the 2010 and 2011 data was compiled pursuant to the K-IFRS Consolidated Reporting Standards

## KOGAS-Tech Strategic Scheme



# General Sustainability Management Data

## Economy

**EC6 Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation**  
KOGAS implements joint contracting programs with local constructors and is involved in other various efforts to revitalize regional economies by encouraging the engagement of local SMEs. Rather than placing a turn-key order for the construction of the Samcheok Terminal as we would usually do for large-scale plant projects, we have split the entire construction project (costing about KRW 300 billion) into several smaller projects (costing about KRW 16.2 billion) to provide opportunities to local small constructors. We also stipulated that the bidders for the construction of new the KOGAS head office building in Daegu shall subcontract at least 40% of the project to local SMEs. Given such efforts, the winning bidder has subcontracted 49% of the entire project to SMEs.

## Environment

### EN2 Percentage of materials used that are recycled input materials

KOGAS has been using compressed conveyance facilities to recollect and reuse the remnants of natural gas in pipelines since 2003 to minimize the venting of remaining natural gas into the air caused by the relocation or maintenance of piping networks. We have recollected 1,144.9 tons of natural gas in 2011.

### EN8 Total water withdrawal by source

| Category          | (Unit : kℓ) |         |         |
|-------------------|-------------|---------|---------|
|                   | 2009        | 2010    | 2011    |
| Tap Water         | 474,990     | 467,579 | 426,420 |
| Underground Water | 6,471       | 16,117  | 20,288  |

### EN11 Location and size of land owned, leased, managed in, or adjacent to protected areas and areas of high biodiversity value outside protected areas

According to the environmental impact assessment for the Samcheok Terminal, the submerged rock was found out to belong to a sea cliff. We have therefore obtained approval for the reclamation of the preserved area of approximately 880m<sup>2</sup> from the Ministry of Environment. We also plan to establish an ecological forest in the green buffer zone for the lakeside industrial complex development project.

### EN13 Habitats protected or restored / EN15 Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations by level of extinction risk

KOGAS has conducted an ecological survey of otters, an endangered species. Based on this work, we have designed a rest area for otters to minimize the ecological impact of the Samcheok Terminal construction project. We have transplanted 80 dogbanes, which are under legal protection, to the Korea Botanic Garden. We have also transplanted 165 Japanese black pine trees in the pine forest protective zone for the lakeside industrial complex development project. The survey plans were established to map out specific protective measures for endangered wild animals such as otters, wildcats, and swans.

## Society

### LA4 Percentage of employees covered by collective bargaining agreements

| Category                                  | Unit   | 2009  | 2010  | 2011  |
|---|--------|-------|-------|-------|
| Number of Workers Subject to Unionization | Person | 2,796 | 2,862 | 2,947 |
| Number of Unionized Workers               | Person | 2,424 | 2,525 | 2,610 |
| Proportion of Unionized Workers           | %      | 86.7  | 88.2  | 88.5  |

#### LA5 Minimum notice period regarding operational changes

| Significant Operational Changes  | Prior Notice  |
|--|---|
| Restructuring (Layoffs for management purpose)   | 50 days in advance  |
| Modifications of incorporation articles, organization, and capital, transfers of operating or key assets, restructuring, and privatization | Promptly upon the occurrence of such events                           |
| Adoption of new machineries and technologies, renovation of work processes   | Prior notice and discussion required on the occurrence of such events |

#### LA15 Return to work and retention rates after parental leave

| Category                                     |        | 2009 | 2010 | 2011 |
|--|--------|------|------|------|
| Parental Leave Rates                         | Male   | 100% | 100% | 100% |
|  | Female | 100% | 100% | 100% |
| Return to Work after Parental Leave          | Male   | 100% | 100% | 100% |
|  | Female | 96%  | 100% | 100% |
| 12 Month Retention Rate after Parental Leave | Male   | 100% | 100% | -    |
|  | Female | 96%  | 100% | -    |

#### HR10 Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments

KOGAS inspects the transparency level in relations with our partners over all our operations. Our company also conducts periodical surveys on our ethical management standards to enhance human right protection and fairness in operations.

#### HR11 Number of grievances related to human rights filed, addressed, and resolved through formal grievance mechanisms

With the CEO and the Chairman of the Labor Union as members, the Labor-Management Conference works to resolve inconveniences to employees and protect their rights. The conference also receives suggestions regarding work environments and human rights issues that are handled by the Ombudsman Committee. Associates can file complaints over their rights through KOGAS' website and intranet without any restrictions. We also have counselors to handle sexual harassment for employees at our operating locations. No lawsuits related to human rights issues have been filed in 2011.

