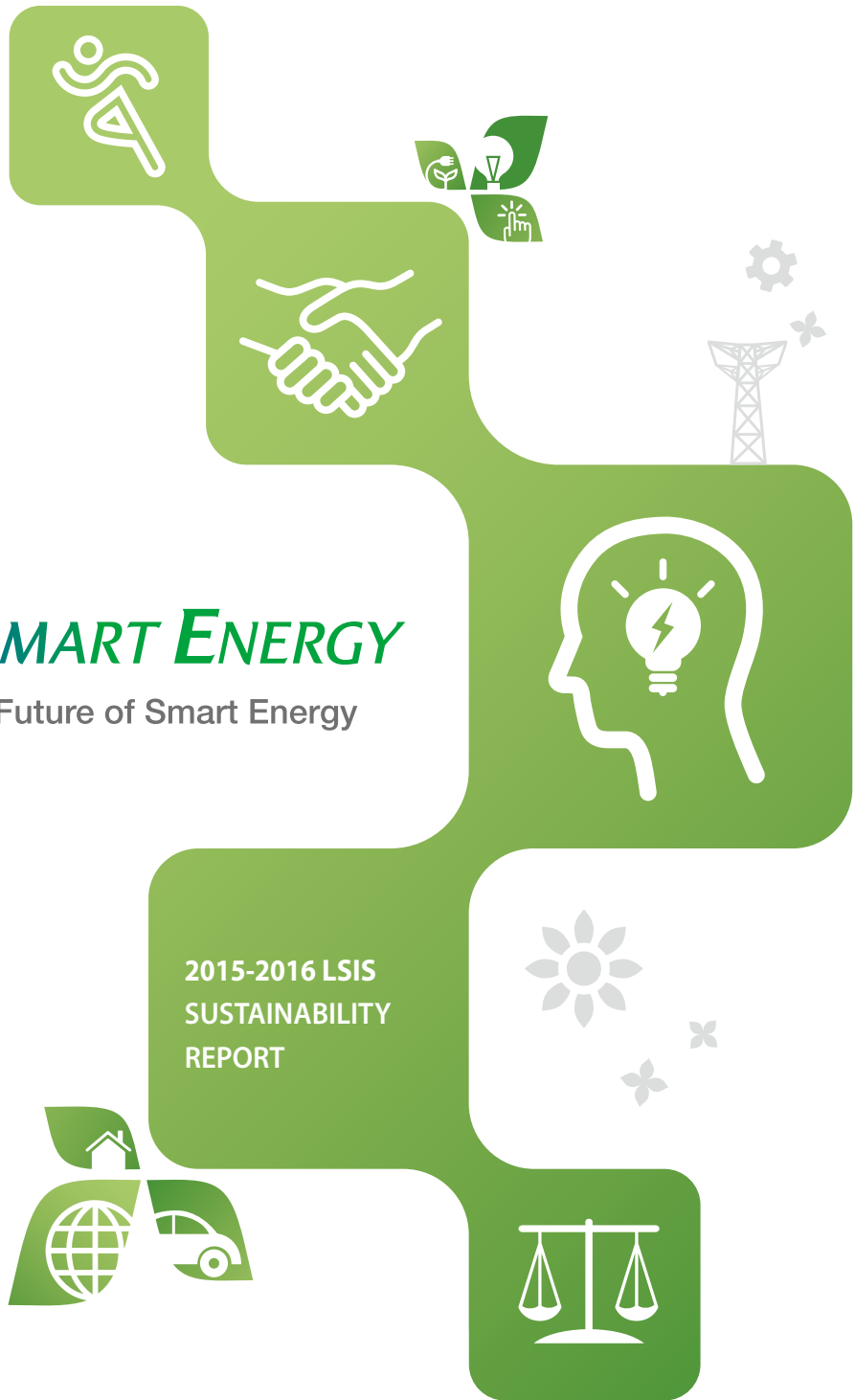


# **FUTURING SMART ENERGY**

Opening the Future of Smart Energy

2015-2016 LSIS  
SUSTAINABILITY  
REPORT



# ABOUT THIS REPORT

## Introduction

LSIS shared its environmental, social, and economic performances with stakeholders by launching its first sustainability report last year. In an effort to facilitate stakeholder communication, we prepared the second report in which our sustainability management performances in 2015 and future plans are included in a balanced and transparent manner. We will continue to publish the annual sustainability report to communicate with stakeholders and demonstrate our commitment to growing together with the community.

## Reporting Period

This report covers our quantitative and qualitative data regarding sustainability management from January 1 through December 31, 2015 and in some cases, historical data in 2013, 2014, and the 1st half of 2016 have been included for comparability and timeliness. The latest sustainability report was launched in March 2015.

## Scope and Boundary

We aimed to report major status and performances in the aspects of economy, society, and environment of the domestic business sites in principle, but included overseas business sites when necessary.

## Reporting Standards

This report was prepared in accordance with "Core" indicators of the GRI (Global Reporting Initiative) G4 Guideline.

## Assurance

The reliability of this report was verified by the Business Institute for Sustainable Development (BISD) under the Korean Chamber of Commerce and Industry (KCCI), a third-party assurance institution which is independent from our businesses and has expertise in sustainability management. The assurance report can be found in the appendix of this report.

## Inquiries on This Report

Please send questions or comments on the LSIS Sustainability Report through the information below:

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## Cover Story

LSIS is committed to creating the future of smart energy based on its core values of collaboration, execution, creativity, and integrity. The cover design of this report symbolizes our management principle through harmonizing the pictorial expression of our mission emblem and eco-friendly image.



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February

**Opened Japan's Largest Mito Photovoltaic Power Plant**

The Mito photovoltaic power plant went into operation on February 6 after 19 months of construction. The 40MW photovoltaic power plant, built by LSIS, is the largest of its kind in Japan currently in service.



**Donated Vehicles to Social Welfare Facilities**

On February 4, LSIS held an event named 'Key for Love with LSIS' at the head office to donate three 12-passenger SUVs to three social welfare facilities in Anyang and Cheongju where vehicles were urgently needed.



July

**Established FEMS at Cheongju Plant 2**

On July 16, LSIS Cheongju Plant 2 established the Factory Energy Management System (FEMS) featuring the in-house energy management solution GridSol. Based upon Energy Management System (EMS), LSIS has realized its convergence technology consisting of Energy Storage System, photovoltaic, and Smart Meter on the existing automation-based smart process line.



August

**Developed and Established SVC System**

On August 21, LSIS completed the establishment of ±100MVar SVC in the Onsan Plant substations of LS-Nikko Copper with the capacity of 154kV and held the completion ceremony of the Smart SVC Center. Designed to improve the stability of power delivery by complementing reactive power lost during power transmission and distribution, SVC is the key facilities of Flexible AC Transmission System (FACTS) which ensures stable power supply in case of fluctuations in wind or photovoltaic power.



**Implemented Social Contribution Activities jointly with Suppliers**

LSIS held the 'Cool Summer with LSIS' where employees at LSIS and 15 other suppliers in Chungcheong-do visited the Chungbuk Rehabilitation Center, donating air-conditioners worth KRW 2 million and spent time with about 30 people with intellectual disabilities in Sangdang Mountain Fortress Natural Recreational Forest.



2015 SUSTAINABILITY MANAGEMENT

HIGHLIGHTS

March

**Sold 2 Million Units of iG5A – the Largest Sales Record for a Single Drive Solution**

On March 23, LSIS set the sales record of its drive solution iG5A, selling 2 million units for the first time in Korea for a single drive brand. Featuring high-end performances compatible with diverse industrial applications and designed in a compact size, iG5A has emerged as a steady-selling brand.



July

**LSIS Sustainability Report Won the LACP Award**

The '2014 Sustainability Report', published in 2015, won the Gold Award at the 2014 Vision Awards hosted by the League of American Communications Professionals (LACP) in the United States.



September

**PLC and Inverter Ranked Top in the KS-QEI for Three Consecutive Years**

On September 18, LSIS was recognized as the No. 1 company in PLC and Inverter category for three consecutive years at the 2015 Korean Standard – Quality Excellence Index Awarding Ceremony hosted by the Korean Standards Association.



**Chairman & CEO Ja-Kyun Koo Delivered Keynote at ISO General Assembly**

LSIS Chairman & CEO Ja-Kyun Koo delivered the keynote speech titled 'International Standards and the Role of the Private Sector' at the opening ceremony of the 35th ISO General Assembly. In his keynote, Mr. Koo talked about the changes in the industrial paradigm brought on by ICT and IoT while stressing the urgent need to establish international standards on energy efficiency technology.



November

**Included Thomson Reuters' Top 100 Global Innovators for Five Years in a Row**

On November 19, LSIS held the awarding ceremony at LS Tower as it was chosen as one of the Top 100 Global Innovators announced by the global business information consulting firm Thomson Reuters for five years in a row. LSIS was the only domestic business to grab the honor in the electricity power category which was newly added this year.





# CEO Message



Dear valued stakeholders of LSIS,

I take great pleasure in presenting the 2nd Sustainability Report as part of our endeavors to engage with stakeholders in a continued communication following the 1st report which came out last year. As we were compiling this report, in particular this year, it was our hope that this report would elaborate on our efforts and achievements in environmental management in a more faithful manner.

In 2015, the international community approved the Paris Agreement, marking the birth of a new climate change framework to mitigate the Earth's average temperature rise. The Korean Government, on its part, will strive to promote 'new energy industry' to meet the goal of GHG emissions cut. The dwindling infrastructure investment due to the slowdown in global economy poses tough challenges to management environment. However, LSIS, with its proven capabilities in power and energy, is poised to turn the crisis into opportunity.

As most of the businesses LSIS has invested in to identify the future growth engine encompass new energy industry, our values, as represented by the vision of 'Futuring Smart Energy', will only grow in the coming years. Smart Energy and Smart Factory Solution, in particular, are expected to contribute not only to the nation's economic advancement but also to the mitigation of climate change.

Generating economic outcomes and reaping the benefits together with stakeholders by joining the global efforts for responding to climate change, our business model faithfully delivers corporate social responsibility and sustainability management values. The Vision 2020 embodies our aspiration to become a great company (Great) which promotes efficiency (Green) on the global arena (Global).

We are seeing tangible outcomes on the horizon. Following the construction of the mega-size photovoltaic power plant in Mito, Japan last year, we won the bid to build a major photovoltaic power plant in Chitose, Hokkaido this year. Our business in China and Southeast Asia is also experiencing favorable growth. The high-efficiency drive product 'iG5A' realized a record high in sales as a single brand in Korea.

Furthermore, we have reestablished the standards on eco-friendly products to minimize their impact on environment while increasing investment in environment and safety to develop green products and improve process. Employees' enhanced awareness of safety and accident prevention process has allowed LSIS to keep its worksites free from accident since 2012. We strive to make sure the environmental safety culture we established is replicated by our suppliers, thereby creating new shared values.

We make lasting efforts to embrace local communities in growth and communication, for example, by supporting welfare facilities for marginalized groups. This year, LSIS and its suppliers will jointly carry out social contribution activities to benefit more people in need.

As we make progress on the long journey towards sustainability management, LSIS pledges to abide by the global standards on corporate social responsibility while fulfilling its duties as a healthy corporate citizen.

We look forward to your unwavering interest in and encouragement for us in the years to come.

Thank you.

Chairman & CEO Ja-Kyun Koo





# Corporate Overview

LSIS has sustained steady growth despite a slump of the global economy on the strength of relentless efforts to develop capabilities in the electricity and energy sectors for the past four decades. Today, as a company fulfilling its environmental and social responsibility, we are ushering in a new era of smart energy together with stakeholders.



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# Corporate Profile

## Introduction

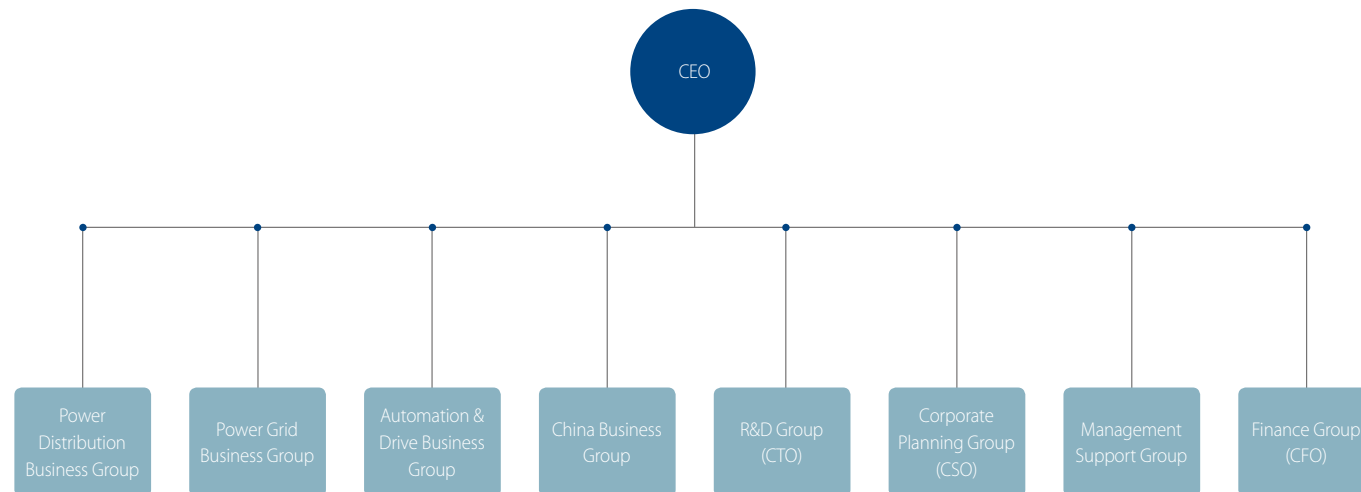
Since the establishment in 1974, LSIS has been spearheading the domestic electric power and industrial automation solution business. We are operating seven plants, five R&D centers, seven local subsidiaries, and thirteen branches at home and abroad, and our management activities to offer impressive customer experience based on top-tier technology and quality are highly trusted in the global market. Particularly, our eco-friendly technology benefits the earth and all mankind. Our commitments to contributing to the development of national economy will be further extended to the sustainability of environment and society.



## Profile

 <b>Company Name</b> LSIS Co., Ltd	 <b>Founded</b> July 24, 1974	 <b>CEO</b> Chairman, Ja-Kyun Koo Vice President, Won-Il Kim	 <b>Head Office</b> LS Tower, 127, LS-ro, Dongan-gu, Anyang-si, Gyeonggi-Do	 <b>No. of Employees</b> 3,616 persons	 <b>Credit Rating</b> AA- (Korea Investors Service, Korea Ratings)
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## Organization Chart



## Creation and Distribution of Economic Value

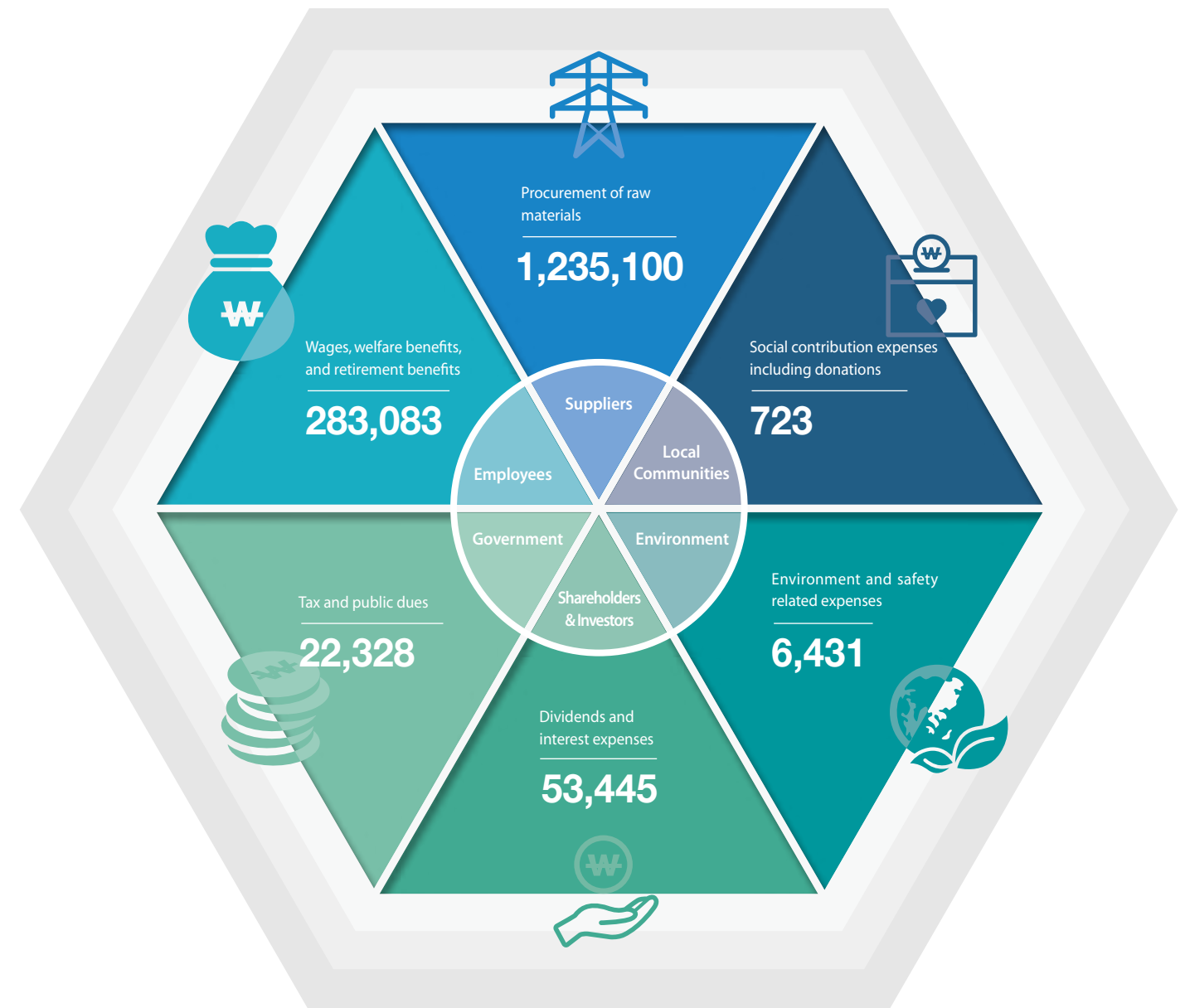
### Economic Value Created

(Unit: KRW in millions)

 <b>Sales</b> Non-consolidated <b>1,753,118</b> Consolidated <b>2,201,676</b>	 <b>Operating Income</b> Non-consolidated <b>147,877</b> Consolidated <b>154,402</b>	 <b>Total Assets</b> Non-consolidated <b>2,107,925</b> Consolidated <b>2,251,674</b>	 <b>Total Liabilities</b> Non-consolidated <b>1,133,286</b> Consolidated <b>1,236,975</b>	 <b>Total Equity</b> Non-consolidated <b>974,639</b> Consolidated <b>1,014,699</b>
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### Distribution of Economic Value (non-consolidated)

(Unit: KRW in millions)



## Vision and Strategy

In January 2015, LSIS declared the value-focused management for the purpose of boosting employees' dedication to the Company while letting them find reward at work and, ultimately, setting common values aligned with employees and the Company. Through the value-focused management, all employees at LSIS will devote themselves to creating a sustainable future by forging ahead with a clear target consciousness.

### Strategy

- Boosting Our Market Position as a Power Solutions Provider
- Leading New Markets through Convergence and Combination
- Expansion of Global Markets
- Securing Operational Excellence

### Core Value



Collaboration



Execution



Creativity



Integrity

### Management Philosophy

Greater value together!



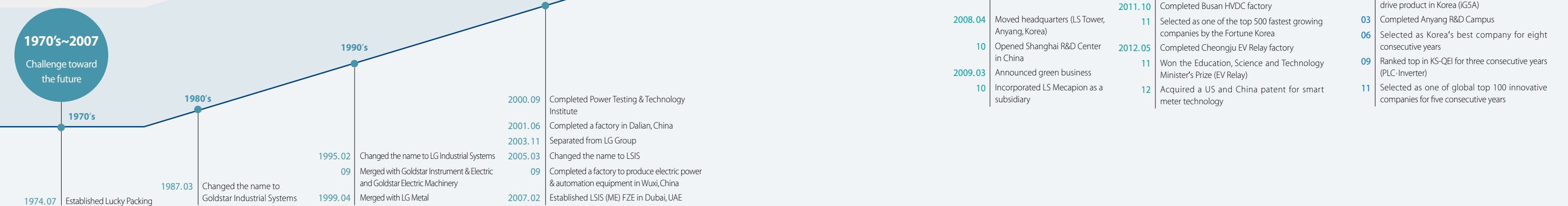
### Mission



### Vision



## Corporate History





# Corporate Governance

## Composition and Operation of the BOD

### Governance Structure

At LSIS, the independent Board of Directors (BOD) ensures transparent and reasonable decision-makings. According to relevant regulations and the articles of association, the BOD is composed of two inside and three outside directors and has two subcommittees - Outside Director Candidate Recommendation Committee and Audit Committee.

Classification	Name	Position	Profile	Start of Term
Inside directors (2 persons)	Ja-Kyun Koo	Chairman & CEO	-	2014.03.21
	Won-Il Kim	Vice President & CEO	Director of the Power Grid Business	2016.03.18
Outside directors (3 persons)	Hyun-Gyo Chung	Audit Committee member	Professor in electrical & information engineering, Seoul National University	2014.03.21
	Sang-Woo Han	Audit Committee member	CEO of Sangjin DPS	2016.03.18
	Byung-Kook Lee	Audit Committee member	Chairman of e-Chon Tax Accounting Corp.	2014.03.21

### Subcommittees

#### Audit Committee

The Audit Committee, comprised of three outside directors, supervises decision-makings of the management through checks and observation. The committee reviews operating results and financial statements at least once a quarter and has authorities to inspect whole accounting works and financial status if necessary. The committee members start a regular communication with independent auditors in 2016 to ensure more efficient audit activities.

#### Outside Director Candidate Recommendation Committee

The appointment of outside directors are conducted in a fair and transparent manner through the Outside Director Candidate Recommendation Committee. Outside directors with expertise in our businesses not only check the management but also help make reasonable and fair decisions by offering professional advices and consultations.

#### Operation of the BOD and Subcommittees in 2015

	No. of Meetings	Attendance Rate
Board of Directors	8	86
Audit Committee	4	92

\* For more information on agendas, see our corporate website.

### Limit of the BOD Remunerations



Limit of remuneration: KRW 5 billion

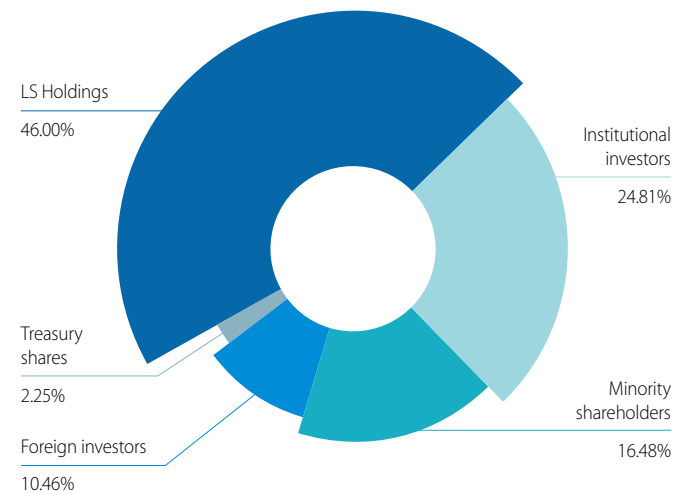


Total remunerations paid: KRW 4.21 billion

### Shareholder Structure

As of December 31, 2015, the largest shareholder of LSIS is LS Holdings with 46% ownership, followed by the National Pension Service with 10.91%, institutional investors with 24.81%, minority shareholders with 16.48%, and foreign investors with 10.46%. The number of floating shares of LSIS is 29,325,028 (98% of total issued shares) excluding about 2% treasury shares.

#### Share Ownership (as of Dec. 31, 2015)



Classification	Relations	Kind	No. of Shares	Percentage
LS Holdings	Largest shareholder	Common share	13,800,000	46.00
Treasury shares	-	Common share	674,972	2.25
Institutional investors	National Pension Service	Common share	3,272,806	10.91
	Others	Common share	4,169,669	13.90
Foreign investors	-	Common share	3,138,757	10.46
Minority shareholders	-	Common share	4,943,796	16.48
Total		Common share	30,000,000	100.00



### Shareholder Returns

Dividend policy tells about a company's financial soundness and ability to sustainably create profits. LSIS provides shareholders with dividends more than market average. Bringing profits regardless of the fluctuation of stock prices, dividends are recognized as a medium that creates stable capital gain. LSIS has maintained approximately 40% dividend payout ratio. Although dividend per share in 2015 decreased compared with the previous year due to a drop in net profit, we intend to keep the dividend payout ratio over 40% in accordance with our commitment to better shareholder returns. With the aim of growing together with shareholders, we will continue to return our profits through a proactive dividend policy to pay dividends exceeding market average.

Classification	2013		2014		2015	
	LSIS	Average of Firms Listed on KOSPI	LSIS	Average of Firms Listed on KOSPI	LSIS	Average of Firms Listed on KOSPI
Total dividends (KRW in billions)	322.57	-	381.23	-	293.25	-
Dividend per share (KRW)	1,100	-	1,300	-	1,000	-
Dividend payout ratio*	29.12%	25.35%	40.60%	27.31%	42.22%	22.2%
Dividend yield**	1.67%	1.30%	2.17%	1.19%	2.17%	1.33%

\* Dividend payout ratio: Total dividends/net profit. (Average of firms listed on KOSPI targets companies that pay dividends.)

\*\* Dividend per share/closing stock price at the end of year (based on KRX data)

### Communication with Shareholders and Investors

Providing shareholders and investors with corporate information in a timely and transparent manner is essential for gaining their trust. To this end, LSIS is always proactive in communicating with them. Our operating performances, mid- to long-term management strategies, and promotion of new businesses are shared with the public through diverse IR meetings and conferences. Recently, many countries are getting interested in smart energy and Korean government also seems to increase investments in that sector. Our IR activities will also focus on emphasizing our new growth engines connected with energy.

IR Activity	Details
Domestic IR conference	Daewoo Securities Conference Samsung Securities Global Conference Daewoo Securities Global Conference Merrill Lynch Securities Global Conference Kiwom Securities Conference Shinhan Investment Conference
Overseas non-deal road show	About 80 meetings a year in the US (New York, Boston, Chicago, L.A.), Hong Kong, and Singapore
One-on-one meeting	About 100 meetings a year with investors who visit the Company
Meeting with the management	Once a year for major analysts (LS Day)
Factory tour for analysts	Cheongju and Busan plants
Earnings release	Quarterly (two days every quarter)

# Global Business

Under the strategic direction to be a global power solution provider, LSIS is concentrating on local investments and marketing activities in the US, Europe, China, the Middle East, and Southeast Asia in order to boost global operations.

● Head Office	Anyang
● Domestic Operations	Anyang (R&D Institute), Cheongju, Cheonan, Busan
● Overseas Subsidiaries (production)	Wuxi, Dalian, Hanoi (Vietnam)
● Overseas Subsidiaries (sales)	Amsterdam (Netherlands), Dubai (UAE), Tokyo (Japan), Chicago (US)
○ Overseas Branches	Shanghai, Beijing, Guangzhou, Qingdao, Chengdu, Shenyang, Jinan, Nanjing (China), Ho Chi Minh (Vietnam), Moscow (Russia), Jakarta (Indonesia), Tokyo (Japan), Palo Alto (US)
● Global Service Centers	Shanghai, Beijing, Guangzhou, Qingdao, Chengdu, Wuxi (China)
● Global R&D Center	Wuxi (China)

## Major Subsidiaries



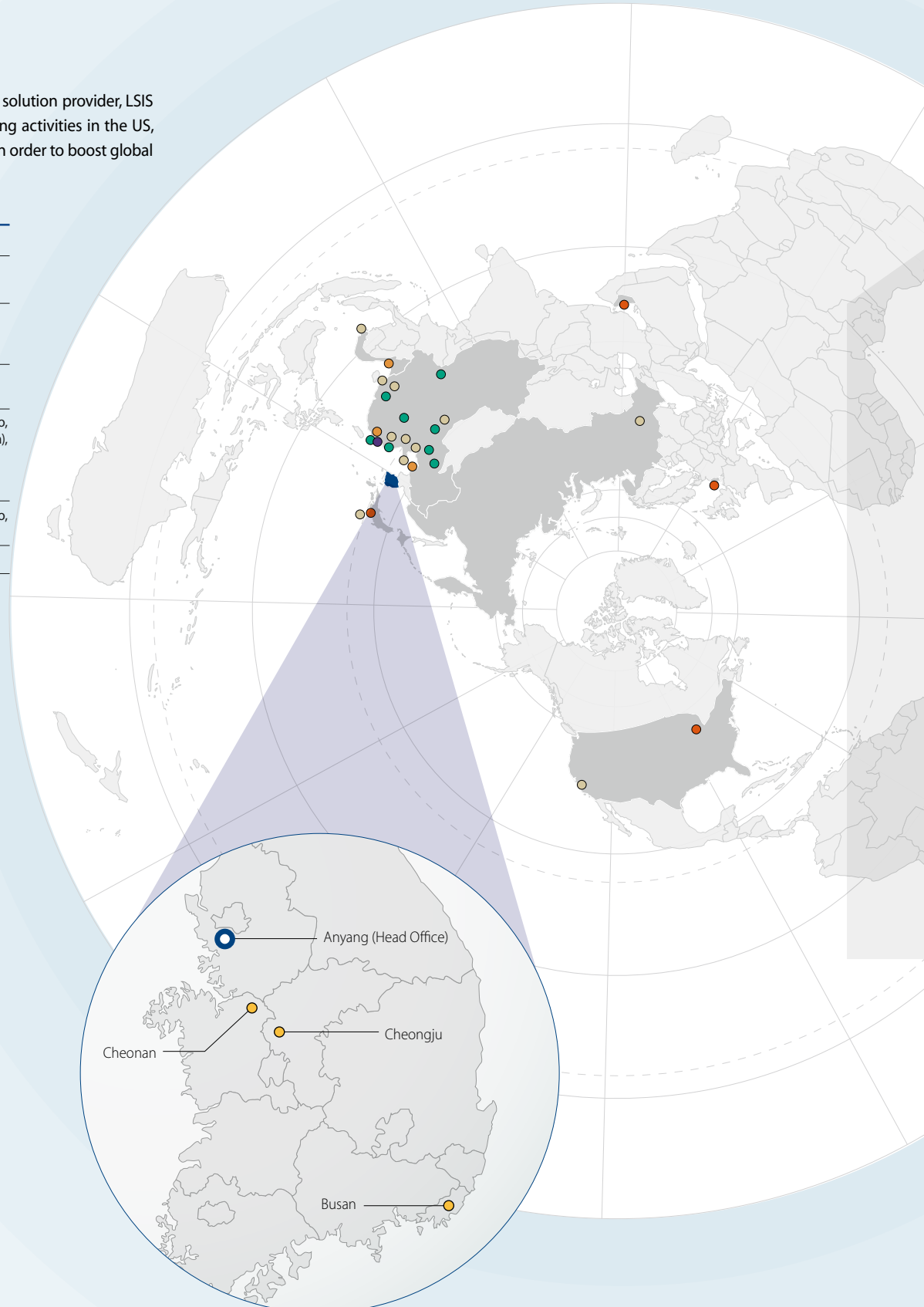
**LS Metal**  
 Address: Trade Tower, 511, Yeongdong-daero, Gangnam-gu, Seoul, Korea  
 Main Business: Manufacturing of copper tube and STS tube  
 Ownership of LSIS: 100%



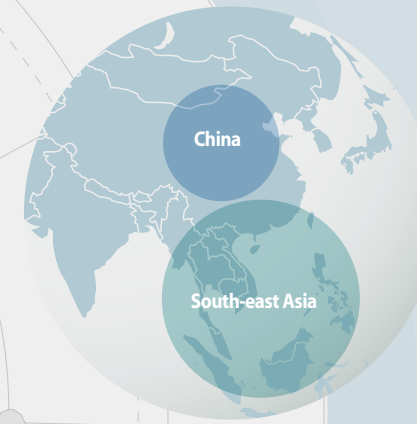
**LS Mecapion**  
 Address: Hosandong-ro, Dalseo-gu, Daegu, Korea  
 Main Business: Manufacturing of industrial electronic equipment  
 Ownership of LSIS: 81.5%



**LS-Sauter**  
 Address: Digital-ro, Geumcheon-gu, Seoul, Korea  
 Main Business: Sales of electrical equipment including BAS & IBS  
 Ownership of LSIS: 90%



## Global Business Strategy



- China**
- Boost power grid business by targeting project markets and expanding renewable energy markets
  - Give impetus to PLC-based automation package sales
- Southeast Asia**
- Implement strategies tailored to target countries
  - Expand local sales networks and promote direct marketing activities



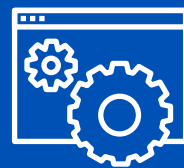
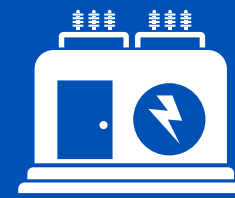
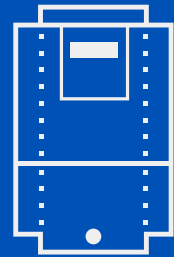
- Middle East**
- Target system and project markets
  - Expand business opportunities in Iran



- America**
- Expand the industrial control market by invigorating local sales representatives
  - Target the power distribution market through solidifying partnerships in the switchgear sector

# Our Businesses and Innovation Activities

LSIS is operating power grid, power distribution, industrial automation, and smart energy businesses. In particular, we are giving all of our strengths to foster Smart Energy and Smart Factory Solution businesses as future growth engines. We believe those will contribute to the mitigation of climate change as well as the national economy.



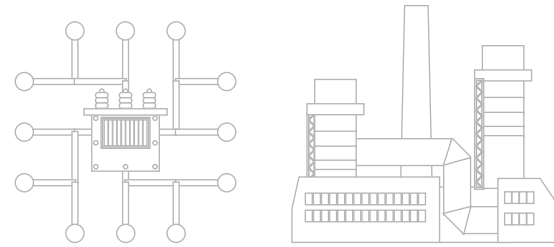
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# Business Portfolio

## Power Grid Business

The power grid business offers convergence power solutions that combine extra-high voltage electric power facilities and systems with IT technology. Major products include gas insulated switchgear (GIS), power transformer, and switchgear to transmit, transform, and distribute electricity generated from power plants. We also supply prevention diagnosis systems for stable operation of electric power facilities and high voltage direct current (HVDC) system as a next growth engine.



