# All Together Create Future for Sustainability





Leading the history of light,

KEPCO has pursued the creation of values for customers

and its own management philosophy of respecting human life.

Now, KEPCO will fulfill its economic, environmental and social responsibilities

to take the lead in establishing a sustainable future and a society where everyone

enjoys growth, and take a big leap forward as the "Global Top Green & Smart Energy Pioneer"

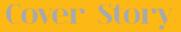


KEPCO, as a representative company in the electric power industry, has provided electric power stably. It is referred to as a driving engine of economic growth.

Now, KEPCO will pursue sustainable management strategies more faithfully; accomplish its Vision of "G**lobal Top Green & Smart Energy Pioneer**" to become an integrated global energy company that provides more values and benefits for humanity.

### Through smarter technologies and high quality services, Let us make a happier world to live in.





In such various sectors as nuclear power plants in overseas countries, thermal power plants, new & renewable energy, smart grid and resource development, KEPCO shows off its visible performance to become a global energy company by utilizing the highest standard of technologies and its operational capabilities.

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This is the 7th Sustainability Report published after KEPCO joined the UN Global Compact in August 2005. With this report, KEPCO shares with stakeholders its efforts to achieve sustainability and its economic, environmental and social performance.

#### Guidelines

This report is prepared in accordance with the GRI Guidelines 2006 (G3) and based on materiality tests to collect the opinions of diverse stakeholders. Financial information and guidelines in this report are in accordance with Korea Financial Accounting Standards.

#### Coverage

This report contains quantitative performance data pertaining to the period from January 1 to December 31, 2010. Some of the non-quantitative descriptions also include data on performance prior to June 2017.

This report primarily covers KEPCO's sustainability management performance, but part of the Environment section includes the performance of six power generation companies, or GENCOs, wholly owned by KEPCO: Korea Hydro & Nuclear Power, Korea South-East Power, Korea Midland Power, Korea Western Power, Korea Southern Power and Korea East-West Power.

To ensure that all of the KEPCO group companies pursue sustainability management in a consistent manner, the GENCOs are already publishing their own sustainability reports.

#### Major Changes and Scope

No significant change in corporate size, ownership structure or business occurred in the reporting period. KEPCO faithfully incorporated all indicators set forth by the GRI Guidelines 2006 (G3) in this report, and included contents of ISO26000 Index (P. 70) as well. Key performance indicators for the past three years are also disclosed in the interest of improving sustainability management performance.

#### **Commitment to Credibility**

In an effort to ensure the credibility of the report, KEPCO invited external experts to review its compilation, starting from the design stage. The data here in are verified by them in accordance with the AA 1000 AS (2003) principles (significance, completeness, reaction). The details of the review are found in the section entitled "Third Party Review" (P. 64-66).

#### Distribution and Feedback

This report is published both in Korean and English, and readers' feedback is accepted via mail, e-mail, or the KEPCO website. For any inquires concerning this report, please contact KEPCO through one of the contact points indicated below.

#### **NGEDCO**

512, Yeongdong-daero, Gangnam-gu, Seoul Strategic Planning Team, Corporate Planning Department Tel: 82-2-3456-3524 / Fax: 82-2-3456-3578 / E-mail: hjnature@kepco.co.kr Green Energy Pioneer Making A Greener and Cleaner World Together With People and Nature

With having the environment as a top priority, KEPCO pursues a strategy of 'low carbon and green growth' to bring a brighter future.



Green World Driven by Eco-Friendly Energy



KEPCO has concentrated on developing eco-friendly energy to preserve the environment by proactively responding to climate change based on its philosophy and vision focusing on the health of the earth.

In improving environmental efficiency as a result of pursuing the eco-friendly management system, KEPCO is a green energy enterprise that embraces an ecofriendly electricity supply chain, develops 'low carbon and green technologies,' and creates environmental values with increased energy efficiency.

Towards Green Energy Pioneer

# Smart Energy Pioneer Creating Plentiful Benefits and Future Value While Increasing the Quality of Life

KEPCO has accumulated the best technologies and know-how and proactively responds to the new energy paradigm through creative innovation, qualitative change and strengthened global competitiveness.



**Convenient World Created with Smart Energy** 

KEPCO, as a representing company in electric power industry, has laid the foundation for development of national economy by stably providing quality electric power that is referred to as a driving engine of economic growth.

KEPCO anticipatively responds to the future based on capabilities accumulated so far, is a smart energy company pioneering new business markets by providing high quality and differentiated services and strengthening knowledgebased creative soft-power capacity.

Towards Smart Energy Pioneer

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Becoming a Reliable and Beloved Company and Providing More Happiness for Humanity, All Together, Create Future

Pursuing a happy society with all stakeholders, KEPCO does its part, becoming a sustainable company by creating value and fulfilling social responsibilities as a corporate citizen.

# All Together, Create Future for Sustainable Company

All Moves Forward to Live in a Happy World



With bringing light to the world and loving each other by sharing, KEPCO has contributed to making a beautiful and happy world as one of the corporate members in society.

Contributing more happiness for humanity, KEPCO is a sustainable company that sincerely fulfills its national and social responsibilities, and gains trust and affections from all stakeholders including employees, customers, shareholders, investors and partners.

All Together, Create Future for Sustainable Company

# CEO Message

KEPCO will raise its value as a sustainable company for the greater happiness of all stakeholders.



#### Distinguished stakeholders of KEPCO!

We would like to express deepest appreciation to all of you for continuous encouragement and support.

KEPCO has played a leading role in facilitating national development by reliably providing high quality electricity, and is moving beyond Korea to the world to become a sustainable company while at the same time leveraging its capability and performance to raise the value for stakeholders.

KEPCO will not only comply with 10 principles of the UN Global Compact but also fully implement its sustainable management in order to contribute to the development of the nation, society, and the growth and happiness of humanity.

#### Let us become a sustainable company which pursues win-win growth.

Trust from all interested parties is a prerequisite for a company to grow sustainably. KEPCO will focus on communication and cooperation with shareholders, customers, partners, employees and local communities, and create performance from economic, environmental, and social perspectives to fulfill social responsibilities in all areas. In addition, we will become a trusted, respected sustainable company by placing an emphasis on the philosophy of sharing, transparency and co-prosperity.



We

#### Let us make energy contributing to the happiness of humanity.

Providing quality of life to the nation, people and humanity is our calling and mission. We do this by fulfilling the roles and responsibilities assigned to us. KEPCO will minimize environmental impacts that can be generated while doing business in the power industry and lead low carbon & green growth in order to respond to climate change, an issue facing all human beings. In addition, we will do our part to provide convenient, clean and safe energy with one of the world's best power quality and services.

Future

#### Let us create a future growth engine to become a Global Top.

Faced with ever-changing business environments such as the combining of electric power and IT, expansion of the global market, a slowdown in the domestic electric power industry, there is a growing need for exploring a new driving engine to facilitate sustainable growth. KEPCO will proactively respond to changes in future trends, and examine and restructure the existing system. In addition, we will promote changes and innovation to enhance financial soundness of domestic electric businesses and the operational effectiveness of power infrastructure, thereby improving corporate value. At the same time, we will make efforts to maximize intangible soft power including human resources, technology and service, to create value from overseas businesses, green technologies, and resources development abroad.

Distinguished stakeholders of KEPCO!

KEPCO will pursue continuous growth, respect the environment and faithfully assume its social responsibilities as a corporate citizen to take the lead in creating a society where everyone shares the results of growth. We would like to urge all of you to remain interested and supportive to help us realize our dream of bringing a greater happiness to humanity.

Thank you.

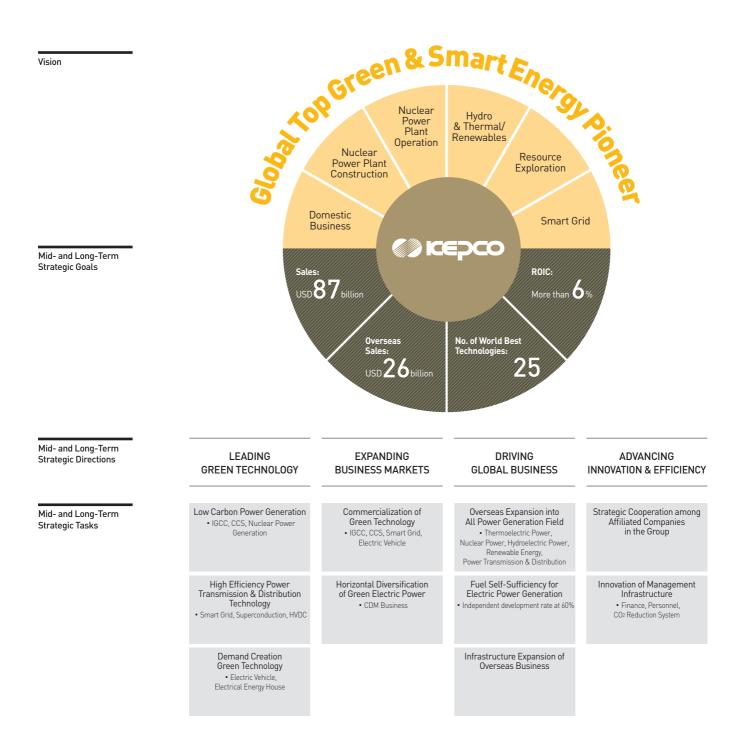
October 2011 President & CEO Joong-kyum Kim

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## **KEPCO** Vision

#### **KEPCO Vision**

KEPCO established its Vision as a "Global Top Green & Smart Energy Pioneer" to become one of the major energy enterprises leading in global green growth. KEPCO set its managerial targets of USD 87 billion for total sales, USD 26 billion for overseas sales and 6% of ROIC in 2020.



# **CEO Management Principle**

#### CEO Management Principle

# **All Together, Create Future**

Foster a global and future-oriented mindset	Contribute to the well-being of humanity
Lead based on trust and communication	Embrace change and innovation
Create Value for all stakeholders	Be socially responsible

We aim to transform into a widely loved and admired company and pursue sustainable growth by creating future value based on continuous innovation for the purpose of achieving the mutual growth of employees, nation and society, and contributing to the general happiness of humankind.

#### MAP OF MANAGEMENT STRATEGY

# All Together, Create Future

		Fost	er a global and future-oriented mindset		
Thinking	Globalization as a way of thinking, Establishment of future-oriented business structure		<ul> <li>Benchmarking of globally-recognized best practice to become a Global No. 1 in all areas</li> <li>Pioneering new business areas through forecasts about future trends</li> </ul>		
		Contribute to the well-being of humanity			
	Self-realization of all members, Contribution to the happiness of mankind		<ul> <li>Making an enjoyable place to work by creating a people-focused, creative and dyna corporate culture</li> <li>Provision of high-level green energy services contributing to the happiness of man</li> </ul>		
		Le	ad based on trust and communication		
у	Pursuit of reconciliation and common growth based on trust		<ul> <li>Becoming an organization harmonizing with trust through honesty and communica</li> <li>Gaining social consensus through transparent dialogue and ethical management vistakeholders</li> </ul>		
			Embrace change and innovation		
	Challenging future with no fear of change		<ul> <li>Continuous change and challenge to overcome limitations rather than being content with the present</li> <li>Securing future competitiveness by translating crisis into opportunity through creatinnovation and qualitative change</li> </ul>		
			Create Value for all stakeholders		
	Achievement of best corporate value	►	<ul> <li>Creating tangible value to satisfy all stakeholders ranging from customers, shareholders, and employees</li> <li>Maximization of values from such aspects as talent, corporate culture, technology brand and financial soundness</li> </ul>		
			Be socially responsible		
	Becoming a beloved company, Realization of sustainable growth		<ul> <li>Making an effort to become a beloved company by creating various values and lead a common growth</li> <li>Pursuing a sustainable company through performance creation from an economic environmental and social point of view</li> </ul>		

## **Overview of Electric Power Industry**

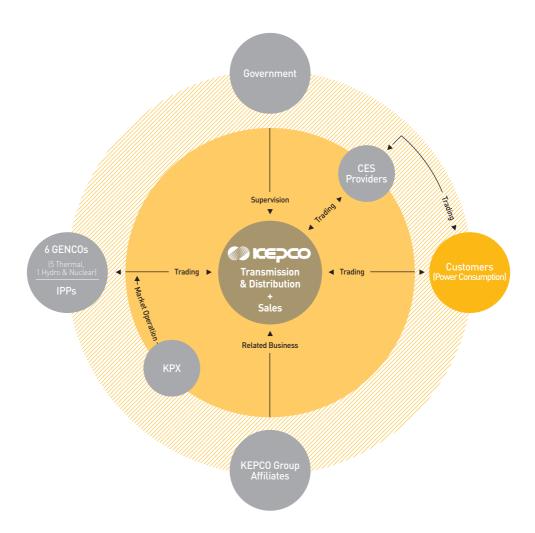
#### Characteristics of Korea's Electric Power Industry

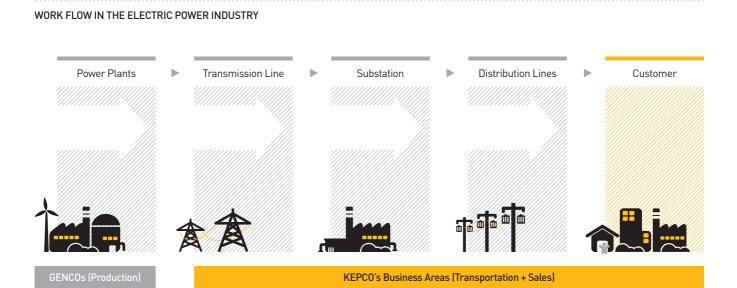
The electric power industry requires facilities on stand-by at all times because electricity is consumed immediately after being generated, and by nature, cannot be stored economically. The industry also needs a grid to distribute and transmit electricity. Korea highly depends on overseas markets for energy (97%) and its geographically-isolated grid system makes it impossible to import electricity from neighboring countries. In addition, long-distance transmission is required because production is concentrated in the south while most of the power is consumed in the northern part of the country. Furthermore, demand is very difficult to control, and considerable time and massive investment is required to secure supply capacity.

#### **Industry Structure**

The six power generation companies (GENCOs), independent power producers (IPPs) and community energy system (CES) providers generate electric power and sell it to KEPCO on the Korea Power Exchange (KPX). KEPCO, in turn, sells electricity to general customers through the transmission and distribution network. Competition in the sales sector of the industry is increasing as large-volume customers (more than 30,000kW) are allowed to buy electric power directly from producers, and each CES provider is allowed to supply electric power in a specific district.

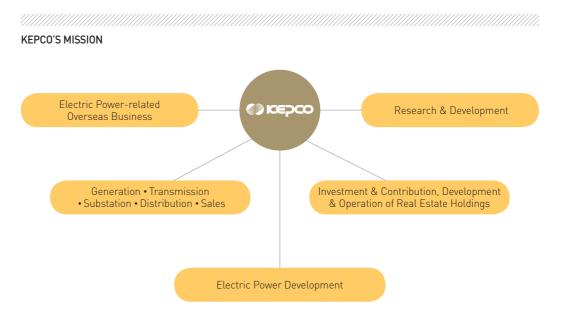






#### **KEPCO's Role**

KEPCO is a special corporation incorporated under the "Korea Electric Power Corporation Act," and classified as a market type public corporation under the Act on the Operation of Public Organizations. KEPCO is carrying out diverse business projects according to its foundation objectives, for example, development of power sources, generation, transmission, substation, distribution, and sales, research and development, overseas business, investment or contribution, and development and operation of real estate holdings.



### About KEPCO

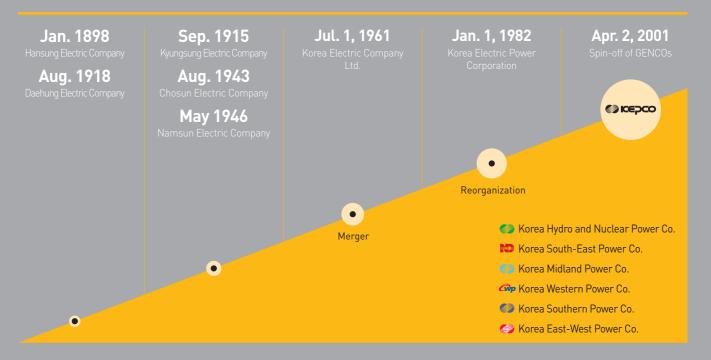
#### **KEPCO** Overview

Name	Korea Electric Power Corporation
Headquarters	512, Yeongdong-daero, Gangnam-gu, Seoul, Korea
	KRW 74 trillion
	KRW 39.2 trillion
	19,387
Electricity Sold Annually	434.2 billion kWh
	Korea Finance Corp 30% Government 21% Foreigners 26% Others 23%
IPO Markets	Korea Exchange (KRX) in 1989 New York Stock Exchange (NYSE) in 1994

#### KEPCO Group Companies Overview

• GENCOs					
	Capital Stock		KEPC0's	KEPCO's Share	
Name Main Business		(KRW 100 million)	Amount (KRW 100 million)	Rate (%)	
Korea South-East Power Co.		3,327	3,327		
Korea Midland Power Co.		1,530	1,530		
Korea Western Power Co.					
Korea Southern Power Co.					
Korea East-West Power Co. Power generation & development		3,074	3,074		
Korea Hydro and Nuclear Power Co.					
• Affiliates					
News	Neis Duringer	Capital Stock	KEPCO's		
Name	Main Business	(KRW 100 million)			
Name KEPCO Engineering & Construction Company, Inc.	Main Business Engineering service for power generation	(KRW 100 million)	KEPCO's	Share	
KEPC0 Engineering &		(KRW 100 million)	KEPCO's Amount (KRW 100 million)	Share Rate (%)	
KEPCO Engineering & Construction Company, Inc. KEPCO Plant Service &	Engineering service for power generation	(KRW 100 million)	KEPCO's : Amount (KRW 100 million) 60	Share Rate (%) 77.94	

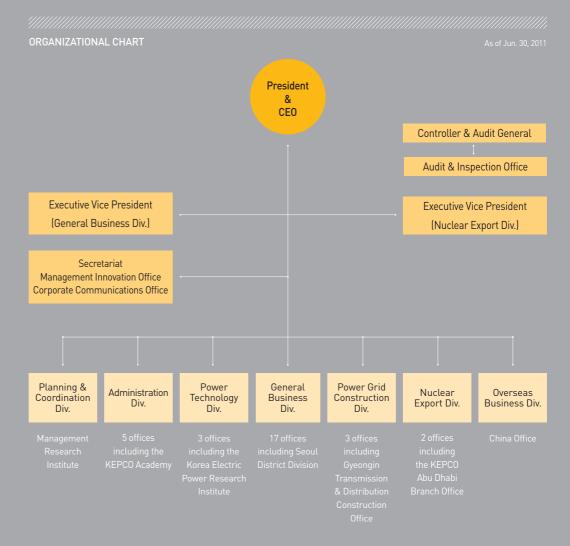
#### **KEPCO's History**





#### Organizational Structure

KEPC0 has 21 departments/offices under 7 divisions at the Head Office. Operations nationally and globally pan a total of 250 locations, including the Management Research Institute and other 12 special offices. Inder General Business Division are 13 district divisions, 1 special office, 175 branch offices and 38 power ransmission branch offices, while the Power Grid Construction Division oversees 3 construction district ivisions and 6 construction branch offices. The Overseas Business Division is in charge of 2 overseas offices. KEPC0 established a system in January 2009 in which a stable power supply and an efficient & responsible nanagement can be pursued through the foundation of comprehensive business head offices on a local ommunity level incorporating main functions of transmission, substation and distribution. In addition, KEPC0 is proactively responding to environmental changes of a future electric industry by reinforcing organizational tructure in business areas with growth potential such as overseas projects, Smart Grid and etc.



## **Global Trends and Business Environment**

#### Global Trends in the Electric Power Industry

The trends in the global electric power industry can be summarized as diversifying business areas through horizontal and vertical expansion, developing a new market based on existing markets, and advancing into the green market. In line with such global trends, KEPCO is expanding their overseas business presence, and preemptively securing green technologies and increasing the synergy effect of the Group's businesses.

