2017 Sustainability Report

SMART ENERGY CREATOR

KEPCO

Contents

Cover Story

The cover design of the 2017 Sustainability Report embodies KEPCO's determination to grow into a global energy company by expanding its business to include the new energy industry and eco-friendly energy as a Smart Energy Creator.

In particular, it depicts KEPCO's sustainable future through eco-friendly and future-oriented elements, such as wind power generation and electric vehicles.

CEO Message

"We take the lead in the new energy ecosystem through change and innovation and fulfill our social responsibilities as a public company, all in our efforts to grow together with our stakeholders."

President & CEO of KEPCO **Cho Hwan-eik**

September 2017

Dear stakeholders,

I extend my deepest thanks to you for your unwavering support and encouragement for Korea Electric Power Corporation (KEPCO).

For more than a century, KEPCO has been supporting industrial development in Korea by providing a highly efficient, high-quality electricity supply. In preparation for the era of the Fourth Industrial Revolution and the new climate regime, we have been focusing on building a new energy ecosystem by expanding our business to include new energy industries and eco-friendly energy. We will continue to faithfully fulfill our social responsibilities as a public company, and put more efforts into stable demand and supply of electricity as well as the nation's economic development.

We will grow into an energy platform business, and thus lead the new convergence industry.

An 'era of singularity,' in which technology goes beyond human beings, is drawing near. As everything connects and converges, boundaries across industries such as finance, telecommunications, and automobiles, are rapidly collapsing. That is why 2017 will be the first year of our evolution into 'Digital KEPCO,' as we launch our innovation to develop into an 'energy platform' provider, leading the Fourth Industrial Revolution. This strong platform will enable us to more conveniently and quickly provide electric power services such as the smart grid, the micro grid, electric vehicle charging, and the Internet of Things (IoT), which in turn will help to improve peoples' lives.

We will supply electricity in a more efficient and safer way through large-scale energy conversion.

The Paris Agreement has put greater emphasis on countries' responsibilities regarding climate change and reducing emissions of CO_2. In Korea in particular, citizens are showing greater interest in health and the environment, especially with the annual inundation of fine dust every spring. The Korean government is now changing the country's power mix, which was heavily dependent on fossil fuels and nuclear power, more towards eco-friendly renewable sources, including wind and solar power. KEPCO will therefore develop technologies to reduce greenhouse gases and fine dust, while maximizing energy efficiency.

We will achieve win-win development by making the Energy Valley a success.

We aim to attract 500 energy-related companies to Bitgaram Innovation City, create 30,000 jobs, and secure 105 key strategic technologies by 2020. We relocated our headquarters to Naju at the end of 2014, and by September 2017 we had successfully attracted 237 companies to the Energy Valley. In addition, we are supporting youth employment, having created approximately 6,800 jobs through our youth internships and the Employment Stepping-stone Program. We are hoping to create a virtuous cycle through which people, companies, and the local economy grow in partnership, and develop Bitgaram Innovation City into a world-renowned energy hub.

We will earn trust by stabilizing our power generation facilities and through service innovation.

We will optimize our transmission and distribution facilities to ensure a stable electricity supply throughout the nation. We also regularly inspect our disaster response systems in readiness for natural disasters such as floods and earthquakes. In addition, we will build an ICT infrastructure and develop technologies to block threats from cyber attacks, which has the potential to cause severe chaos. Moreover, we will think from the perspective of our customers – citizens and companies – and listen to their opinions with an open mind. We have fully reformed our progressive electricity billing system for households after 40 years, and any other systems that need to be modified will be improved in a reasonable and fair manner.

We will continue to communicate closely with all our stakeholders, including customers, suppliers, and shareholders. I ask for your continued interest and support.

Thank you.

KEPCO Highlights

We made improvement to our management performance and earned global recognition for our sustainable value for the future by making continuous progress in all economic, social, and environmental aspects.

Reformed the progressive electricity billing system for households from 6 stages to 3

KEPCO simplified the six-stage progressive electricity billing system for households to a three-stage system. Households in the highest stage were levied 11.7 times more than the minimum rate, but will now be levied only three times more than the minimum rate. This reform of the billing system has helped to ease the burden on customers.

Recipient of the gold prize in the social media innovation sector's communication/PR category at the 'Asia-Pacific Stevie Awards'

KEPCO was honored with the gold prize for its excellence in providing electricity and energy-related information and engaging in active communication via the company's blog as well as Instagram and Facebook accounts. KEPCO's Facebook page was noted for having the greatest number of followers among public companies at around 120 thousand.

Top-ranked in the electricity supply sector of the World Bank's '2016 Business Environment Survey' for the third consecutive year

KEPCO was ranked No. 1 in the world for three consecutive years in the Business Environment Survey by the World Bank, thus earning recognition as a company that provides electricity supply services in the most convenient, quickest manner.

World No.1 in the electric utility category of '2016 Forbes Global 2000'

KEPCO became the first Asian electric utility company to be ranked as the world's No. 1 in the 2016 Forbes Global 2000. It also became the first public company in Korea to be listed in the global top 100.

Inauguration Ceremony of the 'Power Big Data Center'

KEPCO opened the Power Big Data Center to disclose public data in the field of electric power and to promote the use of big data on electric power in the private sector. By the end of the year, the Center will disclose information on electricity usage by month, year, and use for as much as the last decade, and also disclose real-time electricity usage information upon receiving user consent.

Successfully hosted 'BIXPO 2016,' the Bitgaram International Exposition of Electric Power Technology

KEPCO held BIXPO 2016, an international exposition of electric power technology that drew the enthusiastic participation of electric power companies and experts from across the globe. Through the event, we expanded our global network and publicized the excellence of Korea's new energy industry.

Established the Conference Of KEPCO Group Companies to cope with climate change and was selected as an outstanding CDP* Company

KEPCO launched the COK11 (Conference Of KEPCO Group Companies to cope with climate change) climate change response council in order to actively meet the government's policy on reducing national greenhouse gas emissions and to take group-wide measures on current issues, such as the need to respond to climate change and reduce greenhouse gas emissions.

* CDP: Carbon Disclosure Project

Became the first in Korea to receive the most renowned award for technology innovation, the 'CIO 100 Awards'

KEPCO became the first in Korea to receive a CIO 100 Awards, the world's most renowned award in technology innovation, by building a smart grid through the next-generation Supervisory Control and Data Acquisition (SCADA) project.

KEPCO Profile

We contribute to the national economy through the development of electric power sources and the stabilization of supply and demand for electricity. Furthermore, we are taking the lead in the global energy market through continued innovation in order to realize sustainable growth.

COMPANY OVERVIEW

KEPCO is a market-oriented public company that was established for the purpose of promoting the development of electric power sources, stabilizing the supply and demand for electricity, and contributing to the development of the national economy. We are a global electric power company that consists of ten domestic power generation companies and Group companies and 30 overseas investment companies and subsidiaries. In 2016, KEPCO supplied electricity to 22,550,000 households across the nation in a stable manner, and our cumulative electricity sales stood at 497,039 GWh – 56.1% for commercial use, 21.9% for general use, 13.7% for households, and 8.3% for others.

Company Profile

Company Name	Korea Electric Power Corporation
Date of establishment	January 26, 1898
Address	55, Jeollyeok-ro, Naju-si, Jeollanam-do, Korea

Total assets (consolidated basis)

KRW 178 trillion

Sales (consolidated basis)

KRW 60 trillion

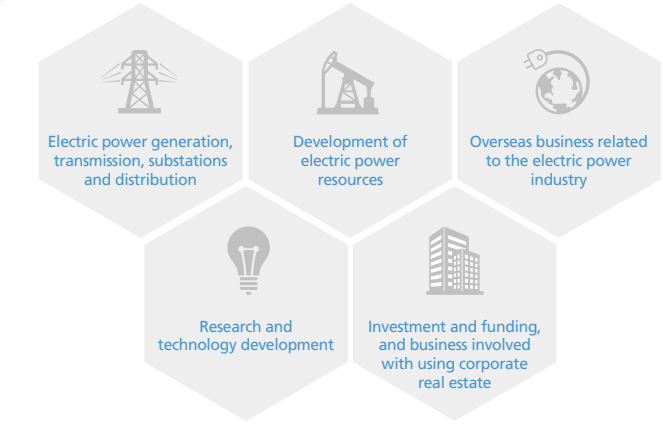
Number of employees (regular workers basis)

20,957 persons

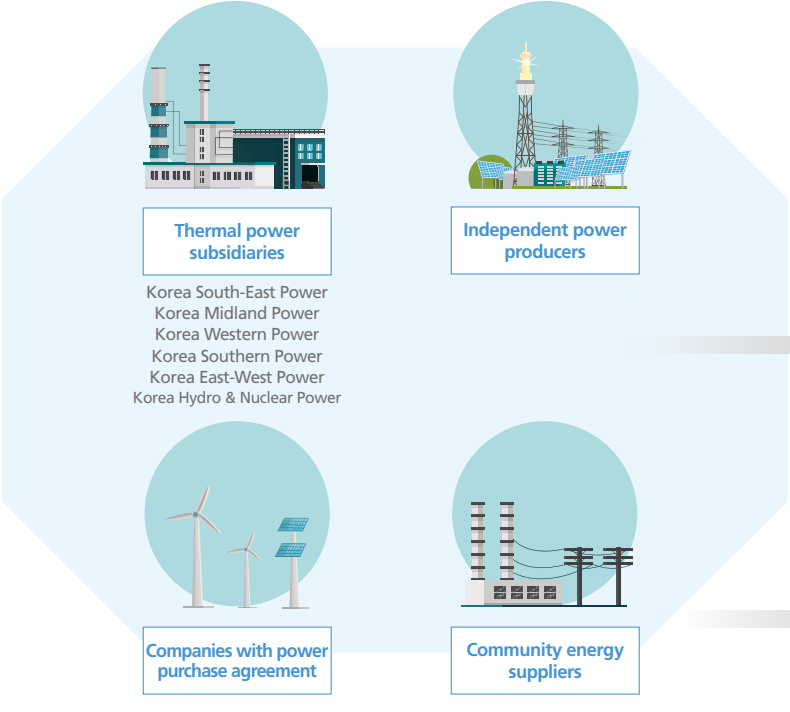
Electricity sales volume

497,039 GWh

Major Businesses



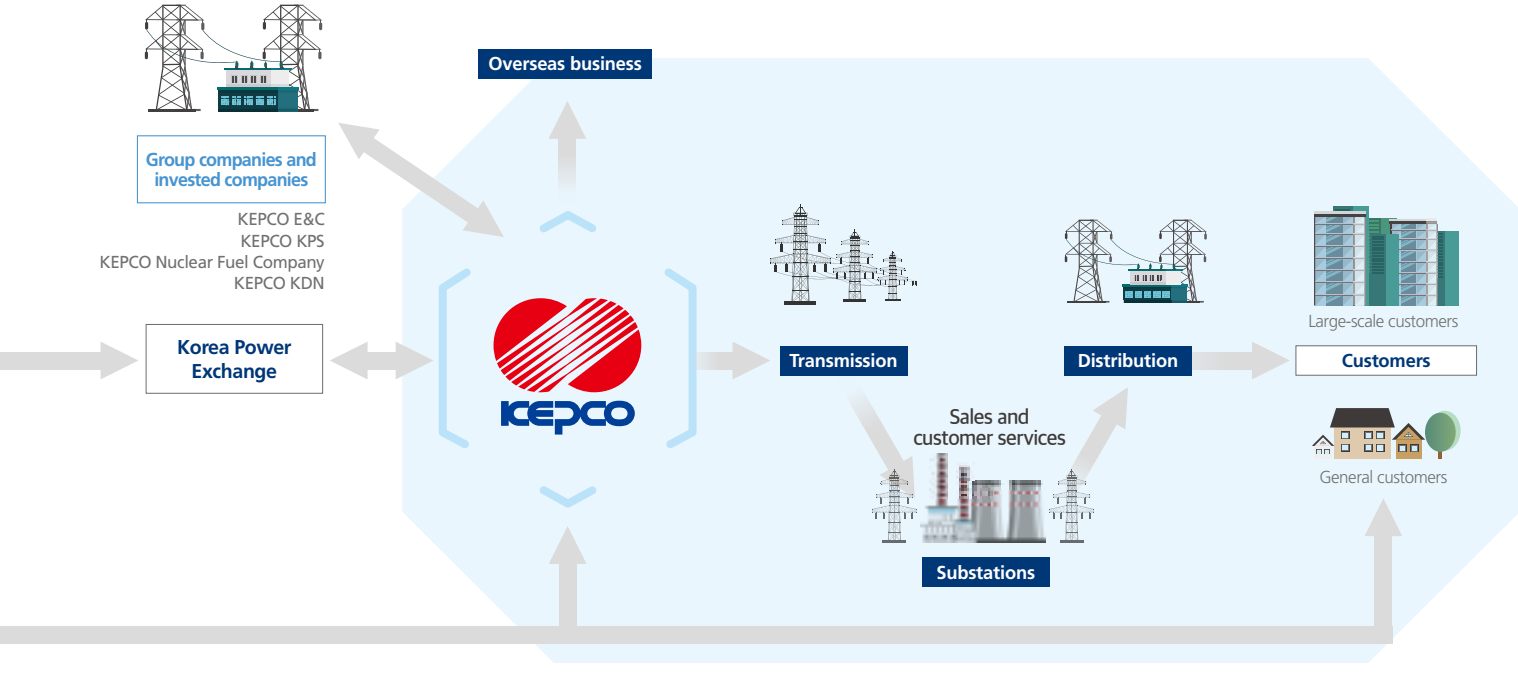
Business Value Chain



Global Network

● Overseas office ■ Overseas subsidiary

* As of June 2017



Sustainable Management

Corporate Governance

BOD OPERATION

Composition of the BOD

KEPCO's Board of Directors (BOD) is composed of seven executive directors (standing), including the CEO, and eight non-executive directors (non-standing). For non-executive directors, we choose candidates with extensive industry experience and expertise to enable flexible, professional responses to the diversifying management environment. A Chairman of the Board is appointed from among the non-executive directors for greater fairness and transparency in BOD operations.

Process for the appointment of directors

Directors are appointed in compliance with matters stipulated in the 'Act on the Operation of Public Organizations' and 'KEPCO Articles of Association.' When appointing the CEO, KEPCO recruits candidates through an open recruitment, which is followed by a recommendation by the Nomination Committee, Public Institution Operation Committee, and an annual general meeting (AGM), a request made by the Minister of Trade, Industry and Energy, and appointment by the President for a three-year term. Executive directors are appointed by the CEO after a resolution at an AGM for a two-year term. The Standing Commissioner is recommended by the Nomination Committee, approved by the Steering Committee, requested by the Minister of Strategy and Finance, and appointed by the President. Non-executive directors are recommended by the Nomination Committee, approved by the Steering Committee, and appointed by the Minister of Strategy and Finance, and serve a two-year term.

Diversity of the BOD To guarantee that the BOD is diverse and balanced, we are diversifying the scope of institutions that recommend candidates. We ensure the balance of the BOD by appointing directors with substantial knowledge and experience in such diverse fields as the law, economy, media, academia, and labor, and by considering diversity factors, such as nationality, race, and hometown. In particular, the Nomination Committee manages a human resource pool of female executives as part of our efforts to recruit and recommend more female candidates.

Status of the subcommittees

Classification		Name	Tenure	Expertise
Standing Directors (Executive Directors)	President & CEO	Cho Hwan-eik	6 years (2012-2018)	Energy and electricity
	Controller & Auditor General	Lee Sung-han	2 years (2016-2018)	Audit
	Executive Vice President of Domestic Operations	Kim Si-ho	2 years (2015-2017)	Energy and electricity
	Executive Vice President of Overseas Operations	Lyu Hyang-reol	2 years (2015-2017)	Energy and electricity
	Executive Vice President & Chief Strategy Officer	Hyun Sang-kwon	2 years (2015-2017)	Energy and electricity
	Executive Vice President & Chief Sales Officer	Park Sung-chul	2 years (2015-2017)	Energy and electricity
	Executive Vice President & Chief Power System Officer	Moon Bong-soo	2 years (2015-2017)	Energy and electricity
Non-standing Directors (Non-executive Directors)		Ahn Choong-young	3 years (2014-2017)	Win-win growth
		Lee Kang-hee	3 years (2014-2017)	Labor and environment
		Cho Jeon-hyeok	3 years (2014-2017)	Economy and accounting
		Choi Ki-ryun	3 years (2014-2017)	Energy economy
		Sung Tae-hyun	3 years (2014-2017)	Energy (Superconductivity)
		Koo Ja-yoon	3 years (2014-2017)	Energy (Power engineering)
		Kim Ju-suen	2 years (2015-2017)	Law
		Kim Ji-hong	2 years (2016-2018)	Economy and management

* As of June 2017

Independence of the BOD KEPCO guarantees the independence of the BOD so that the Board can faithfully perform its role of checks and balances. We strictly review whether a non-executive director candidate has a special relationship with KEPCO by verifying whether a candidate falls under any reasons for disqualification that are stipulated in the Commercial Act*. Furthermore, we have established a regulation to ensure that non-executive directors constitute a majority of the BOD, and thus strengthen their decision-making authority.

Expertise of the BOD KEPCO considers the expertise in the relevant business in the process of reviewing documents of executive candidates, in order to ensure the expertise of the BOD, and actively appoints energy experts. Even after their appointment, directors take part in regular training and visits to electric power facilities in Korea and abroad to enhance their industrial expertise. Additionally, directors are regularly provided with materials on industry trends and major management issues.

We are bolstering our corporate governance through the fair and transparent operation of the BOD. We also guarantee the expertise, diversity, and independence of the BOD, thus respond to changing business environments in a flexible and professional manner.

BOD ACTIVITIES

The BOD deliberates on important matters such as management goals and the budget in accordance with the Articles of Incorporation and the BOD regulations. A director who has a special interest with a BOD agenda item is not permitted to vote on that particular item. The minutes written after the conclusion of BOD meetings are disclosed to stakeholders by posting them on KEPCO's website except for special matters, such as confidential business information.

There are various institutional mechanisms in place to ensure that BOD activities take place smoothly and dynamically, such as an operational performance assessment system, the publication of a 'Monthly Brief' to distribute management information, workshops to reinforce the professionalism of newly appointed non-standing directors, and assistance for management-by-conducting tours. In addition, we have established the Audit Committee, Nomination Committee, and Professional Committee in the BOD to guarantee management engagement by non-standing directors and to reinforce deliberation.

Evaluation and compensation of the BOD

The CEO of KEPCO signs a management pact with the Minister of Trade, Industry and Energy on the management goals that should be achieved during the CEO's tenure. The progress that is made in implementing the pact is assessed by the Performance Appraisal Board for Public Corporations. Executive directors sign a management contract with the CEO on management goals that should be accomplished, and receive incentives based on their performance. They are remunerated under the remuneration limit approved at the AGM. The reappointment of non-executive directors is determined based on performance assessment results. They are also provided with a service allowance based on internal regulations.

* Major reasons for disqualification as a non-executive director pursuant to the Commercial Act

- Directors, executive directors, and employees who are engaged in the regular business of the relevant company; or directors, auditors, executive directors, and employees who have engaged in the regular business of the relevant company within the last two years
- The principal, his/her spouse, lineal ascendants, and lineal descendants, in cases where the largest shareholder is a natural person
- Directors, auditors, executive directors, and employees of the corporation, in cases where the largest shareholder is a corporation
- The spouses, lineal ascendants, and lineal descendants of directors, auditors, and executive directors
- The directors, auditors, executive directors, and employees of a parent company or a subsidiary company of the relevant company
- Directors, auditors, executive directors, and employees of a corporation which has a significant interest in the relevant company, such as business relations with the company
- Directors, auditors, executive directors, and employees of another company for which directors, executive directors; and employees of the relevant company serve as directors and executive directors

Status of the subcommittees

Name	Composition		Roles	2016 Performance
Audit Committee	2 Non-standing directors, 1 Standing director		Audit and investigation	Held 11 times, 93.9% participation rate, 25 cases decided, 14 cases reported
Nomination Committee	At least a majority of non-standing directors		Recommendation of executives	Held 3 times, 94.3% participation rate, recommended candidates for a standing commissioner and non-standing director
Professional Committee	Management	3 Non-standing directors	Pre-deliberation	Held 12 times, 100% participation rate, 47 cases pre-deliberated
	Overseas	2 Non-standing directors		Held 7 times, 100% participation rate, 8 cases pre-deliberated

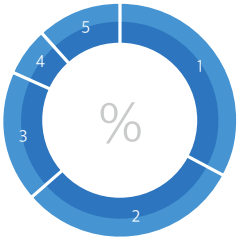
Participation rate in BOD meetings 84.6%

Participation rate of non-standing directors 82.3%

Number of BOD meetings 21 times

Decided/reported agenda 78 cases

Composition of shareholders



1	KDB Bank	32.90
2	Foreigners	30.74
3	Government	18.20
4	National Pension Service	6.50
5	Others	11.66

* As of December 31, 2016

Ethical Management

ETHICAL MANAGEMENT SYSTEM

Compliance with ethical regulations

KEPCO established ethical regulations as well as special anti-corruption measures for compliance with ethical standards, and implemented the 'knock-down scheme' for those practicing corruption and a 'clean HR reform' for executives assigned to duties during which irregularities may occur. In addition, we became the first public corporation to carry out the 'disclosure of the real names of people who practiced corruption,' and strengthened the standards for disciplinary measures against people who actively engage in unfair and illegal conduct. We thus enhanced our ability to practice ethical management in order to fully establish a culture of integrity.

Complaint-handling and tailored multi-channel reporting systems

KEPCO has set a voluntary reporting system, the irregularity report center, an onsite report center, and other various channels for reporting corruption. To prevent the exposure of whistleblowers' identities, we outsourced the operation of the anonymous report system, which is available any time. Also, complaints that are received through various channels, such as phones and the Internet, are managed in an integrated way through an in-house reporting system called Sinmungo. The complaint-handling system is operated transparently and reasonably through the independent review of the 'KEPCO ombudsmen,' which consists of outside personnel.

Vision

Develop into a trusted and respected KEPCO with integrity

Mid- to long-term strategy

Fully establish a world-leading culture of ethics	Strengthen capabilities to control corruption	Establish a strict discipline as a public corporation

Implementation tasks

Fully establish an ethical culture	Control corruption in advance	Effectiveness in anti-corruption	Highest integrity level
· Preemptively respond to the Improper Solicitation and Graft Act · Take the lead in practicing human rights management	· Promote the internal report system · Review discipline among those in authority	· Identify tasks to work together with partner companies · Improve the system in vulnerable areas	· Come up with measures to improve integrity · Eradicate conduct that undermines credibility

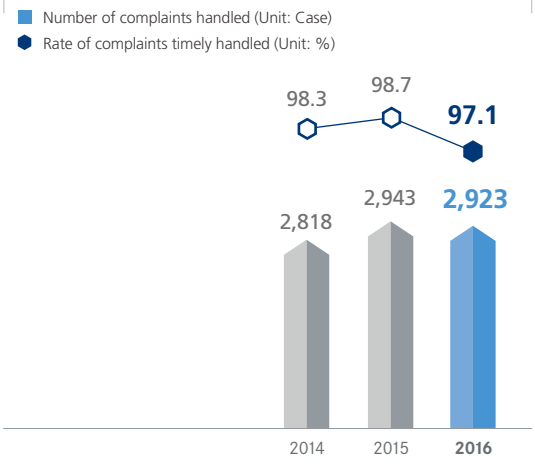
Dedicated team

Integrity T/F	Audit & Inspection Office	Personnel in charge of the code of conduct	Solicitation Prevention Officer
Establish corporate-wide integrity policies	Build a culture of integrity and control corruption	Comply with the code of conduct and provide ethics counseling	Provide training and counseling on the Improper Solicitation and Graft Act

Code of ethics

Fully establish an ethical mindset	Fully establish an ethical management system	Punish unfair and illegal conduct
5 codes of ethics, including the code of conduct for employees	4 codes of ethics, including inspection regulations and enforcement policy	3 codes of ethics, including guidelines on requesting disciplinary action

Number of complaints handled and timely-handled rates



Channels for reporting irregularities

Classification	Number of cases reported			Identification disclosure	Reporting method	Note
	2014	2015	2016			
Internal/voluntary report	3	5	–	Real name or anonymous	Online	Intranet
Irregularity report center	112	72	37	Anonymous	Online	Website outside the company
Onsite report center	14	–	–	Anonymous	Reporting postcard	Provide a sealed postcard
Anonymous report system	31	95	82	Anonymous	Online	External consignment

We are striving to grow into a global ethical company by building an ethical management system on the company level. Furthermore, various activities are underway in our efforts to spread a culture of integrity.

INTEGRITY AT KEPCO

Establishing a preemptive response system for the Improper Solicitation and Graft Act

With the enforcement of the Improper Solicitation and Graft Act in September 2016, we established and are implementing preemptive response strategies. We specifically established and internalized an infrastructure for observance of the law, and inspected execution capabilities to prevent potential violations. By making such improvements to the anti-corruption and integrity culture and mindset of all employees, we achieved zero cases of violation of the Improper Solicitation and Graft Act in 2016.

Spreading a culture of integrity

KEPCO shares outstanding cases with staff, our integrity partners, and citizens through activities aimed at promoting and spreading ethical management. Furthermore, in partnership with public organizations, local governments, and civic groups in the Bitgaram Innovation City, we are building an integrity ecosystem and holding an integrity concert, thereby demonstrating our strong commitment to integrity.

Activities to respond to the Improper Solicitation and Graft Act

Build infrastructure	Internalize	Review execution capability
• Enact and amend internal regulations • Build an external lecture reporting system • Designate a solicitation prevention officer (22 persons)	• Publish a casebook • Provide trainings on the Improper Solicitation and Graft Act (31,425 persons)	• Simulation drills to respond to the Improper Solicitation and Graft Act (Participated by 19,521 employees and 21 internal audit organizations)

Spreading a culture of integrity

Activities to spread a culture of integrity	Major achievements in 2016
Build an integrity ecosystem in the Bitgaram Innovation City	• Signed an agreement on a Bitgaram integrity-exercising network, with the participation of 10 organizations • Held the Bitgaram Integrity Culture Festival: Participated in by 1,980 persons, including staff and local residents
Host the KEPCO Integrity Concert jointly with the Anti-Corruption & Civil Rights Commission	• Provided emotional training, such as role plays and congratulatory performances: Completed by 1,010 persons
Build a system that discloses integrity and ethics information, such as the corruption status	• Established a voluntary unfair and illegal activity prevention atmosphere: The system visited by 10,496 persons
Run a voluntary property registration system for high-ranking executives	• Demonstrated commitment to anti-corruption and integrity: Registered by 393 persons

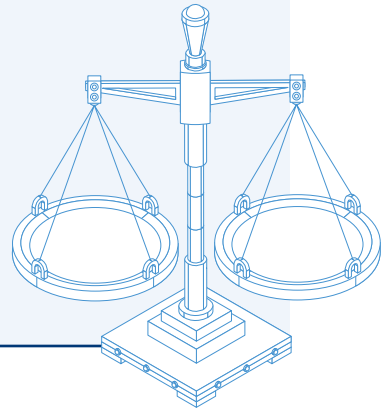
BUSINESS CASE

Bitgaram Integrity Culture Festival

KEPCO holds the 'Bitgaram Integrity Culture Festival' together with organizations, the local government, and local residents in the Bitgaram Innovation City, with an aim to build an integrity cluster and spread our strong resolve to act with integrity.

Opening ceremony of the Bitgaram Integrity Culture Festival

Held for the third time in June 2017, the Festival serves as a role model for the promotion of a culture of integrity and establishment of an integrity ecosystem as an integrity culture brand rather than a one-time event. An opportunity to spread the integrity mindset is created by various events held by organizations that participate in the Integrity Culture Festival, such as an integrity concert, film, music concert, and mentoring. The Integrity Culture Festival is becoming a local festival for all citizens with participation from the local government and several local civic groups.