#### S04 Actions taken in response to incidents of corruption

| Category           | 2009           | 2010 | 2011 |   |
|--------------------|----------------|------|------|---|
| Corruption Reports | 6              | 15   | 15   |   |
| Bribery Reports    | 0              | 0    | 1    |   |
| Follow-ups         | Discharge      | 0    | 1    | 0 |
|                    | Wage Reduction | 0    | 0    | 1 |
|                    | Others         | 0    | 1    | 0 |

(Unit : case)

#### PR1 Life cycle stages in which health and safety impact of products and services are assessed for improvement

| Phase                          | Major Activities  |
|--------------------------------|---|
| Manufacturing and Production   | Conduct safety, health and environmental safety assessments for the installation and modification of gas facilities, subsidiary equipment, construction, and new instruments to systematically identify potential risks and establish countermeasures<br>Perform a job safety analysis (JSA) and hold a tool box meeting (TBM) before commencing works on site to identify potential risks in advance |
| Storage, Transport, and Supply | Perform safety checks on pipelines older than 15 years at least every five years<br>Conduct safety assessments on the storage tanks at terminals every five years   |
| Usage and Service              | Attach the material safety datasheets (MSDS) for materials in use at operating locations to prepare for problems like leakages  |
| Disposal, Reuse, or Recycling  | Review the EHSQ management plans submitted by waste management companies, and inspect the service providers to check whether they legally and properly manage wastes semiannually or more frequently  |

# Assurance Statement



## INTRODUCTION

Det Norske Veritas Certification Ltd. (hereinafter referred to as 'DNV') has been commissioned to carry out assurance engagement Korea Gas Corporation (hereinafter referred to as 'KOGAS') 2011 Sustainability Report (hereinafter referred to as 'the Report'). This engagement focused on the information provided in the Report and the underlying management and reporting processes.

This Assurance Statement is intended for the readers of the KOGAS' Sustainability Report. KOGAS is responsible for the collection, analysis, aggregation and presentation of all information within the Report. DNV's responsibility regarding this Assurance engagement is to the management of KOGAS only, in accordance with terms of reference and scope of work agreed. DNV disclaims any liability or responsibility to a third-party for any decisions, whether investment or otherwise, based upon this Assurance Statement.

## SCOPE OF ASSURANCE

This Assurance Engagement covered data from calendar year 2011. The scope of DNV's Assurance Engagement, as agreed with KOGAS included the verification of:

- Sustainability policy, goals, initiatives, practices and performance for calendar year 2011, as described in the Report. These were verified at company level.
- Health & Safety, Social and Environmental data management systems, and associated processes and tools for collecting, analysing, aggregating and reporting quantitative and qualitative information provided in the Report.
- Processes for defining the boundaries, focus and content of the Report. (Limited to Head office and project sites)
- Review of the extent to which the principles of the Global Reporting Initiative (GRI) Guidelines for Sustainability Reporting (GRI G3.1) are reflected in the Report.
- The reliability of the information within the Report for calendar year 2011 was verified to a moderate level assurance.

KOGAS' reporting boundaries include all operations over which KOGAS' management exercises significant control, but do not include overseas branch offices and share-holding affiliated companies.

## LIMITATIONS

The engagement excluded the sustainability management, performance and reporting practices of KOGAS' suppliers, contractors and any third-parties mentioned in the Report. DNV did not interview external stakeholders as part of this Assurance Engagement. Economic performances including financial data were cross-checked at head-office with internal documents and the financial statements audited by another 3rd party. The activities of overseas branch offices and share-holding affiliated companies are not included in this Assurance Engagement.

## STATEMENT OF COMPETENCE AND INDEPENDENCE

DNV provides sustainability risk management services through specialists worldwide. This engagement was undertaken by a multi-disciplinary team of suitably qualified and experienced sustainability professionals. DNV was not involved in the preparation of any information presented in the Report. DNV did not provide any services to KOGAS in 2011 and 2012 that could compromise the independence or impartiality of our work.

## VERIFICATION METHODOLOGY

This Assurance Engagement was carried out from June till July 2012, and in accordance with the DNV Protocol for Verification of Sustainability Reporting.

In reaching our conclusion, we have undertaken the following work;

- Interviewed KOGAS' representatives from different divisions and functions;
- Visited KOGAS' Head office in Seongnam, Republic of Korea;
- Examined relevant documents, data and other information requested by DNV and made available by KOGAS;
- Reviewed the mechanisms implemented by KOGAS to promote and oversee its sustainability-related policies as described in the Report;
- Reviewed a selection of internal communication and external media reports relating to KOGAS' sustainability management approach, performance and adherence to its policies;

## CONCLUSIONS

In DNV's opinion, and based on the scope of this Assurance Engagement, the Report provides a reliable and fair representation of KOGAS' sustainability strategy, policy, practices and performance in 2011.

Based on the work undertaken as part of this Assurance Engagement, DNV believes that the Report generally meets the principles of GRI G3.1. Further conclusions and observations on the adoption of reporting principles and specific performance information are made below;

Regarding the level of adherence to reporting principles, we conclude the following::

**Inclusivity and Responsiveness :** KOGAS has engaged with a wide range of stakeholders regarding sustainability issues via survey. 8 groups such as government, local society, partners, global stakeholders, employees, investors, customers and end users are identified with the reason of being selected and the communication processes for respective groups in the Report. Stakeholders' views, interests and expectations sought from the survey are considered in the preparation of the Report and in the formulation of KOGAS' sustainability management approach. The Report provides insight into the organization's relationships with its key stakeholders and how and to what extent the organization understands, takes into account and responds to their needs.

**Materiality :** The Report generally provides an account of performance on the issues that are most significant to KOGAS' activities and which are most relevant to its stakeholders. The material issues were identified and prioritised based upon the stakeholders' opinion sought by survey. However KOGAS needs to make full use of identified engagement measures with the stakeholders in order to reflect their concerns and expectations into the sustainable management.

