



# **FUTURING SMART ENERGY**

**3Q 2018 Review & Outlook**

**LSIS**



## Disclaimer

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**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.**

# I . Results & Outlook

# 3Q 2018 Total Results

Sales 602bwn (YoY 11bwn increased), Operating Profit 53bwn (YoY 3bwn decreased)

Convergence led to the Sales increase / Sales profit decreased by Electric Infra

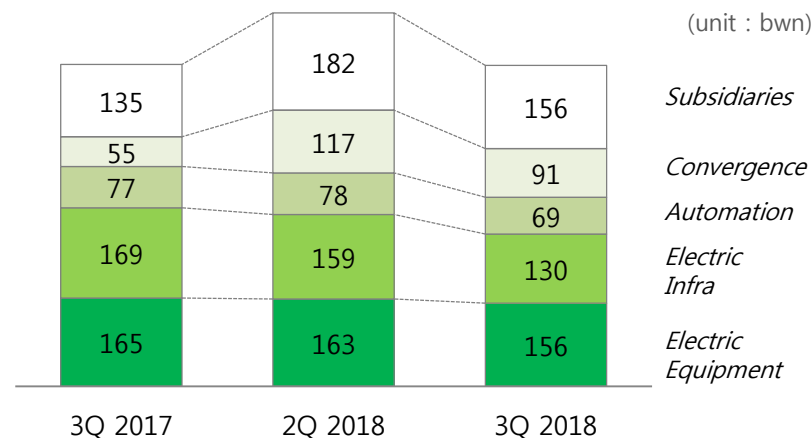
## Income Statement

(unit : bwn)

Segment	3Q 2017	2Q 2018	3Q 2018	YoY	QoQ
Sales	591	661	602	11	△58
Operating Profit	55	65	53	△3	△13
Profit before tax	50	57	45	△5	△11
Net income	38	40	35	△3	△5

## Sales Breakdown by Business

(unit : bwn)



\* Subsidiaries includes LS Metal, LS Sauter, LS Mecapion, LSIS Wuxi, LSIS Dalian and LS-Vietnam

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

\*\*\* Sales of subsidiaries are before the consolidated adjustments.

# 3Q 2018 Financial Position

**Total assets 2,359bwn (YoY 60bwn increased)**

**Total liabilities/Equity Ratios dropped 11%p (YoY, 103%→92%)**

## Financial Statement

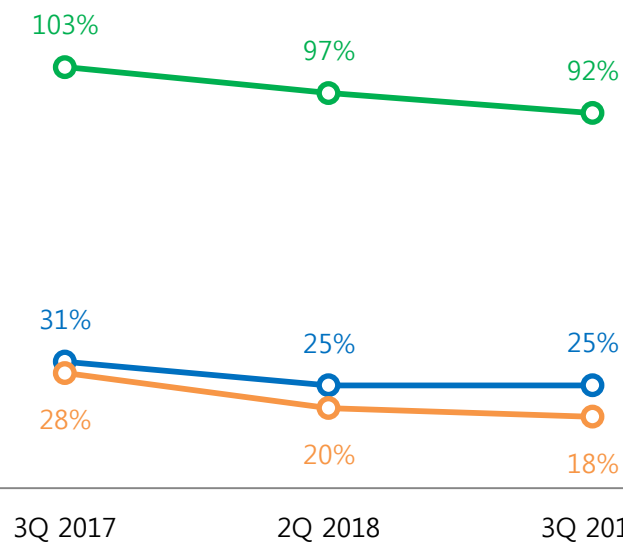
(unit : bwn)

Segment	3Q 2017	2Q 2018	3Q 2018	YoY	QoQ
Total Assets	2,299	2,361	2,359	60	△2
Current Assets	1,469	1,542	1,553	84	11
Cash & cash equivalent	393	359	379	△14	20
Total Liabilities	1,167	1,161	1,129	△38	△32
Debts	712	595	595	△118	△0
Net Debts	319	236	216	△104	△20
Equity	1,132	1,200	1,229	98	30

## Financial Ratios

(unit : %)

