2014 Sustainability Report

Beyond LNG, Global KOGAS

# Better Energy Better World





## **About this Report**

#### Better Energy, Better World

KOGAS strives to be the best global energy company growing together with every stakeholder for better energy and better world. Since 2006, KOGAS has published the Sustainability Report by annually in order to share our efforts for sustainability with stakeholders.

#### **Reporting Standard**

This report was written in accordance with GRI (Global Reporting Initiative) G4 and partially compliance with ISO 26000 as international guideline for Corporate Social Responsibility.

#### **Reporting Period and Scope**

This report contains the sustainability activities and performances for the period from January 1, 2014 to December 31, 2014. Some important records for the past three years are reported to identify trends in performances. Depending on the reporting period, the content for 2015 is partially included and stated in the report. The scope of this report encompasses the KOGAS' headquarters, 13 regional business locations, and R&D centers. In case of needs, performance and information for overseas business were also included.

#### Third Party Assurance

To secure credibility and objectivity, Independent third party verification was conducted and the result is contained in the report for independent assurance statement on pages 42.

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# Better Energy, Better World Delivered by KOGAS



## Changes in the Energy Market and Generation of New Growth Engines

The global natural gas industry is undergoing tremendous challenges. Reduction in oil prices and renewable energy cost lowers the price competitiveness of natural gases. As a consequence, power generation companies that mostly utilize such gases have decreased the portion of power generation using natural gases, while increasing the generation of coal-fired thermal energies which are relatively cheaper. Against this backdrop, KOGAS fulfills its duties as a public corporation to stably supply natural gases, and mulls over ways to seek for new future growth engines through a paradigm shift. As such, KOGAS explores new business opportunities abroad through commercialization in the entire energy value change based on its over 30 years of brand power and technical expertise, ranging from adoption of natural gases to the construction and operation of facilities. KOGAS plans to intensify overseas projects by going beyond its roles focusing on the adoption and sales of gases for the domestic market so that it could make investment in the whole supply chain under a new scheme of equity participations. Moreover, KOGAS will strive to upscale the domestic demand by expanding investment in new growth energy projects that leverage natural gases in tandem with climate change responses. It is because natural gases are clean fuels that generate almost no air pollutants during incineration as sulfur, nitrogen and ashes, etc. are removed in the course of liquefaction.

#### **Clean Energies that KOGAS Supplies**

Despite challenges in the domestic market, a stable supply of natural gases is put on the first burner of KOGAS because it is its mission as a public energy corporation to enhance benefits and happiness of the public through the supply of natural gases. With the world's largest natural gas purchasing power and market information, KOGAS plans to enhance the stability in supply and demand through using a demand prediction model according to scenarios. Meanwhile, KOGAS puts in efforts to upgrade accessibility to natural gases. A project to construct a natural gas pipe is in progress, while a secondary pipe construction, pipe network connecting the entire land of Korea. Once the pipe construction is completed, it will

enable anyone to conveniently and stably utilize natural gases without neglecting any regions for gas supply.

Such endeavors of KOGAS to securely and stably supply natural gases, which is the world's one of the top three energy sources have borne fruit with the city gas penetration rate of 80%, opening up a new era of natural gases as the common fuel for the public. KOGAS' prestige as a public energy corporation in Korea is proven by its No.1 storage facilities of 9.46 million kQ amounting to 63 units and 4,239km-long supply facilities for the main pipe. These are testimonies of KOGAS' hard work and unyielding efforts, and interest and encouragement of stakeholders for the past 32 years.

#### **Better Energy, Better World**

KOGAS exists on the foundation of stakeholders and the public. We are committed to causing no concerns among the public with a clean corporate culture, and to making a workplace where all the employees can work with a great self-esteem.

For KOGAS, the current challenges will become opportunities for further growth and the competencies that have been built up will serve as wings to fly higher. I ask for your continued interest in and support for our continued commitment and efforts.

CEO and President Seung-Hoon Lee

# 2014 Performance **Highlight**

## 15,000 Barrels of Crude Oil a Day **Commenced in the Badra Oilfield** in Iraq

Badra Oilfield in Iraq, which produces 15,000 barrels of crude oil a day, and is expected to produce 800 million barrels for the next 20 years. With the crude oil production there, the amount of crude oil acquired by KOGAS through the production in Iraq will skyrocket, along with the Jubair Oilfield from which KOGAS undertakes over 10 million barrels since 2011.





#### KOGAS Opening the Era of **Daegu through Relocating HQ** into Daegu Innovation City

KOGAS completed the relocation of the company building into the Innovative City of Daegu, heralding the era of Daegu in full swing. KOGAS will contribute to the regional economic development by seeking for mutual growth measures with local industries for balanced development in Daegu and engaging in social contribution activities with passion. In all, the new era will pave the way for KOGAS to leap higher as a stronger player of energy in the new century.

#### Gastech 2014 Successfully Hosted

'Gastech 2014', which provides the opportunities of overseas expansion for domestic gas companies and strengthens cooperation in natural gas industry, was held as the largest of its kind from March 24 to 27 in 2014. For the first time across the north east Asia, about 20,000 people from 383 companies of 44 countries participated in the conference and the exhibition.

Gastech is one of three global conference related to gas including WGC and LNG Conference, having a great economic riffle effect of KRW 62.5 billion value and employment inducing effect of around 600 people.



#### Dow Jones Sustainability Indices Asia Pacific listed 2 years in a row

Developed by S&P Dow Jones Indices and RobecoSAM, DJSI(Dow Jones Sustainability Indices) tracks stock performance of the world's leading companies in terms of sustainability as well as selects for the inclusion of indices by sustainability assessments. KOGAS was successfully listed as 'DJSI Asia Pacific' for 2 consecutive years and 'DJSI Korea' for 6 consecutive years in gas utility sector from 2014 DJSI.

#### Ranked a winner as 'Most **Respected Korean Company**

KOGAS was ranked as a winner for 'Most Respected Korean Company of public energy sector in 2014' hosted by Korea Management Association Registration for 7 years in a row (public sector / energy sector).

KOGAS commenced the crude oil production in the

#### **Contract for design of 270,000 kl** storage tank LNG Terminal **Project in Singapore**

KOGAS signed a contract on designing a 270,000 kl storage tank, which is the world's largest of its kind for the LNG Terminal Project in Singapore with Samsung C&T. This is the world's first and largest design project. KOGAS is operating a total of 63 storage tanks with a capacity of 9.46 million kl in four LNG terminal divisions. This is one stark achievement where KOGAS' know-how has led to profit making.

#### WGC 2021 Selected to Host

KOGAS has honorably won the bid to host the WGC 2021, known as the Olympics of the Gas Industry, in October 2014. The WGC is the largest event in the gas industry held every three years with the participation of 6,000 people from 90 countries. Korea will be the chair of the IGU for three years from 2018 to 2021 with the hosting of the WGC 2021, thus raising the prestige of the Korean gas industry in the international community.

# Company **Profile**

KOGAS is Korea's representative public energy corporation that stably supplies natural gas to the public under its corporate philosophy of 'Better Energy, Better World.' We participate in overseas resources development for a stable supply and demand of natural resources, and extend of supplying natural gas to nationwide for a greater convenience in living and better welfare benefits.

Company name	Korea Gas Corporation (KOGAS)
Establishment date	August 18, 1983
Foundation for establishment	Korea Gas Corporation Act
Type of corporate body	Corporation
Location	120, Cheomdan-ro, Dong-gu, Daegu, Korea

#### **Key Business Areas**

KOGAS imports LNG for its stable supply to city gas producers and power plants, and is mostly involved in projects for operating LNG bases and pipeline network construction to supply natural gas. KOGAS comprehensively covers the entire process from the exploration, production and development of overseas resources to the procurement, transport, production, supply and sale of natural gas in Korea.

Production/Supply of natural gas and refinement/sale of byproduct

Construction/Operation of bases and supply networks for natural gas

Development, transport and ex/import of natural gas

Development and ex/import of Liquefied Petroleum Gas

Projects on new/renewable energies, clean synthesis fuel and climate-friendliness using natural gas or its byproduct

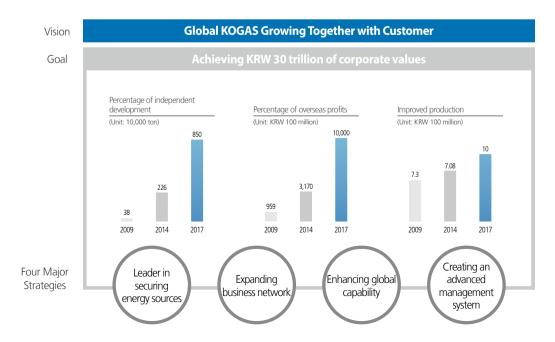
R&D on related projects and auxiliary projects

Projects commissioned by the central or local governments

Exploration/Development projects for oil resources and related projects

#### **Vision System**

Under the goal to realize its corporate philosophy of 'Better Energy, Better World,' KOGAS established and has implemented 'KOGAS Vision 2017.' Accordingly, we set our goal to achieve the corporate value of KRW 30 trillion by 2017, and initiated setting four strategic directions and 12 strategic tasks to reach the goal.



## System for Sustainable Management Strategies

In accordance with vision 2017, KOGAS set the vision for sustainability management ; 'Global KOGASwith people, with the planet.' and implement specialized tasks accordingly.

Туре	Strategic directions	Major Tasks	
Governance	Securing leadership for sustainable management by strengthening the foundation for manage- ment	Increase independence and efficiency of BOD Raise BOD's accountabilities for sus- tainability management Establish R&R in risk-related depart- ments	Improve the non-financial risk control system Manage stakeholders' issues on an inte- grated basis Communicate issues internally and externally Establish an integrated form of stake- holder management
Economy	Carrying out sustainable business by supplying energy in a stable manner	Identify supply restraints and set up peak oil strategies Expand investments in overseas E&P Raise efficiency on demand sides	Set up plans to cooperate with indus- tries Operate LNG facilities and develop transport businesses Reinforce business networks Expand R&D investments in alternative energy
Environment	Minimizing environmen- tal impacts by adopting leading environmental management	Re-establish environmental manage- ment organizations Set up biodiversity policies and guide- lines Set up environmental data manage- ment standards Redefine environmental data KPI	Upgrade eco-purchasing programs Strengthen controls on greenhouse gas emissions Reduce carbon emissions to meet targeted goals Establish carbon-neutral systems
Society	Creating a corporate culture focused on the people	Upgrade ethical management policies Raise management transparency Revamp human rights and labor prac- tices Strengthen performance-based remu- neration systems Develop global talents Manage operations free from accidents / disasters Strengthen health controls for associ- ates	Support SME's sustainability manage- ment Help SMEs gain competencies Analyze VOC and customer feedback Heighten privacy protections for cus- tomers Improve the management of social contribution activities Implement strategic social contribution programs

#### **Key Milestones**

Listed on the Korea Stock	1980's Base building	1990's Expanding Growth	2000's Becoming a World Class	2010's Better Energy, Better Tomorrow
Hosted the Gastech 2014	Establishment of KOGAS 1986 First import of LNG Commencement of natural gas distribution to power plant operations (Pyeongtaek) 1987 Commencement of city gas supply to Seoul metropolitan	Establishment of the R&D Center 1993 Commencement of city gas supply to the mid region 1994 Commission first LNG national flag carrier 1997 Establishment of KOLNG and Commencement of operations of the Incheon terminal 1999	Korea, China and Russia reached to agreement for co- development of Irkutsk gas field development 2002 Commencement of operations at the Tongyeong terminal 2003 Completed sales contract with Australia Liquefied Natural Gas for mid-term LNG 2004	Incheon LNG Terminal surpassed the 100 million ton mark in accumulated production of natural gas Landed development and production rights in the oil and gas fields in Zubair and Badra , Iraq Gained access to Akkas and Mansuriya Gas Fields in Iraq 2013 Agreement signed for E&P project on three blocks in Cyprus Additional Discovery of Gas Well in Area 4 of Mozambique 2014 Hosted the Gastech 2014

Key	/ Finan	cial	Perfo	rmance
ney	i iiiai	Clai	I CHO	mance

**Total assets** 



2014 KRW 46,772 billion 2013 KRW 43,666 billion





2014 KRW 37,285 billion 2013 KRW 38,063 trillion

#### Amount of LNG sales



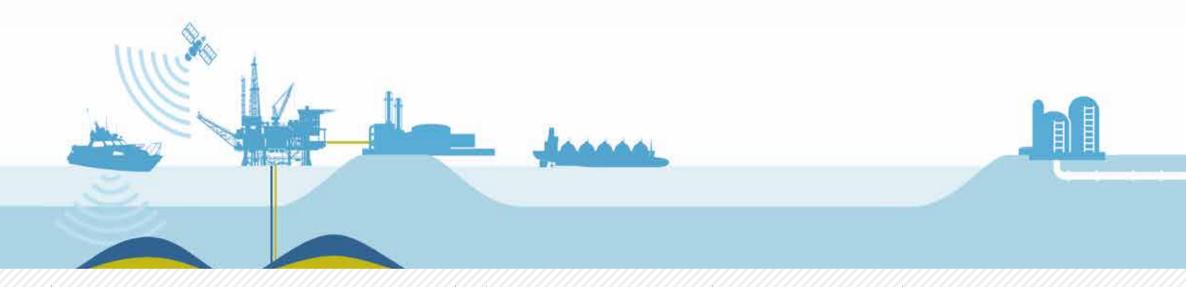
2014 35.17 million tons 2013 38.68 million tons

#### Credit ratings

STANDARD MOODY'S FITCH & POOR'S

A<sup>+</sup> Aa3 AA<sup>-</sup>

## **KOGAS Value Chain**



#### Exploration and Development of **Natural Gas**

KOGAS is realizing its dream to turn Korea into a strong player with energy by advancing into overseas upstream projects for natural gas including exploration and development of resources. KOGAS is currently initiating 10 development and production projects as well as five exploration projects.

