# 2010 Sustainability Report

World Best 3E Creator Energy | Environment | Expertise



Focus & Align

# 2010 SUSTAINABILITY REPORT



#### 1. Purpose of Publication

Korea Western Power publishes its Sustainability Report to transparently disclose the activities it has undertaken to fulfill its social responsibilities to diverse stakeholders, including shareholders, government agencies, investors, internal and external customers, partners, local communities and civil organizations, and to highlight its achievements in these areas. The review opinions of three independent experts specialized in economy, society and the environment are included, to improve the reliability of the report.

#### 2. Applied Standard

This report was prepared based on the Sustainability Reporting Guidelines (G3) and the Electric Utility Sector Supplement of GRI. For the level of disclosure, please refer to the GRI Index Chart.

#### 3. Scope and Period of Report

This report contains information about the headquarters in Seoul and six business sites. The meaningful achievements and activities were based on 2008 and 2009, and some achievements including the organization and executives were reported as of June 2010. In order to track the changes in achievements, this report contains achievements for three years from 2007 to 2009.

#### 4. Level of Application of GRI G3 Guidelines

Korea Western Power declares that it has met all requirements of Grade A of GRI G3 Guidelines applicable to reports in relation to its publication of 2010 Sustainability Report.



#### 5. Overview of Report and Changes from Existing Report

Korea Western Power had published environmental reports on an annual basis since publishing its first environmental report in 2004. It published its first Sustainability report in 2007 by combining the contents of the environmental report with its business results and social achievements. It published its second Sustainability report in October 2008, and this is the third Sustainability report in 2010. This year, it has reinforced the efforts to reflect the views of stakeholders about the contents of the report by conducting interviews and a survey of stakeholders, as well as an analysis of the reporting of its business results this year by including economic achievements.

#### 6. Criteria for Data Measurement & Calculation

The business results presented in this report are based on corporate accounting standards, and the environmental and social achievements in this report are based on related laws and regulations, or the internal standards applicable to the measurement and calculation of data.

#### 7. Contact for Inquiries and Details about Report

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# 2010 SUSTAINABILITY REPORT World Best 3E Creator





# 2010 SUSTAINABILITY REPORT

# Message from the CEO



Korea Western Power will pursue cooperation and co-prosperity with its stakeholders through active communication and interactions, and realize the corporate vision through the engagement and alignment of all employees.

# Distinguished stakeholders,

Korea Western Power has pursued co-prosperity and co-existence with local communities, SMEs and neighbors in need to fulfill its responsibility as a public organization and grow together with the community, thanks in part to your interests and support. As part of these efforts, it has published three sustainable management reports since 2007. I am extremely pleased to release the third sustainable management report.

To respond to the rapidly changing business conditions of the power industry and achieve sustainable growth, we have revised our 10 year-term strategy of "New Vision 2020," and established the 3 year-term strategy "Focus & Align 2013," which will be the cornerstones for the company's long-term growth.

Based on the strategies, we aim to make the following sustainable management efforts in the areas of our economic, environmental and social performance.

In terms of the economic strategy, we will establish a strong company with high profitability and create long-term growth engines. We will operate our primary business, power generation, with excellence, while maximizing our organizational competitiveness through cost-effective fuel purchase and continuous management innovations. We will also secure long-term growth potential by developing new businesses such as Garorim Tidal Power Plant and IGCC, expanding businesses related to power generation including heat supply to Cheongna District, and launching overseas businesses based on the expertise we have gained in the domestic market.

In terms of the environmental strategy, we will minimize the negative impacts of our operations, and proactively respond to the challenge presented by climate change. We have fully complied with all environmental laws and regulations by building our environmental management system and applying strict internal standards. We have also led the response to climate change by reducing our carbon emissions by 550,000tons, the highest reduction achieved by any of the domestic power generators, by 2009. We plan to turn the external threat posed by environmental regulations into an opportunity to generate new profit by securing the carbon emission right through overseas CDM projects and developing environmental technologies.

In terms of our social efforts, we have been dedicated to pursuing cooperation and co-prosperity with internal and external stakeholders. Based on the philosophy that a corporation is responsible for fulfilling its role as a member of the community, we have actively supported local residents, and operated diverse systems to create win-win conditions with SMEs and meet their needs. We will also make continuous efforts to implement our GWP (Great Work Place) system to maximize employee satisfaction.

All members of Korea Western Power will work together to actively interact with stakeholders and pursue sustainable growth. We promise that we will lead the fulfillment of corporate social responsibilities.

I humbly ask for your continued support and interest. Thank you very much.

> August 2010 President & CEO **Moon-duk Kim** Korea Western Power

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# **Communications with Stakeholders**

Korea Western Power has diverse stakeholders with interests in corporate management for power generation, and these stakeholders interact with one another. Korea Western Power highly recognizes the importance of mutual trust with its stakeholders for sustainability management. To this end, the Company maintains diverse communication channels to identify and respond to the needs of its stakeholders. The needs identified through these channels are regularly analyzed and managed through sustainable management activities.



### Interviews with Major Stakeholders

#### Local School

#### President Young-jin Lee, Samgoei High School, Pyeongtaek



Samgoei High School in Pyeongtaek was designated as Korea's only venture-specialized school in 2009, and has attracted applicants from across the country. The school was able to accomplish this thanks to Korea Western Power.

The company has improved educational conditions by donating scholarship funds and equipment since 2000, and even expanded its active support through the sisterhood relationship building since 2006.

I hope that Korea Western Power will provide continuous sponsorship and support, and that it will play a pivotal role in the educational development of the local community. I also hope that by hiring many employees who graduated from local schools, Korea Western Power will solve the major social problem of unemployment.

#### **Research Institute**

President Chang-ho Lee, Electricity Industry Policy Research Center, Korea Electrotechnology Research Institute



Korea Western Power and the Korea Electrotechnology Research Institute have been engaged in a partnership for policy research on the renewable energy business and investment strategies, and the Institute has identified the status of the field and gained feedback about the

impact of policies from Korea Western Power.

The Company has a challenging spirit. It pioneers the future of the power industry rather than focusing on short-term results. I hope that the company will continue to actively respond to the paradigm shift in the power industry by successfully addressing the issue of climate change and developing renewable energy sources, and lead the sectors of power generation with competitiveness.

#### **Financial Organization**

Deputy Branch Manager Dong-soo Kim, Nonghyup Samseongdong Branch



Nonghyup has served as the primary bank of Korea Western Power, providing the company with a system for the stable flow of funds and the related support systems. I expect that the company will sustainably grow into a respected enterprise that contributes to Korea's industrial

development and an improved quality of life for its citizens by securing diverse material supply channels and efficient corporate operation. Continuous technology development and improvements in operating efficiency will improve its productivity and save costs, and the financial results will be maximized. When the added value created through this process is invested in stable power production, including renewable energy development, the company will be able to achieve sustainable management targets.

#### Partner SME

#### CEO Geon-soo Lee, Korea Air Conditioning Tech



Korea Air Conditioning Tech has worked on an SME partnership R&D project with Korea Western Power, and the related patent is coowned by Korea Air Conditioning Tech and Korea Western Power. The product that was developed through this partnership can save energy by up to

40% compared to existing products, and was designated as the best SME product, contributing to the revenue growth of Korea Air Conditioning Tech, and enabling stable power facility operation and power generation cost saving by Korea Western Power.

I hope that Korea Western Power will continuously support and partner with Korea Air Conditioning Tech in the areas of corporate management, technology development and sales channels development, so that Korea Air Conditioning Tech can overcome the typical challenges faced by SMEs and achieve long-term growth.

#### Korea Power Exchange

Bong-hwan Hwang, General Manager, Market Operation Team, Korea Power Exchange



Korea Power Exchange is providing various market operation services for the domestic power market, including power generation cost evaluation, technology data about power generators, data to supplement power system operation and the application of coefficient, based

on the operation rules of the power market, in partnership with Korea Western Power. The Company has significantly contributed to the efficient operation of the domestic power market and the stable supply of power through the optimized management of its power facilities, the advancement of power facility operation, and the active implementation of green business. I hope that the company will continuously focus on R&D to respond to the problem of climate change in order to pursue sustainable management.

#### Labor Corporation

#### Labor Attorney Jeong-hyeon Lee, Donghwa Human Labor



Donghwa Human Labor serves as an advisor to Korea Western Power in relation to HR and labor. While technically we have served as advisors, in fact we have found that the HR and labor system of Korea Western Power is already so reasonable that we have even been

benchmarking some aspects of its existing system.

Reasonable labor-management relations can be described as the DNA of a sustainable business. If an advanced labor-management practice that pursues the mutual prosperity of both parties is introduced, and a foundation is maintained on which both parties can trust each other, the company can overcome any crisis through its firm labor-management partnership. I hope that the company will lead Korea's labor-management practices through its advanced and reasonable labor-management relations.

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# Survey with Stakeholders

To improve the reliability and usability of the sustainable management report by reflecting the opinions and interests of stakeholders, we conducted a survey on the 2008 Sustainable Management Report on our website from July 5 to July 16, 2010. Invitations to take the survey were sent to 16,000 target respondents through the newsletter we send to external and internal stakeholders.

#### Results of Survey with External and Internal Stakeholders



Which area requires improvement from an economic perspective?





Which area requires improvement from an environmental perspective?



Which area requires improvement in terms of its management system?



Which area requires improvement from a social perspective?



# Selection of Major Issues to Report

Korea Western Power evaluated the significance of issues to report that were selected from its strategic initiatives by considering the alignment with business strategies and social interests. To improve satisfaction of stakeholders who use the report, it reinforced the level of reporting for selected major issues.



	20 Major Issues	Evaluation of Strategic Alignment	Evaluation of External Interest
	Corporate Overview		0
Management System	Vision & Management Strategy	000	00
	Corporate Governance		0
	Risk Management	0	000
	Operation of Power Facilities	000	0
	Development of Domestic & Overseas New Business	000	000
Fconomy	Renewable Energy Development	000	0000
Economy	Technology Development	0	000
	Management Innovations	O	0
	Economic Achievements	000	000
Environmont	Efforts to Respond to Climate Change Agreement	00	0000
LINIOIIIIent	Management of Discharge of Pollutants during Power Generation	00	00
	Safety & Health	O	O
	Employee Satisfaction	O	00
Society	Development of Employee Capability	00	00
Society	Ethical Management	O	000
	Cooperation with SMEs	O	000
	Support for Local Communities & Social Contributions	O	0000
Other Issues	Fuel Purchase	00	00
Uther Issues	Development of Infrastructure for Expansion of Power Facility	000	00

## Results of the Selection of Major Issues to Report

According to the analysis, six issues that are frequently raised and have the highest importance from internal and external perspectives were selected. Efforts to respond to the issues and the related achievements were covered by the report. The scope and the level of the report will be expanded in the future to secure completeness and responsiveness.

20 Major Issues	Contents	
Vision & Management Strategy	Realignment of long-term strategy (Vision 2020) and mid-term strategy (Focus & Align 2013)	16p
Domestic & Overseas New Business Development	Launch of overseas business and domestic business related to power business	26p
Renewable Energy Development	Development of Garorim Tidal Power Plant, IGCC	28p
Economic Achievements	Creation of economic value added and its distribution	32p
Efforts to Respond to Climate Change Agreement	Reinforcement of eco-friendly system, recycling of by-products and generation of carbon profits	36р
Local Community Support / Social Contributions	Fulfillment of social contributions through support for regions neighboring power plants	62p



# Sustainability Management System

We contribute to the Society with the Best Energy generated in Harmony with Human, Technology, Environment.

Sustainability Management System

• Corporate Overview

Corporate Overview
 Characteristics of the Power Industry
 Vision and Management Strategies
 Corporate Governance
 Risk Management

# World Best 3E Creator

# Focus & Align

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Environment

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# **Corporate Overview**

Korea Western Power is one of the six power generation companies that separated from KEPCO in 2001 to reinforce the competitiveness of Korea's power industry. We currently hold and operate a power generation capacity of 9,604 MW, or about 13 % of the nation's total power generation capacity.

The domestic and international management environment surrounding the power generation industry is rapidly changing, due to factors such as a slowdown in the growth of electricity demand, a rapid rise in the price of oil and bituminous coal, and regulations on carbon emission adopted by the United Nations Framework Convention on Climate Change. However, we take this crisis as an opportunity to move forward and achieve our vision of becoming the "World' s Best 3E Creator", focused on the '3 Es' of energy, environment and expertise.

We operate our business with the goal of maximizing energy efficiency and creating additional profits by starting the thermal power generation business and the integrated energy supply business. We have been steadily preparing to diversify our business fields by making inroads into overseas power markets and contributing to the export of products by Korean manufacturers in the power industry. In addition, we are pursuing diverse strategies to find opportunity in the current crisis, while working to secure our sustainability by taking a leadership role in the renewable energy business field related to carbon emissions. We are striving to further develop our company as a world-renowned leader in the power generation industry by operating our human resource development system (e-HRD), along with other education and training programs designed to foster competent employees.

Beyond our economic achievements, we actively pursue social contribution activities through our corporate volunteer corps, to promote balanced development in the economic, environmental and social sectors and to gain a strong foothold as a company that takes the lead in the power generation industry in terms of sustainable management.



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CEO	Moon-duk Kim
Headquarters	411 Yeongdong-daero, Gangnam-gu, Seoul
Main Functions	Power resource development, Power generation and relevant business, R&D and its incidental business, Integrated construction supervision
Date of Incorporation	April 2, 2001
Capital	KRW 176 billion
Total Assets	KRW 4,482 billion
Sales	KRW 3,817 billion
Net Income	KRW 88 billion
Major Shareholder	KEPCO(Equity Ratio : 100%)
Credit Rating	S&P : A, Moody's : A1, National : AAA
Number of Employees	1,862
Generation Capacity	9,603.72MW (Installed : 8,885.32MW, On construction : 718.4MW)
Gross Generation	45,728GWh (10.6% of total generation in Korea)

[As of Dec 31, 2009]

To actively and flexibly react to the rapidly changing management environment, we expanded our team-based organization operated in our headquarters to all of our workplaces in 2009. Our organization, structured to reinforce the responsible management of each unit, is operated focused on the horizontal structure and work process to ensure the best efficiency.

Our headquarters consists of 2 divisions, 4 departments and 2 offices, and the number of teams was reduced from 33 to 24 to facilitate efficient management and rapid decision-making. Each power plant complex site consists of 67 teams, which has been reduced from the previous 73 departments under 4 divisions and 3 departments.

We are also working to secure the foundation from which to diversify our business by incorporating the joint venture Cheongna Energy and Garolim Tidal Power Plant Co., Ltd. We endeavor to create growth engines for the future by pursuing diverse overseas power generation projects. We are promoting a hydro power plant business and a biomass-fired power generation business in Laos and the Philippines, along with a specialized project based on our superior commissioning capacity and Operation & Maintenance ability in Saudi Arabia and Nigeria.



# **Operation Status of Power Generation Facilities**

Korea Western Power holds 47 power generation facilities in 6 areas, including Taean and Pyeongtaek, and has a power generation capacity of 9,604MW. We provide stable and affordable electrical power by operating a bituminous coal-fired power generation plant with a capacity of 4,000MW in Taean. We are also making a big contribution to ensuring a stable power supply in the northern area of Gyeonggi-do and Seoul metropolitan area by operating Pyeongtaek and Seoincheon thermal and combined cycle (CC) power plants, with a power generation capacity of 3,680MW in total. Our pumped storage power plants in Samrangjin and Cheongsong, with a power generation capacity of 1,200MW, promote a stable supply of electric power by utilizing electricity during low demand periods in order to store water, which is used to generate hydroelectric power. The construction project for the Gunsan combined cycle power plant was also completed in May, 2010, and has entered operation. In addition, our renewable energy power generation facilities, including a photovoltaic power generation plant and a small hydro power plant, are being operated in the Taean and Samrangjin power plants.

Classification	Plants		Number of Units	Capacity (MW)	Total	Percentage(%)
	Taean		8	500	4,000	
Thermal	Pyeon	gtaek	4	350	1,400	
	Sub	total	12		5,400	56.2
	Proopstack	GT	4	80	320	
	гуеопутаек	ST	1	160	160	
	Casinghaan	GT	8	150	1,200	
Combined Cycle	Seomeneon	ST	8	75	600	
,	Gunsan	GT	2	233.3	466.6	
		ST	1	251.8	251.8	
	Sub total		24		2,998.4	31.2
Samra		angjin	2	300	600	
Pumped Storage	Cheongsong		2	300	600	
	Sub total		4		1,200	12.5
	Taean Small Hydro		4	0.55	2.2	
Renewable	Taean Photovoltaic		1	0.12	0.12	
	Samrangjin I	Photovoltaic	2	1.5	3	
	Sub	total	7		5.32	0.1
Total		47		9,603.72	100	



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# **Characteristics of the Power Industry**

#### General characteristics of the Power Industry

Korea's electric power industry is the root of its national development, and 95% of its assets are fixed assets.

Electrical power is impossible to store and is transmitted at the speed of light, so power generation and consumption must be balanced from second to second. Moreover, it is necessary to secure backup power to ensure a stable power supply due to the difficulty of storage.

However, the construction of power facilities requires a largescale investment over a long period of time, and cannot be achieved promptly to respond to changes in demand.

For this reason, we keep trying to secure an appropriate level of backup power to ensure a stable power supply by establishing a fundamental plan every two years for securing power supply and demand.

#### **Characteristics of Power Plant Construction**

Since Korea occupies a small area of land, and lacks precipitous mountains due to its old topography, it is not suitable for hydroelectric power generation facilities that require large amounts of falling water. For this reason, Korea has a higher dependence on thermal power generation and nuclear energy development than on hydro power generation. Thermal power generation generates electricity by using heavy oil, coal and natural gas as materials to spin a steam turbine. This generation method has a number of advantages: its construction cost is lower than that of a hydro power plant, and its construction period can be shortened. Moreover, the location of a thermal power plant does not have to be restricted to remote mountainous areas. 8,400MW, or 87% of our total power generation capacity, is accounted for by thermal power generation plants.

# Structure of the Electric Power Industry

For a long period of time, the electric power industry was a monopoly due to its nature as a public utility, and has made a great contribution to the industrial development of the country through economies of scale. With the intention of introducing competition in the power industry to improve the efficiency of management and increase customer choice, the Korean government decided to split the power generation area of KEPCO into 6 power generation companies under the basic power industry restructuring plan of April 2001. Currently, five power generation companies, which are Korea South-East Power (KOSEP), Korea Midland Power (KOMIPO), Korea Southern Power (KOSPO), Korea East-West Power (EWP) and Korea Hydro and Nuclear Power (KHNP), and other independent power producers such as K-Water, POSCO Power, GS Power, GS Energy, GS EPS and MPC, are competing with us in the power generation market.

## **Operation of Power Market**

The power trade market is operated according to the applicable laws and acts, such as the Electricity Business Act and the Power Market Operation Regulations. The power trade market is classified into the three aspects of the entire market's profit, stable power supply and fairness of transaction. Clause 31 of the Electricity Business Act forces power generation companies and power providers to transact power only in the power market.

Business Area	Customers	Value Standard	Requirements for the Customers
Power Generation	Market Operation	Profitability	Stable trade of power at the cheapest price
Business (Power generation and sales)	System Operation	Reliability	Supply of high-quality power
	Trading Operation	Fairness	Fair market operation (Comply with regulations)

#### Market Shares and Power Generation Capacities



## **Regulations Applicable to the Power Industry**

The power plant operation and construction sector is governed by the Electricity Business Act, while the power trading area is subject to the Power Market Operation Regulation & Guideline. We strictly comply with the Clean Air Conservation Act and the Water Quality Conservation Act in terms of our emission of environmental pollutants, and do our best to minimize our environmental impact by setting internal regulations that are stricter than our minimum legal obligations. In addition, we frequently (monthly and annually) check and inspect our power generation facilities, high-pressure gas facilities, fire preventing facilities, and disaster prevention facilities to ensure safe operation and compliance with all applicable laws and regulations, including the Electricity Business Act, the High-pressure Gas Safety Law, the Fire Service Act, and the Toxic Chemicals Control Act.

# **Vision and Management Strategies**

Under our corporate philosophy of "We Contribute to the Society, with the Best Energy Generated with Human, Technology, Environment", all of our employees strive to carry out our mission as a national company based on our long-term management strategy "Vision 2020". We are also making steady efforts to become a world-class power generation corporation.

