



# **F**UTURING *SMART ENERGY*

**1Q17 Review & Outlook**

**LS IS**

# **Disclaimer**

**This presentation material is prepared for investors' reference, based on data that have not been filed with the financial supervisory commission.**

**Actual business performance may not necessarily be consistent with the projections herein, as a result of unexpected changes in the market environment and other conditions.**

**The financial information in this document are consolidated earnings results based on K-IFRS.**

# Total Results

# 1Q '17 Total Results

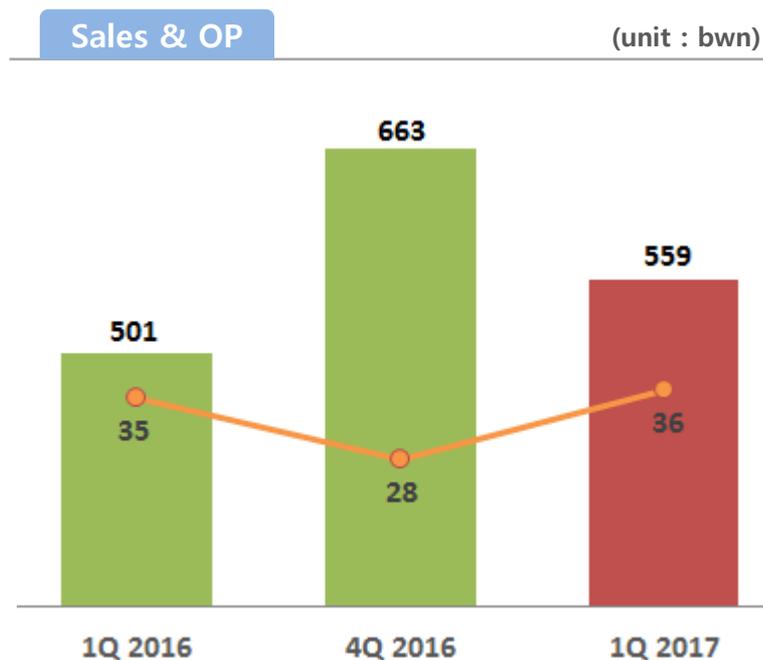
## ◆ Sales

Y-o-Y 58.6bwn increased(11.7%), Q-o-Q 104.0bwn decreased(△15.7%)

## ◆ Operating Profit

Y-o-Y 1.0bwn increased(2.8%), Q-o-Q 8.3bwn increased(30.0%)

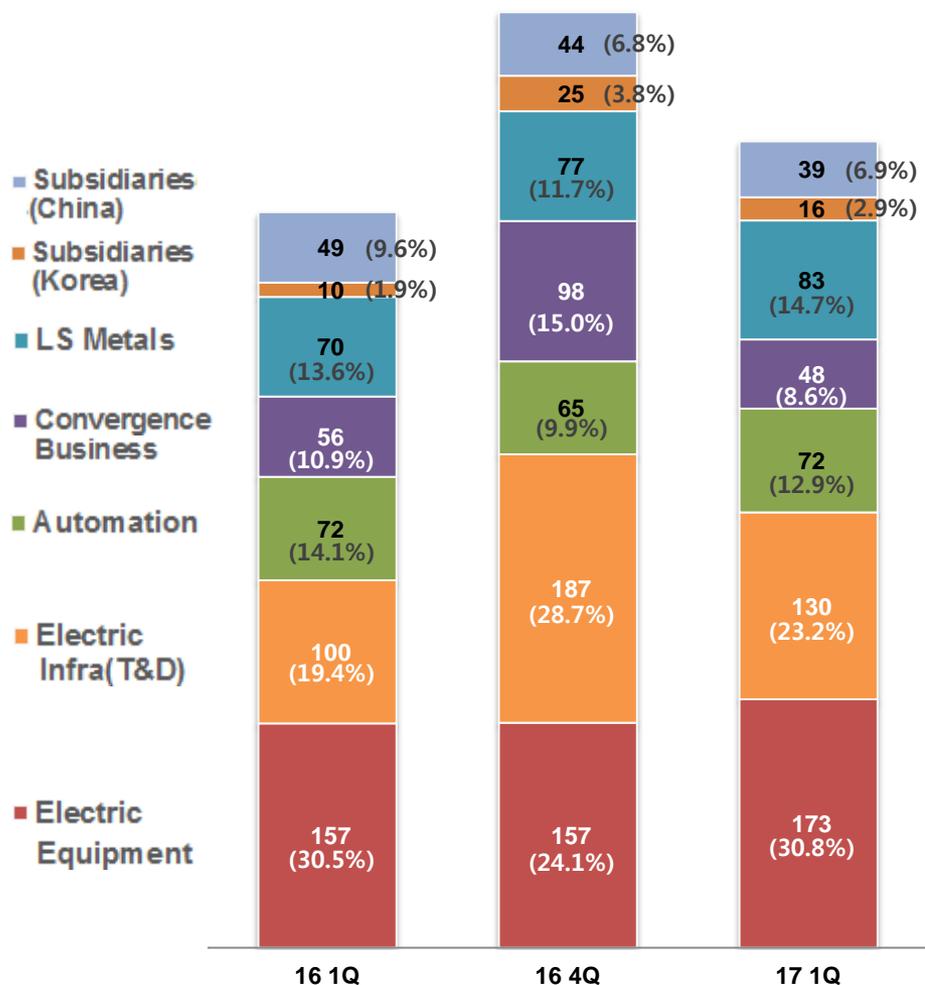
Income Statement			(unit : bwn)		
Segment	Q1 2016	Q4 2016	Q1 2017	Y-o-Y	Q-o-Q
Sales	501	663	559	11.7%	△15.7%
Operating profit	35	28	36	2.8%	30.0%
Profit before tax	23	25	22	△4.5%	△12.7%
Net income	17	22	19	12.6%	△11.1%