#### Adoption of LNG

KOGAS adopts approximately 36 million tons of LNG a year. Seeking to secure capacities in a timely manner and seek for stability in supply in preparation against a higher demand in Korea, KOGAS strives to supply natural gas in a stable manner by diversifying the channels in different parts of the world.

#### Storage of LNG

KOGAS possesses the world's number one LNG storage capacity (9.46 million kl) tanks. By securing storage facilities continuously, KOGAS strives for a stable supply of natural gas.

▼ Area4 Exploration, Mozambique

▼ East Timor offshore exploration project







▼ Zubair Oil Field development Project



▼ Horn River & West Cutbank, Canada

▼ GLNG Project, Australia









#### Supply of Natural Gas

KOGAS securely supplies natural gas from each terminal division to power plants and city gas producers through pipelines. Natural gas is securely and stably supplied nationwide through the pipeline that is up to 4,239km long, thereby contributing to national economic growth, balanced regional development and enhanced benefits for the public.

- ▼ PTT LNG Re-gasification Terminal Project, Thailand



▼ Manzanillo LNG Re-gasification Terminal Project, Mexico



## Corporate Governance

Shareholders of KOGAS are comprised of public shareholders and ordinary shareholders. Public shareholders, that is, the government, KEPCO and local governments, hold approximately 54.56% of total shares, enabling stable management of shares.

# Ownership Structure(%) 37.07 8.37 Covernment KEPCO Foreigners Local governments Others

#### **Composition and Operation of the BOD**

KOGAS forms and operates the Board of Directors (BOD) pursuant to the Act on the Management of Public Institutions and the Articles of Incorporation. The BOD consists of the CEO, three executive directors and seven non-executive directors. A non-executive director is appointed as the chairman of the BOD to ensure independence. We set operating directions and goals based on the analysis of internal and external management environment, and establish yearly operating plans and "BOD Work System" to put in place an efficient operating system for the BOD.

Туре	Name	Position
	Seung-Hoon Lee	CEO (Former) Chief Commissioner of the Presidential Committee on Green Growth (Former) Professor of Economics, Seoul National University President of the Korean Institute of Electrical Engineers
Executive Director	Heung Ki Kim	Chief Auditor Executive (Former) Assistant of Lawmakers at the Secretariat of the National Assembly, and CEO of Mupung Trading Company
	Jong Ho Lee	Vice president of Technology and Management (Former) Head of the Resources Development Division, and Head of the New Project Division
	Kwang Sik Choi	Lead Non-executive Director (Chairman of the BOD) (Current) Chairman of SL Innovations Co., Ltd. (Former) CEO of City Airport, Logis& Travel, Korea (CALT), and CEO of Daehan Oil Pipeline Corporation
	Man Kyo Chang	Director (Former) Head of the Election Polling Committee for the Chungcheongbuk-do Party under Saenuri Party for the Presidential Election (Former) Auditor at the Korean Construction Guarantee Cooperative, and National Defense Commissioner at the Central Election Polling Committee for the Presidential Election
	Won Tak Lee	Auditor (Current) President of Daewon University (Former) Chief Counsel of the Public Administration and Security Committee at the National Assembly
Non-executive Director	Jong Rae Kim	Director (Current) Visiting Professor of Business Administration and Management, Chungnam National University (Former)Director of the Publishing Bureau at the ChosunIlbo, and General Manager of the Social Affairs Division at the ChosunIlbo
	Sung Hwan Shin	Head of the Audit Committee (Current) President of Korea Institute of Finance, and Advisory Professor at Korea Fixed Income Research Institute (Former) Senior Financial Officer at the World Bank
	Sun Woo Lee	Director (Current) Professor of Public Administration, Korea National Open University (Former) Head of Reorganization Committee, Ministry of Security and Public Administration
	Jun Hyung Lee	Director (Current) Chairman of GoodNET Corp. (Former) Advisor at Jinhaeng Waterway, and Advisor at DongyangGangchul (ALUKO)

#### **Operation of Subcommittees**

KOGAS has established and operated three subcommittees under the BOD by utilizing the expertise of non-executive directors.

Composition	Key Roles	
One executive director, two	<ul> <li>Reporting to the BOD on direc Incorporation</li> </ul>	
non-executive directors	<ul> <li>Matters entrusted by the BOD, bilities of the Audit Committee tion, etc.</li> </ul>	
Two or more direc- tors	<ul> <li>Deliberating or advising on ma plans, major investment project</li> </ul>	
Two or more direc- tors	• Deliberating or advising on ex seas resources, overseas plant	
	One executive director, two non-executive directors Two or more direc- tors Two or more direc-	

## **Roles of Non-executive Directors and Expertise Buildup**

In order to enhance job capabilities of non-executive directors, we provide management information on KOGAS to them for greater understanding of their job functions through such diverse channels as reporting on the status of KOGAS and its major tasks, and visits to domestic production and supply facility sites. Seeking to leverage the expertise of non-executive directors complete with seasoned experiences in various fields including law, economy and public administration, we have expanded their channels of participating in corporate management including being appointed as advisors to three special committees on management normalization, giving corporate management advice and providing suggestions for management.

#### ▼ Non-executive directors' participation in management

2012
2012
Once
61 cases
6 cases

#### Composition and Operation of the Executive Nomination Committee

KOGAS forms the Executive Nomination Committee consisting of three non-executive directors and two outside members in accordance with the 'Protocol on the Operation of the Executive Nomination Committee.' The committee meetings are held to decide on the methodologies of operation and the appointment procedure to ensure transparency and independence. We also strive to enhance efficiency in work pursuant to a systematic executive appointment procedure by publishing and utilizing the manual for executive appointment.

## **Performance Evaluation of Directors and Executives**

KOGAS increased the efficiency of the BOD operation by identifying director's needs and improvement matters based on the evaluation of individual directors and the BOD. The remuneration for executives is composed of basic salary, incentives, and severance pay. The yearly basic salary is decided in the BOD meetings for non-executive directors within the scope of salary limit, which is approved in a shareholder's meeting. The president receives incentives depending on the result of assessment of management performances after signing a management contract to achieve the corporate philosophy and vision with the chief of the relevant institution, and executive directors receive incentives after making a contract for performance with the president.

ectors' act of violating laws and the Articles of

D, and those determined to fall under the responsiee according to laws and the Articles of Incorpora-

natters including mid-and long-term business ects, budget and operation plans, etc.

xploration, development and production of overt projects and other overseas projects

2013	2014
Once	Once
65 cases	36 cases
7 cases	5 cases

#### **BOD Activities**

#### No. of Meetings Held

2014 **2013 19 times** 2012 18 times

#### No. of Agenda agreed

# 2014 **67 agendas**

2013	43 agendas	
2012	55 agendas	

#### Average Attendance Rate

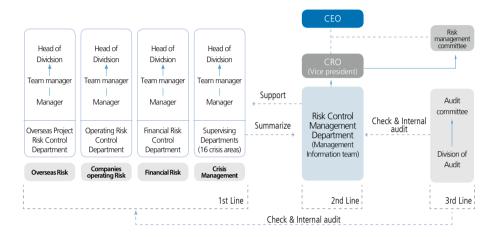


2013 95% 2012 93%

# Risk Management

#### **Risk Management System**

KOGAS has a system to enable Risk Management Committee and the Chief Risk Officer (CRO) to proceed with work independently upon making critical decisions. KOGAS' risk management is based on the '3-lines of defense' model: the first-line supervising departments that are primarily responsible for risks as they conduct daily risk management operations; the second-line Risk Control Management Department that manages the risk management system and supports risk management operations in the working level; and the third-line Office of the Auditors that audits the procedural adequacy of risk management activities. We ensure that departments for establishing the risk management system and operating routine risk management are separated. There are the risk management supervisor, a decision-making body and related regulations so that independence could be guaranteed in business areas.



#### Improvement of the Corporation-wide Management System

KOGAS has continuously improved the risk/crisis management areas and work processes in order to flexibly respond to the changes in the management environment. For crisis management, the existing 18 types of crises that used to be classified by job were integrated into nine types, focusing on core/actual crises. Crisis management has been made more efficient by revising the crisis response manual in full swing. We also made a crisis response handbook separately to increase the usefulness of the manual. For risk management, the existing risk indicators for corporate management were reviewed across the board to re-classify them into 31 core risk indicators as of now. We also plan to further reinforce prewarning functions by developing early warning indicators.

#### Improvement of the Risk Management System for Overseas **Projects**

KOGAS established measures to identify, evaluate and counter risks by business in order to respond to the aggravated environment in overseas projects including oil and LNG price drop and defined relevant roles for person in charge. We also improved the risk management system by realigning the work process and the reporting scheme. We strive to enhance competencies for overseas projects by reinforcing risk management for new projects while improving the process for investment in overseas projects.

#### **Reinforcement of Risk Monitoring and Reporting**

KOGAS monitors the status quo of risk management by month/quarter and reports it to the CRO and the Risk Management Committee. We monitor the response records upon the issuance of crisis warnings and forward them to the department in charge for timely and effective responses. We report the current status of risk management by risk indicator and overseas project, and countering measures on major risk signals to the CRO and the Risk Management Committee.

## Innovation system



features of each business site

#### Performance of Innovation Activities

KOGAS has explored the outcome of best knowledge (CoP, personal knowledge and BnF) through diverse knowledge management activities, thus achieving tangible effects (cost reduction, etc.) and intangible effects (institutional improvement and systematization and system setup). The financial effects generated through the knowledge management and management innovation (BnF) activities throughout 2014 amount to KRW 158.7 billion. As more CoPs opened in the intangible areas compared to the previous year, it could be identified that a culture of collaboration and communication among CoP members was taking root.

▼ Performance of Best Knowledge Outcome (CoP, personal knowledge and BnF) and Financial Effects





#### **Best & First- KOGAS' Innovative Brand**

KOGAS continuously achieves innovation of its corporate management in a bid to cater to the rapidly changing management environment and pave the way for a new leap. KOGAS has made the brand of BnF (Best & First) to innovate itself earlier than others to be No.1 as it tries hard for on-site innovation. Activities of 'First' are to ferret out setbacks within a business unit and encourage its employees to take part to improve on, while activities of 'Best' are to disseminate and share best practices generated from the 'First' activities throughout the corporation.

KOGAS initiates 'On-site BnF Rainbow Activities' to determine eight core areas based on its annual management policies, and conduct autonomous tasks befitting each base and regional division.

\* Rainbow: It is KOGAS' exclusive innovation campaign slogan selected in 2012. It implies that things are to be improved unceasingly in the era of limitless competitions to pursue a better future and innovation activities of various colors are to be initiated befitting the

#### **Knowledge Management Activities**

KOGAS conducts knowledge management (personal knowledge, CoP) and management innovation (BnF) activities to explore excellent knowledge to be conducive. In 2014, 541 Communities of Practice (CoP) were opened and operated, among which 108 best CoPs were selected through a stringent review, and two cases of personal knowledge were adopted as best knowledge. Moreover, 16 best cases of management innovation (BnF) were explored through management innovation (BnF) activities.

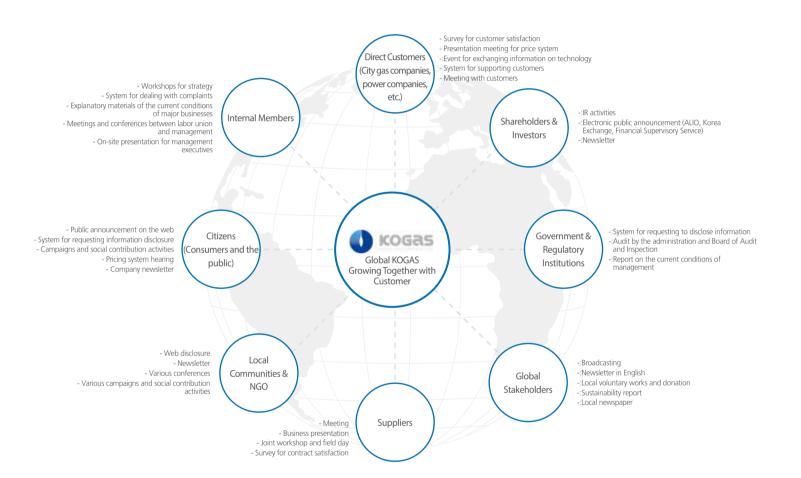
Since we plan on patent filing for best knowledge to turn knowledge into our asset, we are working on knowledge standardization at the same time. We hold the BP Contest every year to share and spread out best knowledge excavated through knowledge management and management innovation (BnF) activities, and produce the 'Knowledge Management Casebook' to share best practices.



## **Stakeholder Engagement**

#### **KOGAS' Stakeholder Engagement**

KOGAS strives to reinforce stakeholder communication and reflect their voices in order to re-establish its prestige as a public energy corporation trusted by the public. We also make efficient responses to stakeholder needs by holding various channels to gather opinions of each stakeholder. We are committed to fulfilling social responsibilities by listening to stakeholder opinions.



