# Striding Toward A Better Tomorrow

2009 Sustainability Report



# **C**ontents

Striding Toward A Better Tomorrow 2009 KOREA EAST-WEST POWER CO.,LTD.

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# **GRI G3 Guideline Application**

This sustainability report satisfies all Global Reporting Initiative(GRI) G3 guideline 'A' grade requirements.

# 34\_ EWP's Social Achievements(Toward the Great Performance)

- 1) Transparent & Ethical Management
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# **About 2009 Sustainability Report**

**Purpose** This is Korea East-West Power Company's (EWP's) third sustainability report. Its aim is to inform the company's various stakeholders and the general public about its economic, social, and environmental efforts and achievements.

**Guidelines** This report has been prepared in conformity with the revised 2006 GRI G3 guideline, Korea's own BEST Sustainability Reporting Guideline.

 $\begin{tabular}{ll} \textbf{Scope} & This report covers EWP's headquarters and six plant sites. \end{tabular}$ 

**Reporting cycle** EWP published its first sustainability report in May 2007 and will keep producing them on annual basis.

**Reporting period** This report outlines the company's sustainability management activities and outcomes from January 1, 2008 to December 31, 2008. However, some items include results of ending in the first half of 2009. Data from 2006 to 2008 have also been included to show time series trends.

**Units employed** KRW [Korean won] for monetary unit, MW for generation facilities capacity, GWh for output, TOE for energy usage volume, and  $kg-CO_2/kWh$  for greenhouse gas emissions. Million, billion and trillion were abbreviated into mn, bn and tn respectively.

■GRI (Global Reporting Initiative): The GRI is a sustainability report production guideline developed in 1997 by the Coalition for Environmentally Responsible Economies [CERES] and the United Nations Environmental Program (UNEP). A revised [G3] version was published in October 2006.

# MESSAGE FROM CEO

Korea East-West Power Co., a partner for those making a better future for humankind



EWP is exerting every effort to join the ranks of world-class global energy businesses while firmly recognizing our responsibility as a member of the community. At present, we are pushing ahead with the plan for the construction of Dangjin Thermal Power Plant Units 9 and 10, which are 1,000 MW, ultra-super-critical, high-efficiency power generation facilities equivalent to one unit of a nuclear power plant, and the first of their kind to be adopted in this country, based on our accumulated technological prowess and operational experience. We expect that the project will usher in a new era in the country's power generation sector. Another recent noteworthy achievement of the company is the construction of a 1 MW tidal power generation facility, using cutting-edge marine energy technology, in Uldolmok Strait, which is renowned as the site of Admiral Yi Sun-sin's decisive victory over the invading Japanese Naval fleet in 1597. We are also doing what we can to refine company management by selecting 30 items for innovation.

However, 2008 was the worst year in the Company's history. Fuel costs accounted for more than 70% of the power production cost, and to make the situation worse, in the first half of the year, fuel prices skyrocketed on a daily basis. In the second half, the global financial crisis which started in the U.S. caused the value of the national currency to drop sharply against the U.S. dollar. Under such circumstances, our management situation worsened deeply.

Moreover, global issues, such as climate change and Low Carbon & Green Growth, have progressed to such an extent as to make businesses reconsider their past rules of the game completely. Such changes pose great challenges to us as a business focusing on thermal power generation. In an effort to cope with such challenges proactively, the Company set itself the corporate vision of becoming "a global leader in power generation that creates the highest possible energy value", and the Company's employees are making wholehearted efforts to fulfill our aim to being a Great, Global and Green Company.

Great company\_Under today's managerial environment, only businesses that fulfill their social responsibilities are respected by interested parties. A vehicle requires a balance between the wheels on both sides to move forward. Likewise, the Company does its best to maintain a balance between profitability and Common good. We are making painstaking efforts to improve our profit position, maintain mutually reasonable labor-management relations, and seek ways for coexistence with local communities and SMEs(Small and Medium Enterprises).

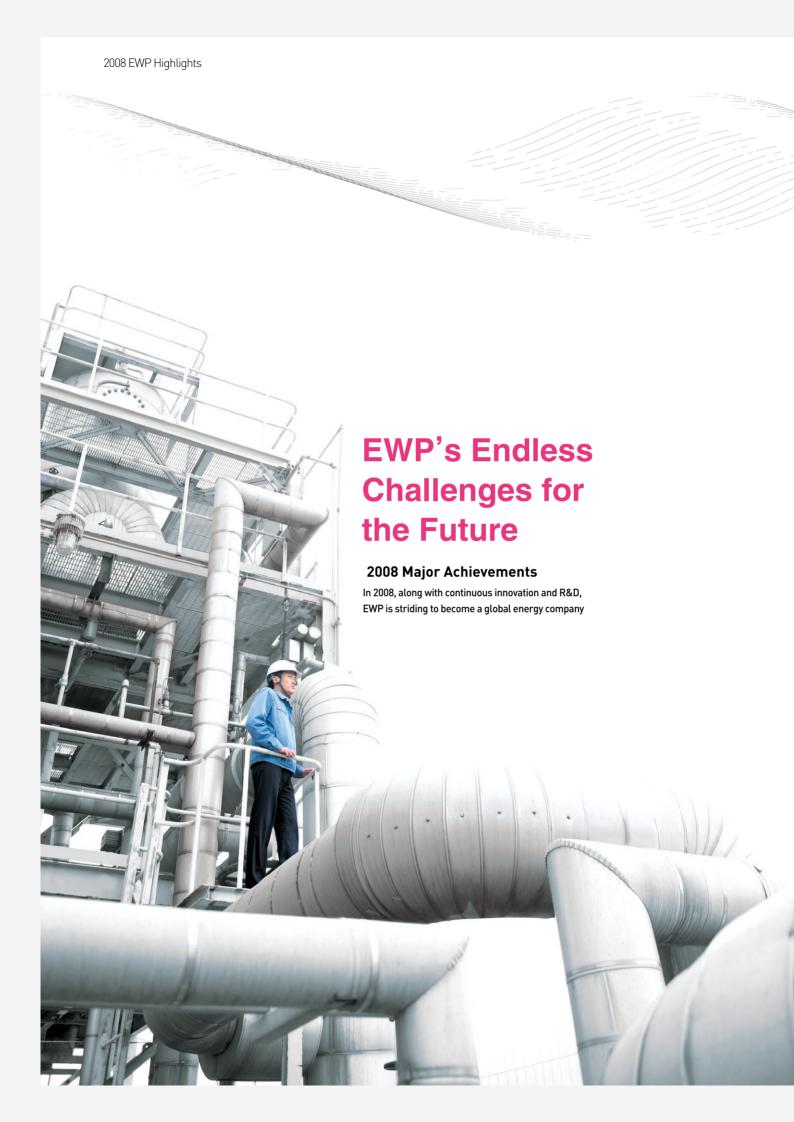
Global company\_The domestic power generation sector is reaching saturation level, and we are concentrating our efforts on making forays into overseas markets based on the technological prowess and experience we have accumulated over many years in connection with the need to create new growth engines. Thus, we have succeeded in winning a number of projects in foreign countries, such as the commissioning of a thermal power plant in Chile, the Cebu Power Plant and a wind-power generation project in the Philippines, and a diesel power generation plant in Haiti. We are also securing higher profits through the direct supply of fuel to our plants.

Green Company\_Green management has already become a required, rather than an optional, item for businesses considering their sustainability. We are setting up a strategy for the promotion of management based on Low Carbon, Green Growth. We became the first KEPCO affiliate to announce the relevant vision. With the aim of accomplishing such an ambitious objective, we are engaged in the construction of diverse new and renewable energy facilities, using wind-power, tidal power and photovoltaic power, the co-firing of biomass materials in coal-fired power plants, and are dedicated to improving efficiency.

The current global economic crisis and the issues surrounding climate change pose apparent challenges to us, but we would like to join those who always try to look on the bright side and regard this as an opportunity. We believe that the endeavor we are making in various sectors to join the ranks of **Great, Global and Green Companies** will provide us with 'Super Enzymes' so that we may build formidable competitiveness. We will remain firmly committed to stably supplying power to our customers and to providing higher benefits to the interested parties. Please continue to support us and show your interest in all that we do. Thank you.

October 2009 **Lee Gil-goo** President Korea East-West Power Co.

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# A Credit Rating S&P's A / Moody's A2

International credit rating companies Standard & Poor's and Moody's gave an A (Stable) and A2 to EWP respectively. These ratings are the same as Korea's national credit rating, which proves EWP is recognized as a highly-reliable company both Korea and abroad.

# The World-First Plant Operation and Maintenance Management System - POMMS™

EWP developed POMMS (Plant Operation and Maintenance Management System) for the first time in the world. The POMMS is an integrated system which combines operation and maintenance management that were managed with separate programs, and it improves work efficiency significantly by simplifying and standardizing those procedures. Also, by implementing the state-based maintenance method, POMMS optimizes maintenance intervals to improve maintenance reliability and cut costs dramatically. Through POMMS, the downtime rate was reduced by 50% to 5 cases from the previous year's 10 cases, fault loss costs were remarkably reduced, achieving a 77% reduction in opportunity loss cost (5.2bn won was cut to 1.2bn won).

# 1,000MW USC Power Plant Construction

Succeeding in commercializing the 500MW USC power plant for the first time in Korea, EWP is preparing for a new challenge. EWP started to build Korea's first 1,000MW USC power units, Dangjin Power Units 9 and 10 which are equivalent to a nuclear power plant. Dangjin Power Units 9 and 10 will generate a total of 2,000MW (1,000 x 2 power plants), which will create a new chapter in the history of Korea's power industry.

# Establishment of ERP(Enterprise Resource Planning)

Starting in February 2007, the ERP (Enterprise Resource Planning) system, E-WAY, was finally completed. While E-WAY uses SAP ERP packages which are most widely used around the world, it realizes optimal work processes suitable for a power plant company by integrating the major working system. This system will allow us to improve management efficiency, productivity and transparency.

# Introduction of APS(Automatic Plant Start & Stop System)

For the first time in the coal-fired power plants in Korea, EWP succeeded in applying APS to Dangjin Power Units 7 and 8. APS automates all procedures from start to finish, which used to be handled manually, and it monitors and controls all equipment and facilities in the power plant. The introduction of APS optimizes all operation procedures in the power plant.

# Construction of 1MW Tidal Current Power Plant, Essence of Ocean Energy

EWP constructed a 1MW pilot tidal current power plant in Uldolmok in Jindo-gun, Jeollanam-do which was the site of Myeongryang Naval Battle during the Japanese Invasion of Korea in 1592. EWP plans to build a 50MW tidal current power plant by 2013 and subsequently a 150MW plant in Jangjuksudo and a 250MW plant in Maenggolsudo. When the plants are completed, EWP will grow to be one of the world's best power companies, which realizes the dream of utilizing marine energy.

# Commissioning of Nueva Ventanas Power Plant

EWP secured a contract to provide technical support for commissioning Chile's biggest power plant. Nueva Ventanas Power Plant, and sent 11 engineers to Chile. This project proves the superiority of EWP's technology accumulated through the construction of the new power plant.

# Managing Foreign Currencies and Debts Using LMS(Liability Management System)

By linking LMS and PCN (Prime Coal Net), the fuel purchase department and the foreign currency procurement department share information on foreign currency flows so as to formulate and implement the best possible foreign currency dealing strategies. LMS helps procure foreign borrowings for the construction of power plants with appropriate levels of interest rates, as well as manage the risks of exchange rates of our US dollar and Japanese yen borrowings. PCN manages the demand and supply of bituminous coal and wiring

# Building Compliance System for Enhanced Transparency of Accounting

In 2007, with the implementation of IFRS (International Financial Reporting Standards), EWP built a compliance system to respond to its being listed on the US stock market, by improving processes and updating and improving on work manuals. Our evaluation proved that the compliance system was valid. Also, with the introduction of ERP, the compliance system was updated in line with the new accounting system.