#### Domestic Environment in Electric Industry

With global efforts to reduce greenhouse gas (GHG) emissions, the energy industry is required to shift swiftly toward a low-carbon system. In addition, competition for resources is intensifying among nations, and stakeholders' demand for corporate social responsibility such as ISO26000 is soaring. KEPCO will continue to respond proactively to such environmental changes to ensure sustainable growth, and fulfill social responsibilities to grow along with stakeholders.



## **Corporate Governance**

#### **Board of Directors**

#### Board of Directors

- Non-standing directors: 8 persons
- Standing directors:
   7 persons

#### Audit Committee

- Non-standing auditors:
- 2 persons
- Standing auditor:
- 1 person
- Chair: Non-standing director
   Business & Accounting practices
- Business & Accounting practice
- Nomination Committ
- Non-standing directors
- Non-government members
   The majority of non-standing
- directors

  Recommendation of candidates
- for members

The CEO of KEPCO is referred by the Nomination Committee, consisting of non-standing directors and nongovernment members, approved by the resolution of the general shareholder's meeting, requested by the Minister of Knowledge Economy and finally, appointed by the President. The tenure of the CEO is three years. Standing directors other than the CEO are appointed by the CEO on the agreement of the general meeting of shareholders. Non-standing directors are appointed by the Minister of Strategy and Finance with the referral of the Nomination Committee and the resolution of Steering Committee of Public Enterprises. Chairman of the board of directors is one of senior non-standing directors appointed by the Minister of Strategy and Finance through voting process of the Steering Committee of Public Enterprises.

In order to keep independence of the BOD, stakeholders who have special interests in a company cannot be appointed as non-standing directors. In accordance with the Act on the Management of Public Institutions, tenure of directors other than the CEO is two years, and can be appointed for consecutive terms in a row, on a one year basis every time.

In 2010, the BOD met 16 times to address a total of 64 agenda items. Significant matters, which were not on the agenda list, were separately reported to the BOD. If necessary, the BOD can invite experts or any person interested in hearing their opinion, and any director who has special interest in a specific agenda is not allowed to vote on the agenda. In addition to the agenda, significant matters regarding economic, environmental or/ and social performance are separately reported to the BOD pursuant to the articles of incorporation and the regulations of the BOD.

#### EFFORTS TO STRENGTHEN THE ROLES OF BOD IN 2010

Strengthened checks · surveillance of the management of BOD	<ul> <li>Establishment of a process for pre-consideration about agenda by each stage to strengthen agenda deliberation procedure</li> <li>Facilitation of operation subcommittees, for example, a systematic operation of the Audit Committee</li> <li>Advancement of the operational system of the BOD, for example, setting a system for real time monitoring on BOD operation</li> </ul>
Intensified utilization of specialty of non-standing directors	<ul> <li>Securing non-standing directors from diverse areas that are commensurate with the company's environment</li> <li>Expansion of opportunities for non-standing directors into management process, for example, visit to electric business areas</li> <li>Real time reflection of suggestions proposed by non-standing directors by establishing and operating a Always-Management Suggestion System</li> </ul>

# Remuneration of Directors

Following consultations with the Nomination Committee, the CEO signs a pact with the Minister of Knowledge Economy with respect to management objectives or key challenges to be achieved or addressed during his or her tenure. Every year, the progress made on the implementation of the pact is reviewed by the Performance Appraisal Board for Public Enterprises, which is composed of experts from various fields. Standing directors other than the CEO are required to set management objectives and sign a pact with the CEO every year and are evaluated by taking into consideration quantified performance on management objectives and the outcome of the Government Management Evaluation. The directors are paid under a remuneration ceiling determined by a resolution at the general meeting of shareholders. Non-standing directors are paid an allowance for work activities.

#### **Audit Committee**

KEPCO established a committee comprised of three auditors who are responsible for independent audit and inspection of its business and accounting practices. Two of them are non-standing directors, and the chair is assumed by a non-standing director. One of the three auditors is an accounting or financial expert in accordance with the enforcement decree of the Commercial Act. The work performance of the standing auditor is evaluated by the Performance Appraisal Board of Public Enterprises.

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### **Ethical Management**

KEPCO established proactive action plans to pursue company-side anti-corruption and integrity strategies. Effectiveness of ethical guidelines has been enhanced through various activities such as revision of ethical guidelines. In addition, pre-control activities against corruption have been carried out by running a cyber ethical consulting center, monitoring use of corporate credit cards and operation of KEPCO's 2nd ombudsman office. As a result, KEPCO was selected as the No. 1 company among 21 public enterprises in the survey of integrity on public bodies organized by Anti-Corruption & Civil Rights Committees, and also the company was positioned itself as the highest for 5 consecutive years in the evaluation on policies about anti-corruption.

#### PROGRESS ON STRATEGIC ETHICAL MANAGEMENT

#### Establishment of Basics for Ethical Management

#### INTRODUCTION (~2005)

- Enactment of code of ethics and code of conduct
- Establishment of steering organization and required infrastructure
- Intensive improvement in vulnerable area to corruption
- Training about ethical management increased integrity
- Establishment of basis for common understanding with
- partners

#### Settlement of Ethical Management System

#### SETTLEMENT (2006~2008)

- Entering into mid-range of score 9 in integrity
- Implementation of corruption detection and feedback system
- Strengthening anti-corruption system
- Online and offline ethical training
- Encouragement toward stakeholders to join anticorruption campaign

#### Leading Corporate Culture of Integrity Ethics

#### MATURITY (2009~)

- Continuous attainment of getting score of 9.5 in integrity
- Continuous implementation of corruption detection and feedback system
- Conducting customized ethical management
- Leading ethical management in electric power industry
- Spreading ethical management towards interested parties

#### Proactive Control on Corruption Risks

Any job or position prone to corruption is excluded from job rotation in an effort to proactively control opportunities of corruption. Jobs to be rotated are specified, particularly in the sectors of finance, procurement, transmission & substation, distribution, construction and quality inspection. An IT-based intelligent monitoring system is operated to monitor 30 indexes in various areas as cases that are repeatedly detected by audit, marketing, financial accounting, purchased materials and so on. In particular, an unusual transaction scenario was additionally developed in 2010 in order to standardize risk indexes (from 15 to 20).

#### Integrity & Ethics Training

KEPCO employees continued to receive training on integrity & ethics to foster a corporate culture of integrity. In March 2010, KEPCO and its Audit Office encouraged their willingness for integrity by conducting "Visiting Integrity Training" towards 240 branch offices in 46 business areas across the country. Meanwhile, KEPCO Academy runs an "Integrity Promotion Class," a training curriculum specialized in anti-corruption to allow persons responsible for pursuing integrity at their offices to participate in to increase the effectiveness of integrity training. In addition, in June 2010, a cyber training course called "Code of Conduct for Public Servants through Cases" was opened. With a total of 19,764 employees taking integrity training on- & off-line, annual per capita training time rose 48.1% from 8.13 hours in 2009 to 12.1 hours in 2010.

#### Actions against Corruption

KEPCO has four levels of disciplinary actions to take with employees involved in corruption: (1) reprimand, (2) salary reduction, (3) suspension from duty and (4) dismissal. In November 2010, relevant regulations were revised to introduce a "Three Strikes & Out" rule which allows the company to dismiss employees who have engaged in corruption such as, demands for bribes, gifts, embezzlement three times to apply the criteria of punishment in a strict way.

#### **Code of Ethics**



We are truly proud that KEPCO has contributed to the development of the national economy and society by providing the best quality service and electric power to all customers. That pride and self-confidence is now being leveraged to make KEPCO a global power company that continues to grow and develop together with all stakeholders. To this end we are pursuing core values, which are "Global Excellence," "Customer Respect," "Performance Drive," "Challenge & Innovation" and "Social Responsibility."

We understand that fair and transparent operation, firmly grounded in corporate ethics, is essential for us to achieve that end. Therefore this Code of Ethics has been adopted and all employees are required to follow it as the standard for correct behavior and proper decision making.

•First, we share the company's core values and vision, carry out our duties with the spirit of challenge and entrepreneurship, comply with all laws, and perform tasks in a fair and faithful manner.

•Second, we provide customers with the best quality service and electricity and respect all customers so as to pursue co-prosperity with customers.

•Third, we make a healthy profit through business innovations and take the lead in enhancing corporate values and achieving sustainable growth.

- •Fourth, we respect each and every employee, give them equal opportunities, create a pleasant and comfortable working environment and make them proud of our company.
- •Fifth, we adhere to Korean and overseas regulations and laws, abide by international agreements, protect the environment, and actively participate in public interest activities as a member of society so as to contribute to the development of the nation and society.

#### Article 1 General Rules

This Code of Ethics is the standard for correct behavior and proper decision making. It must be complied with by all KEPCO employees in order to create a corporate culture based on fairness, transparency and business ethics.

#### Article 2 Basic Ethics for KEPCO Employees

- 1. We share company's core values and vision, fulfill our duties and pursue personal and company growth through continuous self-development.
- We abide by all laws, perform tasks in a fair and faithful manner, make no unfair profit and strive to maintain personal dignity and the company reputation.
- We recognize that both labor and management are owners of our company and take the lead in pursuing joint growth and co-prosperity built on trust and understanding.

#### Article 3 Ethical Treatment of Customers and Suppliers

- In the spirit of respecting customers, we always put customer value first and earn customers' trust by providing them with the best quality electricity and services.
- We respect the order of the market economy based on the principle of free competition and compete with others in good faith on the basis of mutual respect.
- 3. We provide a fair chance to suppliers, perform tasks in a mutually equal position and seek win-win growth with suppliers by providing them with diverse kinds of support.

#### Article 4 Ethical Treatment of Shareholders and Investors

- 1. We make sound profits through efficient management and transparent performance so as to protect the returns of shareholders and investors.
- 2. We pursue the sound growth and development of our company over the

long term by enhancing corporate values through continuous changes and innovations.

3. We disclose corporate information in a transparent manner, provide more opportunities to participate in the company decision-making process and help shareholders and investors exercise their rights.

#### Article 5 Ethical Treatment of Employees

- We respect each and every employee, give equal opportunities to them according to their competence, and neither discriminate nor provide special treatment on the basis of gender, educational background, religion, age, or disabilities.
- We fully support employees efforts to develop themselves and grow into the professionals necessary for our company to succeed. We also create a work environment that encourages creative and empowered thinking and behavior.
- 3. We establish a pleasant and safe work environment and strive to make employees proud of the company based on mutual trust and understanding.

#### Article 6 Ethical Treatment of the Nation and Society

- We continuously grow and develop through reasonable and responsible management so as to contribute to the development of a nation and society and fulfill social responsibilities as a corporate citizen.
- 2. We promote safety awareness to protect employees and customers in the spirit of respect for all people. Understanding the importance of protecting the environment, we comply with Korean and foreign environmental laws and regulations and endeavor to protect the environment and prevent pollution.
- 3. We abide by Korean and foreign laws and regulations and international agreements, and we respect the culture of host countries and contribute to their economic development.

# Sustainability Management: Operational Mechanism

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Sustainability Management Framework	KEPCO set a sustainability management target called KS-G15" (KEPCO Sustainability Global Top 5) under the vision of "Global Top Green & Smart Energy Pioneer" by 2020, implementing 12 action items covering economics, the environment, and society. The 12 action items were mapped to the "2020 Mid-/Long-term Strategies," adding momentum to our drive to realize the vision.
Sustainability Management Organization	KEPCO has been operating a unit dedicated to Corporate Sustainability Management (CSM) since 2005 in order to implement policy more systematically. Sustainability management activities are supervised by the Strategic Planning Team under the Corporate Planning Department, and executed by 21 departments (offices) and 250 locations of operation nationwide.

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SUSTAINABILITY MANAGEMENT OVERVIEW



#### DEVELOPMENT PHASES OF SUSTAINABILITY MANAGEMENT

Development Stage	Foundation-laying 2005~2010	Growth & development 2011~2015	Sustainability management 2016~2020	
3 Key Areas				
Economy	Sales: KRW 39 trillion ROIC: 1%	Sales: KRW 68 trillion ROIC: 4%	Sales: KRW 87 trillion ROIC: More than 6%	
Environment	Certification of environmental management system	Strengthen an integrated environmental management system	Lead green management an technology standardization	
Society Trust-building		10th most respected company in Korea	Most respected company in Korea	

#### Enacted in August 2005

#### Principles for KEPCO Sustainability Management

KEPCO leads Korea's electric power industry. As such we are committed to corporate social responsibility, contributing to the sustainable development of the country, society and humanity. We hereby pledge to make KEPCO a world-class electric power company growing together with customers by pursuing sustainability management in the areas of economy, environment, society and human resources.

#### Economy : Sustainable Growth

- We secure a competitive advantage in the global market and build future growth engines based on a challenging spirit and creative, forward thinking. We also raise corporate value by maintaining a sound financial structure.
- We continue efforts to raise operational efficiency to the global level by taking the initiative in innovation activities.
- We stay ahead in developing core technologies in the electric power industry through ongoing technological innovation, and are a leader in the development of the global electric power industry.

- Society : Trust-Building
- We perform all matters equitably according to moral and ethical values, and disclose business performance faithfully to enhance managerial transparency.
- We seek to grow with all stakeholders by ensuring mutual benefits for customers, suppliers, group companies, the government, society, shareholders and employees.
- We make KEPCO a respected company that fulfills social responsibility by engaging all employees in the practice of sharing management.

#### **Environment : Eco-Value Creation**

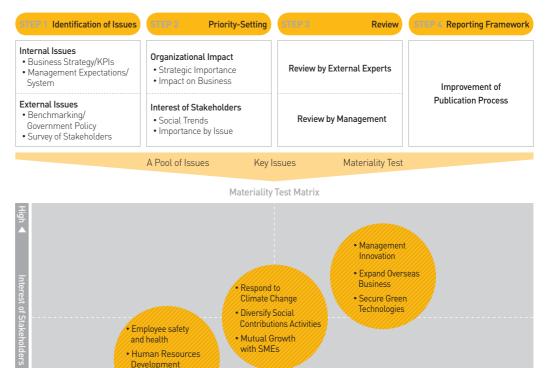
- We implement environmental management systematically to maximize environmental efficiency, and continue to increase energy use efficiency through proactive demand control.
- We strive to make the electric power supply chain eco-friendlier.
- We closely cooperate with other group companies to tackle climate change issues, thereby contributing to global environmental conservation and raising environmental value for future generations.

#### Human : People-Oriented Management

- We continue to raise the quality of life of all employees by building future-oriented labor relations, strengthening health and safety activities, and promoting employee welfare.
- We nurture human resources with global capabilities under the definition of KEPCO's Ideal employee to continue strengthening our corporate competencies.
- We manage HR value by complying with the principles of respect for human rights & human diversity, gender equality, nondiscrimination, prevention of forced labor and child labor and support of the socially vulnerable.

## **Materiality Test Process**

To draw up this Report, KEPCO identified stakeholders' areas of interest and their relative impact on the company. A sophisticated materiality test process was established to identify significant issues affecting the decision-making process with regard to economic, environmental and social issues. Materiality Test Process is composed of Issue Identification, Priority Setting, Review and Reporting Framework. Accordingly we have made reporting a priority and adopted a structured approach toward significant issues.



KEPCO drew a conclusion on main issues for a sustainable management by performing the Materiality Test Process; Management Innovation, Response to Climate Change, Employee safety and welfare, etc.

#### Participation of Stakeholders

KEPCO recognizes all Koreans who use electricity, foreign residents who are working on overseas projects in Korea, organizations, and corporations as its customers. The customers are categorized based on the characteristics of interested people into stakeholders, creditors, the government, civic groups, partners and executives and employees. We utilize diverse channels such as a general meeting of shareholders, investment presentations, an ombudsman system and a variety of committees and VOC to make decisions and identify main issues regarding sustainable management.

Collaboration between
 Group Companies



# **Key Performance Indicators**

KEPCO has set key performance indicators (KPIs) in three major areas of economics, environment and society in association with the Mid-/Long-term Strategies and management goals. In this report, we presented three year performance results in order to help stakeholders understand the sustainability management activities of KEPCO.

KPIs	Performance Results	Tar	Target	
Economy				
<b>U</b>	2008	2009	2010	2011
Sales (KRW 100 million)	315,224	336,857	391,387	441,000
Overseas Sales (KRW 100 million)	5,074	5,640	15,478	19,800
Overseas Installed Capacity (MW)	2,991	3,116	3,455	3,039
Fuel Self-Sufficiency (%)	3.5	17 ///	28	35
IPR (No. of cases)	1,416	1,536	1,476	1,423
Outage/Blackout Hour (Minute · Customer/Year)	16.08	15.59	15.15	13.22

	2008	2009	2010	2011
Energy Usage (TOE)	74,991	77,195	78,045	80,397
Water Usage (Thousand tons)	963	1,025	1,014	1,191
Waste Recycling Rate (%)	94	92.1	100	100
Purchase of Environment-Friendly Products (%)	50.1	90.7	91.5	92
Progress of Green Technology Development [%]	-	8.15	29	48
CDM Business (No. of cases)	8	8	13	14
GHG Emissions (Thousand of tons of CO2)	2,795	2,175	2,036	2,000
T/D Loss Rate (%)	4.01	4.07	3.99	3.98

Society				
	2008	2009	2010	2011
Integrity as a Public Enterprise (Points)	9.52	8.82	9.44	9.5
Customer Satisfaction as Public Enterprise (Points)	90.8	95.7	98.1	98.4
Purchase from SMEs (%)	76.0	66.3	68.5	72.5
Supplier Satisfaction (Points)	93.3	94.5	95.1	95.5
Social Contributions (KRW 100 million)	1,214	2,885	2,971	3,000
Employment of Women (%)	24.9	20.5	42.0	42.5
Employment of Disabled Persons (%)	2.37	2.48	2.61	2.70
Industrial Accident Rate (%)	0.005	0.025	0.005	Zero

# Highlights

#### Sustainability Management Highlights

KEPCO is committed to push forward diverse overseas projects and green growth businesses as part of sustainable management strategies and more importantly, KEPCO is creating a society full of hopes by encouraging a culture of sharing and integrity.

#### FULL-SCALE EXECUTION OF UAE NUCLEAR POWER BUSINESS



An historical groundbreaking ceremony on UAE Nuclear Power Business was held in Braka, UAE. The ceremony, held at the expected site for construction of a nuclear reactor, was the first official event of UAE Nuclear Power Business since the contract was signed between ENEC and KEPCO. The construction is underway to build a sophisticated and distinguished nuclear reactor.

#### ACCOMPLISHMENT OF THE 1ST IN INTEGRITY, CUSTOMER SATISFACTION SURVEY



KEPCO earned top score in the category of public enterprises' integrity as a result of establishment of an ethics management system through continuous activities for improvement, for example, global ethics management training. In addition, Thanks to IT-based One Stop Service, expansion of marketing strategy toward the public, and so on, KEPCO achieved the highest level in the area of customer satisfaction among public enterprises for 12 consecutive years.

#### WINNING A SERIES OF OVERSEAS BUSINESS IN INTERNATIONAL COMPETITION BID



In August 2010, KEPCO and Samsung C&T Corporation Consortium won the contract of construction and operation in Norte II Gas-Fired Combined-Cycle Power Plant (433MW) awarded by Comisión Federal de Electricidad, Mexico. By taking the opportunity, KEPCO has, for the first time, entered into Central and South America. In October, KEPCO won the contract of construction and operation business in Shuweihat S3 Gas-Fired Combined-Cycle Power Plant (1,600MW) in UAE in the Middle East, one of the ferocious battlefields in the Independent Power Market. As such, KEPCO has contributed to job creation and export by winning such overseas businesses in cooperation with domestic companies, and financial organizations.

#### FOUNDATION OF STEPPINGSTONE FOR "BECOMING A MAJOR COMPANY IN GLOBAL POWER FUEL INDUSTRY"



On July 2010, KEPCO acquired bituminous coal of 16,500,000 tons a year by taking over, shares of 100% for Bylong Mine, Australia, 51% for Ownaview Mine, and 20% owned by Bayan Resources, Indonesia. And it explored high-grade uranium in a mining area of Waterbury Lake, Canada so that KEPCO secured its economic feasibility. As a result of proactive effort to secure resources, KEPCO increased its rate of autonomous development from 17% in 2009 to 28% in 2010.