#### ▼ Major Concerns of Stakeholders

Direct Customers	Stability of supply / Soundness of facilities / System for supporting customers / Communication channels for pricing
Shareholders & Investor	Stock price / Investment / Stability / Prospect for growth / Financial soundness / Dividend / Corporate governance
Government & Regulatory Institutions	Respond to climate change / Corporate governance structure / Reforming / Stability in supply and demand of natural gas
Global Stakeholders	Policies on environment and human rights / Global CSR activities
Suppliers	Expanding business / Supporting SMEs / Financial soundness
Local Communities & NGO	Social contribution / Safety and environmental management / Sustainability management / Ethical management / ISO 26000
Citizens	Price / Stable provision of natural gas / Heating value (quality) / Social contribution and energy welfare
Internal Members	Expanding business / Reinforcing capability / Wage / Stabilizing employment / Welfare and benefits / Health and safety / Labor-Management relations

## **Materiality Test**

KOGAS decided on core issues for reporting through the materiality test process. The materiality test is to identify areas that are important in business, economic, environmental and social aspects, and are of common interest among stakeholders.

Step 1		Step 2				Step 3				Step 4			
Identification of I	Issues	Collection of S	takeho	lder Opin	ions	Priorit	ization and	Rev	iew	Confirm to be Re		on Core Is d	ssues
Review of external issues	Review of internal issues	Surveys				Prioritiz	ation		iew of pritization	Selection	of the	related Asp	ects
Media research     Analysis of relevant companies     Trend & Impact Analysi     Government policy an regulatory analysis	Management strategies     Status quo of sustainable management and SR evaluation & analysis	External stakeholde     Employees	rs			-	ic materiality f interest among olders	• E> • Re	ternal expert review view by the anagement	Determin reported		key content to n GRI G4	be
						•			Strategic Materiality of C for KOGAS' Sustainabilit		Rank- ing	Strategic Materiality	Stakeholders
					C	A			A Health & Safety		1	89.2	91.8
				0.0		D	B		B Anti-corruption Management	and Ethical	2	89.8	89.0
External					G				C Greenhouse Ga Management	s & Energy	3	85.3	90.3
									D Generation of E	conomic Value	4	87.2	86.5
									E Shared growth		5	81.5	89.8
									F Contribution to	community	6	80.3	88.8
Tow									Employmentar	,			
0 Low		Internal				•	High		G benefits	a frendre	7	85.8	84.2
Core Issues Stable production and s		GRI G4 Material Aspect	Employ- ees	Direct Custom- ers	Share- holders & Investors	Govern- ment	Global Custom- Su ers	upplie	rs nity Public	Reporting of Co	ore Issue	S	Page
Higher financial soundn													
Higher demands for ant	ti-corruption												
Improvement in slack m	nanagement	Generation of								1 Stable sup	1. Stable supply of natural gas and	d is	
Substantiation of overse		economic value			•	• • •			•		higher business efficiency		<sup>4</sup> 16
Development of project engines	ts for new growth												
Improvement of core te competencies	echnological												
Eradication of corruptio	on and irregularities												
Stronger competencies		Anti-corruption and ethical management	•			•				2. KOGAS wit reliability	h trans	parency and	20
Improved ethical management	gement/transparent	ethical management								Teliability			
GHG and energy manage	-												
Response to carbon em		GHG and energy management	•			•							
Utilization of new & rene expansion of investmen										3. Clean and	safe en	ergies	24
Prevention of safety acc	idents	Haalth & cafaty											
Workplace health		Health & safety	•										
Improvement of SME co	ompetencies												
Compliance with fair tra fair trade culture	ade and formation of the	Shared growth	•				•						
Expansion of the shared	d growth culture									<ol> <li>A corporat with its nei</li> </ol>			28
Facilitation of communi economy		Contribution to	•						•				
Realization of welfare in	energy	community	-										
Work-life balance													
Creation of quality jobs		Employment & welfare								5. A favorable	e corpo	ration to wor	<sup>k</sup> 32
Fair wage and HR mana	gement	benefits	-							for			02
ran mage and minimum	-												



#### 01. Generation of Economic Value

# **KOGAS** will strive for the stable supply of natural gas and higher business efficiency.

Due to the strong instability of supply and demand of electric power for years, the construction of combined cycle power plants has been massively extended, and a higher demand for heating in winter has made a stable supply of natural gas even more significant. The issue of stably supplying natural gas and raising accessibility to it directly impacts the national economy and welfare for the public. In this aspect, KOGAS' efforts to seek for new growth engines have been spotlighted in developing overseas resources. It has become critical to raise the self-sufficient development rate for resources and also efficiency in investment.

#### 2014 Key Performance





supply pipelines



Amount of resources production

_	
LNG storage ratio	16.8%
Accumulated construction of pipeline networks	4,857 km
Amount of resources secured	440 million tons
Amount of resources	8.68 million tons

90%

2018 Attainment Targets

F&P technological

independence

#### 1. Stable Supply of Natural Gas

#### Sophistication of Supply and Demand Management

Long-term Supply and Demand Planning According to the gas supply and demand plan of Article 18.2 of the Urban Gas Business Act, the Ministry of Trade, Industry and Energy sets long-term supply & demand planning on natural gas for over 10 years and promulgates it biannually. The long-term plan for natural gas is divided into the one for urban gas and for power generation, and is based on specified forecasting models. Accuracy is raised through supply and demand prediction in consideration of the economic growth rate, population growth rate, industrial structures and basic plans for power supply and demand. Contracts to be implemented, construction of supply facilities and investment plans are determined based on such demand prospects, and plans are set to expand natural gas to untapped areas to achieve balanced national development.

Accurate Forecasting of Demand A stable supply of natural gas starts from accurate forecasting of demand. KOGAS operates an integrated supply& demand management system for scientific supply& demand management. Monitoring has been reinforced on factors with demand fluctuations including temperature, GDP and demand for electricity to enable timely identification of the rapidly changing supply& demand status. We have forged partnerships with the Econometric Research Center at Sungkyunkwan University and Korea Energy Economics Institute to boost accuracy in forecasting demand, which continues to improve the demand forecasting models for natural gas.

#### ▼ Integrated Supply & Demand Management System

Supply & demand planning system KOGAS City gas producers KPX Forecasting demand Forecast model Forecasting demand for Forecasting demand for city gas power generatic Setting plans for supply & demand for long term/short term/winter Facility setup system System for procurement Supply & demand forecasting Calculation of storage tanks (LNGSIM) analysis (STONER) G ≣ Calculating surplus / shortage volume Calculation of Calculation o Integrated supply & demand system storage tanks pipeline faciliti and annexed including 4 facilities pipeline Demand forecasting Mid-and Demand management ng-term and short-term strategies – Mid-and long Procurement management Facility planning and Facility management

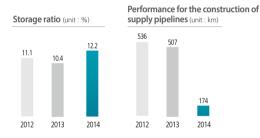
Preparation for Supply & Demand Instability KOGAS signs longterm and short-term procurement contracts for natural gas based on the demand forecasts by period and demand prospects in winter. Upon the occurrence of surplus or shortage, we calculate the volume needs by period, and make responses through additional purchases in the LNG spot market or treatment of surplus volumes. With our branches in Southeast Asia and the Middle East where most of LNG is concentrated, we monitor the local status of facility operation and local political and economic circumstances. In order to overcome regionally skewed distribution of procurement lines and minimize political and geographical risks, we have diversified our procurement lines to Russia and Australia, etc. We have secured self-sufficient development volumes through our exclusive LNG development projects in Canada and Mozambigue.



#### **Construction of New Facilities**

Timely Expansion of Facilities and Scale-up of Supply KOGAS ensure that there is no setback in the long-term natural gas supply through mid-and long-term facility construction plans. Under a plan to increase the storage ratio up to 21% by 2027, we completed the construction of three storage tanks at Samcheok Terminal Division in 2014, and are now equipped with production systems in four terminal divisions with the initiation of transmission of LNG to Samcheok Terminal Division following the ones in Pyeongtaek, Incheon and Tongyeong. We also completed the construction of the 174km-long main pipe and 21 production management offices for stable supply of natural gas. Once the construction is completed for Samcheok Terminal Division by 2017, we will be complete with 12 tanks, the natural gas storage capacity of 2.61 million kl, and vaporization facilities of 1,320 T/H. Some new projects are in the pipeline: additional construction of a combined cycle power plant in the metropolitan area; extension of 4th area of Incheon Terminal Division bracing for a peak demand in winter; and construction of small LNG terminals to establish stable energy infrastructure in Jeju, a renowned tourist destination. On the matters of an extension of 4th area of Incheon Terminal Division, some local residents showed their worries over stability of LNG terminal division. In order to relieve their anxiety, KOGAS clearly demonstrated its safety over LNG terminal division by conducting safety test through third party expert agency from February to August in 2014.

▼ Expansion of Storage Facilities & Construction of Supply Pipelines



#### Efficient Construction and Improvement of Facility Standards KOGAS supplied natural gas 12 months earlier than planned to Ansan

Combined Cycle Power Plant, thus shortening the gas supply period by a total of 26 months to four power plants. This contributed to securing a sufficient power reserve ratio, and enhanced the sales increase of KRW 400.2 billion through the early supply of natural gas. As a result of reasonable improvement in design standards and the Value Engineering (VE), we could reduce the investment cost of KRW 118.8 billion. We also established the design standard for LNG storage tanks of 270,000 k  $\ell$ , the world's first and largest capacity, and applied it to three storage tanks at Samcheok Terminal Division. As a consequence, we could additional secure 200,000 k l tanks vis a vis our initial plan, while minimizing the boil-off gas (BOG).

▼ 270.000 k ℓ tank construction site at Samcheok Terminal Division



Construction site for the main pipe semi-shield from langlim to linhae



#### **Enhancement of Operation Efficiency**

Enhancement of Reliability of Long-term Operation Facilities KOGAS established a standard for lifecycle management for facilities for the first time in the gas industry to systematically manage the operation facilities. In 2014, an inspection team consisting of internal and external experts conducted precise safety checks and maintenance for 11 storage tanks operated for long, that is, for over 15 years and the 288.5km-long main pipe. For obsolete facilities of over 30 years, in particular, we strive to maintain reliable facilities with integrity through collaborative inspection with outside facility experts.

#### 2. Development of New Growth Projects

#### **Expansion of New and Renewable Energies**

KOGAS has expanded the supply of fuel cells as an effort to explore new demands for natural gas. The fuel cell market grows by about 140% a year on average, showing the fastest growth among new and renewable energies. Moreover, fuel cells are spotlighted as the optimal solution for power supply, and the demand for power generation using fuel cells is likely to soar as the mandatory supply ratio for new and renewable energies increases. We are keen to find new market opportunities through models to develop and support fuel cell projects using natural gas.

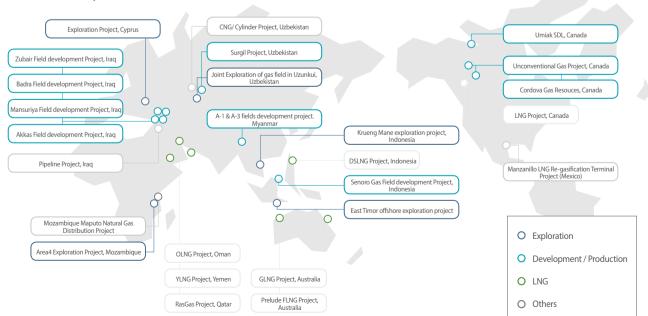
#### ▼ Supply ratio of new and renewable energies (unit : %)

Year	2014								]		2024
Mandatory Ratio	3.0	3.5	4.0	4.5	5.0	5.5	6.0	7.0	8.0	9.0	10.0
* Starting with 2% in 2024	2012, an	annual	increase	of 0.5%	6: after 2	2020, ar	n annual	increase	e of 1%	to read	n 10% by

▼ Distribution of fuel cells for power generation (unit : accumulated, MW)

Year	2012	2013	2014
Amount of Distribution	58	126	164

#### ▼ Status of Overseas Projects



In 2014, KOGAS signed an investment agreement to establish 100MW fuel cells with eight institutions including Gyeonagi Provincial Government and Pyeongtaek City Government. We are currently looking at a measure to supply natural gas to Pyeongtaek Fuel Cell Power Plant through Poseung Governor Station.

#### ▼ Expected Results of Pyeongtaek Fuel Cell Project

Sales volume of natural gas	Revenues of natural gas	Net income
147,000 tons/year	KRW 153.8 billion/year	KRW 6.3 billion/year

#### **Efficient Initiation of Overseas Projects**

Development of Overseas Resources KOGAS has continuously initiated projects to develop overseas resources for stable supply and demand of domestic natural gas and secure new growth engines. We established three major strategic directions, including "enhancing investment efficiency", "selecting and focusing", and "reinforcing business capability" for strategies in mid and long-term resources development based on the global energy market trends, the government's energy policies and the analysis of the management environment. Accordingly, we plan to secure resources that are equivalent to a domestic natural gas volume to be consumed for a decade by 2020, and produce 20% of domestic annual consumptions outside Korea.