Thus, the compliance system was certified by a third party, and the third-party accounting audit found that areas for improvement decreased by 21% from the previous year.

# 2008 EWP Highlights

# 2008. 1

Korea's Technology Innovation Management Award in the Category of Public Corporations for Three Years in a Row

# 2008. 2

Korea's Ethical Management Award in the Category of Public Corporations.

# 2008.4

- Start the Construction of Dangjin Small Hydro Power Plant
- Contract to Commission Nueva Ventanas Power Plant in Chile
- Awarded for win-win partnerships with SMEs by the Ministry of Knowledge Economy

# 2008.6

- Ceremony for the Completion of Dangjin Power Unit 7 and 8
- Awarded at the Ministry of Public Administrat on and Security [MOPAS]hosted public purchase promotion competition

# 2008.8

Inauguration of Auditor Lee Jung-Won

# 2008.10

- Inauguration of CEO Lee Gil-Gu
- Quality Competitive Company by Korean Agency for Technology & Standards for Two Years in a Row

# 2008.12

MOU with Namhae-gun to Develop New Renewable Energy

# 2008.3

MOU with Ulsan City to Develop New Renewable Energy

# 2008.5

- Social Contribution Award in the Category of Volunteer Work
- Presidential Award in the 3rd Beautiful Partner Award
- Awarded at the MKE-hosted 20th SMEs competition

# 2008.7

- Win the CES Project for Seokmun Industrial Complex
- Win the CES Project for Songjeong Zone of Ulsan Innovation City

# 2008.9

- Dangjin Power Unit 3 is ranked 1st in the category of longest operation without a breakdown in 2008 Fall Conference hosted by EUCG[Electric Utility Cost Group]
- MOU with South African Government for the Sumbandila Power Plant Project

# 2008.10

- Best Company in the 3rd Sustainable Management Awards Hosted by Ministry of Knowledge and Economy
- · Operation of the ERP system, E-WAY

# Stakeholder Engagement

# Stakeholders

Stakeholders parties are classified into six groups, namely, employees, shareholders/investors, affiliates/SMEs, customers/communities/NGOs, electric power generation companies (related to KEPCO), and the government/consulting group. This classification is based on the parties' direct or indirect influences on EWP's business activities and achievements, and on their legal, financial and operational responsibilities.

# Shareholders/ Investors Stakeholders Stakeholders Stakeholders Consultant Group Power Generation Companies (Gencos)

# Communication

EWP's stakeholders are defined, and communication channels by each stakeholder are established to share corporate vision, key values, and the CEO's management policy with them. The system helps effectively reflect stakeholders' opinions in strategies and policies.

Stakeholders	Major Communication Activities
Employees	Workshops to celebrate the building of the company-wide integrated information system (E-Way)  Ethical management commitment ceremony  Road show education to prevent wrongdoing and to establish discipline
Shareholders/Investors	Disclosure of 2008 sustainability report  Discussion with KEPCO regarding overseas businesses and development of new and renewable energy  IR sessions for institutional investors
Affiliates/Small and Medium Enterprises	Workplace sessions regarding products selected for joint R&D with SMEs  Launching of Consultative Council for SMEs  Commitment ceremony of supporters for SMEs  Affiliates satisfaction survey
Customers/Communities/NG0s	<ul> <li>NGOs-linked corporate social activity, "Make a Wish"</li> <li>Blood donation relay campaign</li> <li>MOU signed with Namhae-gun to cooperate in development of new and renewable energy</li> <li>Launching of Internet market for trading regional native products</li> </ul>
Power Generation Companies (GENCOs)	<ul> <li>Power generation conference</li> <li>Meeting of presidents of GENCOs</li> <li>Asia-Pacific Partnership on Climate (Power Generation and Transmission T/F)</li> <li>Joint project with KEPCO to carry out power generation project in Sumbandilla, South Africa</li> </ul>
Government/Consulting Groups	MKE-led government-private sector working meeting for overseas bituminous coal development     Industry-academia-research joint R&D advisory efforts     Sustainability Management Committee











# Sustainability of EWP

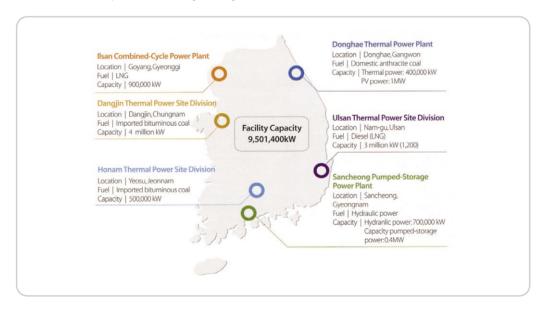
# **About EWP**

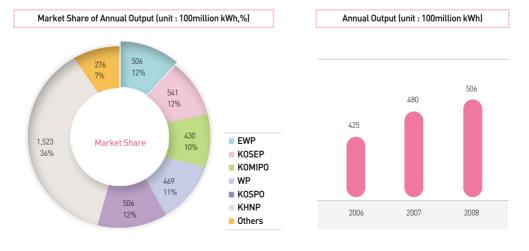
# Power Industry and EWP

The power industry generates electric power and supplies it to various industries. Electric power is essential to industries just as air and water are indispensable for humans. EWP, one of KEPCO's 6 power generation subsidiaries, produces power in conjunction with private power generation companies and district electric power operators. EWP trades power with KEPCO through Korea Power Exchange, and KEPCO sells power to general customers through its nationwide power transmission and distribution networks.

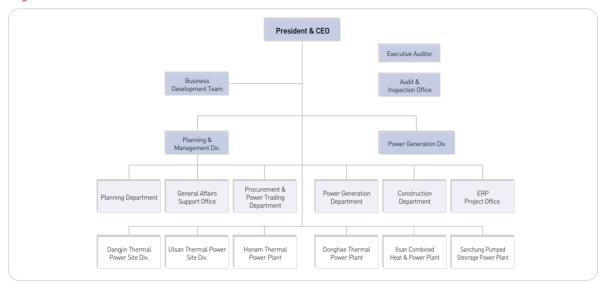
# Company Overview

- Name : Korea East-West Power Co., Ltd.
- Headquarters: 167 Samseong-dong, Gangnam-gu, Seoul, Republic of Korea
- Plant Sites: Dangjin Thermal Power Site Division, Ulsan Thermal Power Site Division, Honam Thermal Power Plant, Donghae Thermal Power Plant, Ilsan Combined-Cycle Power Plant, Sancheong Pumped-Storage Power Plant
- Date of establishment : April 2, 2001
- Total assets: 4.7152trillion won(19.5billion won reduced)
- Sales: 3.996tn won (1.1038trillion won increased)
- Workforce: 2,118 people (34 people decreased)
- Major Business: Development of electrical power resources, power generation
- Output: 50.6billion kWh (2.6billion kWh increased)
- Power sales volume : 48.3bn kWh (2.6bn kWh increased)
- · Shareholders: Owned 100% by KEPCO (remaining unchanged)





# **Organization Chart**



### **Business Areas**

EWP supplies electric power mainly through the thermal power generation and pumped storage power generation businesses. EWP is engaged in the business of using thermal power plants' waste heat and supplying heat to Korea District Heating Corporation, etc.

### • Thermal Power Generation

A business through which water is heated with thermal energy generated by fossil fuel combustion and is converted into high-temperature, high-pressure steam. This energy is used to turn turbines to generate and sell electricity.

# • Pumped-Storage Power Generation

A business through which at night, or during holidays when electric power consumption is less, water is pumped into a higher dam and is used to generate and sell power using the water fall like a normal hydro power when there is a large demand for electric power.

# Heat Supply

A business through which steam produced when operating turbines to generate power is utilized to supply heat to homes (EWP's Ilsan Cogeneration Plant supplies heat to Ilsan and Goyang areas)

# New and Renewable Energy

In a bid to proactively respond to the future power industry changes, EWP is building the Uldolmok Tidal Current Power Plant scheduled to be completed in 2012, Jeongseon Wind Power Plant, Ilsan Fuel Cell Plant, and Dangjin Small Hydro Power Plant, as well as developing large-capacity tidal current power plants in Jangjuksudo and Maenggolsudo, and offshore wind power.

# Overseas Business

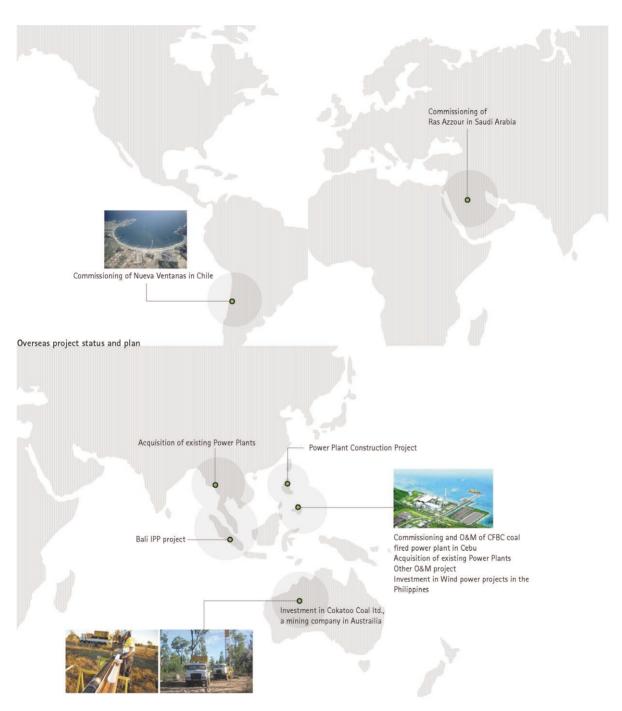
Based on its world-class power plant construction and operation expertise, EWP is venturing into overseas power markets as a means of fostering new growth engines. EWP boasts world-class power generation facilities in the fields of super critical coal-fired power generation, USC coal-fired power generation, CFBC (circulating fluidized bed combustion) coal-fired power generation, heavy oil power generation, gas combined cycle power generation, and other diverse new and renewable resources of energy.

EWP signed an agreement to provide technical support for the test operation of Chile's single-largest thermal power plant, Nueva Ventanas, and dispatched 11 employees to carry out the project.

		Ongoing Ove	rseas Projects		
Project Name	Project Description	Client	Туре	Facility	Progress
Test operation of Nueva Ventanas in Chile	Test operation of Nueva Ventanas Power Plant	POSCO E&C	Test operation	242MW coal fired power	Test operation underway
Cebu 0&M in the Philippines	0&M of KEPCO's Cebu Power Plant	KEPC0	0&M	CFBC 200MW (100MW×2)	Contract signed
Wind power in the Philippines	Equity participation in Alternegy to enter the Philippines wind power generation market	-	Equity participation in IPP	206MW wind power	Contract signed
Bali Timur IPP in Indonesia	200MW IPP east of Bali	PT PLNI	PP200	(100×2)MW coal fired power	Pre-Qualification Submission

### • Overseas Resources Development

Through alliances with developers of resources including mines, equity participation in projects, direct development and so on, EWP is developing resources in association with its overseas businesses. In December 2007, EWP, together with KEPCO, acquired a stake in Australia's mine developer cockatoo Coal Ltd., and with the Board's decision to purchase an additional stake in December 2008, EWP was able to increase its stake to 6.3% in 2009. This initiative enabled EWP to have a preemptive right to annually buy 2million tons of bituminous coal for power generation, and 0.5million tons of anthracite coal. EWP was also to take a 0.5% commission on coal for power generation that is imported to Korea from cockatoo. This will certainly stabilize the supply of bituminous coal and enhance the profitability of investment.