#### ACCELERATION OF DEVELOPMENT OF SMART GRID AND GREEN TECHNOLOGY



KEPCO selected its major green technology items including Smart Grid and IGCC through execution of 2020 mid and long term strategies, and is committed to focusing its capacity on developing these items. In 2010, KEPCO laid the foundation for commercialization of systems including the establishment of comprehensive complex for Smart Grid in Jeju and development of a power distribution system so that groundwork for commercialization has been laid thanks to the introduction of core technologies for IGCC.

#### DEVELOPMENT OF ECO-FRIENDLY & HIGH EFFICIENT NEW TECHNOLOGY AND FACILITY OPERATION



KEPCO established an eco-friendly power facility system through a radical arrangement in electricity and communication facilities by developing and utilizing eco-friendly supplies and equipment while at the same time improving environmental conditions in side streets in urban areas largely thanks to the development of Semi-Shield New Method.

#### STRENGTHENED INCLUSIVE GROWTH WITH SMALL & MEDIUM-SIZED BUSINESSES



KEPCO operates a technology advisory center for SMEs all year round to facilitate a common growth with them, and helps them promote their products towards overseas markets and strengthen their quality competitiveness. In addition to that, KEPCO shared economical results produced as a result of 5 efforts or areas including cost saving, guality improvement, newly-developed methods, etc.

#### ACCOMPLISHMENT OF ZERO-DEFECT POWER SUPPLY IN G20 SEOUL SUMMIT



KEPCO formed a task force team to provide zero-defect power during the G20 summit meeting in November 2010, and arranged power facilities in a comprehensive way. As a result, KEPCO committed to holding a successful G20 Seoul Summit by focusing on securing power in a stable manner.

#### PURSUIT OF RESCUE ACTIVITY IN DISASTER SITES ON INTERNATIONAL LEVEL



In October 2010, KEPCO founded the 119 Rescue Service Team to support prompt rescue services in case of many unusual weather phenomena, disasters and safety accidents for the sake of realization of a safe society. The 119 Rescue Service Team, consisting of Human Rescue Team, Medical Support Team, and Site Support Team in 6 major cities across the country, carried out diverse restoration work against damaged areas affected by snowstorms, and sites in Yeonpyeong Island fired on by North Korea.

EXPANSION OF SOCIAL CONTRIBUTION ACTIVITY THROUGH LABOR-MANAGEMENT JOINT COOPERATIVE EFFORT



Diverse social contribution activities have been conducted, for example, setting up a sisterhood relationship with local children center, volunteer activities in social welfare centers in cooperation with labor and management, a campaign for cornea donation, opening an account for love fund by all employees, purchasing gift cards for traditional markets, and so forth. Such activities have contributed to supporting the vulnerable and reviving the economy at the same time. KEPCO has also participated in efforts to realize social equity in employment by sharing job opportunities with the youth, national patriots and veterans, and the disabled.

# Value Creation for the Future

ECONOMIC PERFORMANCE

#### KEPCO'S VALUE LEADING TO INFINITE POTENTIAL IN THE FUTURE

KEPCO's enterprise innovations maximize its management efficiency which creates high-quality and stable electricity supply and provides a variety of customer-oriented services, so that high added value is being created. In addition, KEPCO is moving towards a global energy company through overseas resources explorations and diversified overseas businesses such as nuclear power plants, hydro-thermal plants and renewable energies.

# **Domestic Business**

Showing KEPCO's competence on creating high added value by supplying high-quality and stable electricity and a variety of customer-oriented services.

#### Sales

Thanks to economic recovery, KEPCO's 2010 sales hit 434,160GWh, 10.1% up from 2009 and its profit posted a 13.4% increase year-afteryear to KRW 37.6842 trillion. Despite the group-level belt tightening in cost savings, it recorded a net loss of KRW 61.4 billion due to energy cost hikes. While its business environment even in 2011 is expected to be unfavorable because of energy price increases and growing competition in the energy industry, KEPCO will make all-out efforts for outstanding business performance through continuous cost-saving activities, management efficiency and so on.

#### Sales Records

Item	2008	2009	2010	
Volume (GWh)	385,070	394,475	434,160	
Amount (KRW 100 million)	311,817	332,256	376,842	

#### **Transmission and Substations**

For high-quality and stable electric power supply, the completion of 96 projects, including the 765kV Shinanseong-Shingapyeong transmission system, has made the 585c-km transmission lines and 8,540MVA main transformers ready on time. In order to make its transmission system projects objective and transparent, KEPCO has largely used its effective location selection system involving interested parties like local residents, local experts and local governments. In order to address civil complaints, KEPCO has deployed its risk management experts on the main construction sites. Furthermore, KEPCO has installed 430Mvar condensers for less loss and better efficiency of existing transmission lines and better electric reliability. Its construction of undersea cables and substations has just kicked off for the second Jindo-Jeju transmission network.

For prevention of large-scale failures, KEPCO's efforts have continued: a monitoring system which is up and running in the urban



areas where multi-loop transmission systems lie underground, additional installation of 3,117 sets of 154kV lightning arresters, a plan to operate the integrated prevention and diagnosis system for substations on a trial basis and development of the warning system of heavy equipment access to transmission lines.

#### • Transmission Lines

						Unit: C-KM
ltem	1980	1990	2000	2008	2009	2010
765kV	-	-	595	755	755	835
345kV	2,044	4,935	7,281	8,310	8,552	8,580
Below 154kV	10,641	14,497	18,706	20,864	20,950	21,261
Total	12,685	19,432	26,582	29,929	30,257	30,676

\* Underground line is 2,985c-km. (incl. HVDC underwater line)

#### Substations

					UNIT: MINA
1980	1990	2000	2008	2009	2010
-	-	-	23,114	24,115	27,115
6,334	21,171	53,115	98,884	104,595	108,096
12,774	30,514	72,585	115,302	119,076	121,107
19,108	51,685	125,700	237,300	247,786	256,318
378	319	483	693	715	731
	- 6,334 12,774 <b>19,108</b>	-         -           6,334         21,171           12,774         30,514           19,108         51,685	6,334         21,171         53,115           12,774         30,514         72,585           19,108 <b>51,685</b> 125,700	-         -         23,114           6,334         21,171         53,115         98,884           12,774         30,514         72,585         115,302           19,108         51,685         125,700         237,300	-         -         23,114         24,115           6,334         21,171         53,115         98,884         104,595           12,774         30,514         72,585         115,302         119,076           19,108         51,685         125,700         237,300         247,786

\* The number of substations include 48 switchyards, and the number of unmanned substations is 590.

\* A "switchyard" is junction connecting the transmission and distribution system on a power plant site.

#### Distribution

KEPCO has expanded power distribution systems to secure stable electric supply by recently deploying 9,502 automatic switches and carrying out 529 new projects such as distribution automation systems and broad distribution control centers. KEPCO has developed and used high-efficient and low-loss equipment like power cables and transformers, so that it has achieved a world-class level of transmission loss rate of 3.99% compared to other OECD economies. In addition, KEPCO's state-of-the-art technologies like automation systems and smart & mobile engineering systems have made construction costs lower and the efficiency of distributor design has improved.

#### • Distribution Lines

ltem	1980	1990	2000	2008	2009	2010
Line Length (c-km)	122,919	231,263	351,264	410,015	420,257	428,259
Supports (Thousand Units)	2,029	3,905	6,439	8,053	8,219	8,343
Transformers (Thousand Units)	264	602	1,309	1,917	1,961	1,990

\* Underground line is 35,620c-km.



# **Electricity Quality**

In order to check its distribution systems and transmission systems, KEPCO uses high-tech IT equipment such as high-frequency monitoring equipment, thermal imaging equipment and optical binoculars, and helicopters, respectively. By doing so, KEPCO has maintained a global level of electric quality with the blackout time per household of 15.15 minutes in 2010, down 2.8% from 15.59 minutes in 2009.

KEPCO's efforts do not stop here: for the sake of preventing systembreakdown-related blackouts, it plans to provide thermal imaging monitoring services for high-voltage customers, to create equipment monitoring centers for each operation, to train monitoring personnel and to develop cutting-edge monitoring equipment.

Blackout Hour per Customer		Unit: Minute · Customer/Year
KEPCO	'10	15.15
Taiwan	.08	22.6
USA	.07	137.7
UK	.07	78.1
France	'08	78
Japan	'08	10



# **Customer Service**

# SYSTEM IMPROVEMENT

KEPCO continues to improve its customer-oriented operating system to satisfy customer needs. By lowering the baseline of low-voltage supplied customers from below 100kW down to below 50kW, the customers pay less for power supply systems and are given wider options to choose from. While electricity reserves were only allowed for high-voltage supplied customers in the past, any customers, if they want, can now be given electricity reserves.

KEPCO's customer-oriented operating system continues to evolve: new power supply available within a shorter period of time than before, no surety is needed when credit-healthy customers apply for electric uses and so on. KEPCO will endeavor to respond to changes and satisfy customer needs.

# IT-BASED CUSTOMER SERVICE

KEPCO offers various IT services for the sake of customers' convenience. As a growing number of smart phone users need a ubiquitous environment, KEPCO has established mobile cyber centers in which customers can make customer service requests and get access to information any time and any place.

Now any customer who wants electric services can apply online in less time and for less money. Online applications for electric services in 2010 out of total applications stand at 32%.



Mobile Customer Service Center

# **Overseas Business**

# Continuously driving KEPCO's growth engine through diversified overseas businesses.

Under the Vision of Global Top Green & Smart Energy Pioneer equipped with technological competence, KEPCO endeavors to explore its growth engines in the overseas electricity markets, so that it can overcome sluggish domestic demand of electricity.

Its future growth can be made overseas in the areas of thermoelectric power plants, nuclear power plants, renewable energies, resources explorations, transmission systems, smart grids, and so on. KEPCO's 2020 target for overseas business is to attain USD 26 billion, or 30% of its total sales target.



# **Nuclear Power**

On December 27 2009 for the first time in its history, KEPCO made an 18.6 billion dollar nuclear power plant project deal with Emirates Nuclear Energy Corporation (ENEC). Under the project, four Koreantype 1,400MW reactors will be built starting with No.1 reactor on May 1 2017 ending with No.4 reactor by 2020.

KEPCO has been gearing up for a successful completion of the project since making the UAE nuclear deal: in 2010 it launched UAE nuclear project task force to make contracts with private companies and subcontractors, made UAE-customized designs, embarked on making and purchasing main equipment, carried out site-related activities like acquisition of permission, completion of the construction site survey and building of construction offices and supporting facilities, and applied for construction permission of UAE Federal Authority For Nuclear Regulation (FANR).

On March 14 2011, KEPCO held a groundbreaking ceremony at the site for UAE power plants.





# Thermal and New & Renewable Power Generation

In the area of thermoelectric power in 2010, KEPCO won Mexico's Norte II project which Mexico's state-owned power utility, Commission Federal de Electrician (CFE), has awarded and will be a 433MW combined-cycle power plant (CCPP). That is the first project that KEPCO won in Central and South America. In the UAE market, which is probably the most competitive market in the world for private power builders, KEPCO won the UAE Shuweihat S3 CCPP project. Now it has established itself as a global private power leader. In the area of renewable energies, KEPCO acquired wind power projects of Inner Mongolia, China with a 975MW capacity in 2009 and an additional 246MW capacity in 2010. That proves to the world how competitive KEPCO is in the wind power market.

Three overseas projects of about KRW 200 billion in sales in 2010 are expected to contribute not only to KEPCO's profitability but also to its brand image as a global power builder. The expansion of the Neimenggu wind power project has secured a 10 billion won carbon credit per annum, which prevents global warming. UAE and Latin America projects involving other Korean companies have created new jobs related to construction and operation of power plants.

In the areas of thermoelectric power and renewable energies as of 2010, KEPCO operates 7 plants with a capacity of 2,602MW in China, the Philippines, Lebanon and other countries, achieving KRW 659.9

<ul> <li>Sales of Overseas Projects</li> </ul>	Unit: KRW 100 million
2008	5,074
2009	5,640
2010	15,630

billion in sales with a 17% growth year after year.

KEPCO will try to focus on renewable energies with great growth potential like wind power, photovoltaic power and geothermal power while minimizing carbon emissions. KEPCO will also commercialize technologies of eco-friendly thermoelectric power plants like IGCC and CCS and be active in the hydroelectric power market by capitalizing on affluent water resources of Latin America and Southeast Asia.



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# **Resource Exploration**

Amid an increasingly growing competition for natural resources due to fierce resource nationalism and resource-rich nations control over resource exports, KEPCO has been very active in exploring overseas resources in order to secure stable supply of fuels and hedge against fluctuating fuel costs.

For example, in 2010, KEPCO's six major initiatives including a takeover of the Bylong mine in Australia have secured 24 million tons of bituminous coal per year and another four projects including acquisition of stakes in Canada-based Denison have acquired in 1,040 tons of uranium per annum, which has made KEPCO's selfsufficiency rate go up to 28%, 11% up from 17% in 2009.

Resource explorations offer a stable supply of fuels for power generation and create extra profits arising from takeovers of overseas mines.

KEPCO's resource explorations aim at KRW 5.4 trillion in sales, or a 60% self-sufficiency rate of bituminous coal and uranium by 2020. In order to get there, KEPCO's move will go beyond minority ownership, operating mines by itself and investing not only in Australia and Indonesia but North America for flaming coal and not only in Canada but Africa, Europe and Central Asia for uranium. For the good of stable resources supply and project risk management, the optimum portfolio will be created per each investment area and each mining development stage of exploration, development and production.

#### STATUS OF OVERSEAS PROJECTS

Kazakhstan: Balkhash power plant, EPC project for power plant modernization 🔳

Jordan: Al Qatrana power plant (373MW) 🔎 Niger: Uranium development 🔳 Nigeria: Egbin power plant 🔳

China: Gansu wind power plant (99MW) Neimenggu wind power plant [1,122MW]

- Shanxi power plant and coal mining project (5,990MW)
- UAE: Shuweihat S3 gas-fired combined-cycle [1,600MW] 🖲 🕒 /UAE nuclear power plant (5,600MW)
- Saudi Arabia: Rabigh power plant [1,204MW]
- Indonesia: Bituminous 💿

coal development

Philippines: Malaya thermal power plant [650MW] Illijan combined cycle [1,200MW] Naga thermal power plant (448MW) Cebu thermal power plant (200MW )

Australia: Bituminous coal development

Canada: Uranium development

Mexico: Norte IV gas-fired combined cycle [433MW] Dominican Republic: Distribution EPC project

On top of that, KEPCO will promote a trading business in a bid to broaden its regional horizons and make the best use of alreadydeveloped resources.

Indonesia Bayan Resources Mines

**Overseas Business** 35 Management Innovation





# **Transmission and Distribution**

In the field of transmission/distribution systems, KEPCO has a world-class competency in the loss rates of transmission/distribution and electrical load factors. There are good examples showing KEPCO's technological competency: Kazakhstan's 140 million dollar EPC project of building transmission systems and substations and Dominica's 45 million dollar EPC project of improving distribution systems. Like this, KEPCO's overseas business is increasingly growing.

# **Smart Grid**

KEPCO is focused on smart grid projects to reduce greenhouse gas (GHG) emissions, improve energy efficiency and promote the use of new & renewable energy. "Smart grid" refers to an electric power grid that incorporates information & communication technologies to maximize efficiency for greater eco-friendliness.

Korea was named a leader in the smart grid area at the Major Economies Forum on Energy and Climate in July 2009. At a national level, ground was broken for a smart grid test-bed on Jeju Island in





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August 2009, and a national roadmap for smart grids was announced in January 2010. KEPCO has participated in all five areas of the Jeju smart grid test-bed project (2009.12~2013.5).

We are working to operate an integrated control center as well as develop smart grid technology and service models, laying the foundation for building a smart grid befitting Korean conditions.

KEPCO's smart grid business has five central pillars: reduction in peak demand and load leveling, smart power grid, CO2reducing renewable energies, standardization of a smart grid and establishment of an information protection system and future growth engines.

KEPCO has outstanding technologies in the smart grid such as transmission/distribution automation technology. Coupled with technical prowess, KEPCO develops customized business models per regions and countries to promote exports. Its smart grid business targets are to secure a foothold based on its smart grid test-bed study by 2013, establish the broad smart grid by 2020 and build the world's first nation-level smart grid by 2030.

#### SMART GRID TEST BED ON JEJU ISLAND

# **5 AREAS OF TEST BED**

## Smart Power Grid 01 • Make Transmission and Distribution Lines Smart • Build a Real-time Remote Monitoring System Smart Place 02 • Build AMI that Allows Two-way Data Exchange • Lay the Foundation for Energy Efficiency based on Demand Response 03 Smart Transport • Build EV Charging Infrastructure • Build a Central Control System Smart Renewable 04 Connect New & Renewable Energy to Power Grid • Validate Energy Storage Facilities Connected to Power Grid Smart Elec. Service 05

- Develop Various Price Plans for the Establishment of Electric Power Service System
- Develop Service Models



# **Management Innovation**

Continuous improvement of management efficiency due to a pioneering organizational culture created by company-wide innovative activities.

Thanks to its innovative management system and enterprise innovations, KEPCO was able to improve its management efficiency by creating an environment in which constructive internal competition takes place and employees take on challenges.

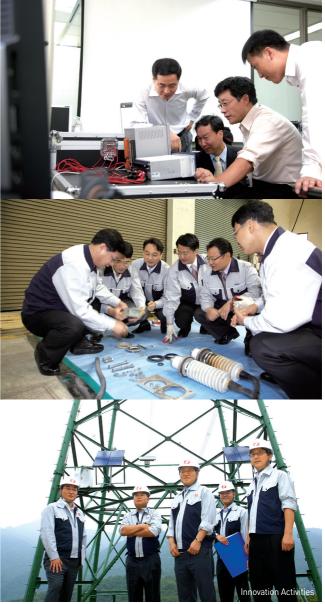
We carried out innovation projects based on the Tear Down & Redesign (TDR) and Six Sigma ( $6\sigma$ ) Concepts, and we also organized direct communication between management and employees.

These efforts bore tangible results: we were able to lead the successful export of nuclear power plants to the UAE in and receive the highest mark in the Government Performance Appraisal conducted by Ministry of Strategy and Finance for four consecutive years.

To be more concrete, the innovations have covered a total 257 TDR tasks from 2009 to 2010, making direct/indirect expected effects of KRW 928.4 billion. As of the end of August 2011, 100 tasks are being implemented. Going forward, we will continue to make substantial progress in the currently ongoing innovation projects, creating a unique innovation model in the process.

Item	2009	2010	Total
No. of Tasks	142	115	257
Expected Effects (KRW 100 million)	6,137	3,147	9,284





# Harmony with the Environment

ENVIRONMENTAL PERFORMANCE

# KEPCO'S EFFORT FOR COEXISTENCE WITH NATURE AND A BRIGHT GREEN FUTURE

KEPCO, as a company that performs low carbon and green management and leads in green growth, established the Integrated Environmental Management System to focus on developing green technologies and to commit to securing electric infrastructure. Moreover, KEPCO understands the seriousness of climate change and makes contributions to making a clean environment by joining forces to respond to crisis in cooperation with its affiliates, and by performing activities to reduce green house gas emissions.

# Environmental Management Expectations

KEPCO, as a producer and supplier of electric power, the engine of national competitiveness, will comply with the Environmental Management Expectations stated below. With these Environmental Management Expectations in place, KEPCO will fulfill social responsibilities and strengthen environmental management capacity so as to achieve the vision of being a "Global Top Green &Smart Energy Pioneer."

### • We will enhance eco-efficiency by implementing environmental management vigorously.

- 1. Comply with environment-related laws and regulations, and establish, operate and upgrade a globally-accepted environmental management system to accomplish environmental management goals.
- 2. Provide proper education and training to ensure active participation of employees in environmental management activities and strengthen communication with stakeholders.
- 3. Promote the reuse of resources and the use of eco-friendly products to reduce the environmental footprint and contribute to building a society that recycles resources to a high degree.

## • We will strive to make the power supply chain more environmentally-friendly, from production and transportation to sales and consumption.

1. Produce and supply electricity in an environment-friendlier way to improve the sustainability of our society.

- 2. Construct and operate facilities in harmony with local communities, and improve the efficiency of operation and maintenance to minimize power loss.
- 3. Carry out energy-saving activities such as load control and energy efficiency programs, enhance the efficiency of energy use at a national level.