KOGAS is currently engaged in 22 resources development projects in 12 countries (excluding other projects). As of 2014-end, we have secured 269 million tons of resources, which is about a volume to be domestically consumed for 6.4 years, if converted into LNG. We produce oil & gas in a total of 10 projects including A-1/A-3 in Myanmar, Jubair project in Iraq and Rasgas project in Qatar. In 2014, we produced oil & gas worth 2.26 million tons to generate the income of USD 765 million (revenues + dividend income), among which the project income worth USD 128 million from three projects, namely, Rasgas of Qatar, OLNG of Oman and YLNG of Yemen was utilized as resources to lower the domestic city gas price, thereby contributing to improved energy welfare for the public.

Through three of the LNG projects, that is, GLNG of Australia, DSLNG of Indonesia and Prelude LNG of Australia, the volume of developing and procuring natural gas will be scaled up to 2.42 million tons by 2017. In 2014, we could procure 928 thousand tons to Korea among the total volume of natural gas produced abroad.



Empowerment of Technological Prowess Aiming to foster technological prowess and reinforce technical evaluation for exclusive minefield operation, KOGAS selected 17 core technological competencies on resources development and established a roadmap to secure technologies over the medium and long haul in its efforts to strengthen technological prowess. KOGAS seeks to achieve technology self-sufficiency of 85% by 2017 to lead Exploration & Production (E&P) projects.





#### **Efforts to Create New Demand**

As regulations on ocean emissions (led by advanced countries) are expected to expand to Northeast.

Asia, the demand for a clean energy source, LNG-fueled ships is expected to increase. In April 2013, KOGAS signed a contract forsupplying LNG with Econuri, an LNG-fueled ship at Incheon Port, for the first time in Asia and prepared for he alternative demand for diesel use for ships by predicting demand. In order to address the severe GHG emissions from diesel-powered yard tractors, a transport device for containers in port, we modified the engines, replacing diesel with LNG. According to a survey done by the Ministry of Oceans and Fisheries, once these yard tractors are fuelled by LNG, about 42% of CO<sub>2</sub> and about 27% of fuel cost can be reduced, while lowering vibration and noise, thus contributing to an improved working environment. The usage of LNG for transport devices at ports is recognized to have contributed to more environmentally friendly ports emitting less pollutants and CO<sub>2</sub>, and we plan to expand this practice to major ports nationwide.

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#### **Zero Supply Disruption and Power** System Failure

KOGAS strives to ensure no supply disruption or power system failure by securely and stably operating facilities. In 2014, we operated an emergency control unit to prevent supply disruption, and conducted accident recovery drills for 53 times. In order to guarantee more prompt responses to risks of power system operation, we reduced the existing four stages to two. Voltage boosting facilities are operated to respond to the setback of lower pressure in gas supply in the Gyeongnam region on which the tip end of the pipeline network lies, and pressure reduction facilities are up and running in the metropolitan area in summer. As a result of such endeavors of KOGAS, there has been no single case of supply disruption of natural gas for 18 years since 1996.

▼ Stability in Supply (unit : cases)

	2012	2013	2014
Gas Supply Disruption			
Power System Failure			

have contracted by the power system failure cases when there is a gas supply of over one hour while not satisfying the needs on the demand side including the volume and pressure as a result of facility breakdown and accidents

#### World-class management of the natural gas loss ratio

KOGAS could reduce the loss of KRW 57.9 billion by unifying the calculation methods for LNG trading unit procured in Korea and raising the accuracy of LNG inventory management. In 2014, the natural gas loss ratio, that is, the ratio of the actual supply volume to the total amount of procurement reached 0.053%, which is the

▼Comparison of Loss Ratios (unit : %)

	Company S,	Company N,	Company C,	Company T,	KOGAS,
	Italy	U.K.	U.S.	U.S.	Korea
Loss Ratio	0.13	0.50	1.00	3.00	0.053

Companies selected for comparison have the same business format with KOGAS (companies that supply gas to city gas producers through high-pressure pipeline networks).

#### **Integration of Value Chain for the Entire Process in DSLNG of Indonesia**

A project in Indonesia titled 'Donggi-Senoro LNG' is KOGAS' first overseas LNG plant project. It is also Indonesia's first gas field separation and development project whereby the two regions of Donggi and Senoro are separately developed. It is capable of producing LNG of 2 million tons a year. KOGAS, Mitsubishi, Pertamina and Medco are jointly taking part in the project. KOGAS is spearheading the entire process ranging from development production of upstream gas field to LNG plant construction, operation, transport and procurement of LNG. This is analogous to integrating the entire value chain in a LNG project covering development up to domestic procurement.



02. Reinforcement of Anti-Corruption and Ethical Management

## **KOGAS** will be reborn with transparency and reliability.

The year 2014 was a painful time for KOGAS due to anti-corruption issues. All the employees at KOGAS have kept in their heart that a corporation with the highest economic value cannot sustain itself if it not ethical, and KOGAS sought after a path of new changes toward ethical management. Stakeholders of KOGAS selected 'anti-corruption and reinforcement of ethical management' as the material issue in the materiality test and as the most material issue in strategic materiality, which, in total, ranked second, hinting at their emphasis on how the corporation must transform itself as a transparent one.

#### 2014 Key Performance





Participating in ethics training

2018 Attainment Targets

Comprehensive integrity Grade 1

Increase of the number of integrity auditors

100% of employees attending cyber ethical training

#### **1.** Comprehensive Measures against Corruption

In 2014, some executives at KOGAS were indicted for taking bribes and committing breach of trust, and the former president and CEO was dismissed. As such, KOGAS was on the verge of being stigmatized as a structurally corrupt entity to extent where the whole organization's transparency raised suspicions. Our reputation that has been accumulated as we tried to make a better world plummeted as we received the lowest grade in the comprehensive integrity evaluation of the Anti-Corruption & Civil Rights Commission. As a consequence, employees that used to be proud of their corporation lost their morale and customers were about to turn their back against KOGAS. Under this backdrop, we came up with anti-corruption measures lest these corruption cases occur again. We have operated 17 core tasks based on multifaceted comprehensive anticorruption measures.

#### **Operation of Comprehensive Management System** against Corruption Risks

We increased accessibility to reporting on corruption cases by launching an app-based 'KOGAS Ombudsman' system on a smartphone in a bid to enhance tangible effects for an anti-corruption management system. We also made a database on vulnerabilities to corruption and high risks so that anti-corruption behaviors and their signals could be monitored around the clock through the improved e-auditing system. Moreover, we adopted the integrity auditor system to select division-specific integrity managers and impose monitoring roles and the rights to demand institutional improvement.

#### **Establishment of a Stringent Punishment System**

We reinforced the disciplinary level by extending the period of disciplinary suspension from the existing three months to six months on corrupt actors so that strict punitive practices could take root. HR provisions were revised to limit voluntary dismissal including limitation on re-employment of corrupt actors, and wage provisions were amended to halve the amount of the expected severance pay upon disciplinary dismissal.

#### **Creation of Instruments for Job Transparency**

Aiming to enhance job transparency in areas that are vulnerable to corruption including contract signing, budgeting and appointment of personnel, we improved our systems in multiple angles. We set up a system to detect suspicious cases on collusive bidding based on the analysis of bidding cases including bidding rate and the number of successful bids by company. We also revised a specific standard to review on the adequacy of the bidding price to prevent bid rigging so that upon estimating the base price, randomly generated cases could reflect the estimation rate. In order to secure transparency in the contractual process, we ensured to implement a prior external verification system on order placement plans and run the Bidding Proposal Inspection and Evaluation Committee. For fair handling of IT contractual work, evaluation is separately conducted, and external reviewers are mandatorily engaged in along with a verification procedure on settlement. The number of steps for reviewing account bookkeeping increased from two to three to improve the system to manage incomings and outgoings. We also enhanced the integrated IT system to prevent double withdrawals for the same case. We have also come up with a whistleblowing system to report on solicitation for personnel affairs to secure transparency in personnel affairs.

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## 2. Better Execution of Ethical Management

#### Sophistication of the Ethical Management System

KOGAS has established and operated a system for ethical management strategies to achieve systematic ethical management. Under the vision of 'Realization of clean and transparent global management with integrity', we established three strategic directions including sophistication of a culture of ethics and integrity, and formed the Global Ethical and Integrity Innovation Committee, classifying tasks for execution into three: institutional improvement, protocol alignment, and ethics and integrity training. We also conduct internal and external evaluation and diagnosis, through which measures for improvement are devised. These measures are reflected in improving institutions and future plans.



#### Improvement of the Ethical Management System and **Protocol Alignment**

KOGAS has implemented the corporate-wide institutional improvement to secure executional capabilities for ethical management and strengthen control functions. We also strengthened executional capabilities on ethics and formed internal consensus on the issues by aligning the ethics protocol e.g. suggesting specific standards for the code of actions, while minimizing abstract features in the code of actions by formulating a standard for disciplinary actions and indicating a mandate for employees working abroad to submit a pledge on ethics and integrity.

Туре	Departments in charge	Activities
Operation of		Adopting the integrity auditor system
Comprehensive Management System against Corruption Risks	Office of the Auditors	Operating around-the-clock auditing system e.g. setting up a system to utilize smart phones
Creation of Instruments for Job Transparency	Material Contract Team	Operating a committee to improve procurement systems participated by outside experts
	Accounting Team	Strengthening internal control on cash book and improving SAP
	Human Resources Team	Adopting a system to manage recruitment interviewers
Establishment of a Stringent	Human Resources Team	Intensifying the level of disciplinary punishment and internally disclosing the reasons for disciplinary punishment
Punishment System against Corrupt Actors	Performance & Compensation Team	Imposing limitations on corrupt actors fordismissal at their own request and reducing their severance pay
	icum	then severance pay

#### Formation of a Corporate Culture with Integrity

KOGAS encourages its employees on voluntary reporting of cases to prevent possibilities of unethical acts that run counter to ethics and integrity, and to enhance individuals' degree of ethics, thus facilitating voluntary compliance with the code of ethics. We have also practiced ethical management for mutual growth by encouraging ethical compliance through reporting on engagement in external lectures and the operation of a gift returning center on Korean traditional holidays, and donating the returned gifts to social welfare centers. Driven by the dissemination of voluntary reporting and self-diagnosis of ethical degree conducted every year, employees' satisfaction and level of improvement are evaluated, which are later used to devise measures for improvement. We are also developing content for customized ethical integrity training for employees to enjoy empathy and joyfulness, while raising the ethical awareness among employees. We offer customized training programs by stakeholder groups: cyber ethical training for all employees, outreach ethical training, Global KOGAS Forum for executives and a program on integrity with credit mileage points for the promoted and new employees.

#### ▼ Number of voluntary reporting among employees

Туре	Activities	Performance
Reporting on participation in outside lectures	Facilitating the ethical compliance through voluntary reporting	149 cases
Operating a gift return center	Practicing ethical management for mutual growth by donating the gifts to social welfare centers	24 cases
Self-diagnosis on ethical level	Coming up with data on the level of objective ethical awareness	Once

Number of Participants for Customized Training Programs

Туре	Targets	Activities	Number of participants
Ethics training	All employees	Raising executional capabilities aligned with internal evaluation	2,963 people
Training for partner companies	Construction companies	Conducting integrity training reaching out on integrity and anti- corruption activities	19 people (5 companies)
Global KOGAS Forum	Executives	Inducing voluntary ethical leadership by encouraging high-ranking executives including team directors and above to participate in training	186 people
Program on integrity with credit mileage points	The promoted and new employees	Conducting a program with mandatory credit mileage points on integrity by life cycle	164 people
Integrity and ethics training	New employees	Understanding integrity and anti- corruption	63 people
Outreach integrity training	Employees	Understanding integrity policies and integrity	1,311 people
Cyber integrity training	Employees	Completing courses of the Anti- Corruption Training Institute under the Anti-Corruption & Civil Rights Commission	3,147 people

#### **Evaluation and Feedback**

KOGAS is subject to the 'Integrity Evaluation of Public Corporations' and 'Evaluation of Anti-Corruption Prevention Measures' of the Anti-Corruption & Civil Rights Commission on an annual basis. The outcome of the evaluations is disclosed via KOGAS' website and 'Alio', an online disclosure system on management information of public corporations, etc. Weakness in integrity and anti-corruption measures are analyzed through the evaluation outcome, based on which we set 'plans to initiate integrity innovation policies' every year. Based on these efforts, we seek for setting up of anti-corruption infrastructure, higher transparency and reliability in policies, removal of and improvement in corruption factors,

improvement in integrity awareness and culture, prevention of corruption and facilitation of reporting. Areas of improvement are found through precise ethical diagnosis and addressed accordingly.

Туре		2012	2013	2014
Results of the Integrity Survey by the Anti- Corruption & Civil Rights Commission	Comprehensive integrity	Grade 3 (8.68)	Grade 3 (8.24)	Grade 5 (7.46)
	External integrity	Grade 3 (9.06)	Grade 3 (8.86)	Grade 5 (7.61)
	Internal integrity	Grade 3 (8.29)	Grade 4 (8.22)	Grade 3 (8.39)

#### 3. Reinforcement of the Internal Control System

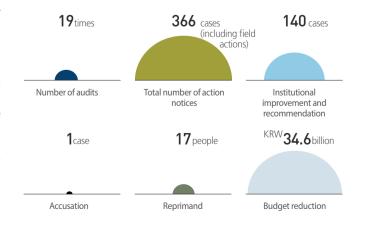
#### **Reinforcement of Expertise and Independence of the Auditing Bodies**

KOGAS selects auditors with over three years of experience in overseas projects and resources development projects to enhance the expertise of the auditing bodies. Audit training related to individual jobs takes place for 54.9 hours on average per head every year. Exclusive audit regulations were formulated and amended to intensify the independence of auditing bodies. Integrity auditors were selected among employees whose integrity grade was three and lower by division, who were imposed with the auditing rights on areas vulnerable to corruption including contracting, accounting and construction. Moreover, the auditing bodies are ensured with independence to independently conduct personnel, training and evaluation programs.