# Vision 2020 - World Best 3E Creator

Paradoxically, the increasing uncertainty resulting from the rapidly changing management environment means a new opportunity ahead. The demand for energy is decreasing because of the changes in the industrial structure and the decrease in population growth. This has resulted in decreasing profitability for our existing businesses. On the other hand, there is a rising demand for compliance with environmental regulations associated with climate change and the fulfillment of social responsibilities. Faced with such difficulties, we need to clarify our vision and establish the appropriate strategies to achieve the goal.

In consideration of this, we established our long-term vision "World' s Best 3E Creator" by identifying the three main factors of energy, environment and expertise as our growth engines, and set seven long-term goals, which include expanding our facility capacity, increasing our renewable energy business ratio, and fostering competent human resources. Then, we prepared four long-term strategic directions, 16 strategic goals and 40 strategic issues as part of our effort to establish a clear strategic system that will enable us to accomplish our "Vision 2020" goals.

We also completed our review on the suitability to achieve Vision 2020 goals last year and revised the goals to reflect the new management environment and reinforce our internal capacity.



# Mid - term Strategy : Focus & Align 2013

Korea Western Power has chosen a management policy of 'Focus & Align,' and has set "Stressing Profitability, Building a Powerful Corporation, Maximizing Future Value, and Creating a Communication-based Corporate Culture" as the four strategic directions.

These efforts are clearly shown in our mid-term strategy Focus & Align 2013, which aims to actualize our overall visions by 2013. We have selected 40 long-term strategic issues under the four major strategic directions, and laid the foundation for achieving our vision by reflecting the short-term pending issues that were not applied to the government's public company management project and to our corporate Vision 2020 project.

The strategic issues are mostly related to our internal management and evaluation indexes, with the goal being to establish a strategic management system that provides performance-based compensation.

In addition, the 12 strategic goals reflect the three main factors of sustainable management, such as economic, environmental and social responsibility, which means the actualization of the strategic goals can immediately lead to the achievement of sustainable management.

Long-term Vision	Management Policy	Strategic Directions	Strategic Goals	Strategic Issues	Sustainability
			Effectively operate power generation facilities	Enhance reliability of facilities / improve productivity of facilities / increase efficiency of old facilities/ effectively operate pumped storage power plant	Economy
		Stressing Profitability	Increase profits, improve facilities	Optimize operation of electricity load in power plants/ manage energy comprehensively/ improve combined power generation/ shorten operation time	Economy
			Economical purchase of fuel	Maintain stable power supply and demand/ increase the use of low calorie coal	Economy
			Initiate management advancement	Create a performance-oriented organization/ innovate management / reduce costs / simplify corporate regulations	Economy
		Focus & Align 2013 Maximizing Future Value	Establish financial soundness	Financial structure / IFRS / risk management/ financial forecast	Economy
World Best	World Focus Best & 3E Align Creator 2013		Strengthen environment management	Climate change / power generation by-product / waste-to-energy	Environment
3E Creator			Build the foundation for mid-term growth	Facilities capacity / using Pyeongtaek power plant/ Preparation of renewable portfolio standard / securing technology	Economy/ Environment
			Create a core growth engine	Taean thermal power plant Nos. 9 and 10/ Taean dock No. 3 / Gunsan power plant 2nd stage / domestic investment business / overseas business	Economy
			Promoting green growth	Renewable energy / integrated gasification combined cycle (IGCC)/ Garolim tidal power plant	Economy/ Environment
	Creating Communication -based Corporate		Creating organization based on performance	GWP/ labor and management/ human resources	Society
		Improve the corporate image	Company PR/ ethical management and social contribution	Society	
			Establish effective management system	Strategic management / ERP	Economy

# **Corporate Governance**

Korea Western Power is one of the 6 power generation companies created when the power generation part of KEPCO was divided in April 2001. All of our equity is owned by KEPCO. We have worked to establish a clean governance structure and decision-making system.

# **Composition of the Board of Directors**

The board of directors consists of 3 standing directors, 4 nonstanding directors and an executive auditor. The board of directors is operated according to the applicable laws, such as commercial laws and regulations. The CEO is the chair of the board of directors.

Information on our directors and the minutes of the board of directors are available at our corporate website (www.iwest.co.kr).

#### Administrators

Titles	Names	Experiences	
President & CEO	Moon-duk Kim	Vice President, Head of Distribution Department, KEPCO (formerly) Head of Transmission Department, KEPCO (formerly)	
Executive Auditor	Seong-jin Jeong	Managing Director, Chungcheong branch office, KEPID (formerly) Hoseo University, Department of Economics, Invitation professor (present)	
Standing	Seung-geun Oh	KEPCO Seodaegu Head Officer, Daegu HQ (formerly) KEPCO Secretary Manager (formerly)	
Director	Young-park Kwon	Korea Western Power Seoincheon Power Plant HQ Head Officer (formerly) Korea Western Power Construction Department Manager, Taean Power Plant HQ (formerly)	
	Jae-joong Shim	Marketing Director, Korea Investment & Securities Co., Ltd (present) CEO, TG Biotech Sales Co., Ltd (formerly)	
Non-standing	Dae-young Kim	Manager of the Headquarters for Administration, PSS (formerly) Manager of the Headquarters for Protection, PSS (formerly)	
Directors	Dae-hwa Jung	Member of the Legislation Committee, Seoul Bar Association (present) Commentator, Traffic Broadcasting Network (present)	
	Chan-gi Jeong	Vice President, Head of Corporate Planning Dept. (KEPCO) (present) Vice President, Head of Personnel & General Affairs Dept. (KEPCO) (formerly)	

# CEO Selection & Performance Evaluation Process

The president is selected after being recommended by the CEO Recommendation Committee and confirmed by a vote at the general shareholders'meeting. The CEO Recommendation Committee consists of non-standing directors and private commissioners. The CEO Recommendation Committee evaluates the appropriateness of the management plans of the candidates, and then recommends the most qualified candidate to the general shareholders'meeting.

The annual management performance of the CEO is evaluated by our mother company, KEPCO. The CEO's performance is evaluated in an objective and fair manner by an evaluation team consisting of professors and experts in the related field. In addition, all management activities are periodically audited by the government and the National Assembly to ensure transparent and effective work performance.

### Rights and Responsibilities of the Board of Directors

Important issues involving corporate management are implemented through a vote by the board of directors in accordance with the applicable laws, such as commercial laws and regulations. The board of directors deliberates various management affairs and provides checks and balances through rejection and revision of the items for deliberation, offering suggestions and recommendations to management. Directors are responsible for acting in the corporate interest according to the laws and regulations.

A regular meeting of the board of directors must be attended by a majority of directors, and decisions must be approved by a majority vote of the members present. To maintain transparency in the operation of the board, directors may not vote on issues in which they have a personal or a business interest. In 2009, 13 meetings of directors were called, 26 motions were adopted through votes, and 14 agendas were reported. Important issues related to management were voted on in the meetings, including financing subsidiaries, adjustment in the quota of employees, and CEO's agreement concerning management.

The attendance rate of the directors for the past three years is 100%, and we plan to continuously improve the corporate environment to activate our board of directors.

Participation Rate of Action Rate	f the Board	of Directors
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Classification	2007	2008	2009
Number of Meetings Called	9	11	13
Number of Proposals (vote, report)	36 (26, 10)	39 (30, 9)	40 (26, 14)
Number of Policies Reflected	16	18	21
Number of Agendas Revised	-	1	1

Major Votes of the Board of Directors in 2009

Date	Agendas	Results
	Capital investment in Cheongna Energy	Passed
Feb 24, 2009	Research & Development project for 2009	Passed(revised)
	Term-end account for 2008	Passed
Mar 20, 2009	Adjustment in the quota of employees	Passed
Apr 24, 2009	Change in CEO's management contract for 2009	Passed
May 26, 2009	Revision on employee wage	Passed
June 8, 2009	Ine 8, 2009 Change in construction cost of Gunsan CC power plant	
Aug 28, 2009	Revision of internal accounting management regulations	Passed
Nov 26, 2000	Change in expected budget for 2009	Passed
1107 20, 2007	Capital investment in Korea Energy Foundation	Passed
Dec 29, 2000	Revision of directors' annual salary	Passed
Dec 28, 2009	Revision of welfare benefit regulations	Passed

### Strengthening the Role of the Board of Directors

As a part of our efforts to improve the top-down decisionmaking system, we allow working-level staff to bring their concerns to board of directors' meetings. We revised the regulation of board of directors and the operation process to strengthen the role of the board of directors and expand its rights in 2009.

Items	Descriptions	Note
Revision of Operation Regulations and Processes	Abolish the written consent system	Clarify the effect of agendas
	Clarify proposal period of the board (New business at home and abroad)	Report: after investigating feasibility Vote: Before signing agreement between shareholders
Expanding the	Internal trading over 10 billion won	Addition of agendas
Agendas and Reinforcing Reports	Internal accounting operation, company management evaluation result	Addition of reports

We frequently monitor the operations of the board of directors by checking the number of meetings, the rate of attendance, and the number of suggestions, in order to activate the operation of the board of directors. We guarantee easy access to information by opening a homepage exclusively used by employees to non-standing directors. Also, we do our best to publicize the activities performed by the board of directors by operating a homepage used exclusively by the board of directors.

In addition, we organize an explanatory meeting before opening the board of directors to allow the non-standing directors to actively raise their opinions. All important management issues are shared through reports made to the board of directors. Non-standing directors are invited to our power plants and employee gatherings in order to gain a better understanding of the company. We have also improved management efficiency by appointing board members as the commissioners of various internal committees.



▲ Field Inspection by Non-standing Director (Gunsan CC Power Plant Construction Site / June 2009)

# Performance Evaluation System for the Management Role

We fairly evaluate the management accomplishments of each executive officer including the CEO, and provide compensation to each executive officer based on the evaluation results.

We try to improve management accomplishments by signing a management agreement with our mother firm, KEPCO, and deciding the management goals to be accomplished by the CEO during his or her service term. We also work to actualize responsible management by each director by signing a management agreement with each standing director.

# **Risk Management**

At Korea Western Power, we are making a continuous effort to respond to the increasing uncertainty of the future and enhance the value of company by eliminating or minimizing the risk factors arising from the rapidly changing management environment.



### Financial Part : Maintaining a sound financial status

We actively manage financial risk by identifying the three core risk factors of worsening financial stability, failure to respond to fluctuating exchange rate, and inappropriate capital management. In addition, we have developed countermeasures against risk factors requiring timely responses by monitoring the core risk factors on a regular basis. Through these efforts, we have maintained a sound financial status by minimizing the financial risks arising from fluctuations in the exchange and interest rate. We created 19.9 billion won in new foreign-exchange profit and maintained about a 90% debt ratio in 2009.



# Fuel Part : Stabilized fuel supply

The supply of power generation fuel is mainly dependent on the overseas market, so high risk can be expected when the procurement environment changes, and the price of fuel has the potential to change at any time. We guarantee a stable supply of fuel by maintaining a sufficient stock and diversifying our suppliers. Also, we reinforce our capacity to forecast the market environment and manage the fuel procurement risk through the consultation provided by the management advisory committee. As a result, we decreased our fuel cost by securing the required fuel during a time of favorable market conditions between the end of 2008 and early 2009 (Reduced costs: KRW 6.8 billion). We also promoted economical fuel use by expanding swaps between power generation companies and ensuring an appropriate coal-mixed firing ratio.

Items	2007	2008	2009
Number of stock days	20	17	17
Ratio between long-term supply and short-term supply	79 : 21	93 : 7	91 : 9
Number of long-term suppliers	28	27	27

# Power Trading Part : Reinforcing the capacity to forecast

This part works to increase sales by carefully analyzing the effects that can be anticipated when the regulations or rules of the power market are revised. This part operates a power market simulator (Plexos) for the purpose of forecasting and analyzing the fluctuation risk of sales volume and power sales price resulting from external factors. Also, this part forecasts the power sales price and then shares the forecast results with the relevant departments or parts.

Items	Results
Adjustment of system marginal price correction factors for 2009 (base: 0.0894—0.1865/general: 0.0894—0.3270)	Increased sales (58.4 billion won)
Installation of combined measuring device for receiving electric power	Cost reduction (3.48 billion won)

### Power Generation (Construction) Part : Organized to prevent accidents

We develop and operate a system designed to provide online the causes of abnormal operations in the power generation facilities, along with the related countermeasures. We do our best to minimize the effect on the power system by preparing the emergency training program and regulations to prepare for accidents. These programs and regulations contribute to ensuring the stable power supply required to ensure the performance of the national economy and a stable quality of life for the public.

We monitor the emission of environmental pollutants by operating a 24-hour monitoring system, and take action when necessary. In addition, we keep our facilities in optimal conditions by preparing the preventive maintenance plans required to ensure a stable power supply, and operate an accident recovery system by installing a safeguard designed to stop the generator in the event of unstable conditions. Through these efforts, we were nominated as the top company in the area of facilities reliability for 2 consecutive years.

Items	2008	2009
Possible power generation index	93.49%	92.08%
Base load loss resulted from unplanned suspensions	0.24%	0.35%
Number of outage on base load facilities	0	0.38
Deadline meeting ratio of power plant construction	96.23%	95.71%

#### **New Business Part**

We operate the new business selection committee with the intention of effectively operating management resources when deciding on the starting a new business, and preventing financial loss or decreased profits due to investment failure. In addition, we systemically manage the risks involved in development projects, such as exchange rate and interest rates. This committee brings important business issues to the integrated risk management committee for deliberation and vote. Based on the results, we try to start new businesses, such as integrated energy business projects in Cheongna, Kimpo, and Pyeongtaek, as well as overseas projects including the heavy oil-fired power plant (0&M project) in Saudi Arabia, the hydro power plant construction in Laos, and the hybrid power generation project in the Philippines.



# Economic Performance

DMA : Disclosure on Management Approach



# 23

Economic Performance

 Operation of Power Facilities
 New Business Development
 Renewable Energy Development
 Nanagement Innovations
 Soundness of Financial Structure
 Economic Achievements

### | Economic Aspects of Sustainability Management |

In economic terms, sustainability management involves maximizing the value to be distributed to stakeholders by establishing a long-term foundation for sustainable profit generation, while maximizing short-term profits by saving costs. Korea Western Power has made efforts to improve profitability in its major business area, power generation, by expanding its power generation capacity through timely capital investments, and by improving productivity through the securing of higher facility reliability.

The company has also advanced into overseas markets and developed businesses related to power generation in the domestic market, as part of its efforts to seek new growth engines during a period of declining domestic power demand. Korea Western Power has also actively developed renewable energy businesses, in line with the national green growth policy. The company plans to continuously make financial achievements by adopting an advanced management system through management innovations, and by innovating technology through active R&D efforts.

Vision 2020	World Best 3E Creator -Energy, Environment, Expertise					
Area	Power Generation & Construction	New Business Development	R&D & Innovation	Financial Results		
Strategic Goals	Power Capacity 17,600MW	Percentage of Renewable Energy 8%	Securing of Five Key Technologies for the Future Achieving Six Sigma Management Quality	Revenue KRW 7.2 Trillion		
Corporate Policy & Rules	'Available 95' Strategy to improve facility reliability / Mid-to long-term plan for facility construction	Strategy to operate overseas businesses / Strategy to develop domestic businesses / Strategy to develop renewable energy	Mid-to-long term R&D plan / Policy for R&D management / Policy for comprehensive rewards / Policy for intellectual property right management	Mid-to-long term financial strategy / Policy for budget operation System for long-term management forecast		
Organization in Charge	Power Generation Department, Power Construction Department	Future Strategy Office, Power Construction Department	Power Generation Department, Planning Department	General Affairs Support Department		

#### | Implementation System |

### | Key Performance Indicators |

Items	Key Indexes	2007	2008	2009
Operation	Power Generation(GWh)	48,728	46,955	45,728
of Power Facility	Rate of Unplanned Loss (%)	0.28	0.38	0.23
New Business Development	Profit from New Businesses (KRW 1 Billion)	0.5	2.5	1.8
	Renewable Energy Portfolio (%)	-	0.016	0.02
R&D	R&D Investments (KRW 1 Billion)	26.7	36.7	37.0
Financial Achievements	Revenue (KRW 1 Billion)	3,069	3,700	3,817

# **Operation of Power Facilities**

Electricity is an essential energy source for modern industry and the everyday lives of all members of society, and cannot be stored or recovered. Power consumption increases as the national income and the national economy grow. Korea Western Power is actively expanding its power facility for energy defense, as the power business is a capital-intensive national backbone industry requiring large-scale facilities and long-term investments. The Company has spared no efforts to stably operate its facilities, improve efficiency and reduce costs.

## **Operation of Power Facility**

In 2009, Korea Western Power operated 12.1% (8,885 MW) of the power facilities in Korea, and produced 10.5% (45,728GWh) of the total power generated in Korea. From 2001 to 2009, its generation capacity increased by 29.8%, from 6,846MW to 8,885MW, and it produced 45,728GWh in 2009, a growth of 76.1% from 25,965GWh in 2001.

# **Power Facility Construction Plan**

As the global program to reduce greenhouse gases is developed, and decreased dependence on fossil fuel energy becomes inevitable, Korea Western Power plans to increase its power capacity by 2,840MW by building the highly efficient Taean Thermal Powers No.9 and No.10, Garorim Tidal Power and Integrated Gasification Combined Cycle (IGCC) for the mid-to-long term development of green power sources.

[Unit: GWh]



#### Power Generation By Sources

	Thermal Power(T/P)	Combined Cycle Power (C/C)	Pumped Storage Power(P/S)	Renewable Power	Total
' 08	34,769	11,336	842	8	46,955
' 09	36,727	8,078	914	9	45,728

#### Facility in Construction or to Be Constructed

ltems	Name of Power Facility	Completion Date (Scheduled)	ompletion Date (Scheduled) Fuel		Remarks
Constructed	Gunsan No. 1	2010. 5	LNG	718.4	In Operation
	Garorim Tidal Power	2015.12	-	520	
	Taean IGCC	2014.12	Bituminous Coal	300	First in Korea
Scheduled	Taean Thermal Power No. 9	2016. 6	Bituminous Coal	1,000	
	Taean Thermal Power No. 10	2016.12	Bituminous Coal	1,000	
	Wind Power	2011.12	-	20	
		Total		3,558.4	

\* Based on Letter of Intent of the 5th Demand and Supply Plan for National Power

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Furthermore, Korea Western Power has improved its facility

operation technology for benchmarking overseas cases, and improved the functions and reliability of its facilities through

facility monitoring and technology exchanges with experts

from EPRI in the US. By establishing a preventive

maintenance system that focuses on fundamental

maintenance functions, the Company has maintained its

facilities in optimal condition, and strives to stably supply

**Operating Results** 

In 2009, the Company recorded a thermal efficiency<sup>1]</sup> of

40.73% by distributing and using the optimal management

resources, improving the facility operation system using six

sigma management innovation techniques, and developing

combustion technology. The efficiency is 0.60% higher than the average of domestic power firms in 2009 (40.13%), and

even higher than the US average of 34.1% (2008) and the

quality power at lower prices.

Taiwan average of 37.2% (2008).21

## **Facility Operation System**

Korea Western Power has developed and operated a system that provides real-time online support in the event that power facilities experience abnormal operating conditions, in order to stably supply power, which is essential for the national economy and the daily lives of the general public. The company is also working to ensure stable facility operation by adopting contingency training programs and policies according to conditions, in order to respond to facility failures and safety accidents. To prevent problems related to environmental pollution, Korea Western Power has adopted a system that monitors its discharge of environmental pollutants around the clock.

To ensure stable operation of the facility, Korea Western Power any has established a preventive maintenance plan, and maintains the best facility conditions. In the event of ripple accidents caused by the electric power system, the company operates a failure recovery system by adopting protection devices so that the power generators can be stably suspended.