## • We will understand and aggressively respond to climate change, a major environmental issue worldwide.

- 1. Play a leadership role in a joint response to climate change at the group level.
- 2. Seek the use of eco-friendly energy, energy saving and equipment improvement to reduce GHG emissions continuously.
- 3. Support activities to reduce indirect GHG emissions from the use of electric power through systematic power demand control and more efficient transmission and distribution.

With the importance of environmental management in mind, each and every employee, from the CEO down, is fully committed to complying with these expectations.



# Environmental Management System

Acquired an international certificated for a company-wide environmental management to become a global composite energy group taking the lead in creating environmental values.

In October 2007, KEPCO drew up a "Mid- to Long-term Environmental Management Master Plan," designed to conduct environmental management in a more systematic way in pursuit of sustainable development.

The mid- to long-term goal of our environmental management is to enhance environmental management capacity so as to become a global top green & smart energy pioneer. To this end, we have executed strategies and action plans in four areas according to the Environmental Management Master Plan.



# ROADMAP FOR INTEGRATED ENVIRONMENTAL MANAGEMENT

FOUNDATION-LAYING	GROWTH & DEVELOPMENT	SETTLEMENT OF ENVIRONMENTAL MANAGEMENT SYSTEM
2007	2008~2010	2011~2015
<ul> <li>Establishment of Environmental Management Master Plan</li> <li>Introduction of Environmental Management Programs (ISO14001, Environmental Performance Evaluation)</li> <li>Enhancement of Waste discharge management</li> <li>Establishment of CDM business plan</li> </ul>	<ul> <li>Set-up of the Integrated Environmental Management</li> <li>ISO14001 Certificate for all locations in operation</li> <li>Eco-friendly Power Supply Chain</li> <li>Development of CDM business</li> </ul>	<ul> <li>Settlement of the Green Management System</li> <li>Response to the Management of Green-house gas &amp; Energy goals</li> <li>Acceleration of Green Technologies</li> <li>Creation of Green Profit (CDM)</li> </ul>

# **Environmental Management System Certification**

KEPCO obtained the Environmental Management System (ISO14001) Certification for five locations in operation in 2007 and then for all locations in operation in 2008. In 2010, KEPCO is trying to expand the extent for getting certificates into nuclear power plant construction and operational management areas, thereby leading the eco-friendly management mechanism.



**ENVIRONMENTAL PERFORMANCE** 

# Development of Low-Carbon Green Power Technologies

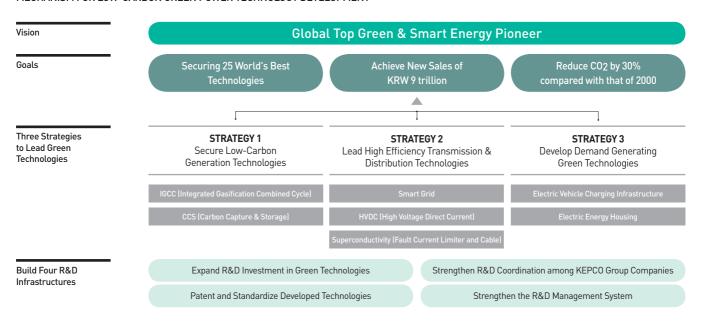
Become a global green company leading the low carbon green technology industry by setting and accomplishing strategies for development of green technologies and mid- to long- term road map.

KEPCO, according to its vision, established development strategies and a road map for major green technologies in order to lead a low carbon green technology industry, and is committed to proactively responding to climate change and to creating a new growth engine in the electric power industry.

In that regard, KEPCO plans to achieve goals of KRW 9 trillion in sales in 2020, securing the world's best 25 core technologies, and CO<sub>2</sub> reduction of 30% compared with the year 2000. To do that, KEPCO will do its best to secure green technologies in their early stages and successfully commercialize them by strategically investing money of approximately KRW 3 trillion and by encouraging researchers to do their jobs. To obtain the core technologies in the earlier stage, KEPCO is intensively controlling project progress rate regarding technology development. Consolidated progress rate in 2010 was 21.15% (29.3% accumulated), and regular rolling about specific strategies is being made through strategically-organized meetings for technology development every quarter.

In addition, for some tasks which technologies have already been secured, such as developed infrastructure for battery charge in electricity vehicles, we will set a specific business plan, and furthermore, explore a new business item related to green technologies.

# MECHANISM FOR LOW-CARBON GREEN POWER TECHNOLOGY DEVELOPMENT





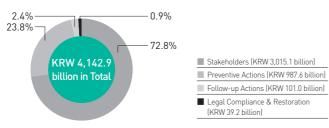
# **Better Environmental Efficiency**

KEPCO always tries to improve environmental efficiency by joining forces to reduce energy consumption by all employees while at the same time complying with laws and regulations related to the environment.

KEPCO pushed forward an effort to substantially save energy in accordance with the government's policies on energy reduction in 2010. To encourage employees to have energy-saving habits, we've emphasized the importance of energy saving. For example, we've designated certain periods for reducing energy consumption during summer and winter. More specifically, we came up with improvement measures through diverse activities including putting Eco-Life Style in place (for example, compliance with an appropriate indoor temperature), and detection of energy usage in offices so that we have the foundation on which systemization of an energy saving scheme and upgrading of energy efficiency can be possible. In addition, we will gradually replace approximately 30% of all lighting facilities with high-efficient LED-based lighting facilities by 2012. In line with the replacement, entire lighting systems using incandescent and halogen lights, which have the lowest energy efficiency will be replaced first, and fluorescent lighting systems, mostly installed in offices, are being replaced with LED according to the company's annual plan.

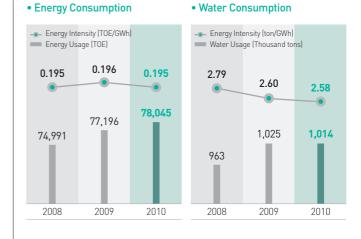
# **Environmental Spending**

In 2010, total environmental spending calculated in accordance with KEPCO's environmental accounting system was KRW 4,142.9 billion, equivalent to 10% of total sales. Much of the outlay was intensively invested in the procurement of construction of eco-friendly power facilities and new & renewable energy equipment. In 2011, the environmental accounting system will be firmly in place and be used strategically, allowing top management and stakeholders to use environmental accounting data in the decision-making process and improve environmental value.



# **Energy & Water Consumption Reduction**

In 2010, KEPCO consumed 78,045TOE of energy and 1,014,000 tons of water in total. Thanks to the wider use of high-efficiency equipment and more efficient use of facilities, we achieved the energy intensity (energy consumption/electricity sales) of 0.195TOE/GWh, which was a 0.001TOE/GWh lower than the target of 0.196TOE. Water intensity was 2.58tons/GWh, down 0.02ton/GWh from 2009, and no water was recycled; all was discharged.



## **ENERGY & WATER SAVING EFFORTS IN 2010**

Strengthen Energy Conservation System	<ul> <li>Reinforce the activities of Energy Conservation Committee (chaired by CTO)</li> <li>Designate 'Energy Guardian' to strictly control the temperature of air conditioners</li> </ul>
Enhance Energy Use Efficiency	<ul> <li>Achieve reduction target through Total Energy Consumption Volume System (less than average for most recent 2 years)</li> <li>Increase use of high-efficiency equipment (total 65.4MW) and energy-saving office appliances (5,654 units)</li> </ul>
Raise Energy Conservation Awareness	<ul> <li>Conduct energy saving campaigns</li> <li>Provide education to share best practices of energy saving to all locations of operation</li> <li>Have energy officers participate in professional training</li> </ul>

# **Environmental Impact of Company Vehicles**

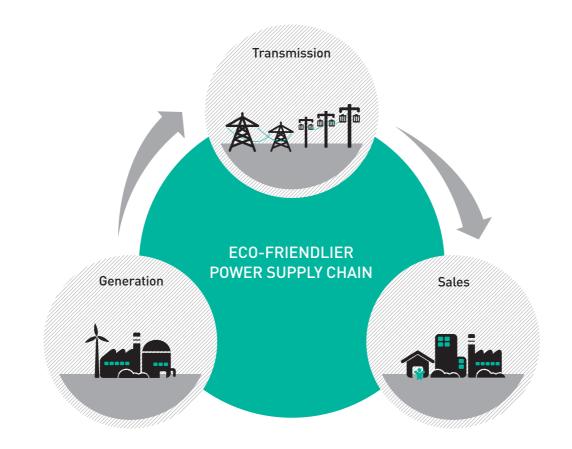
KEPC0 took steps to mitigate the environmental impact of company vehicles. In 2010 the vehicle fleet totaled 3,178, up 21 vehicles from the previous year. Of these, 1,738 were passenger cars, and 1,420 (81.7%) of these cars were eco-friendly models such as light and hybrid vehicles. At least 80% of all newly purchased vehicles will be light or hybrid models. Fuel consumption for company vehicles in 2010 was 7,163,000 liters, and fuel economy was 7.13 km/l.

# • Eco-Friendly Company Vehicles

ltem	2008	2009	2010
Passenger Cars (No. of Units)	1,741	1,742	1,738
Light Vehicles (No. of Units)	1,359	1,359	1,360
Hybrid Vehicles (No. of Units)	60	60	60
Eco-friendly Vehicles (No. of Units)	1,419	1,419	1,420
Portion of Eco-friendly Vehicles (%)	81.5	81.5	81.7

# **Eco-Friendlier Power Supply Chain**

KEPCO & GENCOs established an eco-friendly management system throughout the entire process of generation, transmission and distribution to make the electric power supply chain more efficient and valuable.



# •

Eco-friendly power generation phase; With the expansion of usage of clean energy and operation of facilities for desulfurization, denitrification and precipitator, substantial minimization of air pollution and completely dealing with waste water using integrated waste water treatment facilities.

#### ENCOURAGE ECO-FRIENDLY MANAGEMENT AT GENCOs

- Establish an Integrated Environmental Management System
- Construct and Operate Facilities in Harmony with Local Communities
- Improve Environmental Efficiency

Eco-friendly power transportation phase; Protecting ecosystems by selecting construction sites based on scientific ground, constructing power generation facilities using eco-friendly materials and methods, substantially reducing loss of power during transmission and distribution and controlling electromagnetic field.

#### EXPAND THE CONSTRUCTION OF ECO-FRIENDLY FACILITIES

- Secure the Objectivity and Transparency of Site Selection Process
- Expand the Construction of Eco-Friendly Facilities in Harmony with Local Communities

#### STRENGTHEN THE OPERATION AND MAINTENANCE OF FACILITIES

- Lower T/D Loss
- Manage Electromagnetic Field and Preserve the Ecosystem

Eco-friendly power sales phase; Improving electricity usage efficiency through development and distribution of high efficient equipment, stabilizing supply and demand of power based on proactive and systematic calculation of electric power needs, and encouraging energy conservation.

### CONTROL POWER DEMAND IN A MORE REASONABLE WAY

Ensure efficient control of peak demand
Improve the Efficiency of Electricity Use

# Generation

KEPCO and GENCOs established a close collaboration among the generation, transmission and distribution sectors to make electric power supply chain more eco-friendly.

# ENVIRONMENTAL INVESTMENT

The GENCOs acquired the ISO14001 certificate for all locations of operation in 2009 and made environmental investments totaling approximately KRW 460.6 billion in 2010.

# CONSTRUCTION OF FACILITIES IN HARMONY WITH LOCAL COMMUNITIES

The GENCOs assess in advance how the construction or expansion of power plants will impact the natural environment and traffic. They also conduct post environmental impact assessments for five years after construction is complete, reporting the results to the government every year.

# IMPROVED ENVIRONMENTAL EFFICIENCY

The GENCOs expanded the use of clean energy and operating systems to reduce emissions of SOx, NOx and dust from the power generation process.

The GENCOs has operating facilities that physically and chemically treat wastewater for reuse or discharge. Moreover, 100% of the desulfurized gypsum generated from coal-fired power plants was reused in cement. Efforts like these help encourage recycling in society.

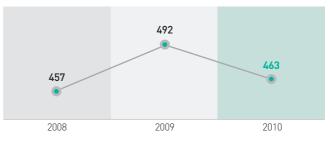
In 2010, GENCOs installed de-NOx, de-sulfurization and dust collecting facilities on every generator to minimize air pollution. Therefore, CO<sub>2</sub> emissions fell 5.9% year after year. Turning to water quality, chemical oxygen demand (COD) decreased by 14.4% and suspended solids (SS) fell by 14.7%.

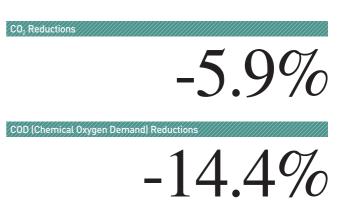
## AIR POLLUTANT EMISSIONS



• CO<sub>2</sub> Emissions

Unit: kg/MWh





WATER POLLUTANT EMISSIONS

• COD	Unit: g/MWh
2008 2009 2010	0.088 0.160 0.137
• SS	Unit: g/MWh
2008 2009	0.041
2010	0.058

SS (Suspended Solid) Reductions

-14.7%

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# **Transmission**

KEPCO constructed transmission and distribution facilities necessary for a stable electric power supply and runs them in an effective way. Also, diverse efforts are being made. For example, having objectivity and transparency of site selection for electric facilities in order to pursue an eco-friendly process of the transformation of electricity, expansion of construction of eco-friendly electric facilities harmonizing with local communities, reduction in loss rate through transmission & distribution, protection of ecosystem, and management of the magnetic field.

# OBJECTIVE & TRANSPARENT SITE SELECTION PROCESS

To increase objectivity and transparency of site selection for construction of transmission & substation facilities, we expanded the scope where sophisticated scientific techniques are needed, and all construction businesses can be started after considering results from a site selection survey conducted by residents since Jan. 2009. Objectivity and transparency are secured when it comes to decision on site selection that is made in Site Selection Committee by local residents, local government, district council, experts and etc.

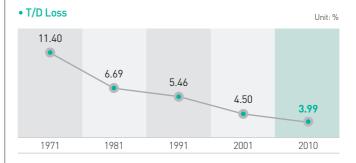
In addition, beginning in 2008, a presentation for residents prior to starting a construction should be made, and expanding its targets into all business projects just for businesses that an environmental impact assessment is required.

The "Open House" system was implemented in September 2010. This system is designed for additional presentations for some residents who do not attend the first presentation.

# ECO-FRIENDLY CONSTRUCTION OF ELECTRIC POWER FACILITIES

KEPCO continuously expands construction of eco-friendly electric facilities by developing eco-friendly materials and construction methods harmonized with the surrounding environment. By applying the Spacer Wiring Method and Ground Method, we were able to contribute to beautification of the environment thanks to reduction of occupied areas where wiring is covered. And we make contributions to protect the environment that was contaminated due to chemical insulating oil using plant-based insulating oil transmission. In addition, we've tried to revise construction laws and regulations, especially by making space inside architectures on the ground to improve the efficiency of resource utilization. By doing so, we were able to eliminate obstructions to walking caused by equipment installed on the ground, and improve landscape at the same time. In addition, we implemented a "Clean-Up Day" campaign, cleaning electric facilities on the ground to make a contribution to eco-friendly operations of electrical facilities.

#### Downtown Underground Transmission Facilities Unit: % 97.4 2008 97.7 2009 2010 97.4 Underground Distribution Facilities Unit: % 13.3 2008 2009 13.8 2010 14.3



# EFFORTS TO LOWER T/D LOSS

By developing and distributing high efficiency devices and equipment such as low loss wiring and transmitters and by maximizing capacity of transmission and distribution lines, we are doing our part to reduce the loss rate of electric power. As a result, we reduced the loss rate of transmission and distribution to 3.99%, the lowest in the world, and the need for construction of the additional generation facilities, while at the same time contributing to reduction in the emissions of green house gases.

# ELECTROMAGNETIC FIELD AND ECOSYSTEM PROTECTION

As electromagnetic field generating from electric facilities has low frequency of 60Hz, it does not deliver electricity far away, and electric power is sharply lower depending on distances. KEPCO, for the sake of operation of the safe electric facilities, operate them with a relatively low level, one sixth of that set in electric industry in Korea. In addition, to relieve conflicts and anxiety against safety of the electromagnetic field, and to provide exact information for the people, we run a webpage (www.emfsafe.kr) about the industry and Understanding Promotion Hall, and implemented a Measurement Service System about the electromagnetic field. In addition, we do continuous research to discover scientific findings about the electromagnetic field, manage their policies in a systematic manner and gather opinions through diverse channels. The total area of electric power facilities in ecosystem protection areas is 48km<sup>2</sup>, and we banned the construction of new transmission lines in designated ecosystem protection areas to help maintain bio-diversity.

# **Sales**

KEPCO has been committed to the stable supply of electric power through proactive and systematic demand control and endeavored to raise the efficiency of equipment, contributing to the nation's energy conservation policies. Through demand control, KEPCO reduced or distributed 3,151MW during peak demand; a figure is equivalent to the construction of three 1,000MW nuclear units and covering 86% of the nation's total demand.

## MAJOR SUPPORT PROGRAMS FOR POWER DEMAND CONTROL

#### Load Control

- Demand control during the fixed  $\longrightarrow$  KRW 640~780/kW adjusted period of time
- Weekly forecast demand control  $\longrightarrow$  KRW 300~480/kW adjusted
- Emergency saving → KRW 270/kW saved → KRW 350~480 thousand/kW reduced
- Ice storage cooling system
- Direct load control
- Remote control system about heating and cooling facilities inside the building
- Peak demand controller

# **Efficiency Improvement**

→ KRW 1.50 million/unit

subsidy

device

- → KRW 6,500~19,500/unit installed • High-efficiency lighting device
- High-efficiency inverter
- → KRW 0.107~4.86 million (by capacity)
- High-efficiency transformer
- → KRW 0.4~5.3 million (by capacity)

Base subsidy (KRW 375/kW)+Control

KRW 30.000 per kW+Control support/

Consumed electricity used for control

# EFFECTIVE MANAGEMENT OF PEAK DEMAND

We designate 15 days for controlling the demand for electricity for a certain period when demand for electricity is high. As a result, we reduced 1,648MW on Friday 29<sup>th</sup> August, 2010, the peak day of all seasons and 956MW per day on average by implementing a Period Forecast System for the first time in January, 2010. In response to changed circumstances on supply and demand, we introduced 'Flexible Operation System for Forecast Target' that control operational factors such as implementing timing and the required amount of reduction thereby increasing effectiveness of load management. Also, when it comes to managing electric demand in an efficient manner, we accomplished a goal of reduction of 3,151MW in total by expanding distribution of remote control system for heating and cooling inside the building.

# TYPES OF DEMAND CONTROL

1	PEAK CLIPPING	2	PEAK SHIFTING
3	VALLEY FILLING	4	ENERGY SAVING

강발전력	공급능력	최대전력	(24 : MM, 5)		N SALES		
131	76,000	71,300	4,700 (6.6)	417 417 518	Mar II	1	2
221	75,910	71,840	4,070 (5.7)	53		1	P

#### SUMMER PEAK DEMAND CONTROL IN 2010

Strengthened peak load management	•   •   •   t
Expanded cooling demand control	•

<u>elated te</u>chnolo

- First implementation of winter period forecast for stabilization of demand and supply
- Improvement of restriction on required amounts thanks to reduction in real load by adjusting required
- Promoted the use of ice storage cooling systems and Peak demand controller: 98MŴ
- Introduction of remote control system for heating and cooling inside the building, and laying a foundation for a distribution scheme by establishing a system

#### Demand Control Actual

			Unit: MW
Item	2008	2009	2010
Before Demand Control	68,738	70,118	73,548
After Demand Control	62,794	63,212	69,886
Demand Control Actuals by KEPCO	4,104	4,999	3,151
Demand Control Actuals by Other Organizations	1,840	1,907	511

# HIGHER ELECTRICITY USE EFFICIENCY

As part of the efforts to achieve low-carbon green growth, KEPCO expanded the use of new high-efficiency equipment such as LED lighting. In 2010, we started to introduce LED illumination and LED emergency lighting and expand an intelligent illumination autocontrol system. We also strengthened our targeted marketing to integrate eco-friendly high-efficient devices in the design from the beginning of construction based on closer relationship with public enterprises in the construction industry. With the wider use of highefficiency devices, we lowered power consumption by 378,613MWh, translating into a reduction of 160,529 tons in CO<sub>2</sub> emissions.