**Reliability :** No material errors have been detected for data and information verified. Information in the Report is presented so as to allow comparison of year-on-year performance.

**Completeness :** Within the reporting boundary and scope defined by KOGAS, we conclude that the Report does not omit information that would significantly influence stakeholders' decisions. More efforts to improve reporting on the performance from overseas project need to be made.

**Neutrality :** In general the Report provides a fair and balanced representation of KOGAS' approach and performance in 2011

## OPPORTUNITIES FOR IMPROVEMENT

The following is an excerpt from the observations and opportunities reported to KOGAS management. However, these do not affect our conclusions on the Report and are provided to encourage continual improvement.

- To establish key processes (data gathering, analysis and reporting) for issuing the sustainability report, and documented procedures specifying R&R for key performance index of sustainability to manage the reporting processes more systematically.
- To expand sustainability management to its affiliated companies and subcontractors continually.
- To consider developing consistent data collection process from overseas project.

Seoul, Korea  
20 July 2012



**Cheol Soo Kim**  
Lead Verifier



**In Kyoon Ahn**  
Country Manager

# GRI 3.1 Guideline and ISO 26000 Index

## General

Report Level : ● Complete ○ Partial ○ Non-disclosure

| GRI 3.1                       | Description   | ISO 26000 | Page      | Report Level | Note      |
|-------------------------------|---|-----------|-----------|--------------|-----------|
| <b>Vision and Strategy</b>    |   |           |           |              |           |
| 1.1                           | CEO statement   | 6.2       | 3~4       | ●            |           |
| 1.2                           | Risks and opportunities   | 6.2       | 17~29, 21 | ●            |           |
| <b>Organizational Profile</b> |   |           |           |              |           |
| 2.1                           | Name of organization  |           | 9         | ●            |           |
| 2.2                           | Primary brands and products   |           | 10        | ●            |           |
| 2.3                           | Operational structure   | 6.2       | 71        | ●            |           |
| 2.4                           | Location of head office   |           | 9         | ●            |           |
| 2.5                           | Country where the organization operates   |           | 11~12     | ●            |           |
| 2.6                           | Nature of ownership and legal form  |           | 15        | ●            |           |
| 2.7                           | Markets served  |           | 11~12     | ●            |           |
| 2.8                           | Size of organization  |           | 9         | ●            |           |
| 2.9                           | Significant changes during the reporting period regarding size, structure, or ownership   |           | 15, 71    | ●            | Unchanged |
| 2.10                          | Awards received   |           | 83        | ●            |           |
| <b>Report Scope</b>           |   |           |           |              |           |
| 3.1                           | Reporting period  |           | 1         | ●            |           |
| 3.2                           | Date of most recent previous report   |           | 1         | ●            |           |
| 3.3                           | Reporting cycle   |           | 1         | ●            |           |
| 3.4                           | Contact point for questions regarding the report or its contents  |           | 1         | ●            |           |
| 3.5                           | Process for defining report content   |           | 20~22     | ●            |           |
| 3.6                           | Boundary of the report  |           | 1         | ●            |           |
| 3.7                           | Limitations on the scope or boundary of the report  |           | 1         | ●            |           |
| 3.8                           | Basis for reporting that can significantly affect comparability   |           | 1         | ●            |           |
| 3.9                           | Data measurement techniques and the bases of calculations   |           | 36, 72    | ●            |           |
| 3.10                          | Re-statements of information provided in earlier reports  |           | 1         | ●            |           |
| 3.11                          | Significant changes in the scope, boundary, or measurement methods  |           | -         | ●            | Unchanged |
| 3.12                          | GRI Content Index   |           | 77~80     | ●            |           |
| 3.13                          | Policy and current practice with regard to seeking external assurance   | 7.5.3     | 75~76     | ●            |           |
| <b>Governance</b>             |   |           |           |              |           |
| 4.1                           | Governance structure of the organization  |           | 15~16     | ●            |           |
| 4.2                           | Indication of whether the Chair of the Board of Directors is also the CEO   |           | 15        | ●            |           |
| 4.3                           | Structure of Board of Directors   |           | 15        | ●            |           |
| 4.4                           | Mechanisms for shareholders and employees to provide recommendations to the Board of Directors  |           | 15~16     | ●            |           |
| 4.5                           | Linkage between compensation for members of the Board of Directors and senior managers, and the organization's performance  |           | 16        | ●            |           |
| 4.6                           | Processes in place for the Board of Directors to ensure conflicts of interest are avoided   |           | -         | ○            |           |
| 4.7                           | Process for determining the qualifications and expertise of the members of the Board of Directors for guiding the organization's strategy on economic, environmental, and social topics |           | 15~16     | ●            |           |
| 4.8                           | Principles of management  |           | 13        | ●            |           |
| 4.9                           | Procedures for the Board of Directors for overseeing the organization's identification and management of economic, environmental, and social performance                                | 6.2       | 14~15     | ●            |           |
| 4.10                          | Processes for evaluating the Board of Director's own performance, particularly with respect to economic, environmental, and social performance  |           | 15~16     | ●            |           |
| 4.11                          | Explanation of how the precautionary approach or principle is addressed by the organization   |           | 17~19     | ●            |           |
| 4.12                          | Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes.   |           | 81, 83    | ●            |           |
| 4.13                          | Memberships in associations and national/international organizations  |           | 83        | ●            |           |
| 4.14                          | List of stakeholder groups  |           | 20~22     | ●            |           |
| 4.15                          | Basis for identification and selection of stakeholders  |           | 20~22     | ●            |           |
| 4.16                          | Approaches to stakeholder engagement  |           | 20~22     | ●            |           |
| 4.17                          | Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded  |           | 20~22     | ●            |           |