# Structure of Sustainability Management

# **Enhancing Global Competitiveness through** Sustainability Management

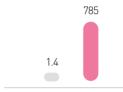
EWP has brought the concept of conserving the global environment and implementing sustainability management into its management philosophy. EWP is thus implementing corporate social responsibility(CSR), environmentallyfriendly management, and an ethical corporate culture.

# 2008 2015

# 2015 Mid-to Long-Term Major Business Goals



# Capacity(MW)



## New and Renewable Energy(MW)



# Overseas Market(MW)



# Overall Cost(Won/kWh)



# (Except overseas generation) (GWh/yr)



# Corporate vision

Creating the best energy value as a world-class power generation company

# 2015 mid-to long-term vision

# Asia's premier energy enterprise



Innovate business structure/Secure competitive advantages

- Expand low-price, high-efficiency generation facilities
- Optimize facility operations and ensure stability
- Source fuels in stable and economical manner

# Create new growth engines

- Advance into overseas markets
- Differentiate new and renewable energy development

# Establish global management system

- Develop advanced managements system
- Strengthen technological competitiveness
- Increase efficiency of human resources

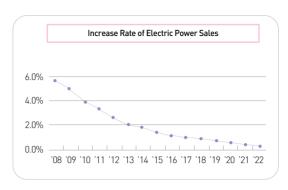
# Develop sustainability management structure

- Become a more responsible corporation
- Practice environmentally friendly management
- Establish globally oriented corporate culture

# Efforts for a Sustainable Future

# **EWP's Crisis and Opportunity**

Electricity, unlike general products, is not supposed to be stored, but upon being produced, is to be consumed. Thus, the demand for electric power is closely linked to economic growth. Sluggish economies, an industrial structure involving low energy consumption, and a declining population will pull down sales growth rate in electric power.

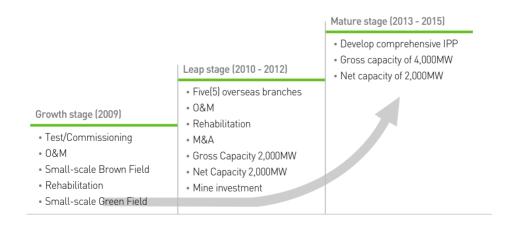


Power facility reserve ratio is estimated at 6-10% by 2011, and at 12-24% after 2012; the demand for additional construction of power plants is low, and if no additional construction of power plants after Dangjin power units 9 and 10, EWP foresees that its market share will decline to 11.5% by 2022 from 13.1% in 2008 due to increases in nuclear power and private power plants.

In 2008, EWP saw fuel costs occupy over 75% of the total production costs due to rising prices in coal, heavy oil, diesel, and natural gas. However, raising fuel costs are regulated not to be transferred to a rise in electricity prices, worsening power companies' profitability. Also, amid diverse interested parties' rising concerns over ecological destruction and environmental pollution, power generation companies are increasingly pressed to cut greenhouse gas emissions. Since EWP is mainly operating coal-fired power plants which emit a high level of carbon dioxide, it will be exposed to a financially unfavorable environment, if a regulatory policy such as cap & trade or carbon tax is implemented.

However, if well prepared for climate change issues, EWP will get new opportunities to create new business. The costs for building new and renewable power plants are gradually decreasing, and this means that new and renewable power generation can compete with fossil fuel power generation. EWP is pushing to continue to expand power generation sources of new and renewable energy.

# Overseas Project implementation Plan



EWP is planning to obtain an IPP status and secure comprehensive IPP basis by making aggressive inroads into global markets and to expand net generating assets to 1000MW in 2012 and to 2000MW in 2014 through power plant commissioning projects, 0&M, and the construction of new power plants in overseas markets. Also, EWP has set a corporate vision to increase the sales revenue of overseas projects by up to 250 billion won, some 5% of gross revenues by 2012.

Having secured a stake in cockatoo in Australia, EWP, from a long-term perspective, will be able to participate in coal mine exploration and operation, and to create synergies in association with its overseas power generation business.

# Active Participation in Major Issues

In an effort to firmly establish transparent management and to fulfill corporate social responsibility, EWP, in August 2006, joined the UN Global Compact. Thus it complies with the UN Global Compact's 10 principles in 4 fields, namely, human rights, labor, environment, and anti-corruption to ensure corporate transparency and to fulfill corporate social responsibility.

Under the agreements with the government, shareholder (KEPCO), and a third party, EWP is also participating in the reformation initiative in economic, environmental and social fields. EWP has signed up for the government's international accords to systematically drive forward its sustainability management.



### UN Global Compact's 10 Principles



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



- Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- the elimination of all forms of forced and compulsory labour;
- the effective abolition of child labour; and
- the elimination of discrimination in respect of employment and occupation.



- Businesses should support a precautionary approach to environmental challenges;
- undertake initiatives to promote greater environmental responsibility; and
- encourage the development and diffusion of environmentally friendly technologies.



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



# Disclosure on Management Approach

# Vision and Strategy

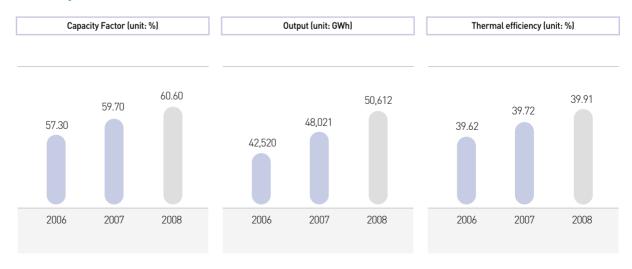
EWP's vision is to create the best energy value as a world-class power generation company. In order to bring this goal to fruition, the company has established a mid to long-term strategy called "Excellence 2015." In line with this, EWP will enhance its competitive advantages by reforming its business structure, create new growth engines by diversifying its business, and support the implementation of the strategy by establishing a global management system. Also, EWP will use its capabilities of constructing and operating eco-friendly, high-efficiency power plants in order to venture into the overseas power generation business as well as the renewable energy business, thereby ensuring continuous growth.



### Vision of Excellence 2015

	2008	Excellence 2015
Domestic Capacity	9,501MW	14,385MW
Overseas Capacity	0	2,500MW
Management System	E-Way, POMMS	Global IPP-Level Management System
Corporate Social Responsibility	Execute Corporate Social Responsibility Activities	Global Sustainable Corporation

# 2008 Major Achievements



# **Economic Achievements**

# **Creating Economic Value**

In 2008, EWP generated a total of 50.6billion kWh, which is a 5.4% increase from 48billion kWh in 2007, and sold 48.3bn kWh, which is a 5.5% increase from the previous year. The total sales figure was 3.996tn won. However, fuel prices, which dominated over 70% of the total costs, climbed rapidly, and the exchange rate of Korean won to USD surged, eroding EWP's profitability, and resulting in a net loss of 196.6bn won.

	Deta	ails of Fuel Price I	ncrease	
Category	2007		2008	Increase Ratio
Dubai Oil(\$/bbl)	68.37		94.18	37.75% ↑
Australian Coal( \$ /ton)	65.29		128.38	96.63% ↑
		Financial Highlig		
Classification		2006	200	7 2008
Revenue(100mn won)		25,754	28,922	39,960
Operating Profit(100mn won)		947	1,053	△657
Net Profit(100mn won)		457	338	△1,966
Assets(100mn won)		45,121	47,347	47,152
Liabilities(100mn won)		19,450	21,493	23,256
Capital(100mn won)		25,671	25,854	23,896
Debt ratio(%)		75.8	83.1	97.3
National Taxes(100mn won)		533	597	411
Local Taxes(100mn won)		105	108	23
Dividends(100mn won)		176	135	0
Dividends(Tuumn won)				

# Optimal Operation of Power Plants

EWP's facility capacity is 9,501MW, which accounts for 13.1% of Korea's total capacity (12.0% in terms of output), and has four cutting-edge ultra super critical(USC) power units(2,000MW) as its core power plants. Also, despite of a high ratio of obsolete power plants compared with other power generation companies, EWP has posted world-class levels of plant efficiency.

# Efforts to Enhance Reliability of Power Plants

Supplying quality electric power requires the minimization of faults. To minimize shutdown rate owing to faults, and downtime owing to unexpected events, EWP is implementing no-fault operation scheme, thereby striving to achieve the best reliability.



# **Reducing Downtime Caused by Unexpected Events**

21% of EWP's plants are 30 years old or older. As such, the company had no choice but to boost the facility reliability. Since 2004, EWP has been operating an integrated maintenance/operation management system or POMMS. This system enables a real time monitoring of risks or faults, making it possible to plan for the enhancement of plant reliability and efficiency, and to lower downtime caused by unexpected events.

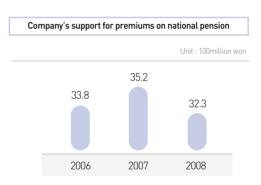


# Creation and Share of Value

EWP creates value, and shares it among employees, affiliates, shareholders, and creditors, as well as paying its taxes. EWP also contributes to social development, creates jobs for the community, and offers scholarships to beneficiaries, thereby accomplishing indirect economic achievements.

### Support for Pensions

EWP supports employee pensions under the National Pension Act. Employees have their premiums on national pensions deducted from their salaries, and such matching funds are supported by the company. The sum of such premiums is paid to the National Pension Service.



# Contribution to Communities and Indirect Economic Achievements

EWP creates jobs for the community's residents, and offers scholarships to low-income families, thereby strengthening its ties with communities and revitalizing regional economies.

Through social contribution activities, EWP is striding to create a better world. All employees participate in social contribution services to share the pain of needy people.

Community Service Achiev	ements		
Major Services	2006	2007	2008
Offering jobs in cleanup and guard services and construction work (people)	242,927	87,000	-
Construction work, services, and material purchase with the community's firms (100bn won)	193	154	-
Programs to increase income and to install public facilities (100bn won)	51	67	55
Payment of local taxes to municipalities (100bn won)	86	88	-
Scholarship to low income families' children (100bn won/people)	7.5(1,880)	8.7(2,053)	6.8[1,876]

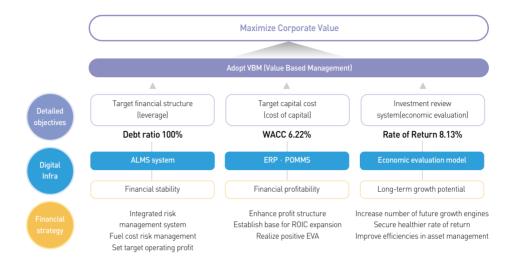
<sup>\*</sup> A decrease in jobs created for the community is attributable to a fall in orders for the construction of power plants.

# **Priority Hiring for Local Residents**

EWP hires people from the neighboring communities with a priority so as to promote their understanding of the power industry, to promote construction of new power plants, and to ensure the successful operation of power plants. In this way, EWP contributes to stabilizing the demand for, and supply of, electric power.

# **Efforts for Improving Financial Structure**

# 2020 Mid to Long-term Financial Strategy



# **Efficient Management of Borrowings**

EWP implemented financial strategies in conjunction with a mid to long-term financial plan, and thus lowered the interest rate on borrowings to 4.57% in 2008 from 6.36% in 2003. The debt ratio is set at 100% in an effort to protect financial health from worsening due to huge investments in expanding new areas such as overseas businesses and new and renewable energy while maintaining certain levels of credit ratings.

The weighted average cost of capital was minimized to ensure an efficient capital structure by cutting financial costs and maintaining an appropriate debt ratio. This has created foundations to concentrate capabilities on highly economic businesses in the future to enhance corporate value.