# 1Q '17 Sales Breakdown

## Breakdown by Business

(unit : bwn)



\* Convergence Business includes Trans SOC, Solar, Smart-Grid and EV components.

\* Sales of subsidiaries are before the consolidated adjustments.

## ◆ Headquarters

- Electric Equipment : Favorable demand in semiconductor mkt, improving profitability by high-end market
- Electric Infra : Domestic improved continuously, Oversea improved from Vietnam and Myanmar mkt
- Automation : Volume decreased due to weak global economy, but continuing performance creation to high-end package market
- Convergence : Volume decreased due the termination of the Express railway system

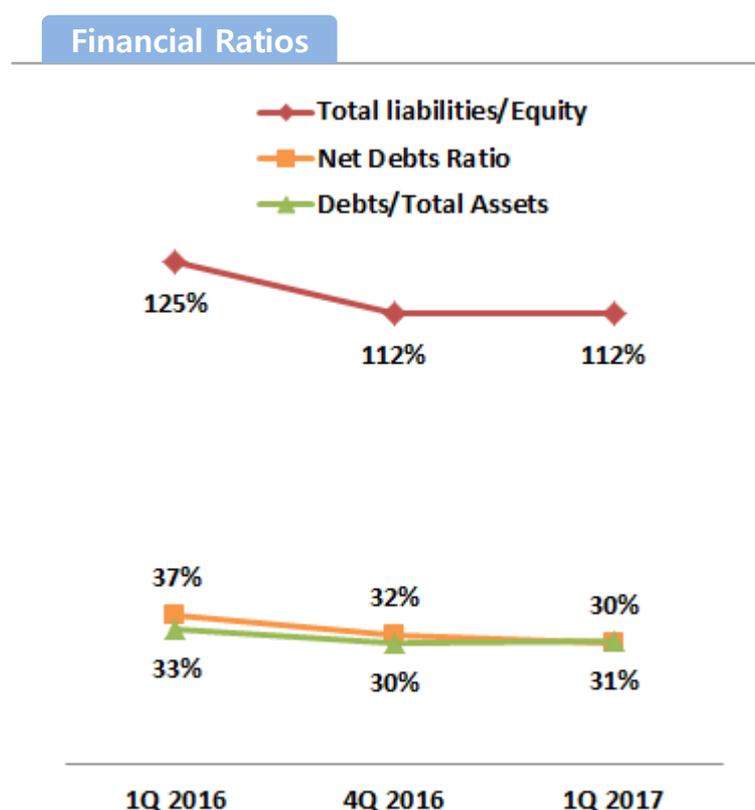
## ◆ Subsidiaries

- LS Metals : Performance improved due to strong commodity price and favorable demand in copper pipe mkt
- Wuxi : Volume decreased due to weak solar market
- LS Mecapion & LS Sauter: Volume increased from favorable semiconductor mkt

# 1Q '17 Financial Position

- ◆ Total assets 2,238bwn (Y-o-Y 15.0bwn decreased, Q-o-Q 23.9bwn decreased)  
Total liabilities 1,182bwn (Y-o-Y 68.2bwn decreased, Q-o-Q 13.4bwn decreased)
- ◆ Total liabilities/Equity posted 112%, net Debts ratio dropped 7%p(Y-o-Y, 37%→30%)

Financial Statement			(unit : bwn)		
Segment	Q1 2016	Q4 2016	Q1 2017	Y-o-Y	Q-o-Q
Total Assets	2,253	2,262	2,238	△1%	△1%
Current Assets	1,409	1,418	1,392	△1%	△2%
Cash & cash equivalent	384	340	367	△5%	8%
Total Liabilities	1,251	1,196	1,182	△5%	△1%
Debts	753	682	684	△9%	0%
Net Debts	369	342	317	△14%	△7%
Equity	1,002	1,066	1,056	5%	1%