### Plans for 2015

- Enhance HVDC manufacturing and R&D capability
- Expand extra-high voltage and large capacity product lineups
- Reinforce competitiveness in the global market by developing market-tailored products

### Major Performances in 2015

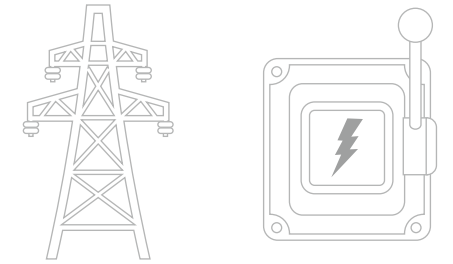
- Increased new orders by building large capacity product lineups
- Achieved remarkable performances in the global turnkey project market (including substation projects in Ghana and Iraq)
- Supplied GIS to Shinjecheon Substation project

### Plans for 2016

- Lay the foundation for the Smart Power Solution business
- Enhance business performance by focusing on the target markets
- Strengthen dominance in the domestic market through product differentiation

## Power Distribution Business

LSIS manufactures electric power equipment that distributes electricity produced from generators to customers. While maintaining the largest share in the domestic power distribution equipment market, we also compete with world's leading companies. Today, we are creating sustainable performances by launching the Susol brand suitable for high-end market and the Metasol brand for mid- to low-end market through R&D activities.



### Plans for 2015

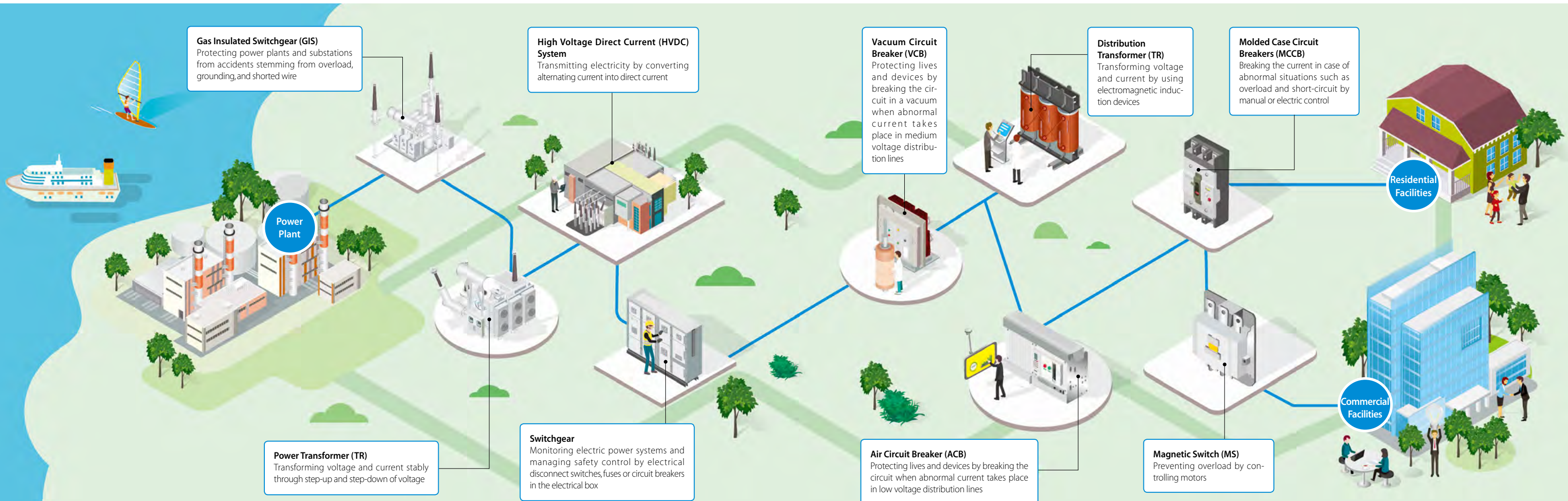
- Activate overseas business and project sales activities
- Research future technologies and next-generation products in advance
- Operate an organization responsible for improvement and maintenance and enhance pre-inspection activities

### Major Performances in 2015

- Won the Multi Polar/Krakatau Steel project in Indonesia
- Secured more orders regarding the Saudi Electricity Company's substation project and local private projects
- Won the NH's integrated IT Center project
- Developed Chinese DC Relay market

### Plans for 2016

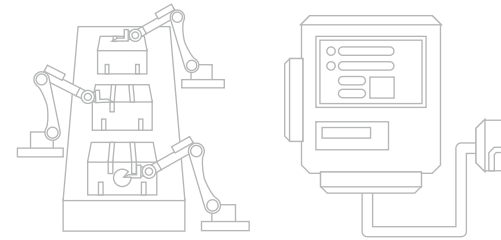
- Establish package solutions by each new and renewable energy application
- Target the domestic and overseas retrofit market by giving impetus to technical sales regarding investments in revamping decrepit facilities
- Build a foundation for growth through securing footholds in Indonesia





## Automation & Drive Business

The Automation & Drive Business provides a wide range of solutions for factory automation by capitalizing on its flagship products PLC and AC Drive. Major products include MVD, HMI, and Servo as well as PLC and AC Drive which are used for factory automation and better energy efficiency. In addition, we are promoting the Smart Factory Solution business that offers customer new value through integrating existing products and upper systems.



### Plans for 2015

- Promote a pilot project for the domestic FA system under the Manufacturing Innovation 3.0 strategy
- Research advanced technologies for next-generation products
- Establish the global SVC infrastructure

### Major Performances in 2015

- Promoted the FA business in connection with the Manufacturing Innovation 3.0 strategy
- Created direct transaction channels with large companies
- Stabilized the quality of MVD
- T/A with Mecapion
- Established the SVC system for global customers

### Plans for 2016

- Boost large-scale OEM business
- Foster HMI and Servo businesses
- Expand the Smart Factory Solution business

#### PLC (Programmable Logic Controller)

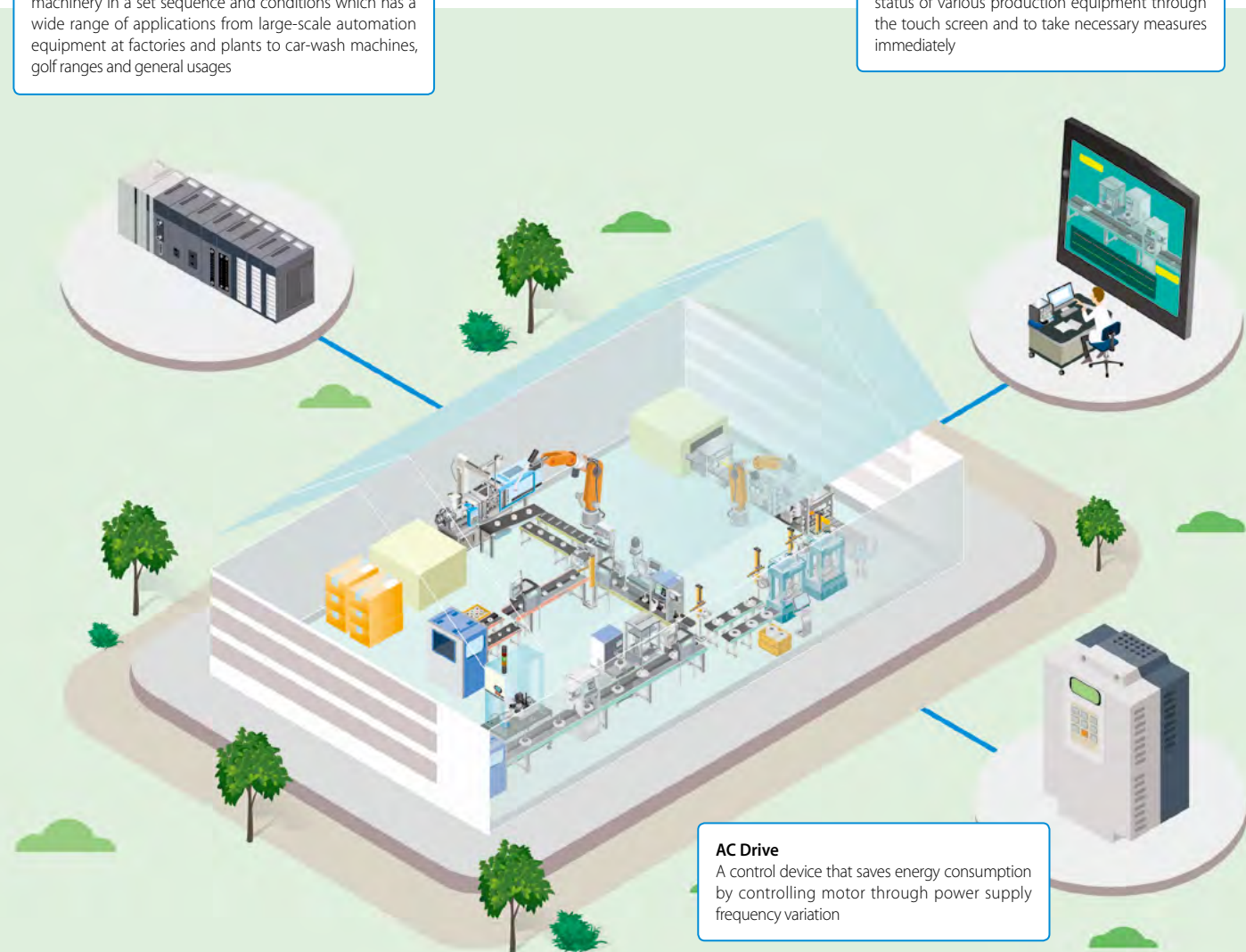
A universal controller that is programmed to operate machinery in a set sequence and conditions which has a wide range of applications from large-scale automation equipment at factories and plants to car-wash machines, golf ranges and general usages

#### HMI (Human Machine Interface)

A device that allows users to easily check the status of various production equipment through the touch screen and to take necessary measures immediately

#### AC Drive

A control device that saves energy consumption by controlling motor through power supply frequency variation



## Other Businesses

### Railway Infrastructure Business

The railway infrastructure business provides signaling system and power supply system that ensure safe movement of trains along the railroad. We are expanding this business to overseas markets.

#### Plans for 2015

- Build a foundation for expanding overseas business through promoting CFT activities

#### Major Performances in 2015

- Achieved record-high orders from overseas business (KRW 61.0 billion)

#### Plans for 2016

- Give an impetus to railway infrastructure business in strategic regions such as Bangladesh and Thailand

### DC-Relay Business

LSIS has evolved into the second largest player in the global DC-Relay market for green car backed by rapid growth of electric vehicle market and increasing demand for green car parts. Major customers include global leading auto makers and battery manufacturers. We plan to make a foray into the industrial DC-Relay market in the future.

#### Plans for 2015

- Leapfrog into a global player by actively developing new markets in the world

#### Major Performances in 2015

- Took second place in the world by targeting Chinese market

#### Plans for 2016

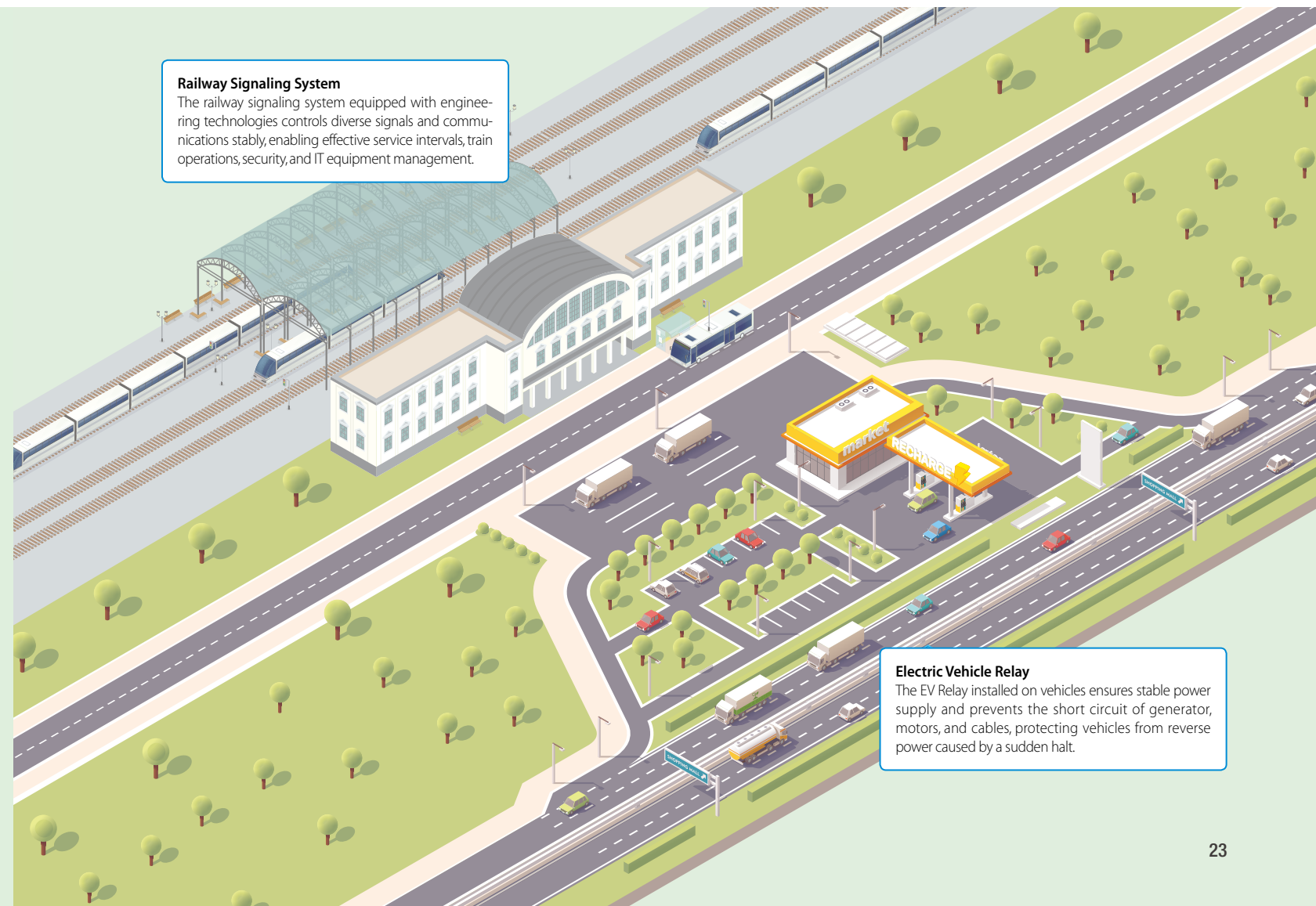
- Launch new products with high fuel-efficiency and industrial products for market diversification

#### Railway Signaling System

The railway signaling system equipped with engineering technologies controls diverse signals and communications stably, enabling effective service intervals, train operations, security, and IT equipment management.

#### Electric Vehicle Relay

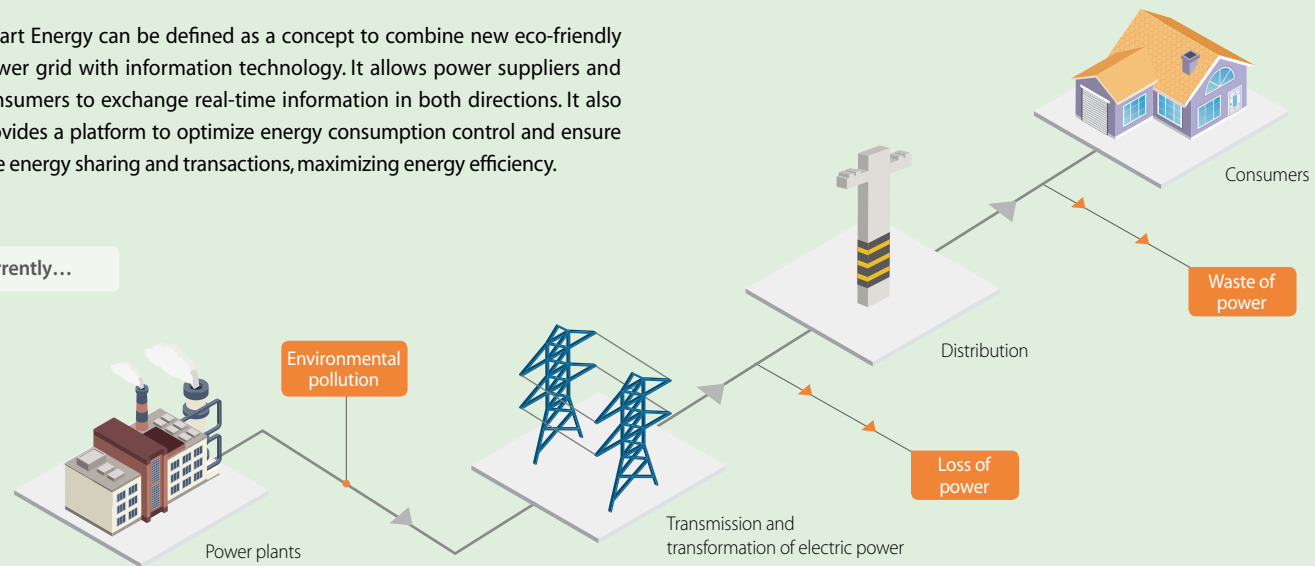
The EV Relay installed on vehicles ensures stable power supply and prevents the short circuit of generator, motors, and cables, protecting vehicles from reverse power caused by a sudden halt.



# Smart Energy

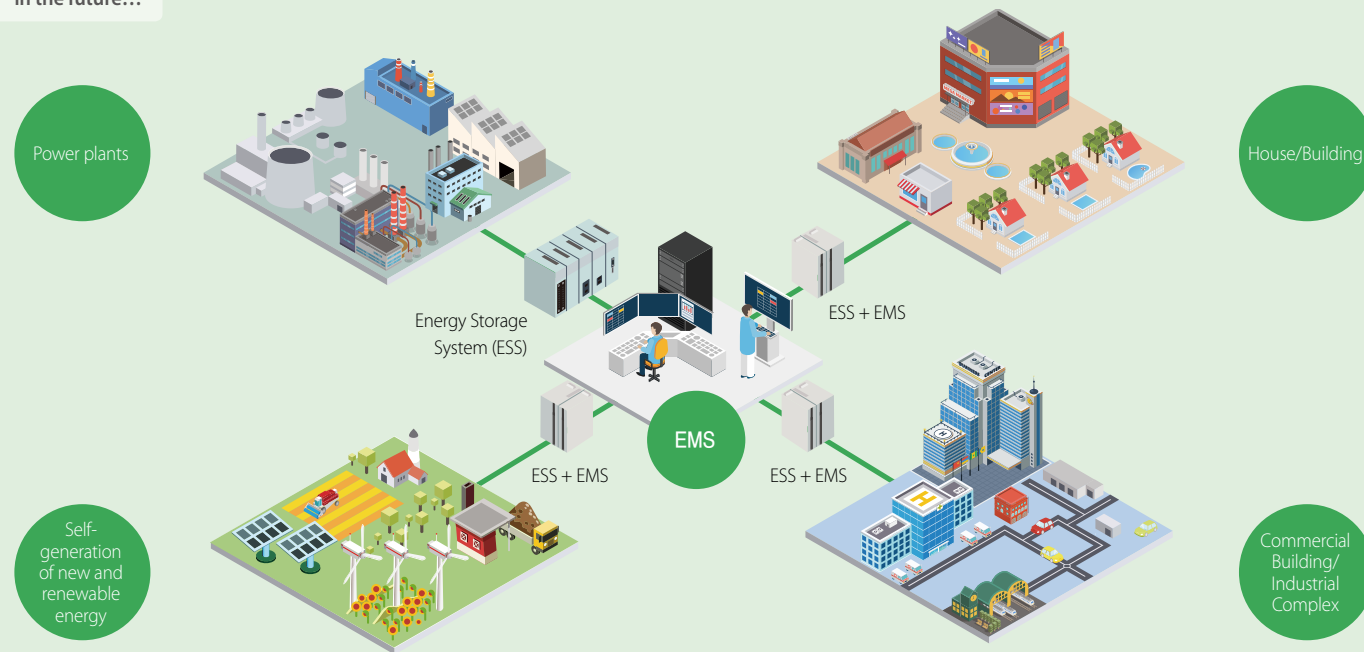
Smart Energy can be defined as a concept to combine new eco-friendly power grid with information technology. It allows power suppliers and consumers to exchange real-time information in both directions. It also provides a platform to optimize energy consumption control and ensure free energy sharing and transactions, maximizing energy efficiency.

## Currently...



- CO<sub>2</sub> emissions are increasing and global warming is continuing as power is mainly generated from thermal power plants.
- Long distance between power plants and consumers results in huge losses of power in the process of bulk transmission.
- The great imbalance between the lowest and highest power-consuming hours results in large investments in facilities and an increase in cost.

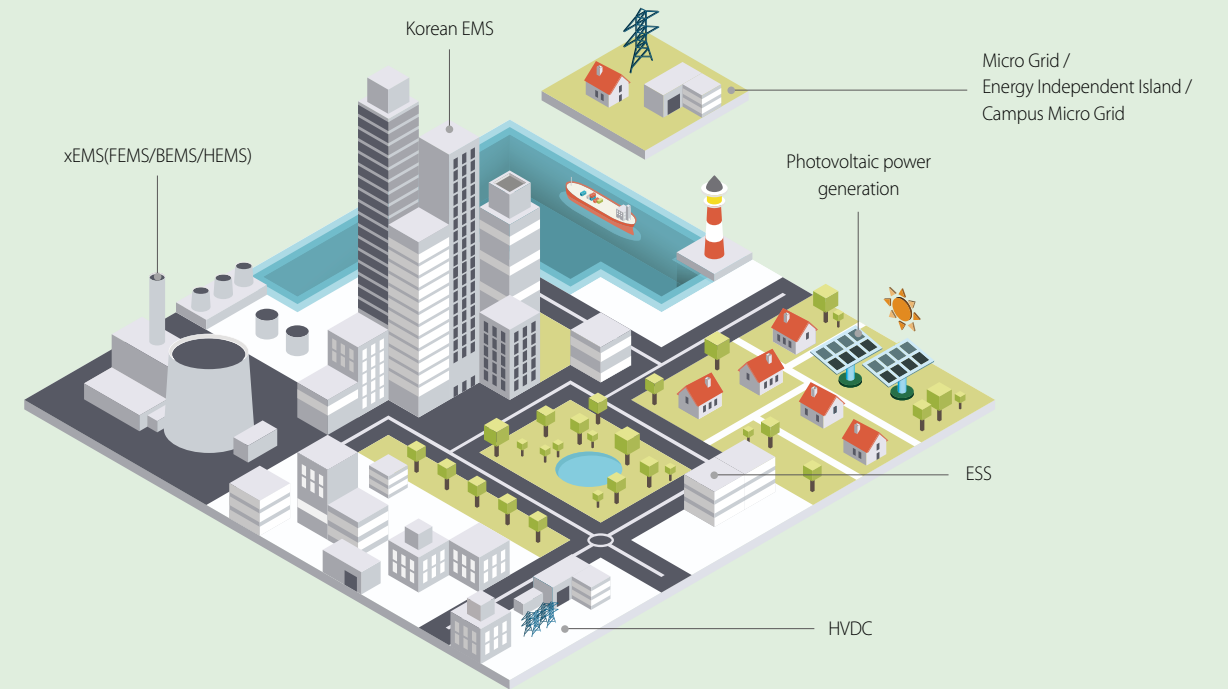
## In the future...



- CO<sub>2</sub> emissions can be decreased by adopting new and renewable energy generated from photovoltaic power/wind power plants.
- Power losses can be reduced by capitalizing on high-efficiency power transmission technologies such as HVDC and installing eco-friendly power plants nearby consumers.
- Consumers are able to directly generate electricity necessary for lives and resell surplus power.
- Energy storage system makes it possible to economically supply power.

Smart energy supplied by our diverse power solutions helps enhance energy efficiency and minimize environmental impacts, thereby contributing to the sustainable growth of our society.

## LSIS's Major Business



	Definition	Our Capabilities / Major Performances
<b>Korean EMS</b>	A system to effectively manage power generation and consumption at the lowest possible cost by optimally controlling power generation facilities and supplying power on the basis of collected and integrated power grid information and data	<ul style="list-style-type: none"> <li>• Localized the EMS with entirely homegrown technologies</li> <li>- Only five countries of the US, Germany, France, Japan, and Korea have homegrown EMS technologies.</li> <li>• Verified the credibility and stability of our system by establishing the EMS of the National Control Center</li> <li>- Naju (main), Seoul, Cheonan, Jeju (backup)</li> </ul>
<b>xEMS (FEMS/BEMS/HEMS)</b>	A system to optimize the energy consumption and maximize efficiency by collecting and analyzing energy consumption information on houses, buildings, or plants in real time	<ul style="list-style-type: none"> <li>• Applied the FEMS to LSIS Cheongju Plant (2015)</li> <li>• Applied the BEMS to LSIS Anyang R&amp;D Campus (2015)</li> <li>- Obtained Korea's first BEMS installation certificate (2016)</li> </ul>
<b>Microgrid / Energy Independent Island / Campus Microgrid</b>	New electricity system to independently generate, store, and supply power in small scale area with distributed generation. On-grid model is suitable for large and urban power supply while off-grid model is widely used for smaller and isolated area where it is difficult to connect with power system.	<ul style="list-style-type: none"> <li>• We conducted a national project to supply the EMS to on-grid and micro off-grid pilot plants and are undertaking various tests.</li> </ul>
<b>Photovoltaic power generation</b>	A system to generate power by converting sunlight into electrical energy. On-grid system converts DC power generated by photovoltaic module into AC power through photovoltaic PCU while off-grid system is usually installed in remote mountainous area or on an island where the utility power grid is difficult to reach.	<ul style="list-style-type: none"> <li>• Provided a total solution for photovoltaic power generation including modules, solar power PCU, monitoring, engineering, EPC, and O&amp;M</li> <li>• Built 15MW photovoltaic power plant in Bulgaria (2012)</li> <li>• Built 40MW Mega Photovoltaic Park in the Mito New Town with the largest photovoltaic power generation system in Japan (2015)</li> <li>• Won an order for the construction of 28MW photovoltaic power plant and ESS in Hokkaido, Japan (2016)</li> </ul>
<b>ESS</b>	A device that stores electricity at one time and supplies the reserved power whenever the power is low or the user wants, which ensures efficient energy consumption	<ul style="list-style-type: none"> <li>• Secured power system operation capability by carrying out various ESS test-bed projects and national projects</li> <li>• Won the project to build 16MW/6.5MWh class ESS for frequency regulation from KEPCO (2015)</li> <li>• PCS for 1MW ESS obtained the UL certification of the US (2016)</li> </ul>
<b>HVDC</b>	HVDC transmits DC converted from AC to the necessary point, where DC is converted into AC again and supplied to consumers.	<ul style="list-style-type: none"> <li>• Secured 250kV DC technology by building a HVDC pilot plant in Jeju (2014)</li> <li>• Won a contract to supply 500kV HVDC converter station to the North Dangjin-Godeok project (2014)</li> <li>• Supplied ±100MVAr SVC system to LS-Nikko Onsan Plant (2015)</li> </ul>



# Smart Factory

Smart Factory Solution optimizes production management by organically integrating all elements in a factory with a wide variety of information based on IoT technology and CPS.

## Major Customers' Visit



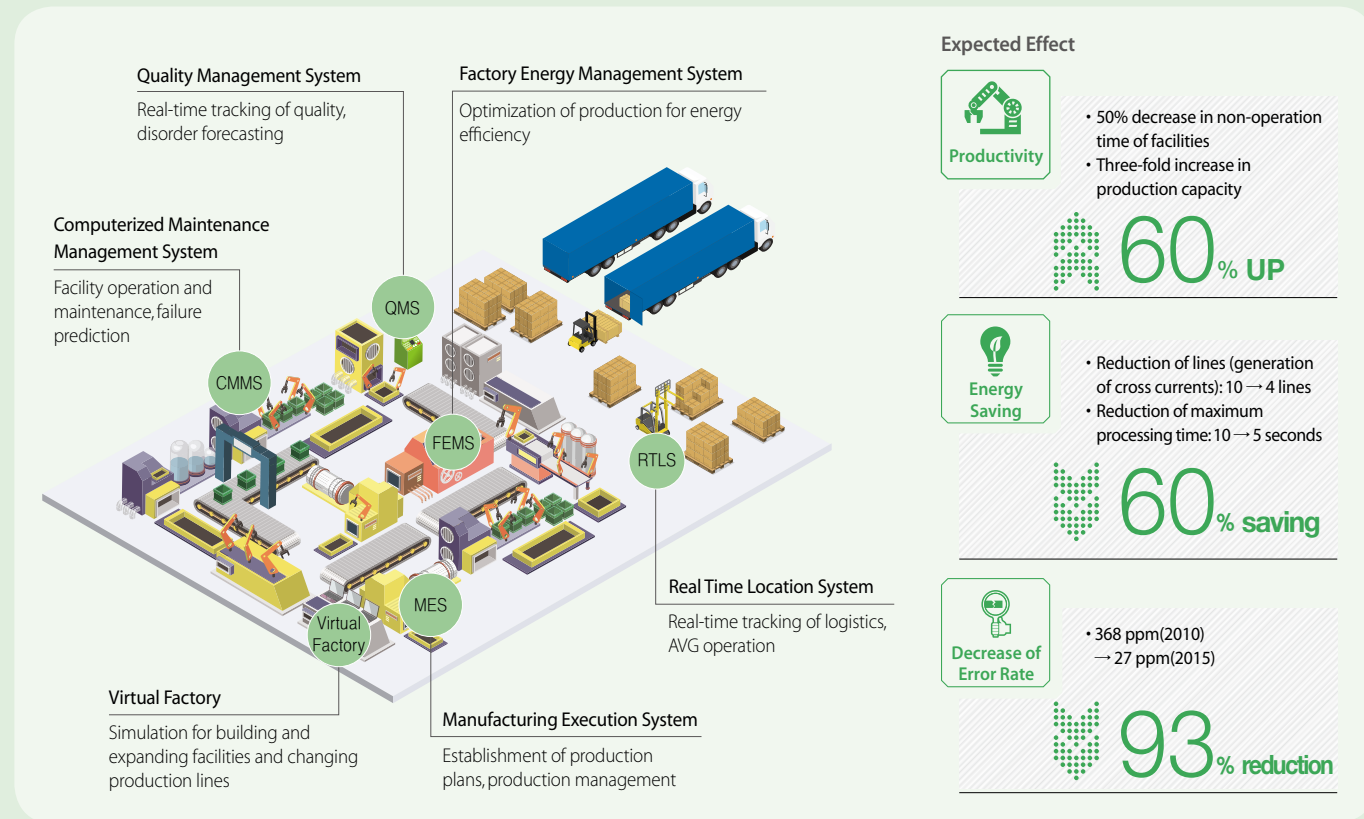
Dec. 7, 2015\_ Prime Minister Hwang Kyo-ahn



Nov. 24, 2015\_ Senior Officials of Electricity Board from 8 Southeast Asian Countries

## Introduction of Smart Factory

LSIS had been setting up Smart Factory in Cheongju Plant for about 4 years from 2010 to 2014. This project allowed the Company to realize multi-product small production as well as multi product mass production by integrating ICT with automation technology. LSIS was recognized as a leader in Smart Factory in December 2015 when Prime Minister made a site tour of our facilities.



## Major Worksites



Operation of unmanned vehicles



Automatic packaging robot



Real-time monitoring of production facilities

## Smart Factory Business by LSIS

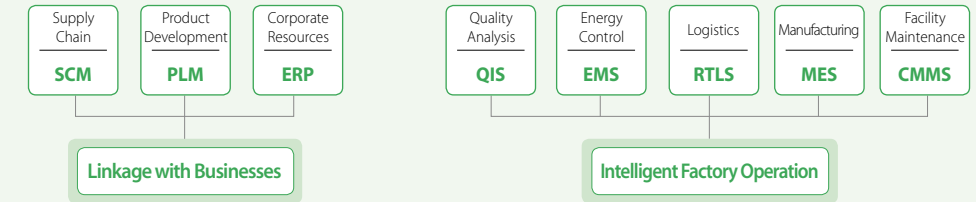
LSIS implements Smart Factory business with its proven know-how and leading technologies in automation. If all plants across the nation catch up with the level of optimization of our plants in response to the government-led 'Manufacturing Innovation 3.0', the productivity can be further elevated and efficient energy consumption can also be realized. Furthermore, this business will be continued to shared growth with suppliers by facilitating collaboration with competent small companies with related solutions.

## Smart Factory Business Model

### IoS Linkage with Businesses & Intelligent Factory Operation

#### IoS (Internet of Service)

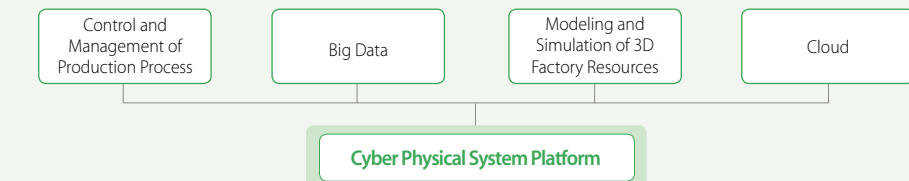
IoS system provides factory operators, suppliers, and customers with diverse IT services after analyzing information collected throughout planning, design, production, distribution, and selling of products in real time.



### CPS Information Integration & Virtualization

#### CPS (Cyber Physical System)

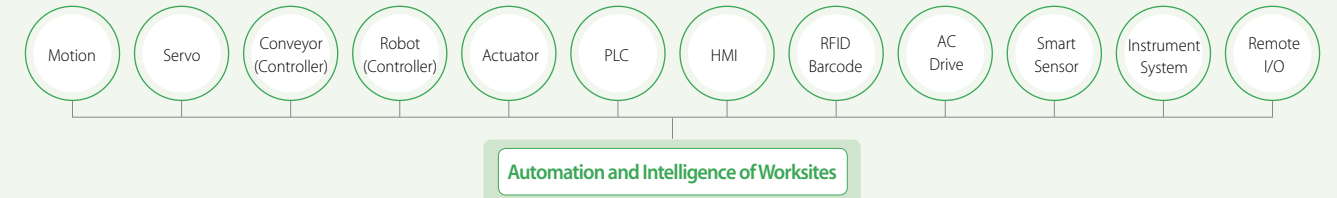
CPS is a platform that connects real and virtual spaces. After automation equipment gathers data generated from field devices, CPS monitors the data and upgrade the results up to the IoS level, thereby offering diverse information necessary for factory operation in a lump.



### IoT Establishment of Flexible Production System

#### IoT (Internet of Things)

IoT system consists of field devices such as robot, sensor, and motor and automation equipment including PLC, HMI, and Servo. It helps acquire information on transfer of half-goods in process efficiently.



## Win-win Growth with SMEs

LSIS is proactive in signing MOUs with capable SMEs (Small & Medium-sized Enterprises) in order to promote the establishment of Smart Factory, paving the way for win-win growth with them.