#### Number of Failures and Thermal Efficiency

Year 2006		2007	2008	2009	
Number of Failures 1		3	0	4	
Average Outage Hours 7:01		3:19	0	3:16	
Thermal Efficiency(%)	41.12	41.26	41.22	40.73	

Year	2006	2007	2008	2009
Taean Thermal Power	90.12	92.87	93.45	94.41
Pyeongtaek Thermal Power	39.68	44.96	15.73	29.71
Pyeongtaek Combined Cycle Power	12.00	21.93	21.71	11.66
Seoincheon Combined Cycle Power	55.99	69.84	65.91	48.12
Samrangjin Pumped Storage Power	6.37	4.15	6.83	7.26
Cheongsong Pumped Storage Power	4.90	5.88	9.16	10.13
Taean Small Hydro Power		16.61	20.30	25.10
Taean Photovoltaic Power	12.11	11.15	12.36	12.15
Samrangjn Photovoltaic Power		12.71	14.78	14.52
Total	59.29	63.69	60.16	58.75

Facility Utilization Factor

<sup>1)</sup> Thermal Efficiency: Ratio of the energy that is changed to power to the thermal energy provided to the thermal cycle

<sup>-</sup> Formula = Power Generation (kWh) X 860 (kcal/kWh) X 100 (%)

Fuel Usage (kg, Q) X Calorific Value (kcal/kg, Q)

<sup>2)</sup> Source [KEPCO in Brief 2009 (Dec. 31, 2009, KEPCO)]

# **New Business Development**

Korea Western Power is looking for new business opportunities in overseas markets based on a business development strategy that focuses on selection and concentration, as well as excellent facility operation techniques, in order to create sustainable growth engines for the future and grow into a major IPP business of Asia. As well, the company is increasing its opportunities for profit creation by expanding the business scope, and has overcome the challenge of the slowdown in domestic power demand by developing new business models through the diversification of related businesses in the domestic market.

### **Development of Overseas Businesses**

Korea Western Power discovers a new business model by advancing to overseas market. Establishing KOWEPO International Corporation in Philippines, Korea Western Power expands business areas in Southern Asia, an area spurring for economic growth by building a ground for local development projects and other overseas businesses. In addition, we aggressively find a way to enter Africa and Central Asia, the areas with rich natural resources, utilizing power plant operation technology accumulated in the domestic market



#### **Overseas Business**

Since Korea Western Power won the order for the operation of a heavy oil power facility in Rabigh (Saudi Arabia) in March of 2009, it has established the 0&M business in Rabigh, produced main devices, and provided the technical support for construction of the power plant. In addition, the Company has focused on the development of future growth engines by building the 390MW capacity Senamnoi hydro power plant in Laos, the 150MW capacity Kanan hydro power plant in the Philippines, and the 200MW capacity Takala thermal power plant in Indonesia.

#### **Resource Development**

To ensure a stable supply of soft coal, a primary fuel, Korea Western Power jointly acquired 5% of the shares of Mulaven Mine in Australia with KEPCO and other power companies in Korea. The Company plans to develop mines in Indonesia to develop stable fuel supply and generate profit from new sources.

## **Development of Domestic Businesses**

Starting from acquisition of community energy supply business right in Cheongra/Gimpo areas, Korea Western Power creates various new domestic business such as Pyeongtaek International Zone, Dongducheon Combined Cycle Project and Ansan Combined Cycle Project. We will expand opportunities of creating various profits by embarking on affiliated business in the domestic market and greatly contribute to improve the quality of the local resident's life



#### Cheongra & Gimpo Community Energy Project

As a community energy supplier to Incheon Cheongra and Gimpo districts, Korea Western Power will improve quality of life for local residents by supplying heat of up to 923Gcal/h to about 150,000 households using the waste heat of Seoincheon C/C. The project forms the foundation for the company's launch of its community energy business, and the site is currently under construction, with a completion target of 2012.

#### Community Energy Project at Pyeongtaek International Zone

As part of its efforts to improve the capacity of Pyeongtaek Thermal Power Plant and contribute to the national energysaving strategy by responding to the government's expansion of the community energy supply, the Company has developed the community energy program for Pyeongtaek International Zone with the aim of supplying heat using the waste heat of Pyeongtaek Thermal Power Plant. It is expected that the zone will accommodate about 54,000 households, and the first heat supply is scheduled for 2016.

### Dongducheon Combined Cycle Power Project

Dongducheon IGCC Project is an LNG power plant with a capacity of 1,500MW (two units with the capacity of 750MW). Since the city of Dongducheon and Korea Western Power concluded an MOU for joint business development in May 2008, Korea Western Power has conducted an environmental impact assessment after completing the business feasibility study. The current target is to include the project to the 5th Demand and Supply Plan for National Power

#### Ansan Combined Cycle Power Project

The aim of the Ansan C/C Project is to build an LNG power plant with a capacity of 750MW. It is included in the government's power supply plan under an MOU between the city of Ansan and POSCO E&C, a private business.

The related stakeholders have agreed to build the power plant, and will sign service contracts for environmental impact assessment, establish a corporation and seek approvals.

# Renewable Energy Development

Korea Western Power has prepared itself for the RPS (Renewable Portfolio Standard) to be adopted in 2012, and is striving to meet the mandates by actively developing renewable energy facilities based on its corporate strategy.

### Strategy to Respond to the National RPS

Korea Western Power has built and operated renewable energy facilities with a production capacity of 5.3MW, and these include Taean Photovoltaic Energy, Taean Small Hydro Power and Samrangjin Photovoltaic Energy. The company plans to build an additional wind power facility and photovoltaic energy facility by 2012, when the Renewable Portfolio Standard (RPS) is adopted, but the target is still below the mandated volume of 2%. Power and Taean IGCC is completed, Korea Western Power plans to meet the standard by purchasing REC from the REC trading organization. The company will be able to meet the RPS mandates in 2015, but the mandate will grow by 1% each year, to reach 10% of the total power production volume in 2020. In consideration of the mandate, the Company plans to develop diverse renewable energy facilities including wind power, fuel cells, marine wind power and tidal power.

Until the year 2015, when the construction of Garorim Tidal

### **Development of Renewable Energy Projects**

#### Garorim Tidal Power

Tidal Power generation is the most economical new renewable energy, available for large-capacity development. The Company has worked on the construction of the world's largest tidal



power plant, with a capacity of 520MW, in Garorim Bay, Seosan and Taean, Chungcheongnam-do. Since it established Garorim Tidal Power Co., Ltd. in September 2007, it has strived to obtain approvals and complete land compensation plans, with the target of breaking ground on the site in December 2010. The plant is scheduled to be completed in December 2015. Once completed, the plant will significantly help the Company to meet the renewable energy mandates.

Location	Naeri, Ewon-Myeon, Taean-gun ~ Ojiri, Daeshin-eup, Seosan-city					
Construction Period	Apr	Apr.2007~Dec.2015				
Installed Capactiy	520MW(26MW*20)	Breakwater Extension	2,202m			
Annual Generation	950GWh	Total Working Expenses KRW	1trillion and 2.2billion			

# Expected Effect from Business Development

Occupying 2% of the total generation of Korea Western Power (4,800GWh)

- Paid KRW 19.7bn as business expense for supporting region
- Economic activation of KRW 20 bn with annual labor mobilization
- Increased tourist income of annual KRW 24bn
- Local development is accelerated with bridge construction effect KRW 130bn
- Balanced development of country and increased profit of fishery culture

#### Integrated Gasfication Combined Cycle(IGCC)

Korea Western Power has signed an agreement with the government for the construction of the 300MW capacity Taean IGCC, and is conducting the comprehensive design & technical program. The construction of the plant will be initiated in November 2011, and completed in November 2015.

#### Photovoltaic Power

For the first time among power generation companies, a photovoltaic power generation facility, with the capacity of 120kWp was completed in August 2005, in the Taean Power Complex Division, and is in commercial operation at present. In addition, 3000kWp Samranghin photovoltaic facility, using an idle site located in the lower area of pumped power plant dam, was completed in April, 2008 and is currently in operation.

#### Ocean Small Hydro Power

The ocean small hydro power plant is a renewable energy generation facility utilizing seawater coolant discharging to the ocean. 2,200kW small hydro power facility was completed in Sep. 2007 in a canal of Taean Power Complex Division and is in operation.

#### Wind Power

The Company is conducting wind power resources investigation and feasibility studies on the planned sites such as Hwasun and Gochang. The Company plans to select the optimal site, launch construction in 2010 and complete the plant in December 2011.

#### Fuel Cell Generation

Since 2005, Korea Western Power has participated in the national strategic task to develop technology of fuel cell generation facilities.

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# Economy

# **Research & Development**

Korea Western Power has strived to expand its R&D technology development and related investments so that it can develop key technologies and create growth engines as a leading domestic and global power firm. Since its establishment, the company has completed 177 R&D initiatives (130 initiatives completed and 47 initiatives pending) as of 2009, and worked on 65 initiatives (15 new initiatives and 50 continuing initiatives) in 2009. It has invested about KRW 100 billion for R&D for the past three years, and will invest KRW 48.4 billion in 2010, a year-on-year increase of KRW 11.3 billion.





#### Major Technology Development

Categories	5 Key Technologies
Renewable Energy	<ol> <li>Securing CCT (Clean Coal Technology)         <ul> <li>Development of Design Skills for and Construction of Localized IGCC with the capacity of 300MW</li> <li>Renewable Energy &amp; New Power Generation Technology</li> <li>Development of 250kW-class MCFC technology</li> </ul> </li> </ol>
Cost Saving & Reliability	<ul> <li>③ Development for Operation and Optimization of Facility         <ul> <li>Local development of parts for the 1350°C- class gas turbines</li> <li>④ Development of New I&amp;C System Technology             <ul></ul></li></ul></li></ul>
Development of Future Environmental Technology	⑤ CO2 Collection & Storage Technology - Development of high-efficiency CO2 collecting materials and absorption technology

### Securing Property Rights & Facilitation of SME Support

Korea Western Power has continuously made efforts to secure industrial property rights, which are intangible intellectual properties. The company owns 170 industrial property rights including utility models, and the number of industrial property rights acquired after separation reaches 90. As part of its policy for SME support, Korea Western Power has transferred 45 industrial property rights to 23 companies, including three paid transfers and 42 free transfers. The Company will continuously acquire competitive industrial property rights, and support SMEs through technology transfer.

[Unit: Number of Cases]

ltems	Pre-Separation Period	2003	2004	2005	2006	2007	2008	2009	Total
Patents	68	0	0	2	17	11	12	3	113
Utility Models	7	0	11	6	7	1	6	2	40
Design & Trademarks	5	1	6	1	0	0	2	2	17
Total	80	1	17	9	24	12	20	7	170

#### • Status of Ownership of Industrial Property Rights

۲	Number	of	Technology	<sup>,</sup> Transfer
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# **Management Innovations**

Korea Western Power has worked for innovation at the enterprise level, in order to reach its corporate goals and improve its corporate value through continuous achievements. A balanced scorecard (BSC) is defined from financial and non-financial perspectives to set goals for innovations by the organization, and members are selecting and implementing action plans to achieve the goals. The initiatives for innovation are being implemented by utilizing Six Sigma, operating a quality management team and receiving proposals, and the evaluation and rewarding related to implementation of initiatives are being conducted in a fair and objective manner. Korea Western Power has encouraged the voluntary participation of all members by building a virtuous circle of innovation through the adoption of systematic activities to encourage innovation.



### Establishment of Key BSC Indexes and Targets

Korea Western Power has set mid-to-long-term management goals and strategies for implementation; developed detailed yearly management targets, strategic initiatives and KPI; and implemented targets at the enterprise level and by organization, based on an analysis of the domestic and overseas management environment, in order to provide systematic innovation indexes and targets by unit organization. In 2010, the Company aimed to produce profit of KRW 190 billion and implement initiatives for low carbon green growth from the perspective of sustainable growth. The Company has developed detailed initiatives and applied various methodologies, including Six Sigma, for the successful implementation of its initiatives.

# Utilization of 6 Sigma

Korea Western Power adopted Six Sigma, a top-down innovation approach led by the management and managers, at the enterprise level, and has applied it to 346 items. The financial benefit of the program reaches KRW 451.1 billion. In addition, Korea Western Power has reinforced the adoption of Six Sigma activities by combining its Six Sigma practice with its HR management system. Since 2007, it has mandated Six Sigma GB certification for managers promoted to first or second class.

#### **Operation of Quality Management Team**

The Quality Management Team that was established in the 1970s is a bottom-up organization participated in by every member of the Company, which focuses on each function and facility in the field. The Company has continuously operated the program by combining it with the Six Sigma innovation practice.

### Operation of the 'Click and Suggest Now' Program

One of Korea Western Power's meaningful achievements has been to improve its proposal system. The scope of proposals has been expanded from innovative ideas to overall operation. For real-time submission and evaluation of proposals, a new webbased proposal management system that maximizes ease of use, promptness and convenience was developed.

### Evaluation & Rewarding of Activities for Innovations

To evaluate and reward the implementation of initiatives, Korea Western Power adopted a comprehensive evaluation and reward policy in December 2005, integrating diverse reward systems. In addition, the company has eliminated complaints about rewards by enabling an objective and fair evaluation through hiring a dedicated financial effect analyst (FEA).

# Soundness of Financial Structure

Korea Western Power strives to maintain the stability and soundness of its financial structure in its overall financial activities, including the establishment and implementation of financial strategy and feedback for budget execution. By setting financial targets based on corporate strategies, analyzing achievements on a regular basis and responding to discrepancies, the Company has maintained a sound financial structure.

Business Strategies		Vision 2020 and mid-to-long term business strategies
Setting Business Goals		Set challenging goals through top-down approach
Setting Mid-to-Long Term Financial Goals		• Set annual financial goals and revise them according to the rolling plan.
Prepare Scenarios		• Prepare scenarios: a basic scenario, an optimistic scenario, a pessimistic scenario
Analyze Financial Results by Scenario		Analyze major financial results by prepared scenario
Draw Financial Statements		• Draw up estimated financial statements after implementing financial strategies.
Feedback	Ć	Analyze gaps between goals and accomplishments periodically.



# Appropriate Unit Price and Cost Saving Efforts

Korea Western Power has increased the unit price of power by persuading KEPCO and the government to improve energy conversion efficiency in 2009. The company's successful adjustment of energy conversion efficiency led to KRW 58.4 billion in profit growth.

Korea Western Power also saved KRW 117.8 billion in operating expenses through intensive, voluntary efforts to save costs. As a result, the company generated profits of KRW 87.9 billion, despite the expected budget deficit of KRW 48.5 billion.

## Financial Risk Management at the Enterprise Level

Financial risk management is part of the risk management program at the enterprise level. Korea Western Power has selected three key risk categories and five key risk indexes, and conducts monitoring on a regular basis. When the key indexes signal emergencies, the company adopts countermeasures. Through such efforts, Korea Western Power has maintained its financial risk indexes within a safe range, and achieved financial soundness, recording the debt ratio of 90%, which is well below the target debt ratio of 94%.

### Maintenance of an Excellent Credit Rating

Korea Western Power enjoys the highest level of credit rating in Korea, and Moody's and S&P also rate the Company as an appropriate investment target. The high credit rating proves that Korea Western Power has the ability of repayment and a sound financial structure.

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# **Economic Achievements**

# **Creation of Added Economic Value**

Korea Western Power has posted revenue of KRW 3.8128 trillion and net income of KRW 87.9 billion for 2009. These business results are more significant when one considers that in 2008, the company operated in the red for the first time since its foundation. Korea Western Power successfully reentered the black in 2009, overcoming the challenges of the global financial crisis and achieving streamlined management. The company is striving to increase the value it distributes to its diverse stakeholders.



# **Growth Potential**

The revenue of the power generation business increases when the economy grows and the national income increases. According to the 4th Basic Plan for Power Supply (the Basic Plan for Power Supply is developed every two years), power demand is expected to grow by 2.1% annually from 2008 to 2022. Korea Western Power will grow with the national economy as a major player among the six domestic power generation businesses. The company posted revenue growth of 3.2% year-on-year in 2009.



### Profitability

Profitability was recovered in 2009 when Korea Western Power re-entered the black in 2009 after recording a deficit in 2008. The cost to sales ratio increased to 101% in 2008 when fuel prices went up, but the company successfully increased profitability by decreasing the cost to sales ratio to 96% in 2009 through efforts to reduce costs. Korea Western Power will continuously increase payability for stable power supply.



Stability

The debt ratio has increased due to various investments made by Korea Western Power to ensure a stable power supply. The ratio increased in 2008 due to a hike in raw material prices caused by the fuel price increase, and in 2009 due to investments for power facility construction. Nevertheless, Korea Western Power has maintained a sound redemption capacity thanks to its stable cash flows. It is also expected that the company will successfully repay and extend the maturity of its borrowings thanks to its sound financial structure, with a debt ratio of about 90% and high financial credibility.



Debt Ratio ODEBT / CAPITAL OEBit/Gross Interest Expense

# **Distribution of Created Economic Values**

As a member of the social community, Korea Western Power has pursued shared growth with its stakeholders. It has created economic value through cooperation with employees, the local community, suppliers and diverse clients, including the government. Korea Western Power has realized its goal of shared prosperity with society by distributing the economic value it creates to stakeholders in a just and fair manner.



Salary & Denenits	(Unit:	KRW 1 Billion)	
ltems	2007	2008	2009
Salary	105.4	123.0	112.9
Reserve for Retirement Allowances	10.4	17.5	8.6
Benefits	3.4	4.9	4.7

Taxes     (Unit: KRW 1 Billion)				
Items	2007	2008	2009	
Corporate Tax	68.2	-	-	
Income Tax	9.1	10.5	11.5	
Comprehensive Property Tax	0.4	0.3	0.2	
Comprehensive Property Tax	0.4	0.3	0.2	

\* No corporate taxes paid in 2008 and 2009 due to net losses in 2008

(Unit: KRW 1 Billion)

(Unit: KRW Million)

#### Investments in Local Community

Items	2007	2008	2009
Costs for Local Programs	7.73	7.68	8.24
Support for SMEs	1.99	1.80	1.88
Donations and Sponsorship for Social Contributions	0.53	0.5	0.61

#### Granting of Government Subsidy

ltems	2007	2008	2009
Investments in Facility for Energy Saving	1,653	5,211	109

Colony & Donofito

Items	2007	2008	2009
Purchase of Fuels	2,111.6	2,968	2,937.7
Purchase of Raw Materials	711.8	559.1	571.3

% Foreign Capital is included in the amount of purchase of raw materials. Foreign exchange rates of the ends of each year are applied.

### Capital Costs (Dividends & Interests)

sts)	(Unit: KRW 1 Billion)

(Unit: KRW 1 Billion)

Items	2007	2008	2009
Dividends	69.9	-	26.4
Interest Costs	20.7	40.1	49.1

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#### munity



# Environmental Peformance

DMA(Disclosure of Management Approach)



# Environmental Performance

Climate Change and Energy
 Minimization of the Emission of Pollutants
 Green Technology Development & Investment
 e Environmental Achievements

#### | Environmental Aspects of Sustainability Management |

As a power generation company with 87% thermal power plant facilities, Korea Western Power recognizes the growing importance of the environmental impact of our activities. We are making a full-fledged effort to minimize the negative environmental influence of the power generation businesses. In addition, we are actively responding to environmental issues so that we can secure sustainable development without being threatened by intensifying environmental regulations and requirements under the Kyoto Protocol. We are expanding our investment in diverse Clean Development Mechanism (CDM) projects and the development of new environmental technologies, out of a belief that the strengthening of environmental regulations presents an opportunity to create profit. With these efforts, we are paving the way to sustainable growth that harmonizes with the needs of the local community.



# | Implementation System |

#### Corporate Policy & Rules

- Establish the mid-term and long-term plan and policy on environmental management
- chieve designation as an eco-friendly company and acquire ISO14001 certificate.
- Sign an agreement on autonomous environmental management with the central government and local governments.

#### Organization in Charge

- Management of environmental impact, Climate change: Power Generation Dept.
- Development of renewable energy : Future Strategy Office, Power Construction Dept.
- Development of eco-friendly technology : Power Generation Dept.

#### | Key Performance Indicators |

Areas	Indexes	2007	2008	2009
Greenhouse Gas	CO2 (g-CO2 eq/kWh)	708	722	744
Environment	SOx (g-SOx/kWh)	0.32	0.26	0.26
Management	NOx (g-NOx/kWh)	0.30	0.40	0.44
Recycling	Coal ash recycling rate (%)	67.3	68.3	70.9
CDM Business	Profits from Emission Trading (KRW 1 Billion)	1.11	0.99	0.56

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# Climate Change and Energy

Korea Western Power currently hold a 10.8% share of the Korean power market. 87% of our power generation facilities are operated by burning fossil fuels, such as coal, oil and gas. As a company that generates most of its power by operating thermal power plants, we are highly vulnerable to the issue of climate change. We are continuously trying to reduce our emission of greenhouse gases by preparing a strategy to overcome climate change and building the required infrastructure.

In addition, we are trying to secure the emission right by signing the emission right trading MOU with Korea Power Exchange in 2008 and 2009, as a part of our efforts to build the foundation for the greenhouse gas trading system that is expected to be used as a means to overcome climate change.