Auditors are applied to independent personnel, training and evaluation system besides other employees. Through personnel verification, auditors are selected and required to take a 40 hours of compulsory training. At least, 3 years of continuous-service are guaranteed and when evaluation for promotion, 1 addition points added up. Instead of being excluded from internal evaluation, their performance is in accordance with evaluation of The Board of Audit and Inspection of Korea. As such, KOGAS appointed 6 auditors, who received average 59 hours of audit training.

#### **Operation of a Preemptive Internal Check System**

KOGAS has enhanced the auditing guality and strengthened internal control based on intensive auditing. Consulting services were provided for areas requiring institutional improvement including protocols and guidelines in order to conduct preemptive management diagnosis. Improvement was made in 117 cases in the areas of contracts & accounting and facility operation: specifically, inappropriate specific inspection standards for negotiation-based procurement contracts,



and a lack of operation of monthly settlement schemes for material procurement. As a result of mobile inspection, five people were reprimanded or dismissed due to accusations of the following: excessive allocation of facility maintenance fees, personal usage of the corporate fees, and disruption of contractual norms for procurement of goods. Disciplinary actions were also taken on three people due to the inappropriateness of bonus payment and the operation of an overseas junket in the name of training. As a result, irrational systems of subsidiaries were demanded to be improved. There is an annual adequacy check through the verification of an external accounting firm on the operating status of the internal accounting management system (internal control system) of KOGAS.

#### **Reinforcement of Follow-up Management and Prevention of Corrupt Practices**

KOGAS has re-established a follow-up management process on audit results, and is making improvement on related weaknesses. Audits are conducted according to the annual audit plan, and the results are disclosed through the Board of Audit and Inspection's 'Public Audit System', intranet and KOGAS' website. For any of the weaknesses, they are reflected in audit plans through follow-up management which takes place to identify if appropriate measures are underway for the cases of disposition. As a result of checking out if the action notices have been implemented, we completed taking actions for 497 cases on slack management. Information on corrupt practices or violates of the code of actions are shared as we registered at the 'Zero Me System' of Anti-Corruption and Civil Rights Commission to prevent the reoccurrence of corrupt practices. For employees that are removed or dismissed due to their corrupt acts, they are given individual notices on a regulatory provision on the prohibition of re-employment in public positions for the next five years.

With the operation of the accountability system for implementation, KOGAS appointed managers in charge to manage the implementation of audit results by one person each for three departments under the Audit Division. And also by registering audit results and due date for actions, we review implementation status for any time. We report on review results by conducting follow-up inspection on the action status guo and the survey on the overall management in full account biannually. As such, KOGAS completed actions taken for 479 action notices on slack management.

#### Notification of audit results

- Sending a report on audit results
- Designating a due date for action and managers in charge

#### Monitoring

 Registering at the Board of Audit and Inspection' Public Audit System and KOGAS' audit system Checking out the progress for taking actions

#### Identification of actions taken

• Registering the outcome for taking actions and evaluating them

#### Feedback

0

 Conducting performance evaluation on audit results • Reflecting any shortcomings in the next year's audit plan

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#### KOGAS Code of Ethics

In an effort to foster transparent management and thus help KOGAS

#### The 1st

#### The first mission is to firmly establish a basic framework for practicing ethical management in the workplace.

#### The 2nd

#### The second mission is to act responsibly in dealing with other KOGAS workers.

#### The 3rd

#### The third mission is to fulfill duties and obligations for shareholders and customers.

- Ensuring stable supply of safe natural gas

#### The 4th

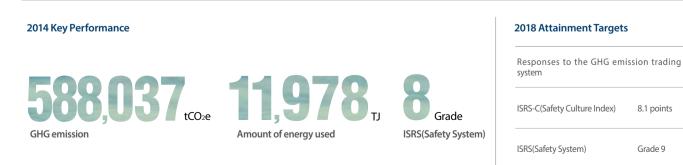
#### The fourth mission is to fulfill duties and obligations for the local community and the nation as a whole.



03. GHG and Energy Management/Safety and Health

## **KOGAS** will make clean and safe energies.

The globally agreed-upon responses to climate change are irreversible for companies to survive over the long haul. The government's 7th basic plan on the supply and demand of electric power even mulls over measures to achieve post-2020 GHG reduction goals. Natural gas is used as a major means to respond to climate change because it generates almost no pollutants in incinerating itself since sulfur, nitrogen and ashes are removed during liguefaction as a clean fuel emitting little GHG. As such, the issue of climate change and the environment are critical issues directly impacting KOGAS' business as well as the demand for natural gas, so was evaluated as the third material issue in the material test. Since LNG might lead to a big accident albeit safe compared to other fuel sources, safety is the top priority. Stakeholders selected 'safety and health' as the most significant reason for KOGAS.



#### **1. Responses to Climate Change**

#### Management of GHG Emissions

Identifying the sources of GHG emissions on sites and accurately identifying the amount of GHG emissions generated from them serve as the foundation to reduce GHG. KOGAS set an inventory guideline to enhance the accuracy of the information on GHG emissions. In 2014, we set the GHG energy IT system to manage not only the GHG inventory but also the amount of energy used to more substantially and effectively lower GHG. According to the Operation Guideline on Management of the GHG & Energy Target of the Notification (No. 2011-29) of the Ministry of Environment, KOGAS operates the GHG management guideline and the GHG guality management and assurance procedure. KOGAS documents a GHG energy specification, which is verified by a third party, and the relevant information is disclosed to the national GHG system. We adopted a system to convert the natural gas pressure generated when lowering the equipment pressure into energy to generate electric power for the first time in Korea. Facilities are improved by applying systems and technologies to control GHG emissions.

#### ▼ GHG Emissions (Unit: tCO2e)



\* Emissions from the business sites emitting a small amount: 3 840 tCO2e \* Fugitive emissions: 298,893 tCO2e

#### **Response to the Carbon Emission Trading System**

KOGAS established measures to respond to the emission trading system under the five-year plan for climate change response. The trading system is also known as the 'carbon emissions trading system' that allows for trading of emission rights or Certified Emission Reduction (CER) among business sites or countries that are obliged to reduce GHG. Once companies register their performance in lowering the six GHGs designated by the Kyoto Protocol, that is, CO<sub>2</sub>, methane, nitrogen oxide, per fluoro carbon, hydero fluoro carbon and sulfur hexafluoride at the United Nations Framework Convention on Climate Change (UNFCCC), they are given the CERs to extent of the amount reduced. The three core tasks for KOGAS to respond to the emissions trading system are establishing a system to respond to the emission trading, developing a specialized workforce on emission trading and initiating GHG reduction projects.

#### Efficient Energy Usage

8.1 points

Grade 9

KOGAS adopted the energy management system at Incheon Terminal Division for the first time as a public energy corporation in 2011 to lower

#### ▼ Core Tasks of KOGAS to Respond to the Emission Trading System



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GHG and manage energy. Since then, three terminal divisions and five district divisions have acquired the ISO 50001, an international standard on the energy management system. In 2014, KOGAS implemented the certification for the business sites without certification within the Trunk Line Division to apply the certification to all sites. With this, all business sites within the Supply Division are complete with the integrated energy

Туре	Certified Business Sites	Note
LNG Terminal Division	Incheon Terminal Division, Pyeongtaek Terminal Division, Tongyeong Terminal Division	Samcheok without certification
Trunk Line Division	Seoul, Gyeonggi, Incheon, Chungcheong, Gangwon, Busan Gyeongnam, Daegu Gyeongbuk, Gwangju Jeonnam, Jeonbuk District Divisions	Integrated in the Trunk Line Division

\* Samcheok Terminal Division to be certified in 2015 as a new site launched in 2014

#### management system.

KOGAS also practices the efficient usage of energy by replacing the ordinary lighting with LEDs or placing LEDs in new spots. In 2014, 4,039 lightings were replaced with LEDs and 62 LED lightings were installed, thus distributing a total of 4,101 LED lightings and saving approximately 205 MWh of energy a year.

#### ▼ LED Lighting Distribution Rate in 2014 (accumulated)

Number of total lightings	Number of LED lightings	LED lighting distribution rate
47,570	31,922	67 %

#### **Expansion of New and Renewable Energies**

Considering that there will be a higher demand for energy sources without GHG emissions over the long term, one of the 12 strategic tasks under the long-term business plan is to foster a low-carbon energy project. Specific tasks to be implemented are advancement into eco-friendly projects and new and renewable energy projects, which are reflected in the business strategies of KOGAS on climate change issues. We are reducing GHG and energy usage by utilizing five types of new and renewable energy facilities – geothermal energy, PV, solar energy, wind energy and fuel cells. We also concentrate on adopting and commercializing fuel cell facilities that produce electricity and heat without the process of GHG-emitting incineration by using natural gas.

KOGAS conducts carbon reduction activities throughout the corporation by making business sites greener and disseminating new and renewable energies. We focus on exclusively producing a part of electric power to be internally consumed by introducing PV, wind energy and fuel cell facilities, and utilize solar and geothermal energies for cooling and heating. As such, various new and renewable energy sources are produced to lower GHG. In 2014, KOGAS reduced the usage of energy of 1,250 TOE, which is about 22 times more than that of 2013 by using more new and renewable energies, thus saving the energy cost of about KRW 1.6 billion.

**Expansion of new and renewable power generation facilities in 2014** (Unit: kW)

	300	300	3
eduction			T
S	Fuel cells	PV	Wind energy

#### 2. Environment and Safety Management

#### Establishing a Roadmap to Enhance the Mid-and Longterm Safety

In order to seek for safety management, the top priority in management for KOGAS, we implement comprehensive and corporation-wide safety management by establishing a roadmap to enhance the mid-and longterm safety. Our goal is to advance world-class EHSQ management to explore tasks to be initiated and improve the effects of execution. Specific mid-and long-term guantitative objects are in place for each task for execution including spearheading the disaster prevention in the industry, enhancing the Safety Culture Index and reducing the disaster rate for partner companies, and performance monitoring is implemented.



#### **Operation of the EHSQ Management System**

KOGAS operates its own EHSQ management system to comprehensively and efficiently manage the environment, health, safety and guality. It has expanded the participation in safety and health of business sites with the help of the EHSQ management system that can be immediately applicable to sites. KOGAS evaluates on whether or not business sites safety management regulations are complied with. Moreover, we received follow-up inspection after acquiring certifications including ISO 9001 (quality), ISO 14001 (environment), OHSAS 18001 (safety and health) and ISO 29001 (natural gas and oil quality) which are environment and safety-related international standards. We strive to minimize risks that might occur throughout the entire process ranging from the production and supply of natural gas.

#### Improvement of Safety Awareness

Driven by the CEO's strong commitment and the government's national initiative on 'strengthening safety management of energy facilities', KOGAS established an on-site safety culture to focus on safety in everyday work life. Marking the 20th anniversary of the Ahyeon-dong city gas explosion in 2014, we organized a rally to practice gas safety, and expand the scope of operating the Safety Management Committee. During the corporation-wide EHSQ manager meeting, site-specific safetyrelated issues and improvement measures were discussed to share near-

#### Rally on Taking Actions for Gas Safety





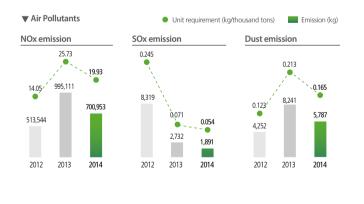
misses and disaster cases. Training to raise site-focused safety awareness is conducted for all employees to upgrade the corporation-wide safety culture, while safety is emphasized in executives' leadership training. The Handbook on Safety Lessons is conductive to the development of employees' safety awareness as it contains major gas accident cases at at home and abroad released by KOGAS every year.

#### ▼ Global Safety Culture Index (ISRS-C)

Year	2012	2013	2014
KOGAS	5.8	6.2	6.7
Average of domestic companies measured	4.4	4.5	4.8

#### Management of Eco-friendly Business Sites

Management of Pollutant Emissions KOGAS manages the environment of business sites by setting the standards for emission of pollutants in the air and water quality of production sites more stringent than the legally permissible level as an eco-friendly corporation. The data on the amount of pollutant emissions generated from air pollutant emitting facilities installed in each site is managed on a monthly basis. Analysis and inspection results on guarterly emissions are reported to the management. The data on environmental pollutant emissions is also provided to the Environmental Information Disclosure System run by the Ministry of Environment as KOGAS is proactively engaged in related institutions' efforts for environmental management. Moreover, as we conduct periodic facility checkup and facility improvement to reduce the amount of pollutants generated, we stringently apply our exclusive treatment standard more stringently than what is required by the relevant law (Act on the Conservation of Air Environment, etc.). As a result of striving for environmental management, KOGAS was externally certified as a green corporation. Major facilities discharging air pollutants among production and supply facilities of KOGAS include combustion vaporizers. gas heaters, combined heat and power generation facilities, boilers and cooling and heating equipment. KOGAS manages these facilities





by minimizing the emission of pollutants. Combined heat and power generation facilities are managed below 75ppm, which is one half of the domestic air environment standard of 150ppm. The intensity and flow rate of NOx is monitored and controlled in real time by TMS installed in chimnevs.