○ Total Liabilities/Equity 
 ○ Debts/Total Assets 
 ○ Net Debts Ratio

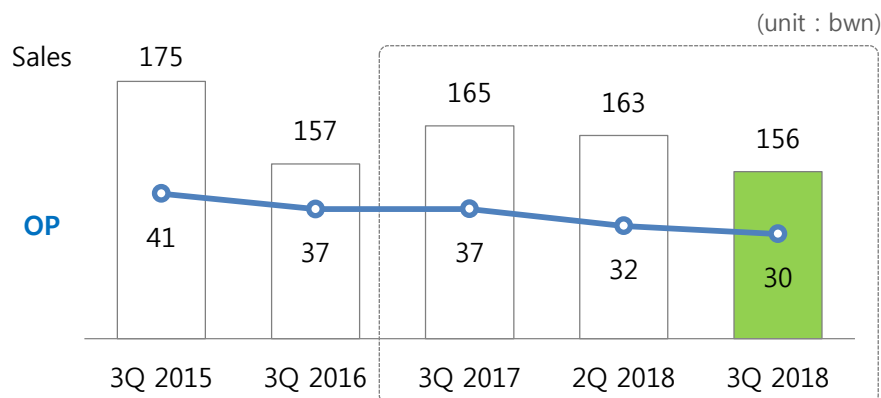


# Business Results & Outlook

**Electric Equipment – Sales decreased in Middle East mkt & due to Exchange rate**

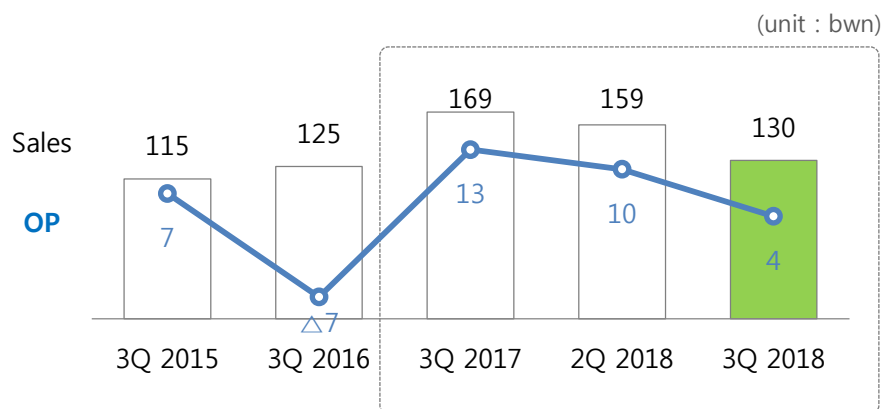
**Electric Infra – Sales profit slowdown due to SWGR and TR Sales decrease in Domestic mkt**

## Electric Equipment



- Sales decreased YoY 6%, OP decreased YoY 19%
  - Sales decreased by overseas mkt (Middle East/SE Asia)
  - Sales profit decreased by exchange rate & Sales decrease
- For the 2019,
  - Strengthen Domestic & Europe DC Equipment mkt (Accumulated sales result up to 3Q : 21bwn)
  - Expansion into SE Asia mkt

## Electric Infra



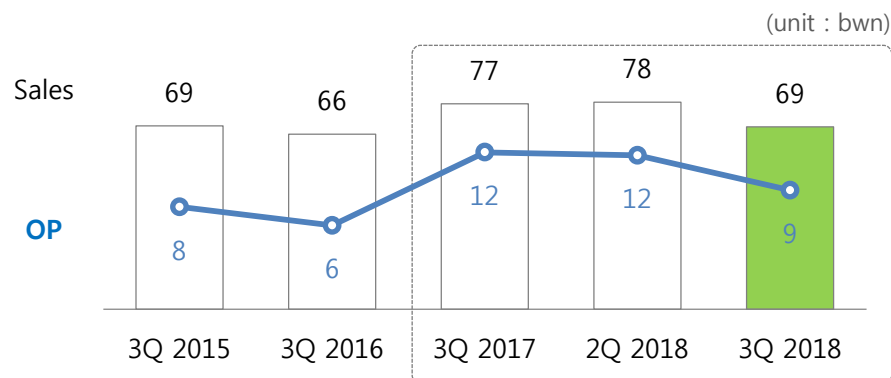
- Sales decreased YoY 23%, OP decreased YoY 69%
  - Domestic sales slowdown by demand in major mkt
  - Reduce profitability due to the product mix changes and SWGR projects
- Domestic performance keep improving by favorable demand in governmental mkt  
Expect to win HVDC PJT in the western Sea (4Q)