#### Strategy to cope with Climate Change



### Building the Greenhouse Gas Inventory System

To reduce the emission of greenhouse gas, the correct greenhouse gas emission volume must be surveyed. We prepare the greenhouse gas inventory report by installing a greenhouse gas inventory system that meets international standards.

Since the establishment of this system, we have calculated our greenhouse gas emission volume in accordance with the IPCC guideline for Greenhouse Gas Inventories, the calculation standards provided by the World Resource

#### Greenhouse Gas Inventory Verification Statement



Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). In 2009, we developed and installed our own greenhouse gas inventory control procedures and guide systems.

We have secured the objectivity of our greenhouse gas emission volume by acquiring the certification of our greenhouse inventory reports (between 2002 and 2007) by the Korea Foundation for Quality in 2008, and utilize these for our climate change policies.



Greenhouse Gas Emission Volumes of Each Year


Greenhouse gas emission volume of each energy source [Unit : g-C0:/kWh]



Greenhouse gas emission volume of each energy source
 [Unit : One thousand tons of CO: eq]



Amount of Energes Used for Each Fuel
 (Unit: thousand GJ)



#### Efforts to Decrease Greenhouse Gas

Currently, Korea is not classified as a country that is required to decrease its greenhouse gas emissions. However, we are faithfully performing various projects such as improving the efficiency of our power generation facilities and developing technology to decrease greenhouse gas emissions, and in doing so are preparing for the enforced decrease of greenhouse gas emission.

#### Improving the Efficiency of Power Generation Facilities

We are working to reduce greenhouse gas emissions by installing state-of-the-art facilities with highly enhanced power generation efficiency when new electric power facilities are installed, and are building an integrated combustion management system and improving our coal blending programs.

#### **Energy Saving Project**

The energy consumption of the power generation industry is more focused on management accomplishments and climate change protocol than cost saving. We operate our business in a manner that is oriented toward decreasing energy consumption by signing voluntary energy saving agreements and reporting our energy saving record.

It is estimated that the replacement of the thyristor transformers operated in the Taean thermal power plants Nos. 5 and 6 with high-efficiency electric precipitators will reduce our greenhouse gas emissions by 5,549 tons of  $CO_2$  eq each year.

#### Development of CO<sub>2</sub> Treatment Technology

Between 2005 and 2009, we have invested 54.64 billion won in developing  $CO_2$  separation dry recycling absorbent, waste gas  $CO_2$  absorption tower fluidized bed process, mass oxygen particle production technology, IGCC Commercialization technology and  $CO_2$  separation technology using aminebased chemical absorption processes.

#### 5th day-No-Driving System

We work to save energy and reduce greenhouse gas by promoting the 5th day-no-driving program, operating a commuting bus for employees, and limiting work-related travel.

#### Carbon Neutral Program

To support social efforts to reduce greenhouse gas emission, we have been participating in the Carbon Neutral Program since 2008 by providing the solar photovoltaic power generation system for a social welfare institute in Eumseong, North Chungcheong Province.

#### Securing CERs and Building the Foundation Required for Joining the Carbon Market

We have proactively joined the clean development mechanism project and greenhouse gas reduction in order to prepare for the enforcement of global greenhouse gas regulation based on the market mechanism. Through these efforts, we expect to show our strong intention to reduce greenhouse gas emissions and be ready for the carbon market regulations. Through 2009, we secured the credit for up to 550 thousand tons of CO<sub>2</sub> eq.

#### Promoting the UN CDM Project

We completed the construction of 120kW solar photovoltaic power generation facilities in Taean in Aug. 2005, and promoted the clean development mechanism project on Taean small hydro power generation facilities and the Samrangjin photovoltaic power generation facilities in Sep. 2007. Through these efforts, we expect to reduce greenhouse gas emissions by up to 6,715 tons of CO<sub>2</sub> eq annually for 10 years. In addition, we expect to reduce emissions by 24,000 tons of CO<sub>2</sub> eq annually by using the organic sludge generated in wastewater treatment facilities as fuel for coal-fired

#### thermal power plants starting Aug. 2009. This project is expected to contribute to reducing fuel expenses by replacing 80,000 tons of coal imports. Furthermore, the Garolim tidal power plant, which at 520MW is the biggest tidal power plant in the world, and the IGCC (300MW) power generation facilities are under construction. These two projects are planned to be completed in 2012.

#### Registration and Management of Global Greenhouse Gas Reduction Project

We have actively joined the greenhouse gas reduction project recording and management system operated by the government for the purpose of reducing the greenhouse gas emitted by industry. We achieved profits of 560 million won by selling the emission right after reducing the greenhouse gas by 115 thousand tons of CO<sub>2</sub> eq in 2009 through these efforts. We created accumulated profits of 2.7 billion won by selling the emission right, and reduced emissions by a total of 550 thousand tons of CO<sub>2</sub> eq until 2009.

#### International CDM Project

	Expected CEPs Amount (CO. og (voor)		
Project Name	Expected CERS Amount (CO2 eq/year)	Progress Status	Effective Terms of Project
Samrangjin Photovoltaic Power Plant	2,215 tons	Registered to the UN CDM	2009. 1.1 thru 2018. 12. 31 (10 years)
Taean Small Hydro Power Plant	4,500 tons	Applied to the UN CDM EB (national approval completed)	2010. 1.1 thru 2019. 12. 31 (10 years)
Co-firing Biomass Fuel and Coal	24,000 tons	The business plan is complete	2011. 1. 1 thru 2019. 12. 31 (10 years)

#### Domestic Greenhouse Gas Reduction Project

Project Name: Seoincheon Combined Cycle Power Plant Performance Improvement Project through the Adoption of a High-Efficiency Gas Turbine

- Project registration: Jun. 2006 (first project in Korea)
- Expected energy saving amount: LNG 47,505/year calculated based on the business plans.
- Reduced amount of greenhouse gas: 550 thousand tons of  $CO_2$  eq (2007~2009)
- Profit acquired by selling the emission right:

2007	2008	2009	Total
1.1 billion won	0.9 billion won	0.56 billion won	2.67 billion won

 Expected additional reduction: about 200 thousand tons of CO<sub>2</sub> eq calculated based on the business plan.



## Minimizing the Emission of Pollutants

It is a characteristic of the industry that a power generation company inevitably uses a huge amount of resources and generates pollutants. Electric power is an indispensable element required for quality of life, and is an element that critically influences the environment through the depletion of fossil fuel and environmental disruption. We aim to contribute to the sustainable growth of our society by recycling resources, managing pollutants and operating a resource cycling system.



ltems	Generated amount (thousand tons)	Recycled amount (thousand tons)	Recycling rate(%)
Coal ash	1,298	920	71
Desulfurization gypsum	432	432	100
Wastewater	1,103	498	46
Waste	8.8	1.2	14

Sustainability Management System

## Preserving the Environment Using the Environmental Management System (EMS)

We work with a focus on environment, perform the environment management protocol by processing the PDCA (Plan-Do-Check-Act) cycle and acquire ISO14001 certificates. Also, we annually perform an environmental audit, aiming to minimize the potential environment risk by effectively operating an environmental management system.



#### **Environmental Management Policies**

We, Korea Western Power make a contribution to growth of society by generating the best energy in harmony with human, technology and environment. Also, we make a contribution to happiness and prosperity of human being by generating the eco-friendly power as a market leader in 21<sup>st</sup> century. We renew our three environmental management policies focused on Clean, Clear and Comfortable power and stipulate our environmental management policies as follows as a part of our effort to accomplish our goal of World Best 3E Creator.

#### \*3E (Energy, Environment, Expertise)

- We decide the 'eco-power 3 plus 10' as our environmental vision for minimizing the impact to environment and actualizing the sustainable growth.
- We do our best effort to preserve the global environment by installing the system meeting the requirements for the international impact assessment against all our power generation processes and periodically performing the environmental impact assessment against all our power generation process.
- We minimize the generation of environment pollutants by operating our own management regulation & targets by the power generation sites as well as observing the national standards and local government regulations.
- 4. We continually develop and apply the technologies for the optimal operation and improvement of environmental facilities.
- 5. We operate the power plants focused on natural cycling by minimizing the generation of wastes and recycling the resources.
- We open all environmental information and reinforce the cooperative system with local society to guarantee the clear and objective environment management.
- All employees including the CEO shall recognize the importance of environmental management and take the required actions to faithfully perform this environmental management policy.

2009.9 Korea Western Power

#### Minimizing the Emission of Air Pollutants

While thermal power plants operated using coal and oil emit sulfur oxides, nitrogen oxide and dust, gas power plants that use natural gas emit nitrogen oxide only. We minimize the emission of air pollutants by improving the reliability of our preventive facilities through strict control standards.

### Improving the Reliability by Opening Environmental Information

We continuously assess the air and water using our quality measuring system, and then send the results to the relevant environmental agencies and local government. We guarantee easy access to environmental information by opening all information to local residents through the electronic display board.

### Efforts to Minimize Environmental Pollution by Observing Environmental Laws

We faithfully comply with all environmental regulations related to air, water and waste. No fines or legal restrictions have ever been imposed against our company for violating environmental laws. Our Taean, Pyeongtaek and Seoincheon power generation divisions signed environmental protocols with local governments for voluntary environmental management. We try to minimize environmental pollution by enforcing control standards for air and water pollutants (keep the level of 30% compared to the legal standards) and wastes (recycling goal of more than 75%).

#### Restraining the Emission of SOx and NOx

We have installed and operated preventive facilities such as cutting-edge flue gas desulfurization facilities, fuel gas denitrification facilities and high efficiency electric precipitators in our Taean thermal power plant and our Pyeongtaek thermal power plant.

We minimize the emission of air pollutants by installing a low NOx combustor designed to minimize nitrogen oxide in Seoincheon combined cycle power plant. We have also installed facilities that reduce the yellow plume that occurs when the equipment stops running.



▲ Flue Gas Desulfurization(FGD) Facilities

#### Flue Gas Denitrification process

Flue Gas Denitrification Facilities : This system, which is designed to discharge the NOx after separating the NOx into nitrogen and oxygen under natural conditions by passing the NOx through the catalytic layer using the selective catalytic reduction method, is operated in our Taean power plant and Pyeongtaek power plant.



#### Restraining the Emission of Dispersing Dust

At our Taean thermal power plant, which is operated by burning coal, we have prevented the dispersal of dust in advance by planting a windbreak forest, operating a motor sprinkler and installing a dustproof wall.

Air Pollutants Emitted by Year



#### Preservation and Saving of Water Resources

The water used by our company can be classified into power generation water directly used for power generation, desulfurization water supplied to desulfurization facilities, cooling water and potable water. Power generation water is supplied from the fore-bays, such as dams or lakes around the power plant. We control the amount of water collected from the fore-bay so that the surrounding water system is not influenced

#### Water Use Status by Plant for 2009

Items	Taean	Pyeongtaek	Seoincheon	
Amount Used	4.8	1.3	0.3	
Fore-bay	Boryeong Dam	Namyangho (Lake)	Paldang Dam	
Supply Capacity	107	180	980,106	

[Supply capacity: Amount of water supplied by each fore-bay]

#### Reuse of Power Generation Water

We reuse and discharge all wastewater generated upon power generation, after it has been treated to the level of 3rd class<sup>1)</sup> in order to reduce the use of water resource and minimize our impact on the water system. Our Taean power generation division reuses most of its wastewater, and our Pyeongtaek power generation division, including the Seoincheon power generation division located in the coastal area, is trying to prevent water pollution and minimize the impact on the ecosystem by discharging wastewater at ordinary temperature.

Since 2007, we have implemented and operated a waste water reclamation and revising system in our Taean power plants in order to effectively use industrial water and secure the water required. To accomplish this goal, we have been promoting the zero leakage movement, activating the reuse of wastewater, and improving the wastewater treatment process. The wastewater reuse rate was decreased slightly in 2008 during the construction of wastewater treatment facilities. Also, the water use rate was slightly increased due to the decrease in the amount of power generation in Seoincheon power plant division. Currently, we are promoting a project that is intended to maximize the water use efficiency, increase the waste water reuse rate, and minimize the discharge of wastewater.

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<sup>1) 3</sup>rd class water: Water meeting the requirement for the COD (Chemical Oxygen Demand) of pH 6.5 ~ 8.5 and containing suspected solids of less than 25mg/L



Water use status recorded for each fore-bay

#### Water recycling status



#### Management of Thermal Effluent

Thermal power plants generate power using a hot, highpressure steam, and then reuse the steam through a condensation process. Seawater is used as the coolant to condense the steam, so thermal effluent is drained. The amount of thermal effluent drain water increases or decreases in proportion to the power generation amount. Although our thermal power plant drains the thermal effluent, the area where the temperature of the seawater is increased by more than 1 degree Celsius is within the range of 1.5km<sup>21</sup>, so the impact to marine ecosystem is assessed to be low.

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2) Source: Environmental impact assessment report for the construction project



#### **Recycling Waste and By-products**

We recycle the coal ash and desulfurization gypsum through the appropriate treatment. Waste or waste lagging materials are difficult to recycle, so we have these materials handled only by the authorized treatment companies.

The total waste discharged by our company in 2009 was recorded as 8.8 thousand tons, a decrease of 55.3% compared with the waste discharged in 2008. The amount of generated and recycled waste was increased in 2008 when the construction of Taean thermal power plants Nos. 7 and 8 started. However, this was decreased to a normal level after the completion of the construction project.

The ash generated from the burning of coal is used as concrete admixture, cement raw material and fill dirt. The coal ash recycling rate has continuously increased for the past several years, and was recorded as 70.9% in 2009. We plan to increase this rate by developing new areas in which coal ash can be used, including road aggregates and embankment. 100% of desulfurization gypsum is recycled as raw material for cement and gypsum board.





Coal ash generation and recycling status



#### Minimizing the Use of Chemicals

Our power plants use 30 different types of chemicals in the operation of our facilities to prevent environmental pollution, prevent corrosion and produce steam for power generation. We continuously work to minimize the use of chemicals by preventing the injection of hydrazine, using high-efficiency cohesive agents, improving our facilities maintenance method and developing processes to replace chemicals. We have never had any accidents involving the leak of noxious material when generating the power.

Through these efforts, we have decreased our overall chemical use by 34% compared with 2007 levels. We are always striving to minimize our use of chemicals.



#### Long-term Chemicals Reduction Plans

- Plan to introduce the latest water technologies - No injection of hydrazine and oxygen treatment
- Plan to develop and apply the process to replace chemicals - Changing the cohesive agents
- Plan to change the facilities preservation method
- Plan to improve the process

#### Places Where Chemicals Are Used

#### Prohibiting the Use of Persistent Organic Pollutants

Of all materials used by our company for the power generation, only the insulating oil used for transformers is classified as a persistent organic pollutant. However, we have not introduced or transported a transformer that includes insulating oil containing PCBs since 2002. Since signing an agreement to prohibit the use of PCBs with the Ministry of Environment in October of 2004, we have checked to determine if the insulating oil of transformers contains PCBs and if the density of insulating oil is appropriate through the total inspection. We plan to prohibit the use of all insulating oil containing PCBs.

In addition, we have submitted a voluntary action plan for the prohibition of PCBs specifying the status of transformers containing insulating oil and a nullification plan to the Ministry of Environment in May 2007, and performed the required actions according to the submitted plans. We disposed of 5 of our 10 transformers in 2009, and plan to dispose of the remaining ones by 2012.

#### Protecting the Ozone Layer

We strictly control the use of substances that cause damage to the ozone layer. Also, we strictly manage all substances stored or in use. Halon gas, which is currently used by our company for the operation of electrical facilities, is classified as a substance causing damage to the ozone layer. We currently own 10,760kg of halon gas. The Taean thermal power plant has charged only 1,050kg of halon gas from 2002 through 2006. We plan to nullify or replace all fire fighting facilities using halon gas By 2012.

Chemical	Places Used	Chemical	Places Used
Hydrochloric Acid / Caustic Soda	<ul> <li>Water treatment plant: Used to produce power generation water</li> <li>Condensate polishing plant: Used for purifying boiler water</li> <li>Wastewater treatment plant: Used to controls pH</li> </ul>	Hydrazine / Ammonia / Phosphoric Acid Soda	<ul> <li>Boiler water treatment: Used to prevent corrosion</li> <li>Denitrification facilities: Used as a reducing agent</li> </ul>
Coagulation Aid / Aluminum Sulfate	<ul> <li>Water treatment plant: Used to produce power generation water</li> <li>Wastewater treatment plant: Used to remove the turbidity element</li> </ul>	Sodium Carbonate / Sodium Sulfite / Hydrochloric Acid Sodium	Desulfurization wastewater treatment: Used to remove heavy metals and COD
Antifoaming Agent	• Used to remove the foam in drain outlet	Ferrous Sulfuric Acid	Coolant sea water treatment: Used to prevent corrosion
Chlorine Dioxide	Used for the disinfection of potable water	Microbe Spawn Material	Sewage treatment: Used to remove BOD

#### **Preventing Soil Pollution**

We perform soil inspection annually or biannually in areas where soil pollution is expected due to the operation of a power plant. No incidents of pollution have been reported.

#### **Environmental Impact Assessment**

We survey and evaluate the environmental and traffic impacts that will result from the construction of a power plant before selecting the project site and preparing the construction plans, and then work to minimize the impact on the surrounding environment. Also, we collect the opinions of all stakeholders, such as local residents and the relevant agencies, and then reflect these in the construction plans.

As a result, all of our power plants are constructed and operated in areas far from protected ecosystems where protected or endangered animals live. In addition, we verify the results of our measures to protect the environment by performing an environmental impact assessment that checks the items reflected for the specific period of the power plant's operation, and then report the results to the relevant agencies.

#### **Environment Accident Preventative System**

We classify all possible environmental pollution accidents by type in order to completely prevent environmental accidents, and operate a consolidated emergency organization. This organization performs more than 12 simulation drills each year to train employees on how to take emergency action in a timely manner. As a result, no accidents have been reported.

### Action procedure applied in the event of an emergency Oil leakage accident

- Toxic substance leakage accident
- Earthquake and fire Typhoon and surge
- Heavy snow and flood

#### Action procedures applied to environmental accidents

- of each facility
- Air pollution prevention facilities
- Water pollution preventive facilities
- Waste storage facilities
- Toxic substance storage facilities
- Oil storage facilities

Also, we provide our employees with training in the prevention of environmental pollution when an accident occurs involving transportation equipment. We post traffic safety posters on the notice board in our workplaces. We also try to prevent environmental accidents involving our transportation service providers through a system that penalizes service providers through a shutout in the event of an accident resulting from speeding.

Areas	Workplaces	Description	Duration
Construction Area	Garolim Tidal Power	Environmental impact assessment for the construction project	2006. 3 ~ 2010.12
	Taean IGCC	Environmental impact assessment for the construction project	2007. 5 ~ 2010. 8
	Taean	Marine, land, air and soil environment survey	Biannually, or annually
	Gunsan Marine, land, air and soil environment survey		Biannually, or annually
	Pyeongtaek	Air, land and soil environment survey	Semi-annually, quarterly and annually
Operation Area Cheongsong Pumped Storage Land, aquatic, air, water, noise, vibra		Land, aquatic, air, water, noise, vibration, weather environmental survey	Annually
	Seoincheon	-	N/A
	Samrangjin Pumped Storage	-	N/A

#### Places where the Environmental Impact Assessment conducted

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# Economy

## Green Technology Development & Investment

#### **Development for Eco-friendly Technology**

We implement research and development through educational and industrial cooperation, and are growing as a green energy company by recognizing developing technologies to reduce greenhouse gas.



#### Environmental Facility Investment and Operation

We have invested 20.4 billion won in environmental facilities, which accounts for 12.3% of our total facility investment in 2009. Over the past three years, we have invested 86 billion won, which accounts for 16.0% of our total facility investment, in improving the environment. In 2009, we spent 123.4 billion won to operate and develop environmental facilities. As a result of our investment in facilities to improve air quality, we have reduced our emission of air pollutants by 19% compared with 2007 levels, through the introduction of a high-efficiency electric precipitator and the optimized operation of desulfurization facilities.

#### Investment and Budget Execution Records in the Environment Area (Unit: Million won)

Items 2007 2008 2009 Investment in 45,306 20.359 20.368 Environmental Facilities Operation 111,435 114,705 119 131 Expenses Development 5,526 2,693 4,248 Expenses Total 162 267 137 757 143 747

\* Development Expenses: Excludes education and training expenses (These are included in operation expenses) CO<sup>2</sup> Capture and Storage Technology Development

We are developing an eco-friendly high-efficient CCS technology that will separate and recover the  $\rm CO_2$  generated from power generation activities before releasing it into the air.