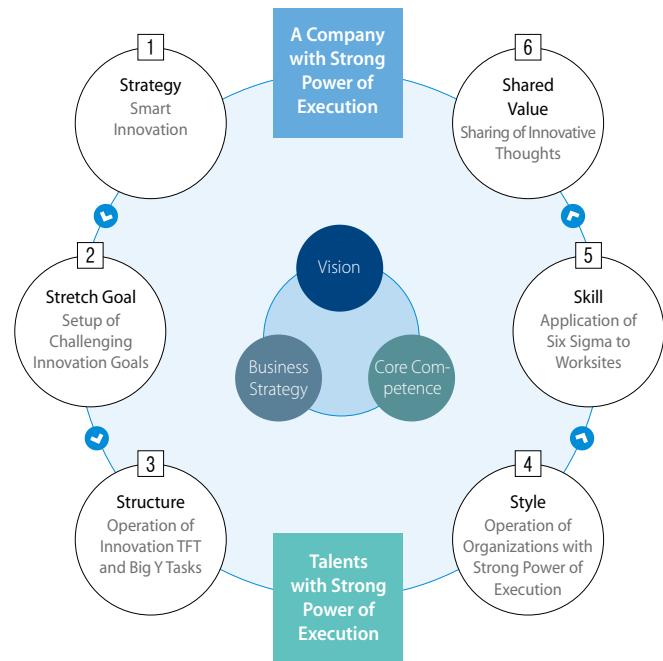


# Management Innovation

## Management Innovation Activities

As the global economy has entered the low-growth era, LSIS carries out management innovation activities aimed at becoming a "company with strong power of execution." Innovation from the perspective of the existing 3P (People, Process, Product) is implemented as voluntary activities led by head of divisions while, at company-wide level, members concentrate their resources on transforming attitude, mindsets, and behavior in order to rise into the No. 1 company in ICT, DC, convergence, and smart energy.

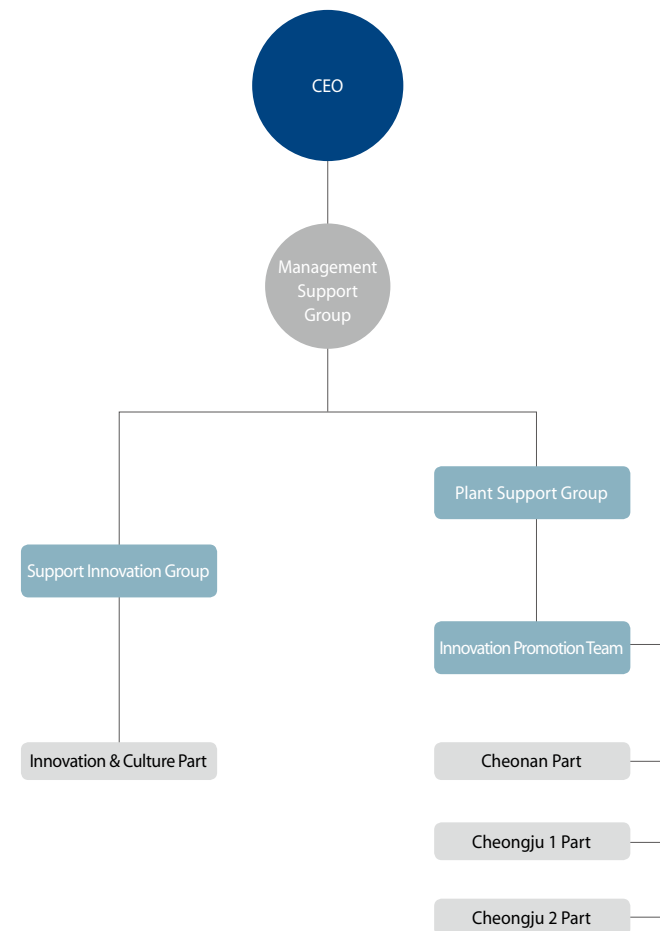
Management Innovation Scheme



## Organization for Implementation

Our company-wide management innovation activities are spearheaded by the Support Innovation Group of Management Support HQ under the CEO. The implementation at each plant is managed by the Innovation Promotion Team under the Plant Support Group, which helps conduct innovation management systematically and consistently.

Management Innovation Organization



## Major Activities and Performances

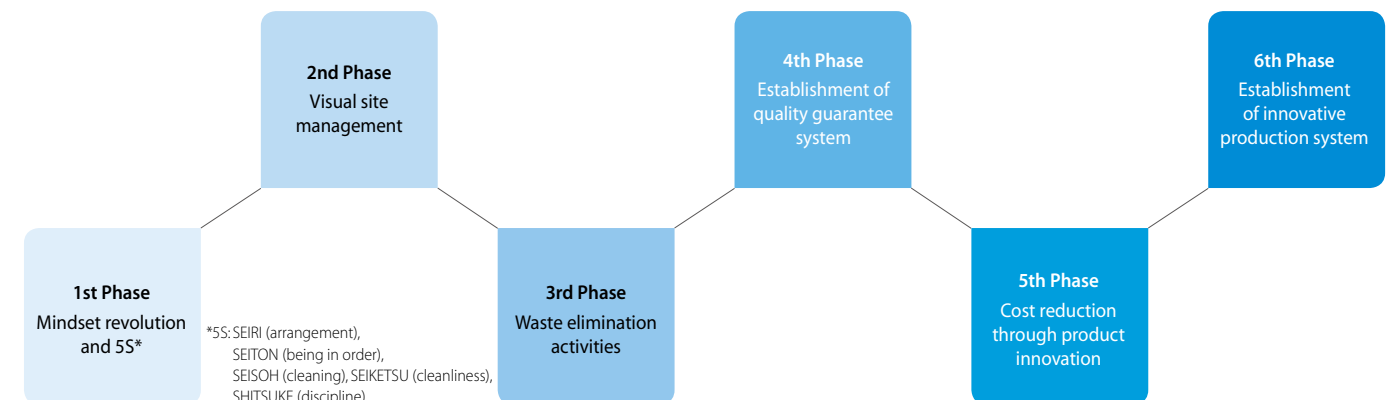
### Big Y Activities

We select and undertake core tasks, named Big Y, among annual tasks linked with business strategy. In 2016, the most significant tasks among implementation items of each business group were nominated as Big Y that requires the power of execution. Those are spearheaded by division and department heads on their own responsibility. For better engagement in Big Y, a task force team is operating in Quick Innovation & Creation (QIC) Room. In addition, we systematically manage the tasks through the innovation system of the Group portal site WeLS. The Innovation Specialist Committee instructs and evaluates task operations regularly, improving the quality of outcomes.

### Site-centric Efficiency Upgrade Activities

LSIS has commissioned external experts to improve site efficiency with the aim of ensuring quality and cost competitiveness. Site-centric efficiency upgrade activities are implemented in phases focused on mindset revolution, visual site management, efficiency per unit, and overall efficiency in accordance with a fixed process map. In 2015, we consulted both our domestic plants and overseas subsidiaries 71 times about site efficiency upgrade. These activities allowed our overseas production subsidiaries to enhance productivity and quality and maximize synergy through sharing best practices with domestic plants. Domestic plants, which completed the six phases of the process map, focus on sustainably increasing site efficiency by operating independent meetings from 2015, while overseas subsidiaries which are on the 4th phase plan to escalate their efficiency levels up to domestic plants through continuously getting consulting. From 2016, for the internalization of site workers' voluntary innovation activities, we will promote hierarchical process audits that site workers diagnose and improve independently by combining five major site management audit activities supervised by the Innovation Team and auto quality system.

Site-centric Efficiency Upgrade Implementation Process



### Suggestion Activities

The Suggestion Activities was prepared to share ideas and knowledge among employees and eliminate waste and inefficiencies in their routine works. Every employee is able to suggest improvement ideas through a company-wide integrated system and outstanding suggestions are rewarded.

Classification	2013	2014	2015
No. of suggestions (ea)	9,999	9,554	9,893
Participation rate (%)	64	80	80
Performances (KRW in millions)	604	372	494
Rewards (KRW in millions)	56	57	52

### Innovative Performance Sharing Meeting

The Innovative Performance Sharing Meeting is held to commend contributions to innovation activities and to share the contents and results. The meeting to share innovation activities of each business group and division is led by their heads. Innovation activities in regard to excellent tasks selected through the evaluation of the Innovation Specialist Committee among Big Y tasks are shared through company-wide Innovative Performance Sharing Meeting hosted by the CEO at the end of each year.

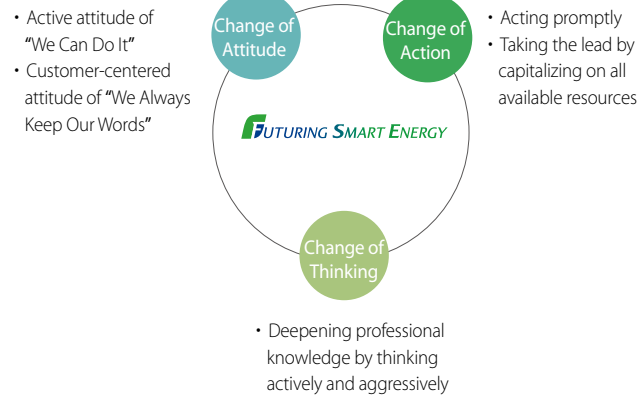
Classification	2013	2014	2015
No. of excellent tasks (ea)	5	4	4
Rewards (KRW in millions)	11	11	11

## Activities to Enhance Power of Execution

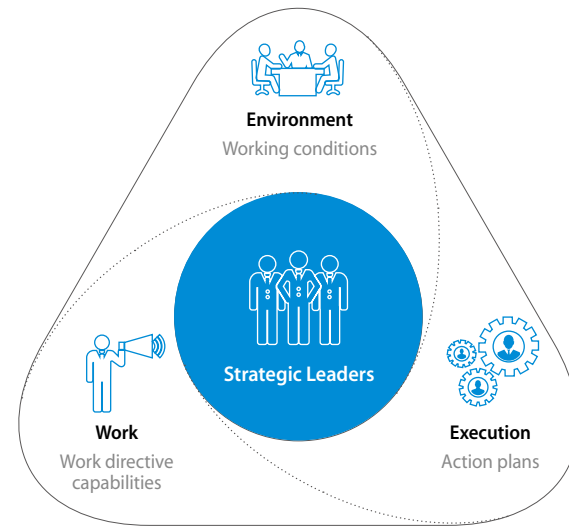
To achieve the enhancement of power of execution, the requirements are: to proactively strive to acquire professional knowledge and to change mindset; to develop customer-oriented attitude to “keep promise all the time”; and to change behavior and mobilize all of the available resources and execute immediately.

LSIS has declared 2016 as the year to innovate power of execution. Recognizing that leaders and heads of organization have to strengthen their strategic leadership to innovate power of execution, LSIS plans to create an environment to facilitate communication between employees, thereby raising the power of execution through innovation of leaders, system, and communication.

### Activities to Enhance the Power of Executions



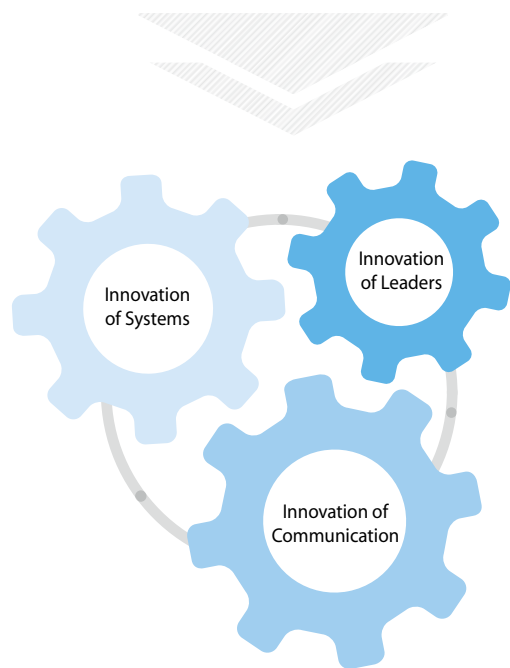
Changes in employee behavior and method of work can be made by seeking changes in an active manner to become strategic leaders. A leader carries out early bird activities (habituation of initiative) in order to secure job expertise while helping promote communication between employees by giving job orders with clear backgrounds and objectives.



To establish the power of execution into the corporate culture and boost employees’ passion, the intensive working hours in the morning has been expanded to afternoon. The immersive working hours in the morning has been expanded to afternoon.

By streamlining meeting and reporting process, we build collaborative basis between business and departments while seeking to promote exchanges between teams. Also, we encourage a variety of attempts to improve job process for the purpose of strengthening employees’ work motivation.

We strive to raise the power of execution through innovation of leader, system, and communication, thereby creating the virtuous circle to bring about outcomes for the organization.



## R&D Innovation

### R&D Activities

#### Direction of R&D

The R&D Group of LSIS strives to enhance competitiveness of main businesses, secure growth engines in the green and next-generation sectors in advance, and improve R&D productivity, contributing to solidifying the presence of LSIS as a total solution provider in the power and automation markets. In particular, we are working to secure core competencies to become the first mover of the smart grid market and focusing R&D capacity on building a foundation for next generation businesses such as HVDC. We operate R&D centers in 3 domestic locations (Anyang: advanced and fundamental technologies and automation solutions / Cheonan: automation solutions / Cheongju: power solutions). Former Shanghai R&D Center was relocated to Wuxi Plant for closer support to production sites and synergy creation with design and engineering functions. We are also operating the first independent power testing and technology institute among private companies to elevate our R&D competitiveness.

#### R&D Investment

In order to maintain our competitive advantage and prepare for the future, LSIS has been expanding R&D investment every year. We invest around 6% of sales in R&D activities and focus on developing next-generation products, technologies for new businesses, and core future technologies.

Classification	2013	2014	2015
Total R&D expenditure (KRW in millions)	102,276	109,755	112,449
R&D expenditure to sales (%)	5.8	6.0	6.4

#### Secure R&D Capabilities

##### Researcher Compensation System

LSIS has in place “6P” program to compensate researchers with outstanding R&D activities in 6 categories each year to boost researcher’s motivation and promote performance-oriented corporate culture. We evaluate R&D activities based on an objective set of standards including Paper, Patent, Passion, Partnership & Presentation, Product, and Project.

##### Establish R&D Infrastructure

The R&D Campus, opened in 2015, comes with industry-leading infrastructure designed to enhance researchers’ capabilities. Featuring changeable seat reservation system, wireless-based network, in-house telephone, creative zone, and cafes, the R&D Campus promises to maximize researchers’ creativity.

##### Open Innovation

LSIS leads open innovation through active R&D collaborations with domestic and foreign research centers. We operate a joint research center with the Korea Electro-technology Research Institute to secure world-

class technologies and strengthen strategic alliance with KEPCO Research Institute to develop core technologies for new businesses and preoccupy the markets. Exchange and cooperation with leading overseas institutes in India and Israel enable us to obtain technologies for R&D activities. In addition, we monitor global technology and market trends in energy, electrical equipment, and materials through the SVO (Silicon Valley Office) in North America and promote exchanges with local universities and venture companies as well.

#### Key R&D Performances in 2015

##### Fully Equipped with Total Transmission Solution Lineup by Developing and Starting Commercial Operation of SVC System

On August 22, 2015, LSIS succeeded in developing SVC for the first time in the country by utilizing the thyristor valve technology, the key facilities to HVDC which minimizes power transmission loss. SVC, the core component of FACTS which ensures stable power supply despite sudden changes in the amount of power, is supplied to electric power companies or steel companies. The commercialization of SVC is meaningful in that we substituted imported SVCs dominated by foreign manufacturers while gaining competitiveness in the fast-growing FACTS markets.

##### Establish Company-wide Technological Infrastructure to Enhance Business Competitiveness

In 2015, our capability with regard to five common platform technologies (communication, S/W, analysis, safety, and EMC) was elevated through establishing the control tower. We also conducted company-wide technological capability enhancement activities such as selecting issue technologies and building R&D basis for materials more systematically. Besides, we set up C4 (CAD, CAE, CAM, CAT technology) development system to accelerate R&D and platform-based H/W and S/W platform-based design and development.

##### R&D for Early Adoption of New Growth Engines

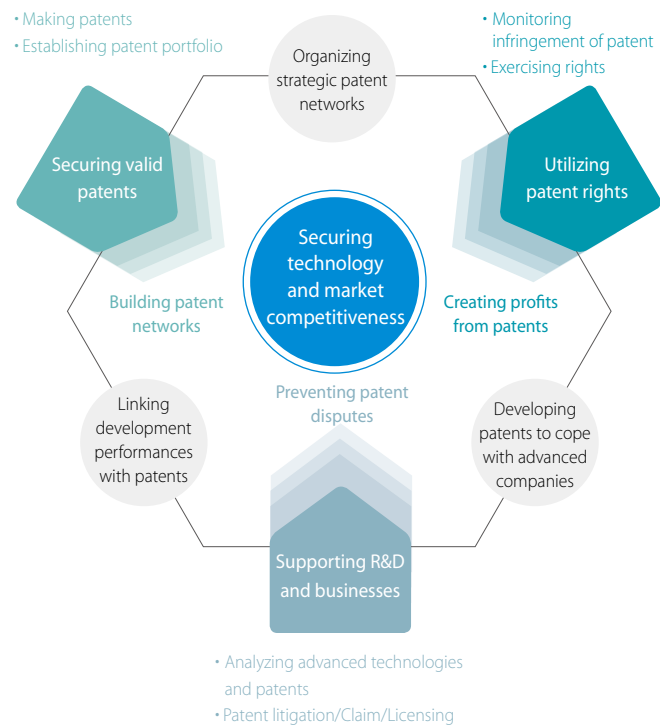
On July 17, 2015, LSIS undertook a pilot project of campus microgrid for the first time in Korea. As a small-scale power network capable of generating, storing, and consuming electricity power in a certain area, it is expected to allow us to analyze diverse energy consumption patterns of buildings and nurture next-generation energy industry platform to provide customized efficiency solution. Our large scale ESS is under commercial operation at Samsung SDI. We won the bid to supply frequency regulation ESS to KEPCO. We also allocate a great volume of resources in convergence solution identification and technology development of DC products for the purpose of creating new opportunities and taking the lead in heavy electric equipment in the ICT convergence era.



## R&D and Patents

### Strategic Management of Intellectual Property (IP)

LSIS creates visible and invisible profits from IPs by building a strong IP portfolio, preventing disputes through preceding patent analysis, and proactively utilizing the rights. We identify IPs of technologies which are equal or superior to competitors and have impacts on our businesses, secure patents in countries we export to, develop standard patents, and monitor infringements, ensuring the setup of strategic IP portfolio. In particular, our overseas IP portfolio is expanded in connection with global business strategies and organic and systematic IP analysis led by collaborations between R&D and IP units facilitates the setup of R&D strategy, development of differentiated technologies, and prevention of IP disputes. Moreover, we not only seek ways to exercise our IP rights by preemptively obtaining information on evaluation and infringement but transfer IPs to SMEs free of charge as part of win-win growth. Various education programs are offered to cultivate IP experts and LS-IP Forum, a council of LS affiliates' IP departments, is running to enhance the competitiveness in IP.



### IP Registration

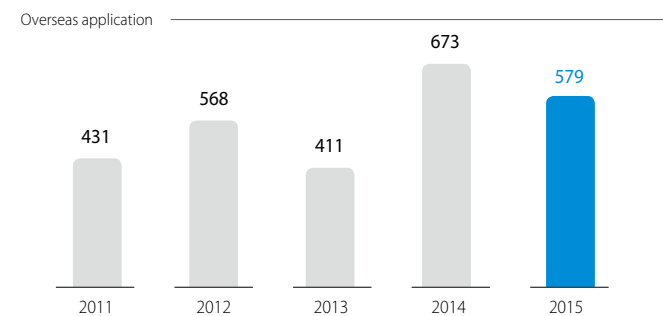
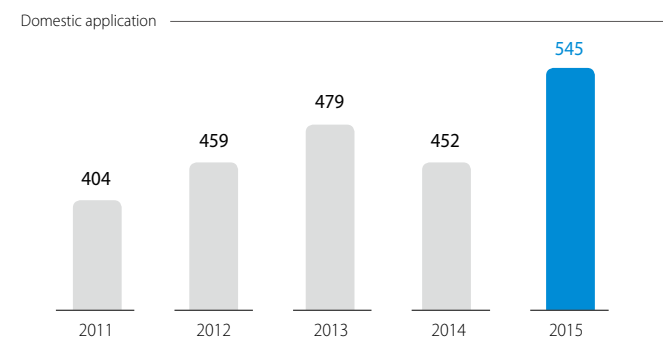
As our technologies and products are highly recognized in the global market, we are faced with more cases of IP disputes and product counterfeiting by latecomers. In response, we are focusing our capacities on strategic IP activities to protect our world-class products and technologies as well as new products that will act as our future growth engines. We also strive to secure IP rights for technologies ranging from basic to applied levels, raising competitiveness in both technologies and products. Our valuable IP portfolio played a central role in preventing IP dispute by signing a cross-license with a global competitor. As a result of these efforts, LSIS has been in the top 100 global innovators in regard to IP index released by Thomson Reuters for five consecutive years. As of January 2016, we hold 3,816 domestic and 3,731 overseas patents and design rights. Recently, our overseas patents have been increasing steadily backed by expanding activities to obtain R&D-related and foreign-market-oriented patents.

(Unit: items)

Classification	Registration	Application	Total
<b>Domestic</b>			
Patent	2,074	1,535	3,609
Design	207	-	207
<b>Total</b>	<b>2,281</b>	<b>1,535</b>	<b>3,816</b>
<b>Overseas</b>			
Patent	1,681	1,812	3,493
Design	229	9	238
<b>Total</b>	<b>1,910</b>	<b>1,821</b>	<b>3,731</b>

### Patent Application

(Unit: items)



### Named Thomson Reuters' Top 100 Global Innovators

#### Top 100 Global Innovators for Five Consecutive Years

In recognition of outstanding competence in IP management and innovation, LSIS has been ranked as top 100 global innovators by Thomson Reuters, a renowned international data provider, for five consecutive years. The Top 100 Global Innovators are selected based on an index comprised of patent registration success rate over the past 5 years, influence of inventions, global accessibility, and number of IP applications. LSIS displayed excellence in this index compared to global leading enterprises. We will continue to hold IP as a main indicator of technological competitiveness and innovation and expand our IP portfolio across all business groups.



### Interview with the CEO on LSIS Innovation

**Q. What does innovation mean for LSIS?**

**A. LSIS innovation is defined as any real reform activity.**

These days, global businesses and technology environments see their existing businesses and technologies being replaced at alarming speeds by new ones through the combination and convergence of diverse businesses and technologies. In the energy industry where LSIS engages, Internet of Things, big data, and innovation of manufacturing are emerging, ushering in a smart era of ICT combination and convergence and a direct-current era that can change the existing electric power paradigm. To lead the way in such an era, LSIS continues to pursue real reform activities from the 3P (product, process, and people) perspective. Our Innovation Department at HQ leads efforts to define challenging tasks and to resolve problems. Based on technological innovation strategies, we continue to invest 6% of our turnover in conducting R&D and securing intellectual properties. Notably, in 2015, we proclaimed a value-based management philosophy to ensure our corporate perpetuation by steering all employees toward a single direction. We newly established our mission (Futuring Smart Energy), vision (G365), and core values (collaboration, execution, creativity, and integrity), thereby laying the groundwork for becoming a global corporation.

**Q. What is the secret to corporate culture innovation of LSIS?**

**A. The energy industry field where LSIS engages is rapidly changing nowadays but is conventionally conservative compared to other industries. To establish a culture that is somewhat in contrast to such a conservative business environment, we conduct diverse innovative activities and campaigns, evaluate our innovative activities according to indices, and award incentives to the best innovative department.** Our major innovative activities include: Value sharing by which each and every employee, based on an understanding of their job, has resolute determination to fulfill challenging goals and establishes and internalizes key values toward that end; and Big-Y activities by which we endeavor to establish an innovative organizational culture and to share cases of innovative activities. Our top executives carry out field management activities to promote and encourage innovative activities. This drives us to push ahead with our work with all our hearts and minds, and even souls, and to create a dynamic organization into which we put our "souls."

**Q. What are the most important innovative properties?**

**A. What I consider to be the most innovative assets of LSIS are our organizational culture of harmony of conservatism and innovation that the company has established and continued to maintain and our employees who clearly understand our culture and who are equipped with fast action and global business capabilities.** The energy industry is rapidly changing nowadays, but the essence of the business that values reliability and stability will not be changed. Thus, the strongest innovative assets for the energy industry are believed to be the environment, i.e., organizational culture that carries on the essence of business yet pursues innovation, and human resources as the starting point of a virtuous structure for the development of products that can surpass our customers' expectations—amid such organizational culture—through invention based on creative thinking and through the embodiment of invention.

- An excerpt from the interview with the CEO in commemoration of including Thomson Reuters' Top 100 Global Innovators



# Core Issues of Sustainability Management

LSIS commits to reducing environmental impacts by product use and raising its employees' and suppliers' awareness of safety, hence creating new shared values within the supply chain. Also, we engage with local communities in continued communication by carrying out social contribution activities jointly with our suppliers. As we make progress on the long pilgrimage toward sustainability management, we abide by the global standards on corporate social responsibility while fulfilling our social duties as a responsible corporate citizen, both environmentally and socially.



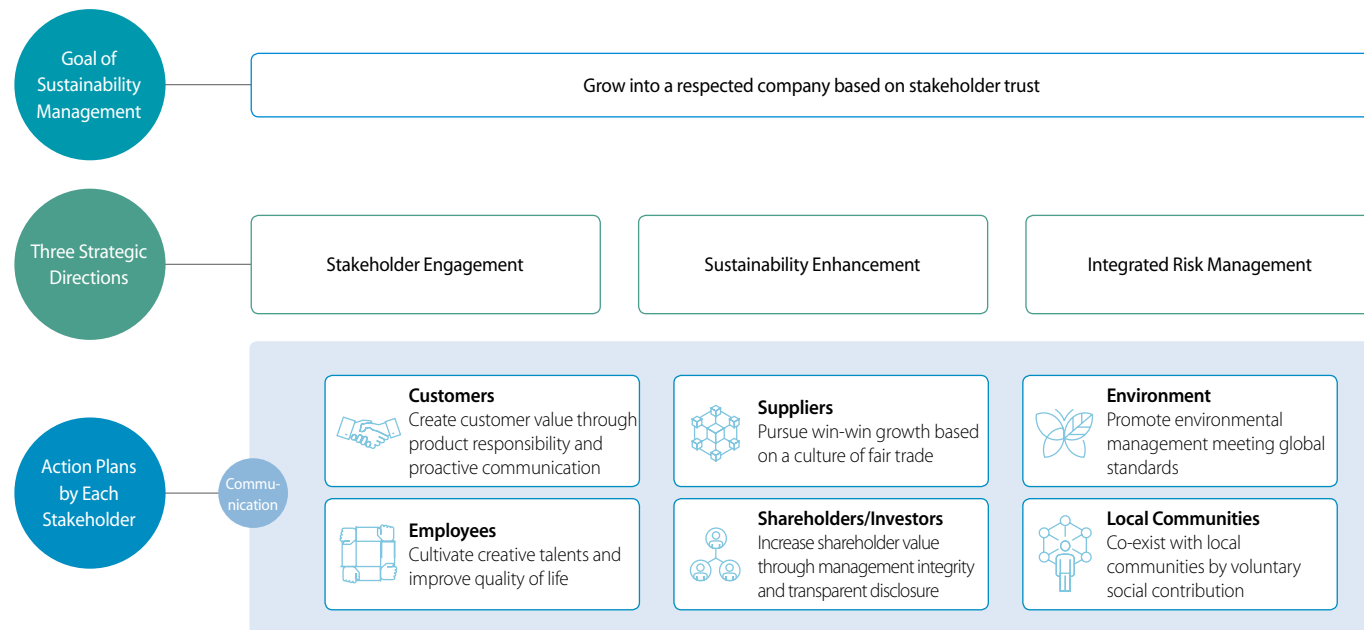
Integrated Sustainability Management	36
Ethical Management	38
Compliance	41
Risk Management	42
Stakeholder Engagement	44
Materiality Test	46
Customers	48
Employees	54
Suppliers	60
Environment and Safety	68
Local Communities	78

# Integrated Sustainability Management

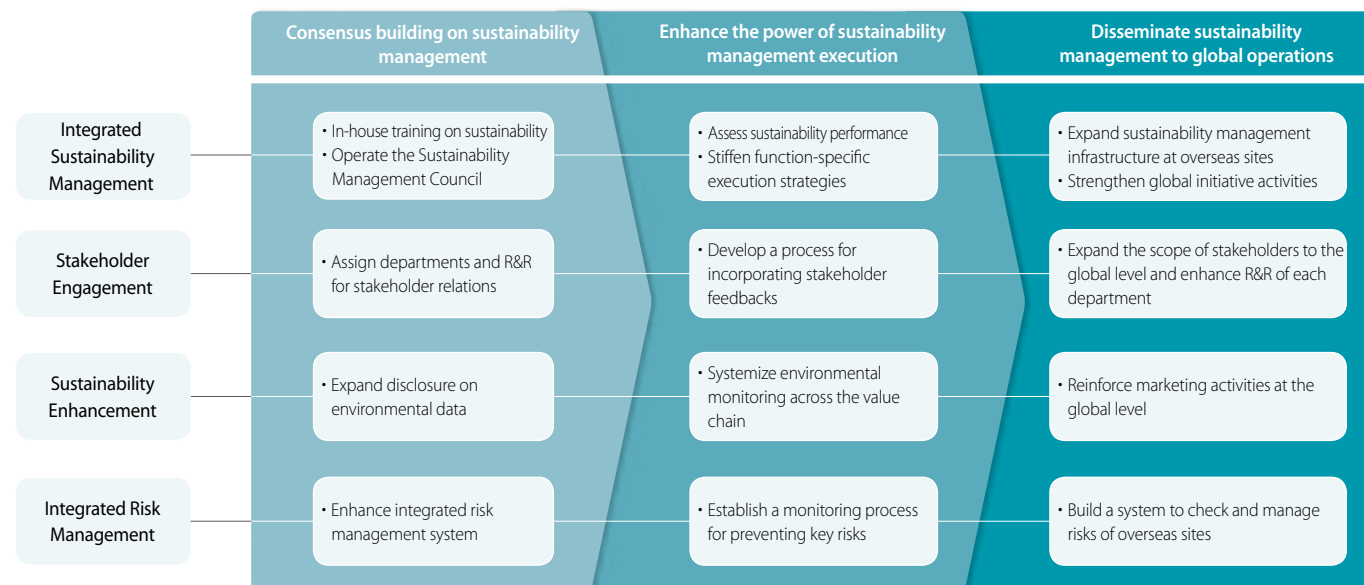
## Fundamental Directions of Sustainability Management

The primary goal of our sustainability management is to grow into a respected company based on stakeholder trust. To achieve this, we set up three strategic directions of "stakeholder engagement," "sustainability enhancement," and "integrated risk management." In addition, the Company is committed

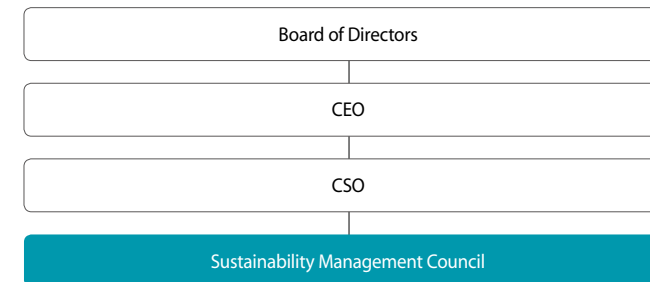
to listening to the voices of stakeholders through active communication and reflecting them to management activities. We will grow into a trusted corporate citizen and a global leader in pursuit of sustainable growth.



### Roadmap for Sustainability Management



## Sustainability Management Implementation System



LSIS operates the sustainability management system where sustainability issues and stakeholder voices are swiftly delivered to the Board of Directors for efficient decision-makings. The Sustainability Management Council, supervised by the CSO and comprised of leaders and staff members of core teams in each category, engages in gathering stakeholder opinions, developing strategic plans, and conducting detailed practices. The agenda formed by the council is passed on to the Management Committee, comprised of executives, to discuss performance and budgeting. The results are then reported to the supreme decision-making body, Board of Directors, so that they may ascertain and manage LSIS sustainability performances.

### Sustainability Management Council

The Sustainability Management Council, as a company-wide consultative group which is headed by the CSO, presents agendas related to the overall sustainability issues LSIS faces, shares them throughout the Company, and determines action plans. It also helps improve collaborations among departments and share performances.

## Activities to Build Consensus on Sustainability Management

To enhance the understanding of our sustainability management strategies and facilitate efficient job implementation, the Company has provided heads and staff of key departments with education programs tailored to their different needs. Major topics included "purpose and expected benefits of sustainability management," "enhancement of job capabilities through case study," and "international standards on sustainability management." We also operate permanent courses on environment, customer (quality), and risks on a yearly basis and plan to offer the education not just to our employees but also suppliers, customers, and all other stakeholders in the coming years.



1. Training for councils  
2. Training for divisions by the CSO

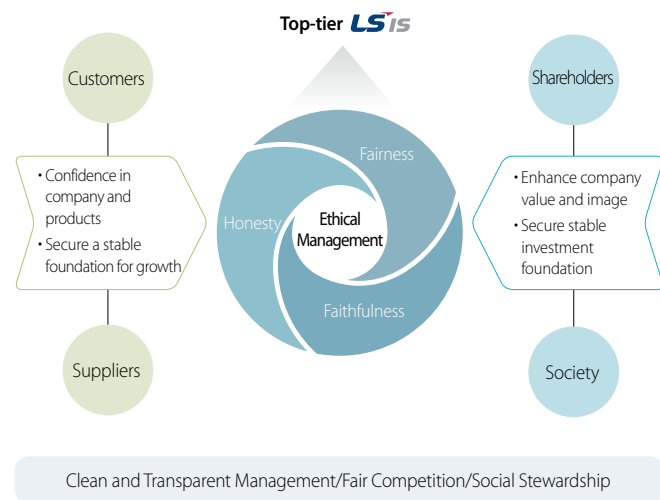


# Ethical Management

## Goal and Strategy for Ethical Management

We aim to grow into a leading global company that fulfills our responsibility for customers, suppliers, shareholders, and the society by conducting transparent management on the basis of the principles of fairness, honesty, and faithfulness.