In the future, we will continue flexible demand control in connection with the electricity reserve and establish a web-based system for regular demand control. We will also remain committed to the wider use of eco-friendly, high-efficiency devices.

# **Resource Recycling & Hazardous Substance Control**

KEPCO fulfills its responsibilities to respond to environmental regulations and conserve the environment through recycling of resources, purchasing of green products, and control over hazardous materials.

# PROMOTION OF RESOURCE RECYCLING

KEPCO has continued to increase resource recycling so long as power supply stability remains unaffected. This is part of an ongoing effort to address global environmental issues, fulfill social responsibilities for environment preservation. Most waste materials are from the transmission and distribution sector, and include concrete power poles, transmission towers, insulators and electric cable. They are highly valuable as resources. Currently we maintain 100% recycling rate and will continue to find new ways to recycle waste equipment and materials.

## Total Material Usage

ltem	2008	2009	2010
Concrete	514,795	494,809	432,196
Metals	94,250	83,221	62,907
Ceramic	4,510	2,497	1,816
Electric Cables	45,410	36,428	30,811
Others	7,395	5,536	8,804
Total	666,360	622,491	536,534

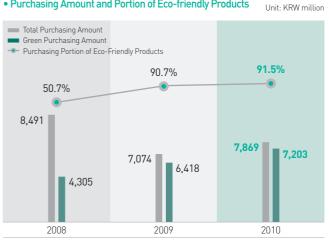
## Wastes Generated and Recycled by Type

ltem	Generation (Tons)	Recycling (Tons)	Recycling Rate (%)
Concrete	204,835	204,835	100
Metals	35,651	35,651	100
Ceramic	7,179	7,179	100
Electric Cables	25,589	25,589	100
Others	439	439	100
Total	273,693	273,693	100

## Resource Reuse

2008	 93.9
2009	92.1
2010	100

## • Purchasing Amount and Portion of Eco-friendly Products



# GREEN PURCHASING

Purchasing eco-friendly products is a priority. In 2010, we purchased KRW 7.2 billion worth of eco-friendly products, accounting for 91.5% of total related supplies. Going forward, we plan to add additional items to eco-mark labeled suppliers in the pre-qualification process and expand green purchasing in various ways.

# CONTROL OF PCBs

Unit: %

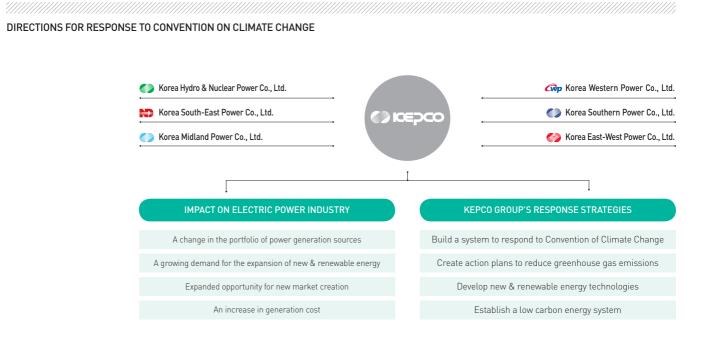
KEPCO deals with accumulated quantities of wasted transformers by forming an additional task force team to completely eradicate Poly Chlorinated Biphenyls (PCBs), and establishes a PCBs controlling program to handle it safely. The accumulated amount of 500,666 fleets to be analyzed, and 153,209 fleets to be dealt with has been done. Therefore, almost of all of the piled waste transformers has been controlled. We will continue to make this effort to manage PCBs in a safe and thorough manner ranging from removal, storage, analysis, disposal, selling of transformers.

Puechasing Portion of Eco-Friendly Products

91.5%

# **Response to the Convention on Climate Change**

KEPCO responds to climate change through utilization of a sustainable energy system by actively joining efforts to preserve the environment and live up to changes in the energy paradigm.



# MECHANISM TO TACKLE CLIMATE CHANGE



# TECHNOLOGY & CLIMATE CHANGE COLLABORATION COMMITTEE



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#### JOINT RESPONSE AT THE GROUP LEVEL

When the Kyoto Protocol took effect in February 2005, Korea was categorized as a non-Annex 1 country. However, Korea can now be included among the Annex 1 countries under the post Kyoto climate regime, which becomes effective from 2013. The electric power industry accounted for approximately 29% of CO<sub>2</sub> emissions. If Korea is obliged to reduce GHG emissions, it will have a huge impact on KEPCO operations. Against this backdrop, KEPCO and the six GENCOs are considering the change as a new opportunity as well as an operational risk; striving further to ensure effective response.

KEPCO and the GENCOs re-organized and expanded the existing Climate Change Collaboration Committee to form the Technology & Climate Change Collaboration Committee. This is part of the efforts to be proactive in preserving the earth's environment and establishing a sustainable energy system in line with a changing energy paradigm (Jun. 2008). The Committee is chaired by the CTO of KEPCO and attended by top management of the GENCOs. Two working-level groups on climate and environment change, and renewable energy are in place under the Committee.

In July 2005, KEPCO and the GENCOs signed an agreement with the Korean government regarding the supply of renewable energy. The agreement called for a KRW 520 billion investment in renewable energy facilities with a 63MW output equivalent over 3 years (2006-2008). During the second term of the contract (2009-2011), we will invest a total of KRW 1.2 trillion in facilities with a total capacity of 503MW.

## JOINT RESPONSE TO CLIMATE CHANGE AT GROUP LEVEL

Joint Response	<ul> <li>Completed the validation of GHG inventory</li> <li>Built an on-line system to control GHG emissions at group companies</li> </ul>
Future Plans	<ul> <li>Set a voluntary target to reduce GHG emissions for KEPCO and GENCOs</li> <li>Provide local and overseas training on carbon credit trading</li> </ul>

# NEWS

KEPCO, CDM Program in Distribution		0.		nine skuller i Bellani av Price Stati Ana Suarter
Becomes 1st in the World to be Registered with UN		All Anno Anno Anno Anno Anno Anno Anno A	Angelin Andrew Marineman Andrew Andrew Marineman Andrew Marineman Andrew Marineman Andrew Marineman Andrew Marineman Andrew	Procession of the second
	UN CDM Website			Property of Page of State

KEPCO's "Distribution S of CDM programs. The CDM program registered by KEPCO is the 1st of its kind in the power distribution category among the 3,497 CDM programs currently registered with the UN.

SFs (sulfur hexafluoride) gas is mostly used in circuit breakers and switches found in power transmission or distribution networks because of its excellent electric insulation property. It is harmless to human beings but accelerates global warming with global warming index that is 23,900 times greater than CO<sub>2</sub>. The CDM (Clean Development Mechanism) program aims to earn marketable carbon credits by reducing greenhouse gas emissions. The Distribution Sector SF6 Gas Emission Reduction CDM Program seeks to retrieve at least 97% of SF6 gas, which used to be released into the air when distribution switches were discarded, and recycle it after refining it to reduce greenhouse gas emissions drastically. KEPC0 expects revenue of KRW 30 billion from carbon credit sales for the next 10 years by reducing greenhouse gas emissions by 150,000 tons every year with SF6 gas retrieval/recycling technology. Likewise, refined SF6 gas can be recycled into gas-insulated distribution switches, etc., which will translate into the further reduction of SFs gas procurement costs by KRW 2.5 billion. The CDM program is made more meaningful by the fact that KEPC0 implements the program exclusively with home-grown technologies without relying on technology or funding from other developed countries and owns 100% of the carbon credits to be earned.

In the meantime, KEPCO plans to utilize the CDM program not only to avoid management risks resulting from the greenhouse gas emission reduction obligation following 2013 but also to make a dent in the global CDM market such as Southeast Asia, based on its CDM implementation know-how and lead the CDM business with SF6 retrieval and recycling technology. KEPC0 intends to develop a master plan to ensure a systematic CDM implementation and establish a working group by allowing both in-house and global experts in power transformation and distribution to participate in, and come up with mid- to long-term strategies covering CDM program development in Korea and elsewhere in the world, carbon asset management system, and carbon credit trading.

# **GHG Reduction Efforts**

KEPCO commits to reduce the amount of green house gases by establishing a GHG emission control system commensurate with international standards, and through verification of GHG inventory.

GHG emitted by KEPCO and the six GENCOs can be mainly classified into two types: direct emissions, such as CO<sub>2</sub> from the use of fossil fuels during power generation and SF<sub>6</sub> emissions from switches in the transportation process, and indirect emissions from T&D loss. In 2010, GHG emissions from the KEPCO group, which includes the six GENCOs, totaled 182 million tons, 2 million tons of which came from KEPCO. KEPCO's emissions are mainly direct SF<sub>6</sub> emissions and indirect emissions from T&D loss.

In 2007, we established a GHG Emission Data System in accordance with international standards and in October 2008 system reliability was verified through the "GHG inventory" on emission statistics control and emission volume (KEMCO GHG Certification Office).

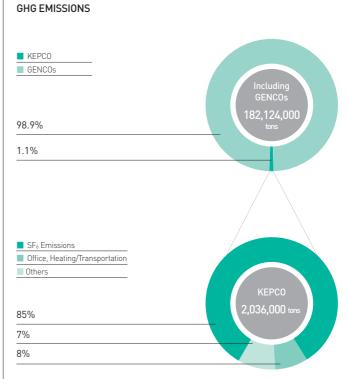
For the first time as a public enterprise, we acquired a carbon footprint certificate from the Ministry of Environment, showing the CO<sub>2</sub> equivalent for GHG emissions from T&D lines. Meanwhile, KEPCO has been operating an online GHG control system at the group level in a bid to collect and provide accurate GHG emission data since February 2010.

KEPCO is also promoting the CDM business at home and abroad as a way to proactively cope with the Convention on Climate Change. For example, our wind power business in China has brought a carbon credit of 940,000 tons. In Korea, we acquired a carbon credit of 150,000 tons per annum through gas-recovery equipment to reduce SF6 used for switch insulation.



GHG Emissions in 2010 (including the six GENCOs, million tons)

182



#### • GHG Emission Data System

Scope	• KEPCO and Six GENCOs
Progress	<ul> <li>Jan.~ May 2007: Developed and validated an emission data program</li> <li>Sept. 2007: Set up the guideline for building up emission data</li> <li>Oct. 2008: Validated GHG inventory</li> <li>Feb. 2010: Built IT-based GHG control system at a group level</li> </ul>

# STRATEGIES FOR CDM PROJECTS

# CREATION OF NEW GROWTH ENGINES Strategy I Strategy II Turn projects at home and abroad into CDM projects Build a carbon asset management system (CAMS) • Accumulate project development experience and expand project participation • Acquire effectively carbon credits and nurture trading capacity

# Partnership with All Stakeholders

SOCIAL PERFORMANCE

# **KEPCO'S COMMUNICATION AND PARTICIPATION FOR WIN-WIN GROWTH AND SHARING**

KEPCO fulfills its responsibilities as a corporate citizen by enhancing its management transparency and through active communication with the interested parties. We will do our part to give more satisfaction to customers, provide a good working environment for executives and employees, try to establish a futureoriented relationship between labor and management, and more importantly, we will play a key role in strengthening relationships with partners for mutual cooperation and common growth, and in reaching out to the needy in local communities to make a better society to live in together.

# **Strengthening Partnership with Stakeholders**

KEPCO commits to pursue a sustainable development in our society by considering the ways to achieve a win-win growth in cooperation with interested parties in every activity.

# **Protection of Customer Rights and Interests**

KEPCO runs a Customer Satisfaction Advisory Committee, a Customer Panel and an Advisory Committee to protect the rights and interests of customers and to manage its businesses based on the needs of customers. To facilitate such committees, we communicate with customers through a regular dialogue channel to build close relationships with customers.

With regard to a stable use of consolidated VOC system, we introduced the VOC operational index by each business area, and an alarm system to analyze VOC daily/monthly/quarterly/yearly so that we reflect the needs of customers on a regular basis. In addition, we run a "Customer Suggestion" program in a cyber office all year to live up to current IT trends such as use of the Internet, spread of mobile devices and do on. In 2010, we accepted 175 cases of customer suggestions so that we were able to improve our sales system accordingly.

In the meantime, we operate a Power Consumption Consulting System (PCCS) to provide information on electricity consumed in real time and how to analyze for high-voltage supplied customers. In 2011, we expanded the use of PCCS to operate the i-SMART system so that we are able to provide information on the consumed amount and fares, thereby inducing efficient electricity use and fare saving.

KEPC0 conducts its own customer satisfaction survey two times a year to provide high quality services for customers. The results and feedback of the survey have been utilized in improving the quality of services. In addition to that, we reflected the changed conditions related to services on the site. For example, we improved the monitoring system measuring services on the customer level, improved the environment where electricity services are provided so that we were able to satisfy customers' needs. As a result, KEPC0 has gained a reputation of "the highest level" for 12 consecutive years in the survey of customer satisfaction in the category of public enterprises, presented by the government in 2010.

# • Status of Customer Satisfaction Advisory Committee

	Advisory Committee	14		Advisory Committee	173
Branch Offices	Customer panel	47	Members	Customer panel	396
(No. of branch offices)	• Joint Councils	24	(Person)	• Joint Councils	662
	• Total	85		• Total	1,231

<ul> <li>Customer Satisfaction Survey</li> </ul>	Unit: Points
2008	90.8
2009	95.7
2010	98.1

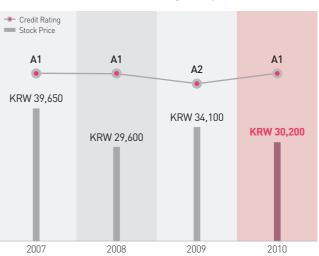


KEPCO Cyber Branch

# **Shareholder Value Management**

KEPCO posted a record USD 61.4 billion net loss in 2009 and 2010, as the management of the environment aggravated such as increased fuel costs according to a series of hikes in energy prices. Therefore, we were not able to pay a dividend for 3 years in a row despite a high dividend payout ratio of 20% in the past. However, we made great efforts to meet the shareholders' right to know and to recover our corporate reliability by conducting diverse IR activities regarding our management status, such as IR by management, investment presentation, conference calls to announce performance results, interviews with investors and so forth. As a result, KEPCO was rated "A1," the same rating as the Korean government, by Moody's in April 2010.

#### Trend of Stock Price and Credit Rating (Moody's)



# **Stakeholders Right to Know**

KEPCO is committed to the stakeholders' right to know and continues to improve the transparency of business operations. To this end, we make public key information in various ways, including management disclosure, integrated disclosure, corporate disclosure and information disclosure.

# CORPORATE DISCLOSURE

We pursue proactive corporate disclosure in order to meet the principle of <sup>F</sup>Meeting Right to Know in line with strengthened rights to speak by minority shareholders, and to respond to the changing trend of corporate disclosure that contributes to investor protection and a fairness of stock price. KEPCO was selected as <sup>F</sup>Excellent Enterprise in Corporate Governance J organized by Korea Exchange and Korea Corporate Governance Service for 3 consecutive years from 2008 to 2010 by playing a leading role in contributing to creating an environment for faithful disclosure.

# INFORMATION DISCLOSURE

KEPCO will commit to promoting the people's right to know by improving customer reliability based on a transparent working process, having a guarantee of people's right to know, and through active information disclosure.

In 2010, a total of 327 requests were received for information disclosure and 283 of these were accepted.

The remaining 44 requests were subjects that should be confidential in accordance with Public Information Act law of public institutions.

## Status of Information Disclosure Channels

ltem	Disclosure Site	Item Disclosed	
Management Disclosure	KEPCO Website (http://www.kepco.co.kr)	Management Status, etc.	
Integrated Disclosure	ALIO System (http://www.alio.go.kr)	Management Performance, etc.	
0	DART System (http://dart.fss.or.kr)	Business Report, etc.	
Corporate Disclosure	KRX System (http://kind.krx.co.kr)	Operating Results, etc.	
Information Disclosure	KEPCO Website (http://www.kepco.co.kr)	Items individually requested	

# Win-Win Growth with Suppliers

KEPCO is strengthening our mutually-beneficial collaboration with SMEs in an attempt to improve global competitiveness and pursue "win-win" growth.

# SUPPORT FOR EXPORT BY SMEs

As a result of intensive export marketing towards overseas offices, KEPCO achieved contracts worth approximately USD 19.14 million for construction projects in 12 countries including UAE, Finland and others in cooperation with as many as 112 small and medium sized companies in winning the contracts. This accomplishment was 4 times greater compared with that of USD 4.77 million in 2009. In addition, we are now conducting a business of installing manhole surveillance systems through a supply line to the National Assembly in the USA in association with export businesses of research results done by SMEs in a cooperative way. In addition to that, we are expanding a basis for export by SMEs by utilizing the brand image of KEPCO, for example, we helped 3 companies conclude contracts of MOU for exports worth of USD 5 million as a result of support for international exhibition in the area of electricity, and holding the Inward Export Mission (IEM). KEPCO is now intensifying the promotional effort about our export support business of SMEs by exploring cooperative development business items, holding presentations (2 times, for 165 companies) about SMEs-led projects such as overseas marketing, holding presentations (4 times, for 190 companies) promoting support for overseas expansion by SMEs, gathering bidding information on overseas initiatives, and operating an English web site about supplier information and so on.



#### 52 Strengthening Partnership with Stakeholders

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#### EXPANDED PUBLIC PROCUREMENT

KEPCO has a priority of public procurement to SMEs suppliers to foster joint growth within the electric power industry. We take the lead in promoting win-win growth with SMEs by efficiently utilizing the Public Procurement System and by establishing a common growth management system through expanded procurement targets, for example, products worth about KRW 4 trillion (increased KRW 107.6 billion compared with the previous year) developed and manufactured by SMEs, by supporting KRW 327.9 billion for production fund such as the Network Loan in 2010.

# IMPROVED SUPPLIER SATISFACTION

KEPC0 strives to improve the satisfaction of partners by supplementing plans and systems by gathering various opinions from equipment suppliers. In 2010, we provided quality consulting services for the manufacturing plants of 8 suppliers to teach them about the ISO9001 Upgrade, quality control methods and others. We also improved a system to offer every facility for users by applying an interface system for procurement prices between ERP and SRM, automatic conversion system for EDMS standardization, OTP certification (tightened security, output and etc.), and by installing multidirectional dialogue channels (like SMS, E-mail and etc.). Therefore KEPCO's partners' satisfaction has been increased since 2007. In particular, satisfaction in the working process in 2010 was 95.1 scores, up 0.6 from 94.5 in 2009. The result of partner satisfaction surveys is reflected in the working process thereby leading a cooperative system for win-win growth.

In addition, amid increased demand to join efforts to enhance the human rights of employees of partners, we include audit items about human rights into the list that is used for partners' evaluation while the bidding process is done. In 2010, the number of cases of human rights evaluations was 506, accounting for approximately 10% of all 4,924 cases. Also, when we evaluate competency of partners, we give partners, showing excellent performance, 2 extra points by evaluating employment performance on the vulnerable, including the disabled and women workforce partners.

# FAIR CONTRACTING PROCESS

To eradicate irrationalities in the process of signing contracts in advance, and to create a transparent contract culture, KEPCO is improving systems continuously. In 2010, we established a system with which real-time monitoring and surveillance over partners who engaged in unfair business practices while a qualification audit about bidders is done and contracts are written in order not to sign a contract with partners that got punished against unfair trade practices within 2 years. To prevent bidding collusion, we implemented systems of 1 person to 1 company bidding representative and an identification process through fingerprint verification using an electronic bidding system with the Public Procurement Service. And we also implemented a system to liquidate damage against bid-rigging for the first time in January 2011. By doing so, we are not able to sign a contract with unfair companies so that we can establish a transparent contract culture, and prevent possibilities of corruption in advance. In addition, we made progress on improved customer satisfaction by resolving inconveniences that bidders could face the process of using the electric bidding system.