#### Green Environmental Technology Development

To prevent the environmental pollutants generated from burning large amounts of fossil fuels, we are developing a clean combustion technology designed to minimize air pollutant emission, including a technology to optimize combustion of the counterflow boiler.

#### **Resource Management for Natural Circulation**

We developed a new technology intended to use biomass fuels produced through processing wastewater sludge as an alternative to coal, and are conducting research to utilize coal ash for agricultural use and to establish a new quality criteria (KS standard) for areas where coal ash is used.

#### **Environmental Accounting System**

We have operated an environmental accounting system designed to calculate the amount of environmental investment, operational expenses and the environmental costs through facilities investment to reduce the emission of environmental pollutants. This system allows for effective decision-making on eco-friendly management by analyzing the environmental benefits generated from environmental activities such as energy recovery and the reuse of byproducts.

#### Environmental Cost Trend by year

(Unit: KRW/kWh)

Year	Taean	Pyeongtaek	Seoincheon	Samrangjin	Cheongsong	Total
2007	2.12	5.91	0.50	1.51	0.35	2.40
2008	2.58	8.78	0.21	0.22	0.39	2.50
2009	2.39	7.44	0.42	0.74	0.45	2.48

\* Environmental cost = (Environment operational expenses +R&D expenses)  $\div$  Total power generation amount

## **Environmental Achievements**

Areas	Indexes	Goals (2020)	Accomplishments (2009)	Targeting value increase rate
Climate Change	CO2 (g-CO2 eq/kWh)	700	745	94.1%
	SOx (g-SOx/kWh)	0.21	0.26	80.8%
Air Area	NOx (g-NOx/kWh)	0.24	0.44	54.5%
	TSP (g-TSP/kWh)	0.02	0.02	100%
Water Quality Area	Used chemicals (g/kWh)	0.30	0.14	214%
Water Quality Area	Drain water reuse rate (%)	80	46	57.5%
	Coal ash recycling rate (%)	90	71	78.9%
Resource Recycling	Desulfurization gypsum recycling rate (%)	100	100	100%

(Unit: GWh)

(Unit: Thousand GJ4)

#### Environmental Accomplishment Indexes

Power Plants	2007	2008	2009
Taean Thermal	30,750	32,834	33,083
Pyeongtaek Thermal	5,514	1,935	3,644
Pyeongtaek C/C	922	915	490
Seoincheon C/C	11,013	10,421	7,587
Samrangjin P/S	218	360	382
Cheongsong P/S	309	483	533
Renewable	2	7	9
Total	48,728	46,955	45,728

Thermal Efficiency by Year



Direct and Indirect Greenhouse Gas Emission Volume
 (Unit: Thousand-CO<sub>2</sub> eq)

ltems		2007	2008	2009
	Bituminous coal	25,653	27,514	27,704
Direct Energy	Heavy oil	3,785	1,349	2,491
	Kerosene	23	14	11
	LNG	4,672	4,492	3,248
Indirect Energy	Electric power	381	543	580
Total		34,513	33,911	34,034

Ist Energy Consumption Volume

Power Generation Status by Year

Items		2007	2008	2009
	Bituminous coal	277,972	296,844	299,029
Direct Energy	Heavy oil	51,395	18,272	33,660
	Kerosene	336	200	165
	LNG	90,938	87,464	63,233
Indirect Energy	Electric power	8	11	12
Total		420,648	402,792	396,099

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Annual Pollutant Emission Status by Year
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Voor	Emission volume (ton)			Basic unit (g/kWh)		
icai	SOx	NOx	TSP	SOx	NOx	TSP
2007	15,431	14,401	976	0.317	0.296	0.020
2008	12,372	18,590	797	0.263	0.396	0.017
2009	11,739	19,920	728	0.257	0.436	0.016

#### Water Pollutant Emission Status by Year

Vear	Wastewater emission	Emission volume(kg)				Basic unit emission volume (mg/MWh)			Wh)
(ton)	COD	SS	T-N	T-P	COD	SS	T-N	T-P	
2007	369,512	1,816	1,472	2,352	14	37.67	30.55	48.80	0.29
2008	618,805	1,920	1,565	753	104	41.64	33.95	16.33	2.25
2009	619,867	2,374	1,318	1,330	12	52.99	29.42	29.67	0.26

#### Cooling Water Use Status by Year

[Calculated based on the temperature difference measured at inlet and outlet]

	ltem	Used Amount (Unit: Million Ton)	
Used		amount	5,026
2007		Water collection	14.9
2007	Temperature (°C)	Water drain	23.6
	(0)	Difference	8.7
Used amount		amount	4,261
2008		Water collection	14.3
	Temperature (က)	Water drain	23.3
	(0)	Difference	9.0
	Used amount		4,882
2009		Water collection	13.6
	Temperature (°C)	Water drain	23.0
		Difference	9.4

#### Amount of Power Generation Water Used (Unit: Thousand Ton)

Year	Taean	Pyeongtaek	Seoincheon
2007	4,696	1,966	519
2008	4,797	1,164	480
2009	4,750	1,331	336

#### Waste Generation Status by Year

Year	Generated Amount (Thousand Ton)	Recycling Amount (Thousand Ton)	Recycling Rate [%]
2007	23.7	6.2	26.2
2008	15.9	2.6	16.4
2009	8.8	1.2	13.6



## Social Performance

(DMA : Disclosure on Management Approach)



49 Social Performance • Safety & Health • Employee Satisfaction • Development of Employee Capability • Ethical Management • Cooperation with SMEs • Local Community Support & Social Contributions



#### | Social Aspects of Sustainable Management |

At Korea Western Power we consider all internal and external stakeholders in our management activities, and believe that sharing the profits produced from business management with our stakeholders is our social responsibility as a corporation. We also believe that doing our best to be a responsible corporate citizen will eventually lead to our sustainable growth. Based on these beliefs, we provide safety and health education to enhance the job satisfaction of our employees, build a corporate culture of trust and communication, and offer systematic education programs to foster human resources. To promote the growth of small and medium-sized companies, which are the engine driving the nation's development, we promote various support programs, including a benefit sharing system through joint technology development. In addition, we pursue continuous volunteer?activities for local communities and neighbors in need through the activities of the Korea Western Power Volunteer Team, in the three areas we call Love of Humans, Love of Environment, and Love of Culture, and promote sustainable management for shared prosperity with our stakeholders.

#### | Implementation System |

Vision 2020	Ranked One of Top 10 Most Admired Companies in Korea					
Field	Satisfaction of Employees Ethical Manageme		Support for SMEs	Social Contribution		
Goal	Realize a Great Work Place (GWP)	Become a Global Ethical Leader	Embody Mutual Growth Via Coexistence and Cooperation	Happy Energy and Friendly Neighbor (Slogan)		
Corporate Policy and Regulations	Corporate Policy and Regulations Employment Regulations, Safety Health Management Regulations, Fringe Benefit Regulations, Education Trading Regulations	Ethical Management Road Map, Employee Credo (Charter of Ethics) Codes of Ethics for Executives and Staff Members	Road Map for Supporting SMEs, Guideline for Supporting SMEs, Guideline for Implementing Benefit Sharing System	Operational Guideline for Volunteer Activities,Western Power Charity Fund, Supporting Rural Areas by Establishing Ties		
Organization in Charge	General Affairs Support Department	Audit & Inspection Office (Ethical Management Office)	Power Generation Dept. (Support Team for SMEs)	Planning Department Western Power Volunteer Team		

#### | Key Performance Indicators |

Field	Key Index	2007	2008	2009
Satisfaction of Employees	Annual Number of Education Sessions Allocated to Each Employee	3.44	4.00	4.82
Ethical Management	Corporate Integrity Score (KEPCO)	8.03	9.73	9.91
Support for SMEs         Amount of Purchases from SMEs (Unit: KRW 1 Billion)		77.2	93.6	129.6
Easial Contribution	Average Hours of Volunteer Activities by Each Employee	20.4	18	20.82
Social Contribution	Participation in Charity Fund (%)	74	77	84

## Safety & Health

The guarantee of safety and health is one of the most basic elements of employee rights. Korea Western Power clearly understands that every job should be performed based on safety and health. Placing a top priority on preventing accidents at work, we provide all necessary support in terms of budget, human resources, and system, and operate a safety management system. Moreover, we spread awareness of safety and health by monitoring safety management activities, not just of our employees but also of our partner companies. We also provide various health and welfare programs for our workers and their families to ensure a healthy lifestyle for our employees.

#### Building an Advanced Safety Management System

In 2003, Korea Western Power acquired the certificate for its Occupational Health and Safety Management System (K-OHSMS/KOSHA18001), a first for a public sector utility in Korea, and was awarded the certificate of Safety Zone Management in 2009. We operate an optimized fire prevention system and realize Safety-First Management by applying these advanced systems to all of our workplaces.

In addition, with the aim of creating a safe and healthy corporate culture, we annually establish and implement a safety management plan to effectively control safety management, ensure the safety and health of our employees and our contractors' employees, and increase our corporate value by strengthening safety management. As a result of these efforts, no industrial accidents were reported in our company throughout 2009.

#### Increasing Safety Awareness and Promoting Zero Accident at Work

Korea Western Power provides safety education to our employees in accordance with the Occupational Safety and Health Act, and strengthens the safety management awareness and capacity of our entire workforce through commissioned education on safety by experts. We take all preventive and corrective actions necessary to ensure the safety of all construction works and maintenance works according to our regulations. We also provide safety education and training to all workers employed by our company and all contractors in order to prevent accidents. Between January of 2007 and December of 2009, we provided safety education and training programs to 264 employees and 1,105 workers at contractor companies, both in our safety training center in Taean and at the safety experience center operated by the Korea Occupational Safety & Health Agency. Our company has achieved excellent safety management, extending the zero-accident period by up to 16 times in Samrangjin power plant, 15 times in Taean power plant and 8 times in Cheongsong power plant.

Lost-time Injury Frequency Rate<sup>1</sup> for Last Three Years<sup>1</sup>

	2007	2008	2009
Annual Work Hours	4,353,600	4,192,800	4,679,976
Number of Accidents	2	1	1
Lost-time Injury Frequency Rate	0.459	0.239	0.214

● Accident Occurrence Rate for the Last Three Years [Ft위: %]

Workplace	2007 2008		2009
Taean	0	0	0.15(1 person)
Pyeongtaek	0.26(1 person)	0.26(1 person)	
Seoincheon	0		0
Samrangjin	1.16(1 person)	0	
Cheongsong	0	0	
Gunsan	0		
Same Category of Business (Power · Gas, Water)	0.22	0.18	0.22

# Industrial Accident Occurrence Rate = Number of Employees Injured or Killed / Number of Employees X 100 % Source: Korea Occupational Safety & Health Agency

#### Building an Emergency Response System to Cope with Disasters

We are continuously working to ensure a stable power supply that is not vulnerable to disasters, and together with KEPCO are striving to improve the service quality. We operate a joint disaster safety response headquarters with the domestic electric power companies to prevent disasters, recover from the damage resulting from disasters and perform safety control, and also operate our own emergency response system to ensure efficient and swift recovery.

In addition, we have prepared a crisis countermeasure system based on the crisis countermeasure manual and action manual, operate a disaster response center, and continuously improve our capacity to manage risk through simulation drills and virtual accident scenarios, followed by performance evaluations.

Lost-time Injury frequency rate is calculated by dividing the number of accidents by the annual work hours of the company (unit: 1 million man-hours). This index is controlled by the Korea Industrial Safety Corporation. 1 million man-hours is used as a criterion in this report. However, 0.2 million man-hours is commonly used as a criterion according to the global standard.

#### Operating Industrial Safety and Health Committee

The collective agreement of Korea Western Power stipulates our liabilities in the area of safety, health and compensation for accidents, our workers' rights related to health and the conditions agreed with our labor union in accordance with the Occupational Safety and Health Act. Consisting of 10 commissioners representing labor and management, the industrial safety and health committee is held in each workplace on a guarterly basis according to the collective agreement. If any pertinent issues are not resolved by the industrial safety and health committee, they will be addressed by the safety and health committee in our head office, which is held on a quarterly basis. In 2009, the safety and health committee organized in head office prepared industrial accident prevention plans, worker safety and health education or training plans, work environment evaluation plans, health care plans, working uniform provision plans, and the drawing up of an asbestos map.

Also, we appoint a health supervisor for our larger workplaces such as Taean, Pyeongtaek and Seoincheon in order to promote the health of our employees. To serve the health care needs of employees in our small workplaces, we hire professional health care service providers. We operate our business with a focus on safety by appointing an honorary industrial safety inspector for each of our workplaces.

#### Operating Comprehensive Health · Welfare Programs

### Operating Health Program for Employees and Their Families

We try to guarantee a good quality of life for our workers by taking care of the health of our employees and their families through regular medical checkups. We perform an annual checkup and a blood test every two years for our employees. In addition, we annually perform a special medical checkup, coupled with the general medical checkup, for employees engaged in the power generation, chemical, mechanical, and measuring areas, as well as shift employees, for their health and safety. In addition, we perform the above medical checkups on new employees and employees changing to shift work.

We concluded an agreement with a corporate medical benefit service provider, the first of its kind in Korea, to provide a wide range of medical benefits to employees, including discounts, late payment and installment payment for the medical bills of our employees and their families. We operate the WHP (Worker Health Promotion) program for our employees and their families) according to the labor-management agreement. Also, we operate a crisis control program for our employees and their families by installing the health care room, hiring a nurse for individual workplaces, and making agreements with hospitals.

#### Operating Employee Welfare Fund and Housing Support Program

Korea Western Power has established an employee welfare fund by donating 5% of its net profits before tax each year to enhance the welfare of its employees. Using this financial resource, our company provides support for family events, childcare and children's educational expenses of employees. as well as support for employees suffering from illness or affected by disaster. Also, in this era of a low birth rate and aging population, we operate child-friendly support policies by paying the tuition of up to two children for each employee hired by our company, until the children graduate from high school. We provide financial support to employees for the purchase of the four major insurances (national pension, health insurance, employment insurance and industrial accident insurance). In the event of a death due to an industrial accident, we provide the family of the employee with financial compensation.

Our main workplaces are located in less-developed regions of Korea near the shore, including Taean and Pyeongtaek, and as such the working environment of our employees is somewhat poor. To address this, we provide housing for our employees by 80% to ensure housing stability for our employees, and support housing purchase or rent of employees by providing long-term low-interest loans of up to 50 million won and 30 million won, respectively.

#### $\odot$ Comprehensive Health $\cdot$ Welfare Program

Classification	Contents
	(General Check-up) Eyesight, hearing, blood pressure, cholesterol, chest radiograph
Health Check-up	(Special Check-up) Provide special medical check-up for employees exposed to a hazardous working environment involving noise, chemicals, and organic solvents with an annual general check-up.
Corporate Medical Benefit Service	Offer medical discount for areas not covered by insurance, including ophthalmology, dental clinic, dermatology, oriental medical clinic.
Employee Welfare Fund	Support for family events, children' s tuition, educational expenses and living expenses for our employees.
Child Education	Support for tuition of children attending middle and high schools
Social Security Insurance	National pension, health insurance, employment insurance, industrial accident insurance, compensation for accidents at work
Housing Stability	Housing, dorms for singles, housing purchase and rent support

## **Employee Satisfaction**

We recognize that a company that provides a satisfactory working environment for its employees not only will inspire high employee loyalty, but will also become a competitive company in the long run. Based on this belief, we are working to build a sound corporate culture through fair and open recruiting, trust, and communication between employees.

#### **Open Recruitment**

We provide an equal opportunity to all job applicants by abolishing the educational background and age limit and paper-screening system. We wait for competent applicants by operating diverse employment programs such as open recruitment, recruitment through academic-industrial cooperation, and honorable treatment and support of distinguished services to the nation.

We have recruited 208 employees in the last 3 years, despite management difficulties caused by the government's management advancement policy. We are actively participating in national and social initiatives intended to solve the problem of youth unemployment.



#### Age Groups of All Employees as of 2009

Percentage of Employees Living in Each Area as of 2009



#### Building a Workforce Based on Equal Opportunity

We completely prevent discrimination by stipulating the equal treatment of all employees regardless of sex, religion and social position in our employment regulations. In addition, we clarify the legal basis for protecting the human rights of workers (Article 84), personal information (Article 85), equality of sexes (Article 86), equality in recruitment and employment (Article 87) and equality in education, position and promotion (Article 88) through the collective agreement with our labor union.

We have abolished discrimination against woman in recruitment and promotion by preparing a long-term female human resources utilization plan and strictly observing the principle of gender equality. We provide opportunities to female job applicants when recruiting new employees by operating a female employee recruitment ratio targeting system. As of end of 2009, we have promoted 13 female employees to manager level by providing equal chances for promotion.

Currently, 41 handicapped employees, 2.2% of our total workforce, are working in our company as of the end of 2009. This number is above the government standard applied to public corporations for the recruitment of handicapped employees, which is 2%. However, we plan to provide more opportunities to the handicapped by increasing this ratio.

#### Number of New Employees for Last Three Years [Unit: Person]

Classification	2007	2008	2009
Current employees	1,873	1,876	1,858
New employees	130	46	32
Female employees	18	7	11

### Basic Salaries of Male and Female Employees as of the End of 2009

[Unit: Person, KRW 1 Million]

Classification	Male	Female	Total
Number of persons	1,709	149	1,858
Average basic salaries	45	45	-

### Anti-Sexual Harassment Education and Maternity Protection

We publish and distribute a guideline to prevent sexual harassment in the workplace to create a safe and sound working environment, and provide anti-sexual harassment education program more than once each year. We provide institutional support to enable female workers to perform their work or duties in a stable environment by increasing the incentive to promote childbirth, appointing a nurse, operating a cooperative hospital and providing a childcare center at work.

#### Preventing Forced Labor and Child Labor

We operate based on a 8-hour per day, 40-hour five-day work week. If overtime work or duty over the holidays is required, prior agreement should be made between the worker and the head of the relevant department. In addition, we fundamentally prevent child labor by implementing a minimum age policy (18) when recruiting new employees.

#### **Operating a Grievance System**

We operate a system to solve problems that arise in the process of work. Experts responsible for solving problems at work are assigned to the headquarters and the 6 local business places nationwide. The experts receive job-related complains from employees, find solutions, and report the results. For example, 12 personnel realignment-related?complaints were reported in 2009, of which 10 cases were resolved. In addition, since 2009 we have provided the employee assistance program (EPA) in an effort to resolve personal problems of employees that are difficult to officially bring up, and worked to resolve employee problems through commissioned experts in order to protect privacy.

#### We currently employ 1,858 employees, and no employees are hired

**Current Status of Labor Union** 

for temporary or part-time work. The Korea Power Generation Industry Labor Union, established on July 24, 2001, consists of union members serving in 5 power generation companies separated from KEPCO. Our labor union has 1,186 union members assigned to all business places operated by our company. 63.8% of all of our employees joined as union members.

Our labor union adopts the union shop system, created under the collective agreement in September 2006, and so our employees become union members immediately after being hired by our company. Clause 26 of the labor collective agreement, signed between the labor union and the company, requires the company to hold discussions with the labor union before changing any important items, such as decreasing the regular staff. If the legal position of union members is changed because of the business closing, dividing, merging, transferring or changing the business item, the company shall inform the labor union of the fact 90 days in advance, and faithfully discuss the situation with the labor union according to clause 54 of the labor collective agreement. The above clause stipulates the foundation required for the minimum notice period and raising the opinion.

#### **Communication-based Corporate Culture**

In an attempt to promote a sound corporate culture based on open communication, we open diverse top-down channels, such as business management presentations, management news, and letters from the CEO, and bottom-up channels including a hotline to the CEO, a proposal system, and a junior board of directors, enabling employees to raise opinions at any times. We also try to prevent conflict between labor and management by improving labor and management partnership through various programs. Through these efforts, we have created an open and innovative corporate culture that enables each employee to strengthen his or her work capacity, and are providing a safe and sound work environment through transparent and ethical management.

#### Corporate Dispute Prevention Program





CEO's Management Policy

Reason and Rate of Turnover

#### Achieving Low Employee Turnover Through High Satisfaction

We provide each employee with the opportunity to develop his or her work capacity in all service periods through systematic education and training. We improve employee satisfaction through fair evaluation of and compensation for the work performed. As a result of these efforts, our turnover rate has remained at a low level.