# **Raising Credit Rating**

In a bid to raise its international credit rating, EWP executes overseas road shows, regularly holds domestic IR sessions, and provides investor-customized management information, thereby revitalizing IR activities. In 2009, these efforts earned EWP an AAA rating from a domestic credit rating agency, A from S&P, and A2 - the same level as the country's sovereign credit rating from Moody's.

# IR Activities



- Interviewing with Moody's and S&P every year
- Interviewed with 19 overseas investors in Singapore, London, Amsterdam, New York, and LA ('04~'05)
- Interviewed with Fidelity, AIG, etc. ('06~'09)
- Make conference calls with overseas investors



- $^{\circ}\,$  Held IR sessions at Ulsan Thermal Power Plant and Dangjin Thermal Power Plant ('05~'08)
- Held IR sessions to enhance corporate image: domestic and overseas institutional investors, credit rating agencies, etc. (every other year)



- Keep investors' mailing list
- Post financial statements and borrowings
- ${}^{\bullet}\text{ Disclose through Financial Supervisor Service 4 times a year, and two times through the Ministry of Strategy and Finance}\\$
- Disclose in Japan's capital market to issue Samurai bonds ('03-'09)

\*\* Disclosure through FSS: http://dart.fss.or.kr/ Disclosure through the MOSF: http://www.alio.go.kr/ Disclosure in Japan's capital market: Japan's Ministry of Finance, Financial Bureau of Kanto

# **Innovation Management**

# **Innovation Management System**

# Six Sigma Innovation Activities

With the introduction of Six Sigma in 2004 for advancing the management expertise, EWP has innovated itself across the board. The primary purpose of introducing Six Sigma is to elevate management quality on a long-term basis by identifying and rectifying impediments in management to maximize customer satisfaction and corporate profit.

### **Innovation Organization Implementation**

With the operation of the Sustainability Management Committee as the management's top advisory body, EWP gets advice on its innovation strategies and revitalizes its external networks so as to reflect well-balanced views in its policy. The CEO acts as a role as the spokesperson of, and supporter for, innovation. Also, the CEO leads various innovation meetings to check the progress of projects to strengthen the driving force, to overcome a possible difference - caused by "the top-down" method - in the understanding of major issues between the CEO and employees, to gather diverse opinions and thus to build a consensus.



CEO's dialogue with employees (Donghae Thermal Power Plant)

# Innovation Culture

# ERP(E-Way) to Accelerate Innovation

To respond proactively to the business environment, and to bolster management efficiency and key capabilities, the company-wide integrated information system E-Way was built in 2008. The E-Way system is geared toward maximizing user convenience and allows easy access to all work processes so as to streamline work-flow and to enhance productivity. Also, this system enables users to retrieve and analyze data necessary for work, therefore enhancing its usefulness.

# Implementation of APS

Dangjin 7 and 8 power units became the country's first coal fired power plants to adopt APS (Automatic Plant Start-up & Shut-down) successfully. APS automates all procedures for the start-up and shut-down of a power plant, and helps supervise and command all equipment, thus optimizing all processes of plant operation.

With the APS, the procedures for power plant operation were optimized and standardized, and the start-up and shut-down time was curtailed, thereby cutting operation costs. Also, with the addition of an automatic voice information function, APS automatically announces each stage before and after the start-up of major systems. In addition, the estimated time required for major stages and overall situations are displayed on the monitor in order to eliminate human errors.

# **POMMS™**

POMMS (Plant Operation and Maintenance Management System) conducts a real-time analysis of the operational status to inform the maintenance targets and scope of power plants and inspection time, thereby enhancing the reliability and cutting maintenance costs.

On top of this, by installing a POMMS-based remote performance monitoring center at the headquarters, is conducting a real-time monitoring and controlling of its 37 power generators in 6 power plants to preventively detect and resolve problems in the early stage. POMMS is benchmarked by other power companies in Korea, and is presented to international conferences such as OSI Users Conference (San Francisco, the US) to be diffused along with relevant technologies to power companies worldwide.

# **Education for Strengthening Innovation Capabilities**

EWP has provided a variety of training and educational programs including professional innovation educational programs, company-wide competence enhancement educational programs, and external educational courses, in order to reinforce the core competence of its employees. The education for professional innovation personnel is offered to the experts of Six Sigma. The education for change management and for other managerial issues is offered to all employees to improve their core competence.



# Disclosure on Management Approach

# Management Structure of Environmental Achievements

To achieve the environmental vision of becoming an environmentally-friendly company that creates a bright future, an environmental management system suited to the ISO standards was introduced. Also, with the goal of building and operating environmentally-friendly power plants and of conserving the global environment, diverse measures are being implemented to cut the fuel consumption and minimize wastes through enhanced plant efficiency, and to develop new and renewable energy.

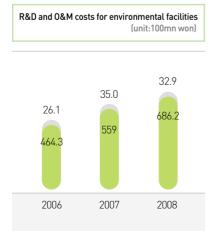


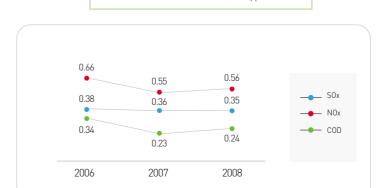
Excellence 2015 Environmentally-friendly Management Objectives							
Category	Vision 2012	Excellence 2015					
Goal	Carbon Emission: 0.22kg-C/kWh	Carbon Emission: 0.20kg-C/kWh					
	Introduce and establish environmental performance	evaluation Strengthen environmental management system.					
Detailed Plan	and total process evaluation system.	Proactively respond to Climate Issues					
	Secure emissions credits through CDM business.						

Strategic Projects and Implementation Organization

- Formulate policy and strategies against climate issues ....... Planning Department

### 2008 Environmental Achievements





Environmental pollutants emissions

# **Environmental Management and Investment**

# **Building Environmental Management System**

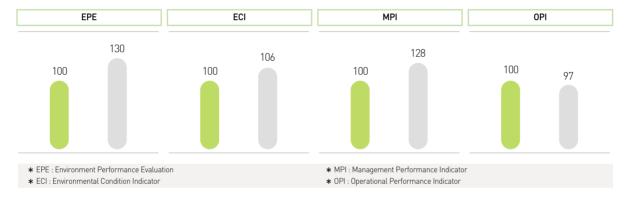
To actively respond to paradigm shifts in environmental policy and to provide an environmental management road map for sustainable growth, a mid to long-term environmental management master plan, focusing on minimizing pollutant emissions, is being implemented. Efforts are being made to reduce emissions of sulfur dioxides, nitrogen oxides, dust, and carbon dioxides, and to recycle wastewater.

# **Building Environmental Performance System**

The environmental performance system aims to manage environmental performance in terms of numbers, to inspect problems for improvement, to ensure efficient facility investment and enhanced transparency of environmental management. EWP is the first Korean power company which introduces environment performance evaluation. In 2008, monthly environmental performance evaluation was efficiently managed using ERP system.

Environmental performance is evaluated every year on the basis of representative indicators. A general index, called EPE (Environment Performance Evaluation), shows yearly trends that reflect management and operational performances and detailed environmental indices. The resulting strengths and weakness identified by EPE are reflected in the company's future plans. Other indices include ECI (Environmental Condition Indicator), MPI (Management Performance Indicator), and OPI (Operational Performance Indicator). Comprehensive evaluation based on weighted indicators suggested that in 2008, environmental performance was improved by 30% from that of 2007.

# **Evaluation of Environmental Management Indicators**



# Active Investments in Environmental Management

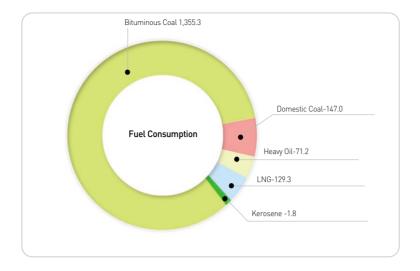
Investment in environmental management has increased every year; compared with 2007, the investment in 2008 was increased by 12.21bn won. R&D investment is on the increase every year owing to a rise in R&D concerning the Climate Change. R&D investment is expected to rise in the future to develop renewable energy and to respond to the issues on Climate Change.

# **Efficient Energy Use**

# Major Energy Use and Emissions Management

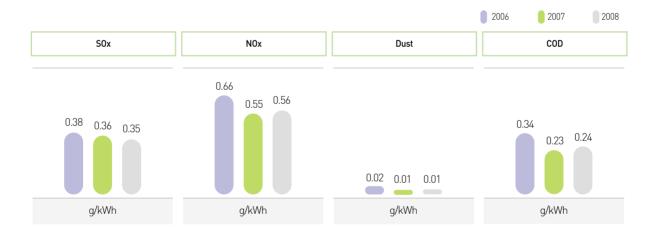
In relation to the fuel consumption, owing to a growing number of coal-fired power plants, the bituminous coal consumption increases every year. The heavy oil consumption decreases, while LNG use is on the increase, thereby helping reduce the emissions of pollutants.

Fuel Consumption						
Classification	2006	2007	2008			
Domestic Coal(ton)	1,139,940	1,153,566	1,469,902			
Bituminous Coal(ton)	10,057,782	11,772,515	13,553,246			
Heavy Oil (kg)	1,366,488	1,266,786	712,022			
Kerosene (kQ)	24,598	29,663	17,882			
LNG(ton)	1,092,700	1,284,754	1,292,571			



# **Emissions of Air and Water Pollutants**

EWP's strict internal standards reduced its emissions factor(g/kWh). In order to meet these standards, cutting-edge air pollution prevention facilities and a comprehensive waste water treatment facility have been installed.



# Number and Amount of Major Hazardous Substances Spills

At every workplace of EWP, there were no accidents of leakage of oils, wastes, hazardous substances, and no violations of environmental regulations.

# **Treatment of Hazardous Wastes**

Hazardous wastes are treated in compliance with the Basel Convention and the Act on Trans-border Movement and Treatment of Wastes, and in 2005~2008, a total of 35.93 tons were treated safely.

	Treatment of Wastes under the E		
Period of Treatment	Treated Volume (ton)	Host Nation	Treatment Costs (100mn won)
Sep '05 ~ Apr '06	25.12	France	0.85
Jan '07 ~ Aug '07	10.81	Belgium	0.51
Total	35.93		1.36

# Coping with Issues on Climate Change

# Countermeasures against Kyoto Protocol

Kyoto Protocol took effect in 2005, and Korea, a member of OECD, is the world's 10th largest emitter of GHG. The international community's pressure will increase to oblige Korea to accept mandatory reduction in post-Kyoto Protocol regime. Thus, in 2005, Korean government formed countermeasure groups in 8 fields of power generation, steelmaking, cement, and other major businesses. EWP declared its low carbon & green growth vision. EWP is positively participating in the international CDM and the nation's GHG reduction inventory registration program as well as the pilot emissions trading, and is pouring all its efforts to develop CO<sub>2</sub> reduction technologies and renewable energy.

### Low carbon & Green Growth Vision



# **Declaration of Low Carbon & Green Growth Vision**

For the first time for power companies, in April 2009, EWP held a ceremony to declare its low carbon, green management vision with 100 personnel in attendance including the CEO, employees, government officials and the residents of Jindo-gun. During the ceremony, EWP declared its vision, the global leader in the power generation industry that leads low carbon, green management, and presented G3, namely, GHG Reduction, Green Growth, and Green Culture, as the 3 strategies.



# **Introducing GHG Monitoring System**

In 2006, a GHG monitoring system was built to produce accurate statistics on GHG emissions and to calculate GHG (CO2) emissions. In measuring GHG emissions, IPCC (Intergovernmental Panel on Climate Change) standards are applied, thus ensuring reliability. Also, such data issued to ensure an efficient facility investment, to produce GHG emission reports and to respond to the UNFCCC.