Risk Management

ESTABLISHING THE RISK MANAGEMENT SYSTEM

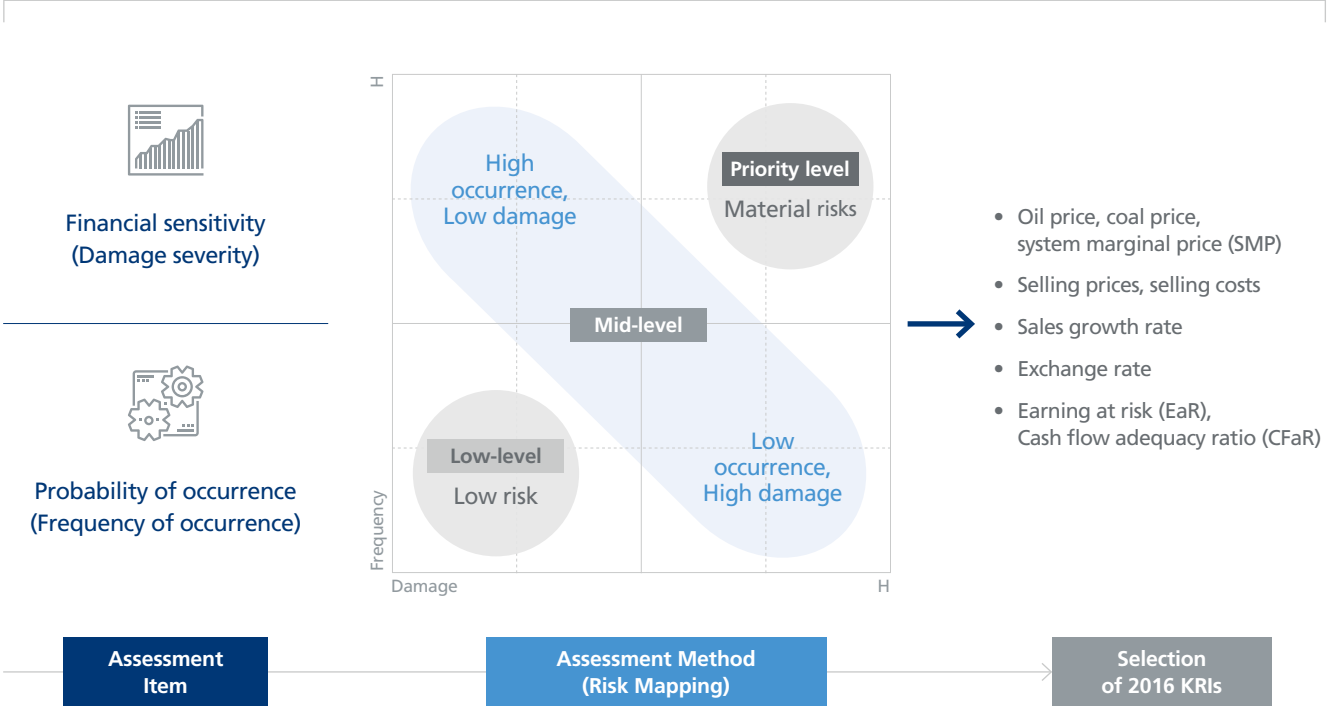
Laying a foundation to stably execute future strategies by establishing the FRM System

KEPCO has established a risk response system to preemptively manage risks that may arise in the process of achieving our strategic goals. We, in particular, established the FRM system to preemptively manage financial risks that can become a practical threat to management activities, and also to strengthen our ability to respond to the diversifying management environment.

In 2016, we redefined eight key risk indexes (KRI), including oil price, bituminous coal price, exchange rate, and system marginal price (SMP). We also have established a contingency plan which sets forth detailed countermeasures according to risk level. In addition, the Financial Improvement Committee determines risk levels, shares KRI information through our internal portal and broadcasting system, and carries out other monitoring and internal sharing activities.

Risk management system

Identification of key financial risk factors



We have been strengthening internal and external trust-based communication through various communication channels. In addition, we are enhancing the rights and benefits of our stakeholders, and share social values with them.

Strengthening measures to respond to uncertainties by establishing the BCM System

KEPCO is operating a global standard BCM system to effectively respond to uncertainties, such as disasters and earthquakes, and to develop work restoration capabilities. The BCM system was established in October 2016, which was followed by the practical operation at our Headquarters and the Gwangju-Jeonnam District Division. We acquired ISO 22301 certification in February 2017, and we are now expanding the BCM system to all business sites.

We also operate a crisis management portal, which is used for real-time risk monitoring and information sharing. We categorize risk types in four sectors – management risk, PR, disaster, and conflict – and manage various potential risks in a preemptive manner. We have also designated a dedicated department for each risk type, and the departments enact and manage crisis management manuals. If a crisis is identified, countermeasures are taken at each organization according to the five-stage procedures.

Risk Type

Category	Risk type
Management risk	· Deteriorating annual profit
Disaster	· Electricity supply shortage due to a sharp increase in demand · Electricity supply interruption due to a power grid failure · Electricity supply interruption due to cyber attacks · Electricity supply interruption due to disasters, catastrophes and earthquakes, and epidemics
PR	· PR activities in response to a crisis in the electricity sector · Damaged corporate image due to a large-scale corruption incident involving company employees
Conflict	· Complaints regarding transmission and substations · Obstacles to power supply due to labor-management conflict

BUSINESS CASE

Management of emerging risks

KEPCO thoroughly analyzes various change factors that surround the corporate business environment. In particular, we identify emerging risks that may arise over the short- to mid-term and establish effective strategies to manage the risks.

Key risk factors	Potential impacts on business	Risk mitigation actions
Information security risk	• Leakage of customers' personal information • Malicious code infection; and damage and leakage of management materials due to an external cyber attack	• Strengthen the encryption of personal information and conduct personal information impact assessments • Use big data technology to establish a security control system • Build a three-layer email hacking defense system (ATP defense system) • Adopt an individual and organization information security mileage system, and provide training to all staff
Disaster and catastrophe risk	• Power supply and demand failure due to disaster or catastrophe	• Establish a situation management infrastructure that is based on the latest ICT to further advance the disaster management system • Continually inspect and improve the disaster response manual, situation management system, and equipment management system for quick recovery and minimization of damage in the event of a disaster • Became the first public organization to develop a technology to provide an earthquake impact assessment • Develop the ability to respond to crisis situations through disaster response training

Stakeholder Communication and Engagement

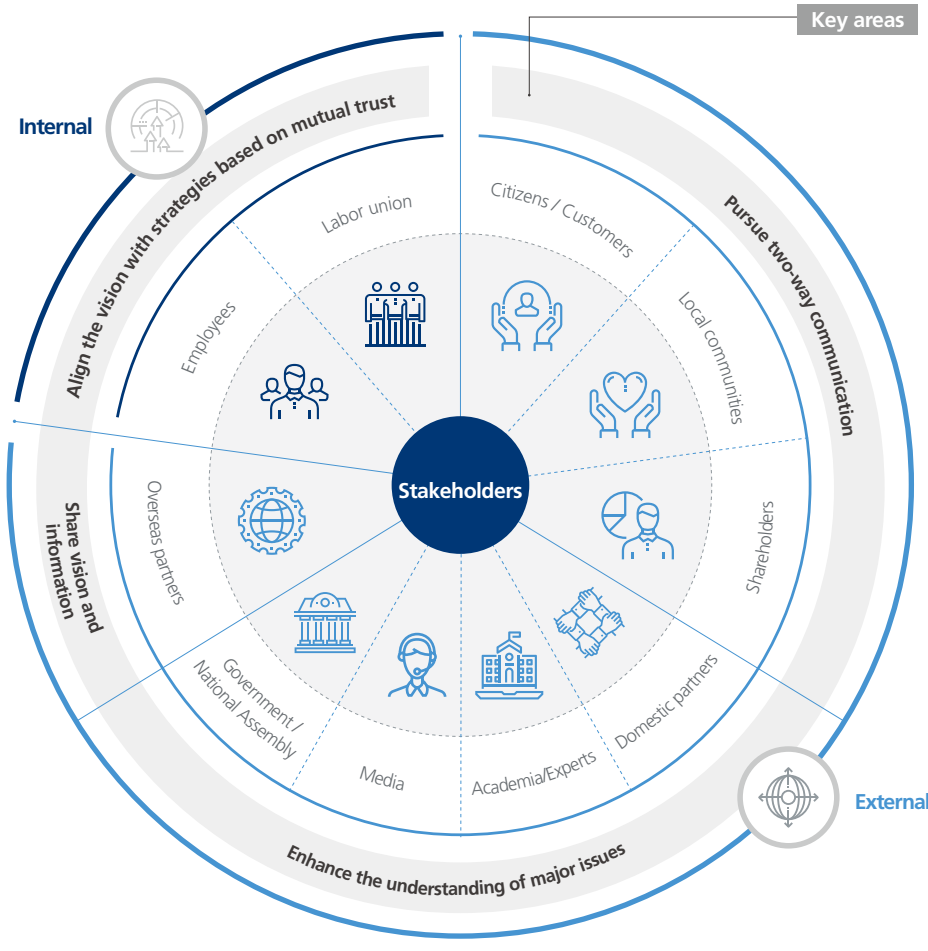
Stakeholder Engagement

In 2016, KEPCO established a 'stakeholder engagement policy' with the goal of promoting stakeholder rights and interests, and creating value for stakeholders. We categorized stakeholders into ten major groups – citizens/customers, local communities, shareholders, the government/National Assembly, media, academia/experts, domestic partners, overseas partners, employees, and the labor union – and operate a communication channel in accordance with each group's major area of interest and key areas.

Stakeholder Communication

Results of the stakeholder communication are shared with the management through a weekly meeting that is held to share information on pending issues with the management. Also, they are reported to the BOD every quarter to continually monitor the issue resolution status and reflect feedback. For issues that have top-level importance and urgency in relation to the electric power business, such as the construction of a power transmission facility and electricity supply & demand crisis in the summer and winter, the CEO makes field visits to share opinions with stakeholders on pending issues. By doing so, we are setting ways to resolve issues through cooperation.

Stakeholder group



We enhance the rights and benefits of our stakeholders and continue to create and share values by having a dialogue with them through various communication channels.

Communication efforts by stakeholder

Stakeholder		Major interest	Communication channel	Directions to share core values	Communication and responses
External	Citizens / Customers	Provide benefits, Form public opinion	• Social media • Meetings • Contests	Build a foundation to support business; and identify customers' needs	• Citizen suggestion contest to provide customized services from the citizen's perspective (1,763 cases received, 15 cases chosen) • Customer satisfaction survey conducted by the Korean government, and independently conducted by KEPCO
	Local communities	Property rights, Joint development, Environmental rights	• Public Hearings • Social contributions	Institutionalize conflict management to fundamentally resolve complaints; and establish a win-win system in which local residents and relevant organizations participate	• Contribution activities that satisfy the cultural activity needs of local communities (Bitgaram Theater, concert, etc.)
	Shareholders	Corporate value, Continued growth	• IR • Public disclosure • Annual general meeting	Provide information preemptively; and manage market sentiments and anxiety	• IR conferences and investor presentations at home and abroad (25 in total including 8 overseas activities in New York and others)
	Government / National Assembly	Policy direction, Public interest	• Seminars • Forums • Cooperation channels	Establish a KEPCO policy and legislation environment, and a support foundation	• Establish a friendly policy and legislation environment by holding presentations for citizens (5 times) and coordination meetings on responding to National Assembly policies
	Media	Lead public opinions, Public rights and interest		Offer advertisement and issues, and form friendly public opinions	• Meetings for media, correspondents' meetings, and press releases • Operate the press and risk management communication system
	Academia / Experts	Promote the energy industry		Form a consensus on 'changes in the business,' and build friendly forces	• Expert forum: Electricity economy (4 times, 89 persons); Electricity Power Act (2 times, 100 persons); and new energy industry (7 times, 214 persons)
	Domestic partners	Win-win growth, Cooperation for exporting	• Onsite VOC • Briefings • Build an ecosystem	Build a 'sharing economy ecosystem,' including fair trade	• Collect onsite VOCs of SMEs and select improvement measures
	Overseas partners	Joint contracts, Provide finance	• Regular exchanges • Benchmarking	Enhance competitiveness in winning contracts; and strengthen the personnel network	• Hold the BIXPO 2016 expo (around 52,000 people from 43 countries; and export counseling worth USD 1.12 billion
Internal	Employees	Continued growth, Self-esteem	• Direct report to the CEO • Vision portal • Management suggestion portal	Form a consensus on vision and strategies; and innovate the corporate culture	• Internalize the vision and core values at the company level: Empathy Up! Vision Concert tour (960 persons) • Direct communication with the CEO: 4 direct communication emails, 5 special lectures for 943 employees, 9 meetings to share information on pending issues at business sites • Training to strengthen innovation capabilities: Strategic leadership training for 60 persons, creative innovation training for 1,303 persons
	Labor union	Enhance the rights of union members	• Labor-management council • Collective bargaining • Workshop	Communicate and form a consensus based on mutual trust	• Communication efforts: 4 meetings of the labor-management council, 7 meetings for collective bargaining, 3 meetings of the labor-management joint committee, 4 wage negotiation meetings, 465 management briefings • Foster 354 onsite experts for labor-management relations

Materiality Test

Materiality test and the selection of core reporting issues

KEPCO conducted internal and external stakeholder surveys, analysis of international standards, benchmarking of advanced companies, and media research, in order to identify core sustainable management issues. In addition, based on the core issues that were derived from this detailed analysis, we conducted a materiality assessment and implemented the prioritization process in accordance with GRI G4 Guidelines. We then transparently report results and relevant activities through this report.

STEP 1

Build the issue pool

Based on economic, environmental, and social influences on our overall business activities or the assessment and decision-making of stakeholders, we composed a potential issue pool with 36 issues.

Analyze global standards

- Analyze requirements of global standards regrading sustainable management and identity issues
- Analyze Global Reporting Initiative (GRI) G4 Guidelines, ISO 26000, Sustainable Development Goals (SDGs), etc.

Review internal materials

- Review internal policies and activities report
- Review the KEPCO company magazines
- Conduct interviews with staff in relevant teams

Conduct benchmarking

- Identify core issues and activities of companies – renowned for outstanding sustainable management – in the same industry
- Identify sustainable management trends at home and abroad

Conduct media research

- Review articles reported from January 2016 to June 2017 through the media
- Review types of articles and major issues

STEP 2

Prioritize the issues

A survey of stakeholders, including customers, employees and partner companies, was conducted to prioritize the derived potential issue pools. Based on that, we identified our sustainable management level, and carried out the materiality test by incorporating impact on stakeholders' decision making and business relevance.

STEP 3

Select and report core issues

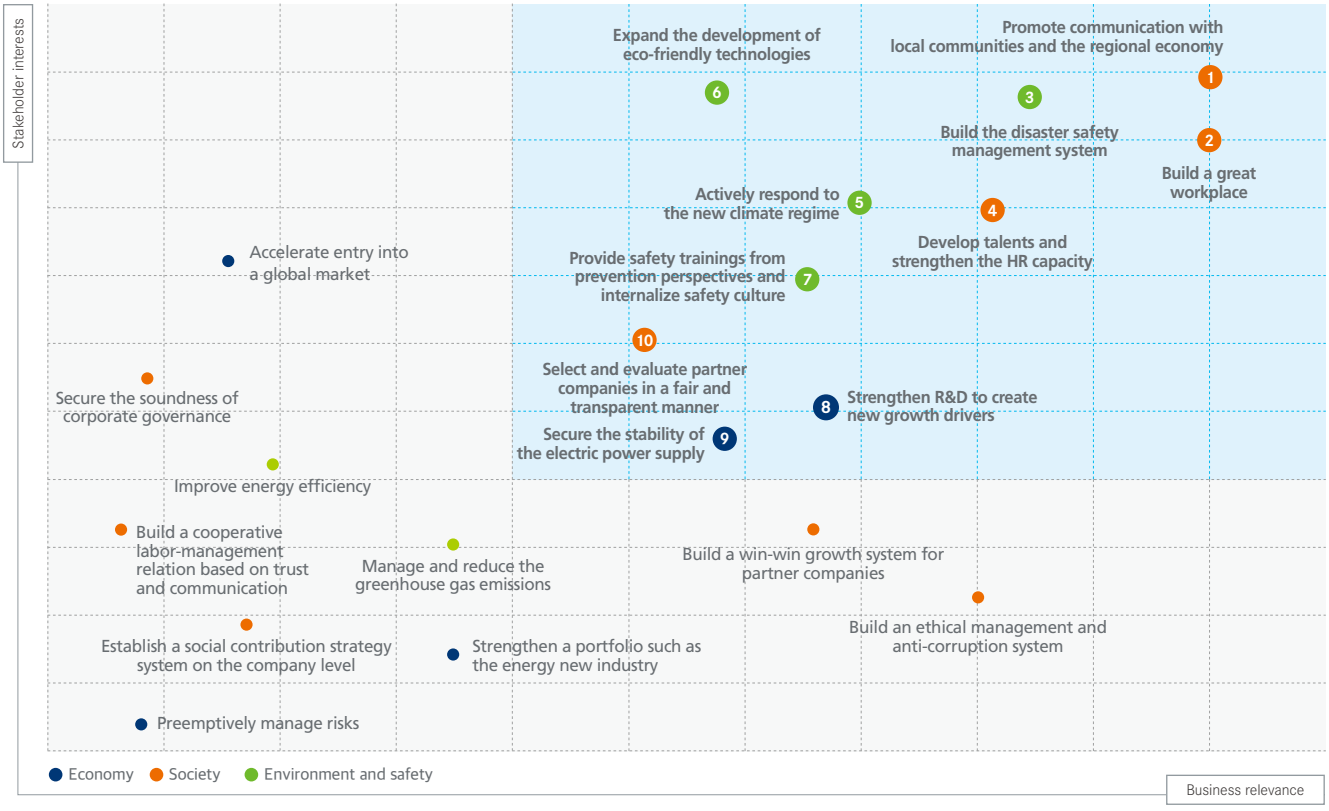
A final selection was made on ten core issues. Consideration was made on their meaning, scope, aspect boundary, reporting period, and reporting boundary, and thus we structured the issues in the contents of the report. In addition, we reported our positive and negative impacts and performances on the economy, society, and environment in a reasonable and balanced manner. We also operate diverse communication channels, including a survey of readers' opinions, to enable stakeholders to express their opinions.

Mapping of core issues into this report

Core Issue	Composition of the Report	Page
8	Issue 1 Creating the new energy ecosystem	26-33
9	Issue 2 Securing leadership in the energy market	34-41
5 6	Issue 3 Taking the lead in responding to climate change	42-49
1 10	Issue 4 Strengthening partnerships with stakeholders	50-63
2 3 4 7	Issue 5 Enhancing employee values	64-71

We identified core issues regarding our sustainable management based on the analysis of international standards, benchmarking, and stakeholder surveys, and report them in a balanced way in accordance with international reporting principles.

Materiality test matrix*



* We conducted the materiality test based on stakeholders' interest as well as the impact on decision-making and business relevance, and thus identified 10 core issues with higher priority.

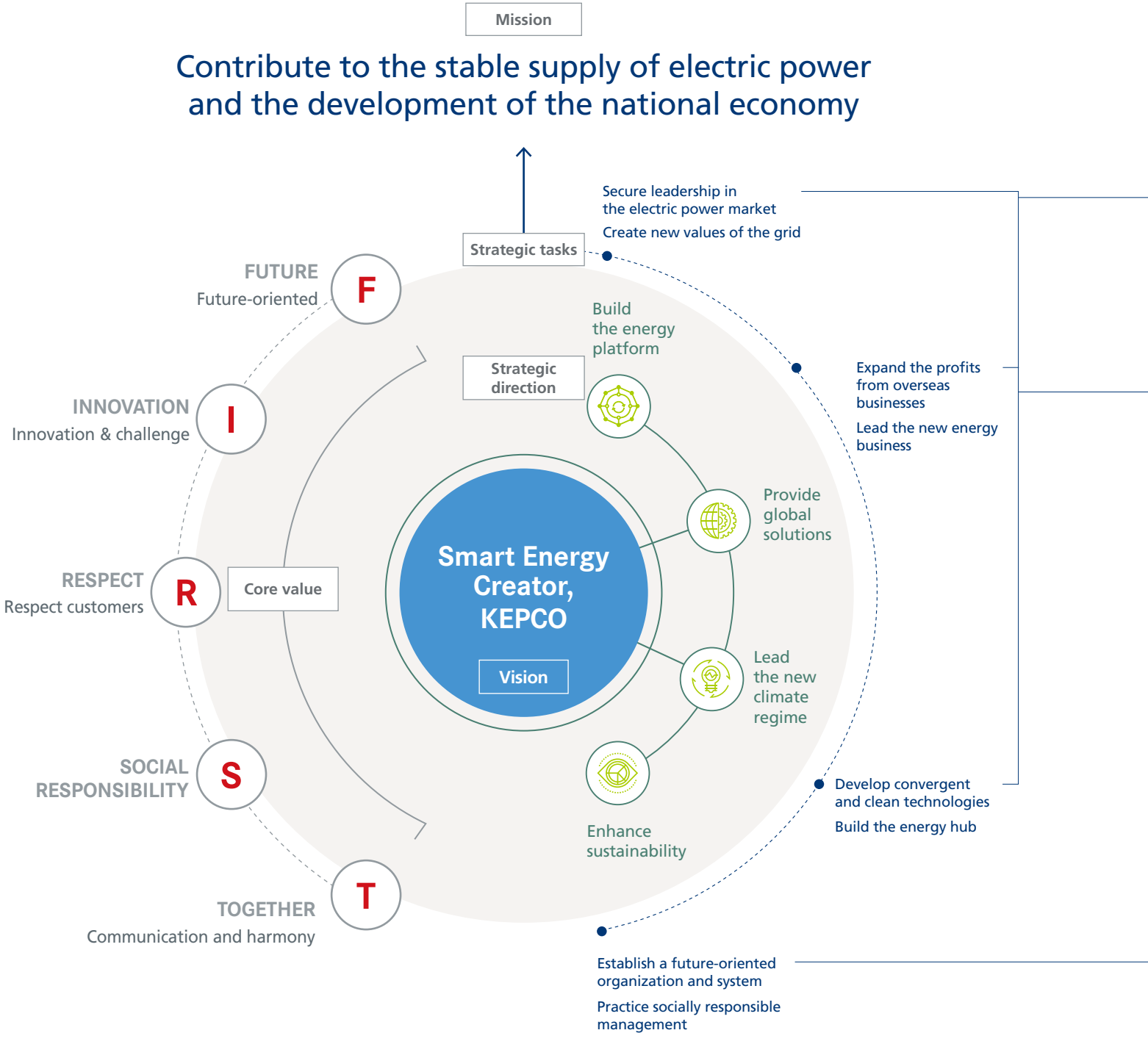
Core Issue	GRI Aspect	Subject of Impacts						Impacts of the Issue		
		Internal	Customers	Shareholders / Investors	Local communities	Government / Related institutions	Partner companies	Cost	Income	Risk
Promote communication with local communities and the regional economy	Local communities	●			●				●	
Build a great workplace	Labor practices	●								●
Build the disaster safety management system	Occupational health and safety	●			●		●			●
Develop talents and strengthen the HR capacity	Training and education	●							●	
Actively respond to the new climate regime	Energy Emissions	●			●	●			●	
Expand the development of eco-friendly technologies	R&D	●		●			●		●	
Provide safety trainings from prevention perspectives and internalize safety culture	Occupational health and safety	●			●	●	●			●
Strengthen R&D to create new growth drivers	R&D	●		●		●		●		
Secure the stability of the electric power supply	Energy	●	●			●			●	
Select and evaluate partner companies in a fair and transparent manner	Procurement practices	●					●			●

Sustainability Core Issues

Sustainable Management Strategy

MISSION & VISION

With the emergence of the new energy industry and the era of the Fourth Industrial Revolution, KEPCO established its vision as an innovative 'value creator' in the global energy industry. Guided by this vision, we strive to contribute to the stabilization of the supply and demand for electricity as well as the development of the national economy.



SUSTAINABLE MANAGEMENT STRATEGY

KEPCO established sustainable management performance indices in alignment with our management mission and vision, and has been managing execution status and goals with an aim for the systematic sustainable management from a long-term perspective. In addition, we put in place the Corporate Strategy Team under the Corporate Planning Department as a dedicated team to corporate sustainability management for the systematic execution of sustainable management.

Performance and goals of sustainable management

Strategic direction	Strategic tasks	Execution status				Future goal	
		Performance index	Unit	Goal for 2016	Achievement in 2016	Goal for 2017	Mid- to long-term goal for 2020
Creating economic value	Stabilize the electric power supply · Create growth drivers for the future	Load factor	%	77.9	72.4	77.9	76.1 and above
		Black out time	Minute	9.90	9.61	9.34	7.92
		Capacity of electric power facilities completed for overseas businesses	MW	New	5,198	5,338	6,138
		Secure core strategic technologies	Case, accumulated	54	54	69	134
Realizing eco-friendly energy	Expand green management · Respond to climate change	Rate of undergrounding electric distribution lines	%	16.9	17.1	17.6	21 and above
		Transmission and distribution loss factor	%	3.73 and below	3.59	3.72	3.72 and below
		Renewable energy capacity	MW	New	180	198	542
		GHG emissions	1,000 ton CO_2eq	1,610	1,398	910	1,590
Strengthening partnerships with stakeholders	Enhance customer values · Practice sharing and coexistence	Customer satisfaction level	Point	91.5	85.2	86.7	90.3
		Rate of preferential purchase of products manufactured by SMEs	%	70.5	70.6	70.7	70.9
		Export performance of SMEs in overseas expansion	USD 10,000	31,837	34,153	35,954	38,000
		Number of companies attracted into the Bitgaram Energy Valley	Company	150	177	250	500
		Support for the launch of startups	Company	New	– [1]	100	300
Pursuing a people-oriented workplace	Secure future-oriented talents · Create a safe and happy workplace	Talents with capacity to drive future growth	Person	971	971	1,075	1,314
		Female employment rate	%	20 and above	21.2	20 and above	20 and above
		Safety accident victims	Person	108 and below	65	94	58
		Employee satisfaction level	Point	76.4	75.2	76.1 [2]	80

[1] Begun in 2017

[2] Based on the average performance of the most recent three years

Creating the new energy ecosystem

OUR APPROACH

KEPCO has been transforming into a Digital Utility based on cutting-edge technologies and convergence-based new energy businesses, with an aim to take the lead in responding to sharp changes in the electric power industry. By successfully completing our transformation into 'Digital KEPCO,' we plan to lead the new paradigm of the Fourth Industrial Revolution and create a new energy market.

RISK

- Policy restrictions on public companies and increased competition in the energy industry
- Increase in electricity purchase expenses due to the expansion of high-cost power generation sources
- Increased demand for the digitalization of electrical grids

OPPORTUNITY

- Experiences in the new energy industry (renewable energy, ESS, smart grids, etc.)
- Global trend towards the energy paradigm conversion

KEY PERFORMANCE

Investment in the new energy industry

KRW 2,639.8 billion

R&D expenses

KRW 446.6 billion

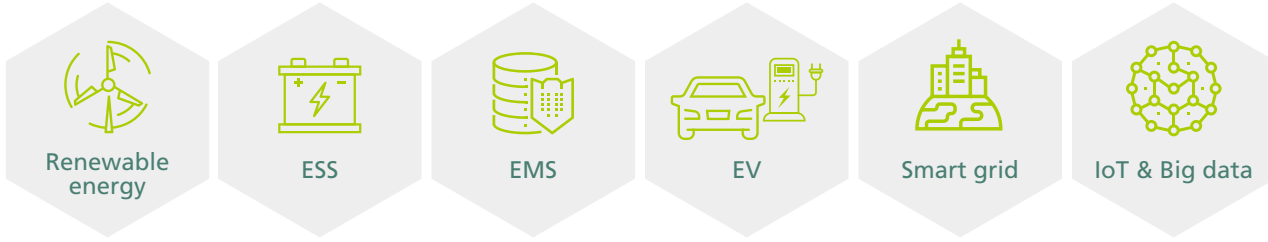
Fund size for the new energy industry

KRW 500 billion

INVESTMENT TO BECOME A LEADER OF THE NEW ENERGY INDUSTRY

KEPCO aims to go beyond ICT and build an energy platform-based electricity business ecosystem in which electric energy and relevant services converge and are connected. Specifically, we have been creating new value through business models by expanding the new energy industry and developing platform-based connected services. To this end, we invested KRW 2,639.8 billion in 2016.