## Economic

| GRI 3.1 | Description  | ISO 26000   | Page              | Report Level | Note |
|---------|--|---|-------------------|--------------|------|
| EC1     | Direct economic value generated and distributed  | 6.8 / 6.8.3 / 6.8.7 / 6.8.9   | 35-36             | ●            |      |
| EC2     | Financial implications and other risks and opportunities for the organization's activities due to climate change                     | 6.5.5   | 30, 43-46         | ●            |      |
| EC3     | Coverage of the organization's defined benefit plan obligations  |   | 60                | ●            |      |
| EC4     | Financial assistance received from government  |   | 34                | ●            |      |
| EC5     | Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation                    | 6.4.4 / 6.8   | 57                | ●            |      |
| EC6     | Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation                       | 6.6.6 / 6.8 / 6.8.5 / 6.8.7   | 73                | ●            |      |
| EC7     | Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation | 6.8 / 6.8.5 / 6.8.7   | 57                | ●            |      |
| EC8     | Development and impact of infrastructure investments and services provided primarily for public benefit                              | 6.3.9 / 6.8 / 6.8.3 / 6.8.4 / 6.8.5 / 6.8.6 / 6.8.7 / 6.8.9         | 66                | ●            |      |
| EC9     | Understanding and describing significant indirect economic impacts, including the extent of impacts                                  | 6.3.9 / 6.6.6 / 6.6.7 / 6.7.8 / 6.8 / 6.8.5 / 6.8.6 / 6.8.7 / 6.8.9 | 25, 29, 61-62, 67 | ●            |      |

## Environmental

| GRI 3.1 | Description  | ISO 26000                   | Page      | Report Level | Note |
|---------|--|-----------------------------|-----------|--------------|------|
| EN1     | Materials used by weight or volume   |                             | 46        | ●            |      |
| EN2     | Percentage of materials used that are recycled input materials   |                             | 73        | ●            |      |
| EN3     | Direct energy consumption by primary energy source   |                             | 48        | ●            |      |
| EN4     | Indirect energy consumption by primary source  |                             | 48        | ●            |      |
| EN5     | Energy saved due to conservation and efficiency improvements   |                             | 45, 47-48 | ○            |      |
| EN6     | Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives  | 6.5 / 6.5.4                 | 47        | ●            |      |
| EN7     | Initiatives to reduce indirect energy consumption and reductions achieved  |                             | 48        | ○            |      |
| EN8     | Total water withdrawal by source   |                             | 73        | ●            |      |
| EN9     | Water sources significantly affected by withdrawal of water  |                             | -         | ●            | None |
| EN10    | Percentage and total volume of water recycled and reused   |                             | -         | ●            | None |
| EN11    | Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas  |                             | 73        | ○            |      |
| EN12    | Impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas  | 6.5 / 6.5.6                 | 41        | ●            |      |
| EN13    | Habitats protected or restored   |                             | 73        | ●            |      |
| EN14    | Strategies, current actions, and future plans for managing impacts on biodiversity   | 6.5 / 6.5.6                 | 41        | ●            |      |
| EN15    | Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk  | 6.5 / 6.5.6                 | 73        | ○            |      |
| EN16    | Total direct and indirect greenhouse gas emissions by weight   |                             | 46        | ●            |      |
| EN17    | Other relevant indirect greenhouse gas emissions   | 6.5 / 6.5.5                 | 46        | ●            |      |
| EN18    | Initiatives to reduce greenhouse gas emissions and reductions achieved   |                             | 45-46     | ●            |      |
| EN19    | Emissions of ozone-depleting substances  |                             | -         | ○            |      |
| EN20    | NO, SO, and other significant air emissions  |                             | 40        | ●            |      |
| EN21    | Total water discharge by quality and destination   |                             | 40        | ●            |      |
| EN22    | Total weight of waste by type and disposal method  | 6.5 / 6.5.3                 | 41        | ●            |      |
| EN23    | Total number and volume of significant spills  |                             | 41        | ●            |      |
| EN24    | Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and IV, and percentage of transported waste shipped internationally |                             | -         | ●            | N/A  |
| EN25    | Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff                        | 6.5 / 6.5.4 / 6.5.6         | -         | ●            | N/A  |
| EN26    | Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation  | 6.5 / 6.5.4 / 6.6.6 / 6.7.5 | 45, 47    | ●            |      |