GHG inventories are being built in connection with the monitoring system and ERP system. The GHG inventory is an integrated system that can use the monitoring function, statistics on emissions, the emissions credit management function, and so forth

	GHG E	missions Overview		
Year	2006	2	007	2008
Output (GWh)	42,5	520	48,021	50,612
Direct Emissions(1,000 ton-CO <sub>2</sub> )	31,5	539	35,490	38,640
Indirect Emission(1,000 ton-CO <sub>2</sub> )		68	82	53
Total Emissions(1,000 ton-CO <sub>2</sub> )	31,	608	35,572	38,693
Emissions Factor (kg-C02/kWh)	0.1	743	0.741	0.764

The main indirect greenhouse gas produced at power plants is  $CO_2$ , generated from SOx removal processes. There were no emissions of  $SF_6$  and such ozone depleting substances as CFCs, HCFC, Halon or Methyl Bromide.

# R&D Investment to Deal with Climate Change

With regard to the UNFCCC, pressure from the international community will increase and require Korea to cut GHG; a fund of 19.46bn won has been earmarked by 2014 in the research project to respond to climate change. Through continuous R&D investment, core technologies for GHG reduction will be secured.

# Construction of New and Renewable Energy Plants

EWP is proactively responding to unstable energy demand and supply situations triggered by the depletion of fossil fuels, to global environmental issues associated with climate change, with the effectuation of Kyoto Protocol, amongst other changes to the power industry. Under the second term Renewable Portfolio Agreement (RPA) made together with the government, EWP is going to invest 340.7bn won by '09~'11 to build new and renewable energy plants up to 97.7MW. Also, of the total output, 3.9% will be supplied from new and renewable energy by investing 3,307.1bn won by 2015 in a mid to long-term plan to build new and renewable energy plants with a capacity of 714.3MW.

New and Renewable Energy Business Overview			<ul><li>Commercial Operation</li><li>Under Process</li></ul>
		Total Project Cost: 408.8 billion won	
Wind Power	102.1bn won	<ul> <li>20MW Jeongseon Wind Power</li> </ul>	To be completed by Jul '11.
wing Power	IUZ. IDN WON	<ul> <li>13MW Gangneung Wind Power</li> </ul>	To be completed by Jul '11.
		• 1MW Donghae PV Plant	Completed(Sep '06)
DV.	07 /1	• 50kW Sancheong PV Plant	Completed(Jun '07)
PV	27.6bn won	• 1MW Dangjin PV Plant	Under preparation
		• 1MW Namhae PV Plant	Under preparation
C 1111 1 D	OF 11	400kW Sancheong small hydro power	Completed(Dec '01)
Small Hydro Power	25.1bn won	• 5MW Dangjin small hydro power	To be completed by Dec '09.
F 10 11 D	EE OI	• 2.4MW Ilsan fuel cell power	To be completed by Sep '09.
Fuel Cell Power	55.9bn won	8.4MW Ilsan fuel cell power	Under preparation
Tidal Current Power	198.1bn won	<ul> <li>49MW Uldolmok Tidal current power (experimental 1MW tidal current power plant)</li> </ul>	To be completed by Dec '13.

### Construction of Fuel Cell Power Plants

Under a master plan for the construction of the country's largest-capacity (4.8MW) fuel cell power plant on Ilsan Cogeneration site, a fuel cell power plant with a capacity of 2.4MW is now being constructed with completion scheduled for September '09. In the future, fuel cell power plants with a capacity of 16.8MW will be constructed at Ilsan Cogeneration Power Plant and Ulsan Thermal Power Plant.

# **Construction of Photovoltaic Power Plants**

A 1MW photovoltaic power plant, which was completed on the premises of Donghae Thermal Power Plant in 2006, is now in service. This plant is the world's first grid-interconnected photovoltaic power plant built in compliance with UNFCCC, and was listed as a CDM (Clean Development Mechanism) business in 2007.

# **Small Hydro Power Plants**

A small hydro power plant refers to a type of power plant that uses the head difference of water discharged in the process of the operation of a power plant. Sancheong Pumped Storage Plant's Small Hydro Power(400kW) harnesses water used for minimal stream flow, discharged from the dam below the plant. Dangjin Thermal Power Plant's small hydro power will generate power by installing three water turbine generators each with a capacity of 1,650kW at the discharging outlet of the plant and by harnessing the plant's main cooling water's head difference to the neighboring sea level. The design was started in June 2005, and the commercial operation is scheduled for December 2009.



# **Construction of Wind Power Plants**

On-site investigations were completed in December 2006 in a plan to develop wind power resources in five sites including the premises of Dangjin Thermal Power Plant, Donghae Thermal Power Plant, Donghae Chorokbong Mountain, and Jeongseon Baekbongnyeong. Currently, a wind power complex with a capacity of 20,000kW is being constructed on Jeongseon Baekbongnyeong. Other projects are under review in Gangneung, Namhae, and Kimcheon.

Large capacity wind power complexes are expected to be developed in cooperation with private power companies and municipalities to facilitate the projects. According to the mid to long-term plan, EWP will participate in the development of power generation technologies suited to Korean topographies and large capacity offshore wind power.

# Technologies Commercializing Ocean Energy

In a mid to long-term project of tidal current power, EWP is participating in the state project for commercializing tidal current energy. In May 2009, EWP, together with the Korea Ocean and Research Development Institute, built an experimental 1,000kW Uldolmok Tidal Current Power Plant. A tidal current energy does not require a dam, but harnesses the fast running water through narrow water channels at high and low tide, and rotates water turbines to generate power. As such, it is an eco-friendly power technology.

Through performance improvement and feasibility study, three commercial tidal current power plant complexes with a total capacity of 450,000kW are projected to be constructed as part of a mid to long-term plan.

The project will, if completed, help revitalize the regional economy in line with the municipality's ongoing ocean energy park as a tourist resource, and serve as an education course for children.

### IGCC (Integrated Coal Gasification Combined Cycle) Power Plants

Starting in December 2006, EWP is participating in the government-led project of developing an 300MW IGCC plant. IGCC technology reduces carbon dioxide emissions by 20% compared with conventional coal-fired power plants. Also, efforts are being made to use hydrogen generated during the IGCC operation. To commercialize hydrogen power technology, EWP plans to construct fuel cell power plants, and to create fuel cell power parks.

### Overview of Intellectual Property

As of December 2008, 66 patents and 13 utility model rights for a total of 79 intellectual properties were registered. Currently, 25 patents and 7 utility model rights are under review.

# Overview of Intellectual Property Filed for Application

[Unit - Case

Cate	gory	2006	2007	2008
N. OD CLUG E E	Patents	8	17	13
No. of IPs filed for application	Utility Model Rights	4	5	3
То	tal	12	22	16

# **Domestic Community Energy Project**

Under a consortium with SK E&S and Seohae City Gas, EWP is pushing to construct a community energy supply facility on Seokmun National Industrial Complex to generate heat with a maximum capacity of 208.8Gcal/h. The project, costing 129.4bn won, is scheduled to be completed by 2012 and heat supply will begin in 2013. For the project, Dangjin Thermal Power Plant will supply steam (a projected 310t/h), and an auxiliary power source, 38MW fludized bed cogeneration unit will be prepared. Many synergies will be created, such as energy efficiency improvement, air quality improvement, enhanced convenience for residential and industrial sectors, and diversification of fuel.

# Achievements against Issues on Climate Change

# Signing MOU to respond jointly to UNFCCC

EWP, along with other power companies and Korea Power Exchange signed a MOU on simulation trade of GHG emissions in the power generation category to jointly and proactively respond to UNFCCC. Under the MOU, efforts are being made to build a simulated emissions trading system, to determine GHG emissions coefficients, and to reduce GHG emissions.

# GHG Emissions Trade and Building Infrastructure

In a bid to respond to climate change, EWP is pushing to launch CDM and to register for KCER(Korea Certified Emission Reduction). Donghae Thermal Power Plant's photovoltaic power was approved for UN CDM registration for the first time in the world's solar photovoltaic power category, thereby acquiring an estimated 690 tons in emissions credits. Dangjin Thermal Power Plant's small hydro power, which has been completed a feasibility study, will seek CDM registration in 2009. The installation of high-pressure inverters at Honam Thermal Power Plant, was granted a KCER of 33,160 tons. The project constructing a USC power plant at Dangjin Thermal Power Plant was granted a KCER of 74,721 tons. Also, the 4,600 ton-CO2 of CER, which was earned through Donghae photovoltaic power project was sold to Natsource in Japan.

Obtained	Carhon	Credits
Obtained	Cai buil	OI CUITS

Project	Sites	Reduction (ton-CO2/year)		Remarks
Donghae Photovoltaic Power Generation (1MW)	Donghae Thermal Power Plant	690		Approved for UN CDM Registration (August '06)
Dangjin Small Hydro Power (5MW)	Dangjin Thermal Power Plant	15,093		Seeking UN CDM registration
		Year 1	8,527	
Installation of High-Pressure Inverters	Honam Thermal Power Plant	Year 2	7,768	KCER granted
		Year 3	16,865	
Construction of USC to Improve Efficiency	Dangjin Thermal Power Plant	74,721		KCER granted

# **Efforts for Minimizing Environmental Impacts**

# Power Plants and Environmental Impacts

In the course of generating electric power, air and water pollutants as well as wastes are created. Air pollutants are created in the course of boiler combustion, such as sulfur dioxides, nitrogen oxides and dust. Water pollutants include chemical oxygen demand (COD) and suspended solids (SS).

To reduce air pollutants, flue-gas desulfurization facilities, de-NOx facilities and electric precipitator(EP)s are operated. Water pollutants are treated at waste water treatment plants installed at each power plant. Coal ash, which is produced when coal is fired, can be recycled and used as raw material for cement. It is then sold, earning revenue for EWP.

	Overview	of Pollutants	
Pollutants	Air Pollutants	Water Pollutants	Wastes
Category	Sulfur dioxides, nitrogen oxides and dust	COD and suspended solids	Coal ash
Reduction Means	Flue-gas desulfurization facilities, de-NOx facilities, and electrical dust collectors	Wastewater treatment plants	Recycled (Used as raw material for cement)

# **Environment Monitoring Systems**

All workplaces of EWP are required to install Clean SYS (stack remote monitoring system). Information of pollutants emissions at power plants is transmitted online in real time to the Environmental Management Corporation(EMC)'s control center. The internal environment monitoring system monitors the stack emissions information, water management and surrounding environment 24 hours a day.

# Real time Monitoring to Measure Environmental Impacts

Cargo handling at wharfs is monitored via CCTVs in real time, and the information is provided in real time to relevant staff, and the CEO, so as to prevent environmental accidents. Coal storage areas are also monitored via CCTVs in real time, so as to comprehensively manage coal storage situations, coal quality information, and fires. Efforts are being made to minimize environmental impacts on areas near our power plants.

# Response to Leakage Accidents of Chemicals and Oils

To respond to possible leakage of fuel oils and hazardous chemicals at power plants, crisis response training and accident prevention training are carried out every year. Pursuant to the Act on Marine Environment Management, water surface cleaners, which were obtained from Korea Marine Environment Management Corporation, are installed in preparation against emergency.





# Construction and Operation of Environmentally-friendly Power Plants

With a total investment of 43.9bn won, de-NOx facilities were constructed at power units 1-4 at Dangjin Thermal Power Plant to prevent nitrogen oxides emissions, complying with the required emissions criteria and remarkably reducing emissions from 230ppm to 50ppm. Ahead of the construction of Dangjin power units 9 and 10 to be completed in 2015, an environmental impact review committee has been established together with the NGO Dangjin Environmental Movement Association to review environmental impacts. Fish farms are built using warm water discharged from power plants in an effort to conserve diverse oceanic lives such as abalones and armorclad rockfish, and to help increase fishermen's income.