New Energy Industry Field



NEW ENERGY INDUSTRY FIELD

KEPCO has identified new energy industry areas that are in line with the government's policy direction and is moving forward with commercialization. By doing so, we have been developing new growth engines for the future and cementing our position as the leader of the new energy ecosystem.

NEW ENERGY INDUSTRY BUSINESS MODEL

Clean and smart infrastructure

Expanding EV charging stations KEPCO became the very first in Korea to develop quick electric vehicle (EV) chargers, and is actively expanding the infrastructure that is needed to promote the dissemination of EVs. In partnership with private companies, we established a special purpose company (SPC) for charging services in August 2015, to provide EV charging services and charge a service fee. We have been conducting a charging infrastructure construction project since 2016, thus building a foundation to promote EVs in Korea and create future demand for electricity.

Status

278 urban life-type charging stations, and 1,594 apartment-type complexes, and launched paid charging services

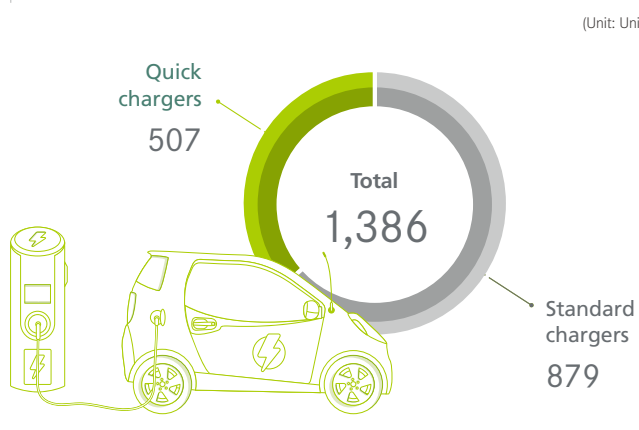
* As of August 2017

Goal

Plan to build 307 urban life-type charging stations and 4,000 apartment-type complexes

Building the AMIs KEPCO plans to build the advanced metering infrastructure (AMI) through which we provide real-time information about the electricity usage and electric rates to customers, thereby encouraging voluntary demand management. This will also enable suppliers to accurately forecast demand and manage loads. In accordance with the government's master plan for electrical grids, we have built the AMI for approximately 3.3 million households as of the end of 2016. This has enabled the remote reading of customers' electricity usage by time slot as well as real-time provision of accurate information, thereby enhancing customer convenience and stability in the electric power supply.

Status of building the infrastructure for EV charging

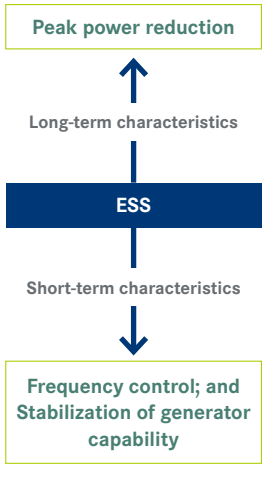


* As of the end of December 2016

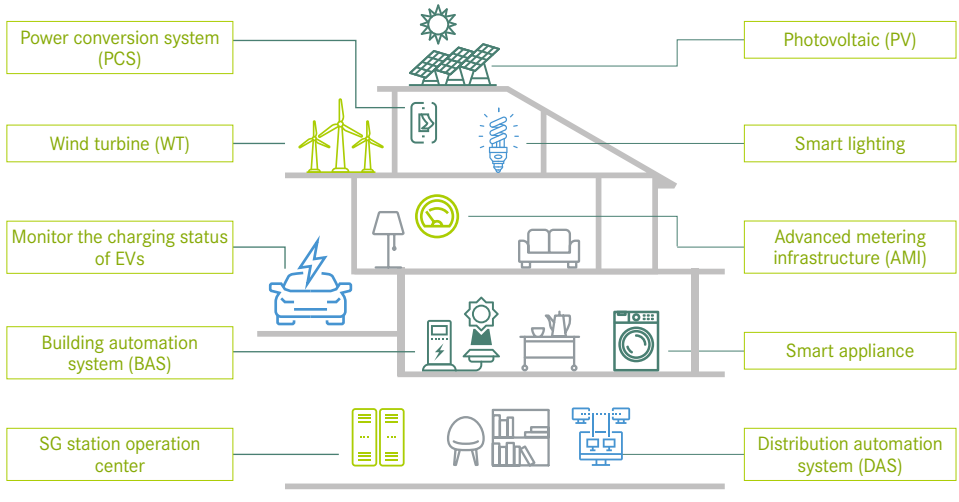
Building ESS facilities for frequency regulation The energy storage system (ESS) stores electric power so that electricity can be used later when it is needed. It can be used in diverse fields, including demand management, new & renewable energy expansion, improvement in electricity quality, and frequency regulation. In particular, ESS replaces the frequency regulating reserve, which used to be handled by coal generators, thereby stabilizing generator output, ultimately leading to a substantial reduction in annual electricity purchase expenses. In 2014, we installed Korea's first 52 MW ESS at the West-Anseong substation and Sin-Youngin substation, and launched the commercial operation of a frequency regulation ESS in 2015.

Expanding the smart grid A smart grid is a next-generation electrical grid that provides high-quality electricity services and optimizes energy usage efficiency. It accomplishes this by making the electrical grid more intelligent and advanced through the convergence of electric power technology and ICT. From 2009 through 2013, we took part in a construction project in all five areas – transmission and distribution, consumer, transportation, new & renewable, and electric power service – in the Jeju Smart Grid Test-bed, and successfully completed the business model development and standardization project. By leveraging the technologies and experience it gained from the Jeju demonstration project, the KEPCO consortium, which consists of 15 organizations, is implementing the 'participation in smart grid deployment project' led by the Korean government as a business model for AMI-based electricity services and energy consulting. We plan to complete the establishment of business models that are in line with the characteristics of each region together with participating local governments by 2018.

Functions of an ESS



Composition of the smart grid station



Renewable energy

Solar power business KEPCO is undertaking the Miryang solar power business, which is a benefit sharing-type renewable energy business. We build and operate solar stations on rooftops and land located near transmission lines, and share the profits with participating residents. We are also conducting a solar power business that uses a school rooftop through an SPC that was established in 2015 together with six power generation companies. We plan to complete the installation of 300 MW facilities at 2,500 schools by 2020. In 2016, we placed an order for construction at 273 schools and completed the construction of a solar power station at two schools. For our overseas business, we commenced construction for a 28 MW solar power project in Chitose, Japan, and acquired a 30 MW solar power plant in Colorado, U.S. We are thus solidifying our stature as a global clean energy business operator in overseas countries as well.

Fuel cells As part of our future growth projects, KEPCO established an SPC in cooperation with Daegu Metropolitan City in 2016 for the joint development of a 60 MW fuel cell business, and the relevant business is underway.

Offshore wind power business In accordance with the government's comprehensive plan for 2.5 GW offshore wind power in the Southwestern Sea, KEPCO has been conducting a 60 MW Southwestern Sea offshore wind power business together with six power generation companies. We are also taking part in the development of the offshore wind power business in the Saemangeum region (99.2 MW) and Hallim, Jeju (100 MW). Our wind power business in Gansu, China marked the beginning of our overseas offshore wind power business. We are operating wind power plants (total of 1,314 MW) in Gansu, Inner Mongolia, and Liaoning. Construction was commenced for the wind power business in Fujeij, Jordan (89.1 MW) in December 2016.

Energy-independent islands The energy-independent island is a new energy business model that involves replacing electricity production and supply on islands in Korea with eco-friendly energy that combines renewable energy with ESS. As a leading example, KEPCO established an SPC in 2015 to build the Ulleungdo eco-friendly energy-independent island, and signed a power purchase agreement (PPA) with Ulleung

Enerpia in 2016. We are thus changing high-cost diesel generators on islands into such clean energy sources as photovoltaic, wind, and geothermal power.

Energy efficiency improvement

Improving efficiency through an ESCO KEPCO strives to improve energy efficiency by supplying high-efficiency facilities. In June 2016, we established a separate corporation and invested approximately KRW 150 billion to start the energy service company (ESCO) business. In 2017, we signed an MOU with Samsung Electronics for a pilot project on peak management using smart home appliances as well as for the development of an energy Internet of Things (IoT) cooperation business model.

Smart city KEPCO has been expanding the ecosystem of the new energy industry and building a city-level integrated management system. As a leading example, such projects as the Bitgaram Energy Valley Smart City, a carbon-free Island (CFI) at Jeju, and the LH Collaboration Smart Energy City are underway.

K-EMS In partnership with other companies, including LG Uplus, KEPCO has been developing business models for energy efficiency, such as the smart factory and smart campus. Investments amounting to KRW 500 billion will be made over the next decade into the smart factory, in particular, in order to build 2,000 K-iEMS (KEPCO Energy Management System) – an integrated energy management system.

Big data·IoT

Big data KEPCO focuses on enhancing market convenience by providing public information in the field of electric power by using big data. Since the opening of the Big Data Center in 2016, we have been posting integrated electric power information. Our plan is to build a big data integration platform and to execute big data analysis tasks, such as an analysis of the economic feasibility of renewable energy and selection of optimal locations for EV charging stations.

IoT KEPCO has set in place a comprehensive management system for electric power IoT, and is thus developing a smart access control system, electric power facility monitoring, and social safety net services. We are taking the lead in realizing an 'energy Internet' by taking such measures as installing IoT terminals and sensors in Jeonju (9 million units) and building a nation-wide IoT infrastructure to collect big data on electric power.

BUSINESS CASE

Transforming Dubai into a cutting-edge energy city

KEPCO held a groundbreaking ceremony for a pilot project of the city-level 'smart grid station' in May 2016, and has been conducting activities to transform Dubai into a cutting-edge energy city.

Groundbreaking ceremony for a pilot project of the city-level smart grid station

The smart grid station (SGS) optimizes energy management in a building. It converges and connects air-conditioning and heating, photovoltaic power, ESS and AMIs with ICT. We plan to build an SGS worth USD 2.8 million (around KRW 3 billion) in the Dubai Electricity and Water Authority (DEWA) building, in partnership with six SMEs in the domestic new energy industry, including AnyGate and Destin Power.

The unprecedented entry of the solar power business into the US electric power market

KEPCO acquired a 30 MW solar power plant in Colorado and began full operation in April 2017.

Solar power plant in Colorado, U.S.

This acquisition has significance in that it is our first entry into the US electricity market, which is the largest in the world. The entire amount of the electricity produced will be sold to the Public Service Company of Colorado. We expect to generate sales of USD 230 million (around KRW 250 billion) during a business period of 25 years. Domestic equipment will be used, such as installing an ESS and increasing panels on idle sites within the complex. By doing so, we can achieve the effect of increasing exports by around KRW 15 billion. We plan to use this business as a basis for carrying out new development business with domestic equipment companies in North America, such as the renewable energy and the new energy industry.

FORMING THE FUND TO INVEST IN THE NEW ENERGY INDUSTRY

KEPCO plans to form a fund to invest in new energy-related businesses, amounting to KRW 2 trillion by 2017, with an aim to establish and develop an ecosystem for the new energy industry. In 2016, we invested KRW 500 billion, based on which we will encourage the private sector to invest in the new industry and play a key role to promote the new industry.

Overview and status of the fund for new energy businesses

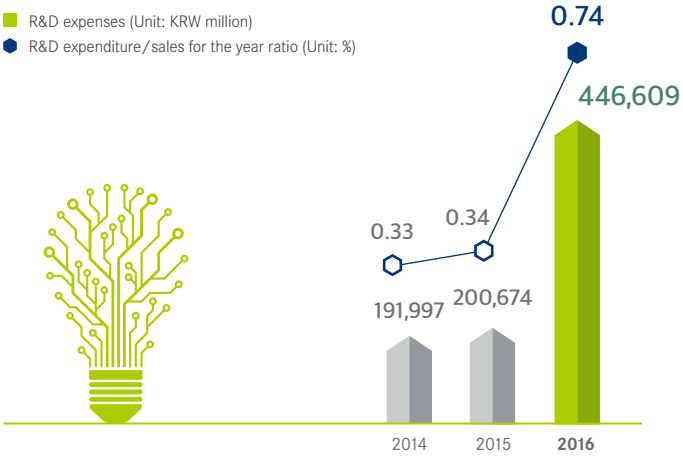
Size	KRW 500 billion
Investment method	Management of parent funds and sub-funds
Parent funds	Energy Infra Asset Management Co., Ltd.
Sub-funds	Venture company and start-up (2): LB, BSK Corporate growth (1): Songhyun Investment

* As of August 2017

LEADING THE NEW ENERGY INDUSTRY THROUGH TECHNOLOGY DEVELOPMENT

KEPCO will secure future growth drivers by developing 10 major strategic technologies and KEPCO 4.0 technologies in preparation for the Fourth Industrial Revolution.

R&D expenses and R&D/sales for the year ratio



10 major strategic technologies

Creative & Innovative Technologies

- New materials for electric power
- New power transmission technology
- Clean thermal power (Ultra super critical CO_2/ oxy-fuel power generation)
- Carbon capture utilization storage
- Offshore wind power

Efficient & Smart Technologies

- Superconductivity
- Micro grids
- Energy storage systems
- ICT convergence
- Smart grids

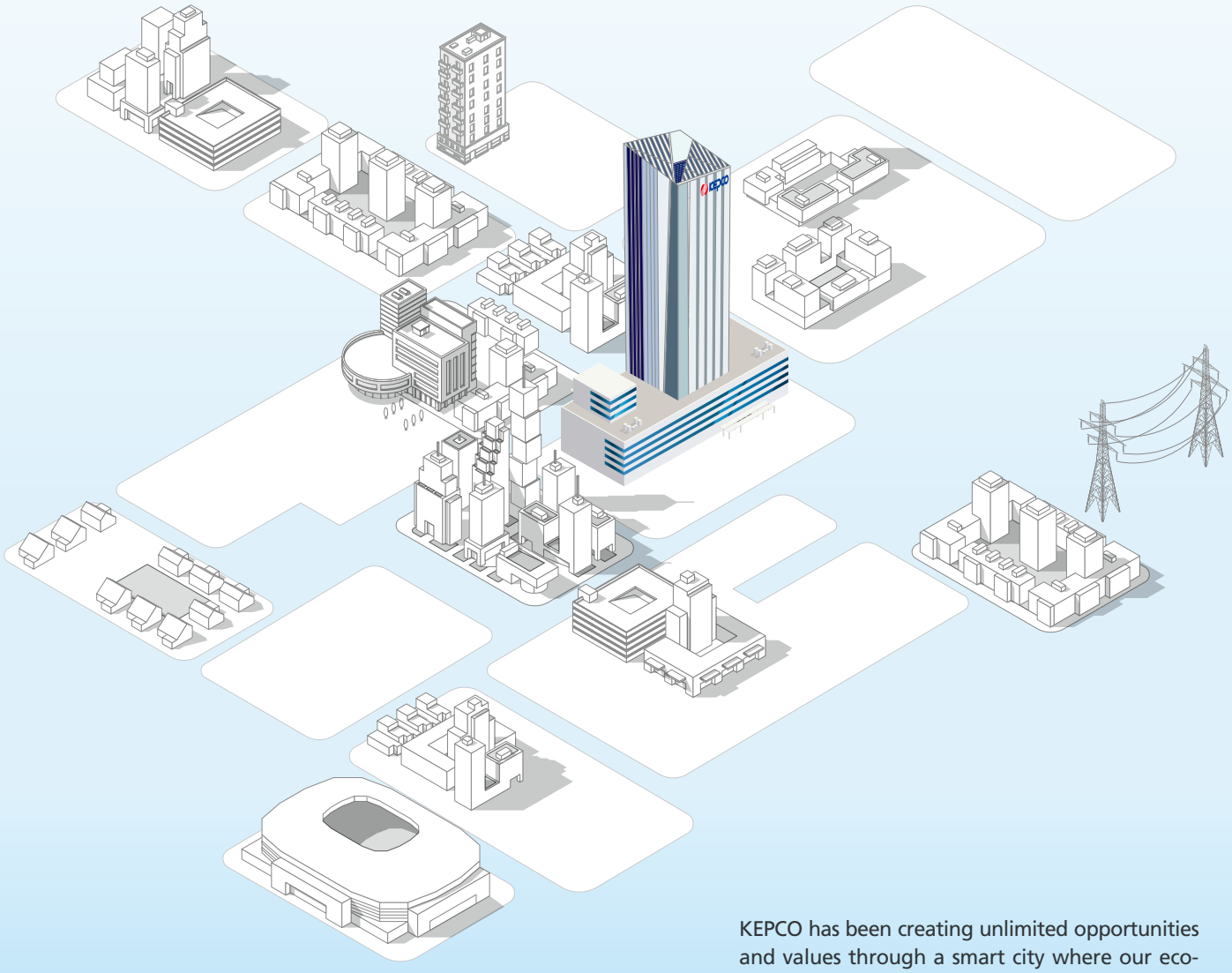
Major KEPCO 4.0 technologies

Development of core technologies

Strategies to secure technologies

Sensor	IoT	Cloud	Big data	AI	Robot
Develop 33 sensors for power generation, transmission, substations, and distribution Develop the energy harvesting technology to secure sources for the sensors	Acquire the international standard for the in-house developed protocol Build infrastructure for IoT	Transform the entire work process into a cloud system Identify new business models base on the cloud	Establish a KEPCO big data platform Build infrastructure to store and analyze big data	Develop basic AI technologies including status diagnostics Develop machine learning technologies	Develop unmanned robots and drones to monitor and inspect electric power facilities Become the first public corporation to develop AI-based chatbots

KEPCO Technologies in the Smart City

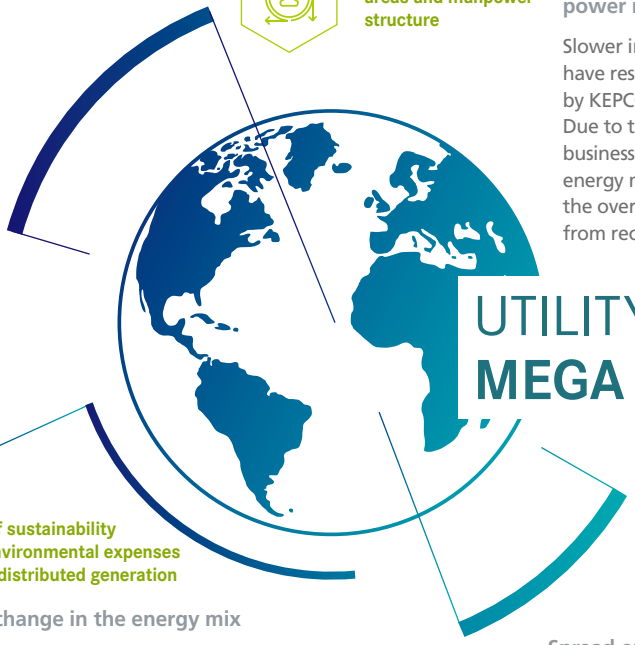


KEPCO has been creating unlimited opportunities and values through a smart city where our eco-friendly technologies and information and communications technologies are converged. We will realize a sustainable city of the future and enhance the quality of customers' lives by focusing on the establishment and promotion of a smart city which is a key platform for the Fourth Industrial Revolution.

Shifting into a Digital KEPCO

MEGATRENDS IN THE ELECTRIC POWER INDUSTRY

KEPCO conducts monitoring of the constantly-changing electric power industry environment and identifies opportunities and risk factors to develop our competitiveness for the future. In particular, we choose megatrends in the electric power industry that influence sustainable management, after which we analyze the trends and reflect the results in our management activities.



- Expansion of the BTM*
- Emergence of new industries

Emergence of new technology-driven industries

The application of convergence technologies, such as AI and IoT, to the electric power business has been spreading, and new markets related to EV and ESS are also expanding. In addition, there is an emergence of companies that have new business models, such as energy efficiency and distributed generation.

* Behind-the-Meter: An energy market behind-the-meter such as AMI, ESS, and IoT

- Changes in traditional business areas and manpower structure

Changes in the value chain and manpower structure of the electric power industry

Slower increases in electricity demand have resulted in changing roles performed by KEPCO as an electric power supplier. Due to the reduction in the existing business scope and the formation of a new energy market, changes are expected in the overall human resources management from recruiting to developing.

- Importance of sustainability
- Increase in environmental expenses
- Expansion of distributed generation

Substantial change in the energy mix

An emphasis is being placed on sustainability that considers economic feasibility, the environment, and safety. There is also a steady rise in the volatility of distributed generation, due to the growing diversity of electric power resources and loads, as well as the increasing complexity of power systems.

- Emergence of energy prosumers
- Focus on customized services

Spread of the energy democracy

Consumers have an increased sense of sovereignty. Furthermore, the main agents of energy supply and consumption are changing to mainly consist of consumers. Consumers especially place importance on personal identity, demand customized services, and pursue cost-effectiveness in energy consumption.

VOICE OF STAKEHOLDERS

Interview with Professor Sang-kyun Cha Chairman of the Digital KEPCO Committee

Prof. **Sang-kyun Cha**,
Director of SNU Big Data Institute

Q We are entering into the era of the Fourth Industrial Revolution that is based on convergence and hyper-connection among industries. Please share your opinions on how this will influence the electric power industry.

The Fourth Industrial Revolution is breaking down boundaries among different industries and bringing about substantial change in the competition system. For example, Tesla, which is famous for EVs, has been expanding investments in the development roof top solar, ESS, and other areas through technological convergence, thereby steadily establishing itself as an energy company. The emergence of such companies will pose a significant threat to existing electric power companies, such as KEPCO.

DIRECTIONS TO SHIFT INTO A DIGITAL KEPCO

Against the backdrop of the emergence of disruptive innovation technologies, as well as market and consumer changes, and also under the eco-friendly energy policy paradigm, KEPCO is seeking ways to shift into a Digital KEPCO by developing business models and establishing digital infrastructure. By doing so, we will take the lead in the Fourth Industrial Revolution and drive the nation's growth.

Goal

- **Secure new business leadership** [New business sales of 30% by 2030]
- **Improve the efficiency and flexibility of the electric power system** [20% share of renewable energy by 2030]
- **Establish an agile, flexible organization** [Independent business team-level responsible management]

Directions

DIGITAL BUSINESS MODELS	DIGITAL SERVICES	DIGITAL TECHNOLOGIES	DIGITAL INFRASTRUCTURE
Solution businesses (EMS, ESS, EV)	Customer convenience-centered marketing using digital technologies, including big data	Secure key personnel in digital technology and strengthen convergence capabilities	Provide high-quality electricity through the hyper-connected and smart grid
Platform businesses (Data transaction, Energy marketplace, Virtual power plant)	Establish a customized rate system	Strengthen the organization for corporate-wide digitalization	Build an energy platform to promote new energy businesses and services
Direct participation in renewable energy	Strengthen customer experience management through digital technologies, including AI and augmented reality (AR)	Secure key technologies and build an innovation ecosystem	Build a smart city for the convergence and demonstration of new technologies and new business models
Export of new businesses		Innovate work processes and the corporate culture	
→ **Secure core talents and technologies**	→ **Provide intelligent and customized services**	→ **Build a foundation for digitalization**	→ **Create convergent-type future businesses**

Create new value chain → Increase customer loyalty Secure market dominance → Flexibility, expandability, stability Build a new electric power grid system → Establish a management system based on future insight

Future businesses

- Renewable energy business **SUPPLY**
- Platform business **NETWORK**
- Energy solution business **RETAIL**

Q What would be the most critical capability to take the lead in the Fourth Industrial Revolution? Also, please comment on what efficient strategies there are to develop such capabilities.

I think the most important thing is to secure innovative talent in preparation for the Fourth Industrial Revolution. To secure the suitable talents who create innovative digital solutions, you should train internal employees and have them develop new perspectives. There is also a need to foster experts in different fields and to recruit outstanding talents from overseas. An important task is to determine how the shift into Digital KEPCO will be achieved based on this human capital.

Q KEPCO has been developing a platform and business models in new business areas, including big data, EMS, EV, as well as renewable energy power generation. Please comment on KEPCO's future direction and roles.

KEPCO has been supplying stable, high-quality electric power and has outstanding talent and business know-how, in addition to substantial electric power data. I believe it is now time for KEPCO to identify ways to contribute to national economic development by using these strengths, such as building a new energy ecosystem. For example, KEPCO can provide a foundation for the new energy industry by increasing AMI supply, and can create greater added value by developing new business models using AI, big data, and cloud.

Securing leadership in the energy market

OUR APPROACH

KEPCO has been achieving continued growth by bolstering the original competitiveness of the electric power industry and taking advantage of new opportunities in the global energy market. We continue to conduct activities that are aimed at increasing stability and efficiency in electric power supply and demand. We also plan to increase the number of contracts we win for our overseas business, such as those related to renewable energy, to gain a foothold in the global energy market in advance.

RISK

- Reduced sales of operating businesses due to falling oil prices and other factors
- Global economic downturn and intensifying competition in overseas markets
- Increasing possibility of an electricity supply and demand crisis, such as due to a natural disaster

OPPORTUNITY

- Integrate with next-generation technologies related to the Fourth Industrial Revolution
- The new energy business industry market is forecast to grow sharply

KEY PERFORMANCE

Transmission and substation loss factor

3.59%

Demand forecast accuracy

98.85%

Overseas sales

KRW 5.1 trillion

STABLE SUPPLY OF ELECTRIC POWER

Setting the goal of electricity supply and demand

KEPCO establishes and implements business goals and detailed plans every year to ensure that an annual 22.94 million households enjoy the stable supply of electricity.

Goal

Realize stable electric power supply and demand, and create customer value

Corporate-level KPI

Adopt a customer-oriented rate system	Enhance convenience in electricity use	Manage the load rate

Execution tasks in 2016

Ease the progressive electricity billing system for households	Take the lead in policy improvements to meet international standards	Prevent electricity supply and demand crises
Increase energy welfare for the underprivileged	Increase the percentage of people benefiting from the welfare system	Expand the amount of energy reduction
Improve the social welfare-type rate system	Increase citizen-centered services	Expand eco-friendly energy businesses

Establishing a response scheme to overcome electricity supply and demand crises

KEPCO operates a supply and demand response system on a regular basis to prevent supply and demand crises, such as a natural disaster, and to ensure stable supply and demand of electricity. In preparation for earthquakes, we established supply and demand stability measures and low-voltage resolution measures for nuclear power plant stoppages and each accident crisis scenario, and thus established response strategies for each type of crisis. To prepare for supply and demand crisis situations that arise from continuous heat waves, all KEPCO employees are carrying out emergency response activities, with the CEO and the management taking the lead. In this way, we are overcoming supply and demand crises and achieving supply and demand stability. In addition, we make improvements to the demand forecasting system and analysis model by enhancing predictor variables, including temperature, humidity, and discomfort indexes. This is how our demand forecast accuracy level remains one of the highest in the world.