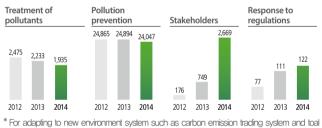
#### ▼ Other Pollutants Activities (unit : KRW million)



#### Management of Expenses for Environmental Activities KOGAS

developed a standard to calculate expenses for environmental activities to manage expenses in four areas of environmental activities: cost for commissioning the treatment of environmental pollutants; pollution prevention expenses for facility investment, environmental training and R&D, etc. to prevent environmental pollution; environmental subsidies for stakeholders as in eco-friendly projects and sponsorship for events of environmental organizations; and statutory response fees including environmental fines and penalties and punitive fines.





maximum daily load for NOx, external responding cost has increased as well,

#### **Disaster and Risk Management**

KOGAS manages disaster risks systematically based on its disaster response system. The central control office at the headquarters, eight regional control offices and four production adjusting offices monitor gas facilities 24/7, and precise safety check is conducted for vulnerable facilities and facilities of long-term use every year to remove risks. In order to reduce disasters on construction sites, inspection on the status of safety management for partner companies has been strengthened. We pay extra attention on preventing safety accidents also by designating hold points for high-risk tasks with a high probability of accidents. KOGAS conducts supply chain patrol and safety management with Daehan Oil Pipeline Corporation for the safety of gas pipelines and efficient facility management. There has been zero safety accident thanks to continued cooperation with related institutions as well as further efforts on operational techniques.

#### ▼ Safety Check for Facilities of Long-term Use (targeting facilities of 15 years

Storage tanks	Production facilities	Main pipelines	Production managem
11 units	74 cases	288.5 km	19 offices





s	ela	pse)	

nent offices

#### **Adoption of LNG Ambient Air Vaporizers**

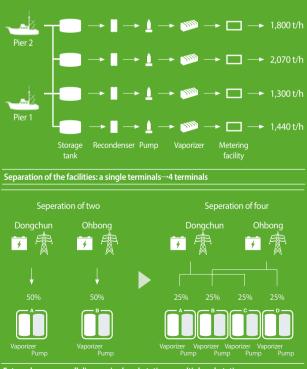
Developing a core technology to secure growth engines of the future LNG is made for easy transporting by compressing in low temperature by capturing natural gas. When LNG reached to consumption site, energy emitted and used coolant could cause impact on the marine environment around terminal divisions. In order to reduce the impact, KOGAS developed a vaporizer thawing system through recirculation of

#### Strengthening facility safety and efficiency by improving the process with creativity

## Intensifying innovative safety by establishing a system for separated management of terminals

national natural gas demand and 60% of metropolitan area demand in winter season. Because of production base being enlarged and focused. when accident occurred, danger and the impact of suspension could be doubled. KOGAS established a basic plan to separate terminals at Incheon base in 2014 by separating single terminal to 4 terminals and load balancing for substations in order to minimize the impact and increase the stability. KOGAS developed such separated operating system as standard model for production base and applied to design for new production base in Jeju. We believe that convenient operating of natural gas.

#### ▼ Terminal Seperate Operating System in Incheon Base



External power paralleling: a single substation→multiple substatio



04. Shared Growth / Contribution to Community

# KOGAS will grow together with our neighbors.

As the impact of the gas industry on the overall industries and people's life implies, KOGAS puts a great emphasis on its ties with other companies and community. The significance lies in a mutually essential relationship for the growth of KOGAS beyond its mere extension of support or assistance. Therefore, our approach to this has been passionate in the perspective of 'growth' unlike other companies that tend to consider social contribution and mutual growth as a way of supporting others or doing some charity work. Likewise, the materiality of mutual growth was ranked fifth and that of social contribution to community was ranked sixth in the materiality test of stakeholders.

#### 2014 Key Performance





KRW



Satisfaction level in shared growth

2018 Attainment Targets

Points of Social Responsibility

Satisfaction level in shared

Satisfaction level in public

Management

growth

institution

64.8 points

85 points

S Grade

## 1. Initiation of Shared Growth with SMEs

#### Establishment of a System for Shared Growth

KOGAS has initiated projects to discover and develop small-and mediumsized suppliers that are sound and competitive. To this end, we have assisted them to develop new technologies in the natural gas field, tap onto sales channels at home and abroad and enhance competitiveness in guality. In 2014, we put in place a mid-and long-term road map to foster and manage small-and medium-sized suppliers in an effective and continuous manner, and set and executed a system for shared growth consisting of four strategic directions and 12 tasks for execution. As a result, KOGAS was selected by the Ministry of Trade, Industry and Energy as a 'favorable company' in the shared growth evaluation.

#### ▼ Breakdown of the Vision and Strategies for KOGAS' Shared Growth



#### **Reinforcement of R&D Competencies of SMEs**

KOGAS strives for shared growth and cooperation to develop new technologies through projects on technological development cooperation with small-and medium-sized suppliers and raise the local content rate of major components for gas facilities. KOGAS sponsors technological development expenses and extends know-how on site operation to SME partners, and develops major components for gas facilities through their exclusive technological expertise. This cooperation enables KOGAS to reduce the expenses to purchase imported products, and pave the way for stable supply of natural gas through improved facility performance and maintenance efficiency. For SME partners, technological competitiveness can be secured and profitability in management can be improved through new sales channels. Thanks to the projects on the technological development cooperation, KOGAS successfully developed a total of five new technologies with four SMEs and achieved the local content rate for 67 components in 2014, saving the procurement cost of KRW 2.5 billion.

#### ▼ Financial Improvement by Technological Development(unit : KRW million)

Amount of Reduction by Using	Products with Technological Developme	ent S
Developer	Products with technological development success	Α
HMC Co., Ltd.	Digital security warning systems	
Bee-Ryong	Multi-functional site control devices	
Electronics Co., Ltd.	Remote surveillance systems for perimeter security	
CMD Korea Co., Ltd.	Imaging control systems for regional control offices	
Ground Co., Ltd.	Direct current blocking devices	
Amount of Reduction through C	Component Localization	
Korea Seal System Co., Ltd., etc.	20 products including top bearings	
Turbo Links, etc.	16 products including bearing sleeves	
Bosung Industry etc	31 products including castle nut gaskets	

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Success
Amount of reduction
300
50
280
170
9
250
710
780

#### Support for SMEs' Exploration of New Channels

KOGAS' Advancement into Overseas Projects with SME Partners KOGAS has proactively advanced into relevant overseas projects with SME partners. We support them to enhance their global competitiveness by assisting them to make inroads into hard-to-enter overseas market. In 2014, KOGAS' SME partners took part in 11 projects of 89 companies in seven countries, expanding overseas channels even further: Manzanillo LNG Terminal Project in Mexico, AKKAS Gas Field Development Project in Iraq, DGS South Project in Iraq, Maputo Pipe Operation Project in Mozambigue; and Kirkuk EPC Project on Pipes in Iraq.

Support for SME Partners' Marketing We support SME partners to participate in various exhibitions at home and abroad to strengthen their marketing, one of their vulnerable areas. Marketing opportunities are provided including promotion of their products and information exchanges on new products. In 2014, we ensured that a total of 44 companies could take part in various conferences including Gastech, the largest international conference on natural gas in Korea, Gas Korea known as an international gas industry exhibition, Environment&Energy Tech and Asia Pacific Gas Conference and explore new sales channels. Procurement seminars were organized in Gyeonggi, Daegu and Gyeongbuk to support SMEs to tap into new sales channels.

A Push for Private Enterprises to Advance into Overseas Market Driven by our overseas resources development projects, KOGAS not only fosters related domestic industries but also helps SME partners in the gas industry and private enterprises to advance into global market. In 2014, 11 SMEs in Korea advanced to the world to construct a gas-chemical plant in the Surgil Project in Uzbekistan, offering jobs to 2,993 employees. As a result of exploring related projects with resources development, 20 private primary subcontractors successfully advanced to global market by 2014, achieving the accumulated order volume of USD 10.6 billion.

#### Gastech exhibition



Hosting purchasing consultation for female-owned firms





#### 2. Support for SMEs to Enhance **Competitiveness in Quality**

Productivity Innovation Partnership with SME Partners KOGAS provides consulting to enhance productivity of primary SME partners. The scope of consulting services includes establishing a management system, diagnosing and improving manufacturing sites, innovating processes and technologies for operating operation. In order for the effects of productivity innovation to go beyond primary SME partners and spread to secondary and tertiary ones, we conduct a program to strengthen competitiveness in quality covering all the primary, secondary and tertiary partners. The three participating companies had their revenues increased by 7.5% on average, and could save expenses by KRW 19,200,000/year as a result of shorter working hours, thus gaining the financial effect of KRW 64 million. Five SME partners were selected and supported under the project to support productivity innovation partnerships, their operating income increased by 4.2% from the previous year. Productivity of added value rose 33% compared to the previous year to achieve the financial performance of KRW 450 million.

**v** Number of Productivity Innovation Partnerships and Details of their Effects (unit : cases, KRW 1.000)

Туре	Number of tasks on financial effects	Financial effects
Sunglim Industry Co.	3	200,868
Correl Technology	1	1,757
MS ENG	1	17,472
SHINWOO FA	1	184,000
GRANTECH	1	46,000
Total	7	450,097

Technical and Job Training for Employees of SME Partners KOGAS is providing various education and advisory programs to improve job capability for SME partners. We are operating the 'Management Doctor System', providing executives of SMEs with advice on management, and conducting job education for their employees to enhance their capabilityin overall management. We are sharing relevant technologies and experience by dispatching experts in the facility operation sector among our retirees and professionals with extensive business experience.

#### 3. Dissemination of a Culture for Shared **Growth with SMEs**

Better Communication with SME Partners KOGAS is operating communication channels to identify various needs and provide suppliers with practical systems. Twice a year, we consult SME partners about related policies by the Shared Growth Committee. We are also collecting opinions from partners and improving measures for support by holding various meetings. Site-oriented win-win cooperation is taking root among contractors and primary/sub-contractors by operating a shared growth management committee on each construction site nationwide. Executives and heads of divisions at KOGAS also visit the sites of SME partners to listen to their difficulties and suggestions and reflect them to shared growth policies.

Improvement of Institutions to Address Difficulties and Extend **Support** In order to address difficulties of SMEs and extend support for them, we take their feedback and try to make improvement. In 2014, we have proactively embraced such requests as the registration of KOGAS' partners in building national flag LNG carriers and SME partners' advancement into overseas market with KOGAS, which were the issues raised at the Shared Growth Committee in 2014. As a result, we enabled two of our partners to take part in building national flag LNG carriers and 44 companies to take part in overseas projects with KOGAS. Numerous requests collected through KOGAS' CEO visiting SME partners' sites including the expansion of sales channels for SMEs were implemented internally at KOGAS. Moreover, 'KOGAS Regulatory Reform Group' participated by the CEO was installed and operated to reform hidden regulations. Institutional improvement was completed for 10 issues registered online including easing of gualification of bidders.

#### Shared Growth Committee for SMEs Expanding Shared Growth Forum

#### 4. Contribution to Community

#### **Onnuri Love Project**

Onnuri Project for Improving Heat Efficiency KOGAS has conducted KOGAS Onnuri Project for improving heat efficiency since 2010 to achieve energy welfare and raise the guality of life for the energy poor and the socially vulnerable. Over KRW 2 billion is injected every year to improve heating efficiency for low-income households and welfare facilities for the improvement in heating, insulation work, window replacement and wallpaper flooring. Improvement has been made for heat efficiency of houses for the underprivileged including 663 lower-income households and 389 social welfare facilities by 2014. We enabled social enterprises to take part in construction to contribute to job creation and energy saving, thus raising the efficiency in social investment.

Waiver of Gas Fees for the Underprivileged KOGAS conducts a project to subsidize heating fees for the underprivileged suffering from a shortage of heating fees as Korea's representative public energy corporation. In 2014, gas fee discounts worth KRW 65.5 billion were offered to 865,000 households of social minority, up about 42% from KRW 48.2 billion of 2013, while KRW 3 billion was donated to 22,542 social welfare facilities. We also tried to share warm-heartedness to many neighbors by suspending the gas supply cut-off even if gas fees are not paid during winter for basic livelihood security recipients and the nearpoverty class.

**One Company One Hope Village Project** KOGAS has supplied goods for winter including blankets and sleeping bags to local residents under the Once Company One Hope Village Project in winter. Such donations have been made to residents in jjokbangchon, or 'cell town,' for the many cubicle-sized dwellings in Dongdaemun from 2010 to 2014. Winter goods were extended to residents in jjokbangchon in Daegu this year.

#### **Onnuri Hope Project**

KOGAS has strived to contribute to the promotion of public interest and the development of future generations through the Onnuri Hope Project. A biannual campaign to protect cultural heritage sites is conducted for 27 of them nationwide around our business sites along with environmental clean-ups and safety check for fire extinguishers and donations of related goods. We take the lead in the air quality improvement campaign for metropolitan cities through air environmental survey, installation of PV facilities and youth training on the environment under the Blue Sky Project in conjunction with civic organizations and local governments in order to inherit the blue sky to our offspring. Cultural vouchers are provided to the socially vulnerable as we sponsor cultural and art events through invited lectures at KOGAS Academy.