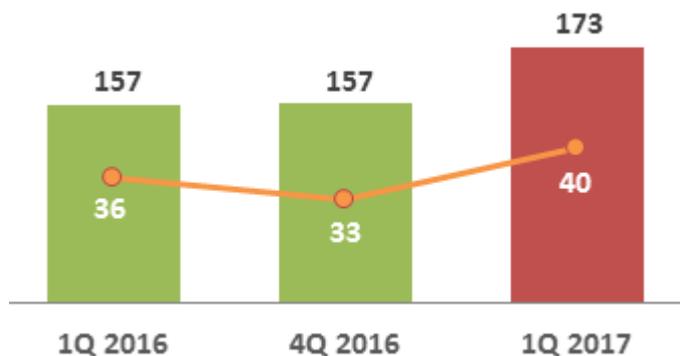
# Business Results & Outlook

# Electric Equipment

## 1Q '17 Results

- ◆ Sales Y-o-Y 10.7% increased, Q-o-Q 10.4% increased
- ◆ OP Y-o-Y 10.9% increased, Q-o-Q 19.8% increased
  - Performance improved due to favorable demand in semiconductor and high-end mkt
  - Despite unfavorable demand from emerging market, Vietnam/India/Iran market improved

◆ Sales & OP trends (unit : bwn)



## '17 Outlook

### [ Market ]

- Local investment shrinkage due to political issue
- Due to global economic recession, risk exists on volume decrease
- Favorable demand in Retrofit market

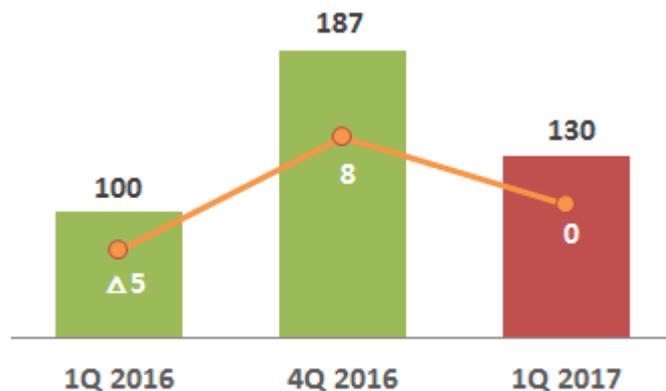
### [ LSIS ]

- Demand response in renewable energy market (Developing large capacity DC product)
- Entering High-end & SOC Market in SEAsia
- Entering new market(housing) & expanding package business in domestic

## 1Q '17 Results

- ◆ Sales Y-o-Y 30.7% increased, Q-o-Q 30.3% decreased
- ◆ OP Y-o-Y turned around, Q-o-Q 99.9% decreased
  - Domestic improved by favorable demand
  - Performance improved in Vietnam & Myanmar mkt

◆ Sales & OP trends (unit : bwn)



## '17 Outlook

### [ Market ]

- Funding increase for investment in SWAsia in the field of Electric power infrastructure
- Expansion of transformer due to increase of renewable energy and power demand
- Expansion of investments in domestic aging facilities

### [ LSIS ]

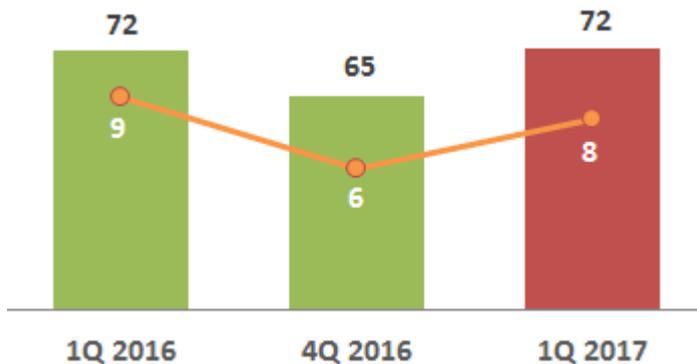
- Domestic performance keep improving by favorable demand
- New PJT's from Bangladesh & Egypt
- HVDC revenue recognition & prepare for new HVDC PJT
- Secure new EPC clients & associate participation

# Automation

## 1Q '17 Results

- ◆ Sales Y-o-Y 0.1% increased, Q-o-Q 11.5% increased
- ◆ OP Y-o-Y 10.3% decreased, Q-o-Q 34.6% increased
- Unfavorable demand due to economic recession
- Continuous performance improvement from conglomerate market

◆ Sales & OP trends (unit : bwn)



## '17 Outlook

### [ Market ]

- Capex decrease by economic recession, but favorable demand from semiconductor and chemical mkt
- Prospects for investment in automobile facilities
- Smart factory market expansion by government policy

### [ LSIS ]

- Strengthen direct sales activities to conglomerates
- Expand Smart factory business in earnest with LSIS's own solution

# Convergence Business

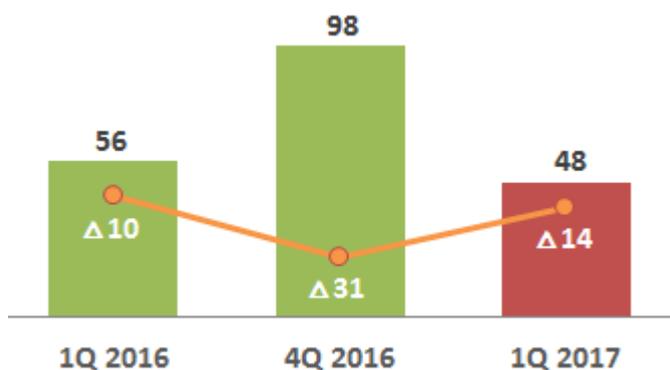
## 1Q '17 Results

◆ Sales Y-o-Y 13.6% decreased, Q-o-Q 50.6% decreased

◆ OP Y-o-Y, Q-o-Q continuous loss

- Oversea volume improvement in Solar and railway system partially recovered weak domestic performance
- Oversea solar improved by Japanese EPC PJT
- Smart-grid in domestic continued improving