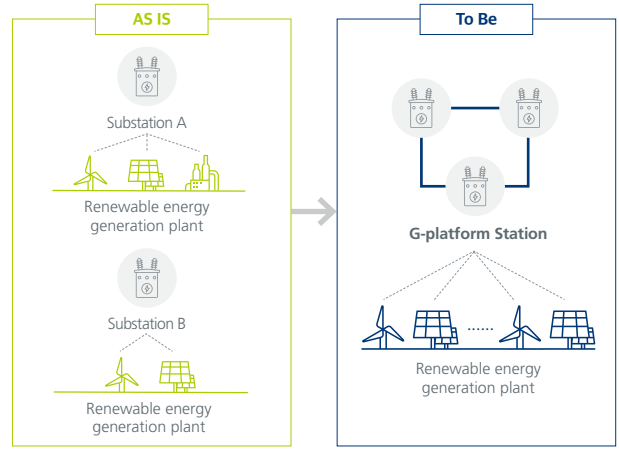
Comprehensive measures on earthquake disaster prevention for electric power facilities

Strengthen seismic standards	Improve earthquake observation systems	Systemize manuals and training
· More than 765 kV (magnitude 6.3 → 7.0) · Less than 345 kV (magnitude 6.3 → 6.6)	· Build more meters (15 → 57) · Analyze damage impacts at all substations	· Establish manuals to respond by magnitude · Make earthquake drills a regular exercise (twice per year)

Resolving the instability of the distributed generation system

KEPCO has been building an electric power infrastructure that satisfies the government's eco-friendly energy mix policy. We are moving forward with 'zero restrictions in the renewable energy power generation system' to respond to a sharp rise in renewable energy sources and potential demand for small-scale renewabl energy power generation. By improving the standard of connection to power plants, the connection capacity of one 154 kV transformer was increased from 25 MW to 50 MW. We are also expanding the renewable energy connection infrastructure by install more transformers and constructing a G-platform dedicated to renewabl energy. We plan to establish and execute measures to improve facilities and develop power transmission system in our efforts to expand renewabel power generation system.

G-platform Station

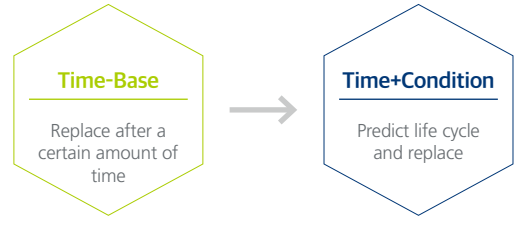


Enhancing reliability in electric power supply through the smart grid

We built and are operating a next-generation SCADA*-based intelligent electrical grid as a countermeasure against a rise in grid uncertainty that results from an expansion of new technologies, including renewable energy and ESS. This has allowed real-time electrical grid analysis, resulting in increased reliability in supply, including early detection of abnormal signs and quick recovery. Also, we are continually enhancing grid reliability through scientific facility replacements based on big data analysis.

*Supervisory Control and Data Acquisition: This system enables remote monitoring and control of around 1 million power facilities. It was built and is operated at the corporate-wide level. It consists of around 3,000 pieces of equipment, including servers.

Scientific facility replacement



PROVIDING HIGH-QUALITY ELECTRIC POWER SERVICES

Providing world-leading electric power quality

KEPCO focuses on providing high-quality electric power through activities to prevent failures, and minimizing disaster and accident-related damage through continuous inspections and response activities. In recognition of these efforts, KEPCO was ranked the world's No. 1 for three consecutive years in the electricity supply sector of the World Bank's 'Business Environment Survey' in 2016. This proved to be another opportunity to demonstrate that KEPCO is a world-class company that provides electricity supply services in the simplest and quickest manner.

Activities to prevent facility failures

Respond to disasters and accidents	• Earthquake resistance evaluations of key electricity facilities (7 sites) • Inspection of the emergency response system and facilities (260,000 sites) • Honorary patrols on islands and mountainous areas (156 persons) / Quick restoration from typhoons
Improve system operations	• Instantaneous voltage sag measures (5 cases of dualization) • Expansion of supply capacity and system changes (15 sites) • Expansion of intelligent extra-high voltages and low voltages • Transmission loss factor: 1.59% / Distribution loss factor: 2.03%
Reinforce vulnerable facilities	• Replace wires of transmission lines, and make other such improvements (789 cases) • Replace the oil-filled cables that cross the Han River (1.2 km) • Improve electric power facilities at traditional markets (730 sites) • Overhaul public power lines in city centers (293 districts)
Strengthen field management	• Inspect heavy-load operating facilities in the summer (64 sites) • Assessment activities at worksites under a planned power outage (927 sites) • Drills to respond to breakdowns (118 sites, 259 persons)

Establishing a wider system operation center

In 2016, KEPCO established a metropolitan system operation center at four district divisions, in order to professionalize feeding operations.

Unification of operation organizations	Unify dispersed operation work among departments into an 'integrated department'
Developing professionals in power converter	Add training groups to address the shortage in professional training

Diagnosis using next-generation technologies

Diagnosis using IoT KEPCO has been making equipment diagnosis techniques smarter by using IoT. In 2016, we built an electricity IoT sensor-based distribution facility diagnosis, facility monitoring system, and self-diagnosis test-bed in Daegu, Gwangju, and Naju, and are in the demonstration phase. By developing an unmanned surveillance robot for electric power conduit pipes, we have established a real-time surveillance system that enables remote surveillance and control through IT equipments.

Facility diagnosis based on ICT convergence KEPCO operates a facility diagnosis system that uses ICT, breaking away from existing methods. We improved the distribution line inspection system by developing and operating drones. Through such systems as the cable joint gas analysis system and the diagnosis system for underground facilities inside manholes, we are systematically managing electric power facilities that are scattered across the nation.

Expanding electricity supply regions

KEPCO carries out its electricity supply business based on requests made by local governments for remote and isolated regions where it is difficult to supply electricity due to geographical constraints. In 2016, we completed providing an electricity supply for 14 households in remote and isolated regions. As of the end of March 2017, there were a total 310 households in remote and isolated regions without access to the transmission and distribution grid, including 111 households that did not meet the necessary requirements in the Act on the Promotion of Electrification in Agricultural and Fishing Villages. We plan to steadily decrease this number by making continuous investments in facilities and expanding decentralized generation (micro grids) in isolated regions.

Drone for checking facilities

EXPANDING THE PROFITS OF GLOBAL BUSINESSES

Building a global KEPCO energy belt

As of the end of June 2017, KEPCO is carrying out 34 projects in 22 countries around the world in various sectors, including thermal power, nuclear power, renewable energy, transmission and distribution, and new businesses. In addition to making diverse efforts to develop business models for long-term convergence-based new businesses, we are increasing our influence in the global renewable energy market and expediting the establishment of the 'global KEPCO energy belt.'

Generating revenue through expansion of the overseas power generation market

KEPCO has been solidifying its stature as a large-scale independent power producer (IPP) in the Asian power generation market. We expanded our reach to include the Middle East, Latin America, and Africa. We have come into rank with global companies and are continuing remarkable growth.

In the Philippines, we successfully completed a performance restoration and operation project for 650 MW heavy fuel oil power generation in Malaya which was our first overseas power generation project. We are generating stable revenue by handling efficient operation of a 1,200 MW gas-fired combined cycle power plant in Ilijan and a 200 MW fluidized bed coal-fired power plant in Cebu.

Power plant in Al-Qatrana, Jordan

These projects globally publicized our technological prowess and know-how, contributing to expanding our business area in the Philippines. We successfully completed the Norte II gas-fired combined power generation (433 MW) project in Mexico in 2013, heavy fuel oil power generation (1,204 MW) project in Rabigh, Saudi Arabia and Shuweihat S3 gas-fired combined cycle power generation (1,600 MW) in 2014, and the diesel internal combustion generation project in Amman, Jordan in 2015. By doing so, we have demonstrated our excellent technological prowess and project execution capabilities all throughout the globe. In addition, KEPCO was chosen as a preferred bidder for the coal-fired power plant (630 MW) construction* and operation project in Thabametsi in the Republic of South Africa. By entering the African IPP market for the first time, we built a foundation to further advance our overseas business.

* KEPCO participated as a consortium with Japan's Marubeni Corporation. Each company's share ratio is 24.5%, and the share of a local business owner is 51%.

BUSINESS CASE

Leading energy cooperation in Northeast Asia through the Super Grid

KEPCO has been implementing the 'Mid- to Long-Term Northeast Asia Super Grid Project' to lead the era of energy cooperation in Northeast Asia.

As part of our efforts to realize the super grid, we completed 'a preliminary feasibility study and joint research on power grid interconnection between Korea and Russia' together with Russia in 2015. Based on this achievement, an MOU was signed in March 2016 among four countries – Korea, China, Japan, and Russia – on a 'preliminary feasibility study and joint research on system connection.' We plan to fully launch multi-party research, establishment of business models, and other such activities in 2017. This project is expected to serve as a foundation for creating our major new growth engine, and substantially contribute to peace and joint prosperity in Northeast Asia.

Development stage 2013-2016	Internal preliminary investigation / Signing of an MOU for joint research ↓ Selection of a pilot project / Joint feasibility research
Execution stage 2017-2020	↓ Establishment of a business model / Basic design for the business ↓ Commencement of commercialization

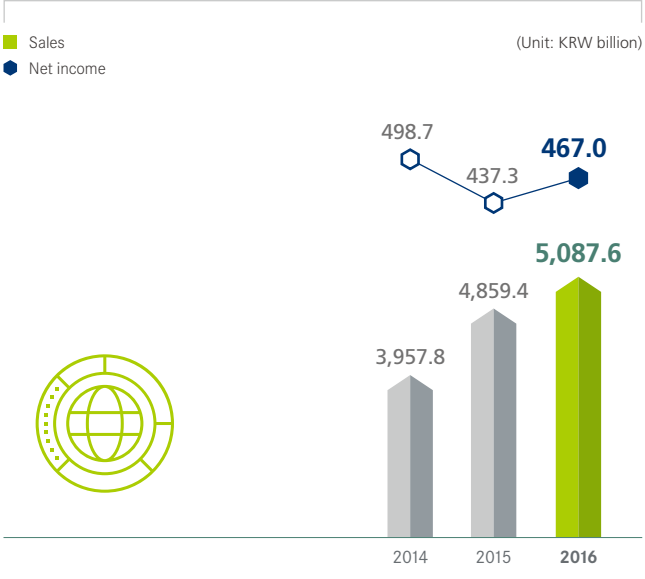
Diversifying the overseas power transmission and distribution business

KEPCO has successfully completed transmission and distribution consulting projects in Nigeria, Cambodia, Pakistan, and other countries, based on our outstanding technological prowess and network. Backed by our extensive experience in the transmission and distribution business, we are conducting around 20 projects in 16 countries and globally publicizing our outstanding technologies, breaking away from the previous consulting-oriented transmission and distribution overseas business structure. In 2016, we won a contract for a smart distribution construction project in Dominica thanks to our capacity in smart grid. We also acquired an opportunity to carry out an intelligent substation construction project in Bhutan that is a Korean-type substation to which an IT system is applied. Through our convergence transmission and distribution business, we have successfully performed as a test-bed for new energy businesses.

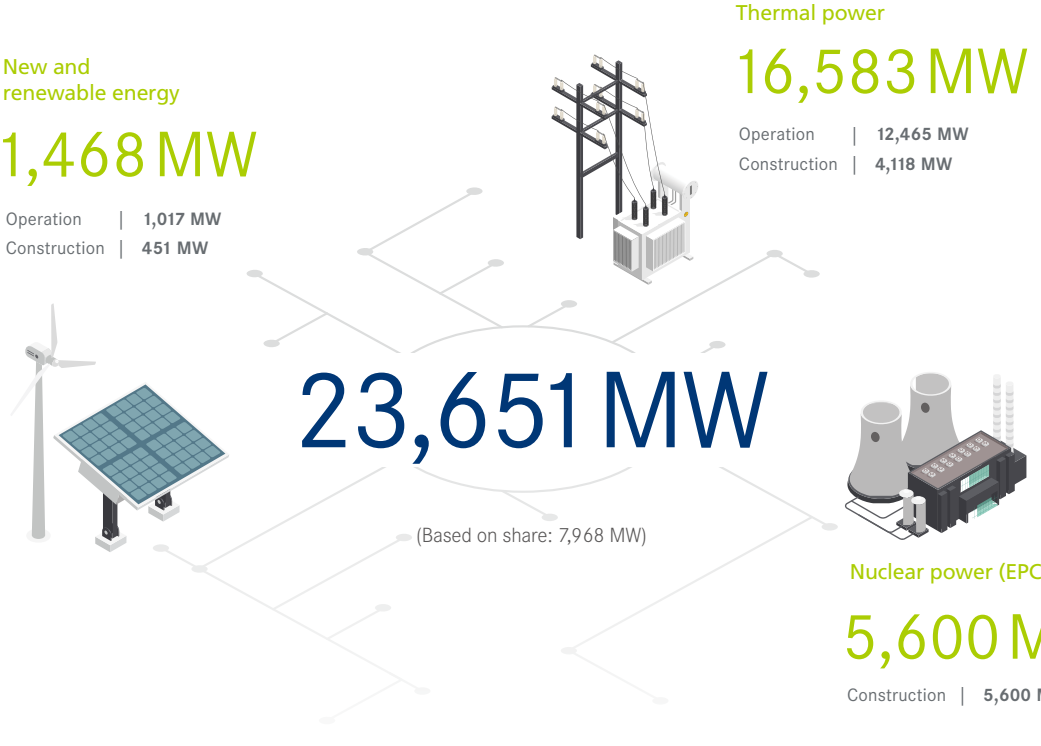
Successful execution of the overseas nuclear power plant business

In 2016, KEPCO signed an investment agreement for nuclear power plant operation in the UAE. This investment agreement is of the world's largest in scale, and will result in KRW 54 trillion in sales over the next 60 years. It has generated stable overseas business revenue and has proven our technological prowess across the entire cycle of the nuclear power plant operation business, including design and construction. We thus laid the foundation to win additional contracts for our overseas nuclear power plant business.

Overseas sales and net income



Overseas power generation facilities



* As of the end of June 2017

Leading the Renewable Energy Business

EXPANDING THE BASE FOR ENTRY INTO THE GLOBAL RENEWABLE ENERGY MARKET

Since the Paris Agreement (COP21) in December 2015, there has been increased interest in responding to climate change, leading to a rise in demand for greenhouse gas reduction. Accordingly, we are tapping into new overseas markets and expanding our renewable energy business.

Overseas renewable energy power generation business

KEPCO has been solidifying its reputation as a clean energy business operator both inside and outside Korea.

China

Beginning with a wind power project in Gansu, China in September 2005, we are now operating a total of 1,314 MW wind power plants in China, including Inner Mongolia and Liaoning.

Gansu	99 MW wind power
Inner Mongolia	990 MW wind power
Liaoning	225 MW wind power

Japan

We commenced construction for a 28 MW photovoltaic power plant in Chitose, Japan in April 2016, and secured a base for entry into Japan's photovoltaic energy market. Commercial operation of the power plant was begun in July 2017, and the construction will be completed in October 2017 after test operations.

Hokkaido	28 MW solar power

Jordan

In 2013, we won a contract for an 89 MW wind power project in Fujeij, Jordan, and commenced construction in 2016. Construction is slated for completion at the end of 2018. It is the first overseas wind power project in which KEPCO owns 100% of the shares and has been participating since the development phase. This project built a foundation for increased contracts in the global wind power IPP market.

Fujeij	89.1 MW wind power

U.S.

In 2016, we made inroads into the U.S., which is the world's largest advanced electric power market, by acquiring a 30 MW solar power plant in Colorado.

Colorado	30 MW solar power

We formed a consortium with LG CNS in 2017 and was chosen for the solar power and ESS power plant construction and operation project in Guam.

Guam	60 MW solar power

Global Network

STATUS OF OVERSEAS BUSINESS

KEPCO is conducting 34 projects in 22 countries across the globe, including Asia, the Middle East, Latin America, North America, and Africa.

SALES

Overseas sales in 2016

KRW 5.1 trillion

PROJECTS

In 22 countries

34

SHARE

Oversees power generation facilities in operation or under construction

7,968 MW

NEW AND RENEWABLE ENERGY

5 projects in 4 countries

THERMAL POWER

12 projects in 9 countries

NUCLEAR POWER

1 project in UAE

POWER TRANSMISSION AND DISTRIBUTION

15 projects in 13 countries

RESOURCE DEVELOPMENT

1 project in 1 Australia

* As of June 2017

Taking the lead in responding to climate change

OUR APPROACH

Since the Paris Agreement in 2015, there has been emphasis on corporate responsibilities and roles in responding to climate change, such as reducing greenhouse gas emissions. To take measures, we formulated a master plan for reducing GHGs, and have put in place a GHG reduction roadmap as part of a joint effort with KEPCO Group companies. With a sense of responsibility towards the environment, we are applying eco-friendly smart technologies throughout the electricity industry value chain to enhance energy efficiency. By doing so, we take the lead in realizing sustainable energy.

RISK

- Increasing demand for the reduction in GHG emissions with the advent of the new climate regime
- Strengthened regulations and monitoring of environmental pollutants, including fine dust

OPPORTUNITY

- Build an eco-friendly corporate image and gain the public's trust
- Gain a competitive edge in eco-friendly technologies such as CCUS, and thus expand relevant businesses

KEY PERFORMANCE

Reduction of GHG emissions

60,000 tons of CO_2eq

R&D for GHG reduction

22 cases

Environmental investment and expenditures

KRW **4,858.5** billion

STRENGTHENING INFRASTRUCTURE TO RESPOND TO CLIMATE CHANGE

Strategies to respond to climate change

Korea set a national mitigation target of 37% compared to BAU by 2030 at the Paris Agreement. In 2016, national GHG emissions* reached 690 million ton CO_2eq, of which the energy industry accounted for the highest percentage at 590 million ton CO_2eq. KEPCO and KEPCO Group companies have set ambitious reduction goals based on the master plan for GHG reduction, and are actively engaging in related activities.

* 2016 National Greenhous Gas Inventory Report by Greenhouse Gas Inventory & Research Center of Korea

Master plan to reduce GHG emissions

Vision

The Most Valuable Green KEPCO

Goal

- Reduce GHG emissions by 40% compared to 2007-2009 by 2020
- Create a new growth engine by commercializing GHG emission reduction technologies
- Build a corporate image as a leading eco-friendly company by strengthening carbon management

Execution strategies

Respond to climate change in the electric power industry; and play a role as a control tower	Develop and apply GHG reduction technologies	Strengthen carbon management and enhance our corporate image as an eco-friendly company

Building the Carbon Asset Management System

KEPCO has established the Carbon Asset Management System (CAMS) to analyze the current state of corporate-wide GHG emissions and manage carbon assets. Through CAMS, we are analyzing certified emission reduction (CER) trading data, engaging in real-time GHG data monitoring, and establishing an optimal CER management portfolio. We also built a connection system with all KEPCO Group companies, and have been coming up with joint measures in relation to the implementation of the CER trading system since 2017.

Carbon Asset Management System

Estimate GHG emissions

- Substation SF_6 emission/ collection
- Distribution SF_6 emission/ collection
- Amount of fuel used by remote generation facilities
- Amount of fuel used for heating and electricity in the company

Build an integrated GHG inventory

- Establish an inventory for integrating data on GHG emissions

Manage the emissions trading scheme

- Manage GHG reduction projects
- Manage the current status of assigned CER
- Manage the current status of offset CER
- Manage the transaction of the emissions trading scheme

Support the transactions of the emissions trading scheme

- Support applications for CER assignment
- Provide support in relation to an optimal portfolio for trading CER
- Support CER trading simulations

ENERGY AND GHG MANAGEMENT

Responding to the emissions trading scheme

As a company subject to GHG emissions trading system (ETS) allocation, KEPCO has been participating in the ETS for the first plan period (2015-2017). We collected and refined SF6 gas from power facilities, and thus reduced approximately 60 thousand tons. In addition, in order to secure CER through our overseas GHG reduction projects, we conducted a feasibility test for a renewable energy micro grid project in Bhutan. With an aim to contribute to the nation's GHG reduction target for 2030, we identified 22 GHG reduction technologies and are conducting R&D. Our plan is to invest KRW 185.8 billion through 2018.

Global certificates for GHG reductions

KEPCO has been disclosing data on corporate carbon emissions and relevant policies to 822 investors across the globe by submitting an open report for the Carbon Disclosure Project (CDP) climate change information. In 2016, we were chosen by CDP as a 'global leader' in carbon management in recognition of our efforts to enhance transparency in disclosing GHG information and achieve results in GHG reduction.

Our GHG emission reduction efforts and performance were recognized by the Korea Productivity Center and Carbon Trust, which is a non-profit organization in the UK that was established to pursue the shift to a low-carbon economy. We acquired and are maintaining the Carbon Trust Standard (CTS), which is a global certification for carbon management.

Activities to save energy

KEPCO has been active in energy-saving activities, such as the efficiency improvement of energy facilities and the promotion of the renewable energy supplies. To this end, we operate the 'Energy Portal System' which enables quick and accurate monitoring of corporate-wide energy usage, and thus regularly manage and monitor energy usage. We will continue to increase energy efficiency, such as improving building and facility performance, expanding renewable energy, and saving energy, thereby taking the lead in reducing GHG emissions.

Energy-saving and GHG reduction activities

Introduce the SF_6-free utilities

- Develop 154 kV-level SF_6 gas-replacing gas
- Expand the use of eco-friendly 23 kV switchgear
- Expand the dissemination of the SF_6-free power-distributing switch

Purify and reuse SF_6

- Collect, purify and reuse SF_6 gas

Replace with high-efficiency LED lights

- Replace all lights with high-efficiency LED lights by 2020

Build the K-BEMS

- Build the K-BEMS business sites (completed the construction of 121 sites)

Build the energy self-sufficient island

- Eco-friendly power generating of the 'renewable energy + ESS' (6 islands)

  → Minimize the diesel power generation

Expand the zero-energy company buildings

- Maximize insulation performance and minimize energy use by leveraging new and renewable energy (5 buildings per year from 2017)

Promote eco-friendly cars

- Promote the low emissions eco-friendly vehicles (220 units per year)

Expanding the investment in new and renewable energy

As a public company in the field of energy, KEPCO has been increasing investments in eco-friendly energy. In particular, we have been facilitating the domestic renewable energy market by developing diverse projects, such as a photovoltaic power project that uses idle resources and a wind power project in which regular citizens participate.

Renewable energy business in Korea

Project name	Project overview	Facility size
Southwestern Sea offshore wind power (Demonstration) (Dec. 2012)	• Phase 1: Test-bed 60 MW • Phase 2: Plan to develop a pilot complex at the 400 MW level	Offshore wind power (60 MW)
Ulleungdo eco-friendly energy self-sufficient island (Sep. 2015)	• Create a track record for the model of an eco-friendly energy self-sufficient island • Phase 1 (2017): Solar power, wind power, ESS etc. • Phase 2 (2020): Geothermal energy (4 MW) • Phase 3 (2025): Geothermal energy (8 MW), operation (-2045)	Solar power (0.6 MW), wind power (6 MW), small hydro power (0.6 MW), geothermal energy (12 MW), ESS (19.5 MWh)
Light of Hope solar power in Miryang (Mar. 2016)	• Resolve civil complaints against the construction of 765 kV transmission lines • Construction (-Jun. 2017), operation (-2036)	Solar power (2.57 MW)
Solar panels on school roofs (Jun. 2016)	• For 2,000 schools • Under construction at 273 schools • Construction (-2020), operation (-2040)	Solar power (200 MW)
Fuel cell power plant in Daegu (Dec. 2016)	• Flagship project selected by Ministry of Science and ICT (Jan. 2015) • Construction (-2020), operation (-2038)	Fuel cells (60 MW)

BUSINESS CASE

Establishing an A·C·E-Farm, a future farm that uses renewable energy

KEPCO signed an MOU with South Jeolla Province and the Jeonnam Agricultural Research & Extension Services in June 2016 for a field test of the A·C·E-Farm, which converges agriculture and energy, and is carrying out relevant activities.

The A·C·E-Farm is a future greenhouse model of farm house installation that enables the supply and control of electricity that is used for agricultural purposes at controlled horticulture farms by utilizing renewable energy, such as photovoltaic energy, ESS, and the energy management system (EMS), without using fossil fuels. We are looking for an air-conditioning and heating energy supply model used in the greenhouse by crop, while the Jeonnam Agricultural Research & Extension Services is researching ways to use ICT and water curtain cultivation facilities inside a greenhouse to reduce energy that is used for crop cultivation while increasing production.

Signing an MOU with South Jeolla Province for a field test of the A·C·E-Farm

Overview of the empirical study in the A·C·E-Farm

Farm 1	Farm 2	Heating and cooling system using geothermal energy and hot waste water	ESS and efficiency enhancement system	Research and development of PV new materials
Non-photosynthetic plants such as mushrooms	Photosynthetic plants such as tomatoes			

IMPROVING THE ECO-FRIENDLINESS OF THE VALUE CHAIN

Power generation Joint response to eco-friendliness with KEPCO Group power generation

Production phase

Construction and operation of power generation facilities for coexistence with local communities KEPCO Group power generation companies conduct an environmental impact assessment in consideration of the natural environment and traffic near a power plant that is newly built or expanded as well as a follow-up environmental impact assessment for five years after completion of construction. The results are reported to the government every year. In this way, we are minimizing damage to local communities and the natural environment located near power plants.

Management of discharged pollutants The Group's power generation companies monitor air pollutant emissions through the smokestack tele-monitoring system (TMS). They have expanded the use of clean energy sources and are operating DeSOx, DeNOx, and dust collection facilities in an effort to reduce sulfur oxide, nitrogen oxide, and dust. Furthermore, wastewater from the power generation process is collected in one place for physical and chemical treatment at comprehensive wastewater treatment facilities. Also, the entire amount of desulfurized gypsum that is produced from coal-fired power plants is recycled for the raw material needed for cement.

We are also striving to improve generation facilities and apply eco-friendly technologies to the operation of overseas plants. By doing so, we comply with the environmental standards of each country and reduce pollutants from our power plant operations.

Water resources protection KEPCO responds to water resource risks by managing water usage. We built a water supply system with dams across the nation, such as Hwacheon Dam, Chuncheon Dam, and Uiam Dam, through the Han River Water Management Center by forming the integrated management council for the dams and weirs of the Han River watershed. We also reduced the use of tap water by more than 53% by applying water-saving sanitary fixtures in the headquarters building. In addition, rainwater-recycling facilities are used for 100% usage of rainwater for landscaping.

Our domestic business has no exposure to water risk, such as water shortages or water pollution. In the case of our overseas business, we use seawater instead of underground water for coolants to minimize exposure to water risk in areas near our overseas power generation business, such as the Philippines (Cebu, Ilijan) and the Middle East (Al-Qatrana). In the case of thermal power plants in China, excluding wind power plants in China (Inner Mongolia, Gansu, Liaoning), use heavy water by recycling wastewater.

BUSINESS CASE

Protecting biodiversity

KEPCO carries out an environmental impact assessment for the construction of all transmission and substation facilities to forecast environmental impacts and set measures to reduce them.

In addition, we publish corporate-wide guidelines on environmental impact assessments for transmission and substation facilities and a management manual for compliance with legal matters, in addition to sharing cases of violation of environmental regulations and providing training to prevent recurrences. Additionally, we appoint external environmental experts to strengthen environmental impact assessments. When relocating our headquarters to Naju Innovation City, we applied a biotope area ratio of 47.8% to build a new corporate building. Furthermore, we have established more than 15 biotopes, which serve as habitats for animals and plants.

Protecting biodiversity by phase

Pre-construction phase	Environmental impact assessment phase	Construction and completion phase
• Conduct an environmental impact assessment • Disclose the result of the environmental impact assessment at www.eiass.go.kr	• Investigate habitats by focusing on endangered species, indigenous species, specific species, and species that inhabit the area in groups • Predict the likely impact and establish measures to reduce the impact	• Appoint a manager and conduct a follow-up environmental impact assessment • Post construction, restore damaged habitats through discussions with the local government

Power transmission and distribution Construction and operation of eco-friendly electric power generation facilities

Sales Systematic management of demand for electricity

Transportation phase

Expanding the construction of eco-friendly power facilities KEPCO focuses on building eco-friendly power facilities by developing equipment and construction methods that are in harmony with the surrounding environment. We have been increasing the use of tubular steel poles that consider outward appearance and applying eco-friendly coating to steel towers. In addition, we have been improving the aesthetic urban landscape by mandating communication lines to be buried along with distribution lines.