# Additional Installation of total nitrogen removal facilities from desulfurization wastewater

An advanced type of waste water treatment facility is being built at Ulsan Thermal Plant to eliminate dissolved total nitrogen which may cause eutrophication of aquatic ecosystems including ocean and rivers. This project is scheduled to be completed in September 2009. This will make it possible to maintain discharged concentration level of total nitrogen at under 20ppm, minimizing water pollution

# **Power Plants into Parks**

Efforts are being made to convert power plants into parks in a bid to recover nature damaged owing to the construction of power plants, and to create shelters for dwellers in the community. This project also plants trees to reduce air pollution and to respond to climate change.

# **Energy Saving Efforts**

### Cutting Energy and Costs through Saving and Enhanced Efficiency

Under a mid to long-term scheme, energy use is systematically managed. To enhance efficiency, POMMS is operated to monitor and manage the performance of facilities in real time. Also, under VESA [Voluntary Energy Saving Action], the use of energy is rationalized to cut costs and to improve on inefficient factors.

Under the scheme, in 2008 as well, efficiency was improved through combustion management optimization, G/T exhaust gas temperature improvement, and G/T compressor cleaning. Energy saving campaigns, energy publicity, guidance on and strengthened supervision over energy saving in buildings was executed. Thus, 130,000 TOE was saved.

		Annual Records for Saved E	inergy		
	Coheren		Yearly Energy Cuts		
Category		'06	'07	'08	
Consumpt on		Output (GWh)	42,520	48,021	50 612
odrisampeon		Energy (1,000TOE)	10,643	11,363	11 617
		Fuel	70	81	80
Saved Energy		Electric Power	47	43	50
(1 000TOE)		Others	0.1	0.4	0.4
		Total	117	125	130

# **Active Recycling**

By products produced from the operation of power plants include coal ash, desulfurized gypsum from the desulfurization process, sludge, waste oils, and domestic wastes. These wastes are increasingly recycled and sold, contributing to EWP's revenues and reducing waste disposal costs. Coal ash is used as a remicon mixture, and a raw material for cement. Desulfurized gypsum is recycled as a raw material for plaster boards and so forth. Also, efforts are being made to divers fy demands for such recyclable materials, and to research and develop recycle technologies. With an enhanced recycling ratio of fly ash, EWP extended the service life of its ash treatment plants, etc. allowing it to cut a cost of 21.3bn won.

ecycling of	oal sh and Desulfurized yps	um	
Year	2006	2007	2008
Coal Ash Recycling Ratio [%]	68	71	69
Gypsum Recycling (1,000 ton)	353	389	397
Revenue from Recycling [100mn won]	84	85	99

Thirty kinds of wastes such as waste oils, waste thermal insulators, and waste synthetic plastics are produced in the process of plant maintenance. Efforts are being made to recycle and treat wastes legally, and non recyclable wastes are treated through authorized waste treatment firms.

	Dis	Disposal of Wastes (except coal fly ash and desulfurized gypsum)			
Cate	egory	Unit	2006	2007	2008
	General	ton	8,640	9,747	8,397
Waste	Des gnated	ton	368	1,043	995
	Total	ton	9,008	10,790	9,392
Recycled	d Volume	ton	5,955	7,126	5,731
Recycli	ng Rat o	%	66%	66%	61%

# Water Consumption and Reuse of Wastewater

Water for operating power plants is supplied from nearby rivers or dams. Water usage includes boiler feed water, machine cooling water, desulfurization water, drinking water, etc.

EWP's each power plant is equipped with comprehensive wastewater treatment systems to treat wastewater physically and chemically. Wastewater is recycled as process water, and is discharged into nearby sea after it is treated far below the discharged water quality standard. Efforts are being made to improve processes at wastewater treatment facilities and to use innovative technologies in a bid to reduce wastewater or to raise recycling ratios.

# Water Consumption and Wastewater Reuse

Year	Output(GWh)	Consumption (1,000 ton)	Vater Consumption Factor (ton/GWh)	Mass Treated (1,000 ton)	Wastewater Mass Reused (1,000 ton)	Reuse Ratio (%)
2006	42,518	8,217	193	2,132	1,379	65%
2007	48,018	9,688	202	2,759	1,907	69%
2008	50,612	8,725	172	2,585	1,453	56%

# **Conservation of Ecosystems**

# **Assessment of Environmental Impacts**

Large-scale development projects and urban development projects may cause serious environmental impacts. Thus, prior detailed environmental surveys are executed so as to assess environmental impacts and to prevent pollution. Investigations found that the process of producing electricity does not affect biodiversity. Thus so far, no particular impacts have been caused to the environment.

# Releasing Fries nearby Dangjin Thermal Power Plant

In a bid to conserve fish near power plants, every year fries are released into the sea off Nanjido Island (Seokmun-myeon, Dangjin-gun), Janggohang, and Gyoro-ri.





# Transparent & Ethical Management

# Transparency of Governance

### Corporate Governance

As of December 31, 2008, total shares stood at 61.48 million, and capital was 307.4bn won. EWP is owned 100% by KEPCO. This remained unchanged in 2008.

### **Board of Directors**

The board of directors, the top decision making organization, consists of standing directors and non-standing directors. Standing directors total three including the President (Chairperson of the board), and non-standing directors consist of four outside directors. The auditor may attend meetings of board and voice his opinions but has no voting right. One coordinator is installed to handle administrative affairs of the board and his position is undertaken at the head of the department which is responsible for the affairs of the board.

Pursuant to EWP's Articles of Association, the President represents the company, supervises work, and chairs the board. When he is unavailable owing to inevitable reasons, a standing director will become an acting chairperson in the prescribed order of standing directors.

# Operating Procedure of Board

The board may resolve on matters by the means of using simultaneous communication video and sound systems with all or some of the board members not attending meetings. If the agenda particularly concerns a certain director, that director is not allowed to vote on the matter in order to ensure transparency in board operations. In order to ensure independence and professionalism more than performing audit, check and balance function, the board has outsider directors in decision making. To that end, the board's homepage is operated to

allow outside directors to better access company information and to reflect their opinions in the key mid to long-term strategies and overall management. Agendas are notified to outside directors seven days before a meeting to allow them to fully review them. The relevant staff visits outside directors three days before a meeting to explain the agenda and allow them to fully review the agenda before presenting their opinions.

Outside directors were invited to visit power plants along with the provision of brochures on the power generation industry to help them understand the industry better. Eight board meetings were held in 2008. Details on resolutions are available at the company's website (www.ewp.co.kr).



(Homepage of BOD)

# **Board's Process for Reaching Agreement**

The board uses outside directors' diverse experiences and professionalism and performance in their various fields so as to reach a balanced agreement on major issues and agenda.

# Analysis of Outside Directors' Performance

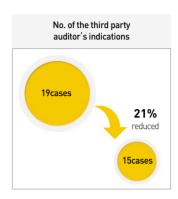
Quantitative Analysis	* Attendance ratio, ratio of speaking, ratio of prior agenda appraisal, etc.
Non-Quantitative Analysis	Suggestion achievements and contribution to the organizational operation     Feedback on board operation

# **Enhancing Transparency of Accounting Information**

In 2007, with the implementation of IFRS (International Financial Reporting Standards), EWP built a compliance system to respond to its being listed on the US stock market by improving processes and updating work manuals. Our evaluation process showed the compliance system to be valid. Also, with the introduction of ERP, the compliance system was updated in line with the new accounting system.

Thus, the compliance system was certified by a third party, and the third-party accounting audit found that areas for improvement decreased by 21% from the previous year.

	Compliance System	
Category	Description	Implementation Period
Effectiveness of Compliance System Design	Work processes tracked and sample tests conducted	Aug 25- 28, '08 Dec 15 - 16, '08
Evaluate the Effectiveness Internally	15 work processes and company-wide compliance status evaluated	Sep 1-5, '08 Dec 17, '08 - Jan 19, '09
	System evaluated internally, and the compliance procedure effectiveness inspected	
Third-Party Auditor	Random process testing conducted, and the adequacy confirmed	Sep 29 - Oct 2, '08 Dec 22 -26, '08
	The adequacy of company-wide compliance examples     and system operation audited	



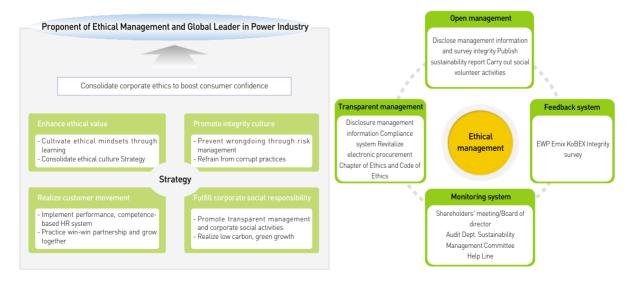
# **Ethical Management**

# Disclosure on Management Approach

# Structure of Ethical Management

EWP continued its efforts to establish ethical management as a corporate culture so as to ensure a clean, transparent and fair work performance.

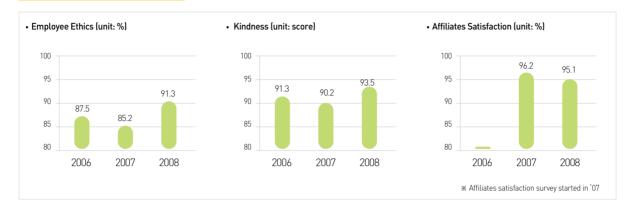
# Vision and Strategy



# Strategic projects and implementation organization

- Enhance efficiency of ethical management system ——Planning Department
   Build unethical practice prevention system ——Audit Office
- Implement performance, competence-based HR system Management .......Support Office
- Enhance transparency of accounting/contracts ......Support Office, Business Department

#### 2008 Social Achievements (ethics category)



#### **Corporate Ethics**

To become a globally renowned energy company, EWP has been committed to its principles. To live up to these principles, employees start their morning work by solving ethics-related problems. As such, employees are striving to further consolidate an ethical culture.

#### **Ethical Management for Transparent Corporation**

EWP bases all its managerial activities to realize the corporate vision upon ethical management. Employees conduct Self-Ethics campaigns under which they are reminded of the fact that the practice of ethical management begins with them. By striving to accomplish corporate economic, social and environmental achievements, EWP enhances ethical value, promotes a culture of integrity, realizes customer movement, and fulfills corporate responsibilities.

#### Policies for Voluntary Implementation of Ethical Management

- Ethical Standards: The ethical standards that serve as evaluation criteria for ethical activities are comprised of ethics declaration, Code of Ethical Behavior, activity principles and activity guidelines for working level employees. They reflect requirements that are being intensified among stakeholders by adding additional social requirements and revising and updating them on a regular basis.
- Ethical Management Education: With respect to forming a sustainable consensus that each person is the subject that should conduct ethical management, a variety of educational programs including cyber education, and group-based education. Notably, in 2008, external instructors were invited to conduct face-to-face education with employees on shift work, enhancing employee education satisfaction.

		Curricula on Ethical Manageme	nt	
Category	Introduction	In-Depth Course	Specialized Course	Others
Targets	New Employees	Senior Employees	Working Staff	All Employees
Course Title	Set the voyage for ethical	Toward sustainability management beyond	Certified sustainability management	Road show education for
	management	ethical management	operator (CSO)	workplaces
Period	May '08 (1 mth)	Aug. '08 (1 mth)	Nov - Dec '08 (6 weeks)	Nov. 08 (2 hrs)
No. of Participants	68	138	2	72

- Reporting Policy: EWP is operating a reporting policy available to any outside stakeholders as well as to internal employees. It also utilizes an ombudsman policy for complaints regarding unethical activities and customer inconveniences along with a 'Helpline' policy to ensure the anonymity of reporters.
- Diagnosis and Improvement: EWP has independently developed and operated the 'East-West Development Ethical Management Index (EWP-EMIX)' to come up with improvements by measuring and analyzing the implementation level of ethical management programs since 2007.