## Employment

| GRI 3.1 | Description  | ISO 26000           | Page | Report Level | Note |
|---------|--|---------------------|------|--------------|------|
| EN27    | Percentage of products sold and their packaging materials that are reclaimed by category   | 6.5 / 6.5.4 / 6.7.5 | -    | ●            | N/A  |
| EN28    | Monetary value of fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations   | 6.5                 | -    | ●            | None |
| EN29    | Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce | 6.5 / 6.5.4 / 6.6.6 | 48   | ●            |      |
| EN30    | Total environmental protection expenditures and investments  | 6.5                 | 39   | ●            |      |

| GRI 3.1 | Description   | ISO 26000                                 | Page   | Report Level | Note          |
|---------|---|---|--------|--------------|---------------|
| LA1     | Total workforce by employment type, employment contract, and region   |   | 57     | ●            |               |
| LA2     | Total number and rate of employee turnover by age group, gender, and region   | 6.4 / 6.4.3                               | 57     | ○            |               |
| LA3     | Benefits provided to full-time employees that are not provided to temporary or part-time employees                              | 6.4 / 6.4.3 / 6.4.4                       | 60     | ●            |               |
| LA4     | Percentage of employees covered by collective bargaining agreements   | 6.4 / 6.4.3 / 6.4.4 / 6.4.5 / 6.3.10      | 73     | ●            |               |
| LA5     | Minimum notice period regarding operation changes   | 6.4 / 6.4.3 / 6.4.4 / 6.4.5               | 74     | ●            |               |
| LA6     | Percentage of total workforce represented by joint management-labor health and safety committees                                |   | 56     | ●            |               |
| LA7     | Rates of injury, occupational diseases, lost days, and absenteeism, and number of work related fatalities                       | 6.4 / 6.4.6                               | -      | ●            | No occurrence |
| LA8     | Programs in place to assist workforce members and community members regarding serious diseases                                  | 6.4 / 6.4.6 / 6.8 / 6.8.3 / 6.8.4 / 6.8.8 | 56     | ●            |               |
| LA9     | Health and safety topics covered in agreements with trade unions  | 6.4 / 6.4.6                               | 56     | ●            |               |
| LA10    | Average hours of training per year per employee by employee category  | 6.4 / 6.4.7                               | 58     | ●            |               |
| LA11    | Programs for lifelong learning that support the continued employability of employees and assist them in managing career endings | 6.4 / 6.4.7 / 6.8.5                       | 58, 60 | ●            |               |
| LA12    | Percentage of employees receiving regular performance and career development reviews  | 6.4 / 6.4.7                               | 59     | ●            |               |
| LA13    | Composition of governance bodies and breakdown of employees   | 6.3.7 / 6.3.10 / 6.4 / 6.4.3              | 15, 57 | ●            |               |
| LA14    | Ratio of basic salary of men to women by employee category  | 6.3.7 / 6.3.10 / 6.4 / 6.4.3 / 6.4.4      | 57     | ●            |               |
| LA15    | Return to work and retention rates after parental leave   |   | 74     | ●            |               |

## Human Rights

| GRI 3.1 | Description  | ISO 26000  | Page | Report Level | Note                        |
|---------|--|--|------|--------------|-----------------------------|
| HR1     | Percentage of significant investment agreements that include human rights clauses or that have undergone human rights screening  | 6.3 / 6.3.3 / 6.3.5 / 6.6.6                                  | -    | ●            | No agreement formed in 2011 |
| HR2     | Percentage of suppliers and contractors that have undergone screening and human rights   | 6.3 / 6.3.3 / 6.3.5 / 6.4.3 / 6.6.6                          |      | ○            |                             |
| HR3     | Total hours of employee training on policies and procedures concerning human rights  | 6.3 / 6.3.5  | 52   | ●            |                             |
| HR4     | Total number of incidents of discrimination and actions taken  | 6.3 / 6.3.6 / 6.3.7 / 6.3.10 / 6.4.3                         | -    | ●            | No occurrence               |
| HR5     | The right to exercise freedom of association and collective bargaining   | 6.3 / 6.3.3 / 6.3.4 / 6.3.5 / 6.3.8 / 6.3.10 / 6.4.3 / 6.4.5 | 60   | ●            |                             |
| HR6     | Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor                          | 6.3 / 6.3.3 / 6.3.4  | 57   | ●            |                             |
| HR7     | Operations identified as having significant risks for incidents of forced or compulsory labor, and measures to contribute to the elimination of forced or compulsory labor | 6.3 / 6.3.5 / 6.3.7 / 6.3.10                                 | 57   | ●            |                             |



| GRI 3.1 | Description  | ISO 26000                           | Page       | Report Level | Note   |
|---------|--|-------------------------------------|------------|--------------|--|
| HR8     | Percentage of security personnel trained regarding human rights  | 6.3 / 6.3.5 / 6.4.3 / 6.6.6         | -          | ●            | Provide regular training to security personnel |
| HR9     | Total number of incidents of violations involving rights of indigenous people and actions taken                    | 6.3 / 6.3.6 / 6.3.7 / 6.3.8 / 6.6.7 | -          | ●            | No occurrence                                  |
| HR10    | Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments |                                     | 74         | ●            |  |
| HR11    | Number of grievances related to human rights filed, addressed, and resolved through formal grievance mechanisms    |                                     | 55, 59, 74 | ●            |  |