# Business Results & Outlook

**Automation – Sales decreased in Domestic (Machinery mkt ) & Middle East mkt**

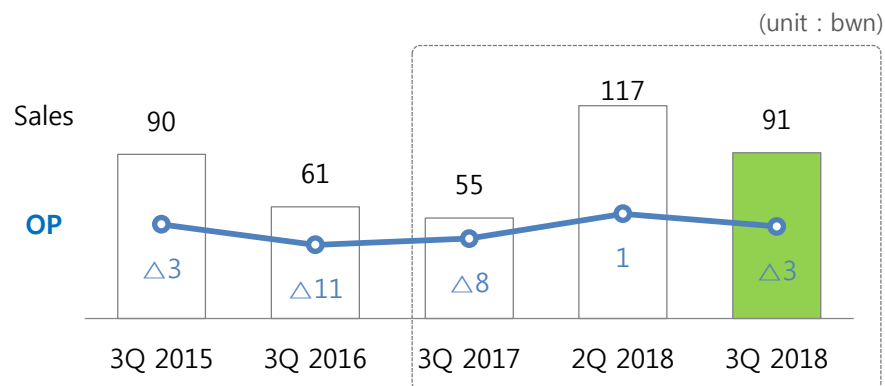
**Convergence- Sales increase in Smart-Grid (ESS) , Smart-Grid keep profit status**

## Automation



- Sales decreased YoY 11%, OP decreased YoY 24%
- Sales decrease in Domestic mkt (Machinery mkt)
- Sales profit decreased due to Overseas (Middle East)
- For the 2019,
  - Strengthen Overseas sales in Target Area (Vietnam , Middle East, Europe, North America)

## Convergence Business



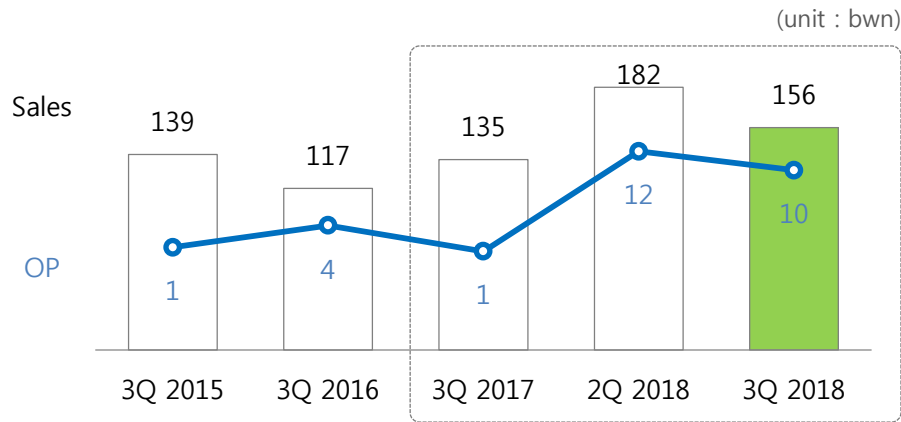
- Sales increased YoY 65%, OP increased YoY 58%
- Sales increased Smart-Grid mkt (ESS)
- Sales profit increased by Smart-Grid
- For the 2019,
  - Expand floating Solar EPC (20~40MW Scale)
  - Expand Smart-Grid mkt (ESS system in Solar mkt)
  - Expand EV components in China mkt

# Business Results & Outlook

China Subsidiaries led to the performance increase

LS Metal – Sales increased by Copper pipe price increase & Stainless steel

## Subsidiaries



- Sales increased YoY 15%, OP YoY 1,141% increased
  - LS Metals improved due to Copper Sales price increase favorable demand in construction and Electronic mkt
  - Wuxi performance increased in Equipment mkt and Electric Car mkt condition
  - Dalian sales increased by major mkt (LGD/SDI)
- For the 2019,
  - LS Metals performance keep improving by copper price
  - Wuxi performance improving by better Electric Car mkt condition in China.

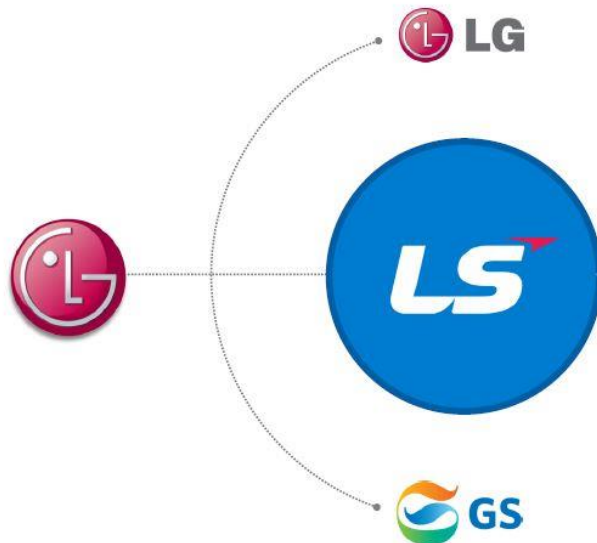


## II. Company & Business Introduction

## 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



## 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	2,344billion(KRW)
Employees	3,538
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 2017)



### 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



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

- 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



- 2010**
- Jan. LS Power Semittech 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 ~)