# • Financial Supports for SMEs

Supportive Areas	2008	2009	2010	
Joint R&D	52	41	35	
Quality Competitiveness	2	3	1	
Overseas Marketing	12	5	9	
Management Support	10	12	11	
Information Technology Development	35	2	-	
Heavy Electric Equipment Technology Development Fund Loan	91	105	64	
Total	202	168	120	

• Supplier Satisfaction	Unit: Points
2008	93.3
2009	94.5
2010	95.1

#### • No. of Screenings of Human Rights

Item	2008	2009	2010
No. of PQs	6,289	5,802	4,924
No. of Screenings	789	717	506
Rate (%)	12.5	12.4	10.3

#### • E-Procurement Trend

2008	 98.8
2009	99.1
2010	99.7

Financial Supports for SMEs (KRW 100 million)

Unity KRW 100 million

Unit: %

# **Contributing to the Nation & Society**

KEPCO is fulfilling its responsibilities for the nation and society by sincerely paying taxes, creating new jobs, and establishing a fair trade culture.

First of all, we are actively participating in initiatives pursued by the government such as continuous job creation as part of solving unemployment among young people, expansion of women and the disabled in the workforce. In 2010, we hired 132 new employees and 1,008 for internships, and the numbers of displaced workers was 32. In the meantime, salary of the newly-employed workers against legal minimum wage in 2010 was approximately 237% (excluding annual leave and a portion of annual salary based on performance).

KEPCO's amount of tax payment in 2010 was KRW 34.4 billion, not including donated amounts to political parties and organizations, and grants received from the government.

KEPCO complies with laws and regulations related to a fair trade to establish a fair and free trade order, and no punishment such as penalty or non-financial restriction has been imposed according to violation of relevant laws.

# • Status of Economic Value Distribution

			0.110	
Item	2007	2008	2009	2010
Total Dividends	4,670	-	-	-
Interest Expense	6,025	7,524	9,884	11,216
National Pension	376	390	386	380

#### Status of Tax Payment

		UTII	
Item	2008	2009	2010
Internal Tax	845	-1,856	-67
Local Tax	369	373	411
Total	1,214	-1,483	344

#### Status of New Employment

	Onit. Let 3011
2008	472
2009	92
2010	132

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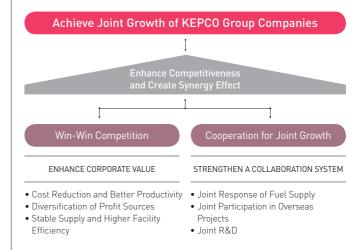
# 1,008

Unit: KRW 100 million

Unit: KRW 100 million

I Init · Person

# Joint Growth of KEPCO Group Companies



KEPCO Group companies pursue win-win competition based on decentralized, accountable management. They have established a collaborative system for domestic and overseas projects that require synergy within the electric power industry.

We are also seeking an economic supply of power generation fuels, closer R&D collaboration, joint participation in overseas projects and joint response against climate change to ensure a stable supply of electricity and enhance the capacity of all group companies.

## KEPCO GROUP'S JOINT GROWTH EFFORTS

Management Innovation at GENCOs	<ul> <li>Enhancement of Strategic cooperation to accomplish Management Innovation at GENCOs</li> <li>Integrated purchasing of power generation fuel, integrated operation of maintenance materials, integrated management of IPRs, establishment of ERP at group Level, efficient execution of overseas projects, efficient management of construction personnel</li> <li>Belt-tightening at group level: KRW 973.1 billion in savings</li> </ul>
Stable Supply of Electricity	<ul> <li>Completion of power plants as scheduled: 1,595MW</li> <li>Higher Capacity Factor: 71.9% in 2009 → 76.6% in 2010</li> </ul>
Economic Purchasing of Power Generation Fuel	• Consolidated purchasing of fuel: KRW 72.5 billion of saving
Group CEO Meeting	<ul> <li>Joint response and coordination on management issues, sharing of best practices</li> <li>Management performance analysis to provide feedback on management performance</li> </ul>

# **Social Contributions**

Nationally-organized KEPCO' Social Volunteer Group makes contributions to the world and the neighborhood, bringing light and love.

6.5

5.6

# KEPCO COMMUNITY SERVICE GROUP

The KEPCO Community Service Group (CSG) was launched under the slogan of "Bring Light to the World and Love to Our Neighbors" in May 2004. KEPCO CSG is currently composed of 272 sub-groups across the country, engaging in community service activities such as community caring, environment protection, and disaster relief. The KEPCO CSG has mainly focused on electricity-related community services, which are financed by funds voluntarily raised by KEPCO employees and matching grants provided by KEPCO (KRW 4.1 billion).

In 2010, social contribution activities of 5,726 have been carried out. For example, setting up a sisterhood relationship with local centers for children, searching for missing children and preventive campaign, cornea donation campaign called 'Sharing of Silver Lining,' improvement and repair of electricity facilities for the vulnerable and so forth. And in total, 32,179 employees have participated.

# • Status of KEPCO Community Service Group

Year	2008	2009	2010
No. of Activities	8,208	5,761	5,726
No. of Participants	48,742	32,658	32,179
Social Contribution Amount		Unit	: KRW 100 millio 1,214 2,885
2010			2,97
• Community Service Hour per Ca	apita		Unit: Hou
2008			10.5

## BASIC RIGHT TO ENERGY

2009

2010

KEPCO helps protect people's basic right to energy by subsidizing electricity tariffs to the socially disadvantaged.

For low income households, we lifted power restrictions during the



hottest (July-September) and coldest (December-February) months. If they are facing service suspension because of unpaid electricity bills, we install a current limiter to guarantee a minimum power supply. Discounted rates are offered to customers with disabilities, low-income families, and social welfare facilities. At the same time, we offer special electricity tariffs to large families to alleviate the progressive tariffs for residential use and for the household with more than three children to support the government's policy to raise the birth rate.

# • Social Welfare Discount Rates for Electricity

ltem	1.0	Total Discount Amount (KRW 100 million)			
nem	In Scope	2008	2009	2010	
Customers with Disabilities	Grade 1 to 3	541	564	633	
Low-income Household	Households in the Lowest Income Bracket	252	274	330	
Social Welfare Facilities	-	132	200	256	

## DIVERSIFIED SOCIAL CONTRIBUTION PROGRAMS

With CSR in mind, KEPCO has incorporated social contribution activities in the corporate core values, making it a consideration in the decision-making process. Furthermore, doing community service at social welfare facilities is mandatory for employees at the general manager level or higher to raise employee awareness of CSR. Each quarter, management and labor union officials have done community services together.

In addition, KEPCO' Art Center, as a part of providing benefits to the socially disadvantaged, provides a free performance of 'Happy Sharing' for those who belong to local centers for children. 'Hope & Love Sharing Concert' has been performed 16 times and has targeted local residents living in areas where electric facilities are built. KEPCO is also making contributions to enhancing a cultural art environment by holding a KBS & KEPCO-led Music Competition in order to explore and support excellent new musicians.



# **Major Social Contribution Activities**

- Cornea donation campaign called 'Sharing of Silver Lining' Convention on cornea donation with (October, 2010) As many as 8,138 persons participated (the largest in Korea) (approximately 42.2% of the total employees)
- Foundation of KEPC0119 Rescue Service Team to help recover from national disasters (October, 2010)
- Full support of resources for safety and medical assistance during G20 summit, recovery from attacks in Yeonpyeong Island, recovery of the areas affected by snowstorm in Pohang and Gangwon regions.
- Volunteer services to help the needy and men of national merit facing trouble in their livelihood: KRW 180 million (2,921 households supported) Offering flowers to Seoul National Cemetery, improvement of electricity facilities, offering helping hands, replacement of new wallpaper, and linoleum, and keeping/making companies and friends.
- Volunteer activities to help recover and repair electric facilities for the socially-vulnerable and the elderly living alone Check and repair of electrical facilities in 1,117 households.
- . . . . . . . . . . . . . . . .
- Setting up a sisterhood relationship with local center for children, and support for activities of the relationship

Learning guidance, cultural experience, meal assistance and etc. (637 times in total / KRW 340 million funded)

#### 🗞 Campaign to find missing children

Category	Details	Remark
Posting photos of missing children	Post photos of lost children (electric bill, company magazine)	Reunion of the separated family members (106 persons)
Using name tags	Use name tags to prevent children from going missing	150,000 tags
Moving video about prevention of children from going missing	Production and distribution of moving picture (elementary schools across the country)	6,000 videos
Marionette play to prevent children from going missing	Performance of marionette play about the prevention of missing children by employees	34 times







"Eye Love" project
 KEPC0119 Rescue Service Team
 Kimchi-Making for the Needy



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## SOCIAL CONTRIBUTIONS OVERSEAS

We support social contribution programs in countries where KEPCO has a presence (the Philippines and China) to lay the groundwork for successful localization and improve the corporate image. We are also fulfilling CSR as a global company by sponsoring free medical services, scholarships and providing support for communities near power plants.

In the Philippines, KEPCO has been involved in a project to promote electrification in agricultural and fishing villages, a priority of the Filipino government. To accelerate progress, we support line extension from the on-grid side and photovoltaic power generation from the off-grid side.

KEPCO has continuously worked to provide fair opportunities to local workers in terms of employment and promotion, and we are committed to respecting the human rights of employees in accordance with local laws and regulations.

# • Wages of Local Employees and the Ratio of Local Managers in the Overseas

ltem	Country	2008	2009	2010
Legal Minimum Wage/	Philippines	19/32	23/44	24/32
Initial Wage (KRW 10 thousand/month)	Jordan	-	26/163	26/163
Datio of Local Managers (9/)	Philippines	43.8	47.3	50
Ratio of Local Managers (%)	Jordan	-	11	11

# • Status of Local Employment

			011111 01 00011
ltem	2008	2009	2010
Philippines	277	305	314
Jordan	-	9	11

Unit: Person

# • Philippines

ltem	2008	2009	2010
Medical Service	8 times	10 times	13 times
	(9,210 persons)	(7,162 persons)	(8,596 persons)
Scholarship	33 schools	51 times	66 times
	(7,210 students)	(11,470 students)	(12,888 students)
Support for Power	98 times	173 times	285 times
Plant Neighborhood	(25,910 persons)	(22,135 persons)	(28,871 persons)

# • Project for Promotion of Electrification in Agricultural and Fishing Villages in the Philippines

Item	Result
On-grid (Line Extension)	484 Project completed (Jan. 2011)
Off-grid (Photovoltaic Power Generation)	270 Project completed (Jan. 2011)



Free Medical Service in the Philippines
 Taekwondo Training Service in the Philippines
 Marine Environmental Clean-up in the Philippines

Participants for Social Contributions (Persons)

32,179

# **Respect for Human Rights**

KEPCO's pursuit of protection of human rights and gender equality and leader in realizing a fair culture without discrimination.

# DISCRIMINATION ERADICATION

We have pledged not to discriminate on the grounds of gender, educational background, religion, age, and disabilities in Chapter 5 (Employee Ethics) of our Code of Ethics. We also faithfully abide by ILO Convention No. 111 Concerning Discrimination In Respect of Employment and Occupation. None of our operations inside or outside Korea have a record of human rights violations or discrimination on grounds of gender or disabilities.

# GENDER EQUALITY

KEPCO is working towards gender equality in various ways such as eliminating discriminatory factors in terms of employment and promotion, and operating a Counseling Center for women employees. We have a quota for women employment, and 42% of all persons hired in 2010 were woman, raising the ratio of women in the workforce. Moreover, the number of women employees with the rank of assistant general manager or higher rose from only 7 in 2000 to 78 in 2010.

We strictly comply with ILO Convention No. 100 Concerning Equal Remuneration for Men and Women Workers for Work of Equal Value.

# SUPPORT FOR COEXISTENCE WITH WORK AND HOME

KEPCO pushes ahead to improve the quality of life of its employees by implementing diverse systems like family-friendly programs such as promoting child birth and child raising, family support and family harmony campaign, and by providing benefits for employees so that our company's goal of becoming a good corporate workplace, contributing to creating an environment where work at the company and building a good family can be possible. In particular, for the sake of resolving the problem of low birth rate on the national level, we establish a Pool System for substitute personnel against those who apply for maternity leave for child birth and child rising to encourage employees to enjoy maternity leave. More specifically, we allow our employees to arrange their commuting time, to reduce their working time during the caring for their child. And having a couple of days off for prenatal diagnosis and taking a leave of absence from work because of sterility are given to our employees. Through such exceptional benefits that are much higher than that guaranteed by law, we had the rate of leave for child-caring of 73%, and birth rate of 1.63 in total of KEPCO in 2010 so that we realize good results when it comes to creating a family-friendly climate.

# HUMAN RIGHTS EDUCATION

KEPCO provides education on human rights issues to irregular and newly-hired employees to foster a corporate culture based on respect for people and non-discrimination.

In 2010, a total of 19,433 employees including 683 irregular and newly hired employees attended this education, and all employees have classroom or online training at least once a year. In addition, human rights education was given to all 486 counselors working in the branch offices through professional training or itinerant education. We will continue to provide training and education to ensure gender equality and respect for human rights.

# HIRING THE VULNERABLE TO EMPLOYMENT

KEPCO hired 520 workers with disabilities in 2010. Workers with disabilities receive 10% additional points in the employment process. We will continue to increase the number of employees with disabilities, for example, by enhancing working conditions for the disabled and by developing an occupational range specifically-designated for the disabled.

At the same time, we give preferential treatment in hiring those who major in science and engineering to achieve a target set since 2004. The employment rate for workers in science and engineering was 72.7% in 2010.

# PREVENTION OF FORCED LABOR AND CHILD LABOR

KEPCO abides by the Labor Standards Act, ILO Convention No. 105 Concerning Abolition of Forced Labor, and the Labor Standards, one of the UN Global Compact's 10 Principles, and no operation has a record of forced labor.

# DEALING WITH EMPLOYEE GRIEVANCES

In line with improvement of the quality of life by resolving grievances at work, KEPCO established diverse communication channels including the On-line HR Grievance Handling System, CEO Hotline, Labor-Management Grievance Handler System and Women Workforce Support Portal. In 2010, 103 cases were reported in total through the HR Grievance Handling System, 97 of them were dealt with.

# CUSTOMER PRIVACY PROTECTION

We have implemented technical security measures such as web firewalls and system access control to protect customer privacy information and prevent illegal data leaks. We also provide regular education on the importance of privacy protection.

# **Employee Safety and Welfare**

KEPCO makes efforts to build close labor relations based on mutual trust and respect, and to create a corporate culture of communication and harmony.

# MUTUAL TRUST BETWEEN LABOR-MANAGEMENT

KEPCO believes in labor relations built on mutual trust and respect. We promoted communication between labor and management through the Labor-Management Council (four times) and laid the foundation for mutual trust by delivering a presentation on the company status 232 times at the branch level and providing key management information to the labor union weekly.

KEPCO complies with ILO Convention No. 87 Concerning Freedom of Association and Protection of the Right to Organize and ILO Convention No. 98 concerning the Application of the Principles of the Right to Organize and to Bargain Collectively. In 2010, 14,892 (75.6%) employees out of a workforce of 119,710 belong to the union. The collective agreement is renewed every two years and applied to all employees.

# SAFETY AND HEALTH MANAGEMENT

KEPCO convenes the Occupational Safety and Health Committee, which is composed of 10 labor and management representatives. We also strive to achieve the goal of zero industrial accidents and improve the health of all employees through field-based safety management.

In addition, we control overall affairs regarding safety management thanks to diverse channels. For instance, by developing advanced new types of safety devices and equipment, by introducing Occupational Health & Safety Management System (KOSHA18001 and etc.) and expanding its application.

In 2010, one employee was involved in an industrial accident (a 0.005% accident rate) and no cases of occupational illness were reported.

# CUSTOMER HEALTH AND SAFETY

KEPCO works to strengthen preventive campaigns in construction sites along with promotional activities concerning electrical safety aimed at all citizens by using advertisements such as CATV or outdoor billboards using LED lights. To urge customers to safely use electricity, we prevent the possible occurrence of electrical fires and electric shock by detecting electrical facilities that customers are using. We will diversify our safety activities to protect both customers' health and their wellbeing.

# Safety Accident Rate

ltem	2008	2009	2010
Industrial Average (%)	0.71	0.70	0.69
No. of Victims at KEPCO	1	5	1
Accident Rate (%)	0.005	0.025	0.005

## HEALTH MANAGEMENT

We have operated a prevention-focused health management program to improve the employee health and ensure vitality in the workplace. The program is also applied to the families of employees. A total of 10,188 employees and 659 spouses took a blood test and thorough medical checkup in 2010. In addition, vaccinations against influenza were provided to 7,001 employees.

We provide employees with a health consultation program after the medical checkup.

# BETTER BENEFITS

KEPCO makes an effort to increase welfare satisfaction of executives and employees to facilitate vitality of the organization. We upgraded our loan system of livelihood stabilization into an urgent loan system in which employees can respond to urgent situations such as natural disasters, rare diseases, traffic accidents, etc. Even for employees facing natural disasters, we decided to improve compensation plans and scheme by increasing our limit of compensation amounts. Also, we conduct a survey on welfare satisfaction on a regular basis to reflect the needs of employees. Therefore, the result of the welfare satisfaction survey targeting employees in 2010 was 70 out of 100.

<ul> <li>Satisfaction with Benefits</li> </ul>	Unit: Points
2008	72.2
2009	72.5
2010	70.0

# OUTPLACEMENT

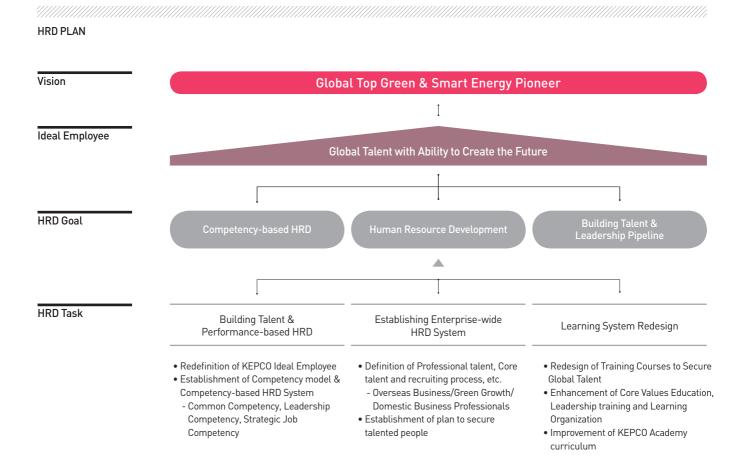
Korean society is aging, and life after employment is emerging as a social issue. In line with this, KEPCO has provided outplacement training consisting of seven programs, 26 subjects that cover change management, asset management and business startup for employees slated for retirement. The programs are provided both on-and off-line to ensure accessibility and efficiency, significantly helping employees be prepared for their life after leaving KEPCO. A total of 153 retiring employees took this program in 2010.



OHSAS18001 Certification

# Human Resource Development

Through evaluation, rewards, a fair competition based on competencies and performances, KEPC0 is committed to nurturing globally-specialized human resources combining passion and executive talent.



# KEPCO'S IDEAL EMPLOYEE

We have defined an ideal employee by identifying basic competencies after considering the company's shared values and the outcome of an employee survey. These qualities were incorporated with company-wide competencies, leadership competencies and strategic job competencies. Nine core competencies have been identified, including an achievement-oriented attitude, flexibility, and teamwork. Company-wide competencies are identified as execution, professionalism and collaboration. KEPCO will take such qualifications as a standard for hiring personnel and development of human resources.

# HRD ROADMAP

KEPCO set up a roadmap for nurturing the right people for global operations by 2020. To this end, we have devised a mid-/long-term plan for human resources development as part of efforts to secure talented people.



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### EDUCATION AND TRAINING

KEPCO has created a talent pool dedicated to overseas projects to nurture global professionals, providing them with apprenticeshipbased OJT and a year of full-time education (IB-MBA). In addition, we are operating programs to enhance job competencies and improving the mentoring system and strengthening the simulation training program.

Meanwhile, we have expanded our blended-learning, which combines on- and off-line programs to ensure efficient education and training. We have provided information on major training & education programs and feedback on performance through a training portal system.

# • Training Courses

ltem –	Internal Training		Professional	Tetel
	Classroom	Online	Training	Total
No. of Courses	202	81	191	474
No. of Persons	9,198	163,076	4,021	176,295

# • Training Budget and Hours

Item	2008	2009	2010
Education & Training Expense Relative to Total Sales (%)	0.16	0.15	0.13
Education & Training Hours a year (Hour/Person)	92.8	62.6	80.3

# PERFORMANCE EVALUATION

KEPCO has evaluated the performance of all employees per year and paid a performance bonus based on the outcome of the evaluation. We also adopted an open competition-based placement system that fills available positions with successful applicants via open competition.