Processing PCBs in waste transformers KEPCO has established the management system to eliminate poly chlorinated biphenyls (PCBs), with an aim to actively execute the national implementation plan of the Stockholm Convention. Waste transformers that are to be disposed are strictly controlled based on the PCBs management process, and those with a PCBs concentration level of no less than 2 ppm are processed by companies that specialize in PCBs.

Sales phase

Establishing a demand control strategy based on stable electricity supply and demand KEPCO contributes to stabilizing electricity supply and demand by actively and systematically managing the demand for electricity. We recently established a new demand control strategy in tandem with the increased stabilization of supply and demand, and are switching from the conventional supply and demand measures for emergencies to market-oriented autonomous demand management. In 2016, we worked to install a new concept-based SC-ESS* to enhance the system stabilization of large-scale power plant complexes, and applied new technologies for stable electricity transport between Korea's eastern coast and the metropolitan area.

Saving energy by improving energy efficiency KEPCO helps households reduce their energy use by providing incentives for highly efficient home appliances. In addition, we established the 'KEPCO Energy Solution,' which is an energy service company (ESCO), as part of our efforts to build a foundation for energy reduction.

* ESS to improve the stability of voltage and phase angle, which cause power outages

1

Provide KRW 95.8 billion worth of high-efficiency household appliances as incentives

Diversification of energy efficiency projects, breaking away from the industry-centered approach to include households

- Facilitate the consumption of eco-friendly products and promote the national economy by providing 350,000 air conditioners, 180,000 refrigerators, etc.
- Saved 43,411MWh of energy and reduced 20,000 tCO_2eq of GHG

2

Establish 'KEPCO Energy Solution' – an ESCO

Investment in facilities for customers who lack the required technologies and funds to share the outcome related to energy reduction costs

- Zero burden on customers / Provide full cycle services
- Perform pioneering roles to promote investments in the private ESCO business

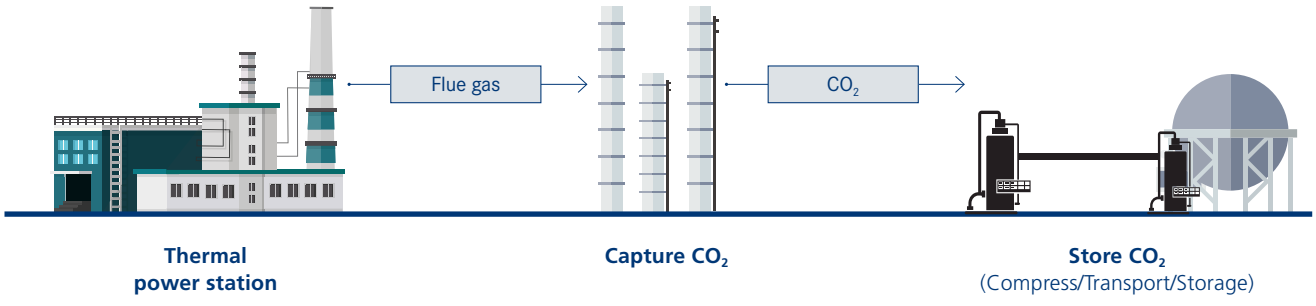
DEVELOPING ECO-FRIENDLY TECHNOLOGIES

Commercialization of CCUS As a result of strengthened GHG regulations, the market size of carbon capture utilization and storage (CCUS) technology is forecast to substantially grow from KRW 8.2 trillion in 2015 to KRW 20.7 trillion in 2030. Because the technology can be applied to petrochemical, fertilizer, and cement factories and steel-works, in addition to power generation plants, the estimated market size is anticipated to grow considerably once commercialization is fully launched.

After completing the construction of a 10MW wet CO_2 capture facility, which is the largest in Korea, at the Boryeong Thermal Power Plant in 2013, we have been engaging in test operation of the facility, which captures a daily 200 tons of CO_2. Full commercialization is planned for 2020. The demonstration plant that was established at the Boryeong Thermal Power Plant has achieved a consumed energy level of 2.8 GJ/tonCO_2, which is needed to accomplish a CO_2 removal rate of at least 90%* and a CO_2 separation purity level of 99.9%. Durability and credibility were certified through continuous operation of more than 5,000 hours through 2016.

* The removal rate can be raised to 100%, but this requires more energy consumption. As such, the removal rate is maintained at 90% as an optimal level from the economic perspective.

CCUS process

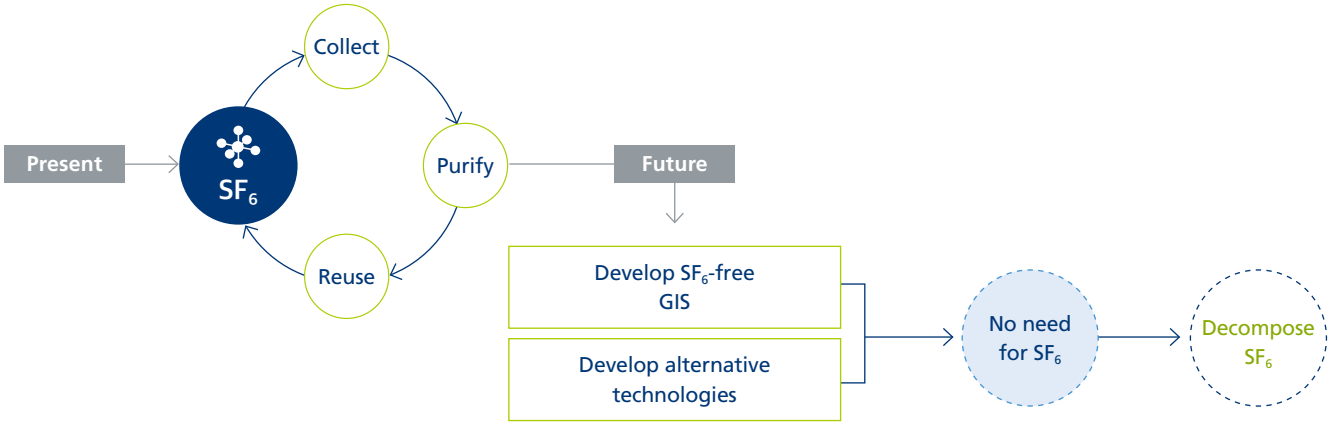


Securing SF_6 reduction technologies KEPCO developed a technology to collect SF_6[1)] gas, which accounts for around 80% of our total GHG emissions, and increased the collection rate from the previous 80% to 97%, thereby reducing emissions. We are developing the green gas for grid (g3)[2)], which is an alternative gas for SF6, and plan to use it for the commercialization of SF_6-free gas-insulated switch gear in 2021. Aiming to go beyond the previous cycle of collection-purification-reuse, we are conducting a research project for management of the entire SF_6 cycle to enable decomposition of SF_6 when there is no need for usage.

[1)] Sulfur hexafluoride is one of GHGs, and its global warming potential (GWP) is 23,900 times higher than that of CO_2.

[2)] Environmentally friendly alternative to SF_6

Managing the entire phase of SF_6



Joint Response of KEPCO Group Companies to Climate Change

The 11 KEPCO Group companies, including KEPCO, launched the Conference Of KEPCO Group Companies to cope with climate change to take the lead in preparing for the shift into a low-carbon management system in the electricity sector and to contribute to meeting the national GHG reduction goal.

The Council effectively responds to the new climate regime by jointly establishing a GHG reduction roadmap and improving the performance of aged power plants, and also engages in activities that are needed to ensure the leadership in the new energy industry.

Measures to reduce fine dust

As part of joint measures against climate change, we implemented fine dust reduction measures for early achievement of the government's fine dust reduction goal. We plan to improve environmental facilities and substantially increase fine dust measurement centers by investing KRW 7.5 trillion in the next five years, with an aim to achieve a 50% reduction in fine dust that is generated from coal-fired thermal power generation. Furthermore, the results of fine dust measurements will be transparently disclosed through an integrated management system. A 'Fine Dust Response Council' that consists of the management of the KEPCO Group companies was established for comprehensive inspection and management of the execution status.

Measure and analyze data	Build a system and disclose information
Develop and install a direct emission measurement device for fine dust generated from coal-fired power generation	Build an information system for each power generation company, and an integrated management system for the KEPCO Group companies
Install 28 new fine dust measurement centers	Disclose real-time emission information on fine dust generated from coal-fired power generation
Set a measurement belt by zone, and analyze the spread and impact	

Developing a carbon management diagnostic index

KEPCO developed the quantitative and qualitative standards to improve energy efficiency in each field, in an effort to respond to climate change and bolster our competitiveness in managing carbon. We set diagnosis indexes based on internal and external environmental analysis, and conducted feasibility assessments on transmission and distribution, sales, and overseas businesses. Our plan is to establish diagnosis standards and operation measures to carry out carbon management diagnosis.

Areas of carbon management diagnostic index

Establishing a GHG reduction roadmap

KEPCO and other Group companies formed a taskforce team that consists of experts from the 11 companies. The team is drawing up a 2030 GHG reduction roadmap.

Directions to establish a GHG reduction roadmap

Set an ambitious goal	Ensure economic efficiency	Establish specialized strategies	Form social consensus
Set reduction goals by scenario	Forecast expenses by year and reduction plan	Establish an optimum plan for each value chain	Align reduction strategies of the Group companies with the government's policies
Analyze the gap between reduction goals and capabilities	Look for strategies that minimize reduction costs	Build R&D strategies for reduction technologies	Share best practices with the Group companies
Consider internal and external risks	Reflect reduction costs in electric rates in a timely manner	Establish a system to verify reduction results	Publicize the reduction efforts of the Group companies to citizens

Strengthening partnerships with stakeholders

OUR APPROACH

In response to the increasing awareness of citizens and social demand towards the electric power industry, KEPCO is fulfilling its fundamental mission to 'supply high-quality and stable electricity' while also improving customer value. In addition, we have been enhancing a sense of happiness among people through continuous communication and win-win activities with local communities and partner companies.

RISK

- Diversification of customer demand and increased level of expectations
- Strengthening of laws and regulations related to fair trade and win-win growth
- Increased possibility of civil complaints and conflict in the event of a lack of communication with local communities

OPPORTUNITY

- Establish a positive corporate image and secure the trust of customers
- Build a virtuous ecosystem in the electric power industry through coexistence and cooperation with partner companies
- Fulfill social responsibilities by supporting local communities

KEY PERFORMANCE

Annual system average interruption duration index

9.61 minutes

Preferential purchase rate of products manufactured by SMEs

70.6%

Expenditures in social contributions

KRW **10,831** million

ENHANCING CUSTOMER VALUE

Re-establishing the Innovation System to improve services for citizens

KEPCO has established an innovation system for enhanced customer services, based on which we identify and implement detailed strategic tasks.

Ease the burden on customers

Recover people's livelihood through system innovation

- Implement a customized rate system that reflects the citizens' perspective
- Establish a system to strengthen the social safety net
- Improve work standards to resolve inconveniences that citizens experience

High quality electric power services

Innovate technologies through the convergence among technologies

- Provide high quality electric power through the IoT
- Operate customer- and eco-friendly electric power facilities
- Strengthen energy welfare by using new ICT technologies

Provide smart services

Realize the happy energy of communication and consideration

- Innovate processes to enhance citizens' convenience
- Expand non-face-to-face services by using smart devices
- Provide customized services that meet customers' needs

Providing customized services that meet customers' needs We pursue customer satisfaction by providing easy and convenient services. In 2016, we expanded the scope of the 'customized bill for seniors,' in tandem with the increasingly aging population, to include all customers aged 65 or more. This bill was previously sent to customers who wanted customized bills. With the number of apartment households reaching 10 million, we implemented the 'system of customer selection of meter-reading day' which enables customers who reside in apartment buildings to change their meter-reading day. Also, for customers who use large amounts of electricity, we provided 'energy consumption diagnosis consulting' which includes an electricity usage pattern analysis, rate comparison, and rate plan diagnosis, and thus increased their satisfaction.

Promoting communication with customers KEPCO focuses on close communication with citizens by leveraging social media networks. In addition to operating 'Love Electricity' blog reporters, we are using such social networking sites as Facebook and Instagram, and are also diversifying our communication channels, such as by publishing a webtoon series. A voice of customer (VOC) system was set up at our customer centers and business sites across the nation to build a system to receive and handle customer complaints.

Training to enhance the customer service mindset KEPCO has put in place a program to help its employees internalize and enhance their service mindset. We discuss measures to promote consumer rights and interests through the 'consumer group leader meeting' which is aimed at facilitating customer communication. Also, a 'service innovation resolution event' is held for employees who are at customer contact points, such as meter readers. We also built a one-stop work material-sharing portal system, thereby improving work efficiency and strengthening service providing-related capabilities.

Providing smart services KEPCO enhances customer convenience by providing simple and useful services.

Renewal of the Smart KEPCO App

Expand diverse services that use ICT

- Automatic recognition and reporting of failures using GPS, real-time settlement and payment of electricity bills for moving, QR code-based payment of electricity bills, etc.

ARS instant consultation for elderly customers

Provide services that enhance convenience for senior customers in step with the aging population

- When a customer aged 65 or above calls the customer center, immediately connect the customer to a consultant

Power Planner and Electricity Housekeeping Book

Provide electricity usage information by using mobile applications and the Internet

- Power Planner: provide real-time electricity usage information
- Electricity Housekeeping Book: provide usage pattern analysis, rates, power-saving tips, and other services

Renewal of the Smart KEPCO App

Welfare services to ease the burden on ordinary citizens KEPCO strives to guarantee the basic energy rights of the underprivileged. By making system reforms that can be truly felt by citizens, we are enhancing the welfare benefit rate and contributing to easing the burden of citizens.

Efforts to satisfy basic energy rights

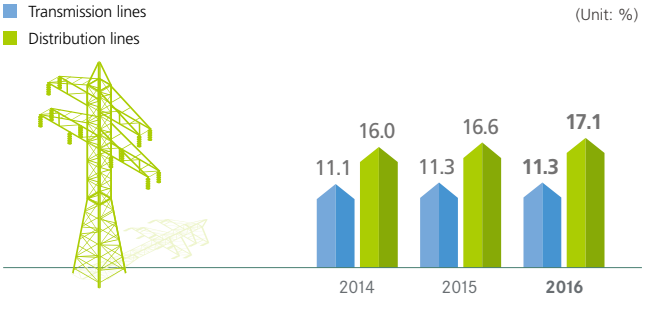
- Interface administrative information with external organizations, including the Ministry of Health and Welfare, and analyze big data to identify beneficiaries
- Provide visiting beneficiary identification services, such as the welfare benefit connection service for customers who move

Implementation of a daily life support system

- Provide financial support for the installation of additional meters to the underprivileged (exemption from the installation fee)
- Promote PR activities on various welfare systems, including electrical bill support for those in energy welfare blind spots
- Immediately execute a support system for areas hit by a disaster, such as an earthquake, fire, or typhoon, to share the burden of citizens

Expanding the undergrounding of transmission and distribution lines to meet citizen demand We are expanding our underground line projects to improve citizens' daily life environment and the landscape. When a transmission line is built, areas that are closely related to the daily life environment, such as areas near villages and schools, are chosen with priority for underground lines in consideration of residence and the environment. We are reducing the burden of relevant costs that are borne by local governments by implementing a five-year, zero-interest amortization plan after underground line construction is completed. Also, construction costs are being reduced by developing new cables and minimizing the construction of tunnels as part of efforts to minimize underground line project costs. In addition, we are continually executing internal underground line projects for vulnerable facility sites to strengthen disaster prevention and stability.

Undergrounding rate of transmission and distribution lines



STRENGTHENING THE MANAGEMENT OF CUSTOMER INFORMATION PROTECTION

Establishing the information security system

KEPCO has put in place a preemptive information security management system to protect the national electrical grid and customer information from such cyber security threats as ransomware and malicious code. By upgrading the security system of the power control system, information system, and Internet services and building a security infrastructure for the new energy industry, we enhanced major infrastructure and information system security. In addition, we are implementing timely measures and improvements for vulnerabilities that are identified through continued security diagnoses, resulting in enhanced cyber security levels.

Activities to strengthen information security

The application of new information security technologies has allowed us to preemptively respond to various security attacks. As a leading example, we are operating a big data-based security control system that has strengthened prior response capabilities through real-time cyberattack analysis and prior detection of unusual signs. Also, our email attack defense system, which consists of three steps, ensures 100% blockage from malicious code threats, which reach up to 250,000 annually. As part of our efforts to prevent leakage of important management information, we expanded the installation of wireless wiretapping detection systems. Thanks to these efforts, there was no case of information security-related violation in 2016.

Major activities in 2016

Provide training to information security personnel
Provide information security training through the Ministry of Trade, Industry and Energy and external professional training organizations

Provide training to all employees
Online training through the cyber security education system and on-site circuit training

Run the information security mileage system
Early establishment of the voluntary security culture

Drills to respond to cyber crisis
Drills on hacking mails for all employees, twice per year

Hacking defense contest
Contest on removing vulnerabilities targeting ICT and information security personnel, once per year

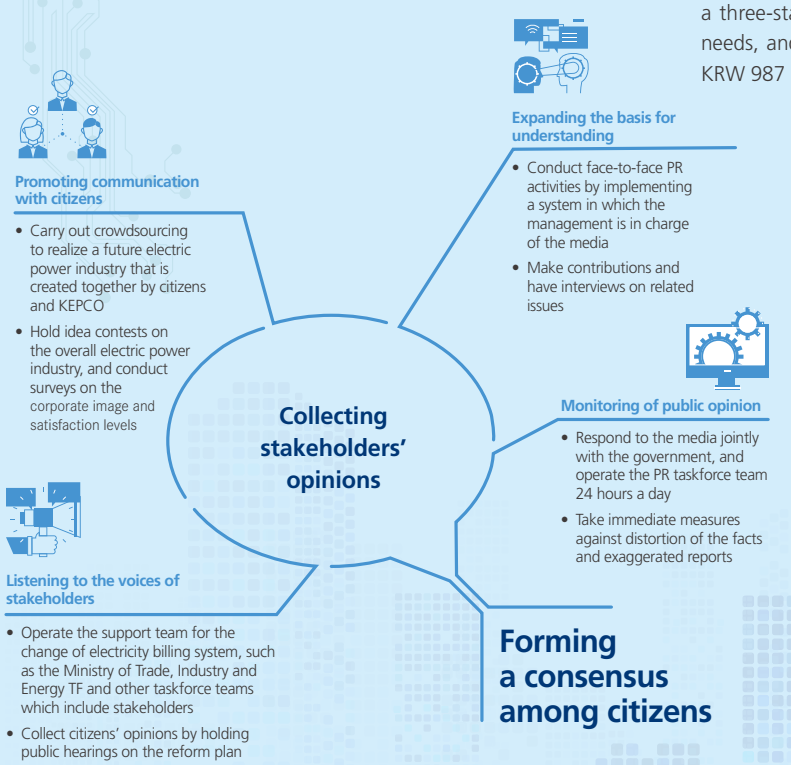
Encryption of personal information

KEPCO proactively complies with the Personal Information Protection Act. In 2016, we completed the encryption of 270 million cases of personal information and conducted major personal information impact evaluations on unique identification and sensitive business information. Thanks to these efforts, we achieved an excellent rating in a personal information management assessment carried out by the Ministry of the Interior and Safety for the second consecutive year and recorded zero cases of personal information leakage.

Providing Customized Services, Responding to Citizens' Needs

Major reform of the progressive electricity billing system for households in 40 years

In 2016, KEPCO made a major reform for the progressive electricity billing system for households in 40 years. This desire for reform was satisfied after collecting opinions from all levels of society. Ahead of the reform of the progressive electricity billing system for households, we communicated with various stakeholders and listened to their opinions in relation to the progressive electricity billing system to reach a national consensus. We then substantially reduced the previous six stages to a three-stage progressive electricity billing system to satisfy consumer needs, and thus eased the burden of citizens amounting to an annual KRW 987 billion.



Establishing the customer-oriented billing system

PREVIOUS

6-stage, 11.7 times

↓

AFTER REFORM

3-stage, 3 times

- **Stage:** Stage 1 is the essential usage amount (200 kWh); stage 2 is the average usage amount (400 kWh); and stage 3 is the high consumption stage (more than 400 kWh)
- **Rate:** Stage 1 is the average rate of the previous stages 1 and 2; stage 2 is the previous stage 3 rate; and stage 3 is the previous stage 4 rate

Customized electric bill support for those who need social care

KEPCO provides practical energy welfare to people who need social care, such as the energy-underprivileged, households with newborns, and students.

In 2016, we reformed the rate for electricity that is used for educational purposes so that classrooms are no longer extremely hot or cold at around 20 thousand elementary, middle, and high schools. Focus was placed on making continuous system improvements, such as by creating the discount system for households with newborns and increasing the discount amount for the welfare discount system. We eased the electricity bill burden, which amounted to a total of KRW 316 billion, for 440 thousand households with newborns, 2.34 million energy-underprivileged, and 20,000 households, including elementary, middle, and high schools.

Energy-underprivileged

- Double the electricity bill discount amount for the disabled and basic livelihood security recipients
- Ease the financial burden of households that use large amounts of electricity depending on the electricity usage environment, such as households with three or more children
- Increase the electricity bill discount rate for social welfare facilities, such as senior citizen centers and daycare centers

Households with newborns

- Support the promotion of childbirth by providing an electricity bill discount to households with a baby that is less than one year old – provide a 30% discount, with a monthly ceiling of KRW 16,000

Reform the electricity billing system for education

- Expand the scope of the discount system from the elementary, middle, and high schools to include kindergartens

Improving electric power infrastructure on islands including Jodo (Existing: 2,480 → Extension: 4,300 kW)

3 places

EXECUTION STRATEGIES FOR WIN-WIN GROWTH

KEPCO has redefined the electric power industry's duty as 'creating a sharing economy ecosystem' in accordance with the emergence of the Fourth Industrial Revolution and the era of the new energy industry. We thus carry out win-win cooperation activities that are based on three major mutual growth implementation strategies – 'Enhance capabilities for technology innovation,' 'Create an ecosystem for win-win growth,' and 'Strengthen support for overseas sales.'

3 execution strategies for win-win growth

Strategies	Enhance capabilities for technology innovation	Create an ecosystem for win-win growth	Strengthen support for overseas sales
Major activities	• Expand R&D support • Promote the use of R&D outcomes	• Short-term: Management support to improve the self-sufficiency of partner companies • Long-term: Create an ecosystem of the new energy industry	• Strategic expansion of sales routes • Support the opening of KEPCO's global network • Diversify support projects for capacity enhancement
Major achievements	• R&D support for SMEs – 22 cases, KRW 14 billion • Purchase of SME products – KRW 80.5 billion	• Operation of the Bitgaram Creative Economy Innovation Center and KRW 20 billion worth of support projects for startups	• 125 KEPCO Trusted Partner-certified companies • USD 340 million worth of exports by KTP-certified companies

SUPPORT FOR THE WIN-WIN GROWTH OF SMEs

KEPCO became the first public company in 1993 to launch an organization that is dedicated to SME support and has been leading mutual growth activities since then. After relocating our headquarters to the Bitgaram Innovation City in 2014, we have been providing systematic support to SMEs in their efforts to enter and export to overseas markets, such as by creating the Export Cooperation Department and holding BIXPO. In addition, we focused on providing practical support for SMEs as follows:

Helping the capacity enhancement of SMEs

Classification	Activities	Achievements in 2016
Win-win payment	• Adopt the win-win payment system for circulation of the payments for delivered goods to secondary and tertiary partner companies • Select target partner companies, sign an agreement with primary partner companies, and make preparations for the full adoption of the system	• Build an electronic system in partnership with 5 banks • Provide KRW 1 billion for the purchase of materials
Human resources development	• Provide training to foster export experts at SMEs, such as experts in contracts, trade documents, and practical affairs related to FTAs	• 3 times per year; completed by 60 people
Quality certification	• Provide support in relation to quality, environmental, and safety certification of exported electric power equipment and test costs	• Total of 85 cases; support KRW 690 million
Special PR	• Special major media PR on the overseas market entry support project • PR tour on the export support system	• 42 times in total; participated by 700 companies
Conferences	• Conference on devoting efforts to promoting exports in the electricity industry (CEO made known his determination to focus on exports) • Meeting with CEOs of the Korea Federation of SMEs, meeting on promoting exports in the field of electricity	• Share strategies to promote exports and seek joint overseas expansion

KEPCO Trusted Partner

KEPCO Trusted Partner (KTP) is a system in which KEPCO's export promotion brand usage rights are given to outstanding SME partners to enhance the overseas marketing capabilities of partner companies. In 2016, we helped them through our overseas offices and subsidiaries by providing office space, work facilities, local information, and other kinds of export support, and expanded the hosting of export promotion conferences and exhibitions. We also selected 41 companies in the new energy industry, such as the smart grid and an ESS, and supported a total of 125 companies.

Efforts to promote the export business of the electric power industry

KTP-certified emblem

R&D support for SMEs to secure technological capacity

In an effort to enhance the technological capabilities of SMEs, KEPCO has been focusing on innovation consulting and the adoption of smart plants since 2014 to increase SME productivity. We are also helping SMEs to strengthen technological competitiveness through export-connected R&D and collaborative R&D.

Consulting and support for smart factories

Phase 1 (2014)	Phase 2 (2015-2016)	Phase 3 (2016-2017)
Support of KRW 0.2 billion for 20 companies	**Support of KRW 0.2 billion for 25 companies**	**Support of KRW 0.7 billion for 30 companies**
• Provide consulting as an internal project	• Provide financial support for industry innovation • Support the adoption of productivity-improving facilities and smart plants	• Expand support for small secondary and tertiary partner companies (strengthen the benefit sharing system)

R&D support

Sales of SMEs
Increased by
KRW 226.7 billion

Purchasing cost of KEPCO
Decreased by
KRW 167.3 billion

BUSINESS CASE

Project to foster startups in the new energy industry

KEPCO became the first public company to launch a large-scale startup-fostering system, and plans to identify and foster 300 companies in five years by 2020.

Diverse support is being provided to the chosen startups, including financial support of up to KRW 200 million, office space at the Bitgaram Creative Economy Innovation Center, use of KEPCO's demonstration and test centers, and mentoring by technical experts in different areas. In 2016, we signed an MOU with the Large & Small Business Cooperation Foundation and others regarding the Win-Win Supporters Youth Business Startup Support Program, and established the Creative Economy Innovation Center, thereby building a foundation for business startup support in the new energy industry.

Identify a company	Fore-R&D	Core-R&D	Post-R&D	Commercialization	Global expansion
• Proposed by a company • Proposed by KEPCO (provide promising technologies)	• Establish development strategies • Analyze validity • Create a business model	• Cooperate with professional technologies • Support R&D expenses	• Move forward with commercialization • Support demonstration and testing • Improve business models	• Profit consulting • Marketing support	• Target market research • Support for overseas expansion

FAIR SELECTION OF PARTNER COMPANIES

Rebuilding the SRM

KEPCO has made improvements to the supplier relationship management (SRM) system to fairly manage the qualifications of partner companies' bidding participation. By doing so, we are preventing the possibility of undermining the fairness of the bidding qualification management process, such as that caused by human error. We also manage partner companies' bidding qualifications in a more transparent and impartial manner by sending SMS text messages and emails with each work-handling progress and engaging in real-time system-based disclosure of information.

Discovery of new companies and lowering of the entry barrier for partner companies

KEPCO has been implementing the 'visiting mentoring system' to discover new partner companies. Relevant departments, including the Procurement Department and Technology Planning Department formed a joint one-stop support team, to provide mentoring programs for SMEs that sought to be registered as new suppliers to help them with the detailed registration process, quality and technology registration requirements, and purchase outlook. In 2016, mentoring was provided to a total of 31 companies, through which we secured 20 additional new suppliers. In addition, we considerably eased the supplier registration criteria by collecting partner companies' opinions through hearings and other channels, and thus reduced the burden on already-registered companies and lowered the entry barrier for new companies.