◆ Sales & OP trends (unit : bwn)



## '17 Outlook

### [ Market ]

- Continuous policy driving on ESS in domestic (New guidance for using ESS as an emergency electric power source, Introduction private rate on ESS users, Allowed power broker business etc)
- Global Mkt expansion in photovoltaic (12GW of PV will be invested in SEAsia by '25)

### [ LSIS ]

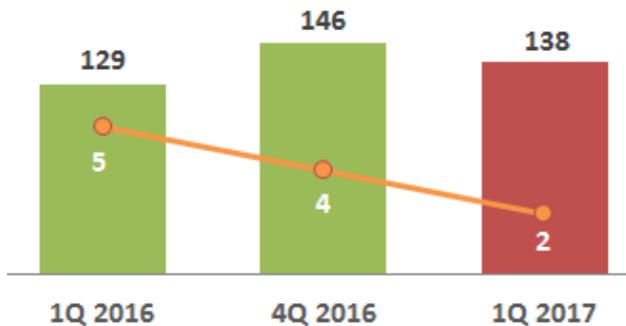
- Participate profitable EPC PJT
- Expand floating PV business with LSIS's solution
- Entering Indonesia, Thailand, Vietnam smart-energy mkt
- Expand Japanese Solar EPC mkt

# Subsidiaries

## 1Q '17 Results

- ◆ Sales Y-o-Y 7.4% increased, Q-o-Q 5.2% decreased
- ◆ OP Y-o-Y 58.8% decreased, Q-o-Q 41.7% decreased
  - LS Metals improved due to favorable demand and copper price increase
  - LS Mecapion improved due to favorable demand
  - Wuxi performance decreased due to weak renewable mkt condition in China

◆ Sales & OP trends (unit : bwn)



## '17 Outlook

### [ Market ]

- Expansion of competition with global players in Chinese renewable energy market
- Copper pipe mkt restructuring to supplier-centered mkt
- Expansion STS pipe PJT in global

### [ LSIS ]

- LS Metals profitability continue to improve by expanding to high-end copper pipe mkt
- New orders from STS pipe PJT
- Wuxi performance improvement by securing large Customer base

# Appendix 1-1) Income Statement

(unit : bwn)

Segment	'16.1Q	'16.4Q	'17.1Q	QoQ	YoY
Sales	501	663	559	26.6%	12.1%
Costs of Sales	△399	△557	△455	29.5%	17.1%
Gross Profit	101	107	105	13.4%	△8.0%
(%)	(20.3%)	(16.1%)	(18.7%)	-	-
SG&A	△67	△79	△69	23.5%	5.0%
Operating Profit	35	28	36	△8.5%	△32.3%
(%)	(7.0%)	(4.2%)	(6.4%)	-	-
Non-OP and Loss	△12	△3	△14	51.2%	△75.6%
Profit before tax	23	25	22	△12.1%	△16.0%
Net Income	17	22	19	0.1%	△7.6%
(%)	(3.4%)	(3.3%)	(3.5%)	-	-
EBITDA Margin	10.0%	7.7%	8.4%	-	-

# Appendix 1-2) Statement of Financial position

Segment	'16.1Q	'16.4Q	'17.1Q	QoQ	YoY	(unit : bwn)
<b>Total Assets</b>	2,253	2,262	2,238	△1%	△1%	
<b>Current Assets</b>	1,409	1,418	1,392	△2%	△1%	
Cash&Cash Equivalents	384	340	367	8%	△5%	
Inventories	170	147	158	7%	△7%	
Other Current Assets	855	931	867	△7%	1%	
<b>Non-Current Assets</b>	844	844	846	0%	0%	
Tangible Assets	630	610	601	△2%	△5%	
Intangible Assets	136	130	126	△3%	△7%	
Other Non-Current Assets	78	104	120	16%	53%	
<b>Total Liabilities</b>	1,251	1,196	1,182	△1%	△5%	
<b>Current Liabilities</b>	660	681	664	△2%	1%	
Short-term borrowings	201	177	179	1%	△11%	
<b>Non-Current Liabilities</b>	591	515	519	1%	△12%	
Long-term borrowings	552	506	505	△0%	△8%	
<b>Equity</b>	1,002	1,066	1,056	△1%	5%	
<b>Current Ratio</b>	213%	208%	210%	1%p	△4%p	
<b>Equity/Total Assets</b>	44%	47%	47%	0%p	3%p	
<b>Total Liabilities/Equity</b>	125%	112%	112%	△0%p	△13%p	
<b>Net debts Ratio</b>	37%	32%	30%	△2%p	△7%p	