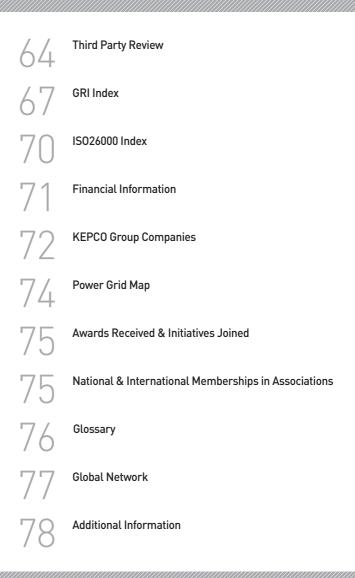
KEPCO will commit to strengthening employees' capability through a fair assessment about their performances and capability development and to creating a performance-based corporate culture.



KEPCO Academy e-Learning
 New Employee Training
 Job Training

+17.7

# APPENDIN





# Kim, Soo-wook

- Ph.D, Eli Broad Graduate School of Management, Michigan State University
- Director, The Korean Society of Supply Chain Management (present)
- Director, The Korean Society for Quality Management (present)
- Professor, Business School, Seoul National University (present)

## PRIOR SUGGESTIONS

- Enhancement of economical performance and strengthening social contribution through improved electric charges system
- Emphasizing social contributions and responsibilities rather than economic performance
- Expansion of global sustainable management system for mutual growth with SMEs

# Steady and further progress has been made regarding contents and formats of Sustainable Management Report

KEPCO has continuously made efforts to enhance the quality of the Sustainable Management Report, especially in its content and format by reflecting advice and recommendations received from external experts, therefore great progress has been made. Suggestions from experts are reflected in this year's report and furthermore, other content is significantly improved, indicating that KEPCO's efforts to pursue sustainable management are not going to stop. In other words, KEPCO can be a good model to other companies that do not yet publish their Sustainable Management Reports. However, to make these strenuous efforts lead to sustainable and practical results, we believe that a certain organization or division needs to be formed as a permanent body to push forward its clear vision and commitment to a sustainable management system.

# KEPCO's philosophy and vision about sustainable management become clear and find their right direction.

In this seventh report published by KEPCO, its clear philosophy and vision towards sustainable management structure are described as one of the world class electricity companies. In that regard, we look forward to more clearly establishing KEPCO's own management philosophies in the eighth report next year. In addition, KEPCO, as a leading company, will commit to enhancing ethical standards of global corporate management by proposing heightened goals and performance targets from environmental and ethical management perspectives.

# • KEPCO plays a leading role in pursuing labor-management culture based on gender equality and mutual reliability.

KEPCO realizes the concept of gender equality inside the organization through expansion of new recruits in the female workforce and promotional benefits, and makes a road to establishing a family-oriented corporate culture by strengthening financial support necessary for childbirth and child-rearing. In addition, a trust-based labor and management culture established over a long period of time represents KEPCO's pride. We believe, therefore, that KEPCO's cooperative and mutually-friendly labor relations can be served as a good model for all corporations.

## • Efforts to secure safety of nuclear power plants should be strengthened.

Alerts and concerns over potential risks of nuclear power plants are getting attention around the world partly due to the massive explosion of nuclear power plants in Japan. The accidents were a good chance to realize possible consequences we face if proper control and management is not done, even if nuclear power plants have advantages, for instance, generating significant amount of electricity with relatively less costs. Since nuclear power plant businesses require long-term periods to make plans, for example, several decades, serious consideration and thorough plans should be prerequisites to secure safety of nuclear power plants at home and abroad.

## Third Party Review



#### Nam, Mee Jung

- MA, Graduate School of Social Development, Chung-Ang University
- Committee Member, Presidential Commission on Sustainable Development
- Co-Representative, Korea NGO's Energy Network (present)
- Co-Representative, Korea Women's Environmental Network (present)

#### PRIOR SUGGESTIONS

- Need for interface between fostering human resources and technology development & long-term competitiveness from the enhanced corporate value point of view
- Need for provision of specific information calculated through environmental accounting system and measurement of effectiveness as a result of spending expenses on the environment
- Need for benchmarking towards global companies to improve corporate value from the environment and social perspectives

## It is viewed that KEPCO's 2011 Sustainability Report is written based on ESG performance measured by objective and reliable tools in accordance with GRI criteria.

In particular, we believe that KEPCO's economic, environmental and social performance are described in the simplest way by pointing out important issues compared with its previous report. The following shows strengths of this year's report.

First, seriousness assessment procedure organized to identify issues of interested parties has been done in an objective manner, and the issues selected through the procedure reflected requirements of the parties concerned.

Second, from an environmental performance perspective, it is positively viewed that progress from diverse aspects has been made, for example, quantitative measurement of environmental costs based on a newly-introduced environmental accounting system, measurement of performance on eco-friendly electricity supply chain.

Third, we believe that social performance achieved through a strengthened partnership with interested parties showed KEPCO's efforts focusing on public interest, and the results are appropriately reflected economic performance.

# • KEPCO's Sustainability Report that intends to become a Global Top Energy Corporation has competitiveness as a global-scale report in terms of its format and structure, while at the same time it should be supplemented as follows.

First, diverse efforts and performance should be supplemented and upgraded, for example, scope of management risks, management system, and responding organizations that are supposed to include a globally-recognized sustainable management framework.

Second, from the aspects of corporate governance and sustainability, assessment results from internal and external organizations, for example, Corporate Governance Service, represent the report's objectiveness and comparability with other global companies. Therefore, proactive utilization of such assessment organizations is recommended.

Third, it is recommended that resources invested in the process of pursuing green growth policies and their results should be compared and analyzed by each business area, and specifically reflected in the report. We are certain that if global-level activities in such areas as labor, human rights, anti-corruption and ethical management are supplemented, a Sustainable Management Report with more sharpened competitiveness can be published.

October 2011



#### Jaemin Park

- Ph.D in Economics, The Ohio State University
- Committee Member, Presidential Committee on Education Innovation
- Committee Member, Committee on Science and Technology, National Science and Technology Council (present)
   Head & Graduate Program Chair, W. F. Miller School of Technology Management, Konkuk University (present)

#### PRIOR SUGGESTIONS

- Need for suggestions on KEPCO's efforts to communicate with various shareholders
- Need for pursuit of global-level environment management as a representing company in the electricity industry
- Need for emphasizing social contribution activities necessary for fulfillment of responsibilities for the nation and society, rather than gaining economical performance

 KEPC0 represents a company pursuing a sustainable management and communicating with society beyond fulfilling social responsibilities.

Since KEPCO joined UN Global Compact in 2005, this is the 7th Sustainability Report to be published. We have committed to fulfilling our responsibilities as a corporate citizen based on financial growth, ethical management, win-win growth and social contribution. Such strenuous KEPCO' efforts have been recognized all over the world. In particular, our performance in sustainable management has been proven. For example, our report was selected as UN Global Compact Notable COP for 2 consecutive years ('08 to '09). Now as a company contributing to active communication with society and improvement of the quality of life based on our sustainable management capacity, KEPCO's commitment and efforts are well described in this 2011 Sustainability Report.

More efforts should be made to move forward with society and to give more benefits to people.

Through this advisory process, we were able to see how strong KEPCO's commitment and efforts are as a company living with society. KEPCO has already acquired world class level of technological prowess and management capability and has played a leading role in strengthening our industrial competitiveness, and more importantly, has established a sustainable management system equivalent to a global standard. However, we would like to call on KEPCO to make heightened efforts to carry out their responsibilities. We look forward to seeing that KEPCO demonstrate its unprecedented roles and leadership from the sustainable management and social contribution perspectives.

#### We hope that KEPC0 contributes to make a 'Bright World with Light and a Happy World with Love'.

It is well known that KEPCO's efforts regarding customer satisfaction and social contribution activities have been nothing like other companies. KEPCO's sustainable management include not only basic factors like technology, environment and management, but also emotional feelings like hopes and dreams that can be prevailed both with customers and society. We believe KEPCO will present a higher standard of sustainable management as a company that wants to grow along with society. We are certain that KEPCO's vision of "Global Top Green & Smart Energy Pioneer" will be fully accomplished. Not only that, but also a 'Bright World with Light and a Happy World with Love' can also be made.

October 2011

	Reporting Level: • Fully	• Partially	× Not Reported N/A
No.	Descriptions		Reporting Remarks
• ST	RATEGY & ANALYSIS		
1.1	Statement from the most senior decision maker of the organization about the relevance of sustainability to the organization and its strategy	9	•
1.2	Description of key impacts, risks, and opportunities	16	•
• OF	GANIZATIONAL PROFILE		
2.1	Name of the organization	14	•
2.2	Primary brands, products, and/or services	13	•
2.3	Operational structure of the organization	14	•
2.4	Location of organization's headquarters	14	•
2.5	Countries where the organization operates	77	•
2.6	Nature of ownership and legal form	14	•
2.7	Markets served	12	•
2.8	Scale of the reporting organization	15	•
2.9	Significant changes regarding size, structure, or ownership	Front Cove	r •
2.10	Awards received	75	•
• RE	PORT PARAMETERS		
3.1	Reporting period	Front Cove	•
3.2	Date of most recent previous report	Front Cove	•
3.3	Reporting cycle	Front Cove	•
3.4	Contact point for questions regarding the report or its contents	78	•
3.5	Process for defining report content	22	•
3.6	Boundary of the report	Front Cove	
3.7	Limitations on the scope or boundary of the report	Front Cove	•
3.8	Basis for reporting on joint ventures, subsidiaries, and other entities that can significantly affect comparability from period to period	Front Cove	
3.9	Data measurement techniques and the bases of calculations	Front Cove	•
3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement	Front Cove	•
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report	Front Cove	
3.12	Table identifying the location of the Standard Disclosures in the report	67	•
3.13	External assurance for the report	64	•
• GO	VERNANCE, COMMITMENTS, AND ENGAGEMENT		
4.1	Governance structure of the organization	17	•
4.2	Indicate whether the Chair of the BOD is also an executive officer	17	•
4.3	Number of members of the BOD that are independent and/or non-executive members	17	•
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the BOD	17	•
4.5	Linkage between compensation for members of the BOD and executives and the organization's performance		•
4.6	Processes in place for the BOD to ensure conflicts of interest are avoided	17	•
4.7	Process for determining the qualifications and expertise of the members of the BOD Statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and	17	•
4.8	social performance	21	•
4.9	Procedures of the BOD for overseeing the organization's identification and management of economic, environmental, and social performance Processes for evaluating the BOD's own performance, particularly with respect to economic, environmental,	17	•
4.10	And social performance Precautionary approach or principle addressed by the organization	17 17, 39	•
	Externally developed economic, environmental, and social charters, principles, or other initiatives to which		•
4.12	the organization subscribes or endorses Memberships in associations and/or national/international advocacy organizations	75	•
4.13	List of stakeholder groups engaged by the organization	22	•
4.14	Basis for identification and selection of stakeholders with whom to engage	52	•
4.15	Approaches to stakeholder engagement	22	•
4.10	Key topics and concerns that have been raised through stakeholder engagement	22	•
	ONOMIC PERFORMANCE		
		55	•
EC1 EC2	Direct economic value generated and distributed Financial implications and other risks and opportunities for the organization's activities due to climate chang		•
EC2 EC3	Coverage of the organization's defined benefit plan obligations	e 16 55	•
EC4	Significant financial assistance received from government	55	•
EC4	Ratios of standard entry level wave compared to local minimum wave at significant locations of operation	55	•

EC5 Ratios of standard entry level wage compared to local minimum wage at significant locations of operation

55

•

	Reporting Level: ●	Fully	● Partially	× Not Reported N/A
No.	Descriptions	Page	Reporting	Remarks
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	53	٠	
EC7	Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation	58	٠	
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit	44	٠	
EC9	Significant indirect economic impacts	53	•	
• EN	IVIRONMENTAL PERFORMANCE			
EN1	Materials used by weight or volume	46	٠	
EN2	Percentage of materials used that are recycled input materials	46	٠	
EN3	Direct energy consumption by primary energy source	41	٠	
EN4	Indirect energy consumption by primary source	41	٠	GENCOs' Performance
EN5	Energy saved due to conservation and efficiency improvements	41	•	
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reduc- tions in energy requirements as a result of these initiatives	41	•	
EN7	Initiatives to reduce indirect energy consumption and reductions achieved	45	•	
EN8	Total water withdrawal by source	41	•	
EN9	Water sources significantly affected by withdrawal of water	-	N/A	Used Tapped Water 100%
ENTU	Percentage and total volume of water recycled and reused	41	•	
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	44	•	
EN12	Significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	44	•	
EN13	Habitats protected or restored	-	N/A	
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	44	•	
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas af- fected by operations	-	N/A	The entire nation is affected by operations
EN16	Total direct and indirect greenhouse gas emissions by weight	49	٠	
	Other relevant indirect greenhouse gas emissions by weight	49	•	
	Initiatives to reduce greenhouse gas emissions and reductions achieved	49	٠	
	Emissions of ozone-depleting substances by weight	49	•	
	NOx, SOx, and other significant air emissions by type and weight	43 43	•	
	Total water discharge by quality and destination Total weight of waste by type and disposal method	43	•	
	Total number and volume of significant spills	49	•	
EN24	Weight of transported imported experted or tracted waste deemed becardous under the terms of	46	0	
EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats signifi- cantly affected by the reporting organization's discharges of water and runoff	41	•	
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	41	٠	
EN27	Percentage of products sold and their packaging materials that are reclaimed by category	46	٠	
EN28	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations	-	N/A	
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce	41	٠	
EN30	Total environmental protection expenditures and investments by type	41	٠	
• LA	BOR PERFORMANCE			
LA1	Total environmental protection expenditures and investments by type	59	•	
LA2	Total number and rate of employee turnover	55	•	
LA3	Benefits provided to full-time employees	60	٠	
LA4	Percentage of employees covered by collective bargaining agreements	60	٠	
LA5	Minimum notice period(s) regarding operational changes	60	•	
LA6	Percentage of total workforce represented in formal joint management–worker health and safety committees	60	•	
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region	60	٠	
LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases	60	٠	
LA9	Health and safety topics covered in formal agreements with trade unions	60	٠	
LA10	Average hours of training per year per employee by employee category	62	٠	
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	62	•	
LA12	Percentage of employees receiving regular performance and career development reviews	62	•	
LA13	Composition of governance bodies and breakdown of employees per category	59	•	
LA14	Ratio of basic salary of men to women by employee category	59	•	

GRI Index

	Reporting Level: • Fu	ully OP	artially × No	t Reported N/A
No.	Descriptions	Page	Reporting	Remarks
• HI	JMAN RIGHTS PERFORMANCE			
HR1	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening	54	O	
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken	54	•	
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights	59	٠	
HR4	Total number of incidents of discrimination and actions taken	59	٠	
HR5	Right to exercise freedom of association and collective bargaining	60	•	
HR6	Measures taken to contribute to the elimination of child labor	59	٠	
HR7	Measures to contribute to the elimination of forced or compulsory labor	59	٠	
HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights	59	•	
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken	58	٠	
• S0	DCIETY PERFORMANCE			
S01	Programs and practices that assess and manage the impacts of operations on communities	43	•	
S02	Percentage and total number of business units analyzed for risks related to corruption	18	•	
S03	Percentage of employees trained in organization's anti-corruption policies and procedures	18	٠	
S04	Actions taken in response to incidents of corruption	18	•	
S05	Public policy positions and participation in public policy development and lobbying	_	N/A	
S06	Total value of financial and in-kind contributions to political parties, politicians, and related institutions	_	N/A	
S07	Total number of legal actions for anticompetitive behavior, anti-trust, and monopoly practices and their outcomes	55	•	
S08	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with laws and regulations	55	•	
• PF	RODUCT RESPONSIBILITY			
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for im- provement	44	O	
PR2	Total number of incidents of non-compliance with regulations concerning health and safety impacts of products and services	-	N/A	
PR3	Type of product and service information required by procedures	29	•	
PR4	Total number of incidents of non-compliance with regulations concerning product and service infor- mation and labeling	-	N/A	
PR5	Practices related to customer satisfaction	52	•	
PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications	52	٠	
PR7	Total number of incidents of non-compliance with regulations concerning marketing communications	-	N/A	
PR8	Total number of substantiated complaints regarding breaches of customer information protection	59	•	
PR9	Monetary value of significant fines for noncompliance with laws and regulations concerning the provision and use of products and services	_	N/A	

## Reporting Level: • Fully • Partially × Not Reported N/A

## ISO26000 Index

re Subjects	Issue	Descriptions	Page
• ORGANIZ	ATIONAL GOVERNANCE		
6.2.3	Decision-making processes and structures	Board of directors, remuneration of directors, audit committee	17
• HUMAN F	RIGHTS		
6.3.3	Due diligence	Audit committee, ethical management, respect for human rights	17-18, 59
6.3.4	Human rights risk situations	Respect for human rights, risk management	59
6.3.5	Avoidance of complicity	Improved suppliers satisfaction, fair contracting process	54
6.3.6	Resolving grievances	Mutual trust between labor-management, dealing with employee	52, 59, 60
6.3.7	Discrimination and vulnerable groups	grievances, protection of customer rights and interests Discrimination eradication, gender equality, hiring the vulnerable	59
6.3.8	Civil and political rights	to employment, performance evaluation Respect for human rights, mutual trust between labor-management	59,60
6.3.9	Economic, social and cultural rights	Social contributions, employee safety & welfare	56-58,60
6.3.10	Fundamental principles and rights at work	Respect for human rights, employee safety & welfare	59-60
• LABOUR	PRACTICES		
6.4.3	Employment and employment relationships	Respect for human rights, employee safety & welfare	59-60
6.4.4	Conditions of work and social protection	Respect for human rights, employee safety & welfare	59-60
6.4.5	Social dialogue	Employee safety & welfare	60
6.4.6	Health and safety at work	Employee safety & welfare	60
6.4.7	Human development and training in the workplace	Human resource development	61-62
• THE ENV	IRONMENT		
6.5.3	Prevention of pollution	Resource recycling and hazardous substance control	46
6.5.4	Sustainable resource use	Resource recycling and hazardous substance control	46
6.5.5	Climate change mitigation and action	Response to the convention on climate change, GHG reduction efforts	47-49
6.5.6	Protection of the environment & biodiversity, and restoration of natural habitat	Eco-friendlier power supply chain (transmission), social contributions	44, 56-58
• FAIR OPE	RATING PRACTICES		
6.6.3	Anti-corruption	Ethical management	18-19
6.6.4	Responsible political involvement	N/A	-
6.6.5	Fair competition	Win-win growth with suppliers, contributing to the nation & society	53, 55
6.6.6	Promoting social responsibility	Win-win growth with suppliers, social contributions	53, 56-58
6.6.7	in the value chain Respect for property rights	Win-win growth with suppliers	53
CONSUM		2	
6.7.3	Fair marketing, factual and unbiased	Protection of customer rights and interests	52
	information and fair contractual practices	Resource recycling and hazardous substance control,	
6.7.4	Protecting consumers' health & safety	employee safety & welfare	46,60
6.7.5	Sustainable consumption Consumer service, support and	Smart grid, development of low-carbon green power technologies	33, 40
6.7.6	complaint and dispute resolution	Protection of customer rights and interests	52
6.7.7	Consumer data protection and privacy	Customer privacy protection	59
6.7.8	Access to essential services	Basic right to energy	56
6.7.9	Education and awareness	Protection of customer rights and interests, customer health and safety	52,60
COMMUN	IITY INVOLVEMENT AND DEVELOPMENT		
6.8.3	Community involvement	Social contributions	56-58
6.8.4	Education and culture	Social contributions	56-58
6.8.5	Employment creation and skills development	Contributing to the nation & society , social contributions	55, 56-58
6.8.6	Technology development and access	Social contributions	56-58
6.8.7	Wealth and income creation	Win-win growth with suppliers, contributing to the nation & society	53, 55
			(0
6.8.8	Health	Employee safety & welfare	60