**2017** Mar. Selected as one of the Top 100 patent application corp. in Europe  
Jun. Awarded the Best Korean Company Grand Award  
Oct. Completed the Solar Power Station in Hokkaido Japan

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

**2013** Apr. Awarded the Great Place to Work Award for 2 consecutive years  
May. Concluded contract for the transfer of HVDC technology, and partnered with KAPES and Alstom  
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



**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  
Nov. Selected as one of the Top 100 Global Innovators by Thompson Reuters

**2016** Jan. Selected as one of the Top 100 Global Innovators by Thompson Reuters  
Mar. R&D campus achieved the first BEMS certification  
Jun. Awarded the Best Korean Company Grand Award  
Sep. R&D campus equipped ESS for emergency electric power supply

**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



Collaboration

Execution

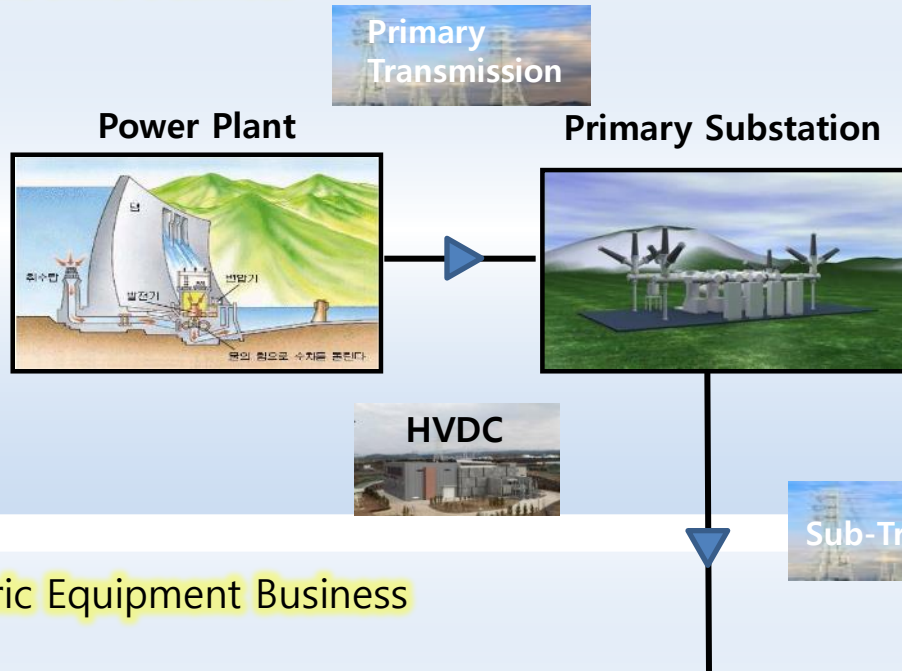
Creativity

Integrity

# Business Introduction

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

### Electric Infra Business

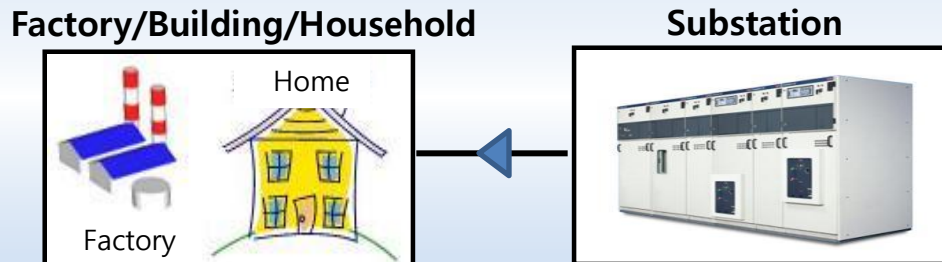


Ultra-high voltage power transmission & distribution system equipment such as gas insulated switchgear (GIS)