# Appendix 1-3) Statements of Cash Flows

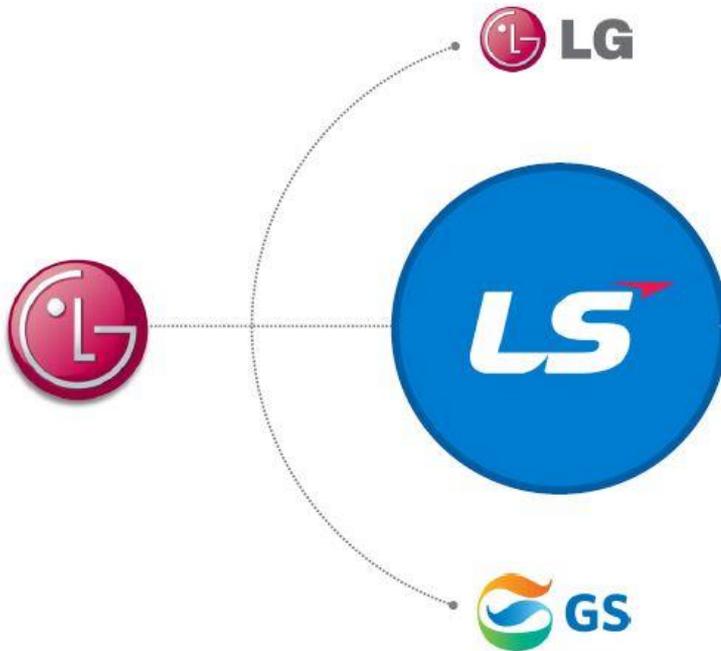
(unit : bwn)

Segment	'16.1Q	'17.1Q	YoY
Cash and cash equivalents at the beginning of year	286	340	54
Cash Flows From Operating Activities	123	73	△50
Cash Flows From Investing Activities	△38	△46	△7
Capex	△13	△12	1
R&D	△4	△4	0
Others	△22	△30	△9
Cash Flows From Financing Activities	14	5	△9
Effect of exchange rate changes on cash and cash equivalents	△0	△6	△6
Cash and cash equivalents at the end of 1st quarter	384	367	△18

## Growing into a World's Best from the Nation's First!

Leading company in the industrial electric, electronics, materials and energy field following its separation from LG in 2003

### LS History



### Management Philosophy

Greater value together!

**LSpartnership**<sup>®</sup>



LS is a faithful and reliable business partner  
Collaboration with LS people leads to greater success

## Leader in Power Solutions, Automation & Green Business

The Leading Company in the Power Distribution & Automation Industry

The first to build a Smart Grid, Green Village and Green Factory

Founded	1974
Sales	2,202billion(KRW)
Employees	3,500
Headquarters	LS Tower, Gyeonggi-do, Korea
Plants	Total 7 Plants
Overseas subsidiaries	China, Vietnam, Japan, etc.
Overseas branches	USA, Europe, Russia, Vietnam, etc.

(As of 2015)



### 1. A History of Challenging the Future (1970's ~ 2007)

**1970's** '74 Jul. Established Goldstar Instrument & Electrical Co., Ltd

**1980's** '87 Mar. Established Goldstar Industrial Systems Co., Ltd.



**2007** Feb. Opened Marketing Subsidiary in Dubai

**2005** Mar. Renamed from LG to LS Industrial Systems  
Sep. Constructed the Electric & Automation equipment factory in Wuxi, China

**2003** Nov. Disaffiliated from LG Group, joined LS Group

**2001** Jun. Constructed Dalian factory

**2000** Sep. Established high-voltage testing agency

**1990's** '94 Jul. Listed Goldstar Industrial Systems on the Korea Stock Exchange

'95 Feb. Renamed from Goldstar to LG Industrial Systems (LGIS)

'95 Sep. LGIS merged Goldstar I&E & Goldstar Mechanical & Electrical

'99 Apr. LGIS merged LG Metal

'99 Aug. Sold copper smelting, Vending Machine, Elevator & Escalator unit

## 2. Shifting the strategy to growth paradigm (2007 ~ 2012)

- 2008**
- Apr. Relocated its headquarters to Anyang LS Tower
  - Sep. Received the Korea Best Company Award (Electricity & Cable industry category)
  - Oct. LS Industrial Systems(currently LSIS) Opened R&D Center in Shanghai, China



- 2012**
- May. completed a EV Relay factory in Cheongju, Korea
  - Jun. Awarded the Best Korean Company Grand Award
  - Dec. Selected as one of the Top 100 Global Innovators by Thompson Reuters
  - Dec. US and Chinese patent acquired for smart meter technology

- 2011**
- Oct. Completed the Busan HVDC Plant
  - Nov. Included in the Fortune Korea's 500 Fastest Growing Companies
  - Nov. Selected as one of the Top 100 Global Innovators by Thompson Reuters



- 2009**
- Mar. Published the Green Business Vision
  - Oct. Share in Mecapion acquired
  - Oct. European sales corporation established



- 2010**
- Jan. LS Power Semitech J/V established
  - Feb. LS Sauter established
  - Apr. LS Metal spun off from LSIS and newly established LS Metal
  - Apr. Construction of Busan plant completed
  - May. LS Hogae Electric established in China
  - May. LS Industrial Systems(currently LSIS) got the largest number of Green Certification as the first company in Korea
  - Jul. LS Industrial Systems(currently LSIS) opened R&D Center in Beijing, China