#### **Retirement Preparation Program**

We operate a retirement preparation program to support retired employees in planning their life after retirement. This program consists of IT education, health care education, knowledge program, and experience program. Since 2006, 41 employees in diverse positions have participated in this program.

#### Accomplishments of the Retirement Preparation Program [Unit: Person]

Honorary Total Turnover rate Year Death Leaving Turnover Retirement 2007 17 8 25 1.35 2 2008 10 12 0.64 \_ 2009 2 0.43 6 8 Total 17 4 0.80 24 45 (average)

Classification	1st class	2nd class	3rd class	4th class and below	Total
2006	4	-	1	1	6
2007	1	4	2	-	7
2008	4	3	3	3	13
2009	6	6	3	-	15
Total	15	13	9	4	41

#### Number and Rate of Employees Retired by Gender, Age Group and Area

[Unit: Person/%, Excluding Directors]

Years 2007 2008 2009 Classification Person Rate Person Rate Person Rate 41 2.19 2.13 50 Male 40 2.69 Sex Female 2 0.11 2 0.11 2 0.11 Sum total 43 2.30 42 2.24 52 2.80 Less than 30 years old 2 0.11 0.21 4 --7 30~50 years old 6 0.32 0.37 10 0.54 Age Groups Above 50 years old 35 1.87 31 1.65 42 2.26 Sum total 43 2.30 42 2 24 52 2.80

#### Number of Employees Expected to Retire within Next 5 Years by Work Category

[Unit: Person, Excluding Directors]

[Unit: Person/%, Excluding Directors]

Classification	Office	Engineering	Technical Post	Security	Total
2010	4	29	4	4	41
2011	4	12	-	1	17
2012	2	20	9	4	35
2013	7	18	11	6	42
2014	6	28	6	5	45
Total	23	107	30	20	180

## **Development of Employee Capability**

Recognizing each employee as our most important resource, we have established education and training programs designed to help our employees develop their capacity. We support learning at all times for the continued growth of our employees, according to our competent employee fostering road map.

#### Operating Capacity-Based Education Training System

We have developed capacity-based education and training programs that enable each employee to reinforce his or her work capacity, in an effort to foster the talented human resources that we need to achieve the corporate vision and meet our business goals. We have also introduced and operated a career development program by selecting experts in 27 fields to pursue the sustainable management of the company. Our career development program is designed to evaluate the capacity of each employee, and provide customized education and training programs.

#### Human Resources Required for Korea Western Power

 Global Employees who have World-Class Competent
 Challenging Employees Who Lead Change
 Professional Employees Who Create Values
 Cooperative Employees Who Build Corporate Culture of Communication

Competition	etency Model			
Classifica Common		Loadorship Capacity	Work Capacity	
tion	Capacity		Action Capacity	Professional Capacity
1st Class		<ul> <li>Motivation</li> <li>Vision</li> <li>Negotiating ability</li> <li>Organization management</li> <li>Observance of principles</li> </ul>	<ul> <li>Flexibility</li> <li>Empowerment</li> <li>Goal-oriented</li> <li>Change management</li> </ul>	-
2nd Class	• Leading changes and innovation	Fostering staff     Planning ability     Result-oriented     Conflict management     Decision-making	<ul> <li>Fair business management</li> <li>Coaching</li> <li>Work promotion</li> <li>Vision innovation</li> </ul>	
3rd Class	<ul> <li>Management mindset</li> <li>Professionalism</li> <li>Teamwork</li> <li>Ownership</li> </ul>	Communication     Work innovation     Problem-solving     Risk management     Balanced understanding	Draw core competence	Draw core competence from 109
4th Class		Encouragement of participation     Innovative mindset     Customer-centered     Embracing organizational values     Build personal relationships	pools	professional capacity pools

#### Competent Employees Fostering Road Map in Order of Year



#### **Strengthening Education Training Programs**

We build and operate the "Do Dream," e-HRD system, an education program, so that each employee can improve his or her capacity. A total of 1,011 education and training

programs were provided for our employees in 2009, and on average 130 education hours were provided for each employee.



#### Education Results by Year

Classification	2007	2008	2009
Total educated employees	6,458	7,520	8,979
Number of education sessions allocated to each employee	3.44	4.00	4.82
Total education expenditure (billion won/year)	4.08	5.28	4.46
Education expense per employee (thousand won/year)	2,171	2,812	2,395

#### Fostering World-class Employee

We provide our employees with diverse opportunities to participate in overseas education and training programs, by benchmarking overseas cases for management and technology improvement or facility maintenance and technology exchanges in collaboration with the Electric Power Research Institute (EPRI). Our employees participate in a number of expert groups, including PTEG, to collect and share power generation technology-related information and engage in R&D activities. Through these efforts, we foster worldclass employees in the power generation industry.

#### Education Hours by Position

Classification	2008	2009
1st class	146.7	138.3
2nd class	269.7	211.4
3rd class	142.5	108.5
4th class	68.43	60.7
Total	156.8	129.7

#### Number of Experts Hired by the Company



## **Ethical Management**

As a public company dedicated to supplying electrical power, the growth engine of industrial development, we make every effort to maintain a level of integrity and transparency that is commensurate with our corporate image. We established and operate a road map to build an ethical management system and anti-corruption corporate culture by becoming the first power generation company in Korea to introduce ethical management in 2002.

In addition, we joined the UN Global Compact in May 2006, the fifth of its kind in Korea, and observe its 10 principles in the four major areas of human rights, labor, environment and anti-corruption. To keep up with the current social movement to raise awareness of ethics and integrity, we built a comprehensive ethical management system in 2009 to fundamentally eliminate the possibility of unethical activities at work. Through these efforts, our stakeholders have come to recognize our strong will to achieve completely ethical management.

#### Ethical Management Vision and Its Road Map

We established our goal of joining the ranks of the top 10 most admired domestic companies and the strategies for fulfilling our social responsibility when we adopted our medium and long-term vision "Vision 2020" in 2007. In

particular, we set new goals for ethical management that are closely connected with our strategies to achieve our vision in 2009, by closely monitoring our achievements in the area of ethical management based on Vision 2020.

#### Ethical Management Road Map

Stage	Mid-Term (2008~2010)	Long-term 1 (2011~2015)	Long-term 2 (2016~2020)
Goal	Exemplary domestic company in the area of ethical management - No. 1 Ethical Management among Korean power generation firms	Ethical management leader in Korea- Join the ranks of the 20 most admired companies in Korea	Global ethical management leader - Join the ranks of the 10 most admired companies in Korea
Strategies	Advancement of ethical management system     Establishment of autonomous ethical culture     Strengthening capacity for ethical     management	<ul> <li>Realize sustainable transparent management</li> <li>Enhance ethical culture</li> <li>Initiate the spread of ethical management</li> </ul>	<ul> <li>Strengthen global ethical trend</li> <li>Stabilize ethical and transparent culture</li> <li>Spread ethical brand</li> </ul>

#### Establishing System for the Practice of Ethical Management

With the belief that to build social trust a company must start with ethical management, we became the first power generation company in Korea to introduce an ethical management system. We also established an institutional

#### Personnel in Charge of Ethical Management, and Organization Chart

Ethical Management Chief	Establishing, operating and supervising the overall corporate ethical management plan and the related action plan.
Ethical Management Supervisor	Establishing, operating and supervising the ethical management system for the corporate bureaus and workplaces.
Head of Ethical Management Department	Monitoring ethical management activities in the department, providing education and reporting the activity results.
Officer in Charge of Ethical Management	Operating the action plan according to the ethical management system of the corporate bureaus and workplaces, and reporting the results.

basis for the practice of ethical management by clarifying our code of ethics. Our executives and directors have taken the initiative to help ethical management take root in our corporate culture through the Integrity Pact, BEST Forum, CEO's Pledges for Ethical Business, etc.

#### Codes of Conduct Concerning Ethical Management

Charter of ethics	Credo of Western Power Employees	Suggest the corporate ethics and values
Action Plans of Corporate	Practice guideline for employees' credo	Suggest the ethical standard in accordance with the credo
Corporate Ethics	Ethical action plans for executives	Provide ethical guidelines and standards

#### Implementing Anti-Corruption Education Program

To enhance employee awareness of the need to fight corruption, we develop and provide ethical management education programs by step in accordance with the ethical management practice road map, and utilize diverse channels including workshops, education and training sessions provided by commissioned experts, business issues briefing given by the management, and messages from the CEO on ethics to stress the importance of ethical management.

	Ethical	Management	Education	Structur
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Classification	General Education	Leadership Education	Managerial Education	Online Education
Goal	Stress the importance of ethical management and share the understanding on the related policy.	Leadership program designed to help employees change unethical practices.	Foster managers to play a leading role in the field of ethical management.	Spread corporate ethical management strategies and raise awareness
Subject	All employees (including new employees)	Employees over 3rd class	Officers in charge of ethical management	All employees
Education Type	Itinerant education / Collective education	Commissioned education / collective education	Workshops / Commissioned education	On-line education

#### Evaluation on Ethical Level and Feedback

### Implementation of Internal and External Assessment, and Monitoring

We monitor ethical management activities, including the company's compliance with the law, via the ethical management bureau and the audit bureau on an ongoing basis. We also try to enhance ethical reliance and satisfaction with our company by consistently monitoring and improving the ethical management of our stakeholders. In addition, we evaluate our corporate anti-corruption level through the assessment given by KEPCO each year, together with our own evaluation on ethical management activities.

The internal and external assessment results are reflected in the evaluation of each organization or department to influence each employee's incentive scores.? If an incident of corruption is found, the relevant workplace is given a penalty, such as being deprived of a reward or an opportunity for overseas training. We share the results of monitoring through workshops for officials responsible for ethical management or itinerant education at workplaces, and find a way to improve the company's ethical management.

#### Our Own Survey on Anti-Corruption

Classification	Clean Cooperator Monitoring (CCM)	Clean Employee Monitoring (CEM)
Subject	Person in Charge at Partner Companies	Internal Employees
Method	Telephone Survey	Mail Survey
Content	Experience of Corruption, Awareness, Established System, Action Plan	Awareness of Ethics, Observance of Ethical Regulations, Ethical Activities



KEPCO Evaluation
 KOWEPO-Evaluation

### Achieving Highest Anti-Corruption Level in the Evaluation by KOBEX

In the survey of the Korea Business Ethics IndeX (KoBEX) conducted by the Ministry of Knowledge Economy in 2008, we received the highest scores in four fields (CEO, Governing Structure, Customers, and Local Community (Environment)) to acquire an average of 9.65 points, which was higher than the average score of 9.01 points achieved by public sector corporations.



• Score of Korea Western Power • Average Score of Public Sector Corporations

#### **Operating Anti-Corruption System**

#### Strengthening Whistle-Blowing System

We opened the "Cyber Ethical Counseling Center" on our corporate website to enhance employee access to the whistle-blowing system, and worked to strengthen the system by publishing information brochures for employees, and increasing the compensation awarded to those who report an act of corruption.

#### Operation of the Cyber Ethical Counseling Center

Dialogue with CEO	Employees	Only available to CEO, Not open to the public (Real name only)
Voluntary reporting system	Employees	Voluntary report on bribes received from outsiders (Real name only)
Corruption reporting system	Employees/ Outsiders	Report on acts of corruption, Operated by the Audit Bureau (Real name only)
Ethical help- line	Employees/ Outsiders	Report on cases of corruption within the company, operated by an outside company (Anonymity guaranteed)

#### Operating Electronic Bidding and Fair Trading Process

In an effort to promote fair and transparent trades, all of our contracts are processed through the electronic bidding system. However, making a private contract is allowed in some special cases related to quality assurance for power generation equipment, limiting suppliers and incompatibility, to facilitate the stable operation of power generation facilities. We are continuously working to prevent corruption before it occurs by requiring officials responsible for contract-related work and our contractors to submit a written oath stating their intention to pursue integrity and transparency in the processing of contracts. We also respect the Fair Trading Act and observe the related regulations. Our company has received no legal restrictions in connection with fair trading. In 2009, we received a corrective order from the Fair Trade Commission and immediately rectified the problem.

#### **Customer Satisfaction Management**

We actively seek ways to satisfy our customers and provide a stable supply of electrical power by improving the reliability of our power generation facilities. As a result of these efforts, we acquired an excellent score of 91.24 points in the customer satisfaction survey regarding public sector companies in 2009.

#### Major Activities Related to Customer Satisfaction Management

Customer Response	<ul> <li>Enhancing convenience of using our power plants by visitors and contractors</li> <li>Friendly response to customers, transparent and fair work process</li> </ul>
Implementing Social Responsibility	<ul> <li>Purchase of local products in the areas neighboring the plant, and expand job opportunities for local citizens</li> <li>Increase efficiency of executing the electric power industry basis fund (increase income, offer educational work, etc)</li> <li>Strengthen social contribution activities in areas around the plant.</li> </ul>
Strengthening Cooperative System and Post Management	<ul> <li>Maintain a close relationship with relevant departments at local places of business</li> <li>Monitor customer contact activities and solve problems</li> <li>Give local residents a field trip to our facilities</li> </ul>

#### **Customer Information Protection Policy**

Due to the rapid change and development of the IT industry, the infringement of personal information is emerging as a critical social issue, and severe damage to a corporation's image is caused when such an infringement occurs. To protect the personal information of customers along with the internal information of the company, we establish and operate a system that is designed to protect personal information in accordance with the security policies administered by the National Intelligence Service and the Ministry of Knowledge Economy.

We recognize the importance of protecting personal information, and effectively block the release of private information by installing an authenticated firewall. No cases of infringement or complaints have been reported in connection with our customer information protection policy and efforts.

#### Marketing Communications

We faithfully observe all advertisement-related regulations, and follow our own guideline on marketing and promotion work, which we developed in 2007. No violations concerning the marketing communication regulations and no customer complaints have been reported in relation with the protection of customer information.

#### Supply of Products and Services

We have received no fines associated with violations of the law or regulations concerning the development of electric power resources and related businesses. We have never breached any regulations related to customer health and safety in the process of supplying electric power.

#### Observance of the Political Fund Act

We comply with the Political Fund Act, which bans the offering of political funds.

## Cooperation with SMEs

We are working to coexist and cooperate in order to grow together with our small and medium-sized contractors by preparing the road map and upgrading the contractor support strategy and system. With these efforts, we enable our contractors to enhance their technological competitive edge, and create Win-Win partnerships by generating high quality power and improving productivity through the creation of synergies.

#### **Contractor Support Vision and Its Road Map**

#### Vision: Realizing mutual growth through coexistence and cooperation



#### Improving the Technical Competitiveness of Our Contractors through R&D Support

We try to improve the technical competitiveness of our contractors and reduce the cost of power generation by developing high-quality power generation appliances and localizing appliances imported from foreign countries by providing R&D support.

In 2009, we succeeded in developing the hybrid selective catalytic reduction (SCR) system in collaboration with our contractor. It is estimated that the development of the hybrid SCR system will bring about a significant reduction in power generation cost of KRW 80 billion, and KRW 200 billion won in import substitution. This achievement has also helped Korea to take the upper hand in the global SCR market of KRW 1.2 trillion.



▲ Final Evaluation of Cooperative Research Project with Our Contractors



▲ Developed Hybrid SCR System in Collaboration with Our Contractor

#### R&D Support for Our SMEs

Classification		2007	2008	2009	Total
Project	R&D cooperation with contractors	2.4	1.7	1.4	5.5
Project	New product development under the condition of purchase	0.3	0.3	0.3	0.9
Provided R&D Fund		0.78	0.6	0.65	2.3

[Unit: KRW 1 Million]

#### Efforts to Solve the Financial Difficulties of Our Contractors

We help our contractors to cope with financial difficulties by making the advance payment to our contractor required for

Financial Support System for Our Contractors

delivering the appliances. Also, we mitigate the financing cost of our contractor by making payment in cash.

[Unit:	KRW	1 Billion]	
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[Unit: KRW 1 Billion, %]

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Classification	Description of support	2007	2008	2009
Advance payment	Up to 50% of contract amount	0.3	10.3	41.6
Network-Loan	Provide credit loan without collateral and guaranty	2.8	2	2.1
Purchase Loan	Provide credit loan without collateral and guaranty 0.3			3.2
With-Loan	.oan Provide credit loan without collateral and guaranty		2	1.5
Electronic Contract Loan	Provide credit loan under the condition of making electronic contract	New	0.05	1.4
Power Energy Loan         Provide credit loan for 1, 2 round cooperative company		-	New	0.5
Payment in a Timely Manner Within 1 or 2 days after being asked for payment		3.7	15.15	50.3

#### Support for Expanding the Purchase of Products Manufactured by SMEs

We have a purchase record that surpasses the legal mandatory purchase goal of products produced by small and medium-sized companies that are certified in terms of new technology. In addition, we offer preferential treatment to companies headed by women, and activate the purchase of products produced by small and medium-sized companies by directly purchasing appliances from small and medium-sized companies when the products have been designated by the Small Business Administration.

Record of purchasing	) products	produced	by SMEs
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Classification Total Purchased Amount (A)	Total Purchased	Products Produced by SMEs		Products Produced through Technology Development		Products Certified in Terms of New Technology	
	Purchased amount (B)	Purchasing rate (B/A)	Purchased amount (C)	Purchasing rate (C/B)	Purchased amount (D)	Purchasing rate (D/B)	
2007	89.8	77.2	86.0	15.6	20.2	8.2	10.7
2008	118.1	93.6	79.2	12.6	13.5	10.2	10.9
2009	162.4	129.6	79.8	20.8	21.1	19.5	19.8

#### Support for the Global Marketing of Products from SMEs

We contribute to expanding the export of products produced by small and medium-sized companies and enhancing their global competitiveness, by helping the products produced by small and medium companies displayed in overseas exhibitions, sending overseas market research groups, and organizing the counseling conference for the buyers invited by small and medium companies.

• Our global marketing support for products produced by SMEs

[Unit: USD Million, Number of Supported Companies]

Classification	2007	2008	2009
Counseling	68	483	1,187
Contract	12	175	205
Financial Support	127	310	455

## Local Community Support & Social Contribution

As a public corporation dedicated to supplying electrical power, Korea Western Power Co., Ltd. has developed by fulfilling our social responsibility to take care of the nation and local communities. In addition, by its very nature a power plant inevitably affects local communities, and thus we have established the infrastructure to minimize the negative impacts and to contribute to the development of the society.

We have supported low-income residents through our volunteer corps that consists of 8 centers and 93 teams under the slogan, "Happy Energy and Friendly Neighbor," as part of our efforts to enable all local residents to enjoy happy lives since 2004, coupled with our project to promote local culture. We try to foster the talented in local areas through a project to foster competent local individuals. We also activate the social services required by the?local community through partnerships with local welfare groups.

#### Emblem

This emblem means that all our employees actualize the "Happy Energy and Friendly Neighbor" by getting together with a positive mindset.



#### **Major Accomplishments**

We have systematically proceeded with social contribution activities focused on 3 areas, which are human (social welfare and disaster relief), nature (preservation of nature) and culture (culture art, academic education and promotion of sports) based on our motto, "Contribute to Society by Generating Energy in Harmony with Humanity, Technology and the Environment."

Year	Month	Descriptions
2004	08	<ul> <li>Organized our volunteer team and declared the emblem and slogan</li> <li>Slogan: Happy Energy and Friendly Neighbor</li> </ul>
2005	04 06 08 10	<ul> <li>Held blood donation campaign to help patients suffering from leukemia and childhood cancers.</li> <li>Signed agreement with local communities and performed farming village service activities - Linked with 46 farming villages.</li> <li>Habitat for Humanity Korea</li> <li>Awarded management innovation best practice prize in the area of social responsibility.</li> </ul>
2006	02 12	<ul> <li>Awarded clean management grand prize.</li> <li>Signed social contribution agreement with the Korean National Red Cross.</li> <li>Supported 1,004 poor households living near the power plant.</li> </ul>
2007	06 07 10 10	<ul> <li>Signed the national park partnership.</li> <li>repair project of Habitat for Humanity Korea (10 house)</li> <li>Supported food relief services of Dail Community and Angel Hospital for harelip patients in the Philippines.</li> <li>Supported the coal sharing movement and performed voluntary service in Gaeseong, North Korea.</li> </ul>
2008	04 05 10 12	<ul> <li>Collected funds to support patients suffering from intractable diseases.</li> <li>Awarded social contribution grand prize in the area of cooperation with local community.</li> <li>Sent books to a library located in Indonesia.</li> <li>Provided commissioned education for fostering social workers.</li> </ul>
2009	05 06 09 10 11	<ul> <li>Supported cultural performances - donation of 150 seats.</li> <li>Signed partnership agreement with the food aid group, Caritas, and performed regular food distribution activities.</li> <li>Held a workshop for officers responsible for social contribution duty - lecture from experts and collection of public opinions in the field.</li> <li>Participated in and supported SBS Hope TV's charity event "Hungry Walking Festival".</li> <li>Opened a program to support multicultural families - Field Trip to Everland and support</li> </ul>

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#### Communication with the Local Community

We clearly recognize that the construction of a power plant has diverse effects on the area in which the power plant is constructed. In this regard, we try to guarantee fair compensation to local residents that must relocate to other areas due to the power plant construction by asking the professional survey agency to check the expected damage and rights to loss by signing the agreement with local residents to move out. In addition, we provide diverse benefits such as support for tuition fee and preferential treatment upon recruiting local residents and their children after moving out. Currently, we grant 10% in additional points to residents living around our power plant when applying for employment. One applicant recruited through this preferential treatment system in 2004 has since been promoted to manager.