CSR assessment of partner companies

KEPCO has put in place a computer system to evaluate the sustainability level of partner companies in economic, social, and environmental areas, and are conducting onsite inspections for high-risk suppliers. For companies that engage in improper conduct, such as a regulation violation, we are placing restrictions, such as a bidding restriction for a certain period, after a resolution by the Reward and Punishment Committee.

CODE OF CONDUCT FOR SUPPLIERS

In 2012, KEPCO became the first public institution to establish the 'Code of Conduct for Suppliers' which incorporates the ten principles of the UN Global Compact and OECD and ILO labor and environment guidelines. By specifying ethical, environmental, and social standards, we provide guidance for compliance with the Code of Conduct for Suppliers for all contracts signed by companies participating in bidding.

Detailed guidelines of the Code of Conduct for Suppliers

Ethical standard

- Prohibit the provision of money, valuables, and bribes
- Prohibit collusion and illegal subcontracting
- Prohibit solicitation
- Obligation to offer ethical training to employees

Social standard

- Comply with tax and labor regulations
- Provide legal labor
- Prohibit child labor
- Prohibit discrimination based on gender, race, etc.

Environmental standard

- Comply with environmental and safety laws and regulations
- Expand eco-friendly technologies
- Offer a safe work environment
- Practice environment-focused management

Successfully Hosting the BIXPO 2016

KEPCO holds export-promoting events and overseas exhibitions, uses the offices of its overseas subsidiaries to operate permanent PR halls for SMEs, and takes other measures with an aim to support exports by SMEs in the field of electric power.

Establishing a foundation for win-win growth through the BIXPO

KEPCO became the first public company to hold a joint growth exposition in 2013, which was followed by the holding of the 'Bitgaram International Exposition of Electric Power Technology (BIXPO) Win-win Growth Exposition' in 2016. BIXPO is the world's only international exposition in the field of electricity and energy. A new technology exhibition, international conference, international invention contest, CTO forum, and joint growth exposition were held simultaneously. BIXPO drew the participation of an estimated 2,400 overseas electricity experts from 43 countries and around 50,000 visitors, making it the world's largest technology exposition in the field of electric power. Also, 179 companies from Korea and abroad attended this event in 2016 to strengthen technological cooperation among the companies. Korean companies were presented with an opportunity to enter overseas markets.

KEPCO provided diverse support to 62 SMEs, including support for participation in BIXPO, operation of an exhibition booth, and business meetings with overseas buyers. We helped the SMEs publicize their outstanding technologies and products, and create new business opportunities. Eight SMEs in Korea, including PLC Korea, signed export contracts, MOUs, and technology investment contracts that amounted to around USD 10.32 million or around KRW 12 billion. The contracts also covered traditional electric power equipment, but new energy industry products and technologies, such as the smart grid, ESS, and solar power, accounted for 73% of the total contract amount at USD 7.56 million, which enabled SMEs in the new energy industry to build a foundation for overseas market entry.

Achievements through BIXPO
(including export contracts, technology investments, etc.)

KRW 12 billion

Participated in BIXPO

179 companies

EXECUTION STRATEGIES FOR SOCIAL CONTRIBUTIONS

KEPCO established five key values and detailed strategic goals, and built a comprehensive system to realize the 'expansion of energy welfare' based on the KEPCO Social Service Corps (307 nationwide, around 20 thousand employees), and is taking the lead in practicing social responsibility management.

Vision	**Smart Energy Creator, KEPCO**				
Slogan	**Light to the World, Love to Neighbors**				
CSR goals	**Walking together in happiness with citizens, leading the socially responsible management of KEPCO**				
Core values	Specialized CSR	Customized CSR	Win-win growth with local communities	Global contributions	Eco-friendly preservation
Links to SDGs	Provide sustainable and affordable energy	Establish social infrastructure; promote sustainable industrialization	Sustainable economic development; quantitative and qualitative jobs as well as job security	Guarantee health and improve welfare for people of all ages	Prevent impacts caused by climate change and take emergency measures

STRATEGIC SOCIAL CONTRIBUTION ACTIVITIES

Specialized CSR

Expanding energy welfare KEPCO's 'support program for solar power generation facilities' is our flagship social contribution program that reflects our business characteristics. Electricity sales profits were used to build solar power plants for free at social economy organizations, and we installed solar power panels at social welfare facilities and underprivileged households, free of charge, to further reduce their electricity bills. In addition, the 'profit-sharing school solar power generation project' was implemented at 2,000 schools (200 MW) to contribute to addressing excessively high and low temperatures in classrooms. Through the Energy of Love, Briquette Sharing, we delivered 2 million briquettes to the underprivileged as part of our efforts to expand energy welfare.

Free installation of solar power generation facilities for the underprivileged

Classification	Solar power station	Solar panel
Beneficiaries	Social economy organizations	Social welfare center and underprivileged households
Number of beneficiaries	19	87
Power generation capacity	1,165kW	177kW

Electricity bill support KEPCO provided welfare discounts for electricity bills that totaled KRW 274.8 billion to 2.4 million households, including low-income households and the disabled. In addition, electricity bill support was given to the underprivileged to remove welfare blind spots and expand energy welfare, such as increasing energy voucher recipients and raising the amount given. Funds that were raised by all staff members were used to carry out the 'sharing energy with love' project. We provided support amounting to KRW 300 million to 2,389 households in 2016, recording a cumulative total of KRW 3.2 billion to 24,020 households.

Completion ceremony of the 1st solar power plant of a social enterprise

KEPCO119 Disaster Relief Squad The KEPCO 119 Disaster Relief Squad is the only disaster relief organization among public companies in Korea. It has been operating three teams – lifesaving, medical support, and field support teams – for each of six zones across the nation. In 2016, the Squad took part in site restoration after an earthquake in Gyeongju and a typhoon in Ulsan, and supported national events, such as the Safe Korea Drill. Also, training is provided regularly throughout the year to around 200 Squad members in relation to rescue equipment use and emergency rescue so as to maintain and strengthen relief capabilities.

Customized CSR

Customized CSR for youths and children In 2016, we established and operated energy-specializing curriculums, such as those on new electric power industry and green growth, thus building a system for supporting the free semester system and actively supporting student experiential activities. Experiential activities were conducted on 169 occasions in 2016, including those at the Jeju Smart Grid PR Hall and a visit to the Electricity Museum. A total of 12,912 students were given occupational experience opportunities. We also contributed to improving the welfare of youths and children by operating a class to obtain a craftsman electricity certificate for youth detention centers inside prisons and by handing out smartbands.

Customized CSR for seniors and the disabled In partnership with Gwangju Metropolitan City, KEPCO engaged in pilot implementation of a social safety net system that enables preparation against emergency situations as well as prevention of missing persons using electricity IoT, targeting 50 seniors living alone and seniors suffering from dementia. Our plan is to increase the scope to cover 500 persons in 2017. We also provided support for the installation of 8,000 highly efficient lighting fixtures at Sorokdo National Hospital and replacement of 150 village streetlamps as part of efforts to remove welfare blind spots for seniors and the disabled.

CSR to support the financial independence of low-income individuals KEPCO contributed to realizing social values and creating jobs by providing funds to youth business startups, overseas sales channel support, management fund support based on crowdfunding, and other support to promote social economy organizations, such as social enterprises. We also offered financial support, low-interest loans, and management consulting to chosen social economy organizations. Funds that were gathered by collecting small amounts from the wages of employees were used to support the independent lives of low-income individuals, such as those in small business startups.

Support for the independence of low-income individuals

Classification	Beneficiary	Number of selected companies	Funds supported
Startup financing	Social economy organizations	5 companies	KRW 100 million
Overseas sales support		16 companies	KRW 100 million
Management fund support based on crowdfunding		15 companies	KRW 300 million
Startup financing and operating fund support	Small businesses run by low-income individuals	6 companies	KRW 130 million

Signing ceremony to support management fund of crowdfunding for social enterprises

VOICE OF STAKEHOLDERS

"I hope there will be continued interest in projects through which we discover and foster next-generation leaders, and expand the public procurement market in order to promote the emergence of innovative social enterprises."

Doo-jin Kang, General Manager, Social Solidarity Bank

The Social Solidarity Bank is a leading organization to provide social finance in Korea, and helps the underprivileged become financially independent. We are conducting programs that support and provide funds for the growth of startups by the underprivileged, a college student tuition loan program, and a program that involves supporting funds, mentoring programs, and management consulting for the growth of social enterprises.

We have been working with KEPCO since 2012 to improve the management of social enterprises and to help the underprivileged become independent by supporting them start their own businesses. In 2017, we shared KEPCO's overseas business experience and resources through such projects as the KEPCO Energy Funding (crowdfunding related to the new energy industry) and Global Light-Up (overseas sales channel support), and thus provided social enterprises in the growth phase with an opportunity to independently find solutions for sales channels. In particular, KEPCO Energy Funding – a support project for the development of the new energy industry, including solar and renewable energy – is a good example of support programs for social enterprises through which KEPCO fulfills its social responsibilities as a global public company in pursuit of win-win growth. I look forward to the continued interest so that social enterprises can enter the maturity phase through the establishment of long-term investment and support policies that are based on the characteristics of the next-generation energy industry.

Win-win growth with local communities

KEPCO has been pursuing win-win growth with local communities by building a win-win platform in the Gwangju-Jeonnam Bitgaram Innovation City. As an outcome of executing win-win growth activities based on cooperation with local governments and social groups, KEPCO became the first public institution in September 2016 to receive the 'Presidential Citation for Promoting the Local Industry.'

Win-win growth performance in the Bitgaram Innovation City

Classification		Projects	Achievements
Cooperation with relevant institutions	Relocated institutions	Create roadside Bitgaram flower paths in the Innovation City	1 km / KRW 30 million
		Innovation City tour in connection with the power generation Group companies	160 persons / 4 times
	Local autonomous entities	Bitgaram Energy Valley tour program for attracted companies	60 persons / 2 times
		Saeddeul Village program to support farming and fishing villages	15 villages / KRW 60 million
	Social associations	Help local college students carry out volunteer activities in Vietnam	30 persons / KRW 100 million
		Install a smart platform for the convenience of local residents	2 places / KRW 90 million
Communication with local communities		Cultural and art performance for local residents (New year's concert, musical, busking, etc.)	9 times in total
		Tour of headquarters for the general public and students	3,000 persons / 52 times
		One Department-One Village sisterhood exchange events (Give a helping hand during the busy season, invite to cultural performances, hold the One Mind Event, etc.)	36 times in total
Customized to local communities		Education support at childcare centers	140 persons / 20 centers
		After-school career path experience program	180 persons / 9 times
		Visit by youths from multicultural families to their respective mother country	100 persons / 2 times
		Give scholarships to the underprivileged and prevent the four major social evils	KRW 40 million
		Bitgaram Theater: Free showing of the latest films for the culturally underprivileged (Donate KRW 3,000 to the local community per spectator)	24 times in total (6,520 persons / KRW 49 million)

Protecting victims of four social evils


One Department One Village activities


Headquarters tour

Global contributions

KEPCO college student overseas volunteer group KEPCO provides college students, who will shape the future of Korea, with significant experiences through which they can be aware of the importance of a life enjoyed together with others. In 2016, in an effort to fulfill our responsibilities as a global company, KEPCO chose 90 college students for overseas volunteer activities and sent 30 of them to each of three developing countries – Bhutan, Indonesia, and Vietnam, to repair school and village facilities, install solar power streetlamps, and carry out other contribution activities.

Overseas customized volunteer work KEPCO has been implementing the 'Eye Love Project' which provides eyesight recovery surgeries to low-income patients, who are in danger of blindness, at home and abroad. By doing so, we give them a gift of the light of the world. In 2016, visits were made to five countries, including Nigeria, to provide medical treatment to 2,103 persons and eyesight recovery surgery to 323 persons, thus presenting 'the light of dreams and hope to the entire world.'

Joint labor-management overseas volunteer group KEPCO practices global sustainable management by expanding overseas volunteer activities. In 2016, we dispatched 119 members of the overseas employee volunteer group to three countries – Laos, Kazakhstan, and the Philippines. The volunteer group established sports facilities, including playgrounds, painted on walls, repaired schools and libraries, supported classes for children, including a Korean culture class, and held field days, thereby sharing happiness.

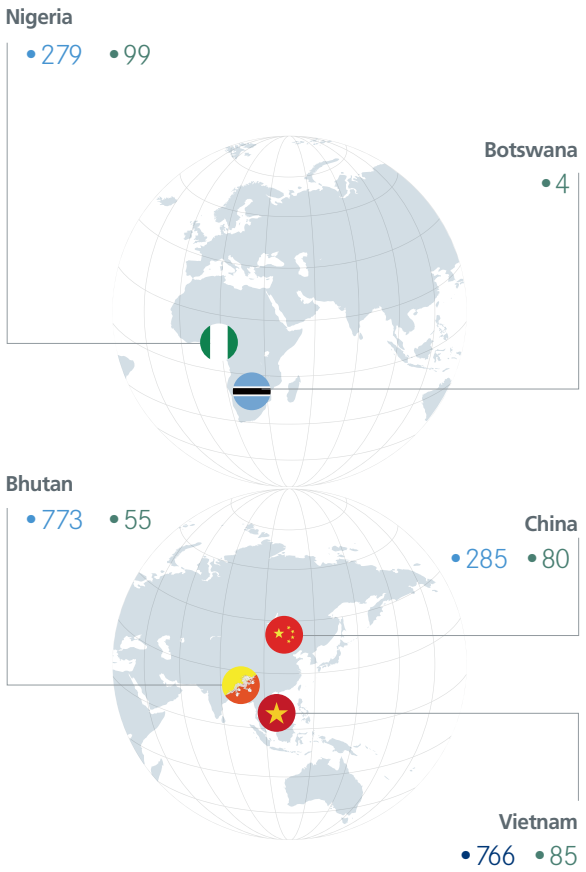
KEPCO college student overseas volunteer group – Indonesia

Power plant tour for multicultural families – Ilijan, the Philippines

Eye Love Project – China

Performance of the Eye Love Project in 2016

• Examination • Operation (Unit: Person)



	Examination	Operation
Total	2,103	323

Eco-friendly preservation

Eco-friendly facilities to support the PyeongChang 2018 Olympic Winter Games KEPCO provided 150 EVs and 26 EV chargers in order to help realize the PyeongChang 2018 Olympic Winter Games' core value as an eco-friendly event. Also, as part of our efforts to build eco-friendly electric power facilities to realize the vision of a green growth-based Olympics, we built underground distribution lines and indoor substations. For the successful hosting of the Olympic Winter Games, we are operating a regular support organization that consists of 39 staff members from the Electricity Planning Team and 49 employees from the Electricity Measure Headquarters.

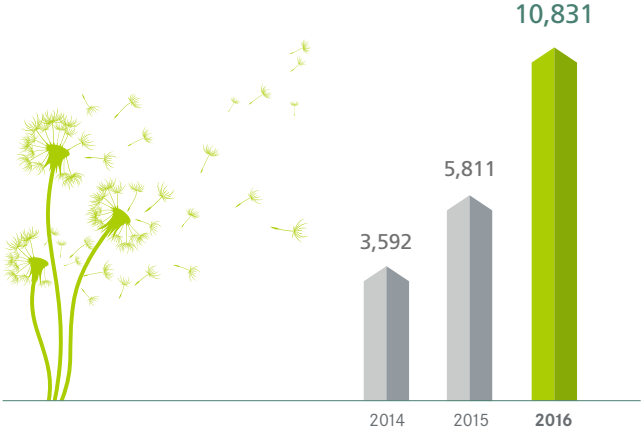
Agreements to support eco-friendly facilities for the PyeongChang 2018 Olympic Winter Games

Carbon management KEPCO created the KEPCO Forest together with citizens by planting 30,000 trees in an area spanning 10 hectares in Gangwon Province for the first time among public companies in Korea as part of the forest carbon offset project. We also provided support for the installation of 30 fine dust reduction facilities to prevent bus idling. We planted approximately 5,000 trees at 33 schools around the nation as part of a campaign to encourage children to take care of forests. This campaign oversaw the creation of forests at elementary schools throughout Korea, thus demonstrating KEPCO's active carbon management.

Green management KEPCO carried out the 'Beauty Pole Street Establishment' project to improve the daily living environment for local residents and to enhance the image of the electricity business by building eco-friendly facilities. After choosing special/cultural streets, areas in which there are many civil complaints, and areas near schools, we carried out around 4,000 scenery-improving construction projects in Jeonju. In addition, a win-win cooperation MOU was signed with the Jeju Special Self-Governing Province to create an eco-friendly island. A total of 120 open EV charging stations were built at the Jeju International Airport and collective housing areas.

Expenditures in social contributions

(Unit: KRW million)



BUSINESS CASE

Establishing a top-tier energy park

Bird's eye view of the energy park

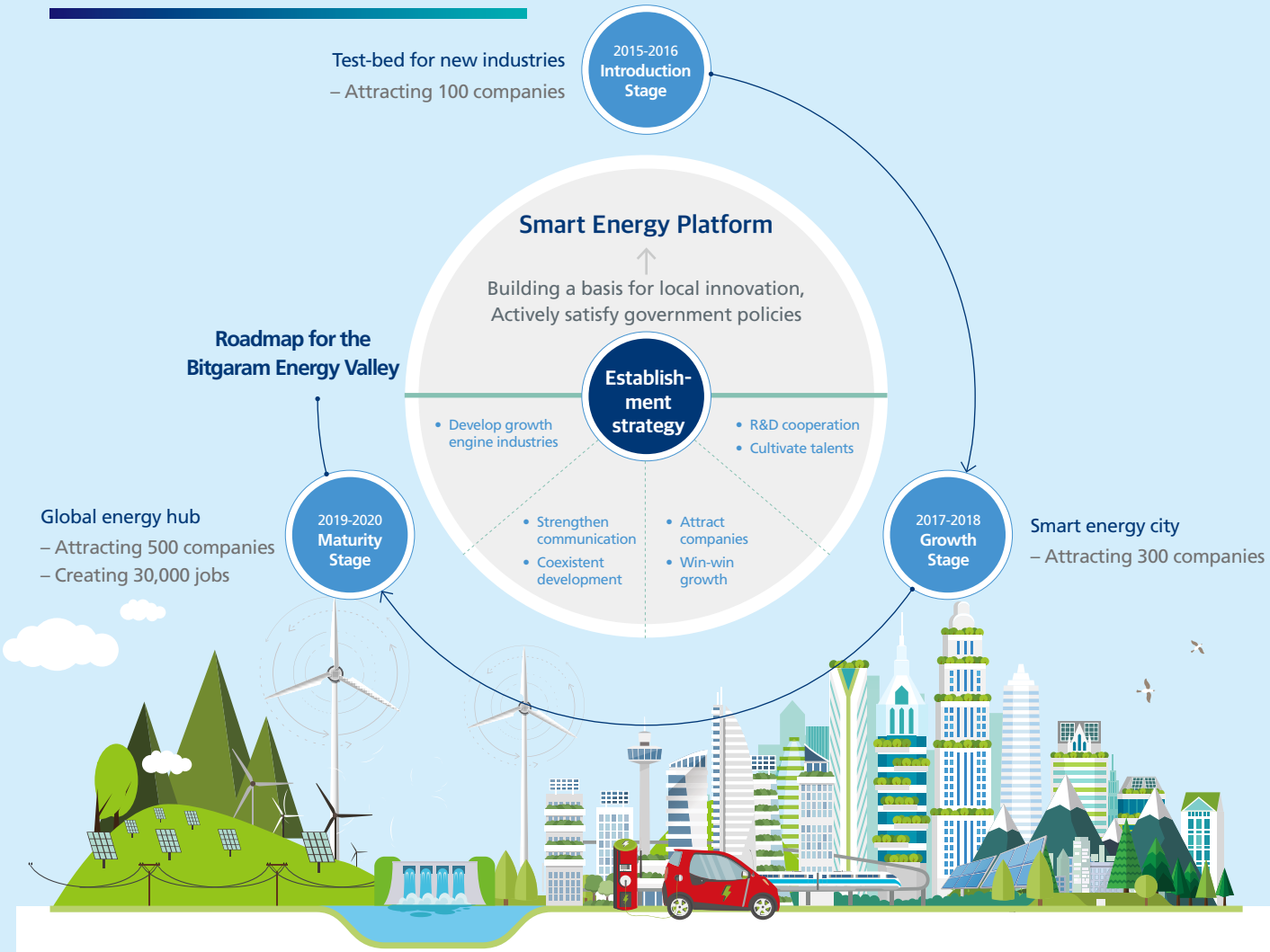
KEPCO signed an MOU with Gwangju Metropolitan City to build an energy park in the Gwangju Sangmu Citizen Park.

This IoT-based eco-friendly smart park will be based on the theme, 'Enjoy & Feel the Energy,' and will consist of three zones – future energy, art collaboration, and energy playground. The park will cover a total area of 41,750 square meters, and its construction is slated for completion in October 2018. The energy park, which is expected to be the best of its kind in Korea, will feature a collaboration between Gwangju Metropolitan City's culture and art and our future technology. It is anticipated to become a new site of culture and tourism and grow into a local win-win development model.

Bitgaram Energy Valley – a Platform for Coexistence

Building the Bitgaram Energy Valley

KEPCO relocated our headquarters to Gwangju-Jeonnam Innovation City in 2014, and took it as an opportunity to create a new future. We therefore presented the 'Bitgaram Energy Valley' – a joint development model with local communities.



Status of the Bitgaram Energy Valley

As of July 2017, KEPCO has signed Energy Valley investment agreements with 200 companies and made an investment of KRW 881 billion.

Support system for investment companies

Support funds	Support sales routes	Foster
• Provide depository interest support (KRW 200 billion) • Form the Energy Belly Investment Fund (KRW 51.5 billion)	• Preferential purchase of products manufactured by residential companies in the Naju Innovation Industrial Complex • Use the dedicated Energy Valley portal, and support B-to-B trading of manufactured products	• Run courses for academic credit in order to foster experts and skilled professionals • Operate the Long-Term Employment Dream System

Plans for the Bitgaram Energy Valley

Our plan for the Energy Valley is develop it as a test-bed for the Fourth Industrial Revolution. We will therefore focus on the application of new industries and innovative technologies, such as electric vehicle chargers and the advanced metering infrastructure, and make a connection with nearby industrial complexes to build a new energy industry cluster. In addition, we will increase the recruitment of new energy industry-related companies and provide greater support in the areas of loan interest, fund investments, and sales channels.

Attracting

200 companies

Investing

KRW 881 billion

ISSUE 05

Enhancing employee values

OUR APPROACH

It is essential for a company to secure talents with expertise and global capabilities to achieve sustainable management. KEPCO believes that the growth of its members leads to the company's sustainable growth. We therefore recruit future-oriented talents through open recruitment, focus on improving competency of employees, provide diverse support for their physical and emotional health, and continue investments with an aim to improve their quality of life.

RISK

- Departure of outstanding personnel due to the relocation of the company headquarters
- Lower work efficiency due to an inflexible organizational culture

OPPORTUNITY

- Foster creative talents to shift business areas to the new energy industry, digital convergence, etc.
- Derive creative ideas by diversifying the workforce including female employees

KEY PERFORMANCE

New recruitments performance

1,433 persons

Training expenses per person

KRW 1,012 thousand

Secure future talent for the entire electric power business (domestic and overseas businesses, electric power technology)

2,635 persons

SECURING FUTURE-ORIENTED TALENTS

Fair and transparent recruitment

Creating jobs to reduce youth unemployment As a leading public company in Korea, KEPCO is taking the lead in creating jobs in the public sector. In 2016, we recruited a total of 1,433 new employees, including high school graduates, local talents, women, and the youth. We also recruited 1,143 youths as interns to provide them with a job experience opportunity and to bolster their competencies in finding a job. To help resolve the social issue of youth unemployment, we created additional jobs for 318 persons through the Employment Stepping-stone Program, thus contributing to the resolution of youth unemployment. Our plan for 2017 is to establish a roadmap to shift non-regular workers into regular positions, and execute the plan, in accordance with the relevant government policy, and with an aim to contribute to the diffusion of such efforts in our society.

Competency-centered recruitment KEPCO strives to enhance the transparency in the recruitment process by focusing on competencies of candidates based on the National Competency Standard (NCS), and strictly prohibits discrimination in the recruitment process based on college, gender, age, etc. We operate a job skill-centered talent selection system, such as holding 'blind interviews' that are based on practical, on-site skills. Also, our recruitment methods were segmented to increase employment opportunities for diverse talent. To recruit global experts for our overseas business and new energy industry, we adopted target recruiting in 2016 and chose excellent talent who will lead changes in the business.

Job creation in 2016

Recruitment of regular workers	Recruitment through the youth internship programs	Recruitment through the Employment Stepping-stone Program
1,433 persons	1,143 persons	318 persons

Total 2,894 persons

VOICE OF STAKEHOLDERS

"KEPCO will contribute to the local community and also recruit outstanding talents from the Gwangju, South Jeolla Province area."

Soo-il Nam, Senior Manager, Human Resources Department, KEPCO

Since the relocation of our headquarters, the number of recruited local talent has been steadily rising – 53 persons in 2014, 112 persons in 2015, 126 persons in 2016. In an effort to hire local talents, we have been assigning additional points to local talent since before the relocation. We especially adopted the 15% employment target system and zone-level local professional employee system in 2017. In case of the employment target system, if the percentage of successful applicants per screening phase is less than the target, local talent who did not pass the screening but have more than a certain number of points are additionally chosen, in the order of talent with the highest points. Additional talent is recruited in excess of the initially expected number of successful applicants to meet the target. In case of the local professional employee system, improvements were made so that applicants can now apply for only the zone that their respective alma mater is located so as to ensure practical protection of employment channels. We are also helping people prepare for employment, such as by providing mentoring to job candidates and holding customized recruitment fairs.

Recruitment target for talents from the area of the new headquarters

- Subject: Graduates (prospective graduates) from the Gwangju and South Jeolla Province area
- Method: Recruitment target by screening phase – additional acceptance for candidates with up to -3 points to the cut-off line within a certain scope

Local professionals system

- Restrict zones (five zones in Korea) to which candidates can apply for to the areas where their alma mater is located
- Limited competition among graduates of universities in the same zone

Provide customized recruitment information

- Provide consultation customized to each region, such as the 'visiting recruitment briefing'
- 12 local recruitment briefings, 8 councils for working-level personnel of local colleges, etc.

FOSTERING EXCELLENT EMPLOYEES

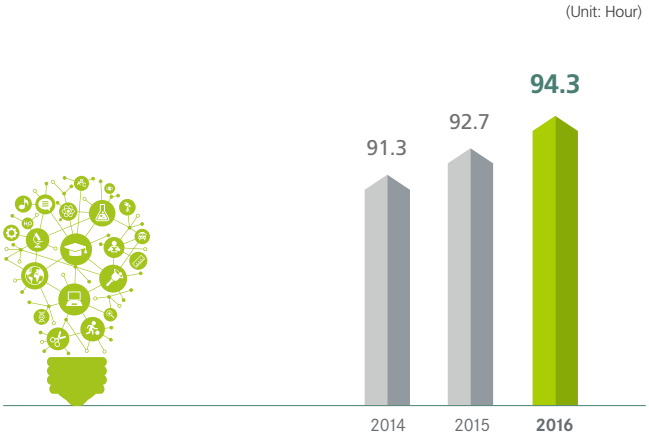
Establishing HRD strategies

KEPCO has put in place advanced human resources development (HRD) programs based on the belief that 'talents are our strategies', with a goal to develop into a smart energy company. We provide field-oriented training to improve electric power services, professional training that specializes in the new energy industry and the overseas business, leadership training by class, and core value internalization training. We established a 'future talent pool' consisting of 2,635 persons in 2016 by providing training, and received the National Quality Presidential Award for the first time in the training sector in November 2016.

Managing the performance of trainings

KEPCO has been increasing our training budget and personnel to bolster key competencies in new businesses and our original business. The training hour per person has been increasing since 2014.