## 3. Challenging for the future of Smart Energy (2013 ~ 2015)

- 2013**
- Apr. Awarded the Great Place to Work Award for 2 consecutive years
  - May. MOU with China's Dongfang Group for developing green automobile parts
  - May. Concluded contract for the transfer of HVDC technology, and partnered with KAPES and Alstom
  - Jun. Awarded the Best Korean Company Grand Award
  - Oct. Selected as one of the Top 100 Global Innovators by Thompson Reuters
  - Nov. Awarded the 39<sup>th</sup> Korea National Quality Grand Award
  - Dec. Won the 500 million Trade Tower Award

- 2015**
- Jan. Declared value-based management
  - Mar. Newly constructed R&D campus in Anyang



- 2014**
- Jan. Launched new strategic automation product lines for A&D
  - May. LSIS Vice Chairman Ja-kyun Koo Received Gold Tower Order of Industrial Service Merit
  - May. Won the World's Largest Order for Smart Grid Project in Iraq
  - Jun. Awarded the Best Korean Company Grand Award for 7 consecutive years
  - Jul. Marked the 40<sup>th</sup> anniversary of the foundation
  - Sep. Ranked number one in the Korean Standard – Quality Excellence Index for 2 consecutive years
  - Nov. Selected as one of the Top 100 Global Innovators by Thompson Reuters

**We guarantee all our customers a safe and affluent life and a happy future by supplying them with convenient smart energy.**

### Mission

**FUTURING SMART ENERGY**

### Vision 2020



### Strategy

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

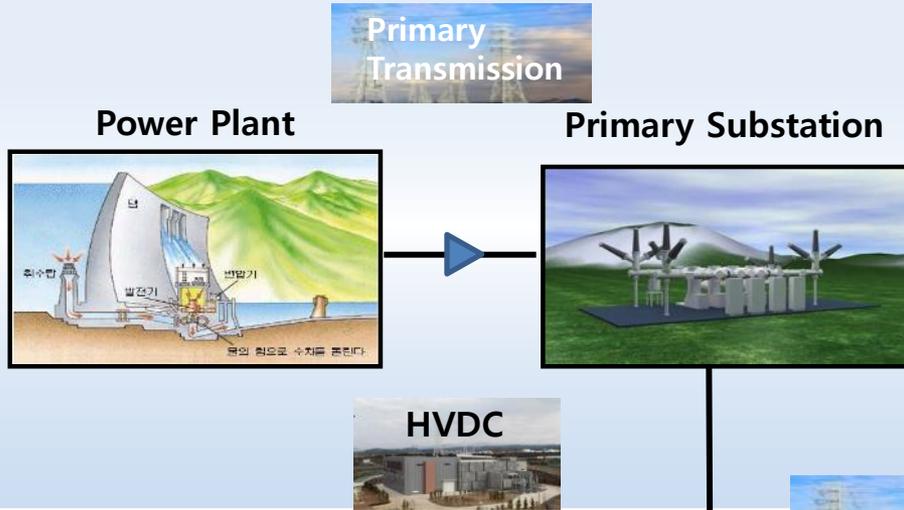
### Core Value



# Appendix 3) Business Introduction

## Leading Provider of Total Electric Power, Automation & Green Business Solutions

### Electric Infra Business

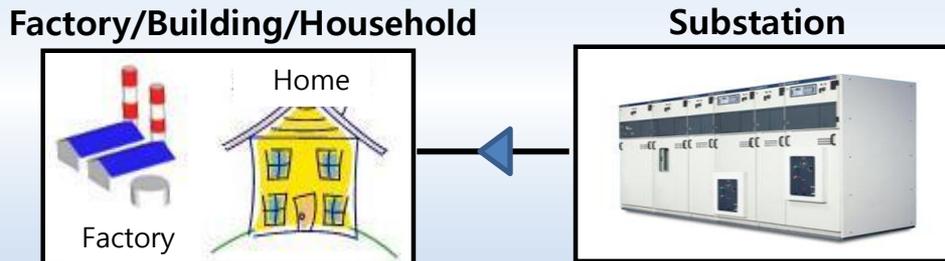


**Ultra-high voltage power transmission & distribution system equipment such as gas insulated switchgear (GIS)**

**< Main Products >**

- Gas Insulated Switchgear (GIS)
- Power Transformers
- Remote Monitoring & Diagnosis Equipment
- HVDC

### Electric Equipment Business



Top low and medium voltage electrical equipment for electricity users

**< Main Products >**

- Switchgear (SWGR)
- Vacuum Circuit Breakers (VCB)
- Air Circuit Breakers (ACB)
- Molded Case Circuit Breakers (MCCB)
- Magnetic Contactors (MC)0

# Appendix 3) Business Introduction

## Automation Business

Factory / Building  
(FA/PA)



Discrete Automation



Process Automation



Building Automation

From simple automation control to large-scale manufacturing facilities and process control, LSIS provides the optimal solutions to diverse industrial fields.