### Ethical Management Goal

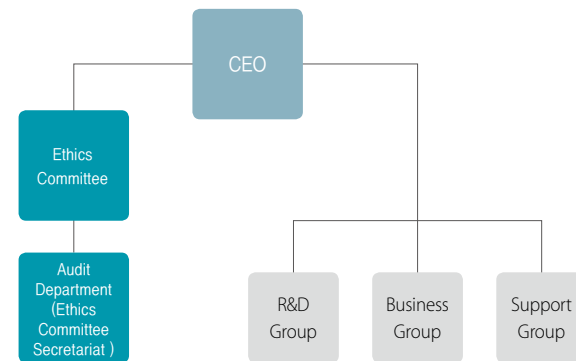


### Ethical Management Strategy

Strategy	Strategic Action Items
Establish and operate ethical management infrastructure	<ul style="list-style-type: none"> <li>Code of Ethics and Conduct</li> <li>Operation program and policies                             <ul style="list-style-type: none"> <li>Informant protection</li> <li>Operation of hotlines</li> <li>Self-reporting system</li> <li>Response procedure to misconducts</li> </ul> </li> <li>Operation system                             <ul style="list-style-type: none"> <li>Cyber reporting (Shinmungo)</li> <li>Audit results follow-up system</li> </ul> </li> </ul>
Stiffen the power of ethical management execution	<ul style="list-style-type: none"> <li>Pledge to practice ethical management</li> <li>Survey on ethical management</li> <li>Delivery of official letters for cooperation to suppliers and distributors</li> <li>Education on ethical management practice for employees</li> <li>Education on ethical management for suppliers</li> </ul>

## Ethical Management System

The Ethics Committee comprised of the HR Committee members is the supreme decision-making body for our ethical management. We are operating the Ethics Committee Secretariat to undertake regular ethical management practices and the Audit Department serves as the secretariat.



### Role of the Ethics Committee Secretariat

- Develop, train, and disseminate systems necessary for complying with the code of ethics
- Establish and operate regulations and processes to report unethical cases or potential risks
- Make authoritative interpretation in ethical practices and submit critical issues to the Ethics Committee

## Establishment and Operation of Ethical Management Infrastructure

### Code of Ethics and Conduct

LSIS has developed the Code of Ethics and Conduct, as a standard for employees' ethical behavior and decision-making. It is applied to all affiliates and subsidiaries, while overseas local subsidiaries comply with this in consideration of local regulations at the same time. We take regular inspections on the implementation of the Code of Ethics and Conduct and strive to raise employees' awareness of the standard.

Code of Ethics	Summary
<b>Chapter 1.</b> Responsibilities and Duties toward Customers	Faithful information disclosure/response to customers/protection of customer interest
<b>Chapter 2.</b> Fair Competition	Fair competition/respect for related laws and business customs
<b>Chapter 3.</b> Fair Transactions	Fair selection of suppliers/fair trade and evaluation/clean trade culture/support for suppliers
<b>Chapter 4.</b> Basic Ethics of Officers and Employees	Dignity maintenance as an employee/honest and fair reporting/protection of company assets/avoidance of interest conflict with the Company/prevention of sexual harassment
<b>Chapter 5.</b> Responsibility toward Officers and Employees	Cultivation of talents/fair treatment/health and safety/respect for individual thinking
<b>Chapter 6.</b> Responsibility toward the Nation and Society	Rational business operations/protection of shareholder benefits and rights/environmental protection/contribution to national and social development

## Operation System and Policies

### Informant Protection Policy

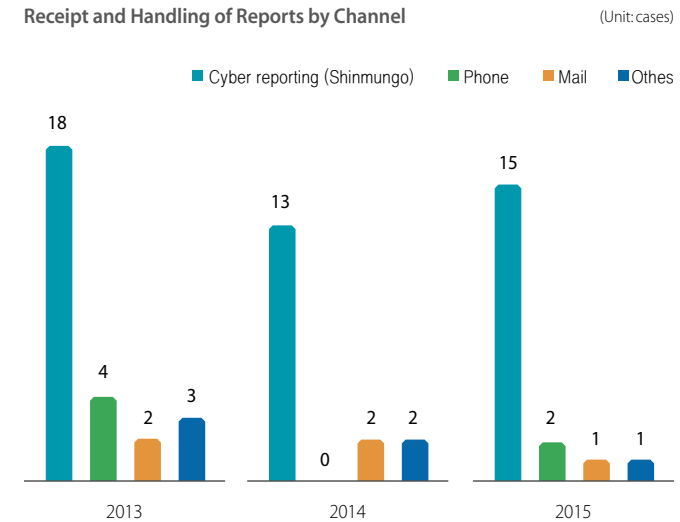
LSIS does not leak any reporting contents and privacy of informants without prior consent. If the informant receives any disadvantage due to a miscarriage of this policy, the Company takes all responsibilities to repair or compensate for damages.

- Reporting contents and privacy of informants are treated as confidential and the reporting system is operated under a safe security system.
- Self-reporting on corruption or unlawful acts in which he or she is involved is taken into consideration for rational resolution of the issue.
- Privacy of the informants and stakeholders is strictly protected and reporting contents are fairly investigated for rational resolution.
- If informants experience disadvantages or impacts from information leaks, reparations or corresponding rewards are taken.

### Operation of Ethical Management Hotlines

LSIS operates various year-round communication channels to receive reports on employee corruption and unfair business practices from suppliers, employees, customers, and other stakeholders. Reports can be submitted via phone, mail, e-mail or the cyber reporting system so that we may eradicate unethical behaviors. Reports related to product quality, services, or product inquiries are handled by a separate Customer Service Center.

### Receipt and Handling of Reports by Channel



### Receipt and Handling of Reports (by type)

(Unit: cases)

Type	2013	2014	2015
Unfair trade	7	3	7
Suggestion on business improvement	1	2	-
Corruption and unlawful act	3	2	1
Unfair operation	4	2	-
Claim	5	3	6
Others	7	5	5
Total	27	17	19

\* Reporting type is classified by the opinions of informants, thereby there can be different from investigation results.

### Self-reporting Program

To eliminate unethical behaviors between employees or stakeholders (customers, suppliers, shareholders, etc.) and build a transparent and sound corporate culture, LSIS is running a system for employees to voluntarily report their unethical practices such as bribery and entertainment. In addition, we hold special sessions to promote self-reporting by guaranteeing anonymity and providing immunity for past misconducts. Such sessions were held in 2007, 2010 and 2014.

### Response Procedure to Unethical Behaviors

Based on the Code of Ethics and Conduct, LSIS carries out thorough investigations on unethical behaviors and takes disciplinary measures through the Disciplinary Committee. The degree of punishment is decided through deliberation and resolution of the Committee.

### Operation System

#### Cyber-reporting (Shinmungo)

An online reporting system named Shinmungo is operating, through which stakeholders are able to report corruption or unfair actions of our employees at any time. There is no restriction on who can access the system and the identity of informants is strictly protected according to our informant protection policy.

#### Audit Results Follow-up System

To monitor the implementation of internal audit results by each unit and department, we have been operating the Follow-up System since June 2014, which helps enhance employees' power of business ethics execution and prevent reoccurrence of violations.



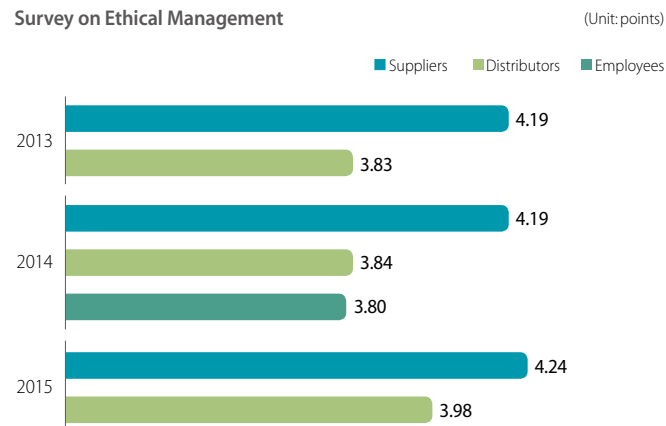
## Enhancement of Ethical Management Execution

### Pledge on Ethical Management Practice

Employees at LSIS submit a written pledge on committing to ethical management every other year, raising the awareness of business ethics. Since 2013, it has been extended to all employees including subsidiaries. The participation rate in the pledge reached 100% except for employees who were dispatched to overseas worksites and took a leave for a long time.

### Survey on Ethical Management

LSIS conducts a survey to evaluate the satisfaction level of suppliers, distributors, and employees in terms of its ethical management. The survey is administered annually to suppliers and distributors and biannually to our employees. We monitor changes in their satisfaction level and collect feedbacks and opinions through the survey, and the results are adopted to the development of ethical management directions and improvement items. The satisfaction level of suppliers (out of a possible 5 points) was 4.24 in 2015, showing a steady increase since 2013, while that of distributors also rose from the previous year. Employees awarded 3.80 points in 2014 and the next survey is scheduled in the second half of 2016.



### Official Notice about Ethics to Suppliers and Distributors

An official notice from the CEO that any gift, entertainment, and money is forbidden to employees is sent to suppliers and distributors before the Korean Thanksgiving and New Year holidays. Our employees are notified of this and encouraged to report violations to help eradicate unethical conducts and take part in the LS Group Management Philosophy 'LSpartnership.'

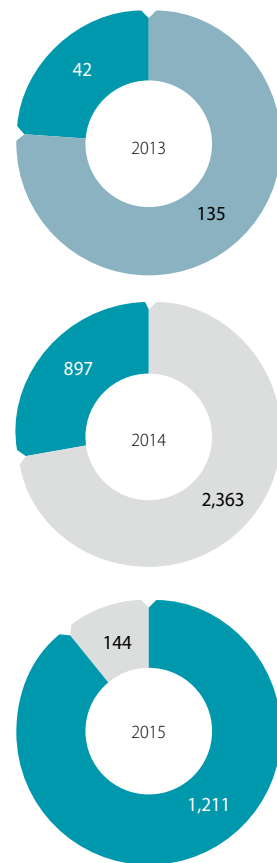
### Training on Ethical Management Practice

Training on ethical management and compliance is mainly offered through entry-level courses for new and experienced employees. Since 2013, it has been conducting at the LS Group level with the aim of further enhancing ethics and compliance. In particular, in 2014, the GVT (Greater Value Together) program was implemented to foster a compliance

culture, internalize LSpartnership, and give impetus to organizational and individual change management at the LS Group level. We also provided employees with online training about compliance. From 2015, ethical management has been included in the training course for newly promoted managers, raising their awareness of ethics and compliance and cultivating competence to respond to ethical dilemmas.

Completion of Ethics & Compliance Trainings (Unit: persons)

■ LS Group collective training ■ LSIS collective training ■ Online training



### Ethical Management Training for Suppliers

In 2014, we had provided suppliers with trainings about ethical management. Definition of unethical behaviors, and how to handle misconducts. Since 2015, the Win-win Growth Team under the CPO Group has supervised the programs and the scope was extended to holding the performance sharing meeting and lectures on ethics by external experts, contributing to disseminating LS Group's philosophy "LSpartnership" as well as ethical management throughout the supply chain.

## Compliance

### Compliance Management System

Since the introduction of the Compliance Officer in 2012, LSIS declared the compliance management in 2014 and has supported all employees to observe compliance practices in daily work through the voluntary transaction system and inspection activities. Our compliance management involves categorizing legal risks, self-assessment, and compliance education under the direction of the Compliance Office who is also head of Legal Affairs Division.

### Compliance Officer

We operate the Compliance Officer under the BOD in accordance with Article 7, Section 13 of the Commercial Act. The BOD appointed the director of Legal Affairs Division to the Compliance Officer in 2012 and 2015. The Compliance Officer organizes a unit responsible for compliance and reports their activities to the BOD every year. Main activities include categorizing potential legal risks in business operations, creating a checklist to help prevent and manage risks, and supporting self-assessments through the checklist.

### Self-initiated Inspection Activities

The compliance unit provides a checklist that helps employees categorize legal risks associated with our business activities while conducting self-

initiated assessment and inspection.

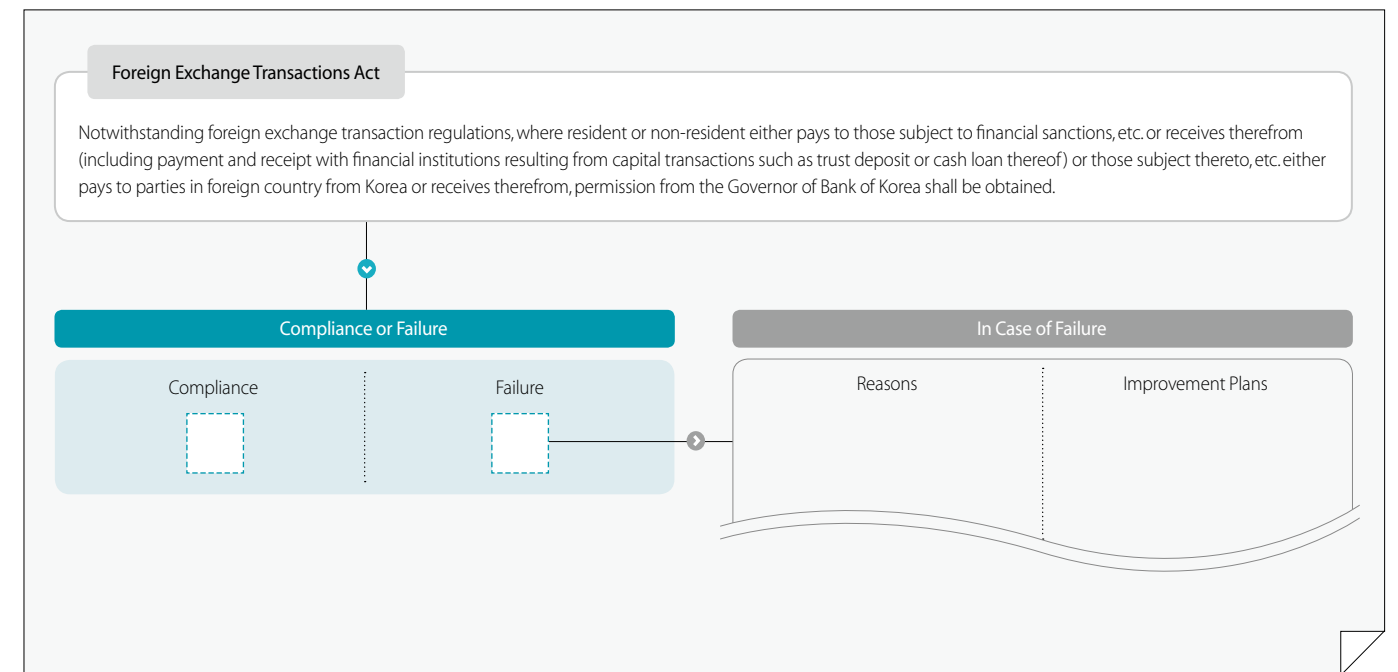
The checklist specifies legal compliance matters, consisting of Yes/No questions on categorized legal risks. For questions on which No is checked, employees can review the background and correctional measures themselves. The categorization of legal risks is updated on a yearly basis in accordance to the answers.

The Compliance Officer ensures that employees voluntarily abide by regulations based on the checklist on a yearly basis. The Officer also monitors the outcome of employees' self-assessment to further investigate compliance when necessary. There was no additional inspection activities by the Compliance Officer in 2015 as employees' self-assessment found that the compliance status was relatively good.

### Compliance Education

LSIS offers compliance education meticulously designed for frontline employees under the Compliance Officer system. In 2015, we conducted field education and investigation on 27 occasions on topics such as basic education on public contract and subcontract. In the later half, education on impact from major economic legislation and response measures was offered to heads of division.

### Cases of Checklist

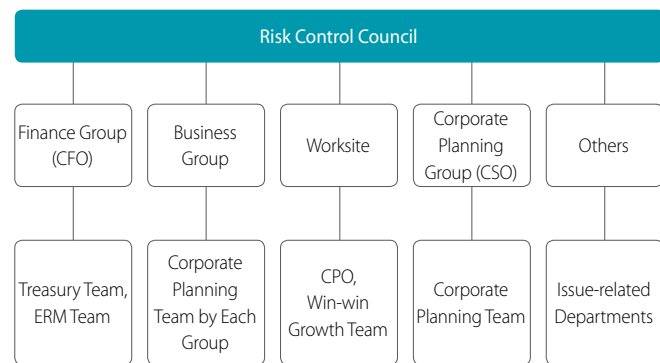


# Risk Management

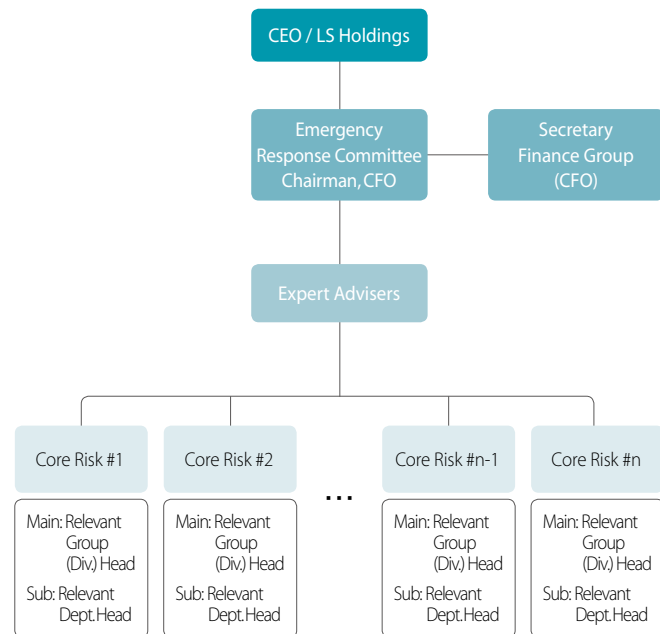
## Risk Management System

As our business portfolio and market keep expanding, investment and project volumes are also growing. This change requires us to preemptively respond to unanticipated risk factors. In response, LSIS has been overhauling the company-wide risk management system since 2012. Having introduced the company-wide integrated management system, LSIS manages company-wide risk status and risk limits in order to provide the management with information for decision making and to identify unfavorable factors.

### Normal Operation



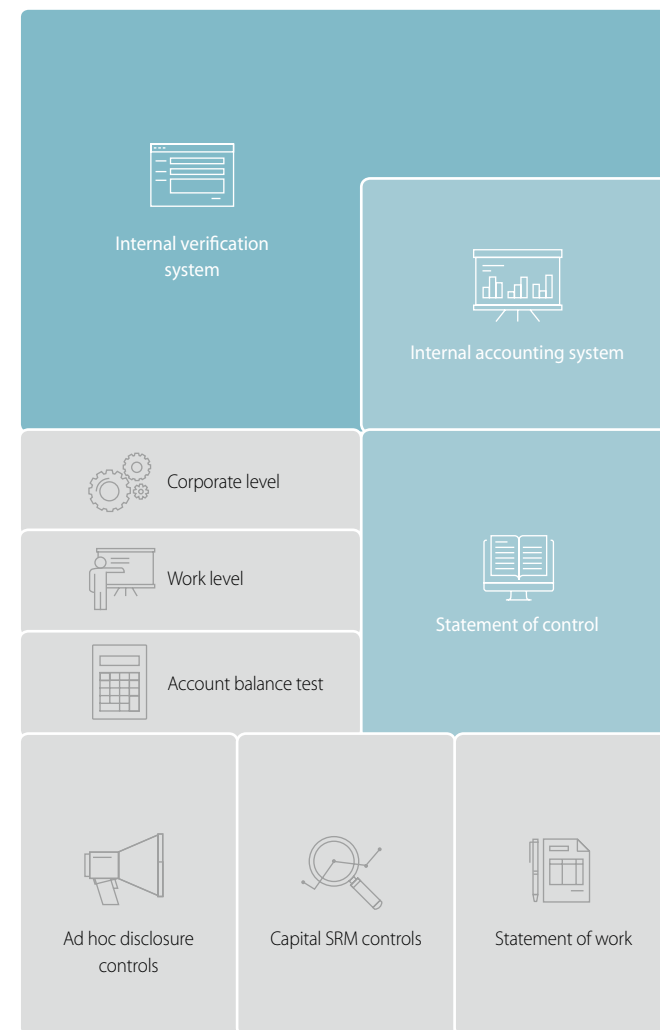
### Emergency Operation



## Internal Control of Financial Reporting

To efficiently control all processes related to the calculation of our financial statements, we built the internal control system based on the COSO\* Framework in 2005 and began operation in 2006. The internal accounting manager reports the operation status to the BOD and the Audit Committee, and the Audit Committee reports the evaluation results to the BOD.

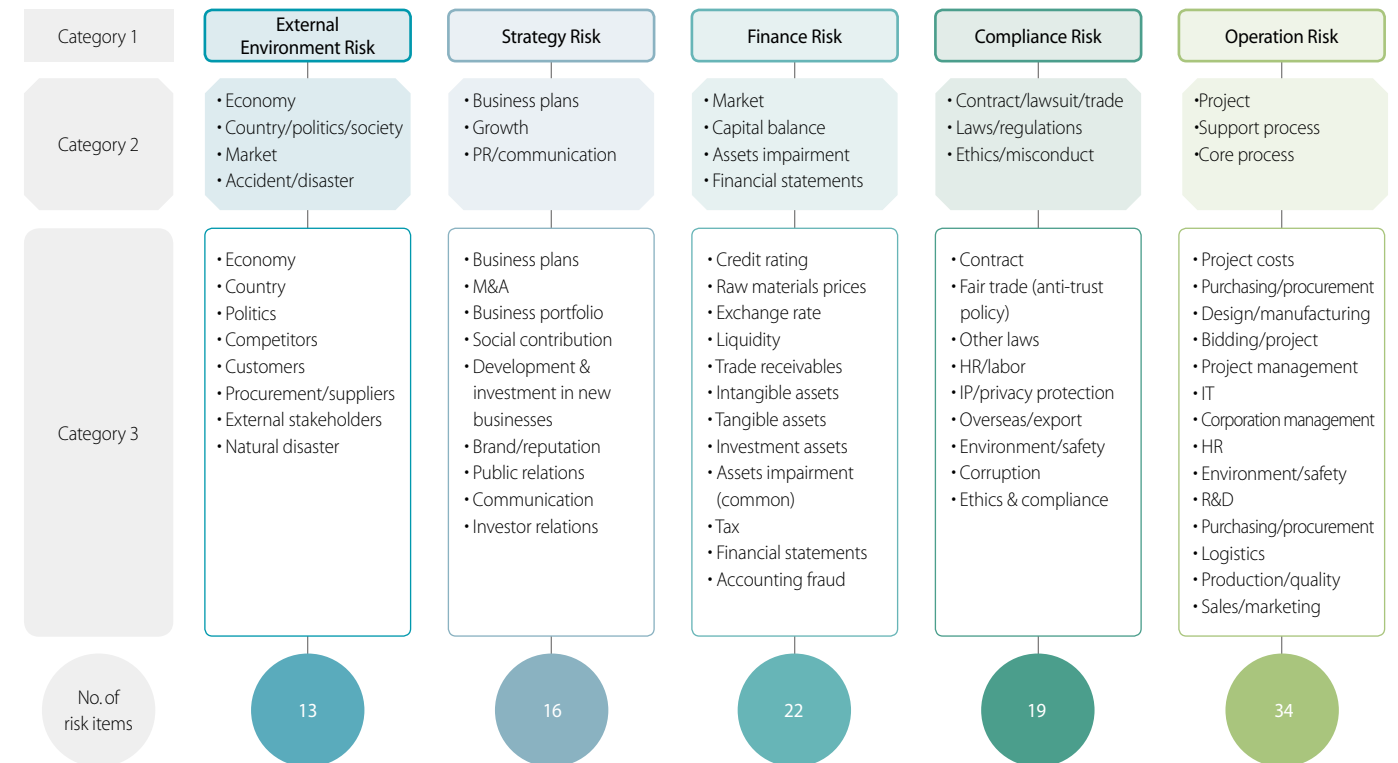
\*COSO: Committee of Sponsoring Organizations of the Treadway Commission



## Risk Management Categories

We subdivide risks in terms of external environment, strategy, finance, compliance, and operation into 17 medium and 52 minor classes, through

which we identify and control 104 risk items.



## Risk Management

### Risk Management Process

Risks identified through the risk management process are quantified and managed within the limit through the risk evaluation process. When the risks exceed the limit, the Emergency Response Committee is organized for company-wide response and monitoring. And then, follow-up improvement actions are taken to avoid reoccurrence of the same risks.



### Inspection on Risks and Future Responses

In 2015, LSIS made an inspection of company-wide risk factors based on defined criteria, identifying 26 priority control targets from inspection re-

sults and evaluations of supervising departments. We will develop control methods and detailed action plans by each priority risk to preemptively and methodically manage potential risks.

### Scope of Risk Control Activities

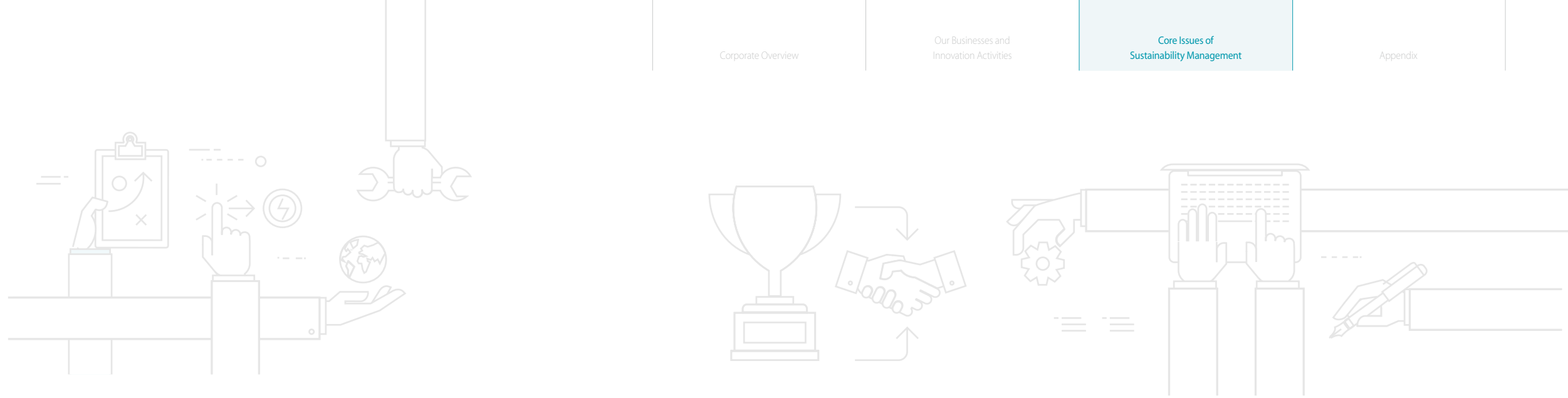
What kinds of risks are in the Company?	Output
<ul style="list-style-type: none"> <li>What are the risks managed by our company?</li> <li>What are the risks insufficiently managed by our company?</li> <li>What are the risks unmanaged by our company?</li> </ul>	<ul style="list-style-type: none"> <li>Risk Pool</li> <li>Management Status</li> </ul>

### Implementation Activities

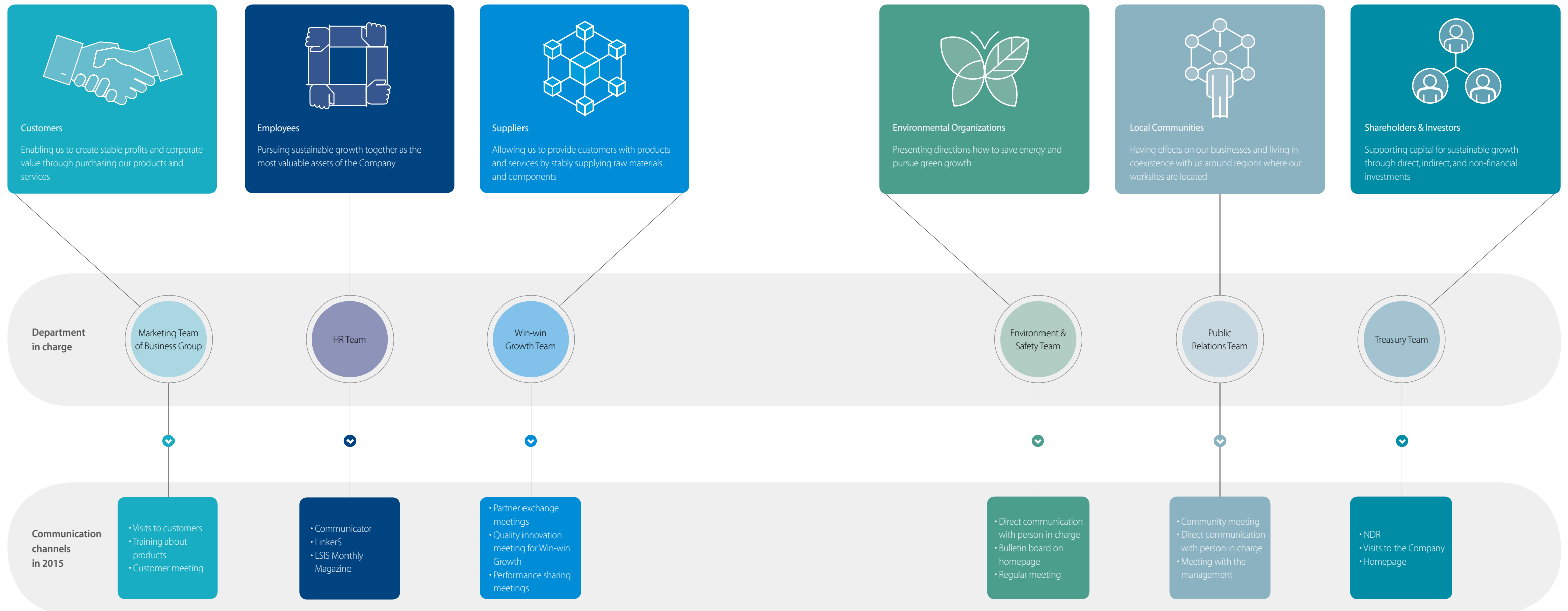
- Defining company-wide risks (risk pool, priority control risks)
- Investigation of management status and selecting priority control risks
- Determining risk control methods - proposing control methods by each priority risk

# Stakeholder Engagement

LSIS operates diverse communication channels to listen to stakeholders' requirements and opinions. Our stakeholders are classified in six groups - customers, employees, suppliers, environmental organizations, local communities, and shareholders & investors. We are proactive in satisfying their expectations by designating departments responsible for communicating with each stakeholder group. Moreover, surveys on the operation of communication channels and feedbacks are carried out every year to ensure better stakeholder engagement.



## Major Stakeholders



\* NDR: Non-Deal Roadshow



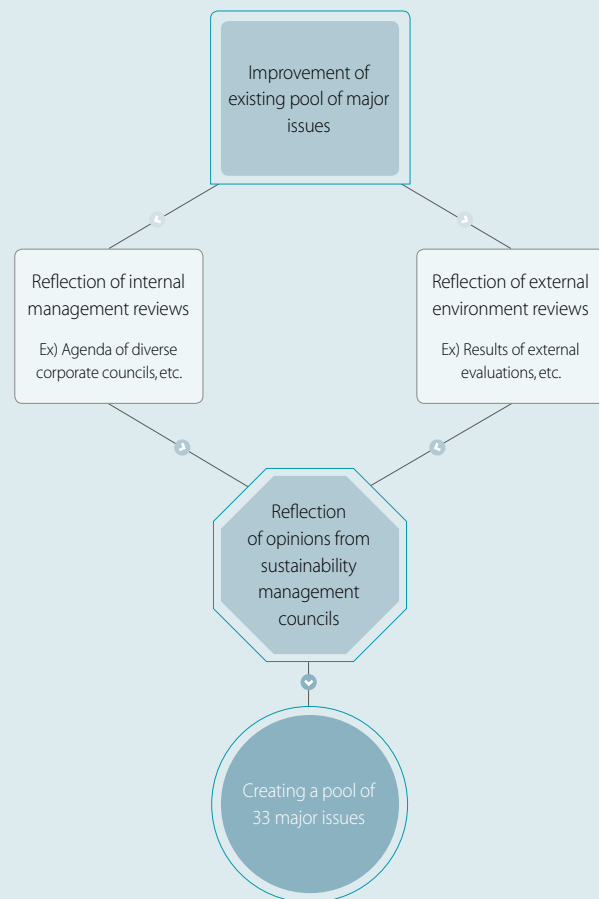
# Materiality Test

## Overview of Materiality Test

The materiality test is carried out with the aim of collecting stakeholders' opinions to be adopted to our business strategies and preparing this report centered on their interests. Our materiality test process includes creating a pool of major issues, prioritizing major issues, and identifying key issues. The results are applied to our action plans.

### Creating a Pool of Major Issues

We created a pool of 33 major issues by reviewing internal and external documents including agendas of the Management Committee based on the previous year's pool of issues and adding opinions from sustainability management councils.



### Prioritizing Major Issues

Stakeholder survey, media & web research, and diagnosis on CSR level were implemented to prioritize major issues.

**STEP 1**

**Stakeholder survey**

We surveyed internal and external stakeholders about their interests on our sustainability issues. In addition, we asked employees for evaluating the level of impacts on our businesses by each issue.

**Period:** July to August 2015  
**Method:** On- and off-line survey  
**Target:** Customers, employees, suppliers, environmental organizations, local communities, shareholders & investors (a total of 782 persons)

**STEP 2**

**Media & web research**

Big data analytics was applied to figure out the frequency of press news about our sustainability issues and business activities in 2015. In particular, negative press news were analyzed with extra care for identifying key issues in a sincere manner.

**Period:** September 2015  
**Method:** Media research (Big Data analytics)  
**Target:** Major broadcasting companies, daily newspapers, economic dailies, etc.

**STEP 3**

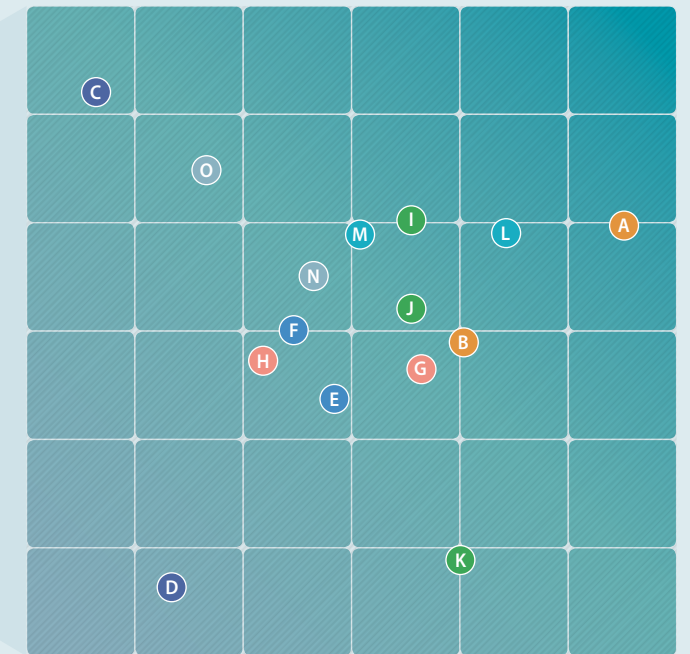
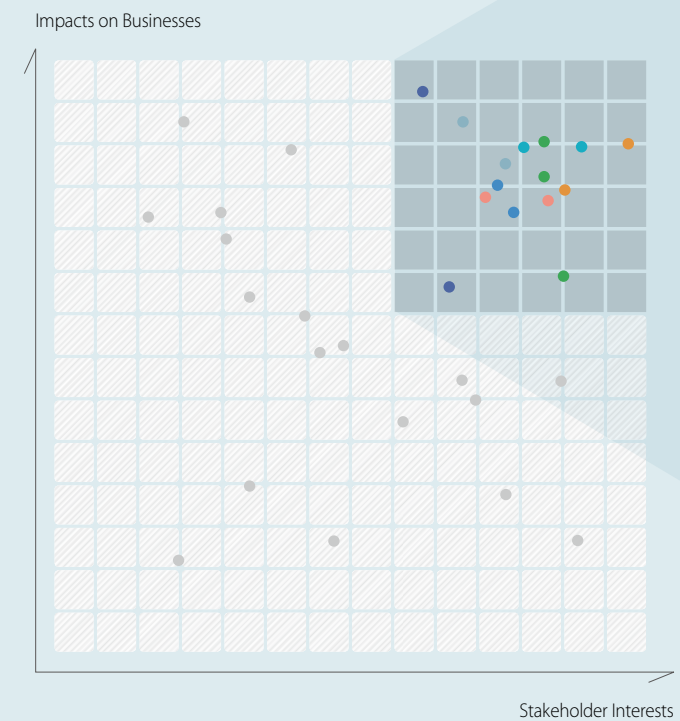
**Diagnosis on CSR level**

We made a diagnosis on CSR level to assess our current status of sustainability and improve insufficiencies. The same tool which had been introduced in the previous year was adopted to the diagnosis and some tasks were drawn up to improve sustainability items of low levels.