Training hours per person



HRD strategies and tasks

Biz Expert

Strengthening customer-oriented core competencies

- Form and run study groups on a regular basis to improve the problem-solving process of electric power services: 163 study groups and 532 Job Meisters
- Build a 3-phased customized job training by competency level: Basic, advanced, and expert courses to help staff improve their competencies and performance

Early Mover

Fostering experts for growth businesses

- Advance the development of experts to make the new energy industry to be a growth driver: Customized training for new businesses, new electric power technologies, R&D, technology policies, etc.
- Strengthen specialized professional training to expand access to a new market overseas: Master's degree course specializing in the overseas business, in-depth training on practical skills related to the overseas business, language courses, etc.

Think Tank

Securing a basis for future growth and development

- Focus on fostering talents with master's and doctor's degrees in key strategic technologies, R&D, and policy: Foster personnel with master's and doctor's degrees to secure professional capabilities in new businesses
- Build the talent pool of 2,635 persons in order to secure future talents across the entire electric power businesses: Overseas business, domestic business, strategic technology

Top Talent

Maximizing the sustainable competencies of the company

- This outside the box! Spread leadership and consensus to lead the change in the industry: Training on creativity and innovation for all employees to help them change their perspectives
- Form a consensus on creating a new energy market and new values, and promote execution: 'Empathy Up!' vision concert, lectures by world-renowned scholars

BUSINESS CASE

Fostering and increasing the number of women in leadership roles

KEPCO has been expanding the recruitment of female employees, and is operating a wide array of programs that focus on development of leadership, use of talent, and support for growth, in order to foster female leaders.

Develop leadership

Provide leadership trainings and support networking and mentoring

- Leadership courses at Ewha Womans University
- Conference on next generation female leaders

Support growth

Support the work-life balance and continuous competency development

- Flex time, reduced work time
- Hire women who experienced interrupted careers

Use talents

Provide self-development opportunities through the job assignment in consideration of expertise

- Growing businesses such as R&D, overseas business, etc.: 1,090 persons (51%)
- Original business such as transmission, transformation, distribution, sales, etc.: 1,042 persons (49%)

CREATING A HAPPY AND SAFE WORKPLACE

Promoting a happy workplace

KEPCO has been building an organizational culture that enables flexible, smooth communication to create a happy workplace. By doing so, we seek to increase trust in labor-management relations and strengthen the foundation for mutual cooperation.

"TRUST" – Building a new corporate culture

Fully establish a communication culture of gratitude and sharing

- Strengthen the Happy Mileage system
- Promote the Lunch Meeting Day
- Diversify labor-management communication channels

Spread an innovation culture of trust and empathy

- Spread and share the corporate culture vision 'KEPCO PRIDE'
- Hold the 'Empathy Up!' vision concert
- Provide all employees with training to improve creativity and the ability to innovate

"PRIDE" – Increasing pride as a member of KEPCO

Enhance self-esteem by boosting morale

- Promote the Bitgaram communication visit for business site employees
- Hold the 2nd KEPCO Heart-touching Person Award
- Implement the restoration project of electric power history

Increase employee engagement through healing

- Upgrade the healing camp
- Host the table tennis match for labor-mismanagement cooperation
- Host the KEPCO Star-King competition

"FUN" – Creating a happy workplace

Strengthen club and cultural activities

- Strengthen club activities to enhance organizational vitality
- Promote the Culture Week to fully establish a sound corporate culture
- Operate the Bitgaram Theater on a regular basis

Balance work and life

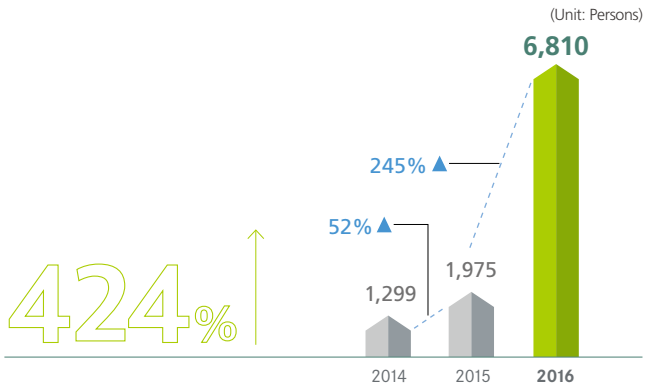
- Expand and promote the flex time system
- Introduce the smart work time system
- Run a work-life balance healing camp for employees and their children

Work-life balance

Improving residential and work conditions at the headquarters In an effort to improve residential conditions with the relocation of our headquarters, we conducted an employee survey, based on which 100 major tasks were identified and completed, including the different time commute system. Also, the 'Residential Condition Improvement Committee' was put in place collect and listen to the opinions of employees on a regular basis.

Expanding the flex time system KEPCO helps our employees achieve work-life balance by adopting the flex time system at a top level among public organizations in Korea. As a leading example, we adopted the self-planned shortened work system in August 2016 in which employees plan their own time to arrive and leave work. In addition, we are using the Smart Work Center to establish an environment that allows employees to work remotely.

Use of the flex time system



Creating a labor-management culture of coexistence

Labor union In an effort to improve residential conditions with the relocation of our headquarters, we conducted an employee survey, based on which 100 major tasks were identified and completed, including the different time commute system. Also, the 'Residential Condition Improvement Committee' has put in place collect and listen to the opinions of employees on a regular basis.

Promoting labor-management communication KEPCO has been expanding the labor-management communication in its efforts to form a consensus between labor and management. Through open communication channels led by a chief, on the company level, as well as field-centric and bottom-up communication channels, we are improving business performance and maintaining cooperative labor-management relations.

Multi-dimensional labor-management communication channels

Led by a chief	On the company level
Strengthen direct communication with union member	Develop a soft communication method
On-site communication workshop (2 times), send e-mails to all employees (7 times)	Cultural innovation vision concert (6 times), promote club activities
Field-centric	**Bottom-up**
Strengthen productive field communication	Quantitative expansion of bottom-up, open communication
Briefing sessions on the performance-based annual salary that are provided on tour (15 times), briefings on the management status (465 times)	Increase surveys on work, promote the anonymous bulletin board of the labor union

Skill and competency-centered evaluations and compensation

Spreading a corporate culture of performance KEPCO conducts performance and competency assessments on all employees based on the Management by Objectives (MBO) personnel evaluation method. Based on the outcome, KEPCO provides a different basic annual salary and performance-based annual salary.

Strengthening performance management We improved the personal assessment management system to enable year-round performance management and coaching. When an employee engages in daily work, he/she can conveniently (one-click) register work performance, enabling systematic performance management and ensuring assessment validity.

Performance management process

Employee-centered welfare system KEPCO has put in place reasonable welfare policies that are in line with management conditions with an aim to enhance the satisfaction level of employees. We also operate the defined benefit retirement bonus system to guarantee a stable post-retirement life. In 2016, we reduced the loan interest rate and increased the loan ceiling for daily life stability funds, increased guarantee conditions for group guarantee-type insurance, and increased the housing fund loan ceiling.

Strengthening the safety and health management

On-site focused safety management activities KEPCO takes preemptive measures against industrial accidents. In 2016, new safety and health technologies were applied to build an IoT-based remote construction site safety management system. Also, advanced safety management techniques of the U.S. and UK were adopted to improve our basic manual on safety rules. A 'special, corporate-wide safety inspection' was carried out by internal and external experts to analyze the fundamental issues of safety management. As a result, we identified 15 cases that required institutional and system improvements, and made the necessary improvements. In addition, we issued the 'KEPCO Safety Guide' and shared it on a corporate-wide level. The Guide clearly organizes safety management standards and processes from the field perspective.

Establishing and spreading a safety culture KEPCO has been strengthening safety management so that not only KEPCO employees but also employees of partner companies work in a safe environment. By developing an indirect hot-line job method in 2016, we built a power facility construction system that places the highest priority on safety. In addition, we fully established a culture of safety in the field by identifying and addressing contractors' safety management blind spots. As a leading example, we conducted safety training for 880 partner company employees, real-time safety management through the construction site monitoring, and safety inspection patrols.

Safety Management Committee KEPCO has put in place the Safety Management Committee that consists of five internal experts and five outside experts, including those from the government, academia, and safety management organizations. Through quarterly meetings, the committee carries out deliberations and provides advice in terms of important safety matters for the company, such as safety management policies and systems and establishment of measures in the event of safety accidents.

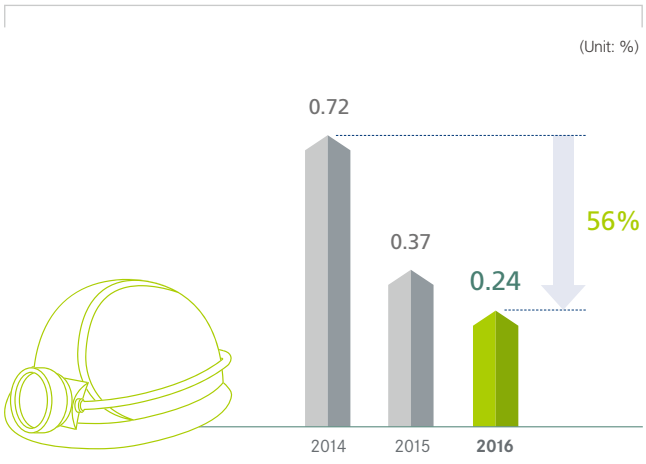
Health management programs for employees We measure the worksite environment (temperature, intensity of illumination, air quality, water quality, etc.) to detect and prevent symptoms of occupational diseases in our efforts to promote employee health. Additionally, regular checkups (every year) and special checkups (every two years) are conducted to check employees' health status in greater detail. Since 2014, we have been conducting a special medical examination for employees working the nightshift. In 2016, various health-promoting programs were implemented, such as the job stress test and counseling program and the smoking cessation clinic in connection with community health centers, thus further strengthening employee health management.

Operate a psychological counseling and alternative medicine programs (once a week)

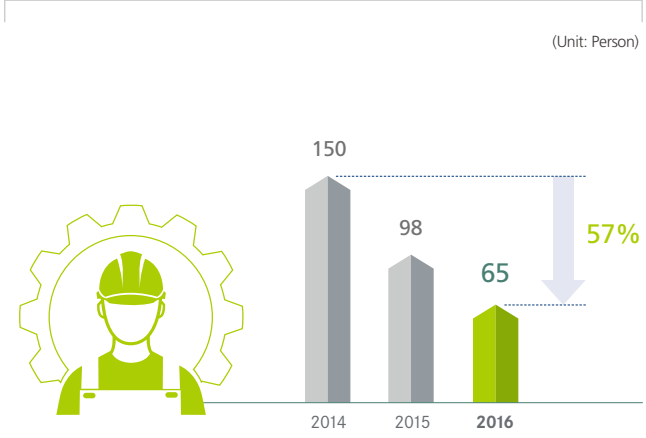
Measure stress levels and the degree of aging of blood vessels (once a month)

Field review at the National Safety Assessment

Accident rate of outsourced projects



Safety-related injuries



Leading Human Rights Management

Human rights management system

KEPCO practices human rights management in accordance with the UN Guiding Principles on Business and Human Rights (UNGPs) and the Human Rights Guideline of the National Human Rights Commission of the Republic Of Korea. In recognition of the importance of human rights, KEPCO has put in place various policies to respect the human rights of its employees as well as other stakeholders. We took the initiative to build and establish the human rights management execution system, and thus became the first Korean company to join the UN Global Compact in 2005. We also enacted and promulgated the human rights management declaration in 2015 for the first time among public companies in Korea.

Human rights risk management and due diligence

To identify and evaluate human rights risks, we categorize risks into 38 detailed items in 10 major areas in accordance with the UNGPs, and create a human rights management checklist. This checklist is used at each business department to conduct periodic self-assessments and inspections.

Meanwhile, KEPCO strictly prohibits discrimination of any kind, including discrimination based on gender, race, age, and social status. We also comply with the Labor Standards Act in Korea as well as the International Labour Organization (ILO) regulations, such as the 'Convention Concerning the Prohibition and Immediate Actions Toward the Elimination of the Worst Forms of Child Labor' and 'Convention Concerning the Abolition of Forced Labor.' No relevant violation case were found at KEPCO in 2016.

Major human rights improvement activities

KEPCO Declaration of Human Rights

Disclosed through the company's website and sustainability report

Self-assessment on human rights

Use the human rights management check list (38 detailed items in 10 areas)

Communication channels to prevent human rights violations

Run communication channels such as the grievance-handling system, direct reporting system, the Red Whistle, etc.

Finding the Roots of Electric Power History in Korea

Project to restore the history of electric power

In 2012, KEPCO redefined its founding date to be the one of Hansung Electric Company – January 26, 1898 – and has been striving to restore the history of all electric power companies in Korea, including Hansung Electric Company, which was the nation's very first electricity company, Hanmi Electric Company, and Gyeongseong Electric Company. By doing so, we aim to fill the gap in Korean history that exists for the late period of the Joseon Dynasty, and raised our sense of pride as we uphold the legitimacy of the national electric power industry. By addressing the rupture in the company's history, we strive to realize a complete KEPCO that connects the past and the future. We will continue to engage in activities that involve discovering and publicizing the historical roots of electricity, such as a symposium on finding the historical roots of electricity in Korea and a special exhibition on the occasion of the 120th anniversary of the company's founding.

Discovering materials that illuminate the history of electric power

KEPCO discovered historical materials about the electric power industry that were in the possession of the family of Harry Bostwick, who was a US partner at the time of the establishment of Hansung Electric Company – the very first electric power company in Korea. The family donated 2,020 rare materials that reflect what life was like at the end of the Joseon Dynasty, including 288 materials related to the history of electricity. Among these materials were scraps of articles about Hansung Electric Company, working-level documents, pictures of Hansung Electric Company and officials, and a written petition for the establishment of the company. We plan to help these materials be used to build a cyber history hall and to run the history exhibition hall in the Electricity Museum to disclose electricity history materials to the general public and to use them for research.

Milestones

2013-2016

After relocating to the Gwangju-Jeonnam Innovation City in 2014, KEPCO expanded its business to include the new energy industry and eco-friendly energy businesses, and also established the Bitgaram Energy Valley, thus building a win-win platform.

2005-2012

KEPCO enhanced its stature as a global company through nuclear power plant exports and the successful holding of the World Energy Congress.

1994-2004

KEPCO focused on overseas expansion, such as the company's listing on the New York Stock Exchange and the power generation business in the Philippines.

1898-1944

Hansung Electric Company, Korea's first electric power company, was established, which was followed by the launch of Korea Electric Power Company in 1962 through the integration of three companies. The company name was changed to Korea Electric Power Corporation (KEPCO) in 1981.

Performance Data

Consolidated statements of financial position

(Unit: KRW million)

Description	54th (Jan.1-Dec.31, 2014)	55th (Jan.1-Dec.31, 2015)	56th (Jan.1-Dec.31, 2016)
Current assets	16,819,855	22,025,325	19,708,526
Non-current assets	146,888,434	153,232,034	158,128,516
Total assets	**163,708,289**	**175,257,359**	**177,837,042**
Current liabilities	21,600,068	22,710,842	24,739,226
Non-current liabilities	87,283,211	84,604,042	80,047,271
Total liabilities	**108,883,279**	**107,314,884**	**104,786,497**
Paid-in capital	4,053,578	4,053,578	4,053,578
Retained earnings	35,303,647	48,187,241	53,173,871
Other components of equity	14,244,106	14,393,648	14,496,244
Equity attributable to owners of the parent	53,601,331	66,634,467	71,723,693
Non-controlling interest	1,223,679	1,308,008	1,326,852
Total equity	**54,825,010**	**67,942,475**	**73,050,545**
Total liabilities and equity	**163,708,289**	**175,257,359**	**177,837,042**

Consolidated income statement

(Unit: KRW million)

Description	54th (Jan.1-Dec.31, 2014)	55th (Jan.1-Dec.31, 2015)	56th (Jan.1-Dec.31, 2016)
Sales	**57,474,883**	**58,957,722**	**60,190,384**
Cost of sales	49,762,952	45,457,729	45,549,553
Gross profit	7,711,931	13,499,993	14,640,831
Selling and administrative expenses	1,924,366	2,153,261	2,639,232
Operating profit	**5,787,565**	**11,346,732**	**12,001,599**
Other income	402,329	432,219	412,887
Other expenses	88,220	108,848	188,624
Other profit (loss)	107,396	8,610,773	70,498
Finance income	885,290	1,182,988	791,543
Finance costs	3,140,038	3,015,457	2,437,087
Other comprehensive profit or loss of associates	274,984	207,379	(137,348)
Profit before income tax	4,229,306	18,655,786	10,513,468
Income tax expense	1,430,339	5,239,413	3,365,141
Net income	**2,798,967**	**13,416,373**	**7,148,327**
Other comprehensive income	(357,721)	34,006	(2,302)
Total comprehensive income	2,441,246	13,450,379	7,146,025

Creating economic value (based on separate figures)

Description	Unit	2014	2015	2016
Power sales	GWh	477,592	483,655	**497,039**
Power sales revenue	KRW billion	57,334.4	58,540.4	**60,289.6**
Operating profit	KRW billion	1,673.7	4,425.4	**4,881.5**
Profit for the period	KRW billion	1,039.9	10,165.7	**4,262.0**
Cash flow	KRW billion	6,271.6	9,751.0	**10,558.9**

Company value (based on the closing price for the period)

Description	Unit	2014	2015	2016
Stock price	KRW	42,700	50,000	**44,050**
Market price	KRW billion	27,411.9	32,098.2	**28,278.5**
Credit rating	Moody's	Aa3 Stable	Aa2 Stable	**Aa2 Stable**
market capitalization ranking	In Korea	4th	3rd	**4th**

Distributing economic value

(Unit: KRW billion)

Description	Classification	2014	2015	2016
Shareholders (Dividends)	Total	321.0	1,990.1	**1,271.1**
	Government	68.0	362.2	**231.3**
	General	160.6	1,004.7	**649.1**
	Foreigners	92.4	623.2	**390.7**
	Dividend rate (%)	10	62	**39.6**
KEPCO Group power generation companies (Power purchase cost)		46,754.7	43,218.5	**4,3231.9**
Creditors (Interest expense)		1,394.1	1,092.6	**844.2**
Donations		16.1	15.1	**22.8**
Purchase of products produced by SMEs		5,028.8	5,825.9	**5,268.4**
Employees	Total	1,498.0	1,890.1	**2,138.8**
	Salaries	1,341.5	1,532.5	**1,674.5**
	Retirement benefits	14.5	153.7	**180.9**
	Employee benefits	142.0	203.9	**283.5**

Environment

Use of materials

Classification	Unit	2014	2015	2016
Concrete	Ton	453,498	602,605	**659,404**
Metal		67,368	103,597	**79,656**
Ceramics		2,552	68	**108**
Power lines		31,127	42,586	**44,505**
Others		8,423	13,430	**14,956**
Total		560,538	762,286	**798,629**

Eco-friendly cars among business purpose vehicles

Classification	Unit	2014	2015	2016
Cars for Business	Unit	1,775	1,843	**1,918**
Eco-friendly cars		1,488	1,603	**1,700**
Compact cars		1,357	1,312	**1,243**
Hybrid vehicles		91	146	**142**
Electric vehicles		40	145	**315**
Percentage of eco-friendly cars	%	83.8	87	**88.6**

Generation and recycle of wastes by type

Classification	2014		2015		2016	
	Generation (Ton)	Recycling rate (%)	Generation (Ton)	Recycling rate (%)	Generation (Ton)	Recycling rate (%)
Concrete	215,565	100	51,561	100	**65,807**	**100**
Metal	39,710	100	22,449	100	**24,164**	**100**
Ceramics	8,777	100	23	100	**47**	**100**
Power lines	13,484	100	6,254	100	**7,246**	**100**
Others	898	100	1,890	100	**2,773**	**100**
Total	277,894	100	82,177	100	**100,037**	**100**

Purchase of green products and purchase percentage

(Unit: KRW million, %)

2014			2015			2016		
Total	Green products	Percentage	Total	Green products	Percentage	Total	Green products	Percentage
8,326	7,868	94.5	16,575	15,574	94.0	**26,351**	**25,344**	**96.2**

Energy

(Unit: TJ)

Classification	2014	2015	2016
Consumption	5,542	5,995	**6,425**

Greenhouse gas emissions and emission intensity

(Unit: 10,000 tons of CO_2eq for emissions; ton/KRW 100 million for intensity)

Classification	2014		2015		2016	
	Emissions	Intensity	Emissions	Intensity	Emissions	Intensity
Scope 1	128	-	115	1.94	**123**	**2.03**
Scope 2	14	-	16	0.27	**17**	**0.29**

Classification	2016			
	Power purchase	Power sales	Employees' commute	Business trip
Scope 3	**20,067**	**20,348**	**0.1**	**1.5**

* 2016 sales: KRW 60,190.4 billion

Performance of the emissions trading scheme

(Unit: 10,000 tons of CO_2eq)

Classification	2015	2016
Allocation	111	**96**
Emissions	130.9	**139.8**

* Basic emission factors based on the 2006 IPCC Guidelines for National Greenhouse Gas Inventories
Method: Applied Article 44 Activity Data Collection Methodology of the Guidelines on National Greenhouse Gas and Energy Target Management and Operation, Etc. All business sites including business sites with small amount of emissions

Air pollutants (Including KEPCO Group power generation companies)

(Unit: g/MWh)

Classification	2014	2015	2016
SOx	170	164	**246**
NOx	291	266	**395**
Dust	8	8	**11**

Environment-related investments and expenditures

(Unit: KRW billion)

Classification							Total
Energy new industry and renewable electricity generation	Energy new industry-related R&D	R&D for GHG reduction	Undergrounding electric power facilities	Transaction costs in an emission trading scheme	Duty-performance costs according to the RPS	Costs for environment-related certification and trainings (external consignment)	
2,639.8	446.6	135.8	452.1	2.9	1,181.1	0.25	**4,858.5**

Water consumption

(Unit: 1,000 ton)

Classification	2014	2015	2016
Consumption	3,831	2,738	**2,453**

Workforce

(Unit: Person)

Classification		2014	2015	2016
Number of employees		20,234	20,620	**21,544**
By employment type	Regular employees	19,899	20,196	**20,957**
	Employees under unlimited contracts	11	10	**1**
	Non-regular employees	324	414	**586**
By gender	Male	16,831	16,926	**17,563**
	Female	3,403	3,694	**3,981**
Newly hired	Regular employees	753	1,041	**1,433**
Retirees		412	774	**681**

Employee trainings

(Unit: Person)

Classification	2014	2015	2016
Senior executives	1,969	2,302	**2,923**
Junior executives	5,991	5,750	**9,059**
Staff	12,517	15,849	**20,981**

Maternity protection system

(Unit: Person)

Classification	2014	2015	2016
Parental leave before or after childbirth	138	122	**139**
Childcare leave (Male)	185 (15)	161 (22)	**310 (41)**
Infertility leave	10	15	**22**
Reduced work hours for childcare	10	9	**22**
Return rate after parental leave (Female/Male)	99.3/100	97.9/93.3	**100/97.2**

Flextime operations

(Unit: Person)

Classification	2014	2015	2016
Flex-time work	1,215	1,562	**6,149**
Part-time work	94	211	**287**

Purchase of products produced by SMEs

(Unit: KRW billion)

Classification	2014	2015	2016
Purchase	5,028.8	5,825.9	**5,268.4**

Material suppliers

Classification	Number of registered items	Number of registered companies
Transmission and substation	151	90
Distribution	97	154
Information and communication	4	5
Total	**252**	**249**

* Total number of companies: 192

Accident of outsourced construction projects

Classification	2014	2015	2016
Accident rate[1] (%)	0.72	0.37	**0.24**
Fatality rate per 10,000 persons[2] (0/000)	5.27	1.00	**1.18**

[1] Accident rate = (Number of casualties/Regular employees) x 100
[2] Fatality rate per 10,000 persons = (Number of the death/Regular employees) x 10,000

Appendix

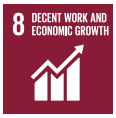
Support for Global Initiatives

Supporting UN SDGs

Adopted by the UN member states in September 2015, the Sustainable Development Goals (SDGs) are goals that all countries around the globe are jointly working on to achieve. It consists of 17 goals and detailed tasks that are aimed at alleviating threats to sustainable development, such as economic and social polarization and climate change.

With the implementation of the SDGs, which need to be accomplished by the international community, KEPCO is carrying out activities in response. Of the 17 goals, we chose eight priority goals that are related to the electric power industry and that can be fulfilled by KEPCO, and are conducting activities to accomplish the goals. By doing so, we seek to discover new growth opportunities and achieve sustainable growth.

KEPCO's response to UN SDGs

	**Goal 3** Ensure healthy lives and promote well-being for all at all ages	• Conduct eyesight recovery operation for low-income patients in danger of blindness in Korea and abroad • Operate employee health management for employee health management
	**Goal 4** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	• Support the learnings at childcare centers • Support the job experience programs after school • Provide scholarship to the underprivileged
	**Goal 7** Ensure access to affordable, reliable, sustainable and modern energy for all	• Expand the renewable energy business such as wind power and solar power • Build EV charging stations • Provide the underprivileged with solar power generation facilities free of charge
	**Goal 8** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	• Carry out projects to foster startups in the energy new industry • Expand the recruitment of local talents
	**Goal 10** Reduce inequality within and among countries	• Help the culturally underprivileged enjoy culture and art performances, including movies • Carry out global social contribution activities (repair village facilities, install solar street lights, etc.)
	**Goal 11** Make cities and human settlements inclusive, safe, resilient and sustainable	• Build the Bitgaram Energy Valley • Run the KEPCO119 Disaster Relief Squad • Build an eco-friendly facility
	**Goal 13** Take urgent action to combat climate change and its impacts	• Jointly respond to climate change with KEPCO Group power generation companies (carbon management diagnostic index, GHG reduction roadmap, etc.) • Develop eco-friendly technologies
	**Goal 15** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	• Build the KEPCO Forest together with citizens • Carry out activities to protect biodiversity (environmental impact assessment, restoration of damaged habitats, etc.)

Independent Assurance Statement

Introduction

Korea Electric Power Corporation ("KEPCO") commissioned DNV GL Business Assurance Korea, Ltd. ("DNV GL"), part of DNV GL Group, to undertake independent assurance on KEPCO 2017 Sustainability Report (the "Report"). DNV GL's assurance engagements are based on the assumption that the data and information provided by the client to us as part of our review have been provided in good faith.

Scope of assurance

The scope of assurance includes a review of sustainability activities and performance data over the reporting period from 1st January to 31st December 2016. This also includes:

- Evaluation of the Report on the adherence to the principles for defining the sustainability report content set forth in the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines 4.0;
- Evaluation of the process for determining material aspects for reporting and the management approach to material issues and the process for generating, gathering and managing the quantitative and qualitative data in the Report;
- Review of the performance data and information in 2016 against the information disclosed in the State-owned/State-controlled organization information disclosure system (www.alio.go.kr), the management performance evaluation report, internal documents and internal records.

Basis of our opinion

The assurance engagement was planned and carried out using DNV GL's assurance methodology VeriSustain™[1], which is based on our professional experience, international assurance best practice including International Standard on Assurance Engagements 3000 (ISAE 3000). We provided the limited level of assurance. The audit was carried out in August through September 2017 and the site visits were made to KEPCO's headquarters in Naju, Jeollanam-do, Korea. We undertook the following activities as part of the assurance process:

- challenged the sustainability-related statements and claims made in the Report and assessed the robustness of the underlying data management system, information flow and controls;
- interviewed representatives from the various departments;
- conducted document reviews, data sampling and interrogation of supporting databases and associated reporting systems as they relate to selected content and performance data;
- reviewed the materiality assessment report.

Limitations

The engagement excludes the sustainability management, performance and reporting practices of KEPCO's subsidiaries, associated companies, suppliers, contractors and any third-parties mentioned in the Report. DNV GL did not interview external stakeholders as part of this Assurance Engagement. Economic performance based on the financial data is cross-checked with internal documents, the audited consolidated financial statements and the announcement disclosed at the website of Korea Financial Supervisory Service (http://dart.fss.or.kr), the website of Public Management Information System (ALIO; www.alio.go.kr) and KEPCO's website (www.kepco.co.kr). These documents, financial statements and the announcements are not included in this Assurance Engagement. Limited depth of evidence gathering were applied including inquiry and analytical procedures and limited sampling at lower levels in the organization. The baseline data for Environmental and Social performance are not verified, while the aggregated data at the corporate level are used for the verification. DNV GL expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Assurance Statement. The directors of KEPCO have sole responsibility for the preparation of the Report. The responsibility of DNV GL in performing the assurance work is to the management of KEPCO in accordance with the terms of reference.