< Main Products >

- Variable Frequency Drive
- PLC (Programmable Logic Controller)
- HMI (Human Machine Interface)
- Servo Drive & Motor
- DCS (Distributed Control System)
- RTU (Remote Terminal Unit)

## Convergence Business



Smart Grid



Green Car Solution



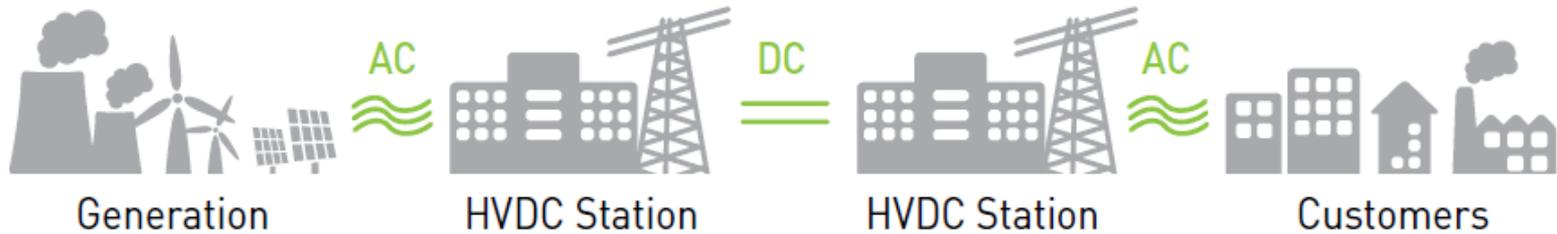
Photovoltaic System



Railway System

# Appendix 4) HVDC

**HVDC system converts AC to DC to transmit long distance and then converts back again to AC to connect with the AC grid with very low loss**



## Long Distance Transmission with Lower Cost

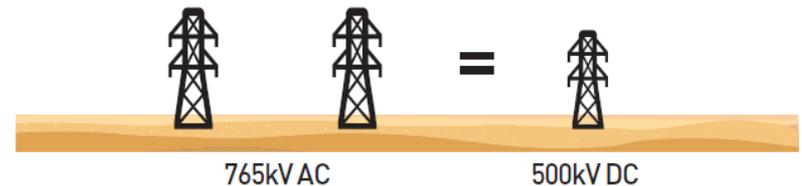
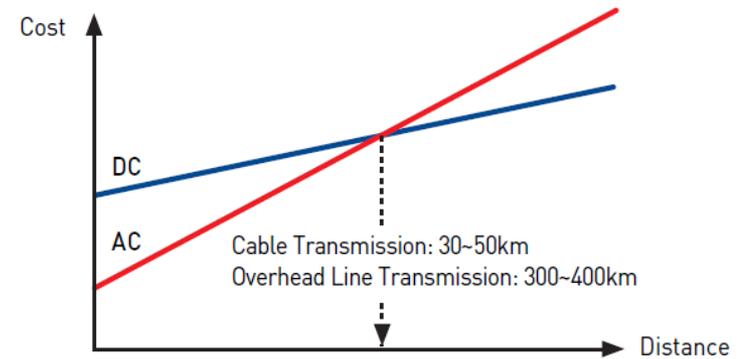
HVDC is the only option for the overhead transmission longer than 300km or submarine/underground 40km thanks to DC characteristics.

## Eco-friendly Transmission

HVDC system has lower environmental impact because it requires fewer overhead lines comparing to AC system. The technology is also the key component in the future energy system based on renewable energy sources.

## Optimal Grid Management

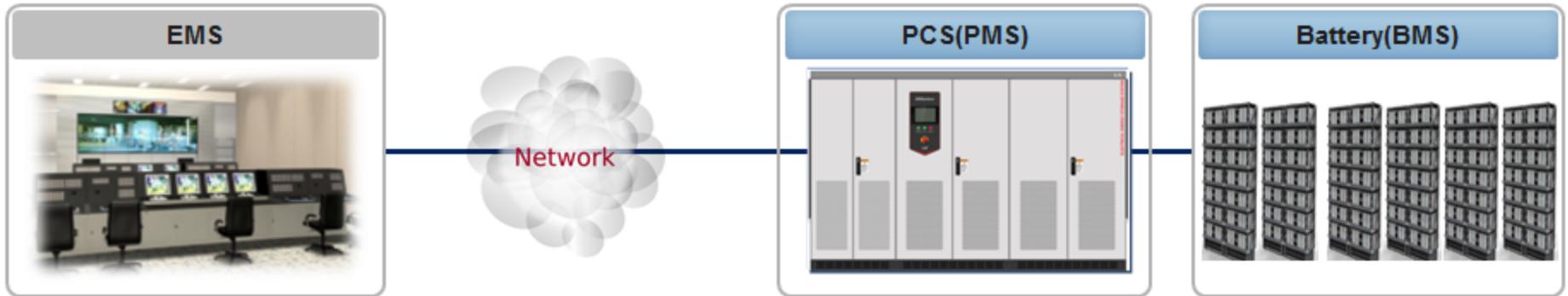
HVDC can directly interconnect load centers with huge energy sources efficiently. Therefore, negative impact on the grid is minimized. HVDC also improves the performance of AC grid by means of additional controllability.