We strive to protect the local communities in which we operate by sufficiently compensating the land and rights occupied by the construction and operation of the power plant according to the applicable laws. Furthermore, we secure communication channels with the public, such as work meetings with local government and signing the pledge upon construction so as to be ready for unexpected public petitions. As no new power plants or facilities were constructed on land in 2009, there were no projects that caused damage to local residents and living environments.

#### Building the Infrastructure for Local Development

Various projects intended to support the development of the local areas in which we operate are in progress to build the infrastructure in the areas around our power plant. The total amount spent on building infrastructure for the development of local areas in the last 3 years is provided in the table below.

The cost of Local Society Support to Build Infrastructure for
Local Development

Init: KRW 1 Billion]



📕 Basic Support Project Cost 📕 Special Support Project Cost

The cost of Local Society Support by Each Pant for 2009
 [Unit- KRW 1 Million]

Classification	Local government	Power plant	Total
Taean	3,516	1,634	5,150
Pyeongtaek	698	233	931
Seoincheon	762	327	1,089
Samrangjin	255	108	363
Cheongsong	255	106	361
Gunsan	199	102	301
Total	5,685	2,510	8,195

5.68 billion won was spent for building local infrastructures out of the 8.19 billion won allocated for the year of 2009. We provided financial support of 1.12 billion won for the purchase of agricultural machinery or equipment and the installation of storage warehouses. We are continuously working to expand the infrastructure of the local areas in which we operate by providing financial support of about 2.9 billion won for the maintenance and repair of 45 roads.

#### Improving the Educational Environment and Activating Scholarship project

Nothing is more important than education for the growth of a community. The work of developing the local community by fostering competent individuals is more valuable than building infrastructure.

Each power plant accumulates a certain amount of funds as the scholarship fund out of the allocated educational project cost (3.73 billion won has been accumulated as of end of 2009). We plan to keep building the fund as the scholarship fund. In addition, we provided scholarships amounting to 0.63 billion won to 1,006 students living in the vicinity of our power plants in 2009.

Korea Western Power Co., Ltd. is laying the foundation that will enable students to study in an excellent environment by providing financial support of 1.18 billion for the purchase or replacement of school supplies and organizing the sketch competition. In particular, our Taean power plant has provided financial support to send students to an English camp (80 students) and specialty programs (2 middle school students, 3 elementary school students) as a part of highachiever oriented program.

#### Implementing Volunteer Activities Suitable for Local Society

We are performing diverse social contribution activities for our local communities through our volunteer activities. Our volunteer corps, consisting of 8 social service centers and 93 teams, provides social service activities that are adapted to the local environments around our plants, through sisterhood relationships with 43 farming villages and 33 social welfare institutes.

At each workplace, our volunteer corps comes closer to the local community as a friendly neighbor by giving support and voluntary service to those who are alienated from the community through activities such as supplying electric power service, performing voluntary housing repair service, and sending living goods for poor families and support for young family heads and seniors who live alone. In addition, we work with the local community to provide Kimchi and coal briquettes for people in need during winter.

In particular, since signing a social contribution partnership agreement with Korea Red Cross in 2006, we have visited 1,004 poor households living around power plant with volunteers from the Red Cross, and provided financial support of about 60 million won each year. This event is highly evaluated and has received a warm response from the local community.

#### Ecosystem Protection Activities to Suit the Local Environment

A clean environment is the most valuable asset we can hand down to our descendants. We are continuing to carry out various ecosystem protection projects, such as the river cleaning project and long-term environment cleaning project, to protect the ecosystem around our power plants. In particular, Cheongsong Power Plant has been carrying out an ecosystem protection project after signing a partnership agreement with the National Park Management Corporation. We also provide education on protecting the ecosystem by organizing our 'environment school,' in consideration of the important role the children of today will play in protecting the environment of the future.

Workplace	Designated Area	Number of Times	Participated employees
Taean	Hakampo (Beach)	9	380
Pyeongtaek	Namyangho (Lake)	4	158
Seoincheon	Seunggicheon (Stream)	10	203
Gunsan	Gyeongpocheon (Stream)	?5	108
Samrangjin	Antae Village	4	130
Cheongsong	Jubangcheon (Stream)	14	474

#### Environment Cleaning Activities by Workplace in 2009



▲ Providing Electric Power for People in Need

▲ Making Kimchi for Poor Families

▲ Offering House Repair Service for Single Seniors

## Support for the recovery after the Taean oil leakage accident

In December of 2007, a massive oil spill occurred, involving the Hebei Spirit, which operated in the sea around the Taean. All of our employees performed volunteer work to prevent the spread of oil in the area where the leakage accident occurred. We directly and indirectly supported the prevention activities by providing the equipment such as loaders, dump trucks and motor sprinklers and accommodation and transportation to the military troop engaged in the prevention activities. Our employees joined in the work of cleaning up the mess, coupled with the equipment support. Our volunteer corps also participated in volunteer activities in 2009 to recover Taean's ecosystem from Korea's worst oil spill.

Places	Accumulated manpower	Equipment	Facilities
Guraepo Hakampo Hwangchon-ri	3,047 persons	2 loaders 1 dump truck 4 buses	Provided accommodation, kitchen and washing water to military troops.

Special donations of KRW 26.39 million and KRW 22.23 million were provided for Taean-gun and Seosan-si each to help them recover from the oil leakage accident

#### Participating in Local Culture Development and Protection Activities



Corporate Mecenat activities contribute to providing cultural benefits for local citizens. By helping local children to experience arts and culture and develop their sensitivity and creativity through direct exposure to

▲ Support for Local Cultural and Sports Activities

culture, we operate a donation system in collaboration with the electric power group by purchasing performance tickets and distributing them to local children. We try to contribute to developing the local community by providing financial support and voluntary service for the local cultural events.

#### Residential and Medical Support for Low Income Residents

Each year since 2004, about 100 of our employees have taken part in the house-building project performed in cooperation with Habitat for Humanity Korea to solve the problem of homelessness. We also support the construction cost. We prepared the promotion fund to repair 5 old houses in 2009, and our employees provided the service as volunteers together with the needy families.

All our employees have participated in the blood donation campaign, "Blood Donations for Life and Love to Patients Suffering from Leukemia," since 2004. A total of 364 employees participated in the donation in 2009, and 302 blood donation certificates were collected. We sent the blood donation certificates to leukemia and childhood cancer associations with the intention of treating patients suffering from leukemia. We also provided 20 million won in financial support to help treat 3 to 5 child patients suffering from leukemia. The day of angels, a festival for children suffering from leukemia, is sponsored by our company.



#### Mountain Climbing with the Disabled

We signed a sponsorship contract with the mountain climbing association in Gunsan, Jeonbuk, and succeeded in climbing Mt. Himalaya Kala Patthar (5,545m), along with 5 disabled with cerebral palsy and other diseases associated with walking difficulties, and our employees worked as volunteers to assist the handicapped. With this splendid success, we delivered a strong message of hope to the disabled.

#### Implementing Social Contribution for New Business Areas

We make efforts to build an amicable foundation for promoting new businesses through diverse social contribution activities in national and international new business areas. For example, as a way of seeking coexistence with Taean, one of the local communities in which we operate, where our company's largest power generation facilities are located and several future business projects, including Garolim Tidal Power Plant and IGCC plants, are underway, we provided financial support of 1.94 billion won through various volunteer activities, cultural events and a fundraising event designed to recover the environment and ecosystem of the Taean, damaged by the oil spill incident. In addition, we also delivered food and medical aid to people suffering from damages caused by a typhoon in Laos, one of our new business development areas, and sent financial support to establish a center for Indonesian migration workers living in Korea. Through these activities, we provided financial support amounting to 14 million won in 2009, and plan to expand our social contribution activities down the road.



▲ Delivered food and medical aid to people in Attapu, Laos

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#### Helping the farming a Village



Each workplace has performed the farming village voluntary service during the busy farming

season, through agreements with farming villages.

#### Food Distribution Service for Homeless People



Friday, in collaboration with the food aid group Caritas.

Support for Children Suffering from Diseases



We have continually performed this program to provide medical cost to children suffering

We provide financial

support for multicultural

families to facilitate their

from intractable diseases by signing an agreement with the leukemia and childhood cancers association.

#### Support for Multicultural Families



integration into Korean society, in consultation with the Multicultural Family Support Center.

#### Making the World a Warmer Place



We keep trying to come closer to local residents by providing essential goods to 1,004 poor

households near our power plant after signing an agreement with Korea Red Cross.



#### Awarded a Prize for Excellent Volunteer Activities

We were awarded a prize by Gangnam-gu Office in recognition of our voluntary activities and social services for the local community.

#### Cooperation through Partnerships with Welfare Agencies

Agencies	Areas of Cooperation
, igonicio	
Korea Red Cross	Cooperate with blood donation service and provide voluntary service and financial support. Provide support to 1,004 poor households
Leukemia and Childhood Cancers Association	Support donation and blood certificates
Habitat for Humanity Korea	Provide support to the homeless (Service areas designated by each volunteer center)
Korea Intractable Disease Association	Provide support for children suffering from intractable diseases.
Caritas Social Welfare Agency	Participate in voluntary food distribution service, and provide financial support
Korea National Park Service	Ecosystem protection activities in Juwangsan (Mt.)
Handicapped Welfare Center	Bind books for the blind
Seniors care center	Provide bathing and cleaning services for the elderly.
Handicapped Lovely House	Provide voluntary service and financial support for the handicapped.
Seungnae Social Welfare Center	Provide voluntary service and financial support for isolated seniors.

#### Description of Three Major Activities

Classification	Activities	Descriptions
Support rare diseases children		Provide support through the leukemia and childhood cancers association.
Love of	Habitat Program	Participate and support Habitat for humanity's house building project
Tuman	Making a warmer world	Descriptions           Provide support through the leukemia and childhood cancers association.           Participate and support Habitat for humanity's house building project           Provide support to poor neighbors near the power plant through the Red Cross.           Environment cleaning activities           Sign partnership agreement with National Park Service           Joint cleaning activities in cooperation with business places and contractors           Provide support for sports activities           Provide support for sports activities           Provide alienated children with the chance to experience culture           Organize cultural events and provide support in the local area
	River or mountain voluntary service	Environment cleaning activities
Love of Nature	Juwangsan Mt. preservation	Activities         Descriptions           upport rare sases children         Provide support through the leukemia and childhood cancers association.           bitat Program         Participate and support Habitat for humanity's house building project           Making a armer world         Provide support to poor neighbors nea the power plant through the Red Cross           River or mountain untary service         Environment cleaning activities           wangsan Mt. reservation         Sign partnership agreement with National Park Service           World Water ay" activities         Joint cleaning activities in cooperation with business places and contractors           Educational project         Provide support for sports activities           Ingel festival         Provide alienated children with the chance to experience culture           Mecenat activities         Organize cultural events and provide support in the local area
	"World Water Day" activities	Joint cleaning activities in cooperation with business places and contractors
	Educational project	Provide scholarship and school supplies
Love of	Lovely marathon	Provide support for sports activities
Culture	Angel festival	Provide alienated children with the chance to experience culture
	Mecenat activities	Organize cultural events and provide support in the local area

#### Voluntary Service Records

Elements	2007	2008	2009	
Hours Spent by Each Person	20.4 hours/year	18 hours/year	20.82 hours/year	
Amount of Funds Provided	KRW 1.58 billion	KRW 2.5 billion	KRW 2.56billion	

#### Scale of Voluntary Service (Manpower and Hours)

Classification	Year	Love of Human		Love of Nature	Love of Culture			Total
		Social Welfare	Disaster Relief	Preservation	Culture & Art	Academic Education	Promotion of Sports	Totat
Times	'09	448	2	76	75	14	11	626
	'08	622	-	105	88	10	7	832
Number of Employees Involved	'09	4,078	3	1,833	294	25	8	6,241
	'08	3,250	-	2,006	77	27	1	5,361
Service Hours	'09	20,099	6	4,932	1,084	-	-	26,121
	'08	16,085	-	9,212	76	18	-	25,391

# Appendix

Independent Expert's Opinion GRI Index Chart Definitions Key Financial Data Awards & Memberships Code of Conduct Reader' s Opinions Independent Expert's Opinion

## Management System & Economic Performance

#### Ji-in Chang

Professor of Business Administration, Chung-Ang University (Present) Chairman of KSPE (Present) Chairman of CDP-Korea (Present) Chairman of Korean Accounting Association (Former)



This opinion verifies that the 2010 Sustainability Report of Korea Western Power is fully compliant with the GRI G3 standards, and appropriately reflects the sustainability management achievements of the company. This opinion particularly focuses on an indepth review of the management system and economic indexes. To sum up the result of the review, this report has appropriately measured and reflected the efforts and achievements made by the company in 2010 related to management system and economic performance, in accordance with the GRI G3 global standards.

As for the management system, the BOD of the company is working independently and innovatively based on the principles of sound corporate governance, and the sustainability management activities are operated in alignment with the corporate values. The company is laying a firm foundation to achieve its 2020 revenue target of KRW 7.2 trillion by operating the power business, developing new businesses, and making R&D efforts. Most notably, the company has worked on management innovations such as six sigma and BSC. The quality management teams work to achieve the corporate goals and improve corporate values by continuously achieving business results, and it is very desirable that such achievements are leading to financial results. I recommend that the company implement measures to maintain a firm financial structure, which will enable sustainable overseas business operations, new business operations in the domestic market, and R&D investments. In addition, the company must conduct a quantitative analysis on the financial impacts of climate change, clearly identify opportunities and threats that climate change gives to its business, and fully reflect the results in its sustainability management strategy.

In terms of the management system and economic performance, the company has successfully operated a sustainable management system to achieve high performance. In order to sustain the management results, the company will need to improve in the following areas. First, the company must make global benchmarking efforts to become the world's leading '3E' creator, in line with its corporate vision. It must analyze each area in which it falls short of the benchmarks, set strategic targets based on the analysis results, and align the targets with the BSC system. Second, the company has achieved positive results by integrating the risk management committee and developing an enterprise-level risk management system. In order to achieve sustainable management, it must consider the newly emerging environmental risks and social risk factors in full detail. Third, technology and HR management is the key factor for the company to be a strong company and maximize future values, which are defined by its future visions. It is necessary to realize that technology development and HR investments are the preconditions for sustainable profit generation, and to reinforce the related investments and strategic management approaches.

August 2010

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Independent Expert's Opinion

## **Environmental Performance**

#### Tae-jin Park

President of Business Institute for Sustainable Development, Korea Chamber of Commerce & Industry (Present) Chief Researcher and President of KAIST Institute of Eco-Energy (Former) Energy Environment Expert Advisor of Korea Institute of S&T Evaluation and Planning (Former) Chairman of the Korean Society of Clean Technology (Former)



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This opinion verifies that the 2010 Sustainability Report of Korea Western Power appropriately reflects the sustainability management achievements of the company in accordance with GRI G3 Standards. This opinion specifically focuses on an indepth review of the environmental section of the report. According to the review, this report has been prepared in the format and with the contents appropriate for a sustainability management report, and all necessary issues have been objectively described in full detail.

As Korea Western Power has established enterprise-level policies for sustainability management and worked on detailed action plans, it is expected that it will achieve sustainable growth in the future. In the area of the environment, it has met the environmental standards by establishing and operating internal standards that are stricter than the national standards, in order to minimize the discharge of environmental pollutants, which is an unavoidable aspect of its business. Its efforts to reduce the discharge of pollutants include regular disclosure of related data. Considering the rigorous efforts of the company, it is expected that it will successfully reduce its volume of pollutant discharge.

In the future, however, since the company is expected to suffer the quality degradation of fuels it use for power generation, it is required to make continuous efforts and develop technology to minimize discharge of environmental pollutants. Most notably, it shall clearly identify the causes of its recent growth in the discharge of some environmental pollutants and develop effective countermeasures. As it is expected that the company will suffer increased pressure to reduce CO<sub>2</sub> emissions due to climate change, its sustainability management will be guaranteed only when it can develop detailed, effective response measures.

The company will also have to thoroughly review the carbon trading system and the carbon emission tax, which are likely to be introduced soon, as well as the CO<sub>2</sub> energy target management system that is already being operated. In the long term, there is a possibility that the use of fossil fuels for power generation will be prohibited. Accordingly, the company must develop technology and diversify its business portfolio to respond to such a change.

August 2010

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Independent Expert's Opinion

## Social Performance

#### Joon-ki Kim

Head of the Office of International Affairs, Seoul National University (Present) Professor in the Graduate School of Public Administration, Seoul National University (Present) Director of KSPE (Present)



The Sustainability Report of Korea Western Power systematically defines the social responsibility the company has fulfilled as a broader concept, and the future direction of the co-prosperous relations between its employees and other members of society, including the local communities in which it operates. This report contains more detailed and practical intention than the general definition of the Corporate Social Responsibility that has emerged.

Specifically, Korea Western Power has classified its social achievements into safety and health, respect for employees, development of employee capability, ethical management, cooperation with SMEs, support for local communities and social contributions, and discussed detailed achievements and its strategy for each item. It is very impressive that the company has provided a roadmap with detailed action plans instead of empty slogans. Most companies pursue relationship-oriented goals rather than financial results or value-oriented approaches for sustainability management. In this sense, the sustainability management strategy of Korea Western Power is differentiated with those of other companies in the sense that it includes detailed strategies and action plans related to relationships with employees, SMEs and local communities.

One area requiring improvement is that the company should reflect social responsibilities or environmental issues to its vision and strategy in a more proactive manner, as it has set the management strategy of "Focus and Align" to successfully achieve its Vision 2020, and announced the related action plans, such as a value-centric approach, a strong company, the maximization of future values and an interactive corporate culture.

It is also recommended that the company view its strategy from the macroscopic perspective and define priorities. The Company has undertaken diverse social activities, but it lacks thorough consideration of the ways to create synergies during this process. The Company must also develop its unique social brand that will encompass and integrate such diverse activities, and reinforce integrated leadership that will further connect each activity.