#### **Onnuri One Heart Project**

KOGAS conducts community-focused social contribution activities at the headquarters and each of the 13 business sites by operating the Onnuri voluntary groups. A culture of sharing is continuously spread to neighbors through diverse volunteering programs including family volunteering on weekends, food trucks, book sharing and blood donation. KOGAS is implementing the 'Volunteer 5-up Movement,' a creative project for sharing practices in the corporation to encourage employees to enhance social contribution points by more than 5% compared to last year. We also signed an agreement titled the 'Project to Support a Health Body and a Healthy Dream' last August upon the relocation of the headquarters to Daegu, unfolding various social contribution projects including construction of a children's toy library, sponsoring school uniforms for middle and high school students and establishment of infrastructure for Kyungpook National University Children's Hospital in Daegu.

Social Contribution Mileage	

Key Performance Indicator(KPI)	2012	2013
Social contribution mileage points per employee	24.4	28.67

#### **Onnuri Harmony Project**

KOGAS is engaged in diverse social contribution activities to forge trust with residents in community and global citizens through the Onnuri Harmony Project. Contribution will be made to community through voluntary works, and starting from 2014, municipal, county and autonomous districts located in the radius of 2 km from LNG terminal divisions will receive operating subsidies worth KRW 6 billion a year. We also conduct projects to support rehabilitation centers for disabled children and youths in all regions including Jeju District to strike a harmony with community. We also strive to develop top talents through scholarship programs and industry-academia cooperation targeting high school and university students of low-income households. Global fellowships are extended to students from countries where overseas resources are developed. For least developed countries, we sponsor the East Timor Soccer Team, and sponsor child patients with heart diseases in Irag and Uzbekistan for their surgical operations. As such, we are committed to fulfilling our social responsibilities as a global energy corporation driven by proactive social contribution programs.



2014
29.15

#### Reducing cost and increasing income through social contribution





#### 05. Employment and Welfare Benefits

# **KOGAS is a Favorable Place to Work for.**

A total of 3,483 employees work for KOGAS, which provides high-quality jobs, respects the diversity of workforce upon recruiting them and strives to strike a work-life balance for employees as a public corporation. As a result of the materiality test the issue was ranked 7th in materiality with 84.2 points for the stakeholder score and 85.8 points for strategic materiality.

#### **1. Fair HR Management**

#### Fairness in Promotion and Allocation

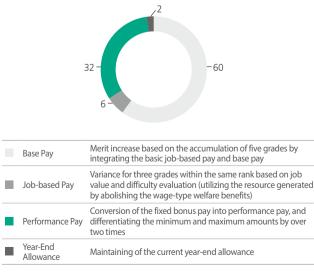
At KOGAS, when employees of Grade 3 or the intermediary manager level and above are to be promoted, they are to pass a qualification test. Then, the information of those that pass the test as candidates including their work performance, language abilities and other gualifications is comprehensively compared and evaluated in multi-dimensions. Those that pass the process become eligible interviewees. Members of the Promotion Review Committee selected through the electronic system decide on the finalists to be promoted with the presence of those at the auditing bodies. The interviewers would make the decisions based on the candidates' track records and performance specifications, following ranking them on an anonymity basis. The ranking is then aggregated to determine the winners for promotion (for Grade 2 and above, the decisions are made by the president). During the period of performance evaluation and promotion, a bulletin board for individual PRs is up and running to give official opportunities to employees to promote themselves, thus eradicating any practices of under-the-table solicitation for personnel affairs. Efforts are poured in to secure fairness in the entire promotion process by disclosing a list of solicitors of personnel affairs and prohibiting collusions among judges. In allocating new employees, their career buildup and job aptitude are considered in positioning them. Even for the job rotation of the existing employees, they are to submit up to three candidates for the departments they would like to belong so that individual preferences and issues on job positioning are considered and fair job opportunities are guaranteed. We also run a committee to select employees to work abroad and long-term trainees to position the right talents for the right jobs.

#### Performance-based Evaluation and Compensation

KOGAS conducts performance evaluation on each employee according to annual goal set by strategic indicators. All employees establishes their goals for performance and capabilities and then approved by the managers at the beginning of the year. Accordingly, their performance evaluation is implemented based on individual performance at the end of the year.

KOGAS conducts performance pay programs according to the government's 'Recommendations on Pay-for-Performance in Public Enterprises.'

#### **View Colored Performance-based Pay** (Unit: %)



#### 2014 Key Performance







2018 Attainment Targets

Organization Effectiveness 78.9%

Performance Evaluation 83 Points

As a result, the base pay, which takes up 60% of the total pay, is raised differentially in five grades based on competency evaluation, and 32% of the total pay is converted into performance pay so that performance is reflected in pay by having a twice or larger difference between the maximum and minimum amounts. In order to make up for weaknesses of formality in written test, interviews have been adopted for fair evaluation – a new arrangement based on employees' feedback from a survey on performance training. The face-to-face interviews have been included for external expert panels to verify the performance on top of the existing written evaluation of performance reports. This ensures objectivity and fairness in evaluation, raising evaluation acceptability through greater reliability.

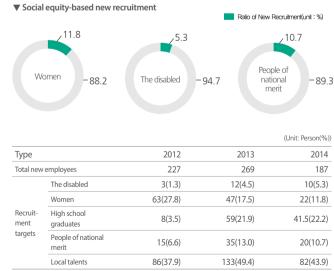
#### Preemptive Risk Management for HR Management

KOGAS preemptively manages risks resulting from a conflict of interests on HR management. Our HR systems have been significantly improved by holding seminars for all employees on HR systems and gathering their feedback. We eliminate HR-related irregularities and laxity by limiting the severance pay for corrupt players and adjusting the standard for financial incentives. Stability in employment is sought after by changing the job status of researchers as regular employees, and converting the contracts of contractual employees into open-ended ones. We also adopted a system to manage job interviewers to eradicate irregularities, while reminding employees of the importance of integrity by strengthening integrity training for those engulfed in irregularities and indicating reasons for disciplinary personnel appointment. As such, we strive to stably control risks in personnel management.

#### 2. Open Recruitment

#### **Expansion of Open Recruitment**

KOGAS openly recruits employees without limitations on age, academic background, major or region. Credentials of interviewees including their name, place of affiliation and university name are not disclosed for interviews to enable transparent recruitment. KOGAS started to recruit employees without considering their career or academic background



\* Based on disclosure from Alio, Ministry of Strategy and Finance

in 2013, abolishing a document screening process to recruit Grade 6 employees and giving opportunities to all applicants to take an aptitude test. KOGAS also adopted the National Competency Standards (NCS) in 2015, expanding open recruitment based on individual capabilities. We continue on with our social equity-focused recruitment. Specifically, recruitment of local talents, high school graduates and people of national merit is in place with a designated guota, and those that have completed their internship at KOGAS can apply for jobs within a quota exclusively designated for them.

#### **KOGAS' HR Management**

As of 2014-end, 3,483 employees work for KOGAS. Over 600 young talents have been newly recruited for the past three years, reinvigorating the corporate atmosphere. Competent talents are also recruited with

#### ▼ Composition of HR

Non-regular employees 30 persons

0.86%





Recruit from local talents 1,616 persons





					(Unit: Person(%)
Туре		Unit	2012	2013	2014
Total employe	es	Number	3,193	3,386	3,483
Employment	Regular	of	3,145	3,347	3,453
type	Non-regular	people	48	39	30
Distribution	Below the 30s		1,054	1,203	1,263
of employees by age	In the 40s		1,611	1,616	1,627
	Above the 50s		528	567	593
Women employees	Women employees	Number of	302(9.6)	336(10.0)	346(10.0)
	Women managers	people (%)	1(0.03)	2(0.06)	5(0.14)
Social equity-	The disabled	Number	78	93	100
focused recruitment	High school graduates	of people	510	546	558.5
	People of national merit		272	302	318
	Local talents		1,470	1,568	1,616

\* Based on disclosure from Alio, Ministry of Strategy and Finance

\* Data of distribution of employees by age bracket may differ from the previous year's one due to change of calculation measure (standard changed from regular employee, to all employees)

no discrimination under the social equity-focused recruitment program. Although the application rate among female talents is low due to the nature of the gas industry, we do the best to continuously generate women managers by offering them a fair promotion procedure and enabling them to develop their career path. As such, KOGAS has expanded the organizational diversity, and fostered the competencies of top talents so that they could together contribute to the society.

#### 3. Work-Life Balance

#### **Facilitation of Flexible Workplace Programs**

Since KOGAS adopted the flexible workplace programs on a pilot scale in 2011, the ways of operation have continuously improved through a better application procedure, differential selection of days, and expansion of types of flexible work. The utilization rate of the programs, as a result, has gradually gone up. Employees in even more diverse job ranks have utilized the flexible workplace programs, especially with the relocation of the headquarters to Daequ in 2014. The programs continue to be upgraded by exploring and recruiting for jobs requiring less than 40 hours of working a week, and operating the Smart Work Center for headquarters employees' convenient handling of tasks in the metropolitan area. A compressed work arrangement is being reviewed to improve working styles and flexibility of job types as the programs have made a soft landing.

#### ▼ Status of Usage of Flexible Workplace Programs

				(Unit: Person(%))
Туре	2012	2013	2014	Job Type
Flex-time work	291 (9.3)	479 (14.3)	914 (26.2)	No limitation
Part-time work	-	-	14 (0.4)	Targeting security & protection jobs
Smart work	-	-	51 (1.5)	Targeting jobs in the metropolitan area

#### **Employment Regulation related to Expanding** Childcare Support

#### [Article 44-1-4 and Subparagraph 2 of Article 25 of Employment Rule]

When men and women employees with a child aged 8 and lower (for elementary school children, second graders and lower) applies for a childcare leave for babies and infants, the childcare leave shall be allowed up to one year (three years for women employees), and the period may be divided into separate terms only once.

#### [Article 12-2 of Employment Rule]

When employees apply for shorter working hours within 12th or after 36th week during pregnancy, a two hour-less working day may be allowed for a designated period of time.

#### **Expansion of Childcare Support for Women Employees**

We provide an environment for maternity protection by shortening working hours and changing jobs during pregnancy, and allocating married couples working for KOGAS to be appointed in workplaces

in close proximity. In order to prevent women's career break due to childbirth and childcare, the maternity leave was expanded from one year to three years, and working hours during the childcare period have been shortened to 15 to 30 hours a week. We proactively accept jobs wanted by employees when they return from their leave so that their job career does not have to be halted. We enhance women employees' job satisfaction and immersion by operating on-site breastfeeding facilities and childcare centers and guaranteeing breastfeeding hours during working hours.

As a result of such efforts as open recruitment, fair HR management and a work-life balance for employees, KOGAS was ranked first for three consecutive years as the 'best place to work for in Korea' in the public energy sector by the Korean Management Association Consulting.

#### ▼ On-site Day Care Centers



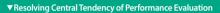
#### **Operation of Family-Friendly Programs**

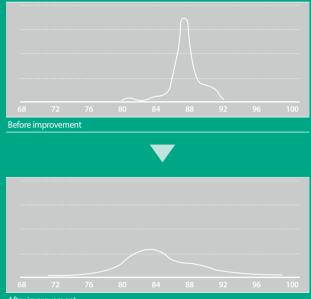
Aiming to enhance job satisfaction among employees through their worklife balance, family-friendly programs have been up and running. Every Wednesday is designated as the Day of Family Love for employees to spend their invaluable family time by encouraging them to leave work in time, and family-care leave has been expanded and is encouraged to be used within a year.

#### Best Practice

#### **Raising Adequacy of Performance Evaluation Schemes**

In order to prevent errors of evaluation, KOGAS newly developed the 'Normalization Program' of the individual and organizational performance evaluation for the first time as a public corporation. It is the program that developed the four-step diagnosis methods and the standard deviation optimization process on the performance evaluation results. The first step is diagnosing the central tendency and comparison of distribution). And then it goes through reference point (GAP) analysis, optimization of variance by adjusting the organizational evaluation grades (S~D), and statistical verification of analytical results. As such, KOGAS reduced the distortion of performance evaluation and increased evaluation acceptability by 2.1% from the previous year.