**Period:** December 2015  
**Method:** Diagnosis tool of an external expert institute  
**Target:** Sustainability management implementation system and 18 departments of the Company

### Identifying Key Issues

Key sustainability issues were identified by quantifying and digitizing prioritized issues and then defining the matrix.



Category	Key Issue	Page
Customers	A. Enhance product safety management	48~53
	B. Expand customer satisfaction activities	
Employees	C. Control labor-management relationship	54~59
	D. Secure global talents	
Suppliers	E. Comply with fair trade	60~67
	F. Stiffen suppliers' competitiveness	
Local Communities	G. Activate communication with local communities	78~83
	H. Strengthen social contribution activities	

Category	Key Issue	Page
Environment & Safety	I. Provide eco-friendly products and services	68~77
	J. Enhance responses to climate change	
	K. Ensure safety and health at worksites	
Shareholders & Investors	L. Secure technological competitiveness	28~33
	M. Invigorate innovation activities	
Basic Management	N. Pursue compliance management	41~43
	O. Promote integrated risk management	

# 01

## Customers

Creating customer value through product responsibility and active communication



### Plans for 2015

- Expand fair trade training and monitoring
- Implement education on privacy protection
- Expand survey on satisfaction
- Standardize Q-Post tour improvement activities
- Enhance training on products for foreign customers

### Achievements in 2015

- Raised awareness of and complied with fair trade
- Conducted education on privacy protection twice
- Expanded survey on customer satisfaction by each business group
- Completed the standardization of Q-Post tour improvement activities
- Expanded the seminar on product for foreign customers

### Plans for 2016

- Expand customer communication activities such as satisfaction survey
- Preemptively improve product quality through Q-Post tour
- Operate development reliability process

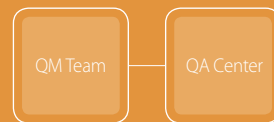
### Key Management Issue



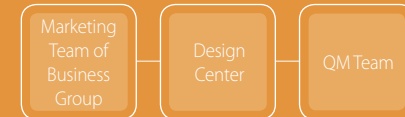
### Our Response

- Upgrade product quality
- Build a system to ensure product reliability

### Implementation Organization



- Activate communication with customers
- Handle customer complaints
- Promote design management activities

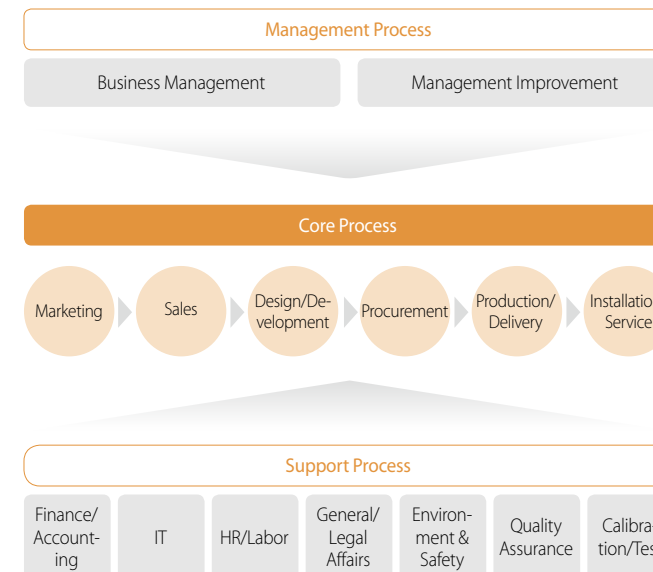


As our products constitute the foundation for social infrastructure, a single failure may translate into safety accident. Therefore, we concentrate all of the capabilities available on product quality and reliability enhancement.

## Upgrade Product Quality

### Quality Management System

Our Quality Management System (QMS) satisfies requirements of ISO9001 (1993~), ISO14001 (1996~), K-OHSMS (2008~), TS16949 (2010~), regulations, customers, and markets as well as process improvements identified from management activities. It also encompasses all processes ranging from planning and development of products and service to relevant infrastructure such as IT system, business operation, and support activities. By taking the QMS rooted in all worksites at home and abroad, we are committed to creating better customer value.



### LSIS PT&T Center

The LSIS Power Testing & Technology (PT&T) Center, the first private institute in Korea equipped with 2,000 MVA capacity short circuit, high voltage, and reliability test equipment, is focusing on developing technologies to improve product performance and strengthen reliability. The LSIS PT&T has contributed to reducing test time by some 30% and saving KRW 4.5 billion annually in testing costs. Above all, it allows us to control testing schedules and ensure high quality and reliability in early stage.

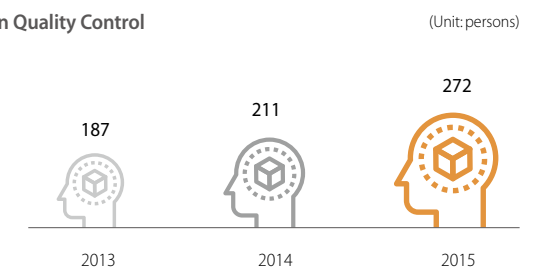


LSIS Power Testing & Technology (PT&T) Center

### Cultivation of Experts in Quality Control

Reliability-based product quality is critical to our businesses. Thus, we operate a system to cultivate talented engineers in quality control and they can play a leading role for the improvement of product quality.

### No. of Experts in Quality Control



### Internal Quality Management Assessment

The Quality Management Assessment System has been running to improve the quality of management activities as part of process quality improvement since 2010. It was developed based on the Malcolm Baldrige model, a renowned global management system, and has been contributing to upgrading the level of our management process and quality.

### Evaluation on Quality Management

Year	2011	2012	2013	2014	2015
Score	61	65	70	72	76

### Key Performance in 2015



Won the Good Design Award



No.1 in PLC-Inverter quality satisfaction index





## Establish Product Reliability System

As a manufacturer of products constituting social infrastructure, LSIS recognizes that product reliability should be our top priority. Therefore, having setup teams dedicated to product reliability in 2013, LSIS has committed to improving reliability of its goods through continued management.

### Company-wide Standardization of Development Reliability

LSIS carries out activities to improve product reliability and secure development reliability. The pilot project of 2014 conducted on AC drive solutions led to the internalization of the reliability process/Tool (IEC60300, IPC, MIL-HDBK). In 2015, in addition to process quality and product reliability improvement, the project was expanded to existing products. Standardization work is under implementation to disseminate reliability technology company-wide starting from 2016. We plan to introduce standardization in order to internalize functional safety which is stricter than traditional safety evaluation.



Design / Lab



Process

Year	Design / Lab	Process
<b>Year 1 (2014)</b> Reliability structure analysis / improvement and failure analysis	<ul style="list-style-type: none"> <li>Structural analysis of design reliability</li> <li>Establish design reliability improvement system</li> <li>Establish failure rate-based design evaluation system</li> </ul>	<ul style="list-style-type: none"> <li>Structural analysis of manufacturing reliability</li> <li>Process reliability improvement system</li> <li>Improve raw materials analysis/management system validity</li> </ul>
<b>Year 2 (2015)</b> Design/lab capability enhancement program	<ul style="list-style-type: none"> <li>Establish design/lab reliability management system</li> <li>Introduce and apply standard/tool to carry out reliability-based R&amp;D</li> </ul>	<ul style="list-style-type: none"> <li>SMT Line automation</li> <li>Establish SPC management system</li> <li>Audit to maintain implementation items for Year 1 and horizontal</li> </ul>
<b>Year 3 (2016)</b> Lab/test capability enhancement program	<ul style="list-style-type: none"> <li>Establish design/lab reliability management system</li> <li>Establish system validity verification system</li> <li>Establish advanced development process</li> </ul>	<ul style="list-style-type: none"> <li>Analyze reliability test system</li> <li>Analyze and overhaul ALT test system</li> </ul>

### Obtain FSM Process

Functional safety is one of the most widely used evaluation methods to secure safety against the increase in risk due to technology development and it employs higher standards than the existing ones. LSIS has established functional safety process in 2014. In 2015, we obtained IEC 61508 and ISO 26262 from the international certification agency TUV Rheinland which verified the validity of our functional safety process.

### Obtain the Next-generation Train Control System 'KRTCS' SIL 4

Based on Wi-Fi and LTE, our train control system KRTCS is capable of controlling trains remotely. This is the first system in Korea to be certified by the international safety reliability certification SIL4 (Safety Integrity Level 4). Evaluating safety and reliability of industrial equipment in a qualitative manner, SIL4 is the highest grade in train safety certification.



KRTCS first obtained the SIL4 certification in the domestic industry

## Communication with Customers

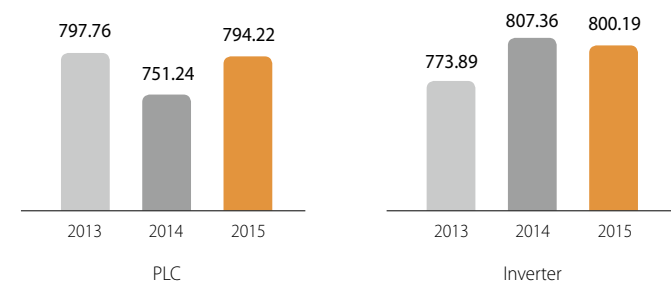
### Customer Satisfaction Survey

We investigate the level of satisfaction of domestic and overseas customers through on and offline surveys every year. If each business division requires, specialized third-party survey firms are commissioned to ensure the reliability of survey results. In particular, the Automation & Drive Business Group ranked top in the PLC & Inverter sector in KS-QEI, the most authoritative quality index in Korea, for three consecutive years. We will continue activating communication with customers to enhance their satisfaction.

### Customer Satisfaction Survey Results

Major Customers	Satisfaction Level	No. Survey Targets
Power Grid	71.3	254 (domestic: 213, overseas: 41)
Power Distribution	72.4	40 (domestic: 22, overseas: 18)
Automation & Drive	72.4	More than 70
Others	76.5	17 (domestic: 15, overseas: 2)

### KS-QEI Supervised by KSA

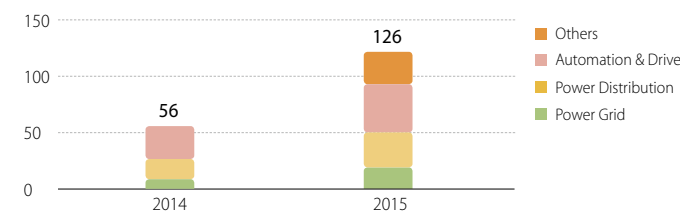


LSIS pays attention down to every detail for customer satisfaction enhancement. In particular, we manage product design and emotional quality, rare for a company engaged in B2B, while reflecting consumers' demand on our products and services.

### Education and Seminar for Customer

LSIS carries out a variety of external activities to promote our products and technologies. For example, we showcased our latest products and solutions by attending major exhibitions on electricity power and automation such as Hannover Messe, SPS/IPC/Drives 2015, Korea Smart Grid Expo, World Water Forum 2015, and many more. In 2015, in particular, we expanded product education for customers not only at home but also abroad, strengthening our customer support globally. We also collect feedback from local and global clients to develop customer-tailored products and expand technical education.

### Product Training and Seminar for Overseas Customers



## Manage Customer Complaints

### Complaints Handling

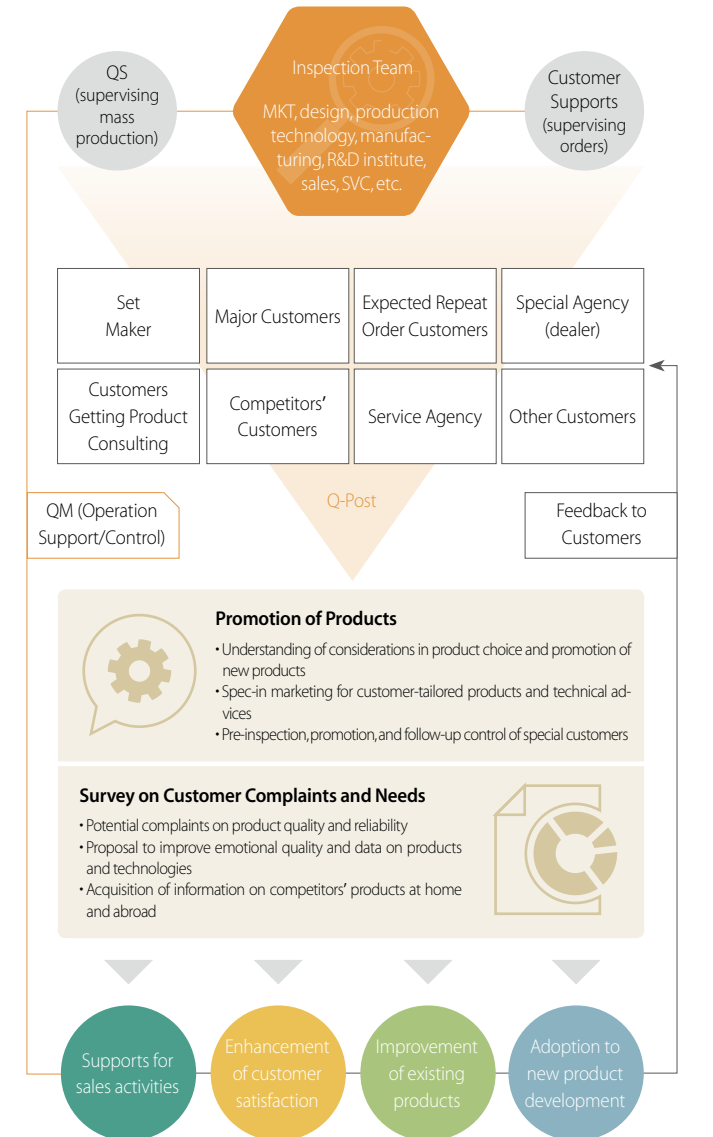
LSIS compiles and manages customer complaints systematically in accordance with its Complaint Response Protocol and processes. Claims regarding quality are treated according to severity through the Quality Information System (QIS) and claims collected by the customer service center and local offices are managed with a target processing time of 2 days (48 hours). Major claims are recorded in the ERP through Client Claim Reports and the Quality Management Department submits and shares the Improvement Report containing causes, improvement plans, and management solutions to the Quality Committee every month. Claims received from the customer center are responded within 24 hours in general. Claims are distributed to responsible departments and results of implementation are managed as "VOC Improvement Rate." The VOC Improvement Rate was 88.2% in 2015 and has been improved every year. Claims received from overseas customers are dealt with equally to domestic claims based on the Overseas Service Protocol and customer complaints response process.

### VOC Improvement Rate

	2012	2013	2014	2015
VOC Improvement Rate	71.9	86.0	86.1	88.2

### Q-POST Tour Activities

We have implemented the Q-Post Tour program to respond to customers' potential complaints since 2012. This program allows us to ascertain their quality expectations and potential complaints in advance and improve the quality of major products and sales activities. Customers' needs identified through the Q-Post Tour program are applied to new product design and quality improvement of existing products. Customer-tailored technological support also contributes to increasing customer satisfaction. We are striving to improve the continuity and efficiency of this program by building an integrated process through collaboration across sales and service departments and factories.





## Design Management Activities

With the declaration of design management for the first time in the industry, LSIS established the Design Center in 2005. The pursuit of customer-centric design was an innovative approach in the industrial equipment business with traditional producer-centric nature. The Design Center is operating as a specialized organization under the CTO to rapidly respond to customer needs for specialization and sophistication. The Design Center enhances our design competitiveness and corporate image by introducing customer-focused designs that can highlight our technical expertise, upgrading design quality, and fortifying R&D capability. Moreover, we strive for sustainable design management to harness customer sensitivity and user experience. We will continue to provide customers with differentiated value through quality that touches them and eco-friendly design development.



### Win 2015 GOOD DESIGN Award

Hosted by the Ministry of Trade, Industry and Energy and organized by Korea Institute of Design Promotion, the Good Design Award is one of the most coveted awards for designers in Korea held every year since 1985. The design center at LSIS had entered three works to the Good Design Award, winning one Excellence Award and two GD Awards. Winning works of GD are selected through rigorous screening by renowned experts from the local design community. Our products won the excellence award (President of KIDP Award) as our FEMS Station garnered high points for effectively catching up with the industry shift from single product to solutions and responding to Manufacturing Innovation 3.0 initiative. This is the second time that LSIS won the award following the excellence award for our ESS in 2013.

### MCCB Energy Meter System

Consisting of shunt module directly connected to MCCB and HMI which monitors the system, MCCB Energy Meter System enhances space efficiency of power distribution system by realizing slim size with optimized key components for power IT solution. With intuitive GUI, MCCB Energy Meter System lets users understand energy information of each shunt module in a clear and easy manner. We plan to develop MCCB Energy Meter System as the key solution to lead the future of smart energy by expanding its connectivity with other power devices.



### GridSol BEMS

Featuring simple design with graphic building images and the connection information between electricity, ESS, renewable energy, gas, and waterworks, GridSol BEMS allows users to monitor and control the building's energy operation intuitively. The energy flow is displayed in animation so that ordinary users can apprehend the system with ease. In consideration of the nature of BEMS which needs to monitor energy generation, consumption, and ESS charging and discharging information in real time, our GridSol BEMS comes with colored layout highly comfortable to human eyes. Those features resulted in the Company winning the GD awards.



### GridSol FEMS Station (Excellence Award)

To realize the vision of "energy efficiency and manufacturing competitiveness of plant through FEMS," LSIS came up with the design keyword "Soaring." Featuring the dynamic wing images on the external wall of GridSol FEMS Station and LED lightings during night, GridSol FEMS Station embodies our outstanding technology integrating "Futuring Smart Energy" solutions. By adopting the package solution identity (PSI) to the design of single devices, display monitors, facility spaces, and brand through this project, our GridSol FEMS is highly recognized for its design competence as well.



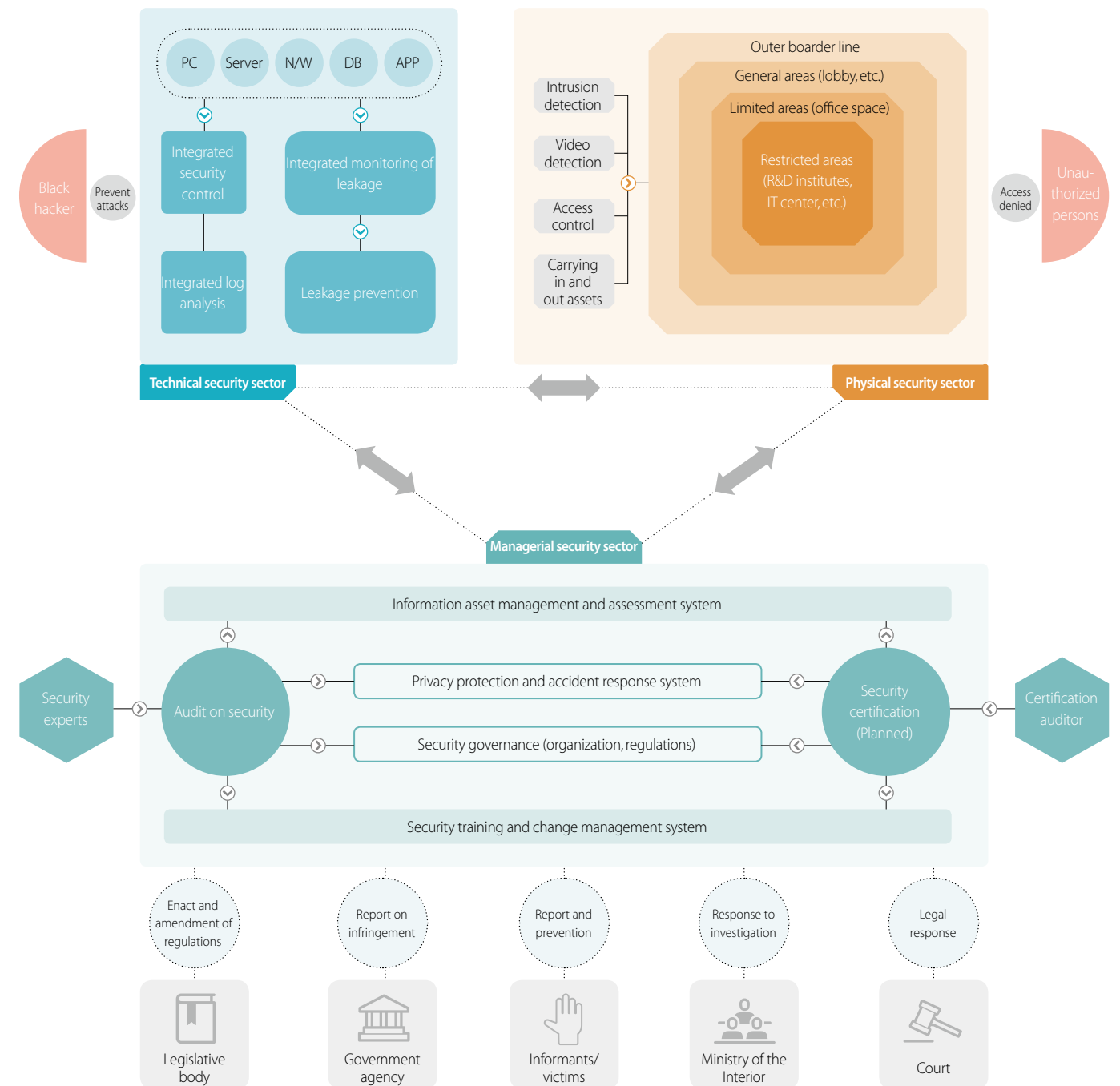
Night View of Gridsol FEMS at Cheongju Plant 2



## Customer Information Protection

LSIS take managerial, technical, and physical measures to protect customer information that may be collected, used, stored, transferred, and discarded along with its information lifecycle. In 2015, we introduced the company-wide DRM solution where customer information is automatically encrypted before being internally stored and becomes inaccessible once leaked. In order to protect customer information from hacking attempts or potential risks, the security division is on a 24/7 monitoring in real time

while ensuring the immediate system shutdown in case of emergency. In response to potential security threat, we conduct security consulting, mock hacking, and vulnerability inspection on a regular basis. Not just customer information but information on employment, employees, personal information of suppliers are all kept and protected in accordance with a strict set of security rules of LSIS. These efforts have resulted in no case of violation of customer information protection laws in 2015.



# 02

## Employees

Cultivating global talents and improving employees' quality of life



LSIS is committed to protecting human rights and interests of its employees. Education on labor rights is offered to field employees and females are also elected to members of the employees' representative body in accordance with gender equality guidelines, which contribute to protecting the socially marginalized groups.

### Strengthen Human Rights and Labor Policies

#### Respect Human Rights and Ensure Basic Labor Rights

##### Respect Human Rights

At LSIS, institutional strategies are provided to prevent any discrimination with regard to gender, race, religion or region of origin. We also enforce and improve diversity management policies to help employees become fully immersed in their works with passion. These strategies and policies ensure working environment where employees are able to realize their potential under equal opportunities. We fundamentally prohibit any form of child labor or forced labor and strictly comply with related domestic and international laws. As a result, there has been no single infringement in terms of these since the foundation. The Company will make more efforts to supplement and develop human rights related strategies and policies.

##### Ensure Basic Labor Rights

We sit down together and talk with labor union to negotiate wages and collective agreement with the awareness that labor union is a valuable partner for our businesses. We specified a phrase 'The Company enters into collective discussions on equal terms as the labor union' on the statement to respect the right of collective agreement and faithfully respond to their requirements. The labor union is free from corporate intervention and their activities are guaranteed without any disadvantage..

#### Labor-Management Partnership for Win-win Growth

##### Operation of Labor-Management Council

For the improvement of working conditions and grievance resolution, we operate the Labor-Management Council in accordance with relevant laws and collective agreement. Issues between labor and management are resolved through the company-wide quarterly Labor-Management Council participated by representatives from both parties and Labor-Management Council held at business level. At the collective discussion in May 2015, an agreement was made on improving wage structure for low-paid workers, expansion of welfare package, and HR policies. In particular, we were able to draw up a reasonable solution to win-win growth by regularly discussing the socially sensitive ordinary wage issue through the "Labor-Management Working Level Committee." In addition to the official labor-management consultative body, LSIS discusses and consults on issues regarding LSIS labor union and working conditions via a variety of channels.

##### Labor Union Membership

In compliance with the articles of the Collective Agreement and Labor Union Charter, 1,035 persons (30.6% of total employees) are members of the labor union as of the end of 2015.

(Unit: persons)

Classification	2013	2014	2015	
No. of labor union members	Male	865	873	867
	Female	167	165	168
	Total	1,032	1,032	1,035
Rate of union membership (%)	31.1	30.5	30.6	

#### Education on Human Rights and Labor Issues

All site supervisors are provided with a leadership reinforcement education every year. The education is focused on the trend in labor-management relation, communication in organizations, and execution, which is significantly helpful in developing problem-solving skills of supervisors and enhancing business performances. Especially, the scope of this education was extended to human rights and labor issues not only to help them better understand relevant laws and standards but also to raise their awareness of the importance of social responsibility.



Education on human rights for site supervisors

#### Activities to Enhance Gender Equality

##### Policies and Guidelines for Gender Equality Employment

LSIS has improved hiring system in order to address an unreasonable discrimination based on gender. We put more importance on objective evaluation factors such as the test of Job Competency and English to make sure no gender discrimination in hiring process. In addition, we educate interviewers on our standardized interview process to help them deliver consistent assessments. Moreover, we operate the female mentoring system for newcomers so as to help out new female employees well adjust to new organizations and support incumbent female employees in developing career paths and growing into managers.

##### Elect a Female LinkerS Member

LinkerS, a representative body for administration staff, has been committed to helping openness take root in corporate culture and taking the lead in social contribution activities. Especially, as a female employee became the LinkerS member in 2015, it is expected to further listen to voices of female employees in the future.

#### Plans for 2015

- Activate family-friendly management
- Secure communication channels for potential recruits
- Supplement human rights and labor related systems

#### Achievements in 2015

- Opened a company daycare center (Anyang)
- Secured communication channels for potential recruits
- Expanded training programs to foster global competence
- Supplemented human rights and labor related systems

#### Plans for 2016

- Nurture capabilities to implement global core businesses
- Implement organization development programs

#### Key Management Issue



Manage labor-management relationship

#### Our Response

- Respect rights of employees
- Reinforce labor-management cooperation
- Enhance gender equality



Secure employees with global competence

- Recruit global talents
- Build programs to help new employees rapidly adjust to the Company
- Develop and train human resources

#### Implementation Organization



#### Key Performance in 2015



Certification on **family-friendly company** (supervised by the Ministry of Gender Equality and Family)  
 • 2014.12.19 ~ 2017.12.18 (for three years)



Preparation of systems and guidelines regarding **gender equality** recruitment



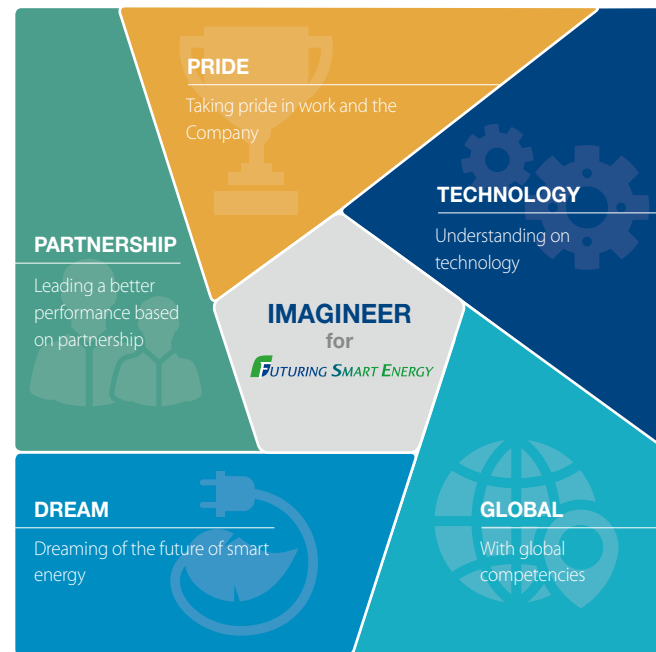


In 2015, LSIS redefined its HR philosophy with the announcement of the value-focused management. Based on the new HR philosophy, we are committed to hiring and nurturing excellent human resources in various sectors.

## Secure and Nurture Talents

### HR Philosophy

We proclaimed the new HR philosophy with the purpose of hiring and nurturing talents who can proactively respond to the paradigm changes in the electric power industry and make the vision "G365" come true. The ideal employee we are seeking for is an "Imagineer for Futuring Smart Energy." The "Imagineer" is an expression coined with "Imagine" and "Engineer." The word refers to a person who takes pride in their work and company, dreams of the future of smart energy on the basis of the understanding on technology and global competency, and leads to better outcomes based on partnership. The Imagineers of LSIS commit



themselves to achieving corporate mission and vision. LSIS is evolving into a "global top heavy electrical equipment maker" by recruiting outstanding talents equipped with global competitiveness, positive thinking, and the passion for challenges. We pursue an open company where passionate experts gather together to concentrate on achieving individual and organizational vision. We have also established and run a fair recruitment system free from discrimination on educational background, age, gender, and race.

### Status of Global Talents

Our businesses are expanding abroad with the strategic direction of evolving into a global top heavy electrical equipment maker. As of the end of 2015, around 1,000 workers are employed at seven production and sales subsidiaries in China, Europe, Vietnam, and Japan, and overseas branches in North America, Indonesia, Russia, and more. In order to advance into global markets and boost global sales, LSIS endeavors not only to reinforce human resources' competitive edge but also to attract more global talents in North America, China, and Europe.

### Diverse Talents Recruitment Channels and Process

Human resources are efficiently assigned to core businesses through open recruitment of new and experienced workers twice a year. LSIS also enhance competitive edge by enforcing global recruiting policies which target students staying abroad in universities at North America, China, or foreign intellectuals in the R&D field. A year-round recruitment program is running to attract excellent researchers for new core businesses and talented workers with enough experience. Other channels include on-campus recruitment, employee recommendation, and search firms. Diverse talent recruitment channels like these help place right human resources in the right positions efficiently. Under the situation where corporations struggle to preoccupy talented workers, LSIS is also endeavoring to attract excellent and professional human resources. By providing constant support through corporate funded scholarships to Master's and PhD candidates, LSIS gives them the opportunity to study their specialties and join the Company afterwards. Also, we conduct the Lab Tour program to visit outstanding electricity and electronic engineering labs at universities in order to continue communication with students. Our internship program targeting college seniors in their spring semester allows them to experience LSIS's vision and corporate culture beforehand through undertaking jobs and tasks in advance. Other programs include plant tours for university students, participation in the energy specialist cultivation project, and so on, which provide them with opportunities to have a positive impression on LSIS. We put applicants' interest in and passion for their future jobs before qualifications and evaluate their basic competence and growth potential through screening career papers. Our common recruitment process includes the first-round working-level interview to assess applicants' knowledge and interest in job, followed by an interview in English with native speakers, personality/aptitude test to check the level of LSpartnership and conformity to people who we are looking for, and the second-round interview with executives.

### Programs to Help New Employees Rapidly Adjust to the Company

New employees at LSIS have diverse experiences prepared to help them rapidly adjust to the Company. We provide new graduate recruits with a message from the CEO and flower basket and take them on tours of the Jeju Pilot HVDC SMART CENTER, allowing them to be proud of joining the Company. Other programs include entry-level education to introduce the group, "Futuring Smart People" course, mentoring program, on-the-job training, basic job training course by each value chain. The On Boarding Package program introduces the Company's HR system and guides for their jobs, supporting quick adaptation to organizational culture and exhibition of their abilities. In addition, the LS Future Camp assists employees who have finished their first year to look back over their careers and shape the future.



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1. LS Future Camp  
2. Futuring Smart People entry-level course

### Development of Human Resources and Education

Our HR development focuses on cultivating smart people to achieve the vision "G365." With the belief that consistent competence development ensures the future, we operate about 150 collective training programs participated by around 14,000 employees and customers every year and run roughly 2,500 online programs as well. The LSIS Training Center had won the President Prize in 2005 and has obtained A grade for four years in a row from 2012 to 2015 in recognition of its excellence. Our Education & Training programs for employees are categorized according to "position," "global," "organization development," "expertise," and "customer." We also run the Global Lounge, a specialized global education program, a coaching program for performance management, and electricity and automation solution training courses for acquiring competencies of key technologies. These education programs are systematically offered to our employees to help them secure global competence and initiate the future of smart

energy. Moreover, we operate the Career Development Program (CDP) that supports all employees to develop career paths ranging from hiring to retirement.

Employee Training Performance in 2015 (Unit: PD, Person per Day)



Training Expense per Employee (Unit: KRW in thousands/person)



- Position**: Learning of knowledge, skills, and attitude required to each position, class, and duty
- Global**: Learning of languages and different cultures needed for global business
- Organizational Development**: Establishment of management philosophy, mission, vision, core value, and organizational culture
- Expertise**: Cultivation of experts by each value chain
- Customer**: Provision of product knowledge to customers



Global Lounge





## Family-friendly Management Activities

### Events for Employee Families

Various family events are held to offer opportunities for open communication among employees and to inspire their families with pride in the Company. In particular, for the employees who were promoted to managerial level, the "Smart Working, Happy Life!" event is held in every January where their families and company executives are invited. Starting in 2011, the event has served the purpose of assuring the importance of the manager role as well as thanking the families' support. We also hold an athletic meeting on Children's Day for employees' sons and daughters in order to realize the importance of family and give them a sense of pride in the Company.