# Appendix 5) ESS Applications

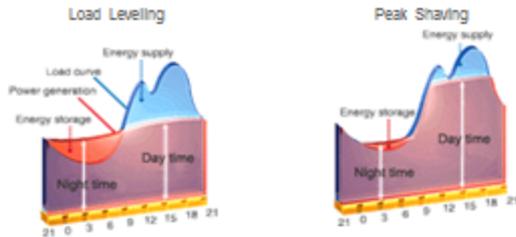
**ESS(Energy Storage System) includes PCS(Power Conversion System) and battery, and make an efficient way of use electricity power**

## Concept of ESS



## Function of ESS

➤ Peak Shaving, Load Leveling



➤ Renewable Energy Smoothing



➤ Frequency Regulation



• EMS : Energy Management System

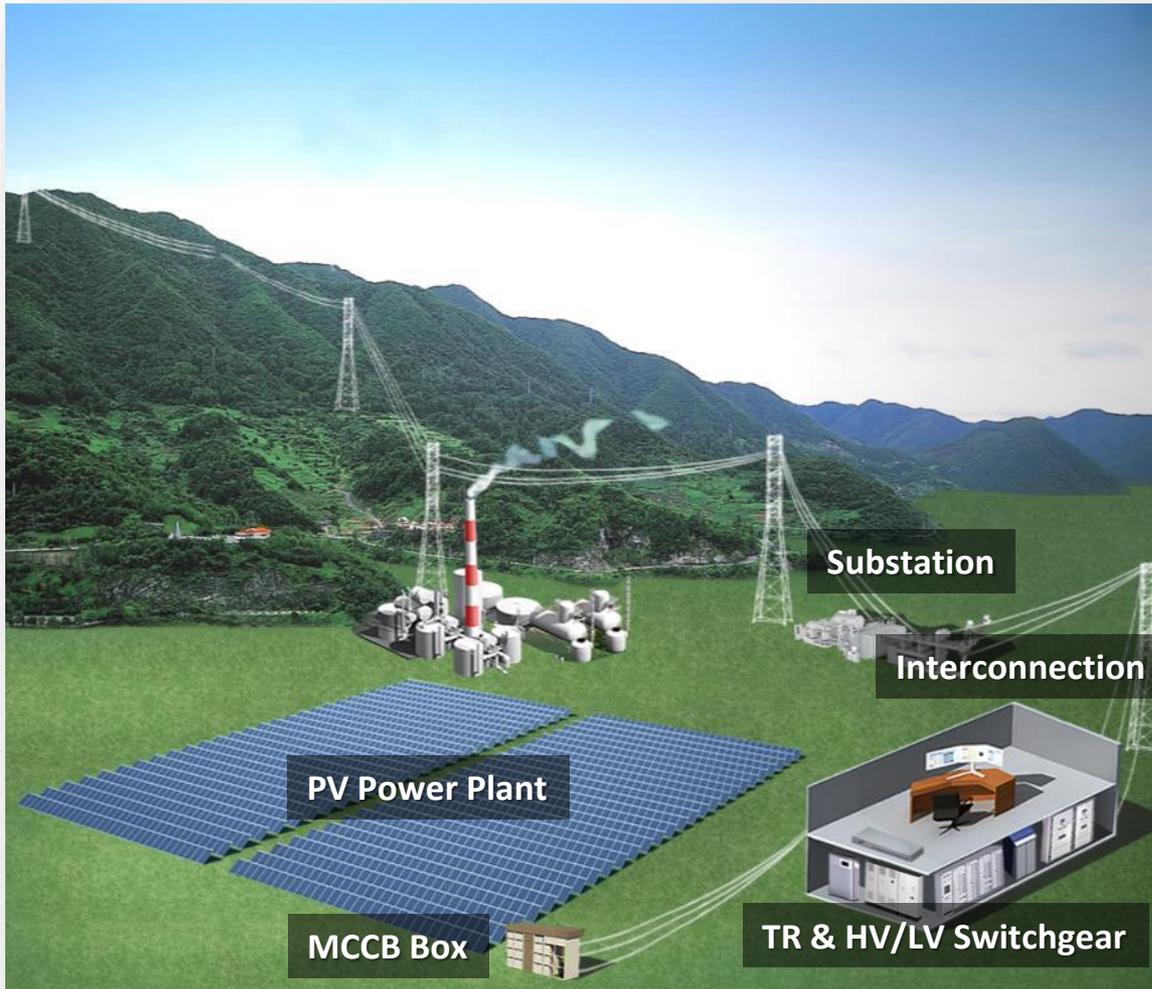
• PCS : Power Conditioning System

• PMS : Power Management System

• BMS : Battery Management System

# Appendix 6) PV Power Plant

We provide total solution for PV Power Plant. In addition to PV products, we can provide customers with all kinds of electric power equipment manufactured by LSIS.



## System Components



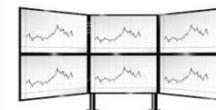
**PV Power System**  
- Module  
- Inverter  
- Balance of System



- HV Switchgear  
- MV Switchgear  
- LV Switchgear



**Transformer**



**Monitoring(SCADA)**