## Appendix **Economic Performance**

#### Major Economic Performance

Туре	Unit	2012	2013	2014
Revenues		350,313	380,627	372,849
Operating income	KRW 100 million	12,667	14,882	10,719
Net income (loss)		3,620	-2,036	4,472

#### **Major Financial Indicators**

Туре		Unit	2012	2013	2014
Growth potentials	Increase rate in revenues		23.22	8.65	-2.04
	Increase rate in net income		107.23	-156.25	319.62
Desfitebility	Return on Assets (ROA)		0.94	-0.48	0.99
Profitability	Return on Equity (ROE)		4.41	-2.35	4.79
	Current ratio	%	115.74	146.78	139.84
Stability	Debt ratio		385.39	388.83	380.98
	Capital ratio		20.60	20.46	20.79
Productivity	Productivity of capital		7.46	6.04	6.18

#### **Summary for Consolidated Financial Statement**

Туре		Unit	2012	2013	2014
	Current assets		117,857	122,394	137,913
	Non-current assets		288,360	314,270	329,807
	Total assets		406,217	436,664	467,720
	Current liabilities		101,832	83,384	98,621
Liabilities	Non-current liabilities		220,696	263,952	271,855
	Total liabilities	KRW 100 million	322,528	347,336	370,476
	Capital stock		3,864	4,616	4,616
	Others		79,919	84,712	92,628
Shareholders' equity	Equity attributable to Shareholders of the Corporation (subtotal)		83,783	89,328	97,244
	Non-controlling interests		∆94	0	0
	Total shareholders' equity		83,689	89,328	97,244

#### **Government Subsidies and Grants**

Туре	Unit	2012	2013	2014
Government subsidies	KRW 100 million	392	381	9

\* Due to changes in calculation of government subsidies and grants, figures for previous years' one have changed, current standard is in line with a statement of cash flows,

#### R&D

Туре	Unit	2012	2013	2014
R&D investment expenses	KRW 100 million	453	443	468
Patented technologies	Number of cases	29	53	33

#### Generation and Distribution of Economic Value

Stakeholders	Calculation Criteria Unit		Distribution Value
Suppliers	Expenses for purchasing goods from SMEs		5,305
Employees	Employee wages and welfare benefits		2,679
Government	Corporate tax + Taxes & dues	KRW 100 million	488
Community	Donations and social contribution activity expenses	KRVV 100 million	264
Customers	Revenues		372,849
Creditors	Interest		8,430

## **Social Performance**

#### **Status of Employees**

As of 2014-end, 3,483 employees work for KOGAS. We have recruited over 600 young talents for the past three years, revitalizing the organization, and created an environment to indiscriminately employ competent talents through the recruitment scheme based on social equity. We also strive continuously for women managers to be generated driven by a fair promotion procedure and career management. As such, we have expanded the organizational diversity, and fostered our employees' competencies to contribute to the society.

Туре		Unit	2012	2013	2014
Total employees			3,193	3,386	3,483
Employment type	Regular		3,145	3,347	3,453
Employment type	Non-regular	Number of annulouses	48	39	30
Distribution of	Below the 30s	Number of employees	1,009	1,167	1,234
employees by age bracket	In the 40s		1,610	1,615	1,626
	Above the 50s		526	565	593
Women employees	Women employees	Number of employees	302(9.6)	336(10.0)	346(10.0)
	Women managers	(%)	1(0.03)	2(0.06)	5(0.14)
	The disabled		78	93	100
Distribution of	High school graduates	Number of annulouses	510	546	558.5
personnel based on social equity	People of national merit	Number of employees	272	302	318
	Local talents		1,470	1,568	1,616
	The disabled		227	269	187
	Women		3	12	10
New recruits based on social-equity	High school graduates	Number of employees	63	47	22
	People of national merit		8	59	41.5
	Local talents		15	35	20

#### Performance in the BOD Operation

Туре	Unit	2012	2013	2014
Number of times BOD meetings have been held	Number of times	18	19	20
Agenda agreed upon	Number of agenda	55	43	67
Pre-deliberation rate	%	83	94	80
Revised agreed-upon agenda	Number of agenda(%)	2(2)	0(0)	1(1)
Reported agenda	Number of agenda	25	33	27
BOD attendance rate	%	93	95	90
Attendance rate of non-executive directors	%	94	94	88
Portion of speeches/motions delivered by non-executive directors	%	64	65	57

#### Status of Training for Employees

Туре	Unit	2012	2013	2014
Investment expenses for education and training	KRW million	9,244	8,658	8,726
Per-head education hours	Number of hours	136	136	116
Per-head education & training expenses	KRW million	2.94	2.58	2.51

#### **Employee Training on Human Rights Policies and Procedure**

Туре	Unit	2012	2013	2014
Ethical training	Number of employees	2,777	2,861	2,963
Cyber integrity training on the code of actions	Number of employees	2,787	2,924	3,122

#### **Employees' Performance Evaluation**

We have established a corporate culture focusing on performance and values by operating a fair performance evaluation system. We have adopted specific evaluation standards ranging from setting goals for individuals and work units to the relevant evaluation in order to secure fairness and distinction in individual evaluation. We have complemented the institutions and processes to expand interactions between evaluators and the evaluated, thus raising evaluation acceptability among the evaluated, and reliability of the evaluation results.

Туре	Unit	2012	2013	2014
Rate of application of performance evaluation	%	100	100	100

#### Employees' Rate of Return to Work After a Childcare Leave

We ensure that employees could maintain their work life without a career break by inducing a work-life balance by expanding the childcare leave and shortening working hours during pregnancy and a childcare period. We also support them to scale up their existing career by proactively considering the jobs they want upon returning to work after a leave.

Туре	Unit	2012	2013	2014
Childcare applicants	Number of employees	19	15	22
Men employees applying for a childcare leave		3	3	4
Post-childcare leave return rate	%	89.5	93.3	54.5

\* A shrinkage in the return rate due to the expansion of the childcare leave in 2014 (from one year to three years)

#### **Employees' Retirement Management**

We support employees and their family to prepare for a stable post-retirement life by operating the retirement pensions scheme. By offering both defined benefit (DB) plans and defined contribution (DC) plans, we give opportunities to employees to select a plan based on their preference.

Туре	Unit	2012	2013	2014
Amount of assets under management	KRW 100 million	1,180	1,251	1,241
Number of subscribers	Number of employees	3,145	3,181	3,485

#### Status of the Labor Union Subscription

Туре	Unit	2012	2013	2014
Number of labor unionists	Number of employees	2,701	2,922	3.000
Labor union subscription rate	%	85.9	87.9	86.5

#### Status of Suppliers

We pursue mutual growth through cooperation and collaboration with diverse suppliers. As of 2014, 64 major suppliers are in contractual partnerships with KOGAS.

Туре	Unit	2012	2013	2014
Number of major partner companies	Number of companies	18	55	64

#### Procurement Contracts with SMEs

We share the economic performance from our management activities through transactions with suppliers. As of 2014, the amount of purchases from SME products stands at KRW 530.6 billion.

Туре	Unit	2012	2013	2014
Purchases of SME products	KRW 100 million	4,392	5,550	5,306
Ratio of purchases of SME products	%	26.2	27.2	27.3

#### Support for SMEs' Competitiveness

Туре		Unit	2012	2013	2014
	Number of cases	Number of cases	10	16	26
Joint R&D	Participating companies	Number of companies	10	16	25
	R&D budget	KRW 100 million	20	28	23

#### **Customer Satisfaction**

Туре	Unit	2012	2013	2014
Public-service Customer Satisfaction Index(PCSI)	Number of points	98.0	98.0	97.2

#### Status of Social Contribution Activities

Туре	Unit	2012	2013	2014
Total volunteering hours	Number of hours	25,205	52,558	45,878
Per-head volunteering hours		11	21	19.6
Discounts for gas fees	KRW 100 million	349	482	685

#### **Environmental Performance**

#### **Greenhouse Gas Emission**

Туре	Unit	2012	2013	2014
Total GHG emission		650,868	682,427	588,037
Direct emission	tCO2e	308,957	329,511	245,954
Indirect emission		341,911	352,916	342,083

#### Amount of Energy Usage

Туре		Unit	2012	2013	2014
Total amount of energy usa	ige		13,130	13,775	11,978
Direct energies	Fuel	TJ	6,081	6,486	4,855
Indirect energies	Electricity + Steam		7,049	7,289	7,123

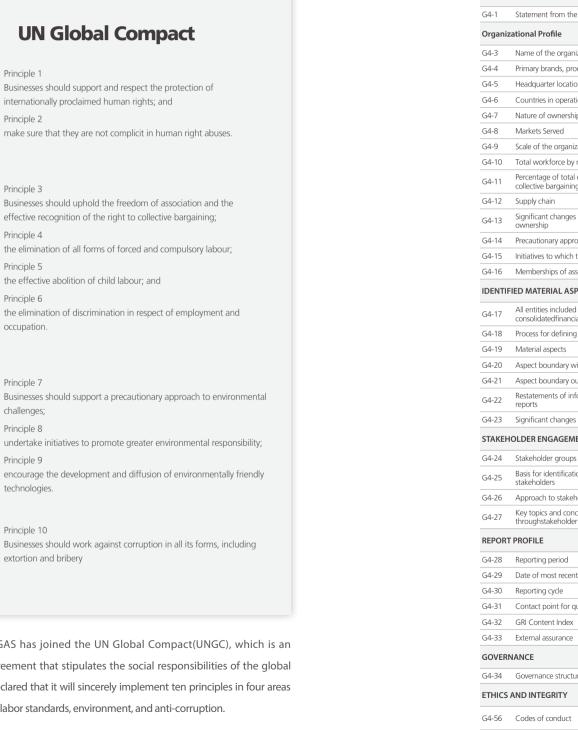
#### **Amount of Water Usage**

Туре	Unit	2012	2013	2014
Total amount of water usage		486,676	1,634,824,872	1,577,284,392
Seawater	3	-	1,634,424,870	1,576,806,104
Water service	M <sup>_</sup>	448,657	387,763	469,210
Others		20,019	12,239	9,078

## **Association and Principles**

## **GRI G4 Content Index**

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#### UN Universal Declaration of Human Rights



Institute for Global Economics

## CEMRD

Energy & Mineral Resources Development Association of Korea



Green Company Council



#### Korea Environmental Preservation Association



Ethical Management SM Forum

## **UN Global Compact**

#### Principle 1

Businesses should support and respect the protection of internationally proclaimed human rights; and Principle 2 make sure that they are not complicit in human right abuses.



#### Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; Principle 4 the elimination of all forms of forced and compulsory labour; Principle 5 the effective abolition of child labour; and

Principle 6 the elimination of discrimination in respect of employment and occupation.

#### Principle 7

challenges; Principle 8 undertake initiatives to promote greater environmental responsibility; Principle 9 encourage the development and diffusion of environmentally friendly technologies.



2

Principle 10 Businesses should work against corruption in all its forms, including extortion and bribery

Since 2007, KOGAS has joined the UN Global Compact(UNGC), which is an international agreement that stipulates the social responsibilities of the global enterprise. We declared that it will sincerely implement ten principles in four areas as human, rights, labor standards, environment, and anti-corruption.

External

Assurance

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## **Third Party's Assurance Statement**

To the Readers of Korea Gas Corporation Sustainability Report 2014:

#### Foreword

Korea Management Association Registration Inc. (hereinafter "KMAR") has been requested by of Korea Gas Corporation (hereinafter "KOGAS") to verify the contents of its Sustainability Report 2014 (hereinafter "the Report"). KOGAS is responsible for the collection and presentation of information included in the Report. KMAR's responsibility is to carry out assurance engagement on specific data and information in the assurance scope stipulated below.

#### Scope and standard

KOGAS describes its efforts and achievements of the sustainability activities in the Report. KMAR performed a Type 2, moderate level of assurance using AA1000AS (2008) as an assurance standard. KMAR's assurance team (hereinafter "the team") evaluated the adherence to Principles of Inclusivity, Materiality and Responsiveness, and the reliability of the selected GRI G4 indices as below, where professional judgment of the team was exercised as materiality criteria.

The team checked whether the Report has been prepared in accordance with the 'Core Option' of GRI G4 which covers the followings.

- Reporting Principles
- · General Standard Disclosures
- Specific Standard Disclosures
- Generic DMA of each of following material aspects
- Economic Performance: EC1, EC2
- Procurement Practices: EC9
- Energy: EN3, EN4
- Emissions: EN15, EN16
- Employment: LA1, LA3
- Occupational Health and Safety: LA5
- Diversity and Equal Opportunity: LA12
- Local Communities: SO1, SO2
- Anti-corruption: SO4, SO5
- Oil and Gas Sector Disclosures: OG1, OG3, OG10

This Report excludes a data and information of joint corporate, contractor etc. which is outside of the organization, i.e. KOGAS, among report boundaries.

#### Our approach

In order to verify the contents of the Report within an agreed scope of assurance in accordance with the assurance standard, the team has carried out an assurance engagement as follows:

- Reviewed overall report
- Reviewed materiality test process and methodology
- Reviewed sustainability management strategies and targets
- Reviewed stakeholder engagement activities
- Interviewed people in charge of preparing the Report

#### Our conclusion

Based on the results we have obtained from material reviews and interviews, we had several discussions with KOGAS on the revision of the Report. We reviewed the Report's final version in order to confirm that our recommendations for improvement and our revisions have been reflected. When reviewing the results of the assurance, the assurance team could not find any inappropriate contents in the Report to the compliance with the principles stipulated below. Nothing has come to our attention that causes us to believe that the data included in the verification scope are not presented appropriately.

- sustainability.
- evaluation process, and the assurance team could not find any critical issues left out in this process.
- realized through decisions, actions, and performance, as well as communication with stakeholders. recorded in the Report.

We could not find any evidence the Report was not prepared in accordance with the 'Core Option' of GRI G4.

#### **Recommendation for improvement**

We hope the Report is actively used as a communication tool with stakeholders and recommend the following for improvements.

- between views of the company and its stakeholders in respect of its sustainability performance.

#### Our independence

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



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

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

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

- KOGAS is determining the materiality of issues found out through stakeholder communication channels through its own materiality

**Responsiveness** Responsiveness is an organization's response to stakeholder issues that affect its sustainability performance and is

- The assurance team could not find any evidence that KOGAS' counter measures to critical stakeholder issues were inappropriately

KOGAS needs to further improve strategies related on sustainability and more systematic performance management system.

We suggest that KOGAS continually improve materiality analysis process and performance management system to minimize the gap

Oct, 12th, 2015

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To minimize environmental impact throughout the entire lifecycle of this eco-design report, KOGAS has used soybean oil and shunned the use of spot color printing or coating.