Conclusion

On the basis of the work undertaken, nothing comes to our attention to suggest that the Report does not properly describe the adherence to the Principles for defining report content in GRI G4 nor is prepared 'in accordance' with GRI G4 Core option. Further opinions with regards to the adherence to the following Principles are made below;

[1] The VeriSustain protocol is available upon request at DNV GL website (www.dnvgl.com)

◇ Stakeholder Inclusiveness

KEPCO has identified ten stakeholder groups. KEPCO engages with stakeholders through various communication channels to figure out respective stakeholder groups' interests and expectations. The examples of approaches to engagements with selected stakeholders are described in the Report.

◇ Sustainability Context

The Report addresses long-term management strategies to achieve KEPCO's vision, strategic tasks, management goals and performance indicators pertaining to those tasks. In addition, the Report describes crisis and opportunity factors, management approach, and performances for material issues. The Report helps the stakeholders understand the sustainability management of KEPCO.

◇ Materiality

KEPCO has conducted the materiality assessment to prepare the Report. The relevant 36 issues selected from the analysis of the key issues in the global sustainability initiatives and international standards, sustainability reports from peer group, the journalist reports on KEPCO in 2016. The issues in the pool are rated by combining the level of impact on KEPCO's business and level of stakeholders' interest in the issue. The prioritization is based on the internal survey results. KEPCO has ended up with 10 material issues through these evaluation processes. In additional, stakeholder relevance to the selected material issues is presented. The audit team reviewed the materiality assessment process and noted that the relevant material issues prioritized from the process are addressed in the Report.

◇ Completeness

The Report has covered the sustainability management approach and sustainability performances of KEPCO for the reporting period. The reporting boundary has been set for KEPCO domestic workplaces including headquarters in Naju. In the case of eco-friendliness of the supply chain (environmental investment costs, air and water pollutants), the reporting boundary is expanded to six power generation companies (Korea Hydro & Nuclear Power, Korea South-East Power, Korea Midland Power, Korea West Power, Korea South Power and Korea East Power) in which KEPCO has 100% stake. The audit team noted that the performance results of material issues within the reporting boundary were reported without omissions.

◇ Accuracy and Reliability

The audit team verified the data and information based on sampling methodology during the verification process. The audit team interviewed the Person-in-Charge, reviewed the process of gathering and processing data and information, and the supporting documents and records. The depth of data verification is limited to the aggregated data. Based on sampling verification and other reported information and available evidence, nothing comes to our attention that would cause us to believe that the data and information presented in the Report have any intentional error or material misstatement.

Competence and Independence

DNV GL Business Assurance is part of DNV GL Group and a global provider of certification, verification, assessment and training services, helping customers to build sustainable business performance. Our environmental and social assurance specialists are present in over 100 countries. The assurance work was performed by independent team which meets DNV GL's competence requirements. DNV GL was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement. The audit team has complied with DNV GL's Code of Conduct.

DNV·GL

September 2017

Seoul, Korea

In Kyoon Ahn

Country Representative

DNV GL Business Assurance Korea, Ltd.

GHG Emission Verification Statement

Verification Institute

DAEIL E&C Verified the Greenhouse Gas & Energy statements of 2016 reported by Korea Electric Power Corporation.

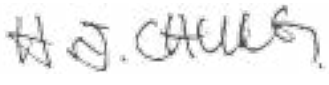
Verification Criteria

The Comprehensive Standards and Guidelines on the Operation of Greenhouse Gas and Energy Target Management Scheme (Notification No. 2016-255, Korea Ministry of Environment).

Verification Conclusion

We, DAEIL E&C, Verify the Greenhouse Gas Emission and Energy statements 2016 of Korea Electric Power Corporation are based on a Reasonable Level of Assurance.

Energy Consumption	**6,309 TJ**
GHG Emissions	**1,396,423 CO_2eq·ton**



September 25, 2017
DAEIL E&C CO., LTD
CEO & President

Certificate No. GHGV-2017-0925

Introduction

Korea Productivity Center was required to verify '2016 Greenhouse Gas (GHG) emissions Statements (hereinafter 'Statement')', of which reporting years was defined as January 1, 2016 to December 31, 2016, by Korea Electric Power Corp.

Levels of Assurance

A reasonable level of assurance was agreed.

Verification Scope

The verification team verified GHG emissions (Scope3) at workplaces of Korea Electric Power Corp. in 2016.

Verification Criteria

- GHG Energy Target Management Guideline
- Community-Scale GHG Emission Calculation Guideline
- IPCC Guideline: 2006, WRI/WBCSD GHG Protocol: 2004
- ISO14064-3: 2006 standard

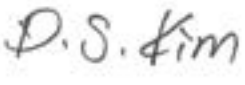
Limitation

Having investigated by sampling method, the Statement might have errors and uncertainties. Final GHG estimates may contain uncertainty for the reasons such as unspecified standard and method, although no exceptional factors has been reported.

Conclusion

- The verification team confirmed that the 'Statements (2016)' was being reported in accordance with self-inspection guideline based on GHG Energy Target Management Guideline and IPCC Guideline.
- Appropriate corrective action was taken by Korea Electric Power Corp. in accordance with investigation results from the verification team.
- The verification team confirms that the 'Statements (2016)' was being reporting 'appropriately' in accordance with relevant standards.

Korea Electric Power Corp.	GHG Emissions
Other Indirect Emissions (Scope3)	**454,949,962 CO_2eq**



June 27, 2017
Korea Productivity Center, Sustainability Management Center
Director Dong-Soo, Kim

GRI G4 Index

General Standard Disclosures

Index	Description	ISO 26000	Page reference	Note
Strategy and analysis				
G4-1	Statement from the most senior decision-maker of the organization	4.7/6.2/7.4.2	4, 5	
G4-2	Description of key impacts, risks, and opportunities		26, 34, 42, 50, 64	
Organizational profile				
G4-3	Name of the organization	6.3.10/6.4.1-6.4.2/ 6.4.3/6.4.4/6.4.5/ 6.8.5/7.8	8	
G4-4	Primary brands, products, and/or services		8	
G4-5	Location of organization's headquarters		8	
G4-6	Countries with significant operations		9, 40, 41	
G4-7	Nature of ownership and legal form		8	
G4-8	Markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries)		8, 9	
G4-9	Scale of the reporting organization		8	
G4-10	The total workforce by employment type, gender, employment contract and region		8, 77	
G4-11	The percentage of total employees covered by collective bargaining agreements		68	
G4-12	Description of the organization's supply chain		8, 9, 54-56	
G4-13	Significant changes during the reporting period relating to size, structure, or ownership or its supply chain		91	
G4-14	Implementation of the precautionary approach or principle		16, 17	
G4-15	External initiatives that the organization endorses		79	
G4-16	Memberships of associations such as industry associations		91	
EU1	Installed capacity, broken down by primary energy source and by regulatory regime		89	
EU2	Net energy output broken down by primary energy source and by regulatory regime		89	
EU4	Length of above and underground transmission and distribution lines		-	474,099 C-km
EU5	Allocation of CO_2e emissions allowances or equivalent, broken down by carbon trading framework		76	
Identified material aspects and boundaries				
G4-17	Entities included in the organization's consolidated financial statements or equivalent documents	5.2/7.3.2/7.3.4	91	Business Report 3-6p
G4-18	Process for defining report content		20, 21	
G4-19	Material Aspects identified in the process for defining report content		20, 21	
G4-20	Aspect Boundary within the organization		21	
G4-21	Aspect Boundary outside the organization		21	
G4-22	Effect of any restatements of information provided in previous reports, and the reasons for such restatements		No significant change	
G4-23	Significant changes from previous reporting periods in the Scope and Aspect Boundaries		20, 21	
Stakeholder engagement				
G4-24	Stakeholder groups engaged by the organization	5.3	18, 19	
G4-25	Basis for identification and selection of stakeholders with whom to engage		18, 19	
G4-26	Approaches to stakeholder engagement by type and by stakeholder group		18, 19	
G4-27	Key topics and concerns raised through stakeholder engagement, and how the organization has responded to them		18, 19	

Index	Description	ISO 26000	Page reference	Note
Report profile				
G4-28	Reporting period	7.5.3/7.6.2	91	
G4-29	Date of most recent previous report		91	
G4-30	Reporting cycle		91	
G4-31	Contact point for questions regarding the report or its contents		91	
G4-32	Table identifying the location of the Standard Disclosures in the report		83-87, 91	
G4-33	Policy and current practice with regard to seeking external assurance for the report		80, 81	
Governance				
G4-34	Governance structure of the organization, including committees of the highest governance body	6.2/7.4.3/7.7.5	12, 13	
Ethics and integrity				
G4-56	Organization's values, principles, standards and norms of behavior	4.4/6.6.3	14, 15	
G4-57	The internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity, such as helplines or advice lines		14, 15	
G4-58	Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines		14, 15	

Specific Standard Disclosures

Index	Description	ISO 26000	Page reference	Note
Economic performance				
DMA (Disclosures on Management Approach)			26, 34	
EC1	Direct economic value generated and distributed	6.8.1-6.8.2/ 6.8.3/6.8.7/6.8.9	73, 74	
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	6.5.5	42	
EC3	Coverage of the organization's defined benefit plan obligations	6.8.7	73	Business Report 282p
Indirect economic impacts				
EC7	Development and impact of infrastructure investments and services supported	6.3.9/6.8.1/6.8.2/ 6.8.7/6.8.9	58-63	
EC8	Significant indirect economic impacts, including the extent of impacts	6.3.9/6.6.6/6.6.7/ 6.7.8/6.8.1-6.8.2/ 6.8.5/6.8.7/6.8.9	51-63	
Procurement practices				
DMA			50	
EC9	Proportion of spending on local suppliers at significant locations of operation	6.4.3/6.6.6/ 6.8.1-6.8.2/6.8.7	50, 77	
Availability and reliability				
DMA			34	
EU6	Management approach to ensure short and long-term electricity availability and reliability	6.3.3/6.5.3/6.5.4/6.5.5/ 6.5.6/6.7.8/6.8.6	35, 36	
EU7	Demand-side management programs including residential, commercial, institutional and industrial programs	6.3.3/6.5.3/6.5.4/6.5.5/ 6.7.5/6.7.8/6.8.6	35	
R&D				
DMA			26	
EU8	Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development	6.8.6	27-31	

Index	Description	ISO 26000	Page reference	Note
System efficiency				
EU12	Transmission and distribution losses as a percentage of total energy		34	
Environmental				
Materials				
EN1	Materials used by weight or volume	6.5.4	75	
Energy				
DMA			42	
EN3	Energy consumption within the organization	6.5.4	76	
EN6	Reduction of energy consumption	6.5.4/6.5.5	44	
Water				
EN8	Total water withdrawal by source		76	
Biodiversity				
EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	6.5.6	46	
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas		46	
EN13	Habitats protected or restored		46	
EU13	Biodiversity of offset habitats compared to the biodiversity of the affected areas		46	
Emissions				
DMA			42	
EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	6.5.5	76	
EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)		76	
EN17	Other indirect greenhouse gas emissions (Scope 3)		76	
EN18	Greenhouse gas (GHG) emissions intensity		76	
EN21	NOx, SOx, and other significant air emissions	6.5.3	76	
Effluents and waste				
EN23	Total weight of waste by type and disposal method	6.5.3	75	
Products and services				
DMA			42	
EN27	Extent of impact mitigation of environmental impacts of products and services	6.5.3/6.5.4/6.5.5/6.7.5	46, 47	
Compliance				
EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations		No such cases	
EN31	Total environmental protection expenditures and investments by type	6.5.1-6.5.2	76	
Employment				
DMA			64	
EU14	Programs and processes to ensure the availability of a skilled workforce	6.4.7	66, 68	
EU16	Policies and requirements regarding health and safety of employees and employees of contractors and subcontractors	6.3.3/6.3.5/6.4.6/6.6.6	69	

Index	Description	ISO 26000	Page reference	Note
Social				
Employment				
LA1	Total number and rates of new employee hires and employee turnover by age group, gender, and region	6.4.1-6.4.2	77	
LA3	Return to work and retention rates after parental leave, by gender	6.4.4	77	
EU18	Percentage of contractor and subcontractor employees that have undergone relevant health and safety training	6.3.3/6.3.5/6.4.6/6.6.6	69	
Occupational health and safety				
DMA			17, 64	
LA5	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	6.4.6	69	
LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of workrelated fatalities, by region and by gender	6.4.6/6.8.8	69, 77	
LA7	Workers with high incidence or high risk of diseases related to their occupation		69	
Training and education				
DMA			64	
LA9	Average hours of training per year per employee by gender, and by employee category	6.4.7	77	
LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	6.4.7/6.8.5	66	
LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	6.4.7	68	
Diversity and equal opportunity				
LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	6.2.3/6.3.7/ 6.3.10/6.4.3	12, 66, 77	
Human rights				
HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	6.3.5	70	
Freedom of association and collective bargaining				
HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights	6.3.3/6.3.4/6.3.5/6.3.8/ 6.3.10/6.4.5/6.6.6	56, 68	
Child labor				
HR5	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor	6.3.3/6.3.4/6.3.5/6.3.7/ 6.3.10/6.6.6/6.8.4	70	
Forced or compulsory labor				
HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	6.3.3/6.3.4/6.3.5/ 6.3.10/6.6.6	70	
Local communities				
DMA			50	
SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	6.3.9/6.5.1-6.5.2/ 6.5.3/6.8	60-63	
EU19	Stakeholder participation in decision making processes related to energy planning and infrastructure development	6.8/6.8.3	18, 19, 53	

Index	Description	ISO 26000	Page reference	Note
Anti-corruption				
DMA			14, 15	
SO4	Communication and training on anti-corruption policies and procedures	6.6.1-6.6.2/6.6.3/6.6.6	14, 15	
SO5	Confirmed incidents of corruption and actions taken	6.6.1-6.6.2/6.6.3	14, 15	
Anti-competitive behavior				
SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	6.6.1-6.6.2/6.6.5/6.6.7	No such cases	
SO10	Significant actual and potential negative impacts on society in the supply chain and actions taken	6.3.5/6.6.1-6.6.2/6.6.6/ 6.8.1-6.8.2/7.3.1	No such cases	
Customer health and safety				
PR1	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement	6.7.1/6.7.2/6.7.4/ 6.7.5/6.8.8	36	
EU25	Number of injuries and fatalities to the public involving company assets, including legal judgments, settlements and pending legal cases of diseases		No such cases	Business Report 538p
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes		No such cases	
PR5	Results of surveys measuring customer satisfaction	6.7.1-6.7.2/6.7.6	25	
Marketing communications				
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		No such cases	
Customer privacy				
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data		No such cases	
Compliance				
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services		No such cases	
Access				
EU23	Programs, including those in partnership with government, to improve or maintain access to electricity and customer support services	6.7.8/6.7.1-6.7.2/6.7.6	36	
EU26	Percentage of population unserved in licensed distribution or service areas	6.7.8	36	
EU30	Average plant availability factor by energy source and by regulatory regime	6.3.7/6.7.8	89	
Provision of information				
EU24	Practices to address language, cultural, low literacy and disability related barriers to accessing and safely using electricity and customer support services	6.3.7/6.7.8	52, 53, 58, 59	

Major Subsidiaries

Power generation companies

Korea Hydro & Nuclear Power Co., Ltd. Ownership: 100%	· Address: 1655, Bulguk-ro, Yangbuk-myeon, Gyeongju-si, Gyeongsangbuk-do · Sales: KRW 11,168,579 million · Total assets: KRW 52,782,915 million · Home page: www.khnp.co.kr/eng	It is the only company in Korea that operates nuclear power plants, and also operates hydropower and pumped storage power plants. · Facility capacity: 28,439MW · Power generation: 158,744GWh
Korea South-East Power Co., Ltd. Ownership: 100%	· Address: 32, Sadeul-ro 123beon-gil, Jinju-si, Gyeongsangnam-do · Sales: KRW 5,093,598 million · Total assets: KRW 9,773,778 million · Home page: www.kosep.co.kr/eng	It operates the Samcheonpo Power Plant and Yeongheung Power Division as a base load. · Facility capacity: 10,332MW · Power generation: 67,738GWh
Korea Midland Power Co., Ltd. Ownership: 100%	· Address: 160, Boryeongbuk-ro, Boryeong-si, Chungcheongnam-do · Sales: KRW 3,719,981 million · Total assets: KRW 9,066,666 million · Home page: www.komipo.co.kr/eng/main/main.do	It operates the Boryeong Power Plant and Seocheon Power Plant Division as a base load. · Facility capacity: 8,342MW · Power generation: 42,907GWh
Korea Western Power Co., Ltd. Ownership: 100%	· Address: 285, Jungang-ro, Taean-eup, Taean-gun, Chungcheongnam-do · Sales: KRW 4,169,712 million · Total assets: KRW 9,810,714 million · Home page: www.westernpower.co.kr/eng	It operates the Taean Thermal Power Plant as a base load. · Facility capacity: 10,725MW · Power generation: 48,387GWh
Korea Southern Power Co., Ltd Ownership: 100%	· Address: 40, Munhyeongeumyung-ro, Nam-gu, Busan · Sales: KRW 4,200,035 million · Total assets: KRW 9,806,023 million · Home page: www.kospo.co.kr/english/	It operates the Hadong Thermal Power Plant as a base load. · Facility capacity: 10,184MW · Power generation: 47,978GWh
Korea East·West Power Co., Ltd. Ownership: 100%	· Address: 395, Jongga-ro, Jung-gu, Ulsan · Sales: KRW 4,210,897 million · Total assets: KRW 8,967,951 million · Home page: www.ewp.co.kr/eng/main/main.asp	It operates the Dangjin Coal-Fired Power Plant and Honam Coal-Fired Power Plant as a base load. · Facility capacity: 11,000MW · Power generation: 49,271GWh

Group companies and invested companies

KEPCO Engineering & Construction Company Inc. Ownership: 65.77%	· Address: 269, Hyeoksin-ro, Gimcheon-si, Gyeongsangbuk-do · Sales: KRW 506,012 million · Total assets: KRW 786,596 million · Home page: www.kepco-enc.com/eng/index.do	As an engineering company related to power generators and plants, KEPCO E&C has been engaging in the design of nuclear, hydroelectric, and thermal power plants, O&M for generation facilities, plant construction business, and PM/CM business since its founding in 1975.
KEPCO KPS Ownership: 51.00%	· Address: 211, Munhwa-ro, Naju-si, Jeollanam-do · Sales: KRW 1,214,304 million · Total assets: KRW 1,086,421 million · Home page: www.kps.co.kr/eng/index.do	KEPCO KPS is a world-leading comprehensive plant service company and provides high-quality maintenance services for power plants (nuclear, thermal, and hydroelectric), transmission and substations, and industrial facilities.
KEPCO NF Ownership: 96.36%	· Address: 242, Daedeok-daero 989beon-gil, Yuseong-gu, Daejeon · Sales: KRW 309,911 million · Total assets: KRW 713,230 million · Home page: www.knfc.co.kr/eng	KEPCO NF is the only nuclear fuel design and manufacturing company in Korea that was established to localize nuclear fuel and achieve technological self-reliance.
KEPCO KDN Co., Ltd. Ownership: 100.00%	· Address: 661, Bitgaram-ro, Naju-si, Jeollanam-do · Sales: KRW 588,160 million · Total assets: KRW 519,901 million · Home page: www.kdn.com	Since its establishment as a company in charge of KEPCO's IT, KEPCO KDN has been offering total IT services in all areas of the electric power system, and is growing into a global electric power IT company.

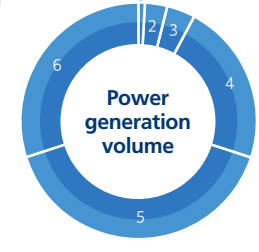
Power generation facility capacity

(Unit: %)

1	Hydro power	6
2	Oil	4
3	Renewable energy, etc.	7
4	LNG	31
5	Coal	30
6	Nuclear power	22

105,866MW

(Unit: %)



1	Hydro power	1
2	Oil	2
3	Renewable energy, etc.	4
4	LNG	22
5	Coal	40
6	Nuclear power	30

540,441GWh

Percentage of facilities by company

(Unit: %)

Korea Hydro & Nuclear Power	Korea South-East Power	Korea Midland Power	Korea Western Power	Korea Southern Power	Korea East·West Power	Others
27	10	8	10	10	10	25

* As of 2016 year end

Memberships and Awards

Awards

Awarding organization	Awards overview	Date
Presidential Committee for National Cohesion	Cited for outstanding conflict management by the Presidential Committee for National Cohesion	Feb. 2016
Korea Marketing Association	Brand that Citizens Identify With in Korea (Heart To Heart Index) for the second consecutive time	Mar. 2016
IFIA	Won seven awards at the 2016 International Exhibition of Inventions in Geneva (2 Gold, 5 Special Awards)	Apr. 2016
Forbes	Ranked No. 1 in the Electric Utility Category of Forbes Global 2000	May 2016
Asia-Pacific Stevie Awards	Received the Gold Prize in the Area of Social Media Innovation in the Communication/PR Category of the 2016 Asia-Pacific Stevie Awards	May 2016
INPEX	Received the Grand Prize for the second consecutive year at the Invention and New Product Exposition in Pittsburgh, U.S.	Jun. 2016
ICQCC	Received the Gold Prize for Quality Improvement Case at the 2016 International Convention on QC Circles	Aug. 2016
LACP	Received the Platinum Award in the Utility Category at the LACP Vision Awards for two straight years	Aug. 2016
Ministry of Trade, Industry and Energy	Received the Presidential Award for Promoting the Local Industry	Sep. 2016
Ministry of Education, Ministry of Personnel Management	Chosen as an outstanding organization for BEST HRD in the public sector	Sep. 2016
Korean Standards Association	Received the Presidential Award and others at the 42nd National QC Circle Contest for the12th consecutive year	Sep. 2016
Platts	Chosen as the world's No. 1 electric power company on Platts Top 250	Sep. 2016
CDP	Chosen for Honors in the Energy & Utility Sector of CDP Carbon Management	Oct. 2016
Ministry of Trade, Industry and Energy	Received the Presidential Citation at the 2016 Korea Energy Efficiency Awards	Oct. 2016
World Bank	Chose as the world's No. 1 in the 'Electricity Supply Sector' of the World Bank's Business Environment Survey for the third consecutive year	Oct. 2016
Dow Jones	Chosen as an Excellent Company in the Electric Utility Category of the 2016 Dow Jones Sustainability Indexes	Oct. 2016
Ministry of Trade, Industry and Energy	Named the '(Best) Excellent' Organization after an assessment on Disaster Management and 'National Safety Diagnosis'	Nov. 2016
Korean Standards Association	Became the first to receive the National Quality Presidential Award in the Training Sector	Nov. 2016
The Dong-A Ilbo Newspaper	Received the CSV Porter Prize for three consecutive years – Entered the Hall of Fame	Dec. 2016
Korea Management Association	Named the Best Company in Social Value at The Management Grand Awards 2016	Dec. 2016
The Seoul Economic Daily	Chosen as the Local Economy Leader of Korea in 2016	Dec. 2016
Korea Employers Federation	Became the first in Public Company Group 1 to receive the Grand Prize at the 29th Korea Labor-Management Cooperation Awards	Feb. 2017
IJ Global	Received the Deal of the Year in the Renewable and Conversion Categories of the IJ Global Awards 2016 for MENA	Mar. 2017
Korean Corporation Management Association	2017 Korea Enterprise Management Award – CEO & President Cho Hwan-eik	Apr. 2017
Edison Electric Institute (EEI)	Received the Platinum Award in the Large Capitalization Category of the Asia-Oceania Index Award	Apr. 2017
IDG	Received the CIO 100 Awards for two consecutive years – world's top 100 in technological innovation	Aug. 2017

Memberships

Organization	Purpose of membership	Year of joining membership
Korean Institute of Electrical Engineers	Promotion and development of academics and technology related to electrical engineering	1961
Korea Standard Association	Exchange of information on various technological standards, including industrial standardization and quality management	1964
Korea Electric Association	Promotion and development of the overall electric industry	1965
Korea Atomic Industrial Forum	Exchange of domestic and overseas nuclear power technology information	1975
International Construction Association	Raising competitiveness by collecting and analyzing information on overseas construction	1976
Korea Management Association	Innovating management and providing consulting support	1981
Korean Society for Quality Management	Exchange of information among quality management organizations to improve quality management activities	1995
Korean Institute of Electrical and Electronic Material Engineers	Academic exchange and cooperation between industry and academia in relation to electrical and electronic material engineering	1996
AESIEAP	Promote cooperation among electric power companies and experts of Asia and the Western Pacific	1998
Korea New & Renewable Energy	Promotion of the renewable energy industry and information sharing	2004
Edison Electric Institute (EEI)	Protection of the rights of U.S. electric power companies and provision of the latest information on the electric power industry	2004
Korea Plant Industries Association	Exchanging information to raise the competitiveness of the plant industry and expand exports	2005
Korea Nuclear Society	Technology development and academic exchanges regarding nuclear power	2007
Association of Edison Illuminating Companies (AEIC)	Technological exchange among electric power companies in North America	2008
Energy & Mineral Resources Development of Korea	Cooperation for overseas resources development industries and consultation on measures for joint engagement	2008
Korean Association for Industrial Technology Security	Developing policies and engaging in cooperation for the protection of industrial technology	2009
Korea Invention Promotion Association	Exchange of needs and trends of the intellectual property market	2009
Korea Smart Grid Association	Smart grid information sharing and cooperation	2009
Korea Carbon Capture and Storage Association (KCCSA)	Spread and support for providing CCS technology	2011
Korea Nuclear Association for International Cooperation	Export of the Korean standard nuclear power plant, analysis of overseas nuclear trends, cooperation and information sharing in the nuclear industry	2011
World Nuclear Export Company Group (WNA)	Enhancement of international stature and marketing of nuclear power plants	2011
Future Energy Forum	Review current affairs and policies in the energy sector	2013
Korea Photovoltaic Industry Association	Photovoltaic power market research and collection of new technology information	2013
Korea Wind Energy Association	Collect information on R&D of wind energy technologies and participate in proposing policies	2014
International Federation of Inventors' Associations (IFIA)	Establish connections and a cooperation system with the International Business Association regarding R&D and new technology	2015

About This Report

Reporting Principles

The 2017 Sustainability Report ('the Report') is based on the G4 Guidelines of the Global Reporting Initiative (GRI), ISO 26000, and the UN Global Compact. The reporting standards and definitions of the financial data are in accordance with the International Financial Reporting Standards (IFRS). To successfully make a shift into the GRI Standards, which will be adopted in 2018, KEPCO undertook pilot implementation of the Standards to the Report. Management approach was drawn up in an integrated manner, and the reporting of boundaries and others was strengthened.

Reporting Period

The Report contains performance data from January 1 through December 31, 2016, and also includes activities of importance that were performed in the first half of 2017. No significant changes took place during the reporting period.

Reporting Scope and Boundary

The Report covers the sustainability management performance of Korea Electric Power Corporation (KEPCO) at home and abroad. Regarding the eco-friendliness in the supply chain, data and activities of six power generation companies whose shares are 100% owned by KEPCO (Korea Hydro & Nuclear Power, Korea South-East Power, Korea Midland Power, Korea Western Power, Korea Southern Power, and Korea East-West Power) was reported.

External Assurance

The information disclosed in the Report was included after the facts prepared by the relevant departments underwent verification. To ensure the credibility of the reported content, the Report was verified by DNV GL, which is an independent assessment institution. The assessment standards used are included in the Independent Assurance Statement (page 80-81).

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