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1. "Smart Working, Happy Life!" event

2. Athletic meeting on Children's Day for employees' sons and daughters

### Concentrated Vacation System

We run a system which allows all employees to go on a concentrated vacation within the limits of their paid leaves and personal vacations, which are fixed by related laws and collective agreements. It is a policy that helps employees balance work with personal lives. It is, in particular, implemented after long term projects or personal events, allowing employees to regain strength and return, thus enhancing business efficiency. Apart from summer vacation, all LSIS employees are given concentrated breaks at the first half and latter half of a year (3~5 days), which provides employees with an opportunity to rest and refresh.

## Fair Evaluation and Compensation

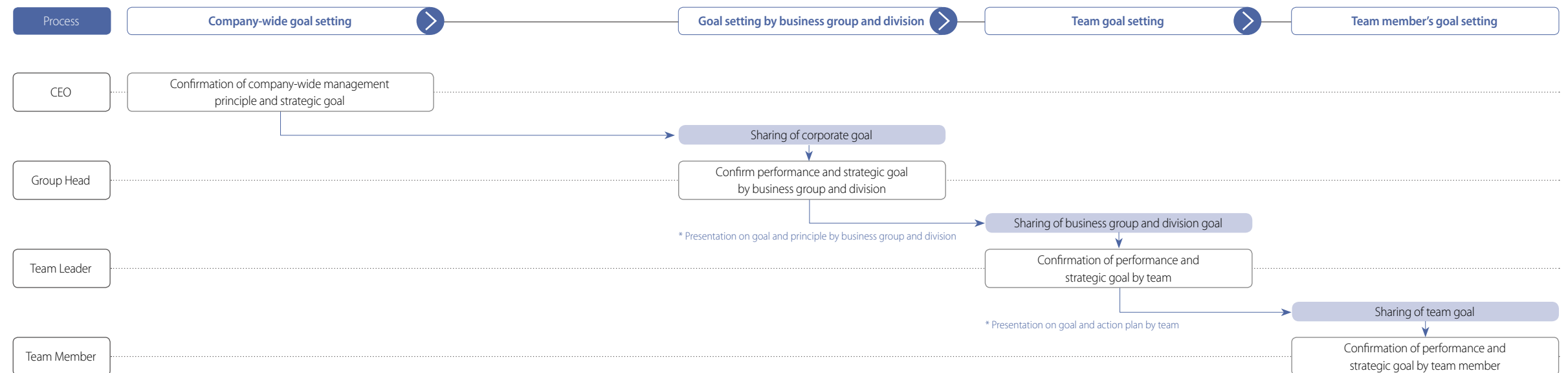
### Performance Management System

Our employees are evaluated with respect to their performances and capabilities. As for performance evaluation, targets are set in the business group, division, team, and individual levels, respectively, through negotiations at the beginning of the year. The progress of each target is checked through daily and mid-term evaluations and various measures are taken to assist in reaching those targets. If those are not achieved, we identify the causes and ways to improve. We secure fairness by requiring meetings between evaluators and evaluatees at every step of the process and improve transparency by providing feedback which is reflected in future goal setting and individual development plans. Business unit performances are linked to individual evaluation grades and are used in calculating bonuses, salary adjustments, promotions, and career development.

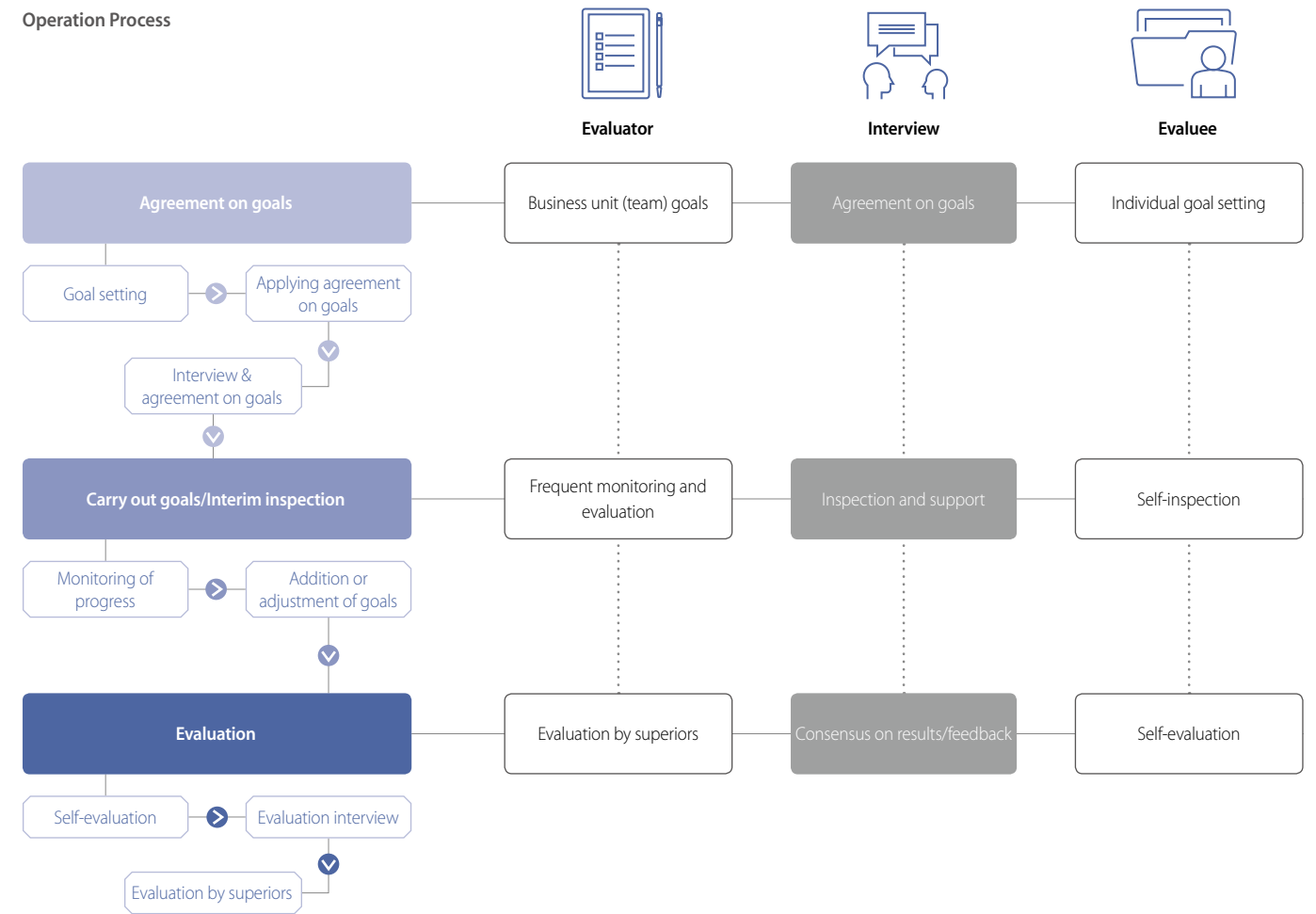
### Compensation Program

Diverse award programs are operating to compensate employee performances. The "LSIS People of the Year Award" is granted to model employees for the year and "Best R&D Award" is given to the researchers who promoted active R&D. Other compensation programs include "Value Sharing Award" to employees who are active in practicing corporate value of collaboration, execution, creativity, and integrity, "Patent of the Year Award" to excellent invention items, "Order of Merit" to individuals who contribute to corporate growth, "Service Excellence Award" to employees who attained remarkable service results, and "Sales Award" to the highest performing sales team. These programs help not only motivate employees to be absorbed in their jobs but also give a boost to organizations.

### Goal Cascading



### Operation Process



# 03

## Suppliers

Win-win Growth by Establishing a Culture of Fair Trade



### Plans for 2015

- Expand training about fair trade and ethical management
- Build infrastructure for win-win growth with suppliers
- Expand financial supports for suppliers and improve the Mutual Growth Payment System
- Support technology protection of suppliers

### Achievements in 2015

- Trained suppliers about fair trade three times
- Built communication channels with 1st, 2nd, and 3rd-tier suppliers
- Activated financial support and the Mutual Growth Payment System for 1st and 2nd-tier suppliers
- Supported technology protection for 1st and 2nd-tier suppliers (Trade Secret Certification Service)

### Plans for 2016

- Disseminate the culture of fair trade and win-win growth
- Stiffen global competence of suppliers
- Invigorate communication channels

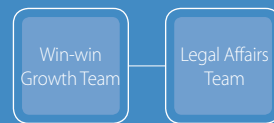
### Key Management Issue



### Our Response

- Strengthen policies for the compliance with subcontract laws
- Establish a culture of fair trade

### Implementation Organization



- ACE Club
- Expand supports for win-win growth
- Make active communication with suppliers



### Key Performance in 2015



Support for KRW 21.8 billion loans at low interest rate



Activation of the Mutual Growth Payment System

LSIS is committed to establishing a culture of fair trade with suppliers. As part of our efforts, we have supported coordinated activities to comply with the Subcontracting Act and educated employees of 2nd and 3rd-tier suppliers on their rights and obligations to embed fair trade throughout the supply chain.

## Activities to Enhance Compliance with Subcontracting

Diverse activities have been conducted to systematically comply with the Fair Trade Act and Subcontracting Act. As part of this, we signed the "Subcontracting Basic Agreement" with about 380 suppliers in 2015. The contract was built on "Standard Subcontracting Agreement" recommended by the Korea Fair Trade Commission aiming to establish fair and transparent trading relationships with suppliers. The pledge to ethical management practice has also been concluded with all current suppliers on a yearly basis. In 2015, we signed the fair trade and win-win growth agreement with 388 suppliers and stipulated 4 key guidelines of the Fair Trade Commission in our corporate standards. We have also worked hard to prevent violations of the Subcontracting Act and continue fair trade. As part of these efforts, we hold the Subcontracting Internal Deliberation Committee chaired by the CPO every month in order to assess whether the registration and withdrawal procedures of suppliers were appropriate and to confirm whether bills were paid within the due period. Additionally, the Purchase Operation Meeting monthly updates the issues and highlights related to compliance and ethical management to continuously enhance the compliance awareness of employees in charge of procurement.



Training about fair trade in 2015



Training on the Subcontracting Law and fair trade in April 2015

### Education to Spread Sustainability Management

Sustainability management requires consensus among main players within the value chain. Thus, we annually run educational programs for suppliers with the aim of disseminating the culture of sustainability management. We took an opportunity to share the philosophy and current status on LSIS's sustainability management, held a special lecture for CEOs from suppliers on the establishment and dissemination of sustainability management, and discussed detailed plans for future execution at the ACE Club seminar in 2015.



Special lecture on sustainability management for suppliers' CEOs



Agreement on win-win growth in 2015



Internal Deliberation Committee for Subcontracting

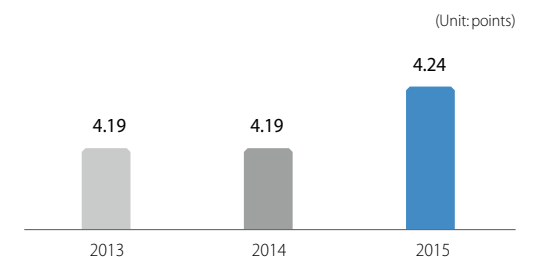
## Establish Fair Trade Culture

### Education on the Subcontracting Act

In 2015, we organized three fair trade education sessions participated by our employees and suppliers to disseminate the compliance with Subcontracting Act and the culture of fair trade. In addition, fair trade education was offered to the CEOs and employees of around 180 1st and 2nd-tier suppliers in April and our employees in charge of procurement in July under the support from the Shared Growth Committee. In July, we provided suppliers' CEOs with education on fair trade at the ACE Club seminar. We will keep on running those educational programs for employees of LSIS and suppliers to help them cultivate basic knowledge on fair trade and prevent any dispute and unfair trade in advance.

### Survey on Fair Trade Targeting Suppliers (Satisfaction on Ethical Management)

LSIS carries out a survey on ethical management targeting suppliers every year in order to assess their satisfaction level on our ethical management and measure ethics index. The survey consists of questions over the entire process spanning from supplier selection and contract agreement to operation. With the survey, we collect and adopt suggestions and opinions from suppliers to set the direction of our ethical management. Their satisfaction on our ethical management has been on the rise. (on the scale from 1 to 5)





We are proactive in supporting the enhancement of suppliers' competitiveness. Outstanding suppliers are selected as members of the ACE Club every year and they receive our consistent supports in the fields of finance, productivity, and technological competitiveness. We are also committed to accepting opinions from suppliers based on continued communications with them.

## ACE Club

### About ACE Club

ACE Club is a program to select suppliers equipped with competencies in three aspects; taking a swift action (Activity), taking up challenges to break through boundaries (Challenge), and making the best performance as excellent partners (Excellent). ACE Club members are able to take our guidance on quality, production, and comprehensive corporate management know-how, and are qualified as a partner for win-win growth. We have annually chosen ACE Club members based on a comprehensive evaluation on product quality, on-time delivery performances, cost competitiveness, process management, and resolution on win-win growth since the year of 2008. ACE Club members benefit from preferential payment conditions, instruction on process management, assistance for establishing manufacturing execution system, and training and education opportunities for benchmarking at home and abroad. Moreover, our varied programs for win-win growth help them acquire global competitiveness and establish a self-reliance management system. The ACE Club has stood for the characteristics of an ideal partner to other suppliers. We encourage our suppliers to build up competencies on a par with that of parent company in specialized fields and well establish management transparency and entrepreneurship in order to acquire sustainable strengths. With our help and efforts, ACE Club members have grown up as exceptional small and medium-sized businesses and are evolving into global suppliers through continuous innovation.

### ACE Club Status

Classification	2008	2009	2010	2011	2012	2013	2014	2015
Total No. of ACE CLUB members	21	26	28	20	19	20	29	19
Purchasing amount (KRW in billions)	97.7	142.0	207.8	214.7	251.0	229.4	247.4	214.4
Purchasing amount per member (KRW in billions)	4.7	5.5	7.4	10.7	13.2	11.5	8.5	11.2
No. of ACE CLUB members with over KRW 10 billion in purchasing	2	4	7	9	12	11	10	9

### Seminar for Suppliers' CEOs

LSIS has held an annual seminar for CEOs of ACE Club members to share know-how regarding business strategy, finance, marketing, leadership, and economy. At the seminar, in particular, dignitaries from various fields and our executives provide participants with special lectures and a forum to discuss the direction we need to take together and pending issues of the industry. In addition, the ACE Club members share their successful innovation strategies and cases in seeking for win-win growth built on a fair competition. This seminar will continue to play a critical role as a channel for learning management expertise and communication.



Seminar for ACE Club CEOs in 2015

### Leadership Innovation Program for CEOs of ACE Club

In 2015, LSIS provided CEOs of ACE Club members with "Management Leadership Innovation Program." It was designed to support suppliers to improve their managerial and organizational culture by facilitating changes in their CEOs' leadership beyond just quality innovation, which pursue upgrading suppliers' sustainability. Prior to launching program, we had examined organizational strengths and weaknesses and management leadership recognized by all employees of suppliers. Based on the results, we drew major assignments for leadership innovation considering each member's condition and offered a customized coaching program by a specialized agency. After the coaching program, we took an opportunity to share the best results of each member and what they had learned from the program and finally evaluated the effectiveness of the program. LSIS plans to carry out diverse programs that practically help suppliers enhance their overall competitiveness not only focusing on the aspects of product quality but also production.



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1. Kick-off of the CEO leadership innovation course in 2015  
2. Implementation of the leadership innovation course  
3. Customized leadership coaching program

### Benchmarking of Domestic and Overseas Advanced Companies

In order to help suppliers build innovation mindsets and increase global competitiveness, we have provided ACE Club members with chances to make visits to advanced manufacturing facilities at home and abroad every year. A total of 248 employees of suppliers have participated in the program of visiting 17 advanced companies in 5 foreign nations and 5 domestic companies between 2008 and 2015. They also took part in three overseas exhibitions. These opportunities have helped them experience rapidly changing market environment and learn the know-how of quality and production management. In March 2015, they visited two domestic automotive component manufacturers, Daesung Electric and Hyunbo, which allowed them to directly witness the differences in the level of management and technologies between automotive component manufacturers and our suppliers. In addition, we encouraged the participants to take actions based on the discussion over benchmarking results and ways of improvement, which helped enhance their corporate competence. In September 2015, 35 major suppliers visited our Smart Factory as part of the program. The visit enabled suppliers to see the superiority and operation performances of our future-oriented automation plant at first hand and get indirect experiences on the innovation of the manufacturing industry. LSIS will continue to offer this program to suppliers in order to stiffen their quality innovation and corporate competitiveness with the belief that they are valuable business partners for expanding business globally.



1. Benchmarking program in 2015  
2. Suppliers' benchmarking on the Smart Factory in 2015





## Intensify Supports for Win-Win Growth

### Financial Support and Mutual Growth Payment System

#### Financial Support

LSIS raises funds in various ways and lets suppliers use them at a low interest rate for investing in equipment and extending manufacturing facilities. In 2015, we raised a total amount of KRW 21.8 billion and offered KRW 10.4 billion to 1st and 2nd -tier suppliers for helping them boost the cash flow and stabilize management. Considering the overall competitiveness enhancement within the supply chain, we are providing financial support not only to 1st -tier suppliers but also to 2nd -tier suppliers. In 2016, we plan to make sure suppliers in need of financial assistance have access to the program. Also, we have been improving the payment condition for subcontractors every year. We have risen the share of cash out of a total payment every year in order to improve the capital liquidity of suppliers. In July 2015, we increased the maximum amount of cash out of a total payment from KRW 50 million up to KRW 60 million. Furthermore, a total of KRW 31.3 billion was settled in advance before the national holiday Chuseok and KRW 38.3 billion of cash was paid out for mutual prosperity in marking the 70th anniversary of Independence Day.

#### Financial Supports for Suppliers

##### • Fund Size (Unit: KRW in billions)

Classification	2013	2014	2015
Direct	2.6	2.8	3.6
Combination	13.2	14.2	14.8
Special	-	3.2	3.4
Total	15.8	20.2	21.8

##### • Performance (Unit: KRW in billions)

Classification	2013	2014	2015
Direct	1.6	2.7	2.7
Combination	13.2	12.6	5.1
Special	-	2.1	2.6
Total	14.8	17.4	10.4

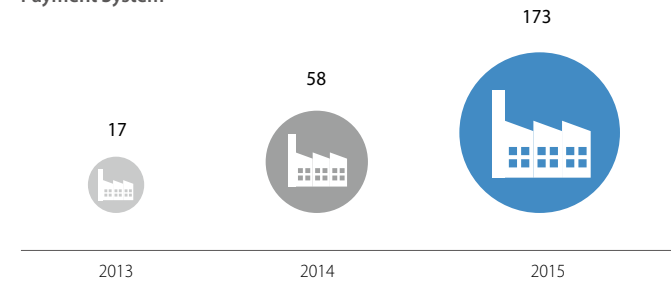
##### • No. of Suppliers Supported (Unit: firms)

Classification	2013	2014	2015
Direct	13	16	22
Combination	53	43	21
Special	-	11	14
Total	66	70	57

### Mutual Growth Payment

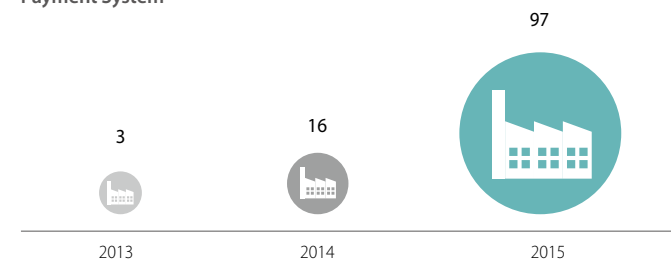
We organized a financial assistant scheme based on our mutual growth payment system to ensure that 1st, 2nd and 3rd-tier suppliers get trade receivables-secured loans. LSIS became the first to adopt the mutual growth payment system in the industry in August 2013 and let 270 1st, 2nd, and 3rd-tier suppliers benefit from the mutual growth payment worth KRW 243.6 billion. We are working hard to make sure that the benefit from the system reach more suppliers as we expanded the bank pool which our suppliers could get help from for the related service in 2015 as well as in 2014. We plan to intensify the mutual growth payment system for 1st -tier suppliers in 2016, which will result in a positive dissemination among 2nd and 3rd-tier suppliers. We will consolidate the foundation for the mutual prosperity within the supply chain by enhancing the stability of bill payment and alleviating concerns out of unpaid bills.

#### No. of 1st-tier Suppliers Using the Mutual Growth Payment System (Unit: firms)



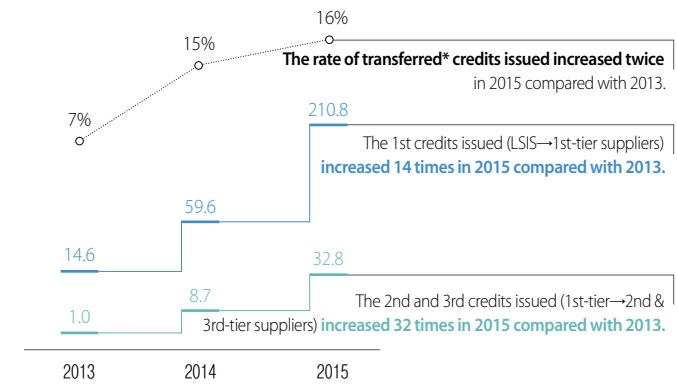
> **Increased 10 times in 2015** compared with 2013 when the system introduced

#### No. of 2nd and 3rd-tier Suppliers Using the Mutual Growth Payment System (Unit: firms)



> **Increased 32 times in 2015** compared with 2013 when the system introduced

### 3-year Performances in the Mutual Growth Payment System (Unit: KRW in billions)



\* Rate of transferred credits issued: Credits issued from receivables between 1st-tier and 2nd & 3rd suppliers to those between LSIS and 1st-tier



Agreement on disseminating the Mutual Growth Payment System

### Supports for Productivity Enhancement

#### Establishment of Production Management System (NAMOS ERP System)

LSIS has encouraged suppliers to establish a production management system (NAMOS ERP System) linked with our ordering information system in order to enable an effective production and inventory control. A total of 21 suppliers have completed the system September to December in 2015, and additional 24 suppliers plan to adopt the system in 2016. The NAMOS ERP system enables suppliers to define their products' BOM that has been loosely managed so far and to make the quality and cost control more effective. We plan to make the NAMOS ERP system connected to the Statistical Process Control System to ensure better product quality.

#### Guidance for Process Quality Management

In order to secure quality competitiveness from the stage of purchasing raw materials, LSIS dispatches internal specialists to guide the management and improvement of process quality. In 2015, we increased the number of specialists to five from two in the previous year to expand the scope to major 2nd-tier suppliers. They visited 1st and 2nd-tier suppliers 239 times and completed 1,075 improvement tasks. This activity helped suppliers become aware of the importance of quality and process management so that they secured more independent and competitive process management system. In 2016, we plan to support them to develop global competence.

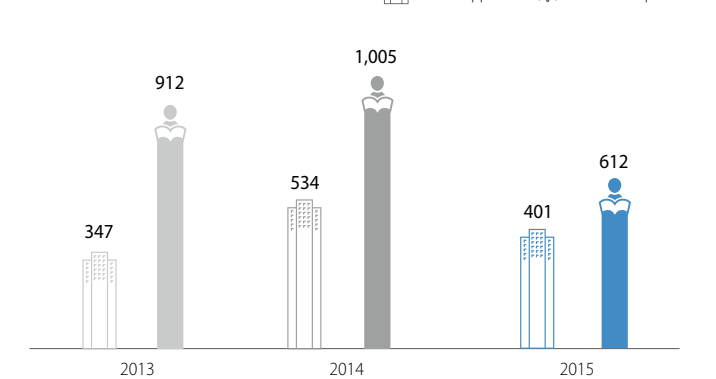
### Guidance for Process Quality Management

Classification	2013	2014	2015
No. of suppliers visited (firms)	34	42	34
No. of visits (times)	45	91	239
No. of improvement supports (items)	275	737	1,075

### Supports for Training and Education

Diverse training and education programs for suppliers have been running to help them enhance competitiveness since 2007. Those programs focus on essential business items such as quality, production, and FTA in association with specialized training institutions outside such as the Chungbuk branch office of the KSA and the Chungbuk Human Resources Development Institute. In particular, we added a specialized training course named "Supplier-tailored Product Education" that features contents on the role of each component of suppliers in finished products, the importance of each part, the point that requires workers' attentions to prevent defects, and the management know-how to the programs in 2013. This course has afforded great satisfaction to trainees who are employees of suppliers every year. In 2015, a total of 612 employees from 401 suppliers have attended the training and education programs (50 rounds, 14 courses), which contributed to enhancing the component quality and productivity of suppliers.

### Three-year Training Results



Customized training on products for suppliers

**Supports for Technology Development and Protection**

**Supports for Technology Development**

**New Product Development with Conditional Purchase Option:** LSIS has jointly worked with suppliers for the government-led project named “New Product Development with Conditional Purchase Option” to enhance their technology development capability and sales revenue. Following “Manufacturing Technology Development of Molding Bond for VI” with the supplier Seung Lim Electric in 2013, we worked with Ejins in completing three projects including the “Localization of HVDC Power Supply” in 2014. In 2015, we also carried out “Software Development for Obtaining Stability of Large-scaled Power System Application” in working with Master’s Space. We consider this project as a representative R&D for win-win growth aimed at motivating suppliers to develop components and intensifying localization, thereby planning to continuously expand participation in this project.

**Technology Cooperation Tasks:** The Company has implemented technology cooperation tasks, as part of the scheme for Open R&D that aims to create synergy by combining our technologies and suppliers’ manufacturing capabilities. We conducted totally 74 collaborative tasks worth KRW 3.3 billion in 2015. We will continue to expand these tasks so as to encourage suppliers to enhance technology development and deepen cooperative relations.

**Implementation of Technical Cooperation Tasks**

Classification	2013	2014	2015
No. of tasks	40	54	74
Amount (KRW in billions)	2.1	2.9	3.3

**Supports for Technology Protection**

LSIS newly adopted the “System and Method on Certification of Trade Secret” in 2015 with the intention of protecting technologies and trade secrets of suppliers. Run by the Korea Institute of Patent Information, it certifies proprietary technologies and the ownership of business information of small and medium-sized businesses and protects suppliers from the theft and drain of proprietary technologies and business information. In 2015, we supported 13 suppliers in protecting 39 technologies and trade secrets at their request in 2015. In 2016, as well, we promise to intensely carry out the activity by conducting demand survey.

**Communication and Information Sharing with Suppliers**

**Performance Sharing**

The Company holds the Performance Sharing Meeting every quarter in order to share our business and innovation performances with suppliers and form a consensus on improvement. In 2015, a total of 630 employees from 600 1st and 2nd-tier suppliers participated in this meeting, through which they dialogued with plant managers, attended special lectures on management insight and communication, and shared best win-win growth practices. We plan to expand the scope of this meeting to 2nd-tier suppliers in the future.

**Partner Exchange Meeting**

The Partner Exchange Meeting, supervised by the director of Business Support Division, was held four times in 2015 where participants shared the vision for win-win growth, presented ways to enhance global competitiveness, and discussed business issues. They also carefully listened to VOCs in each business sector and debated diverse cooperation methods for future growth. As a result, a total of 38 agendas were handled and many improvement tasks with regard to business process were identified.



1. 2nd Partner Exchange Meeting  
2. 3rd Partner Exchange Meeting

**Communication with 1st, 2nd, and 3rd-tier Suppliers**

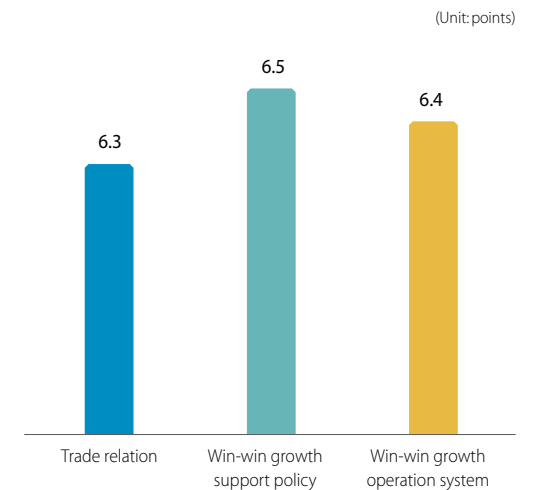
The CPO of LSIS annually visits its suppliers to directly listen to their opinions and grievances and discuss ways of improvement, which helps intensify interactions with them. We have developed the event into a venue for candid communications in the form of a talk concert staying away from a typical and conventional communication. During the session, the CPO takes time not only to listen to suppliers’ difficulties and opinions but also to have meals with participants to build deepened relations. Especially in 2015, we extended the program to include 3rd-tier suppliers in addition to 1st and 2nd -tier suppliers in the communication, and made a resolution to engage in the fair trade and win-win growth between LSIS and suppliers based on the Multilateral Win-win Growth Agreement. We will continue to maintain the communication channel with suppliers for better fair trade and co-prosperity.



1. Round-table lunch with suppliers  
2. Agreement on win-win growth with suppliers  
3. Visit to the 3rd-tier suppliers  
4. Event for activating communication with suppliers

**Satisfaction Survey Results on Win-win Growth**

We started a survey to check the level of satisfaction of suppliers for win-win growth in 2015. Major survey items include trade relation, win-win growth support policy, and win-win growth operation system, and the results are adopted to setting the activity direction for win-win growth. In the survey of 35 major suppliers conducted in 2015, respondents suggested 6.3 for trade relations, 6.5 for policies of supporting win-win growth, and 6.4 for win-win growth operation system on a scale of 1 - 7. The results indicated that suppliers were most satisfied with fair trade presented by due payment, ethical management and win-win growth support policy presented by supporting for subcontracting committee, education, and communication. On the other hand, they indicated that the suppliers’ satisfaction level was quite low in terms of trade relation presented by payment adjustment for delivered goods. We plan to annually carry out the survey to reflect the results in setting the policy direction for win-win growth. In 2016, in particular, we will collect VOCs from diverse suppliers to include more of them for the survey for the next survey.



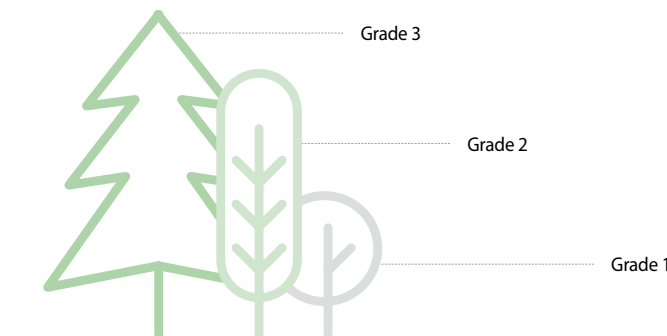




LSIS focuses on going green by making energy utilization more effective and reducing wasted energy. In 2015, we redefined standards for eco-friendly products to prohibit the use of hazardous substances and to promote eco-friendly product development.

### Standards and Status of Green Products

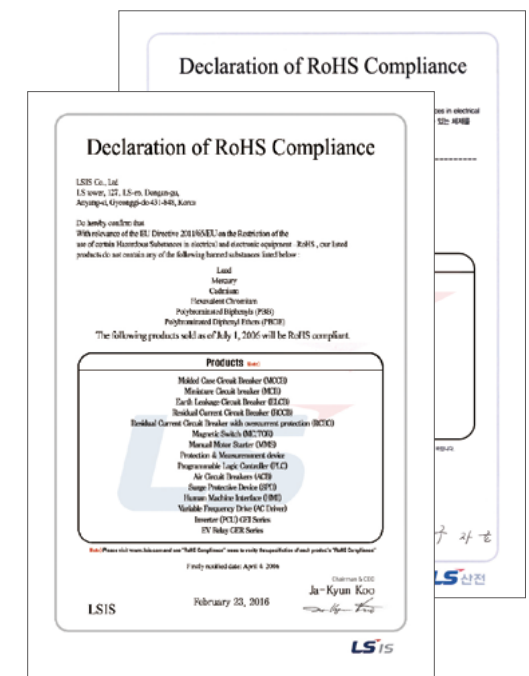
LSIS strives to deal with eco-friendly products in a coordinated manner in accordance with "Green Product Grade Model." The model was defined to achieve our goal of "Futuring Smart Energy" and improve our company image as a green energy business. All models of our products are given grades from 1 to 3 based on the level of eco-friendliness according to the "Green Product Grade Model." In dealing with products based on their grade, we are supporting for constant development of customer-oriented green products.



Grade 3	Products corresponding to "green technology" certified by the Green Certification Committee of the Government
Grade 2	Products qualified to the technology level for green technology certification** by the Government while being eligible for Grade 1
Grade 1	Products meeting the standards of our "Rules of Responding to Environmental Regulations" for coping with domestic laws on hazardous substances, international environmental regulations, and requests from customers

### Hazardous Substance Management (6 RoHS)

The Company has restricted the use of 6 RoHS - lead (Pb), cadmium (Cd), mercury (Hg), hexavalent chromium (Cr6+), polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE) - with the declaration of environmental management in 2006. Additionally, we established hazardous substance management system enabling a tight management and verification to ensure that no parts and materials contain hazardous substances. Through this system, we thoroughly monitor the use of hazardous substances.



RoHS Compliance

#### Plans for 2015

- Redefine eco-friendly product standards and establish eco-friendly product development process
- Improve environmental management organization structure
- Identify and respond to company-wide health and safety risk

#### Achievements in 2015

- Redefined eco-friendly product standards
- Established ESH Control Tower
  - Drew up and inspected environment and safety policies
- Revamped emergency response system and scenarios

#### Plans for 2016

- Build an integrated disaster control center
- Embed a culture of safety management

#### Key Management Issue



#### Our Response

- Reestablish eco-friendly product standards
- Manage hazardous substances

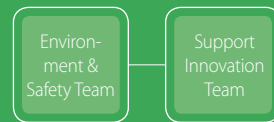
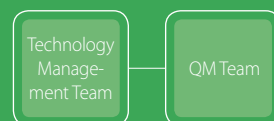


- Environment and safety management system
- Safety management at worksites
- Improve employee health



- Strategy to respond to climate change
- Manage energy consumption

#### Implementation Organization



#### Key Performance in 2015





Our Major Green Technologies

Energy-saving Variable Speed Drive Technology

Technology to enhance energy efficiency through variable speed control of drives



High Voltage Drive Technology

Motor control solution to build high voltage drives by connecting low voltage single phase output drives in series



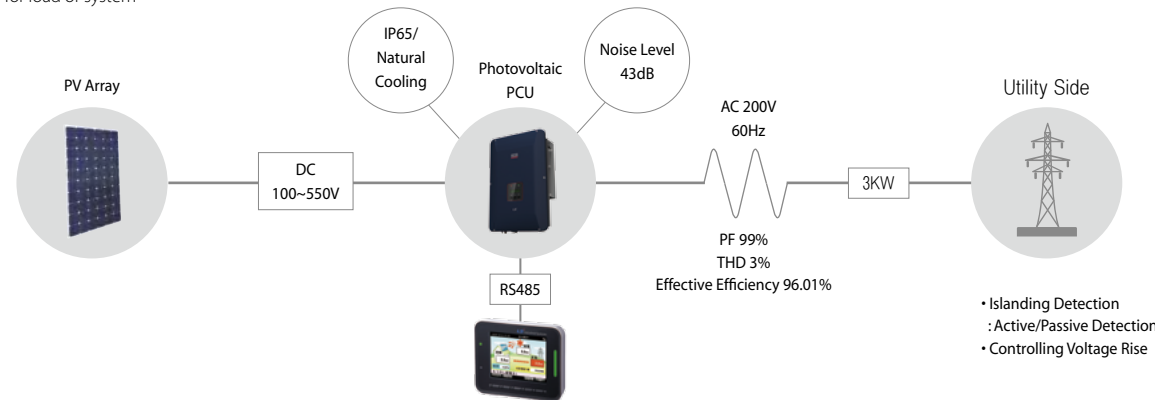
Components of Energy Storage System such as Inverter, Converter, etc.