## Financial Information

#### • Statements of Financial Position

<ul> <li>Statements of Financial Position</li> </ul>			Unit: KRW 100 million
Account	FY2010 (As of Dec. 31, 2010)	FY2009 (As of Dec. 31, 2009)	FY2008 (As of Dec. 31, 2008)
1. Current Assets	48,292	43,170	42,304
(1) Quick Assets	47,696	41,265	40,036
(2) Inventory	596	1,905	2,268
2. Non-Current Assets	695,690	656,685	626,378
(1) Investment Assets	335,622	308,317	288,186
(2) Tangible Assets	346,734	333,465	319,412
(3) Intangible Assets	964	1,051	1,960
(4) Other Non-Current Assets	12,370	13,852	16,820
TOTAL ASSETS	743,982	699,855	668,682
1. Current Liabilities	85,291	80,875	78,755
2. Non-Current Liabilities	248,220	208,101	180,537
TOTAL LIABILITIES	333,511	288,976	259,292
1. Capital Stock	32,078	32,078	32,078
2. Capital Surplus	147,930	146,662	145,562
3. Capital Adjustments	△7,415	△7,415	△7,415
4. Accumulated Other Comprehensive Income (Loss)	4,172	5,234	4,068
5. Retained Earnings (Net Income)	233,706 (△614)	234,320 (△777)	235,097 (△29,525)
TOTAL SHAREHOLDERS' EQUITY	410,471	410,879	409,390
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	743,982	699,855	668,682

#### • Statements of Income

Account	FY2010 (2010.1.1~2010.12.31)	FY2009 (2009.1.1~2009.12.31)	FY2008 (2008.1.1~2008.12.31)
Revenues	391,897	336,857	315,224
Cost of Goods Sold	397,653	330,948	338,717
Gross Profit	△5,756	5,909	△23,493
SG&A	12,118	11,596	13,099
Operating Income	△17,874	△5,687	△36,592
Non-Operating Income	31,049	23,044	15,479
Non-Operating Expenses	14,938	18,561	23,949
Income before Income Taxes	△1,763	△1,204	△45,062
Income Tax Expenses	△1,149	△427	△15,537
Net Income	△614	△777	△29,525

[ Total Assets ]	FY2010	743,982
Unit: KRW 100 million	FY2009	699,855
	FY2008	668,682
[Revenues]	FY2010	391,897
Unit: KRW 100 million	FY2009	336,857
	FY2008	315,224

Unit: KRW 100 million

#### **KEPCO Group Companies**

#### **GENCOs**

#### Korea Hydro & Nuclear Power Co., Ltd.(KHNP)



Installed Capacity	Power Generation
18 <b>,256</b> <sup>MW</sup>	150,098 <sup>GWI</sup>
Employees	Revenues
7,731	5,829.6 KRW

KHNP is operating nuclear power plants as base load power plants and hydroelectric plants as peak load power plants. KHNP has currently 20 units in operation, including Kori Unit 1, which started commercial operation in 1978. KHNP is the world's 5th largest nuclear power company, responsible for approximately 32.5% of the national power supply. KHNP has recorded the capacity factor of higher than 90% for 10 convective years, starting in 2000. The capacity factor in 2010 was 91.2%, higher than the global average. As of late December, 2010, KHNP has 18,256MW of installed capacity, which breaks down as 17,716MW of 20 nuclear (97.0%) units and 537MW of 27 hydroelectric units (3.0%).

Korea South-East Power Co., Ltd.(KOSEP)



KOSEP is operating the Samcheonpo Thermal Power Site and Yeongheung Thermal Power Site as base load plants. As of late December 2010, KOSEP has an installed capacity of 8,976MW, which includes 6,580MW for 10 bituminous coal units (73.3%), 922MW for 10 LNG combined cycle units (10.3%), 528.6MW for two oil units (5.9%) and 325MW for two anthracite units (3.6%). KOMIPO is operating the Boryeong Thermal Power Site and Seocheon Thermal Power Plant as base load plants. As of late December 2010, KOMIPO has the installed capacity of 9,399MW, which breaks down as 4,000MW for eight bituminous coal units (42.6%), 3,700MW for 21 LNG combined cycle units (39.4%), 400MW for two anthracite units (4.3%), 285MW for five oil units (3.0%) and 1,000MW for four pumped storage

Korea Midland Power Co., Ltd.(KOMIPO)

#### Affiliates

#### KEPCO Engineering & Construction Company, Inc. (KEPCO E&C)

- Address: 2354 Yonggudaero, Giheung-gu, Yongin-si, Gyeonggi-do
- Website: www.kepco-enc.com

KEPCO Engineering & Construction (KEPCO E&C) was founded in 1975 to attain self-sufficiency in design technology for nuclear, hydroelectric and thermal power plants. Since then, KEPCO E&C has grown into a world-class nuclear power plant design company. The Korean Standard Nuclear Power Plant OPR1000 and



APR1400 are rated as top-tier nuclear power reactors in terms of economy and safety. KEPC0 E&C has also enhanced the performance and economy of a standardized 500MW coal-fired power plant, and started commercial operation of an 800MW thermal power plant, an upgraded version of the 500MW model. In addition, KEPC0 E&C's project management (PM) and construction management (CM) technology is considered among Korea's best. Recently, KEPC0 E&C advanced into the highly potential environmental market with the world's first low-temperature desulfurization technology.

#### KEPCO Plant Service & Engineering Co., Ltd. (KPS)

Address: Migeumro 1, Bundang-gu, Seongnam-si, Gyeonggi-do
Website: www.kps.co.krservice of electric power facilities.

KEPCO Plant Service & Engineering (KPS) is an integrated plant service company, providing high-quality maintenance services for power plants, transmission & substations, and industrial facilities. KPS is responsible for commissioning maintenance of power plants under construction, and ordinary maintenance, planned



outage and other repair & maintenance of power plants in operation, contributing to preventing unplanned shutdowns and improving the capacity factor. KPS also offers total maintenance services for transmission and substation facilities such as transmission facility maintenance, live wire maintenance, underwater HVDC cable and conversion facility maintenance, design, construction, supervision and safety service of electric power facilities.



Installed Capacity	Power Generation
9,604 <sup>MW</sup>	53,033 <sup>GWh</sup>
Employees	Revenues
1,811	4,766.8 KRW billion

WP is operating the Taeahn Thermal Power Site as base load plants. As of late December, 2010, WP has the installed capacity of 9,604MW, which includes 4,000MW for eight bituminous coal units (41.6%), 2,998MW for 24 LNG combined cycle units (31.2%), 1,400MW for four oil units (14.6%) and 1,200MW for four pumped storage units (12.5%).



Installed Capacity

9,638<sup>MW</sup>

Employees 1,793 Korea East-West Power Co., Ltd.(EWP)



Power Generation $59,954^{\mathrm{GWh}}$	Installed Capacity 9,510 <sup>MW</sup>	Power Generation $54,707^{\text{GWh}}$
Revenues 5,153.4 KRW billion	Employees 1,990	Revenues 4,573.4 KRW billion
the Hadong Thermal Power nts. As of late December, 2010,	1 5	gjin Thermal Power Site and Plant as base load plants.

KOSPO is operating Site as base load plant KOSPO has the installed capacity of 9,638MW, which breaks down as 4,000MW for eight bituminous coal units (41.5%), 4,553MW for 31 LNG combined cycle units (47.2%), 640MW for eight oil units (6.6%), 400MW for two pumped storage units (4.2%) and 41MW for 19 wind units (0.4%).

As of late December, 2010, EWP has an installed capacity of 9,510MW, which includes 4,500MW for 10 bituminous coal units (47.3%), 2,100MW for 17 LNG combined cycle units (22.1%), 1,800MW for six oil units (18.9%), 700MW for two pumped storage units (7.4%) and 400MW for two anthracite units (4.2%).

#### As of December 31, 2010

#### KEPCO Nuclear Fuel Co., Ltd. (KNF)

- Address: 1047 Daedukdaero, Yuseong-gu, Daejeon-si
- Website: www.knfc.co.kr

KEPCO Nuclear Fuel (KEPCO NF) is a nuclear fuel cycle company, providing nuclear fuel design, manufacturing & engineering services. KEPCO NF is the world's only producer of nuclear fuel both for PWR and CANDU reactors. KEPCO NF has developed and commercially supplied PLUS7TM for Korean Standard Nuclear Power



Plants (KSNP) and ACE7TM for Westinghouse models, helping to increase power plant output power and reduce nuclear fuel cycle cost, thereby raising the operational economy of nuclear power plants.

#### KEPCO Knowledge, Data & Network Co., Ltd. (KDN)

• Address: 1355, Seocho 2-dong, Seocho-gu, Seoul • Website: www.kdn.com

KEPCO Knowledge, Data & Network (KEPCO KDN) was founded as a KEPCO IT provider in 1992. Since then, KEPCO KDN has offered total IT services ranging from generation, transmission & substations, and distribution to sales, growing into a global electric power IT company. KEPCO KDN has mainly engaged



in the business of deployment/operation of information systems, automation of electric power IT, deployment and maintenance of IT infrastructure and consigned management of distribution facilities. KEPCO KDN is now striving to enhance PLC and RFID technologies with an aim to provide ubiquitous electric power services.

### **Power Grid Map**

- 765kV Substation
- 345kV Substation
- Power Generation Plant
- 765kV Route
- 345kV Overhead Line
- ---- 345kV Underground Line
- DC±180kV Cable Link



# Awards Received & Initiatives Joined

#### LIST OF AWARDS RECEIVED IN 2010

Date	Awards	Presenter
2010. 4	Award for the 38th International Exhibition of Inventions of GENEVA	International Federation of Inventors' Associations
2010. 5	The Presidential Award for the Best Patent Management Company on the 45th annual Invention Day.	-
2010. 11	Award for IT Innovation	Ministry of Knowledge and Economy
2010. 12	The Presidential Award for the 5th International Construction Day	-
2010. 12	Presidential Award for The 1st Nuclear Day	-
2010. 12	Ranked top among a total 21 organizations in the survey on integrity of public enterprises	Anti-Corruption & Civil Rights Commission
2010. 12	Acquired the top grade in the survey on customer satisfaction of public enterprises for 12th consecutive year	Ministry of Strategy and Finance

#### MAJOR INITIATIVES JOINED

Date	Initiatives
Jun. 2005	Transparent Society Pact between KICAC and the CEOs of 18 public enterprises
Jul. 2005	Renewable Portfolio Agreement with the Ministry of Commerce, Industry and Energy
Aug. 2005	Agreement to comply with the 10 Principles of UN Global Compact
Sept. 2005	Transparent Society Pact in the Electric Power Sector among 11 KEPCO Group companies and the representative of major electric power companies
Jan. 2006	Integrity Pact between KEPCO and business partners (1,579 companies/18,135 persons participated)
Jun. 2007	Agreement with private-sector organizations on business cooperation in the area of the environment (UNEP National Committee for Korea, Korea Green Foundation, Korea Women's Environmental Network)
Jul. 2009	Renewable Portfolio Agreement II with the Ministry of Knowledge Economy
Dec. 2009	Accession to UN Global Compact in Korea

## National & International Memberships in Associations

Name	Objective	Date
Korea Standard Association	Exchange of information on technological standards, including industrial standardization and quality management	1964
Korea Electric Association	Promotion and development of electric industry	1965
Korean Member Committee of the World Energy Council	Enhancement of international relationship in the energy area	1969
Korea Atomic Industrial Forum	Exchange of nuclear technology at home and abroad	1975
Korea Electrical Engineering & Science Research Institute	Basic research and nurturing of human resources with regard to electric power industry	1989
Korean Society for Quality Management	Exchange of information among quality management organizations to improve quality management activities	1995
Korea Nuclear Society	Technology development and academic exchange with regard to nuclear power	1995
Korean Institute of Electrical & Electronic Material Engineering	Academic exchange and cooperation between industry and academia regarding electrical and electronic material engineering	1996
AESIEAP	Cooperation among electric power companies & experts of East Asia and the Western Pacific	1998
EEI	Protection of the rights of US electric power companies and provision of information on the electric power industry	2004
AEIC	Technological exchange among electric power companies in North America	2008
Korea Invention Promotion Association	Exchange of needs and trends of IPR market	2009

#### Gas Insulated Switch Gear (GIS)

A complex switching device which opens or closes an electric circuit which is insulated with sulfur hexafluoride (SF<sub>6</sub>) gas

#### Community Energy System (CES)

A type of power business that generates electricity using a small-capacity generator and supplies electricity to users within the designated district directly without going through the power exchange market

#### Base Load Generator

A generator which keeps running at a constant output due to little output adjustment according to demand control. Currently coalfired thermal power generators and nuclear power generators are running as base load generators

#### Emissions Trading System (ETS)

The system that sets the total quantity of greenhouse gas emissions of all advanced nations and imposes a certain amount of emission quotas. Countries exceeding the quota can purchase emission rights and those under the quota can sell emissions

#### Load Factor

The ratio of average power as compared with the peak power during a given period. Used as the indicator representing the efficiency of power facilities

#### Transmission & Distribution Loss

Electricity loss incurred while electric power flows from power plant to substation, transmission/distribution lines, and finally point of consumption, mainly due to resistance

#### Energy Intensity

Energy consumption per US\$ 1,000 of GDP

#### Electricity Reserve Rate

Electric power in reserve against contingencies or to meet sudden surges in electricity demand

#### Electric Quality

The quality of electricity provided is represented as blackout time, voltage & frequency margin and total harmonic distortion (THD)

#### Smart Grid

"Smart grid" refers to an electric power grid that incorporates information & communication technologies to maximize efficiency for greater eco-friendliness.

#### Clean Development Mechanism

An arrangement allowing industrialized countries with a greenhouse gas reduction commitment to invest in projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries.

#### Renewable Portfolio Standard (RPS)

Regulation that requires the increased production of energy from renewable energy sources

#### Greenhouse Gases

Elements of air generated either naturally or artificially, which may contribute to global warming when there is an excessive increase of their proportion in the atmosphere. Refers to gases like carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), chlorofluorocarbon (CFC), nitrous oxide (N<sub>2</sub>O), and sulfur hexafluoride(SF<sub>6</sub>)

#### Electricity Effect Valuation System

A technique to select ideal sites for constructing transmission and substation facilities. Quantifies the effect of electricity on the natural, social and technology environment by using GIS and CAD and analyzes the weighted importance of the effect. Results are rendered in 3D images

#### Self-Sufficiency Rate

KEPCO defines Self-Sufficiency Rate as the ratio of the amount of a given fuel secured to the amount of a given fuel required

#### c-km (Circuit Kilometer)

Length of one cable made up of three lines. One of the most generally used units for the length of transmission line

#### Demand Control

All the activities to satisfy electricity demand at a minimal cost by changing customers' electricity use patterns. Load control and energy efficiency improvement are major methods for demand control

#### Ice Storage Cooling Facility

An advanced cooling system that stores ice or cold water by using off-peak electricity during the night and uses it for cooling during the day. Distributes the increasing cooling load to the night time zone and helps improve load imbalance between day and night

#### Certified Emission Reduction (CERs)

CERs are carbon credits issued by the CDM Executive Board for emission reductions achieved by CDM projects

#### Global Compact

UN Secretary-General Kofi Annan presented 10 universal principles in the areas of human rights, labor, the environment and anti-corruption, calling for business leaders to join an initiative called the Global Compact aimed at promoting business transparency and corporate social responsibility. The operational phase of the initiative was launched at UN Headquarters in July 2000

#### Global Reporting Initiative (GRI)

A body of the United Nations Environmental Programme in charge of developing globally applicable guidelines for sustainability reporting

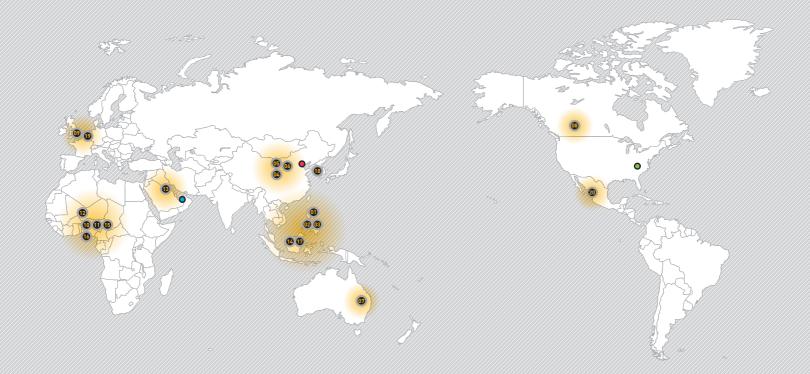
#### SF6 Gas

 $SF_6$  gas is used as insulation medium for GIS. The impact of  $SF_6$  gas on global warming is app. 25,000 times more than  $CO_2$ 

#### TOE (Ton of Oil Equivalent)

Unit converted on the basis of the caloric value of 1 ton of oil

#### **Global Network**



#### **OVERSEAS OFFICES**

#### Abu Dhabi Branch Office

Muroor Road (4th st), al Marnoura, B Po Box 112010, Abu Dhabi, UAE Tel: 971-2-659-5590 Fax: 971-2-659-5666

#### • KEPCO Washington, D.C.Office

8100 Boone Boulevard, Suite 620, Vienna, VA 22182, U.S.A Tel: 1-703-917-1591 Fax: 1-703-917-1593

#### • KEPCO China Office

2702, Tower A, Tianyuangang Center No.C2, Dongsanhuanbeilu, Chaoyang District, Beijing, China Tel: 86-10-6466-9426 Fax: 86-10-6466-9436

#### **OVERSEAS SUBSIDIARIES**

- KEPCO International Hong Kong Ltd.
  KEPCO International Philippines Inc.
  KEPCO Philippines Holdings Inc.
  KEPCO Gansu International Ltd.
  KEPCO Neimenggu International Ltd.
  KEPCO Shanxi International Ltd.
  KEPCO Australia Pty Ltd.
  KEPCO Canada Energy Ltd.
  KEPCO Netherlands B.V.
  KEPCO Energy Resource Nigeria Ltd.
- KNOC Nigerian East/West Oil Co., Ltd.
- 12 Korea Imouraren Uranium Investment
- 18 KEPCO Middle East Holding Company
- 10 PT Bayan Resources TBK.
- 1 Dolphin Property Ltd.
- 10 KEPCO Electric Power Nigeria Ltd.
- **11** PT Adaro Energy TBK.
- 10 AMEC Partners Korea Ltd.
- KEPCO Netherlands S3 B.V.
- MEPCO Holdings de Mexico

## Additional Information

Sustainability Reports including this one and Annual Reports can be downloaded on the website of KEPCO. Additional information of the management of KEPCO is available on the websites below. Expressions such as forecast, expect and estimate is a description of the analysis of the future as of today. Therefore, for specific risk or uncertainty, please refer to Form 20-F.

Business Report	Financial Supervisory Service's DART (data analysis, retrieval and transfer system)/company overview	dart.fss.or.kr
Form 20-F	US Securities and Exchange Commission	www.sec.gov
Annual Report	KEPCO homepage/Investor relations/ management	www.kepco.co.kr
Statistics of Electric Power in Korea	KEPCO homepage/Investor relations/ Investor resources/Statistics of electricity	www.kepco.co.kr
Social Contribution	KEPCO homepage/Sustainability	www.kepco.co.kr
Management Information of Public Institutions	Public Institution Information Management System, the Ministry of Strategy and Finance	www.alio.go.kr

## **Contact Information**

#### For more detailed information on this report, please contact us at:

512, Yeongdong-daero, Gangnam-gu, Seoul, Korea (zip code: 135-791) Strategic Planning Team, Corporate Planning Department, KEPCO Tel: 82-2-3456-3524 Fax: 82-2-3456-3578 E-mail: hjnature@kepco.co.kr

#### Other Contact Points

Financial Information: General Accounting Team, Treasury Department (yuyong@kepco.co.kr) Ethical Management: Anti-corruption Team, Audit & Inspection Office (kms8504@kepco.co.kr) Environmental Management: Green Growth Strategy Team, Technology Division (rookie@kepco.co.kr) Social Contribution: Social Contribution Team, Corporate Communications Office (ogong119@kepco.co.kr)

## Reader Feedback

Your valuable feedback on 2011 KEPCO Sustainability Report will be used to improve the quality of our sustainability management and sustainability reports. Please send us your feedback by posting on KEPCO website or by e-mail/mail.



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