### Society

| GRI 3.1 | Description   | ISO 26000                           | Page             | Report Level | Note                                       |
|---------|---|-------------------------------------|------------------|--------------|--|
| S01     | Nature, scope, and effectiveness of any programs that assess and manage the impacts of operations on communities, including entering, operating and exiting | 6.3.9 / 6.8 / 6.8.5 / 6.8.7 / 6.6.7 | 41, 65-68        | ●            |  |
| S02     | Percentage and total number of business units analyzed for risks related to corruption  |                                     | -                | ●            | 13 business units in total (100% analyzed) |
| S03     | Percentage of employees trained in organization's anti-corruption policies and procedures   | 6.6 / 6.6.3                         | 52               | ●            |  |
| S04     | Actions taken in response to incidents of corruption  |                                     | 74               | ●            |  |
| S05     | Public policy positions and participation in public policy development and lobbying   | 6.6 / 6.6.4 / 6.8.3                 | 34, 44-46, 61-62 | ●            | Lobbying banned for public enterprises     |
| S06     | Total value of financial contributions to political parties and politicians,  |                                     | -                | ●            | No occurrence                              |
| S07     | Total number of legal actions for anticompetitive behavior, anti-trust, and monopoly practices and their outcomes   | 6.6 / 6.6.5 / 6.6.7                 | 62               | ●            | No occurrence                              |
| S08     | Monetary value of fines and total number of non-monetary sanctions for noncompliance with laws and regulations  | 6.6 / 6.6.7 / 6.8.7                 | -                | ●            | No occurrence                              |
| S09     | Operations with significant potential or actual negative impacts on local communities   |                                     | -                | ●            | None                                       |
| S010    | Prevention and mitigation measures implemented in operations with negative impacts on local communities   |                                     | 41, 65-68        | ●            |  |

### Product Responsibility

| GRI 3.1 | Description   | ISO 26000                                   | Page  | Report Level | Note  |
|---------|---|---|-------|--------------|---|
| PR1     | Life cycle stages in which health and safety impacts of products and services are assessed for improvement                              | 6.3.9 / 6.6.6 / 6.7 / 6.7.4 / 6.7.5         | 74    | ●            |   |
| PR2     | Total number of incidents of non-compliance with regulations concerning health and safety impacts of products and services              |   | -     | ●            | No occurrence   |
| PR3     | Type of product and service information required by procedures  | 6.7 / 6.7.3 / 6.7.4 / 6.7.5 / 6.7.6 / 6.7.9 | -     | ●            | See the material safety data sheets (MSDS) for natural gas on website |
| PR4     | Total number of incidents of non-compliance with regulations concerning product and service information and labeling                    |   | -     | ●            | No occurrence   |
| PR5     | Policies and practices related to customer satisfaction   | 6.7 / 6.7.4 / 6.7.5 / 6.7.6 / 6.7.8 / 6.7.9 | 63-64 | ●            |   |
| PR6     | Policies and programs for marketing communications, including advertising, promotion, and sponsorships                                  | 6.7 / 6.7.3 / 6.7.6 / 6.7.9                 |       | ●            | N/A   |
| PR7     | Total number of incidents of non-compliance with regulations concerning marketing communications, including advertising and sponsorship |   | -     | ●            | No occurrence   |
| PR8     | Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data                             | 6.7 / 6.7.7                                 | -     | ●            | No occurrence   |
| PR9     | Monetary value of fines for noncompliance with laws and regulations concerning the provision and use of products and services           | 6.7 / 6.7.6                                 | -     | ●            | No fine paid  |

# ISO 26000

The International Organization for Standardization (ISO) has launched the International Standard providing guidelines for social responsibility, named ISO 26000, in November 2011. It covers the 7 core subjects of organizational governance, human rights, labor practices, environment, fair operating practices, consumer issues, and community involvement and development, as well as many existing guidelines on management integrations. KOGAS assures its compliance with ISO 26000 under continuous management.