#### Implementation Organization for Ethical Management

#### Green Management Committee

The Sustainability Management Committee used to be a critical consulting group regarding ethical management, and coordinates and decides on major relevant polices. In 2009, its name changed to Green Management Committee. The committee is composed of external key profressionals in the fields of business administration, ethics, labor, energy and environment, as well as inside directors in a bid to promote the governance of project implementation.



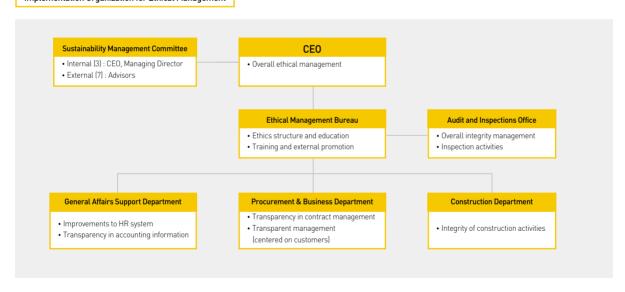
#### Ethical Management Action Secretariat

As an organization under direct control of the CEO, the Ethical Management Action Secretariat is in full charge of ethical management implementation activities. The organization consists of Strategic Planning Team and Audit Department. Major responsibilities include setting up action plans for the distribution, implementation and evaluation of the ethical consciousness and giving feedbacks on the results to iron out measures for continued improvements.

#### • Audit Office and Staff in charge of Ethical Code

The Audit Office prepares a framework to prevent unethical activities, provides education for the prevention of wrongdoings/corruption and carries out an internal report system. The officers designated to be in charge of Ethical Code in the headquarters and branches perform comprehensive tasks regarding ethical management, including education and consultation of employees, handling infringement cases and protection of those who report unethical practices. They also act as consultants for ethical dilemmas that might occur in everyday works.

#### Implementation Organization for Ethical Management



#### **Accomplishments**

EWP is widely recognized by outside institutions for its efforts to create a transparent company based on this ethical management system.

- Granted Sustainable Management Award hosted by Ministry of Commerce & Industry and Energy for three years in a row
- Accomplished top class level in Integrity Survey on Power Group Affiliates for two years in a row
- Rated top (AAA) ('08) in Ethical management Status Survey organized by Ministry of Knowledge & Economy
- Korea's Ethical Management Award in the Category of Public Corporations





#### Achievements in Labor and Human Rights Affairs

#### Creating a Healthy Corporate Culture

#### Employee Overview

By installing power units 5-8 at Dangjin Thermal Plant, job creation increased by 4.28% in 2006 and by 4.01% in 2007. In 2008, workforce stands at 2,118. More new employees are hired, leading to a decrease in the average number of years served.

	Workfo	orce Overview	
Category	2006	2007	2008
Employees (people)	2,069	2,152	2,118
- Regular	2,069	2,152	2,118
- Non-Regular	0	0	0
Average Years Served	15.4	15.1	15.1
Job Creation Ratio (%)	4.28	4.01	-1.58
Job Quitting Ratio (%)	0.04	0.07	0.56

<sup>\*</sup> Years served include those with KEPCO

#### Gender Equality

No discrimination against women is allowed regarding recruitment, promotion, salaries and so forth. The ratio of female employees to the total workforce increases, and in 2008, it stands at 7.55%. Also, in 2007, the ratio of new female employees to the total new employees reached 17.69%

To ensure gender equality, in the 2008 employee promotion, female supervisors accounted for 15.4% of the total supervisors promoted. Also, special educational courses are provided to women only, and maternal protection facilities are operated within the company.

	Female Workforce		
Category	2006	2007	2008
Female Workforce (people)	139	159	159
Ratio of Female Employees [%]	6.71	7.39	7.51
Yearly Female Employee Recruitment Ratio [%]	0.36	0.54	0.55

<sup>\*</sup> In 2008, no new employees were recruited.

#### Increased Employment of Marginalized People and Meritorious Service Achievers

Disabled employees are increasingly recruited every year. The ratio of disabled employees to the total workforce exceeds 2%, which is the mandatory employment level stipulated under the Act on Promotion of Disabled People and the Act on Occupational Rehabilitation. Also, pursuant to the Act on Special Treatment of and Support for National Meritorious Service Achievers, meritorious service achievers are employed to account for 9.49% of the total workforce in our equal employment initiative.

	Radio of Disabled Employees		
Category	2006	2007	2008
Ratio of Disabled Employees (%)	2.22	2.18	2.46
Meritorious Service Achievers Employees [%]	8.79	9.53	9.54

#### Creating a Pleasant Workplace

#### Securing Work Safety and Health

#### Labor-Management Health & Safety Committee

The Industrial Safety, Health Committee, comprised of high-ranking officials from both management and labor sides, executed joint safety inspections at workplaces, held workshops, and resolved 40 major agendas. As such, the committee plays a crucial role in consolidating the company's safety and health system.

#### ■ Work-Related ∆ccidents

Work environment evaluation is executed to protect employees from possible hazards and to promote employee health. Quality protective aids are provided to workers to protect their health. As a result, no single accident took place in 2008.

#### Injuries, Diseases and Accidents of Employees (non-attendance ratio

Category	2006	2007	2008
Accident Ratio (%)	0.05	0.048	0
Accident Category (employee)	Death -0, Injuries -1	Death -0, Injuries -1	Death - 0, Injuries-0
Average of Electricity, Gas and Tap Water Businesses [%]	0.24	0.24	0.18

#### Educational Programs for Health Improvement

To ensure employee health, both internal and external instructor-led health classes are provided to employees. Also, exercise prescription and training apparatus are provided to help treat and prevent chronic diseases and musculoskeletal disorders.

#### Health Counseling

Health staff regularly visits frontlines to check employee's health, and a health counseling system is implemented so as to protect employees' health. General and special medical examination of employees takes place every year to prevent diseases. Under arrangements with hospitals, a discount medical checkup system for employees and their family members is also implemented. Medical personnel also regularly visit employees at workplaces and company housings to conduct medical checkups.

#### Risk Management Program

Joint labor-management evaluation of work environments is executed to prevent possible hazards and to protect employee health. Where applicable, improvement measures are worked out and implemented. Special medical examination of employees at frontlines is conducted to manage health risks. Hearing protection programs along with the provision of hearing power measurement devices are implemented. Superior-quality protective aids are provided to employees to protect them from risks.

#### Win-Win Partnership with SMEs

#### EWP's Win-Win Partnership Policy

EWP implements partnership programs for its affiliates. Under the programs, EWP helps bolster affiliates' key capabilities, and to foster SMEs to grow into global companies, thereby endeavoring to ensure the power industry's sustainable growth and enhanced competitiveness, and helping strengthen the country's competitiveness.

#### Support for SMEs

Under the 2008 SMEs support program targeting 100 SMEs, EWP identified and helped resolve their needs, implemented partnership programs geared toward the sustainable power industry, and publicized its partnership philosophies to the government, the academia, other power generation companies, and SMEs.

Under the SWEs support program, EWP explores the world's 30 star enterprises and fosters the country's 100 key SMEs. The EWP-SMEs Consultative was also launched to build a customized support system by growth stage.

#### **Technological Supports for SMEs**

Through joint R&D with SMEs, between 2004 and 2008, EWP carried out 102 projects worth 4.17bn won. In 2008, under 15 cooperation agreements with SMEs, we provided R&D support to SMEs and procured power generation machines from them, instead of importing them. Also, EWP transfers its proprietary technologies to SMEs free of charge to help their business success and bolster technical competitiveness.

#### **Expanded Purchases from SMEs**

EWP purchased products - developed by SMEs - worth 7.09bn won to respond to the government scheme of joint purchase of SMEs' products and to support SMEs. EWP also purchased products worth 3.7bn won from women-run enterprises to help women's social activities. The purchase from SMEs totaled 140.2bn won. The exclusive purchase task force - under the control of the CEO - comprised of 32 staff from 26 departments who undertook this job to expand the purchase from SMEs.

#### Support for SMEs in Exploring Business Opportunities

To help SMEs expand their business opportunities, EWP supported 95 SMEs at three exhibitions including Global Electric Power IT Exhibition, leading them to win 48.8bn won in negotiation and orders 7.7bn won. Through five occasions including participation in SME Administration-led public purchase promotion campaigns, EWP supported 48 SMEs in purchase negotiation. EWP supported eight superior SMEs' advertisements through the SBS show entitled 'The Power of Korea', SMEs, and 14 other SMEs' advertisements through the Electric Power Times.

To help SMEs explore their overseas business opportunities, EWP supported eleven SMEs at two international exhibitions including Dubai WETEX Exhibition, helping them win orders worth USD 5mn. Also, to promote SMEs' overseas exports, EWP invited 13 buyers from Japan, Indonesia, and the Middle East to visit Korea to negotiate exports. This helped 36 firms including TATA and DESEIN of India listed as vendors. In this initiative, orders worth USD 61.71mn were attained.

Support for SM	ses	(Unit : 10thousand USD)		
Category	Participants	Participants 2007 Value of Orders		2008 Value of Orders
Domestic Exhibitions	110	35	95	77
International Exhibitions	24	2,510	11	500
Listing of Vendors and Export Negotiation	18	-	135	6,171

#### Co-Prosperity with Local Community

#### Corporate Social Responsibilities

#### ■ Volunteer Service Group

In a bid to fulfill its corporate social responsibilities, EWP continues to help needy people. In this way, EWP can realize its company motto of conserving nature and respecting humanity. All employees practice the culture of volunteering to help neighbors.

#### Volunteer Service Corps and Fund Raising

The volunteer service corps, launched in February 2004, consists of the headquarters' secretariat and seven branches. As of December 2008, the group had 92 teams and 2,118 members. Major funds for volunteer services are raised through employees' donation under the campaign of Neighbor Love Account, and the company's matching grant<sup>1</sup>. In 2008, a fund of 820mn won was raised, and volunteer activities include helping teenager family supporters, helping elderly people with no family members to support them, and conserving nature.

#### Organization of Social Voluntary Service Corps

			Presi	dent			
CEO							
						Local Br	anches
						In Charge of Sustainable Manageme	
Headquarter Branch	Dangjin Branch	Honam Branch	Donghae Branch	Ulsan Branch	Ilsan Branch	Sancheong Branch	Company-Wide
7 teams	30	7	7	31	7	3	92
	678	196	184	534	184	71	2,118

<sup>1)</sup> A method of raising fund for corporate social responsibility activities, by which if employees raise fund or donate their money, the company provides a matching fund.

|--|

Programs	Fund	Description
Neighbor Love Account	274,320	Employee contribution (deduction from salaries) : up to 20,000 won per person
Matching Grant & Donations	538,000	The company's donation budget
Knowledge Rewarding Mileage	4,579	Employees donate their knowledge activities translated into a mileage score
Corporate Card Mileage	5,000	Contribution of corporate credit card
Beautiful East-West Market	1,349	Corporate intranet cyber market profitTotal823,248
Total	823,248	

#### **Diverse Volunteer Activities**

Across the board, at headquarters level and at branches, EWP as a corporate citizen executes volunteer social service activities. Major relevant programs include Blood Donation Relay and Helping Children with Intractable Diseases and Happy Home School in conjunction with Korea Make a Wish Foundation and Korea Food for the Hungry International.