Feature to stably supply and block battery power. Technology to prevent flow of over current from capacitor motor due to short circuit and protect components from reverse current caused by sudden stop



Photovoltaic Module (Photovoltaic PCU)

Power generation system to convert DC current generated from solar cell, which converts light energy to electric energy using semiconductor characteristic, into AC current to be used for load or system



Smart Power Distribution and Micro-grid Operation System

Technology to optimize energy efficiency, while reducing power loss and CO<sub>2</sub> emissions, through real-time two-way information exchange between suppliers and consumers and to enhance energy reliability through monitoring/controlling system for distribution network and power failure recovering technology



Smart Meter Technology

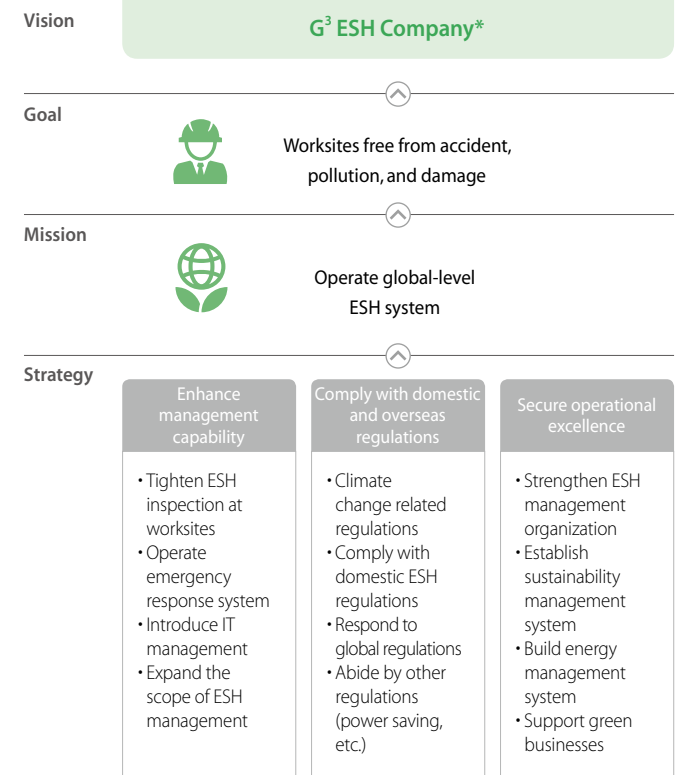
Electricity meter to measure an electric usage in certain intervals and exchanges various demand information with other multiple devices and systems



LSIS is proactive in creating a better work environment and enhancing safety and health of employees. We also strive to implement a world-class ESH (Environment, Safety, and Health) system by establishing an environmental management system, setting visions, and selecting and continuously managing major environment and safety indices.

Environment and Safety Management System

**Environment, Safety, and Health Management Strategy and Vision**  
We are committed to realizing the vision of "G<sup>3</sup> (Green, Great, Global) ESH Company" through building a workplace free from accidents, pollutants, and losses. To that end, we put our efforts in establishing an optimal environmental management system while enhancing environment and safety management competency from every sector and improving operation efficiency.



\* G<sup>3</sup> ESH Company: Green, Great, Global ESH Company

**Declaration on Environment, Safety, and Health Management**  
In fulfilling our management philosophy, "going together for a greater value," we acknowledge the activities for environment, safety, and health management as basic tasks to be done. We promise to put the activities below into practice in order to build a clean and safe society.

Building Eco-friendly Workplace

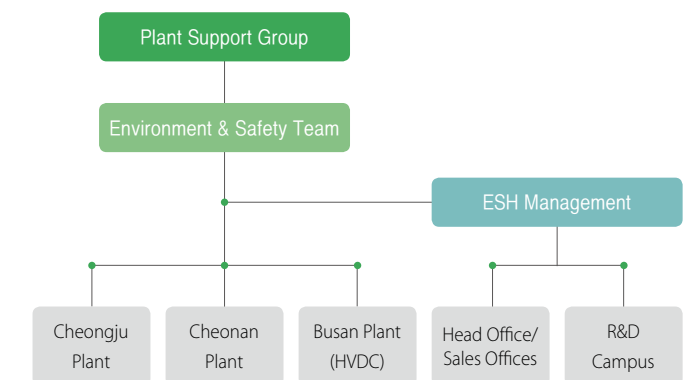
- Primarily prevent contamination by minimizing environmental impacts throughout the process from product design to disposal
- Minimize the usage of resources and energy by adopting clean production technology
- Comply with international agreements, laws, corporate standards, and other requirements
- Conduct periodic environmental assessment to analyze the performance and constantly improve environment management system
- Provide training programs for a better environmental awareness among employees and encourage them to engage in activities for environment conservation

Operating a safe and healthy workplace

- Offer resources for safety and health improvement and attract employees' positive participation through trainings and educations
- Prevent possible accidents and improve safety and health condition by setting and implementing action plans for detecting potential risk factors and minimizing safety and health risks
- Improve productivity by engaging in activities for improving health and preventing diseases and accidents

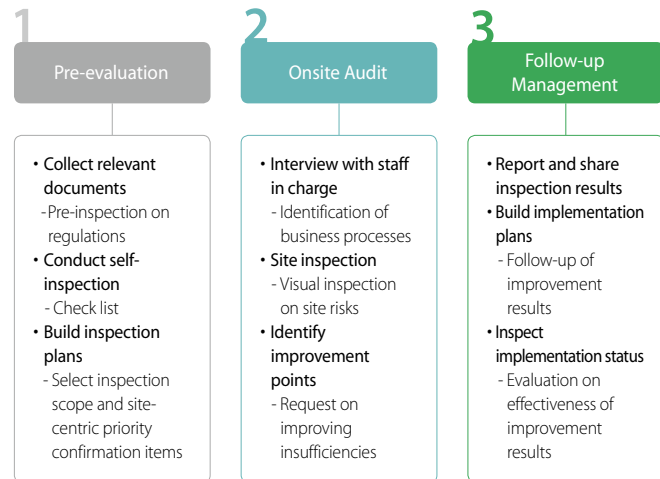
Organizations for Implementation

In order to effectively manage environment, safety, and health factors at worksites, we are operating the ESH system by newly organizing a group solely for ESH management led by the Environment & Safety Team. The ESH system enables us to get rid of blind spots of environment and safety management at the head office and research centers, also achieve the upward leveling in ESH management in all sectors. We will continue to proactively respond to domestic and overseas laws and restrictions related to ESH by preemptively analyzing trends and preparing action plans.



**ESH Monitoring**

We regularly inspect whether environment and safety laws are well observed and draw up improvement tasks to get rid of ESH risks. Main inspection items include the implementation of legal requirements in terms of working environment, safety, health, firefighting, and U/T facilities. We also continuously monitor and check out whether the improvement is made.

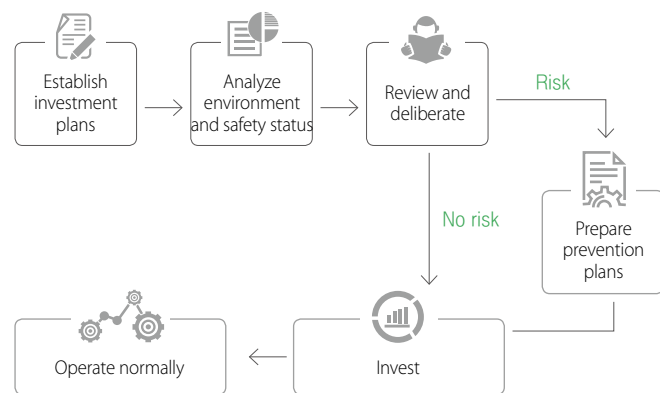


**ESH Information Exchange**

We run meetings for exchanging ESH information on a regular basis among relevant employees in order to aggressively respond to environment and safety laws and policies getting ever more stringent. We have the results of discussion reflected in management in workplaces and share the information of improvement with related employees.

**Prior Inspection on Environment, Safety, and Health**

We operate the prior inspection system on environment, safety and health to make a coordinated response possible based on prediction and analysis of potential environment and safety impacts of the business. The system enables us to abide by environment and safety laws by adopting equipment to prevent contamination and accidents.



**Green Purchasing**

LSIS mainly purchases raw materials (metals) qualified to RoHS and engages in green purchasing activities in accordance with its own "Green Purchasing Guidelines." Moreover, we purchased materials and office supplies with the Green Mark worth KRW 180 million in total. We plan to work hard to consistently engage in green purchasing to minimize environmental impacts in the coming years.

**Investment in Environment and Safety**

We primarily invest in green product development and process improvement in order to minimize impacts on environment, safety, and health. In addition, a comprehensive emergency management system is in preparation in an attempt to respond to possible emergencies and improve responsive capability in workplace. We plan to build and implement a mid and long-term investment plan to save energy, enhance yield of materials, and reduce environment and safety risks.

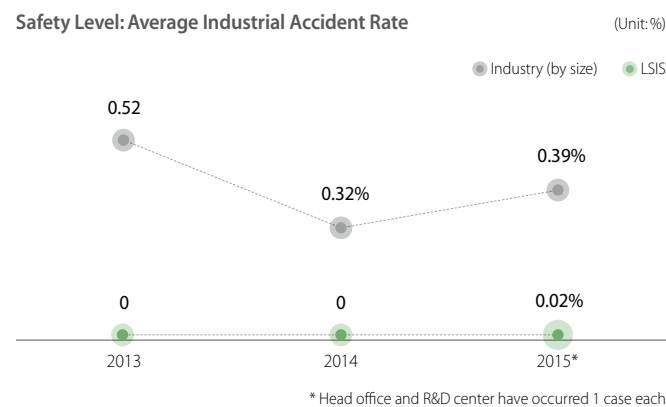
(Unit: KRW in millions)

Classification	2014	2015
Eco-friendly product development	4025.1	5,342.0
Process improvement	180.3	153.9
Investment in environment and safety facilities	351.3	616.1
Maintenance of environment and safety facilities	114.5	318.6
Total	4,671.1	6,430.5

**Safety Management in Workplace**

**Industrial Accident Rate Management**

Safety is the top priority in workplace. We have adopted safety and health management system since 2008 in hopes to build accident-free workplace and continued risk evaluation and working environment improvement activities. As a result, the accident rate at LSIS has been maintained at the lowest level in the industry since 2012. Furthermore, monthly regular safety inspection is conducted on jobs with high risk in construction sites and trainings and technical supports are offered to ensure safety management.



**Enhancing Safety Awareness**

In order to heighten safety awareness among employees, we have operated systems to evaluate safety implementation and safety education performance. As a result, we realized our goal, "Building Accident-free Workplace" as we paid scrupulous attention on employees' safety and reviewing potential risks. We notify employees of safety instructions and practice guidelines via the intranet once a month and let employees transfer ESH information from the field for the purpose of heightening their awareness of safety and health management

**Accident Prevention Process**

When introducing new facilities to workplace, we assess their impacts on safety and health in advance. And then, risk evaluation is carried out to check potential risks after installing the facilities and we continuously monitor improvement items. We plan, execute, check, and improve all safety management activities based on OHSMS18001. The implementation status of the process is examined through an internal and external inspection.



**Support for Strengthening Suppliers' Competency in Safety and Health**

LSIS puts in place diverse programs to encourage suppliers' employees to voluntarily engage in environment and safety management activities. Particularly, the Performance Sharing Meeting, which is held every quarter and attended by suppliers' CEOs, offers a venue for cooperation to create a new shared value and for the promotion of a common goal of building accident-free workplace. Moreover, our staff in charge of environment and safety visits suppliers to offer practical supports, strengthening suppliers' competency in safety and health.

**Response to Emergency Situations**

Regular inspections on risky jobs, environmental pollutant control facilities, and hazardous substances are executed to preemptively prevent emergency situations at workplace. Emergency drills are also conducted based on detailed scenarios by type and stage. In 2015, we carried out unplanned emergency drills in cooperation with a fire station in order to check our emergency response capability and verify the validity of our organizational and procedural efficiency for emergency response. We plan to enable all employees to secure rapid initial response capability to emergency situations in accordance with designated manuals and duties.



Surprising emergency drill

**Introduction of Fire Prevention System**

We have introduced risk management criteria to designated areas with the possibility of fire or explosion hazard, while meeting fire safety level in the view of insurers based on National Fire Prevention Association (NFPA). In addition, we are establishing the Smart Management System in order to effectively manage fire prevention facilities in case of emergencies in workplace.



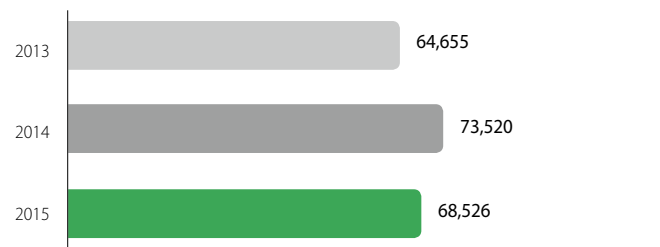
**Training on Safety and Health**

We provide our employees and suppliers with tailored training programs on safety to raise their awareness of safety. Special safety programs by external experts are regularly offer to supervisors who take a key role in managing manufacturing field, while helping them learn diverse disaster-free techniques online.

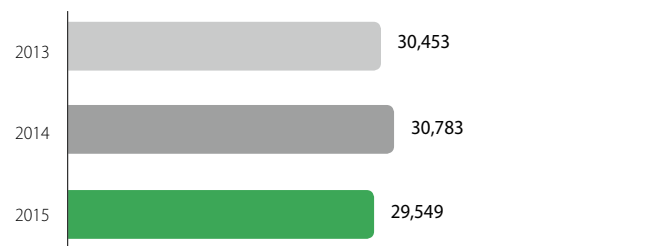
**Safety and Health Training System**

Course	Details	Term
Legal training	Training in the employment stage	Monthly
	Regular training	Monthly
	Training for supervisors	Half a year
Special training	Job training (environment, safety, health, and disaster prevention)	Year-round
	e-learning training	Year-round

**Training Hours** (Unit: cumulative hours)



**No. of Trainees** (Unit: cumulative persons)



**Enhancement of Employee's Health**

**Improvement of Working Environment**

Stringent standards are applied to all worksites to ensure safe working environment. In addition, to improve pleasant working environment and employees' health, we commission external specialized institutions to conduct inspection on hazardous factors in working environment for the first and second half of every year. We also strive to minimize noise from equipment operation by drawing a noise map.

**Improvement of Employees' Health**

**Health Check-up and Emergency Treatment Training**

We offer regular health check-ups to our employees in partnership with local hospitals, helping them perform their jobs in good health. For those diagnosed with abnormal findings, we help them build healthy life patterns by providing consultation services and follow-up examination. We place easy-to-use automated external defibrillators in workplaces to make sure anyone can respond to emergencies of patients with cardiovascular diseases, the second most common cause of death. Also, we conduct emergency treatment trainings for cerebrovascular diseases.

**Health Enhancement Program**

LSIS operates diverse programs to prevent muscular-skeletal disease, stop smoking, and enhance employees' health. Those contribute to employees enjoying their healthy and happy lives as well as improving productivity. Especially, we run the anti-smoking campaign, "One Plus One," in connection with local public health centers in order to encourage smokers to voluntarily quit smoking and create clean circumstances.



Training on emergency measures

**Health Management Activities**

- Operation of Health Care Center**  
 Respond to emergency patient in real time and offer customized health care services
- Medical Checkup**  
 Support general and comprehensive medical checkups of employees and spouses
- Antismoking Campaign**  
 Help employees' antismoking activities in connection with local health centers
- Hearing Maintenance Program**  
 Improve facilities in line with noise evaluation and conduct regular hearing checkup
- Health Enhancement Program**  
 Consult doctors on checkup results and manage health condition regularly
- Intensive Control of Five Major Diseases**  
 Operate intensive control programs for high blood pressure, diabetes, high cholesterol, liver/intestine conditions, and obesity
- Prevention of Muscular Skeletal Disease**  
 Inspect hazardous factors, improve working environment, and carry out medical health care
- Get-together "119 Movement"**  
 Conduct a campaign to build a sound get-together culture (1 alcoholic drink, 1 round, return home by 9 o'clock)

**Establishment of Infectious Disease Control System**

New viral diseases such as SARS and H1N1 are prevalent throughout the world today. In 2015, Middle East Respiratory Syndrome (MERS), with symptoms of fever, dry cough, and severe shortness of breath, caused a number of deaths for two months after the first case was reported in our nation. In response, LSIS established a disease prevention and control system under the leadership of environment and safety related divisions as our employees frequently go on business trips to the Middle East and South East Asia which are relatively prone to new viral diseases.



MERS response activities

Blue	
<b>Concern (preemptive response)</b>	<ul style="list-style-type: none"> <li>Collect and share information on infectious disease</li> <li>Prepare disease related supplies and secure network of emergency contacts with public health authorities</li> <li>Train staff members on prevention and countermeasures</li> </ul>
Yellow	
<b>Attention (confirmed patient in the nation)</b>	<ul style="list-style-type: none"> <li>Secure database on employees who left for a business trip and visited outbreak regions</li> <li>Manage employees' commute status and build disinfection plans</li> <li>Check disease status of visitors to the company</li> </ul>
Orange	
<b>Warning (suspected cases in the company)</b>	<ul style="list-style-type: none"> <li>Monitor the diffusion of disease to the company</li> <li>Send suspected employees to designated hospitals and command home working</li> <li>Minimize business trip and movement to suspected areas</li> </ul>
Red	
<b>Seriousness (spread of infection throughout the company)</b>	<ul style="list-style-type: none"> <li>Quarantine confirmed employees to designated hospitals and monitor the diffusion of disease</li> <li>Commission the Korea Centers for Disease Control and Prevention</li> </ul>



International organizations have jointly taken measures against global warming and extreme weather caused by GHG emission as they are getting even more severe. LSIS has established policies against climate change and a relevant organization in order to join the efforts to reduce industrial GHG emission and fulfill responsibility as a global corporate citizen.

## Response to Climate Change

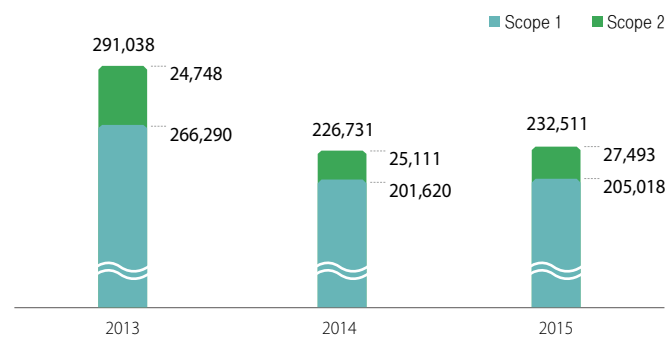
### Climate Change Strategy

LSIS is committed to addressing global climate changes through its green business. Furthermore, we operate a task force team to deal with issues such as global warming and the destruction of the ozone layer that cause climate changes. We voluntarily signed an agreement for saving energy and reducing GHG emissions to join the government-led climate change strategy. GHG emissions from our businesses are systematically controlled through the standardization of relevant rules and guidelines of measuring emissions. We participated in the CDP in 2011 and have disclosed our GHG management strategies and achievements to the public since then. Our Cheongju Plant have strived to achieve GHG emissions reduction goal since 2014 when it was designated as a worksite subject to GHG & Energy Target Management System.

### Verification of GHG Inventory

LSIS monitors the source and amount of GHG emissions in real time by establishing guidelines and inventories of GHG. A third party verification on our GHG inventory has been conducted to ensure the reliability on our GHG management since 2010, and relevant data serves as basis in designing green products and setting energy-saving plans. The emission of SF6 GAS during the manufacturing process of GIS (Gas Insulated Switchgear) is the source of almost 90% of our GHG emissions and the rest 10% comes from the usage of electric power and LNG (for heating)

GHG Emissions (by emission source) (Unit : tCO<sub>2</sub>eq)



### Energy Saving and GHG Reduction Activities

The energy consumption is monitored through the GHG inventory and management system in real time. In 2015, the energy consumption increased due to the expansion of business, establishment of new research facilities, and expansion of plant buildings. We will endeavor to minimize energy consumption by setting mid and long-term energy-saving plans and managing energy intensity. Electric power is mainly used for manufacturing process and cooling at Cheongju, Cheonan, and Busan plants, while LNG is used for heating facilities as a whole company.

Classification	Unit	2013	2014	2015
Electricity	MWh	47,856.4	47,863.7	52,326.4
	MWh/KRW in millions	2.64	2.62	2.92
LNG	km <sup>3</sup>	2,052.0	2,079.3	2,034.5
	km <sup>3</sup> /KRW in millions	0.11	0.11	0.11

### F-EMS (Factory Energy Management System)

In 2015, we installed the F-EMS at Cheongju Plant 2 to maximize energy efficiency in worksite. The 2,000kW photovoltaic power system was built on the rooftop of the plant to maximize the use of natural energy, which is expected to generate about 2.50 million kWh power and reduce 1,165tCO<sub>2</sub>eq of GHG every year. Furthermore, we plan to maximize the use of midnight power service by building 1,000kW Electric Energy Storage System and minimize avoidable power usage by linking lighting control systems in the plant.



Photovoltaic power generation system

### Operation of Automatic Control System for Cooling and Heating

We have adopted and operated an automatic controlling system for cooling and heating facilities operated in plants in order to properly manage energy used for cooling and heating. In the process, we are monitoring the energy consumption of each building in real time and

supplying power to maintain the indoor temperature according to our own energy saving policy. By doing so, we are able to provide employees with a comfortable and fresh working environment and effectively manage energy consumption.



Automatic cooling and heating control system

### High Efficiency U/T Equipment Replacement

The replacement of conventional lightings in and around our offices and plants with high efficiency LED lightings has resulted in saving about 665MWh of power and 300tCO<sub>2</sub>eq of GHG. We also expect that the replacement of old transformers with new high efficiency ones will reduce power loss by 35%. We continue investments in adopting high efficiency freezers, boilers, and low NOx burners to increase energy efficiency and reduce GHG emissions.



Low NOx burner

## Pollutants Management

### Air Quality Control

#### Air Pollutant Emission

We endeavor to reduce air pollutants from the source of emission by changing processes and replacing raw and source materials while minimizing the emissions by employing pollutant control facilities to treat pollutant substances. We make sure the pollutant control facilities operate in its best condition as we conduct regular check-ups for every facility. These efforts resulted in staying pollutant emissions below 50% of the legal limit.

#### Ozone Layer-depleting Substance

LSIS does not use substances containing CFCs specified by the Montreal Protocol, the most successful environment protection agreement

regarding all the major ozone depleting substances. On the other hand, we use substances containing HCFC with a relatively lower ODP (Ozone Depletion Potential) compared to substances containing CFC as a freezing agent for freezers and cooling facilities. The existing freezing agent will be consistently replaced with ODP Zero substances.



Inspection on air pollution prevention facilities

### Water Resource Management

As Korea is considered as a nation with water shortage, we are working hard to reduce water consumption and wastewater emissions. In 2015, water intake of all worksites from neighboring sources amounted to 226.4km<sup>3</sup>, most of which is used for manufacturing process and the rest is supplied for residential and fire-fighting water. Wastewater is treated by external professional firms in legitimate ways. Our Cheonan Plant recycles treated wastewater for the process of power semiconductor, reducing wastewater by up to 80%. We will continue to efficiently manage water resource by recycling wastewater and adjusting water supply pressure.

### Waste Management

The waste discharged from manufacturing process is legally managed based on different treatment methods. Waste recycling rate in 2015 was 82.2%, which was attributable to employees' voluntary efforts for separate waste collection and reduction of raw materials consumption from the stage of product design. In addition, we evaluate and examine waste treatment firms even before concluding contracts to make sure they treat waste discharged from plants in an appropriate manner.

### Management of Hazardous Materials

We have seen several chemical accidents in the industry and learned good lessons. In response, we have tightened our chemical substance management process in consideration of the impacts on environment and safety and strived to adequately manage them in manufacturing process. Hazardous substances are replaced with eco-friendly ones through consistent process innovation and trainings on responses to the leakage of chemical substances and safety instruction are offered to site worker on a regular basis. Moreover, we support them to perform their jobs in a safe environment with material safety data sheet and safety signs.



# 05



## Local Communities

Coexist with local communities through voluntary social contribution

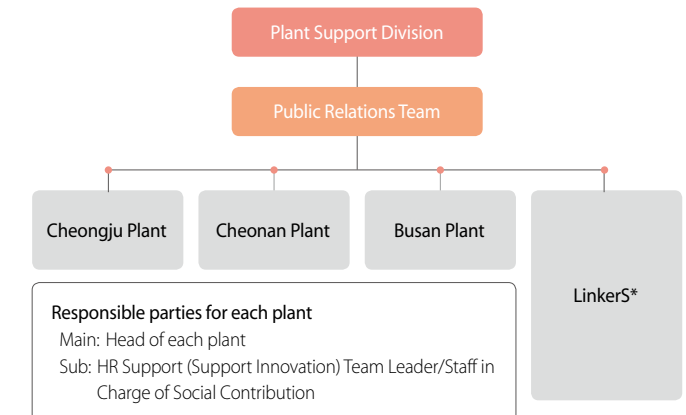


LSIS is committed to engaging in activities to support the underprivileged and the marginalized. We endeavor to create greater values while continuously taking part in the joint social activities with LS Group aligned with the group's philanthropic philosophy.

### Social Contribution System

#### Social Contribution Philosophy

We jointly carry out social contribution activities with LS Group. LS Group's management philosophy "LSpartnership" aimed at creating a greater value together as trustworthy partners embodies the identity of our social contribution activities. LS Group also implements various social contribution activities at home and abroad to create a greater value through sharing and collaborating between beneficiaries and volunteers under the social contribution philosophy of becoming "A Reliable Partner Sponsoring the Underprivileged and the Future Generation with Dreams." All affiliates of LS Group generate synergy throughout the entire process encompassing planning and implementation of social contribution under a unified philosophy.



\* LinkerS: LSIS's representative body for support staff, comprised of 17 members, to establish an open corporate culture and lead social contribution activities

#### Plans for 2015

- Participate in collaborative social contribution programs with LS Group
- Document social contribution policies and disclose activity information
- Build communication channels with local communities

#### Achievements in 2015

- Participated in collaborative social contribution programs with LS Group
- Documented social contribution policies and disclosed activity information (website, etc.)
- Surveyed local communities

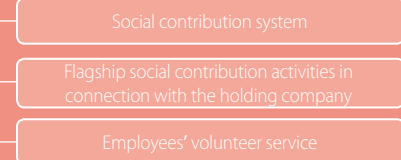
#### Plans for 2016

- Expand social contribution activities in connection with Anyang Senior Welfare Service Center
- Devise social contribution activities by season and national holiday
- Raise employees' awareness of CSR (a series of four featured articles in corporate magazine)

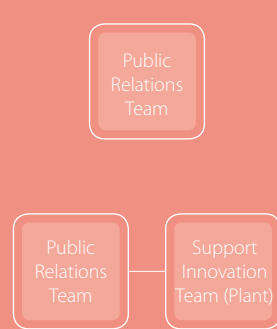
#### Key Management Issue



#### Our Response



#### Implementation Organization



#### LS Group's Philosophy of Social Contribution

##### Trustworthy partner supporting the underprivileged and our future generations

- Create better value through sharing and cooperating between beneficiaries and volunteers based on the philosophy of LSpartnership
- Develop and operate programs with the same concept in line with LS Group's philosophy to create synergy among affiliates

#### LSIS's Philosophy of Social Contribution

##### Provide sustainable support towards solving social conflict and helping the minorities based on a commitment to partnership

- Partnership: Take interest and participate in issues related to social conflict and minorities
- Initiative: Conduct sincere and voluntary activities from the bottom of the heart
- Sustainable: Continuously participate in social contribution activities beyond just one-time event

#### Representative Joint Social Contribution Programs with LS Holdings

##### LS Dream Science Class

We run LS Dream Science Class to provide neighboring elementary students with science classes and culture experiences in cooperation with the Child Fund and the National Academy Engineering of Korea since 2013. This program boosts children's interest in science by teaching them about the principles of science in an easy and enjoyable manner. Selected college students majoring in science and engineering provide science classes and mentoring programs after completing trainings for instructors. Our employees working at Cheongju, Anyang, and Busan plants participate in the class as one-day instructors and the Company offers students chances to visit its worksites.



LS Dream Science Class

#### Social Contribution Implementation Structure

LSIS aims to move beyond simply taking part in the activities led by our holding company, and finally operate a new stand-alone social contribution program in the long run that can create greater synergy. Currently, the company-wide social contribution activities are led by the Public Relations Team and the HR Support (Support Innovation) Team and LinkerS (representative body for support staff) from each plant implement activities tailored to each region.

#### Key Performance in 2015

No. of participants in volunteer service



Expansion of communication with local communities



Disclosure on social contribution activities  
Implementation of surveys



**Overseas Volunteer Group (LS Dream Village / LS Dream School)**

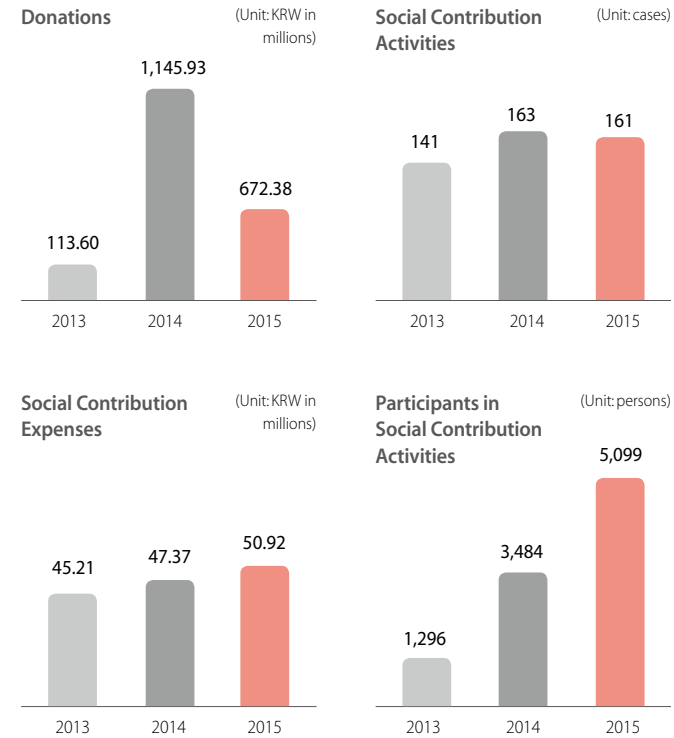
LS Group has been dispatching the undergraduate volunteer group to developing countries twice a year since 2007 with the aim of offering local children better educational environment and cultural experiences. Since 2013, the volunteer group has joined the "LS Dream School" project which selects two old and needy schools and constructs school buildings every year. Through this project, we had completed multi-layered buildings with 6~10 classrooms for Trung An A Primary School in VinhLong Province near Ho Chi Minh and Thai Hoa Primary School in HaiDuong near Hanoi in 2014, following the 1st and 2nd Dream School in 2013. In 2015, we held a ceremony to celebrate the completion of 5th and 6th Dream School in HaiDuong and VinhLong Province in Vietnam where production sites of LS Group's major affiliates (LSIS, LSCS, and LS Mtron) are located.



Activities of LS Dream Village

**Community Services of Employees**

With the basic direction of "Contribution to Local Communities," LSIS has joined LS Group's representative contribution activities while conducting volunteer services for local communities in Anyang, Cheongju, Cheonan, and Busan where the head office and worksites are located. In Anyang, we have visited social welfare centers once a month since 2012 to offer the physically disabled and the elderly living alone opportunities for experiencing culture, taking a walk together, going to the movies, going shopping, and delivering needed goods as well as to improve their living conditions. Moreover, employees and in-company clubs implement charity works in working with social welfare centers such as "Yulmok Welfare Center." In particular, the "Woori Love Corp," organized in 2011, has held mountain climbing events where they donate the funds raised to the elderly living alone and children from dysfunctional families. They also hold the Kimchi sharing event at the end of every year. Cheongju Plant has maintained a sisterhood tie for the last 12 years since 2005 as part of efforts to make better the economic conditions of agricultural areas. And an in-house community club of the plant has proactively engaged in various programs such as helping the elderly living alone, physically disabled children, child-headed families, and people with severe disabilities. Moreover, each plant has put efforts in taking social responsibilities as a member of community by taking part in various initiatives such as cleaning-up neighboring mountains, no-leftover campaign, no disposable campaign, environment protection, and energy saving.

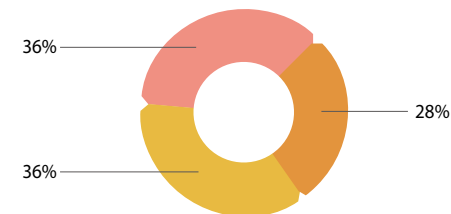


**Survey of Local Communities**

In August 2015, we carried out a survey of social welfare centers in Anyang, Cheongju, Cheonan, and Busan to gather VOCs regarding our social contribution activities. We plan to reflect the various requests made by local communities during the survey in running our social contribution programs in the coming years.

**What approach LSIS needs to take in dealing with social issues?**

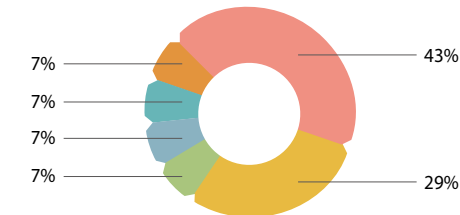
- **Encourage self-reliance**  
- Supports for self-reliance of social enterprises, etc ("how to fish" program)
- **Nurture the future resources**  
- Operate education programs to cultivate future talents (raising "the future fishermen")
- **Build the future tangible/intangible infrastructure**  
- Support culture and art program and disseminate culture of sharing (creating an "ecosystem where fish inhabits")



LSIS strives to interact with communities to gather feedbacks, identify activities for beneficiaries, and get the VOCs to be reflected in our social contribution activities. In addition, we constantly provide support to neighboring social welfare facilities by making visits on a regular basis.