| Level of disclosure : ● Complete ● Partial ○ Non-disclosure |   |   |   |
|---|---|---|---|
| Topic   | Key issues  | Relevant GRI Index                            | Level of Disclosure                                     |
| 6.2 Organizational governance                               | 6.2.3 Decision-making processes and structures  | 1.1, 1.2, 2.3, 4.1~4.17                       | ○   |
|   | 6.3.3 Due diligence   | HR1, HR2, HR5, HR6, HR7                       | ○   |
|   | 6.3.4 Human rights risk situations  | HR5, HR6, HR7                                 | ●   |
| 6.3 Human rights  | 6.3.5 Avoidance of complicity   | HR1, HR2, HR3, HR5, HR6, HR7, HR8             | ○   |
|   | 6.3.6 Resolving grievances  | HR4, HR9                                      | ●   |
|   | 6.3.7 Discrimination and vulnerable groups  | HR4, HR6, HR7, HR9, LA13, LA14                | ●   |
|   | 6.3.8 Civil and political rights  | HR5, HR9                                      | ●   |
|   | 6.3.9 Economic, social and cultural rights  | SO1, PR1, PR2, EC8, EC9                       | ●   |
|   | 6.3.10 Fundamental principles and rights at work                                      | HR4, HR5, HR6, HR7, Labor DMA, LA4, LA14      | ●   |
|   | 6.4 Labour practices  | 6.4.3 Employment and employment relationships | HR2, HR4, HR5, HR8, LA1, LA2, LA3, LA4, LA5, LA13, LA14 |
| 6.4.4 Conditions of work and social protection              |   | LA3, LA4, LA5, LA14, EC5                      | ●   |
| 6.4.5 Social dialogue                                       |   | HR5, LA4, LA5                                 | ●   |
| 6.4.6 Health and safety at work                             |   | LA6, LA7, LA8, LA9                            | ●   |
| 6.4.7 Human development and training in the workplace       |   | LA10, LA11, LA12                              | ●   |
| 6.5 The environment   | 6.5.3 Prevention of pollution   | EN19~EN24                                     | ○   |
|   | 6.5.4 Sustainable resource use  | EN1~EN10, EN25, EN26, EN27, EN29              | ○   |
|   | 6.5.5 Climate change mitigation and adaptation  | EC2, EN16~EN18                                | ●   |
|   | 6.5.6 Protection of the environment, biodiversity and restoration of natural habitats | EN11~EN15, EN25                               | ○   |
| 6.6 Fair operating practices                                | 6.6.3 Anti-corruption   | SO2, SO3, SO4                                 | ●   |
|   | 6.6.4 Responsible political involvement   | SO5, SO6                                      | ●   |
|   | 6.6.5 Fair competition  | SO7   | ●   |
|   | 6.6.6 Promoting social responsibility in the value chain                              | HR1, HR2, HR8, PR1, PR2, EC6, EC9, EN26, EN29 | ○   |
|   | 6.6.7 Respect for property rights   | HR9, SO1, SO7, SO8, EC9                       | ●   |
|   | 6.7.3 Fair marketing, factual and unbiased information and fair contractual practices | PR3, PR4, PR6, PR7                            | ●   |
|   | 6.7.4 Protecting consumers' health and safety   | PR1, PR2, PR3, PR4, PR5                       | ●   |
| 6.7 Consumer issues   | 6.7.5 Sustainable consumption   | PR1, PR2, PR3, PR4, PR5, EN26, EN27           | ●   |
|   | 6.7.6 Consumer service, support, and complaint and dispute resolution                 | PR3, PR4, PR5, PR6, PR7, PR9                  | ●   |
|   | 6.7.7 Consumer data protection and privacy  | PR8   | ●   |
|   | 6.7.8 Access to essential services  | PR5, EC9                                      | ●   |
|   | 6.7.9 Education and awareness   | PR3, PR4, PR5, PR6, PR7                       | ●   |
| 6.8 Community involvement and development                   | 6.8.3 Community involvement   | SO5, SO6, LA8, EC1, EC8                       | ●   |
|   | 6.8.4 Education and culture   | LA8, EC8                                      | ●   |
|   | 6.8.5 Employment creation and skills development                                      | SO1, LA11, EC6, EC7, EC8, EC9                 | ●   |
|   | 6.8.6 Technology development and access   | EC8, EC9                                      | ●   |
|   | 6.8.7 Wealth and income creation  | SO1, SO8, EC1, EC6, EC7, EC8, EC9             | ●   |
|   | 6.8.8 Health  | LA8   | ●   |
|   | 6.8.9 Social investment   | EC1, EC8, EC9                                 | ●   |

# Glossary

| Term   | Definition  |
|--|---|
| CDP (Carbon Disclosure Project)                        | A global project that collects and analyzes the greenhouse gas emission data of major public companies across the world on behalf of global investors and financial institutions.   |
| CFaR (Cash Flow at Risk)                               | A method to estimate the maximum loss in cash liquidity within a specific period which can be caused by the variability in business, investment, and financing activities in accordance with a specific confidence level.   |
| CNG (Compressed Natural Gas)                           | Natural gas compressed under high pressures at normal temperature (14.5°C ~ 15.5°C) to be used as vehicle fuel.   |
| DJSI Korea (Dow Jones Sustainability Index)            | A Dow Jones social responsibility index for domestic corporations only.   |
| DME (Di-Methyl Ether or dimethyl ether)                | Dimethyl ether (CH <sub>3</sub> -O-CH <sub>3</sub> , DME) is produced by extracting and synthesizing compound gas (CO, H <sub>2</sub> ) from natural gas, coal, and biomass. It is available as an alternative to LPG (liquefied petroleum gas).  |
| EAP (Employee Assistance Program)                      | A program to help associates resolve personal issues which may impact their health and welfare. The program includes diagnosis, counseling services, and hospital referrals for associates and their families.  |
| EaR (Earnings at Risk)                                 | A method to estimate the potential loss caused by changes in gross profit or interest payments in accordance with a specific confidence level.  |
| GH (Gas Hydrate)                                       | A crystalline compound produced when methane gas, as a hydrocarbon, coexists with water at low temperatures and under high pressures. Also known as Methane Hydrate.  |
| Global Compact   | The world's largest global corporate citizen initiative under the United Nations that provides the framework of the ten principles for corporations to apply to their strategies supporting human rights, labor, environment and anti-corruption.   |
| GTL (Gas To Liquid)                                    | Technology that chemically and physically converts natural gas into liquid petrochemical products. GTL products include diesel, gasoline, naphtha, wax, and methanol.   |
| LNG-FPSO (Floating Production Storage and Off-loading) | Technologies for installing the facilities built at dockyards on maritime gas rigs and then relocating them to other gas projects for reuse after the completion of the previous project. It is appropriate for medium to small-scale ocean gas development projects.   |
| Low Carbon Green Growth                                | A government-driven national development paradigm that develops new growth engines and jobs with green technologies and clean energy sources to ensure sustainable growth by cutting greenhouse gas emissions and environment pollution.  |
| PNG (Pipeline Natural Gas)                             | A pipeline system to provide natural gas supplies in gas form from a production plant to users without any liquefying processes.  |
| Self Sufficiency                                       | Percentage of resources developed by domestic corporations in the annual resource imports. Self-sufficiency is calculated by dividing the total imports by the combined stakes of domestic companies in overseas production.  |
| SMV (Submerged Combustion Vaporizer)                   | Facility that heats water through the combustion of fuel in the water. Using tubes installed in the water tank, the LNG is pumped into the tubes to be gasified.  |
| Spot Market  | LNG trading market that ensures free trade between producers and buyers without any medium to long-term contract terms.   |
| Tcf (Trillion Cubic Feet)                              | Volume unit equivalent to 1 trillion cubic feet.  |
| Unconventional Gas                                     | Gas resource requiring different development approaches from conventional gas. It has been largely ignored due to its low economic feasibility, but is recently gaining much more attention due to technical advances and oil price hikes. It is categorized into coal bed methane (CBM) or coal seam gas (CSG), shale gas, tight gas, or gas hydrate according to the constituent of the layer containing gases. |
| VaR (Value at Risk)                                    | A method to estimate the maximum loss which can be caused by the variability in the portfolio value in normal market circumstances for a specific period in accordance with a specific confidence level.  |
| Vent   | Discharge of natural gas in pipelines into the air for emergency or maintenance.  |