August 2010

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	EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	44	7, 8
	EN13	Habitats protected or restored	44	
Environ-	EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	44	
mental	EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	44	
	EN16	Total direct and indirect greenhouse gas emissions by weight	37	8
	EN17	Other relevant indirect greenhouse gas emissions by weight	37	8
	EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved	37, 38	8, 9
	EN19	Emissions of ozone-depleting substances by weight	43	8
	EN20	NOx, SOx, and other significant air emissions by type and weight	41	8
	EN21	Total water discharge by quality and destination	47	8
-	EN22	Total weight of waste by type and disposal method	42	8
	EN23	Total number and volume of significant spills	43	8
	EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally	43	8
	EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff	42	8
	EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	44	8
	EN27	Percentage of products sold and their packaging materials that are reclaimed by category	N/A	
	EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	40	8
	EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce	44	8, 9
	EN30	Total environmental protection expenditures and investments by type.	45	8, 9
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Category		Index & Contents	Page	UNGC
	Disclosur	e of Management Approach	49	1, 3, 6
	LA1	Total workforce by employment type, employment contract, and region	52	
	LA2	Total number and rate of employee turnover by age group, gender, and region	54	
	LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations	53	6
	LA4	Percentage of employees covered by collective bargaining agreements	53	1,3
	LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements	53	3
	LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	51	1
Social (Labor)	LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region	50	
	LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases	51	
	LA9	Health and safety topics covered in formal agreements with trade unions	51	1
	LA10	Average hours of training per year per employee by employee category	56	
	LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	54, 55	
	LA12	Percentage of employees receiving regular performance and career development reviews	56	
	LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity	52	
	LA14	Ratio of basic salary of men to women by employee category	52	6
	Disclosure	of Management Approach	49	1~6
Social (Human Rights)	HR1	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening	59	
	HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken	59	
	HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	53	1~6
	HR4	Total number of incidents of discrimination and actions taken.	53	1, 2, 6
	HR5	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights	53	1-3
	HR6	Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor	53	5
	HR7	Operations identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of forced or compulsory labor	53	1, 2, 4
	HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations	-	
	HR9	Total number of incidents of violations involving rights of indigenous people and actions taken	63	
	Disclosure	of Management Approach	49	7, 10
	S01	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting	44	7
	S02	Percentage and total number of business units analyzed for risks related to corruption	58, 59	
	S03	Percentage of employees trained in organization's anti-corruption policies and procedures	58	10
Social	S04	Actions taken in response to incidents of corruption	58	10
(Society)	S05	Public policy positions and participation in public policy development and lobbying	15	L
	S06	Total value of financial and in-kind contributions to political parties, politicians, and related institutions	59	
	S07	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices	59	
	S08	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	59	
	Disclosure	of Management Approach	49	8
	PR1	Life cycle stages in which health and safety impacts of products and percentage of significant products and services categories	44	1
	PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes	59	
	PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements	N/A	8
Social	PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes	N/A	8
(Product Responsibility)	PR5	Practices related to customer satisfaction	59	
	PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications	59	
	PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications	59	
	PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	59	
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Category		Index	Page	UNGC
	EU1	Installed capacity, broken down by primary energy source and by regulatory regime	14	
	EU2	Net energy output, broken down by primary energy source and by regulatory regime	24	
Category Electric Utility Sector Supplement	EU3	Number of residential, industrial, institutional and commercial customer acoounts	N/A	
	EU4	Length of above and underground transmiision and distribution lines by regulatory regime	N/A	
	EU5	Allocation of CO2 emissions allowances or equivalent, broken down by carbon trading framework	N/A	
	EU6	Management approach to ensure short and long-term electricity availability and reliability	24	
	EU7	Demand-side management programs including residential, commercial, institutional and industrial programs	N/A	
	EU8	Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development	29	
	EU9	Provisions for decommissioning of nuclear power sites	N/A	
	EU10	Planned capacity against projected electricity demand over the long term, broken down by energy source and regulatory regime	24	
	EU11	Average generation efficiency of thermal plants by energy source and regulatory regime	25	
	EU12	Transmission and distribution losses as a percentage of total energy	N/A	
	EU13	Biodiversity of offset habitats compared to the biodiversity of the affected areas	44	
	EU14	Programs and processes to ensure the availability of a skilled workforce	55	
Electric Utility Sector	EU15	Percentage of employees eligible to retire in the next 5 and 10 years broken down by job category and by region	54	
Supplement	EU16	Policies and requirements regarding health and safety of employees and employees of contractors and subcontractors	50	
	EU17	Days worked by contractor and subcontractor employees involved in construction, operation & maintenance activities	-	
	EU18	Percentage of contractor and subcontractor employees that have undergone relevant health and safety training	50	
	EU19	Stakeholder participation in the decision making process related to energy planning and infrastructure development	63	
	EU20	Approach to managing the impacts of displacement	63	7
	EU21	Contingency planning measures, disaster/emergency management plan and training programs, and recovery/restoration plans	50	7
	EU22	Number of people physically or economically displaced and compensation, broken down by type of project	63	
	EU23	Programs, including those in partnership with government, to improve or maintain access to electricity	N/A	
	EU24	Practices to address language, culture, low literacy and disability related barrier to accessing and safely using electricity and customer support services	N/A	
	EU25	Number of injuries and fatalities to the public involving company assets	-	
	EU26	Percentage of population unserved in licensed distribution or service areas	N/A	
	EU27	Number of residential disconnections for non-payment	N/A	
	EU28	Power outage frequency	25	
	EU29	Average power outage duration	25	
	EU30	Average plant availability factor by energy source and by regulatory regime	25	

### The Ten Principles of UN Global Compact

Human Rights	1. Businesses should support and respect the protection of internationally proclaimed human rights;
	2. make sure that they are not complicit in human rights abuses
	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
Labour	4. the elimination of all forms of forced and compulsory labour;
Labour	5. the effective abolition of child labour
	6. the elimination of discrimination in respect of employment and occupation.
	7. Businesses should support a precautionary approach to environmental challenges
Environment	8. undertake initiatives to promote greater environmental responsibility
	9. encourage the development and diffusion of environmentally friendly technologies.
Anti-Corruption	10. Businesses should work against corruption in all its forms, including extortion and bribery

## Definitions

### BSC (Balanced Score Card)

BSC is a new strategic management and performance evaluation tool that converts the missions and strategies of an organization into comprehensive indexes.

#### CCM (Clean Cooperator Monitoring)

CCM is a phone survey targeting contract managers, field managers and visitors of partners.

#### CEM (Customer Experience Management)

CEM analyzes and integrates all conditions and mental processes related to the customer experience, in order to better the understand customers. CEM focuses on the procedure and the execution rather than the results.

#### CDM (Clean Development Mechanism)

The CDM is defined in Article 12 of the Kyoto Protocol. Under the CDM, advanced countries make financial and technological investments so that developing countries can reduce greenhouse gas emissions, and the amount by which gas emissions are reduced as a result is added to the advanced countries' performance for greenhouse gas reduction

### **Electric Precipitator**

An Electric Precipitator circulates the dust particles in gases so that they gain electrical properties, and collects them using the magnetic field.

### **GRI (Global Reporting Initiative)**

GRI is a sub-division of UNEP (UN Environmental Program), and provides the guidelines for the publication of the sustainable management report.

### GWP (Great Work Place)

GWP refers to a workplace where all employees trust their supervisors and the management, take pride in their duties, and work pleasantly with colleagues. Employees shall have a humanistic attitude, and pursue ethical behavior, principles and standards. They shall be proud of their responsibilities, and fully enjoy what they do.

### IGCC (Integrated Gasification Combined Cycle)

IGCC refers to a process of incomplete combustion and gasification of low-quality solid and liquid fuels including coals, heavy residual oil and petroleum coke, which generates gases consisting of carbon monoxide and hydrogen. The gases are purified and sent to the gas turbine for the first power generation, and then to the steam turbine for the second power generation.

### IPCC (Intergovernmental Panel on Climate Change)

IPCC is an UN organization consisting of experts from diverse countries, which was formed to review comprehensive responses to changes in the global environment, particularly global warming. Since it was established in 1988, three working groups in charge of the scientific assessment of global warming, its impacts on the environment and society and global warming responses have been operated. The ultimate goal of IPCC is to enter into an Agreement for the Prevention of Global Warming.

### K-OHSMS (Occupational Health & Safety Management System)

K-OHSMS refers to the management system used to set up the goals to maintain and improve the safety and health of workers; to define the organization, responsibilities and procedures by which such goals will be achieved; and to efficiently allocate physical resources and human resources within the organization, in order to prevent industrial accidents and create pleasant working conditions.

### PCBs (Polychlorinated Biphenyls)

PCBs are materials in which one or more hydrogen atoms of Biphenyl ( $C_{12}H_{10}$ ) have been replaced with chlorine. As they are very toxic and decompose extremely slowly, they are considered one of the residual organic pollutants that can damage the ecosystem for a long period of time.

### P-CRM (Policy Customer Relationship Management)

P-CRM is a system of providing customers with differentiated and customized policy information by policy area. It is a PR tool that government organizations have recently adopted to build social consensus and improve reliability and efficiency in operation.

#### PSMS (Product Safety Management System)

PSMS is the comprehensive management activity of a business undertaken to respond to the Product Liability Law. The new management system model aims to improve product safety in the total product lifecycle, including product development, design, manufacturing, delivery and disposal.

### SCR (Selective Catalytic Reduction)

The SCR device filters NOx in gases emitted with the catalyst layer, and discharges N2 and O2 separated in the natural air.

#### TPH (Total Petroleum Hydrocarbon)

Total petroleum hydrocarbon is used to identify pollutants, including kerosene, light oil, jet oil and bunker fuel oil C.

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# Key Financial Data

Balance Sneets & Fi	nancial Statements			(Unit: KRW 0.1 Billion)
	Items	2007	2008	2009
	Current Assets	6,071	7,386	8,428
	Non-Current Assets	32,780	34,599	36,388
	Total Assets	38,851	41,985	44,816
	Total Assets	5,430	7,395	9,562
	Non-Current Liabilities	9,159	11,867	11,711
Balance Sheets	Total Liabilities	14,589	19,292	21,273
	Capital	1,760	1,760	1,760
	Capital Surplus	12,666	12,666	12,666
	Earned Surplus	9,818	8,085	8,964
	Total Capital	24,262	22,723	23,543
	Total Assets/Liabilities	38,851	41,985	44,816
	Revenue	30,691	37,003	38,172
	Cost of Goods Sold (COGS)	27,687	37,357	36,812
	Gross Profit	3,004	(354)	1,360
	Selling General & Administrative xpenses	362	380	320
	Operating Profit	2,642	(734)	1,040
Income Statements	Non-Operating Profit	263	1,967	1,041
	Non-Operating Costs	543	2,482	1,319
	Net Income Before Taxes	2,362	(1,249)	1,129
	Incomes Tax Expenses	614	(215)	250
	Net Profit	1,748	(1,034)	879

### Balance Sheets & Financial Statements

### Financial Indexes

Items		2007	2008	2009
	Ratio of Asset Growth (%)	4.8	8.1	6.7
Growth Potential	Ratio of Sales Growth (%)	26.6	20.6	3.2
	Ratio of Net Profit Growth (%)	9.5	-159.2	184.9
	Ratio of Operating Profit to Net Sales (%)	8.6	-2.0	2.7
Desfitability	Ratio of Net Profit to Sales (%)	5.7	-2.8	2.3
Prontability	R0A (%)	4.6	-2.6	4.1
	ROE (%)	7.4	-4.4	7.6
	Debt Ratio (%)	61.1	84.8	90.4
Stability	Current Ratio (%)	111.8	99.9	88.1
	Quick Ratio (%)	86.6	57.1	63.6
	Total Asset Turnover Ratio(Numbr of Turnover)	0.8	0.9	0.9
	Paid-in Capital Turnover ratio(Number of Turnover)	1.3	1.6	1.7
Activeness	Inventory Asset Turnover Ratio (Number of Turnover)	20.2	16.5	13.4
	Accounts Receivable Turnover Ratio (Number of Turnover)	22.4	12.3	10.9

- The indexes for growth potential were calculated compared to the previous period, and the amounts used for the calculation of stability and activeness were arrived at by taking the average of the figures of the beginning and the end of the period of the balance sheets.

## **Certification & Awards**

Year	Number of Certificates & Awards	Organizer/Sponsor
	Korea Grand Prize for Corporate Communications (Printed Media)	Business Communicators Association
	Chairman' s Prize (Korea Energy Management Corporation)	Korea Energy Management Corporation
2000	Contest for the Best Water Quality TMS Management Cases	Korea Environment Corporation/Ministry of Environment
2009	Minister of Environment' s Prize	Korea Environmental Preservation Association
	Korea Environmental Preservation Association/Ministry of Environment	Small & Medium Business Administration
	Prize for the Best Case of Development of Areas Adjacent to Power Plants	Ministry of Knowledge Economy
	2008 Korea Grand Prize for Social Contributions	Korea Economic Daily
	2008 Grand Prize for New Quality Innovations	New Quality Forum, Korea Economic Daily
	Selected as the Safest Business Spaces (Taean/ Pyeongtaek/ Seoincheon)	National Emergency Management Agency
2008	Certificate of Week Greenhouse Inventory for the 3rd Climate Change Responses	Ministry of Knowledge Economy/ DNV CDM Certification Center, Norway
	2008 Korea Grand Prize for Technology Innovation Management, Public Corporations category (for two consecutive years)	Korea Economic Daily (Hankyung)/ Open Management Research Institute
	Grand Prize for Sustainable Management	Ministry of Knowledge Economy
	Korea Grand Prize for Corporate Communications	Business Communicators Association
	Government Prize for Commercialization of New Technology	Korean Agency for Technology and Standards
	Certificate for the Best Business Voluntarily Entered in Agreements	Korea Energy Management Corporation
2007	Korea Grand Prize for Safety	National Emergency Management Agency / Kyunghyang Daily
2007	The 23rd Kyunghyang Grand Prize for Electricity & Energy	Kyunghyang Daily/ Korea Electric Power Corporation and Ministry of Knowledge Economy
	Korea Grand Prize for Idea Management	KSSA
	Korea Grand Prize for Productivity	Korea Management Association
	1st Place in 2006 Management Evaluation for Power Generators	Korea Electric Power Corporation
	Korea Grand Prize for Technology Innovations	Korea Economic Daily

# Memberships

Areas	Name of Association	Areas	Name of Association
	BEST Forum		Korea Energy Economics Association
Ethics & Transparency	BEST CEO Club		Korea Energy Foundation (2013 WEC Korea)
	The Institute of Internal Auditors		Korean Society of Mechanical Engineers
Social Contributions	The Republic of Korea National Red Cross	Power Generation Technology	Korean Society of Electrical Engineers
	Korea Plant Industries Association		Korea Standards Association
	The Korean Society for Quality Management		EEI(Edison Electric Institute)
	Korea Quality Master Association		East Asia-West Pacific Electrical Manufacturers' ssociation
Quality & Innovations	National Quality Award Winners Association	Construction	Korea Construction Consulting Engineers Association
	Korea Six Sigma Academy	Construction	Korea Project Management Association
	KSSA	Environment	Korea Environmental Preservation Association
	Korea Management Association	Banawahla Enargy	Korean Society for New and Renewable Energy
Cafaty	Korea Fire Safety Association	Renewable Energy	Korea New & Renewable Energy
Salety	Korea Occupational Safety & Health Agency		The Federation of Korean Industries
Fuel & Contraction	The Korean Committee for WPC	Management & Finance	Korea Employers Federation
Fuel & Contracting	Korea International Trade Association		IMI of the Federation of Korean Industries

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### Code of Conduct (Credo of Western Power Employees)



we think and act from the perspective of our customers, and strive to earn the continued trust of our customers through integrity and transparency. Our primary responsibility is to provide customers with better quality power at lower prices. We will never compromise the rights and interests of our customers to protect our own. We promptly and transparently disclose all major issues related to corporate management.

Second

as a member of the community, we pursue shared prosperity through ethical and reasonable corporate activities and social services. We participate in academic, cultural, sports, scholarship and welfare programs to support our local communities, and actively contribute to local economic growth. We do our utmost to preserve the environment and protect nature, and fully conform with all laws and regulations. We improve friendly relations with our partners, and compete fairly through sound corporate activities. We maintain an equal status with partners, and avoid any activities related to corruption or bribery.



we work actively to improve the quality of life and job satisfaction of our employees. The salaries we pay are always reasonable, and the working environment is pleasant. Employees are always free to make suggestions or complaints. Equal opportunities for recruitment, relocation, promotion and professional development are given to all employees, according to their capability and achievements. The company spares no efforts in helping employees to fulfill their responsibilities for their families. Employees shall work steadily for self-development, and fulfill

their responsibilities for the success of the company.



we generate sound profits through efficient corporate management and reasonable investments, in order to create higher shareholder value. We maintain and manage all facilities to be in the best condition, and build a sound profit-creating structure by securing the best level of competitiveness in an ever-changing business environment through improving our product and service quality based on continuous innovation. We pursue transparent account management in accordance with international accounting standards, and actively promote our company so that

the company can be evaluated reasonably based on our corporate values.

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# Reader's Opinions

Please send us your feedback about Korea Western Power's 2010 Sustainable Management Report. Your feedback will significantly help us to improve the completeness and the contents of the Report. We promise that we will fully reflect your feedback in future publications.

### 1. How did you access this Report?

□ Website □ Media, including newspapers and TV □ Korea Western Power □ Seminar or lectures □ Others

### 2. To which of the following groups do you belong?

Government, shareholders or investors	Executives and employee	es	🗆 Local resid	ents and NGOs
Partners and parties in business relations with Korea	a Western Powerc	🗆 Ger	neral public	□ Other:

3. How readable is this Report? □ Very easy to understand	□ Easy to understand	□ Not easy to understand	□ Very difficult to understand
4. Which section of this Report h	has attracted your interest?		
Management System	Economic Performance	Environmental Performance	Social Performance

### 5. In which area do you see the need for improvements?

Stage 1		Stage 2
□ Management System	□ Corporate Overview □ Vision & Manageme	nt Strategy 🗆 Corporate Governance 🗆 Risk Management
Economic Performance	Operation of Power Facilities     Renewable Energy Development     Management Innovations	<ul> <li>□ New Business Development (Domestic &amp; Overseas)</li> <li>□ Research &amp; Development</li> <li>□ Economic Achievements</li> </ul>
Environmental Performance	Climate Change & Energy     Green Technology Development &investment	☐ Minimization of the Emission of Pollutants ☐ Environmental Achievements
□ Social Performance	□ Safety & Health □ Development of Employee Capability □ Cooperation with SMEs	□ Employee Satisfaction □ Ethical Management □ Local Communities Support & Social Contributions
□ Others	□ Purchase of Fuels □ Building o	f Infrastructure for the Expansion of Power Facilities

### 6. What could be improved to make this Report better?

7. Please feel free to add any suggestions you have about Korea Western Power's sustainability management.

Sender				
Name:				
Contact Number:				
E-mail:				

### Recipient

Address : 411, Yeongdongdaero, Gangnam-gu, Seoul, 135-791, Korea
Contact Number: 82-2-3456-7723
E-mail: sustainability@iwest.co.kr

# Publication Team and Review of Report

As this is the third Sustainability Report published by Korea Western Power, we have taken full advantage of the internal resources we have developed through the publication of other sustainability reports in the past.

The TF team was organized in June 2010, consisting of members from bureaus (offices) of the Headquarters. The TF team members completed training on the preparation of the report in accordance with the guidelines for sustainable management and GRI, and learned more about report preparation through workshops. In July, interviews with stakeholders from industry, environmental groups and the community at large were conducted, and a survey was operated through our website. Opinions collected were reflected in the Report, and the external experts reviewed the Report to improve quality of its contents. We plan to further improve the reliability of the survey by expanding the target respondents in the future.

We also aim to introduce a system on our website for collecting regular feedback about our sustainability reports. We thank you for your interest and support.

### Task Force Team for the Publication of Sustainability Report

Position		Member
Chief Operating Officer		Yeong-cheol Jeong, Chief of Future Strategy Office
T/F Team Manager		General Manager Sang-mun Han, Business Strategy Team of Future Strategy Office
T/F Team Members	Stakeholder Analysis & Overall Publication	Deputy General Manager Ji-eun Lee of Business Strategy Team
	Sustainability Management System	Deputy General Manager Rae-hyeon Jeong of Business Strategy Team
	Economic Performance	Deputy General Manager Se-mun Lee of Accounting and Finance Team
	Environmental Performance	Deputy General Manager Jae-cheol Lee of Green Environment Team
	Social Performance	Deputy General Manager Jong-rae Park of Culture & PR Team, Deputy General Manager Sam-Young So of Labor & Welfare Team

# History of Sustainability Report



- The 1st Environmental Report
   Featured environmental management
- activities and environmental achievements of the company since 2002
- Revised the environmental policies and the basic plan for environmental management
  Set the mid-to-long term environmental targets by area (2014)



- Summarized the environmental management system and the environmental achievements
- Preserved nature and the ecosystem and built partnerships with stakeholders
- Won the ESH Value Management Prize of Korea for 2005
- Set up strategy to respond to climate change agreements and sustainable management



- The 1st Sustainability Report
  Recognized as the highest-level report by
- Hankyoreh Economic Research Institute - Corporate Transparency Evaluation of East Asia (4th Place)
- Won the 2007 Grand Prize for Sustainable
   Management (for the category of Innovatio



- The 1st Social Contribution Report
- Summarized strategy, organization and system related to social contributions
- Summarized social contributions of the
- Company since it was separated from Korea Electric Power Corporation in 2001 • Won the 2008 Grand Prize for Social Contributions (based on achievements in 2007)



- The 2nd Sustainability Report
- Clearly defined DMA, stakeholder activities
   and significance evaluation
- Added the final achievements overview by section
- Registered as UNGC fulfillment achievements
   report