**What kinds of social contribution activities should we pursue?**

- Monetary support (donation)
- Material support (necessaries)
- Participation in volunteer service (employees)
- Talent cultivation
- Dissemination of sharing culture
- Medical support



**What's the most effective communication channel?**

- Regular meeting
- Telephone contact with responsible staff
- Direct dialogue with the management
- E-mail communication with responsible staff
- Bulletin board on the website
- Survey



**Please give us your opinions what we have to improve for better social contribution**



**Assistant activities by engaging with a local community- Anyang Senior Welfare Center**

LSIS has been carrying out various social contribution activities in association with Anyang Senior Welfare Center, established by the city of Anyang. Starting from 2014, we have donated winter clothes to seniors in need as part of the program "Preparing for Warm Winter with LSIS" every year. In the summer of 2015, we ran the program "Preparing for Cool Summer with LSIS" to donate 100 cool mats worth KRW 5 million for elderly people living

alone suffering from extremely scorching weather. Furthermore, we are committed to providing beneficiaries with what they really need by keeping close contacts with the vulnerable in local communities through various programs such as "Meal Box Deliver on Chuseok," and "Sponsoring a Field Day of Senior Welfare Center."



Donation of cooling mats in summer



Provision of winter clothes to elderly people living alone



## Social Contribution Activities by Region

### Anyang

Classification	Department	Summary	Frequency	Participants	Beneficiary
Dream Science Class		One-day teaching service	Once	1	Buheung Welfare Center
Blood Donation for Love		LS blood donation relay for love	Once	32	Korean Red Cross
Volunteer Day activities		Visit to elderly people living along/making Songpyeon at the Korean Thanksgiving Day	3 times	14	Senior Welfare Service Center
Contribution to local communities	Public Relations Team	Provision of winter clothes to elderly people living along	Once	4	Senior Welfare Service Center
Contribution to local communities		Donation of PCS to ADRF	Once	8	ADRF
Contribution to local communities		Donation of cooling mats in summer	Once	4	Senior Welfare Service Center
LinkerS Beautiful Day		Employee item collection drive for Beautiful Store	Once	254	Beautiful Store
LinkerS regular sponsorship	LinkerS	Scholarship for 6 child household heads	12 times	204	Child breadwinners
Contribution to local communities		Delivery of daily revenues	Once	5	Suri Community Rehabilitation Center
Informal volunteer work	Woori Love Community	Volunteer service at Love House and for senior citizens	Twice	114	Yulmok Welfare Center
Informal regular sponsorship		Contribution to child welfare funds	12 times	684	Yulmok Welfare Center
<b>Total</b>			<b>36 times</b>	<b>1,324</b>	

### Cheongju

Classification	Department	Summary	Frequency	Participants	Beneficiary
1 Company 1 Village sisterhood		Support for selling agricultural products	Once	-	Daedae 1-ri
Green & Clean Day		Environmental cleanup activities inside and outside the company	8 times	165	Around the plant
Dream Science Class		Plant tour/finishing class/one-day teaching service	7 times	9	Dream Science Class
Blood Donation for Love	Support Innovation Team	Blood donation	3 times	145	Korean Red Cross
Support for local cultural activities		Book purchasing and performance sponsorship	3 times	21	Cheongju Arts Center
Contribution to local communities		Plant tour, supports for events, etc.	16 times	92	Engineering students and cultural organizations
Korean Cultural Artifact Protector		Environmental cleanup around Sangdang Mountain Fortress	4 times	50	Sangdang Mountain Fortress
Volunteer Day activities	Innovation Implementation Team	Volunteer service at Yesim House and elderly nursing homes	14 times	183	Social Welfare Center
1 Company 1 Mountain campaign	Environment & Safety Team	Environmental cleanup and planting in Bumo Mountain	Twice	23	Bumo Mountain
Regular sponsorship	Private donation	Donation to children's foundations and welfare facilities for senior citizens	36 times	2,118	Social Welfare Center
<b>Total</b>			<b>94 times</b>	<b>2,806</b>	

### Cheonan

Classification	Department	Summary	Frequency	Participants	Beneficiary
Coin collection		Coin collection campaign	Once	500	Community Chest of Korea
Blood Donation for Love	Support Innovation Team	Blood donation	3 times	134	Korean Red Cross
Volunteer Day activities		Volunteer day for free meals	11 times	91	Hope Sharing Volunteer Center
Green & Clean Day	Environment & Safety Team	Environmental cleanup activities inside and outside the company	8 times	161	Around the plant
<b>Total</b>			<b>23</b>	<b>886</b>	

### Busan

Classification	Department	Summary	Frequency	Participants	Beneficiary
1 Company 1 River campaign		River cleanup activities	Once	8	Around the plant
Green & Clean Day		Environmental cleanup activities inside and outside the company	Once	9	Around the plant
Dream Science Class	Human Resources Support Team	Plant tour	Once	23	Dream Science Class
Supporting needy people		Product donation to Beautiful Store	Once	15	Beautiful Store
Blood Donation for Love		Blood donation	Once	8	Korean Red Cross
Volunteer Day activities		Volunteer free meal delivery service for elderly people living alone	3 times	20	Elderly people living alone in Gangseo-gu
<b>Total</b>			<b>8 times</b>	<b>83</b>	



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# Sustainability Management Data\_ Economy

## Consolidated Basis

### Summarized Financial Position

(KRW in millions, at the end of each year)

Item	2013	2014	2015
<b>Assets</b>			
Current Assets	1,237,406	1,402,955	1,394,335
Non-current Assets	863,875	891,401	857,339
<b>Total Assets</b>	<b>2,101,280</b>	<b>2,294,355</b>	<b>2,251,674</b>
<b>Liabilities</b>			
Current Liabilities	521,551	737,437	618,075
Non-Current Liabilities	652,775	563,458	618,900
<b>Total Liabilities</b>	<b>1,174,326</b>	<b>1,300,895</b>	<b>1,236,975</b>
<b>Equity</b>			
Total equity attributable to stockholders of the Company	926,212	992,937	1,013,260
Share capital	150,000	150,000	150,000
Share premium	935	935	1,178
Other equity items	-25,542	-25,542	-25,542
Other comprehensive income/loss accumulated amount	-1,164	23	949
Retained Earnings	801,982	867,521	886,674
Non-controlling interest	743	524	1,439
<b>Total equity</b>	<b>926,954</b>	<b>993,461</b>	<b>1,014,699</b>
<b>Total liabilities and equity</b>	<b>2,101,280</b>	<b>2,294,355</b>	<b>2,251,674</b>

### Summarized Income Statement

(KRW in millions, at the end of each year)

Item	2013	2014	2015
Sales	2,351,887	2,290,983	2,201,676
Gross income	432,090	425,913	433,917
Operating income	174,925	162,066	154,402
Income from continuing operations before tax	145,987	133,498	113,642
Net income	113,991	105,146	70,554

## Non-consolidated Basis

### Summarized Financial Position

(KRW in millions, at the end of each year)

Item	2013	2014	2015
<b>Assets</b>			
Current Assets	948,361	1,117,160	1,096,545
Non-current Assets	1,012,876	1,033,924	1,011,380
<b>Total Assets</b>	<b>1,961,236</b>	<b>2,151,083</b>	<b>2,107,925</b>
<b>Liabilities</b>			
Current Liabilities	416,584	636,131	518,885
Non-Current Liabilities	642,463	559,052	614,401
<b>Total Liabilities</b>	<b>1,059,047</b>	<b>1,195,183</b>	<b>1,133,286</b>
<b>Equity</b>			
Share capital	150,000	150,000	150,000
Other equity items	-25,542	-25,542	-25,542
Other comprehensive income/loss accumulated amount	-208	-301	-138
Retained Earnings	777,939	831,744	850,318
Total equity	902,190	955,901	974,639
<b>Total liabilities and equity</b>	<b>1,961,236</b>	<b>2,151,083</b>	<b>2,107,925</b>

### Summarized Income Statement

(KRW in millions, at the end of each year)

Item	2013	2014	2015
Sales	1,765,837	1,827,657	1,753,118
Gross income	369,410	369,284	371,608
Operating income	170,139	155,115	147,877
Income from continuing operations before tax	140,301	115,995	104,417
Net income	110,779	93,904	69,452

### Government Subsidies

(KRW in millions)

Classification	2013	2014	2015
Machinery	341	239	112
Tools and instrument	61	-	-
Office equipment	138	34	6
Buildings	-	-	267
R&D expense	2,777	2,584	2,119

### Retirement Pension Program

(KRW in millions)

Classification	2013	2014	2015
Defined Benefit (DB)	Amount	97,090	127,102
	No. of subscribers	3,184	3,217
Defined Contribution (DC)	Amount	0	0
	No. of subscribers	-	80*

\* The number of employees who cashed in retirement fund prematurely. (There is no DC type invested assets in real.)

\*\* Amount of DC type invested assets operated by individual



# Sustainability Management Data\_ Environment

Classification			Total			Cheongju Plant			Cheonan Plant			Busan Plant			
Sector	Item	Unit	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015	
Investment in environment and safety	Eco-friendly product development	KRW in millions	6,231.70	4,025.10	5,342.00	4,871.70	2,237.10	3,731.00	1,360.00	1,788.00	1,611.00	0	0	0	
	Process improvement	KRW in millions	1,974.10	180.3	153.9	63	101.9	90	9.1	21.4	28.9	1,902.00	57	35	
	Investment in environmental and safety facilities	KRW in millions	448.5	351.3	616.1	276	189.8	250	12.5	91.5	43.1	160	70	323	
	Maintenance of environmental and safety facilities	KRW in millions	96.4	114.5	318.6	66.1	84.1	158.2	10.4	15.4	131	20	15	29.3	
Green purchasing	Purchasing of eco-friendly products	KRW in millions	216.3	206.2	180.3	100.5	113.8	77.5	25.2	23.5	42.7	90.5	69	60.1	
Environment	Dust emissions	kg	1,147.30	939.6	1,015.30	755.4	785.5	828.3	66.9	35.1	114	325	119	73	
	Water consumption	km <sup>3</sup>	209	230	226.4	95	100	96	80	83	79	34	47	51	
	Wastewater discharge	m <sup>3</sup>	949	875	209.5	14	18	19	935	857	190	0	0	0	
	Waste discharge	General	ton	4,237.70	4,278.30	3,723.60	3,174.10	3,375.40	3,296.20	619.6	548.9	299.3	444	354	128.2
		Designated	ton	90.3	80.8	69.7	38	31.9	48.2	3.3	4.2	2.4	49	44.7	19.1
	Waste recycling rate	%	75.2	81.8	82.2	80.9	81.6	81.4	67	65.1	66.6	77.6	98.7	98.7	
	GHG emissions (by source)	Scope 1	tCO <sub>2</sub> eq	266,289.60	201,620.30	226,346.60	264,591.90	199,912.10	224,605.00	975.9	937.2	918.2	721.8	771	823.4
		Scope 2	tCO <sub>2</sub> eq	24,747.60	25,110.70	24,341.90	14,685.30	15,172.70	16,469.00	7,774.30	7,594.90	5,544.80	2,288.00	2,343.10	2,328.10
		Subtotal	tCO <sub>2</sub> eq	291,037.20	226,731.00	250,688.60	279,277.20	215,084.80	241,074.00	8,750.20	8,532.10	6,463.00	3,009.80	3,114.10	3,151.60
	GHG intensity	tCO <sub>2</sub> eq/KRW in millions	0.16	0.12	0.14	0.24	0.18	0.21	0.02	0.01	0.01	0.03	0.04	0.05	
Energy	Electricity consumption	MWh	47,856.40	47,863.70	52,326.40	31,190.90	32,232.70	35,321.20	11,758.20	10,605.70	11,549.20	4,907.30	5,025.30	5,456	
		toe	11,007.00	11,008.60	12,035.10	7,173.90	7,413.50	8,123.90	2,704.40	2,439.30	2,656.30	1,128.70	1,155.80	1,255	
	Electricity intensity	MWh/KRW in millions	2.64	2.62	2.92	2.69	2.74	3.05	2.09	1.86	2.04	5.59	6.43	7.91	
	LNG consumption	km <sup>3</sup>	2,052.00	2,079.30	1,950.70	1,327.90	1,343.30	1,214.70	411.7	402	394	312.4	334	342	
		toe	2,140.20	2,168.70	2,034.50	1,385.00	1,401.10	1,266.90	429.4	419.3	410.9	325.8	348.4	356.7	
LNG intensity	km <sup>3</sup> /KRW in millions	0.11	0.11	0.11	0.11	0.11	0.11	0.07	0.07	0.07	0.36	0.43	0.5		
Safety*	Industrial accident rate	%	0	0	0	0	0	0	0	0	0	0	0	0	
	Training hours (cumulative)	h	64,655.00	73,520.00	68,526.00	41,206	43,084	42,268	18,609	24,876	21,154	4,840	5,560	5,104	
	Trainees (cumulative)	Persons	30,453.00	30,783.00	29,549.00	19,329	20,166	18,974	8,496	7,991	8,261	2,628	2,626	2,314	
Raw materials	Steel		17,932,086	17,213,157	18,154,711	13,610,647	13,601,409	14,904,585	0	0	0	4,321,439	3,611,748	3,250,126	
	Nonferrous metals	kg	7,852,803	4,680,716	4,529,898	6,593,919	3,622,022	3,682,574	316,868	386,975	197,671	942,016	671,719	649,654	
	Resins		3,012,060	5,002,444	4,811,774	2,111,688	2,165,344	2,318,977	900,372	2,837,100	2,492,797	0	0	0	

\* We are operating the Occupational Safety and Health Committee where the labor and management consult or deliberate major issues with regard to safety and health of employees working at sites, which contributes to building safe and pleasant working environments.

# Sustainability Management Data\_ Society

Index	Classification	Unit	2013	2014	2015	Remarks
Workforce	Executives		21	20	22	
	Permanent staff	Persons	3,313	3,395	3,351	
	Contracted staff		255	240	243	
	Total		3,589	3,655	3,616	
Workforce by region	Anyang		1,129	1,163	1,176	
	Cheongju		1,571	1,624	1,581	
	Cheonan	Persons	596	567	557	
	Busan		173	187	193	
	Others		120	114	109	
	Total		3,589	3,655	3,616	
Workforce by age	20s		474	478	421	
	30s		1,240	1,220	1,165	
	40s	Persons	1,107	1,143	1,166	
	Over 50s		492	554	599	
	Total		3,313	3,395	3,351	
Newly hired (permanent staff)	Persons	268	254	105		
Retirement rate (permanent staff)	%	3.00%	3.40%	3.00%		
Female workforce	Persons	455	457	419		
Percentage of female workforce	%	12.70%	12.50%	11.60%		
Female managers	Persons	26	29	33	Manager level and over	
Workforce with disabilities	Persons	46	44	45		
Percentage of workforce with disabilities	%	1.40%	1.30%	1.30%		
Foreign workforce (permanent & contracted)	Persons	28	20	18		
Training expense	KRW in thousands/person	2,024	2,162	2,106	The training expenses in 2013 and 2014 were adjusted due to the change of calculation criteria in 2015	
Training hours	PD/person	10	11	10	1PD: 8-hour collective training and one-month cyber training	
Welfare benefit expense	KRW in millions/person	12.7	13.2	13.7		
Employees who used childbirth leave	Persons	13	16	17		
Employees who used parental leave	Persons	21	14	17	Staff returned from parental leave	
Rate of return to work after parental leave	%	95%	100%	100%		

## Sustainability Management Data\_ Others

### Social Contribution

Index	Unit	2013	2014	2015	Remarks
Donations	KRW in millions	11,360	114,593	67,238	
Social contribution expenses	KRW in millions	4,521	4,737	5,092	
No. of social contribution activities	Times	141	163	161	
No. of participants	Persons	1,296	3,484	5,099	
Social contribution activity hours	Hours	6,480	17,420	25,495	Participants x avg. activity hours (5 hours)

### Win-win Growth

Index	Classification	Unit	2013	2014	2015	Remarks
LSIS ethics index		Points	4.19	4.19	4.24	Survey of suppliers
Agreement on win-win growth	Agreement	Cases	185	416	388	
	Fund size	KRW in billions	15.8	20.2	21.8	
Financial support to suppliers	Amount of supports	KRW in billions	14.8	17.3	10.4	
	Supported to	Firms	66	70	57	
Support for suppliers' training		Persons	668	1005	612	
Support for suppliers' quality management		Cases	257	737	1,075	
Support for suppliers' technology sharing		Firms		9	-	Offered patent rights free
Support for suppliers' technology protection		Cases			39	Trade Secret Certification Service
Commissioning of development projects	No. of projects	Cases	40	54	74	
	Amount	KRW in billions	21.	2.9	3.3	
ACE CLUB members		Firms	20	29	20	
ACE CLUB's support for innovation capacity	Supported suppliers	Firms	20	29	20	Leadership innovation course for CEOs
	Supported personnel	Persons	74	143	20	
Communication with suppliers	Performance Sharing Meeting	Firms	433	584	600	No. of firms participated
	LSIS Partner Exchange Meeting	Times	4	4	4	No. of meetings held
	CPO Talk Concert	Times	4	4	2	No. of events held

### Procurement

LSIS is supplied with raw materials and equipment worth about KRW 1.2 to 1.3 trillion annually from 31 suppliers around the globe.

(KRW in billions)

	2013	2014	2015
Asia	94%	96%	95%
Europe	4%	3%	4%
Americas	2%	1%	1%
Middle East	0.10%	0.70%	0.30%
<b>Total</b>	<b>1,263.5</b>	<b>1,324.4</b>	<b>1,235.1</b>

### Membership in Initiatives

Domestic	Overseas
Korea Chamber of Commerce, Korea International Trade Association, Federation of Korean Industries, Korea Electrical Manufacturers Association, Korea Smart Grid Association, Korea Management Association, Korea Standards Association, Korea Electric Association, Korean Institute of Electrical Engineers, Korea Electrical Contractors Association, International Contractors Association of Korea, Korea Engineering & Consulting Association, Korea New & Renewable Energy Association, Korea Photovoltaic Industry Association, Korea Fire Safety Association, Korea Customs Association, Korea Invention Promotion Association, Korea Atomic Industrial Forum, Korea Device Net Association, Korea Industrial Technology Association, Korea Association of ESCO, Korea Information and Communication Contractors Association, Korea Railway Association, Korea Railway Signal Engineering Association	LMS UA(Device Language Message Specification), IEEE PES(Institute of Electrical and Electronics Engineers), CIRED, LONMARK International, UN Global Compact, CAN in Automation, Zigbee Alliance, Sunspec Alliance

### Awards

Classification	Date	Title	Hosted by	Award
Company	2015.6.	Korea's Best Enterprise (Power and cable sector)	Korea CEO Association	Grand Prize
	2015.8.	2014 Vision Awards	LACP	Gold Prize
	2015.11.	Top 100 Global Innovators	Thomson Reuters	Top 100 Companies
Individual	2015.3.	Award of Merit, Commerce and Industry Day	Ministry of Trade, Industry and Energy	Minister's Citation
	2015.10.	Award of Merit, Development of Electricity Business	Ministry of Trade, Industry and Energy	Industrial Medal
	2015.11.	Award of Merit, Contribution to Win-win Growth	Ministry of Trade, Industry and Energy	Minister's Citation

# GRI G4 (Core) Index

General Standard Disclosures					
Index	Contents	Reporting Level	Page	External Assurance	Remarks
Strategy and Analysis	G4-1 A general strategic view of the organization's sustainability, in order to provide context for subsequent, more detailed reporting against other sections of the Guidelines.	●	7	✓	
Organizational Profile	G4-3 Name of the organization	●	10	✓	
	G4-4 Primary brands, products, and services	●	20~27	✓	
	G4-5 Location of the organization's headquarters	●	10, 16	✓	
	G4-6 The number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report	●	16~17	✓	
	G4-7 Nature of ownership and legal form	●	14-15	✓	
	G4-8 Markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries)	●	16~17	✓	
	G4-9 Scale of the organization	●	10~11	✓	
	G4-10 Total number of employees by employment contract, gender, region, work scope of non-permanent employees, significant changes in number of employees	●	89	✓	
	G4-11 Percentage of total employees covered by collective bargaining agreements	●	55	✓	
	G4-12 The organization's supply chain	●	11, 60~67	✓	
	G4-13 Significant changes during the reporting period regarding the organization's size, structure, ownership or supply chain	●	10, 16~17	✓	China) Shanghai R&D Center -> Wuxi R&D Center, Selling-off of Hubei Subsidiary US) Closing of Detroit Branch
	G4-14 Reporting whether and how the precautionary approach or principle is addressed by the organization	●	42~43	✓	
	G4-15 Externally developed economic, environmental and social charters, or other initiatives to which the organization subscribes or which it endorses	●	91	✓	
G4-16 Memberships of association and national or international advocacy organizations	●	91	✓		
Identified Material Aspects and Boundaries	G4-17 Entities included in the organization's consolidated financial statements or equivalent documents	●	16~17	✓	
	G4-18 Process for defining the report content and the Aspect Boundaries and how they are implemented	●	46~47	✓	
	G4-19 All the material Aspects identified in the process for defining report content	●	47	✓	
	G4-20 Report on whether the Aspect is material within the organization	●	2, 47	✓	
	G4-21 Report on whether the Aspect is material outside of the organization	●	2, 47	✓	
	G4-22 Effect of any restatements of information provided in previous reports, and the reasons for such restatements	N/A	-	✓	No modification
	G4-23 Significant changes in the Aspect Boundaries and the Aspect in post-reporting period	N/A	-	✓	No change
Stakeholder Engagement	G4-24 List of stakeholder groups engaged by the organization	●	44~45	✓	
	G4-25 Basis for identification and selection of stakeholders with whom to engage	●	44~45	✓	
	G4-26 The organization's approach to stakeholder engagement	●	44~46	✓	
	G4-27 Key topics and concerns that have been raised through stakeholder engagement and how the organization has responded to those key topics and concerns	●	46~47, 48, 54, 60, 68, 78	✓	
Report Profile	G4-28 Reporting period for information provided	●	2	✓	
	G4-29 Date of most recent previous report	●	2	✓	
	G4-30 Reporting cycle	●	2	✓	
	G4-31 Contact point for questions regarding the report for its contents	●	2	✓	
	G4-32 Report on 'in accordance' option the organization has chosen, the GRI Content Index for the chosen option, the reference to the External Assurance Report, if the report has been externally assured	●	92~95	✓	
	G4-33 Report on the organization's policy and current practice with regard to seeking external assurance for the report, the relationship between the organization and the assurance providers, and whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report	●	2, 96~97	✓	
Governance	G4-34 The governance structure of the organization, including committees of the highest governance body	●	14, 37	✓	
Ethics and Integrity	G4-56 The Organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics	●	38	✓	

Specific Standard Disclosures					
Index	Contents	Reporting Level	Page	External Assurance	Remarks
Disclosures on Management Approach	G4-DMA (1) Why the Aspect is material. Report the impacts that make this Aspect material (2) How the organization manages the material Aspect or its impacts (3) The evaluation of the management approach	●	48, 54, 60, 68, 78	✓	
	<b>Economic</b>				
	Economic Performance	G4-EC1 Direct economic value generated and distributed	●	11, 86~87	✓
G4-EC2 Financial implications and other risks and opportunities for the organization's activities due to climate change		●	7, 76~77	✓	
G4-EC3 Coverage of the organization's defined benefit plan obligations		●	87	✓	
G4-EC4 Significant indirect economic impacts, including the extent of impacts		●	87	✓	
Market Presence	G4-EC6 Proportion of senior management hired from the local community at significant locations of operation	●	-	✓	Directors who are the BOD members at the domestic sites are Korean
	<b>Environmental</b>				
Material	G4-EN1 Materials used by weight or volume	●	88	✓	
	G4-EN2 Percentage of materials used that are recycled input materials	●	-	✓	No use of recycled raw materials
Energy	G4-EN3 Energy consumption within the organization	●	76, 88	✓	
	G4-EN5 Energy intensity	●	76, 88	✓	
	G4-EN6 Reduction of energy consumption	●	76, 88	✓	
	G4-EN7 Reductions in energy requirements of products and services	●	24~27	✓	
Water	G4-EN8 Total water withdrawal by source	●	88	✓	
	G4-EN9 Water sources significantly affected by withdrawal of water	●	77	✓	
	G4-EN10 Total water withdrawal by source	●	77	✓	
Emission	G4-EN15 Direct greenhouse gas (GHG) emissions	●	76, 88	✓	
	G4-EN16 Indirect greenhouse gas (GHG) emissions	●	76, 88	✓	
	G4-EN18 Greenhouse gas (GHG) emissions intensity	●	76, 88	✓	
	G4-EN19 Reduction of greenhouse gas (GHG) emissions intensity	●	76	✓	
	G4-EN20 Emissions of ozone-depleting substances (ODS)	●	77	✓	
	G4-EN21 NOx, SOx and other significant air emissions	●	76, 88	✓	
	G4-EN22 Total water discharge by quality and destination	●	76, 88	✓	
Effluents and Waste	G4-EN23 Total weight of waste by type and disposal method	●	76, 88	✓	
	G4-EN24 Total number and volume of significant spills	●	-	✓	No spill of hazardous substances during the reporting period
Products and Services	G4-EN25 Weight of transformed, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III and VIII, and percentage of transported waste shipped internationally	N/A	-	✓	No waste was shipped overseas
	G4-EN26 Identity, size, protected status, and biodiversity value of water bodies related habitats significantly affected by the organization's discharge of water and runoff	N/A	-	✓	Wastewater was entirely treated by external professional firms
Compliance	G4-EN29 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	●	-	✓	No violation to environmental laws and regulations during the reporting period
Overall	G4-EN31 Total environmental protection expenditures and investment by type	●	72, 88	✓	
Supplier Environmental Assessment	G4-EN32 Percentage of new suppliers that were screened using environmental criteria	●	73, 77	✓	
Environmental Grievance Mechanisms	G4-EN34 Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	●	39	✓	



# GRI G4 (Core) Index

Specific Standard Disclosures						
Index	Contents		Reporting Level	Page	External Assurance	Remarks
<b>Social</b>						
<b>Labor Practices and Decent Work</b>						
Employment	G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender and region	●	89	✓	
	G4-LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	●	58	✓	
	G4-LA3	Return to work and retention rates after parental leave, by gender	●	89	✓	
Labor/ Management Relations	G4-LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	●	55	✓	
	G4-LA5	Percentage of total work force represented in formal joint management-worker health and safety commitments that help monitor and advise on occupational health and safety programs	●	88	✓	
Occupational Health and Safety	G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and gender	●	72,88	✓	
	G4-LA7	Workers with high incidence of high risk of diseases related to their occupation	●	73~75	✓	
	G4-LA8	Health and safety topics covered in formal agreements with trade unions	●	73~75	✓	
	G4-LA9	Average hours of training per year per employee by gender, and by employee category	●	57,89	✓	
Training and Education	G4-LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	●	57	✓	
	G4-LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	●	57	✓	
Diversity and Equal Opportunity	G4-LA12	Composition of governance bodies and breakdown of employees	●	89	✓	
Equal Remuneration for Women and Men	G4-LA13	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation	●	55	✓	
Labor Practices and Grievance Mechanisms	G4-LA16	Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms	●	39	✓	
<b>Human Rights</b>						
Investment	G4-HR2	Total number 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	●	40	✓	
Freedom of Association and Collective Bargaining	G4-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	●	-	✓	No infringement or violation
Child Labor	G4-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	●	55,61	✓	
Forced or Compulsory Labor	G4-HR6	Operations and suppliers identified as having significant risk for incidents or forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	●	55,61	✓	
Human Rights Grievance Mechanisms	G4-HR12	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms	●	39	✓	
<b>Society</b>						
Local Communities	G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	●	78~83	✓	
Anti-corruption	G4-SO3	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	●	43	✓	
	G4-SO4	Communication and training on anti-corruption policies and procedures	●	40	✓	
	G4-SO5	Confirmed incidents of corruption and actions taken	●	39	✓	
Public Policy	G4-SO6	Total value of political contributions by country and recipient/beneficiary	●	-	✓	No case
Anti-competitive Behavior	G4-SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	●	-	✓	No case

Specific Standard Disclosures						
Index	Contents		Reporting Level	Page	External Assurance	Remarks
Compliance	G4-SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	●	-	✓	One bidding restriction (in accordance with the corrective measure in 2014)
Grievance Mechanisms for Impacts on Society	G4-SO11	Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms	●	39	✓	
<b>Product Responsibility</b>						
Customer Health and Safety	G4-PR1	Percentage of significant products and services categories for which health and safety impacts are assessed for improvement	●	69	✓	
	G4-PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes	●	-	✓	No case
Product and Service Labeling	G4-PR5	Results of surveys measuring customer satisfaction	●	50	✓	
Marketing	G4-PR6	Sale of banned or disputes products	●	-	✓	No case
Communications	G4-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 case
Customer Privacy	G4-PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	●	53	✓	
Compliance	G4-PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	●	-	✓	No case

## UN Global Compact COP



UN Global Compact 10 Principles		Page reported	LSIS Policy
Human Rights	Principle 1. Businesses should support and respect the protection of internationally proclaimed human rights.	Employees -Strengthen Human Rights and Labor Policies (p.55)	<ul style="list-style-type: none"> <li>• LSIS Code of Ethics</li> <li>• Code of Conduct for Employees</li> </ul>
	Principle 2. Businesses should ensure they are not complicit in human rights abuses.		
Labor	Principle 3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	Employees -Strengthen Human Rights and Labor Policies (p.55)	<ul style="list-style-type: none"> <li>• LSIS Code of Ethics</li> <li>• Code of Conduct for Employees</li> </ul>
	Principle 4. Businesses should uphold the elimination of all forms of forced and compulsory labor.		
	Principle 5. Businesses should uphold the effective abolition of child labor.		
	Principle 6. Businesses should uphold the elimination of discrimination in respect of employment and occupation.		
Environment	Principle 7. Businesses should support a precautionary approach to environmental challenges.	Environment and Safety (pp.69~77)	<ul style="list-style-type: none"> <li>• LSIS Environmental policies</li> </ul>
	Principle 8. Businesses should undertake initiatives to promote greater environmental responsibility.		
	Principle 9. Businesses should encourage the development and diffusion of environmentally friendly technologies.		
Anti-Corruption	Principle 10. Businesses should work against corruption in all its forms, including extortion and bribery.	Ethical Management (pp.38~40)	<ul style="list-style-type: none"> <li>• LSIS Code of Ethics</li> <li>• Code of Conduct for Employees</li> </ul>

# Independent Assurance Statement

The Business Institute for Sustainable Development (BISD), led by the Korea Chamber of Commerce & Industry, was requested by LSIS to serve as an independent 'third-party assurance institute' for the '2015-2016 LSIS Sustainable Management Report' (hereinafter 'Report'), and submits the assurance statement as follows.

## Purpose

The purpose of this assurance report is to identify any major errors or biases in the Report, to conduct independent assurance procedures to determine whether the sustainable management issues of LSIS were appropriately reported, and to present an assurance opinion.

## Responsibilities and Independence

This Report contains matters on LSIS's sustainable management efforts, achievements and future plans. All responsibility regarding the drafting of the Report lies with LSIS.

In conducting assurance procedures on the Report and providing assurance opinions to the board of directors, BISD has no management-related interests in profits with LSIS, aside from carrying out third-party assurance, in order to maintain independence and autonomy.

## Assurance Standards and Restrictions

BISD performed the assurance evaluation in consideration of the three accountability principles (inclusivity, materiality and responsiveness) of AA1000AS (2008) and the principles for defining report content and report quality of the Global Reporting Initiative G4 guidelines.

Physical inspections were conducted at the headquarters of LSIS located in Anyang. The scope of the assurance evaluation was limited to only those performances stated in the Report and excludes data from previous years and data reported online. Furthermore, greenhouse gas data that has already been verified from another third-party organization was not subjected to the assurance evaluation.

## Major Assurance Procedures

For the assurance process, LSIS's employees were engaged in interviews. Results from the interviews and other relevant documents provided by LSIS were examined. Major assurance procedures undertaken are as follows:

- Review of application of company's internal sustainability report standards
- Review of the Report contents and the information collection process
- Review of the materiality test process, core issues and company policies
- Performance of physical inspections and interviews with employees.

## Opinions

BISD performed the assurance evaluation in accordance with the procedures identified above, and the Report was modified by LSIS if and when deemed necessary. Based on the assurance evaluation, BISD is not aware of any significant errors in the Report and confirmed that the Report was written in accordance with GRI G4 guidelines (core option). The opinions of BISD produced as a result of its assurance evaluation and in consideration of the AA1000APS accountability standards are explained below.

• **Inclusivity:** Does LSIS adhere to the principle of stakeholder engagement in order to ensure a responsible and strategic response in advancing sustainability management?

- LSIS gathered major concerns and opinions from core stakeholders, including its customers, employees, partners, environmental organizations, local communities, shareholders and investors through stakeholder communication channels.
- BISD is not aware of any significant stakeholder groups that were omitted from the process of gathering sustainability management issues through LSIS's stakeholder communication channels.

• **Materiality:** Does LSIS include material issues that affect stakeholders in the entire spectrum of sustainability management in the Report?

- LSIS identified major issues through the materiality test and compiled opinions through a survey from each stakeholder group in the process of the materiality test process.
- BISD is not aware of any significant issues that were omitted from the process.

• **Responsiveness:** Does LSIS respond appropriately to stakeholder issues?

- LSIS has acknowledged the impact of its business decisions on stakeholders and responded properly with coherent actions. The Report presents related performances during the reporting period.
- BISD is not aware of any violations of the principle of responsiveness in LSIS's response to major sustainability management issues or performances that are described in the Report from the perspective of materiality.

## Recommendations

BISD makes the following recommendations within a scope that does not affect the assurance results:

- LSIS performs the materiality analysis systematically through stakeholder communication and CSR assessment. It is an outstanding achievement that LSIS has taken steps to establish CSR activity plans and to achieve the goals based on the results of materiality analysis. BISD recommends that LSIS continually listen to stakeholders' interests so that core sustainability issues are well managed and meaningful results can be achieved.
- LSIS conducted surveys of the local community to better improve their social contribution activity. As LSIS enters the global market under the title of 'Excellent global enterprise', BISD recommends that LSIS expand the social contribution to local communities where overseas sites are located and record achievements based on company's philosophy of social contribution.
- LSIS strongly promotes Smart Energy and Smart Factory businesses which can resolve environmental and social problems that humankind face. To carry out these businesses continually, the corporate culture which considers social problems from the technology development phase is needed. BISD suggest that LSIS establish corporate culture embedded with sustainability and develops business models that offer new growth engines.

June 2016



President Chun, Subong

# Employees Involved in the Preparation of This Report

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