## Awards

| Awards   | Organization                                 |
|--|--|
| Joined the DJSI Korea Electricity/Gas Category for 3 consecutive years   | Korea Productivity Center                    |
| Earned the top grade (Excellence) in the customer satisfaction survey for public enterprises for 5 consecutive years | Ministry of Strategy & Finance               |
| Won the Presidential Human Resource Development Award at the 2011 National Quality Competition                       | Korea Standards Association                  |
| Won the ministerial award for advanced labor-management relations  | Ministry of Employment & Labor               |
| Social Contribution Award (Ministerial, Chungcheong Regional Headquarters)   | Ministry for Health and Welfare              |
| Social Responsibility Award (Ministerial, North Gyeongsang Regional Headquarters)                                    | Ministry of Public Administration & Security |
| Won the Disaster Control Award from the Prime Minister   | Ministry of Public Administration & Security |
| Won the Ministerial Anti-Disaster Safety Management Award  | Ministry of Knowledge Economy                |
| Earned the Excellence grade in the Transparency Survey   | Anti-corruption & Civil Rights Commission    |
| Nominated as Korea's most admired energy company for 5 consecutive years   | Korea Management Association                 |

## Associations

| Organization  | Key Activities  | Note       |
|---|---|------------|
| IUNC  | Biodiversity  | Support    |
| <b>Overseas</b> UN Universal Declaration of Human Rights    | Human Rights  | Support    |
| UN Global Compact   | Compliance with the Global Code of Ethics & COP Reporting                 | Membership |
| Institute for Global Economics                              | Analysis of Global Economic Trends and Major Economic Issues, etc.        | Membership |
| Energy & Mineral Resources Development Association of Korea | Energy Resource Development Planning, etc.                                | Membership |
| <b>Domestic</b> Green Company Council                       | Accomplishment of the Low-Carbon Green Growth Vision                      | Membership |
| Korea Environmental Preservation Association                | Research, development, education, and PR on environmental preservations   | Membership |
| Ethical Management SM Forum                                 | Activities of the CEO and working groups for ethical management practices | Membership |

## Past KOGAS Sustainability Reports



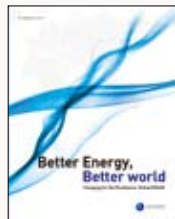
2006



2007



2008



2009



2010

### For more information about KOGAS...

|                                   |   |
|-----------------------------------|---|
| Corporate Profile                 | <a href="http://www.kogas.or.kr">http://www.kogas.or.kr</a>   |
| Management Disclosure             | <a href="http://www.kogas.or.kr/kogas_kr/html/notice/notice_submain.jsp">http://www.kogas.or.kr/kogas_kr/html/notice/notice_submain.jsp</a> |
| Sustainability Management         | <a href="http://www.kogas.or.kr/kogas_kr/html/open/open_01.jsp">http://www.kogas.or.kr/kogas_kr/html/open/open_01.jsp</a>                   |
| Ethical Management                | <a href="http://www.kogas.or.kr/moral/">http://www.kogas.or.kr/moral/</a>   |
| Safety & Environmental Management | <a href="http://www.kogas.or.kr/kogas_kr/html/open/open_21.jsp">http://www.kogas.or.kr/kogas_kr/html/open/open_21.jsp</a>                   |
| Social Contribution               | <a href="http://www.kogas.or.kr/kogas_kr/html/open/open_27.jsp">http://www.kogas.or.kr/kogas_kr/html/open/open_27.jsp</a>                   |
| Gas Science Museum                | <a href="http://www.kogas.or.kr/museum_in/kr/00_main/main.jsp">http://www.kogas.or.kr/museum_in/kr/00_main/main.jsp</a>                     |
| Bidding Information               | <a href="http://bid.kogas.or.kr/supplier">http://bid.kogas.or.kr/supplier</a>   |



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