Under a sisterhood agreement with Jeongseon Snow Flower Village as part of its corporate social responsibility, EWP conducts diverse volunteer services and operates an agricultural products wholesale market to help the rural community.

Corporate Social Responsibility Programs	
Company-Wide Project	Helping Teenage Heads of Family, Helping Living-alone Senior Citizens, Nurturing Green Environment
Branch Service Program	122 annual programs including Environment Painting Fair
Team-Based Voluntary Service	118 voluntary services for welfare facilities for the disabled and marginalized people
Focus Program	Love sharing with homeless, Love blood donation relay, Helping children with incurable disease, Happy home school and other Non Governmental Organization(NGO) public services
Green Growth-Linked Program	Sisterhood agreement with Jeongseon, support for new and renewable energy systems with welfare facilities, and operating wholesale markets

#### Company-Wide Project

EWP supported 181 teenage family supporters and elderly people with no people to support them under the arrangement of agreements. Under the program, employees regularly visited their homes to repair obsolete facilities, to clean up the houses, and to provide daily necessities. A total of 220mn won was spent on these activities. Under the nature conservation program, EWP regularly planted trees.

#### **Branch Service Program and Team-Based Voluntary Service**

Activities for supporting welfare facilities and social volunteer services included the support for the construction of Dangjin-gun Bus Terminal and Sports Complex, the support for the construction of Ulsan Yongjamteo Memorial Monument, the support for the relocation of the access road in Hangnam-ri, Onsan, the support for the construction of Dongahe Gymnasium and building of houses for needy people, in addition to the construction of Sancheong Cultural House.

#### Focus Program

Having started at headquarters in 2004, blood donation campaigns are conducted at Ilsan Cogeneration Power Plant, Dangjin Thermal Power Plant, Honam Thermal Power Plant, Sancheong Pumped-Storage Power Plant, Ulsan Thermal Power Plant, and Donghae Thermal Power Plant, in that order.

Also, certificates of blood donors are provided to children with cancer, patients with leukemia, and those who urgently need blood transfusion. In this way, EWP is actively participating in social volunteer services.

# **Appendix**

GRI Index
Environmental Policies
Charter of Ethics
Reader Opinion Survey

# **GRI Index**

#### ■ Reported ■ Partially reported □ N/A x Not reported

RI Index	Wordings / Reasonings	Check	Page
EC1	Direct economic value generated and distributed, including revenues, operating costs, employees compensations, donations and other community investment, retained earnings, and payments to capital providers and governments		20
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change		28~29
EC3	Coverage of the organization's defined benefit plan obligations	■	21
EC4	Significant financial assistance received from government	x	_
EC5	Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation	X	_
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	^	40~4
EC7	Procedures for local hiring and proportion of senior management hired from the local community		
	at locations of significant operation		21
EC8	Development and impact of infrastructure investment and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement	•	13, 2
EC9	Understanding and describing significant indirect economic impact, including the extent of impacts	■	21
EN1	Materials used by weight or volume		26
EN2	Percentage of materials used that are recycled input materials	<u>=</u>	32~3
EN3	Direct energy consumption by primary energy source.		26
EN4	Indirect energy consumption by primary source		26
EN5	Energy saved due to conservation and efficiency improvements	<u> </u>	32
EN6	Initiatives to provide energy-efficient or renewable energy based products and services,	-	52
LINO	and reductions in energy requirements as a result of these initiatives		29~3
EN7	Initiatives to reduce indirect energy consumption and reductions achieved		32
EN8	Total water withdrawal by source		33
EN9	Water sources significantly affected by withdrawal of water	Х	-
EN10	Percentage and total volume of water recycled and reused		33
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and		_
ENIA O	areas of high biodiversity value outside protected areas		
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	•	33
EN13	Habitats protected or restored.	Х	-
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity		33
EN15	Number of IUCN Red List species and national conservation list species with habitats		
	in areas affected by operations, by level of extinction risk	Х	-
EN16	Total direct and indirect greenhouse gas emissions by weight		28
EN17	Other relevant indirect greenhouse gas emissions by weight		28
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved	•	28
EN19	Emissions of ozone-depleting substances by weight	•	28
EN20	NOx, SOx, and other significant air emissions by type and weight	•	27
EN21	Total water discharge by quality and destination	•	33
EN22	Total weight of waste by type and disposal method		32
EN23	Total number and volume of significant spills		27
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under		
	the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally		27
EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff		33
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation		25
EN27	Percentage of products sold and their packaging materials that are reclaimed by category		_
EN28	Monetary value of significant fines and total number of non-monetary sanctions		
	for non-compliance with environmental laws and regulations		27
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce		-
EN30	Total environmental protection expenditures and investments by type		25
LA1	Total workforce by employment type, employment contract, and region	<u>=</u>	39
LA2	Total number and rate of employee turnover by age group, gender, and region	<u> </u>	39
LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations		40
	Percentage of employees covered by collective bargaining agreements		-

GRI Index	Wordings / Reasonings	Check	Page
LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements	Х	-
LA6	Percentage of total workforce represented in formal joint management-worker health and		
	safety committees that help monitor and advise on occupational health and safety programs	X	_
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region.		40
LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members,	_	/0
	their families, or community members regarding serious diseases	•	40
LA9	Health and safety topics covered in formal agreements with trade unions		40
LA10	Average hours of training per year per employee by employee category	Х	-
LA11	Programs for skills management and lifelong learning that support the continued employability of		
	employees and assist them in managing career endings	X	-
LA12	Percentage of employees receiving regular performance and career development reviews	Х	_
LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group,		
	minority group membership, and other indicators of diversity	X	-
LA14	Ratio of basic salary of men to women by employee category	X	_
HR1	Percentage and total number of significant investment agreements that include human rights clauses or		
	that have undergone human rights screening	X	-
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken	X	-
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant		
	to operations, including the percentage of employees trained	X	-
HR4	Total number of incidents of discrimination and actions taken		-
HR5	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk,	_	/0
	and actions taken to support these rights		40
HR6	Operations identified as having significant risk for incidents of child labor, and measures taken to contribute	_	
	to the elimination of child labor		_
HR7	Operations identified as having significant risk for incidents of forced or compulsory labor, and measures	_	00
	to contribute to the elimination of forced or compulsory labor	•	33
HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of		
	human rights that are relevant to operations	X	_
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken		-
S01	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on	_	/0
	communities, including entering, operating, and exiting		42
S02	Percentage and total number of business units analyzed for risks related to corruption	X	-
S03	Percentage of employees trained in organization's anti-corruption policies and procedures.		37
S04	Actions taken in response to incidents of corruption		37
S05	Public policy positions and participation in public policy development and lobbying	X	_
S06	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country	X	-
S07	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes		_
S08	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	X	_
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement,		
	and percentage of significant products and services categories subject to such procedures	X	-
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and		
	safety impacts of products and services during their life cycle, by type of outcomes		_
PR3	Type of product and service information required by procedures, and percentage of significant products and		
	services subject to such information requirements	X	_
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and		
	service information and labeling, by type of outcomes		-
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	X	_
PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications,		
	including advertising, promotion, and sponsorship		-
PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications,		
	including advertising, promotion, and sponsorship by type of outcomes		-
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data		_
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and		
	use of products and services		-

## **Environmental Policies**

Korea East-West Power Co.,Ltd. is committed to helping Korea develop into a global powerhouse by providing it with a stable supply of electricity. Because our operations are predicated on pursuing environmentally sound and sustainable development, we have established and implemented the following environmental policies, the overriding goal of which is to promote harmony between the environment and the economy. The company also takes the interests of local communities into consideration when constructing and operating its power stations.

- 1. We have selected "E-TOP" (Environment, Transparency, Optimum, and Precaution) as the motto the best enunciates the company's attitude towards its environmental and social responsibilities and its commitment to the sustainable production of electrical power.
- 2. We establish system that meet international environmental standards to ensure that our management is conversant with and dedicated to the environment. In addition, we work to prevent pollution by periodically conducting environmental impact assessments.
- 3. We observe all relevant legal regulations and statutes to minimize environmental pollution and establish and operate in-house management standards for each of our power stations that reflect conditions and needs within the local community
- 4. We take the lead in domestic environmental technology development by engaging in continuous performance improvements. We are also in the vanguard of applying new thchnologies to ensure that we save energy and operate our environmental facilities efficiently
- 5. We minimize the generation of wastes and actively promote "recucing", "reusing", and "recycling" to maximize the efficient use of natural resources.
- 6. We honor all requests for environmental information and data to heighten the transparency and objectiveness of our environmental management and communicate with local community residents on an ongoing basis.
- 7. We clarify the responsibilities and roles of our organization regarding the prevention of pollution and heighten our employees' awareness of the environment by insisting that they be trained in environmental issues.

In order to effectively implement these policies, all our employees-including the CEO -must be aware of the importance of environmental management and pledge to make every effort to put it into practice.

### **Charter of Ethics**

Korea East-West Power Co.,Ltd. is a proudly Korean company that contributes to the nation's growth by developing electrical power resources, generating electricity, and operating related businesses.

We are committed to becoming a world-class power generation company that earns people's trust through its commitment to ethical management and compliance management.

Accordingly, we will use both our creativity and our willingness to face challenges to reach our goals, conduct our operations in an honest and fair manner, and strive to prevent corruption and create a clean and equitable working environment.

We will provide our customers with a stable supply of electrical power and high-quality service, take whatever measures are needed to satisfy them, and manage our business with a view to increasing its value.

We will comply with all domestic laws and international regulations, respect the freedom of the marketplace, and seek prosperity for all by building mutually-cooperative relationships with all our stakeholders.

We will respect the individuality of all of our employees and will not discriminate against anyone for any reason. We will ensure our employees are given equal opportunities and fair evaluations and strive to improve their well being and quality of life.

We will participate in all community activities as a concerned and committed member of our society and contribute to the development of the nation and our society by constantly creating new values.

We will do our best to hand down a clean environment to future generations by respecting all forms of life and taking the lead in the protection of all natural phenomena.

### **<sup>-</sup>2009 EWP's Sustainability Report**

# **Reader Opinion Survey**

In this report, EWP has tried to disclose its sustainability management activities as openly as possible. To improve its contents and level of completeness, we would like to hear from you. Your opinions will be reflected in future reports.

1. What is your position?			
① Investor/Shareholder	② Employee of an affiliate	③ Local resident	
④ NGO	⑤ Employee of GENCO	6 Member of Acad	lemic Community
7 Civil Servant	8 Employee of EWP	Other (	)
2. What is your overall evalu  ☐ Good ☐ Moderate ☐ B			
3. How understandable is it?			
□ Easy □ Moderate □ Difficult			
·			
4. How do you feel about the amount of information included in this report?  □ Too much □ Moderate □ Too little			
5. Which section of the report did you find the most interesting?			
□ Sustainability at EWP □ Economy □ Environment □ Society			
	2 Beonomy 2 Environment 2	Boolety	
6. Which section of the report do you think needs improvement?			
□ Sustainability at EWP □ Economy □ Environment □ Society			
·	•	•	
7. Please feel free to make comments on the report.			
Thank you for your cooperation.			
Please forward this form to 02-3456-8379 (Fax) or sustainability@ewp.co.kr (e-mail).			

#### Procedures for the Preparation of the Sustainability Report

This is the second sustainability report by Korea East-West Power Company(EWP), and its purpose is to address stakeholders who are exerting influences on the company and project the company's economic, social and environmental efforts and accomplishments. The report has been prepared in accordance with the G3 Guideline of the Global Reporting Initiative(GRI).

In order to heighten credibility of this report, the company has operated a task force team consisting of members from four departments and two offices, and details contained herein have been prepared based on data provided by each division and sector. These have been confirmed and finalized through supervision by management prior to publication.