#### < Main Products >

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

### Electric Equipment Business



Top low and medium voltage electrical equipment for electricity users

#### <Main Products>

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



# 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



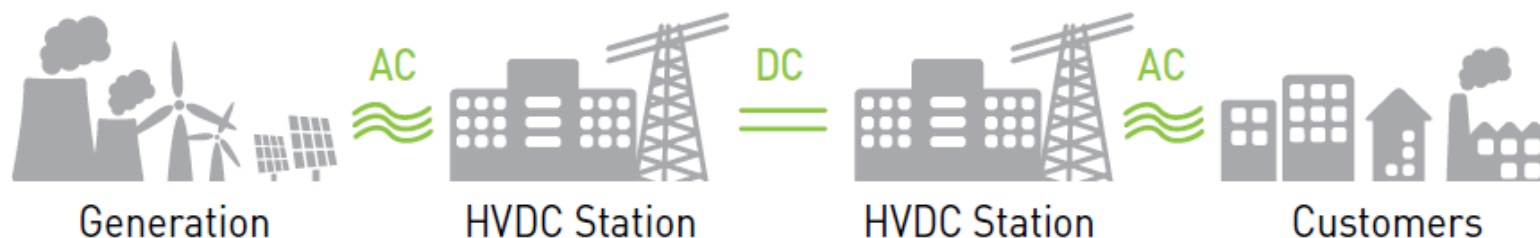
Photovoltaic System



Railway System

# 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

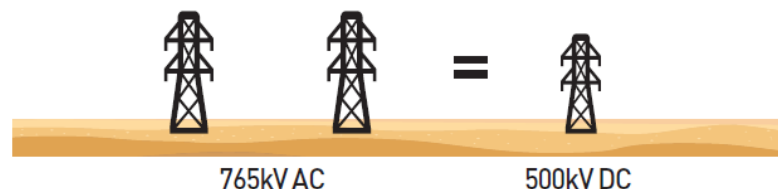
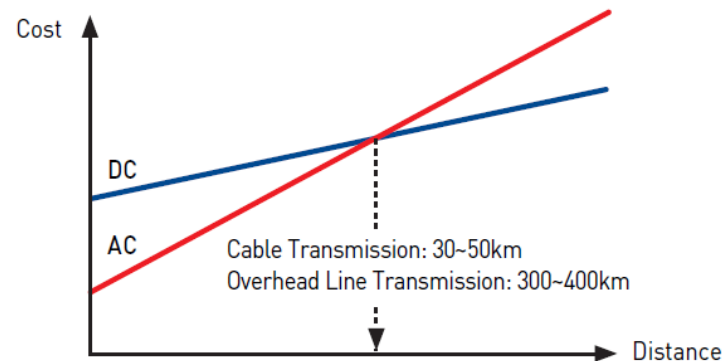
HVDC is the only option for the overhead transmission longer than 300km or submarine/underground 40km thanks to DC characteristics.

## 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

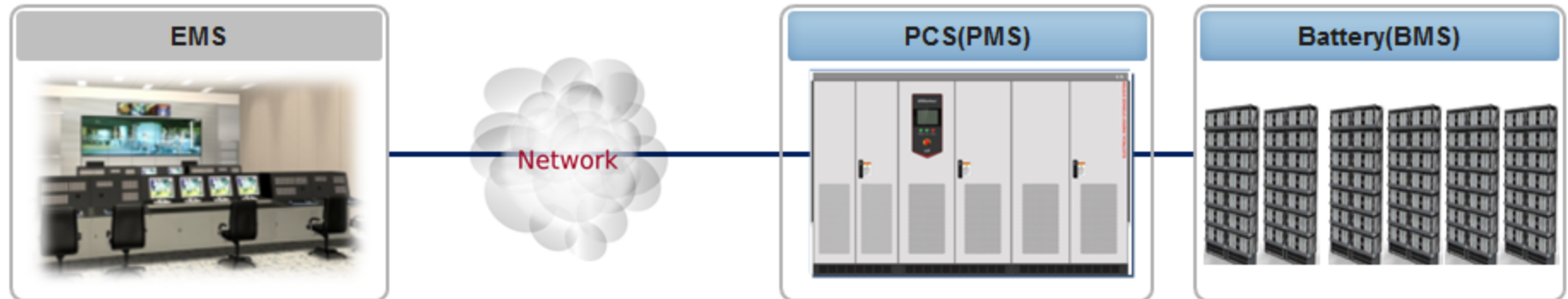
HVDC can directly interconnect load centers with huge energy sources efficiently. Therefore, negative impact on the grid is minimized. HVDC also improves the performance of AC grid by means of additional controllability.



# ESS Applications

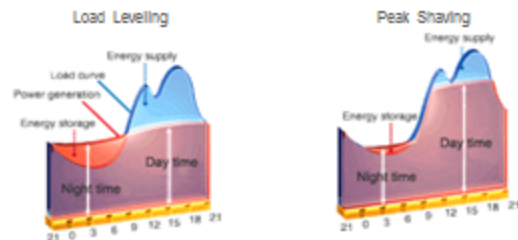
ESS(Energy Storage System) includes PCS(Power Conversion System) and battery, and make an efficient way of use electricity power

## Concept of ESS



## Function of ESS

➤ Peak Shaving, Load Leveling



➤ Renewable Energy Smoothing



➤ Frequency Regulation



• EMS : Energy Management System

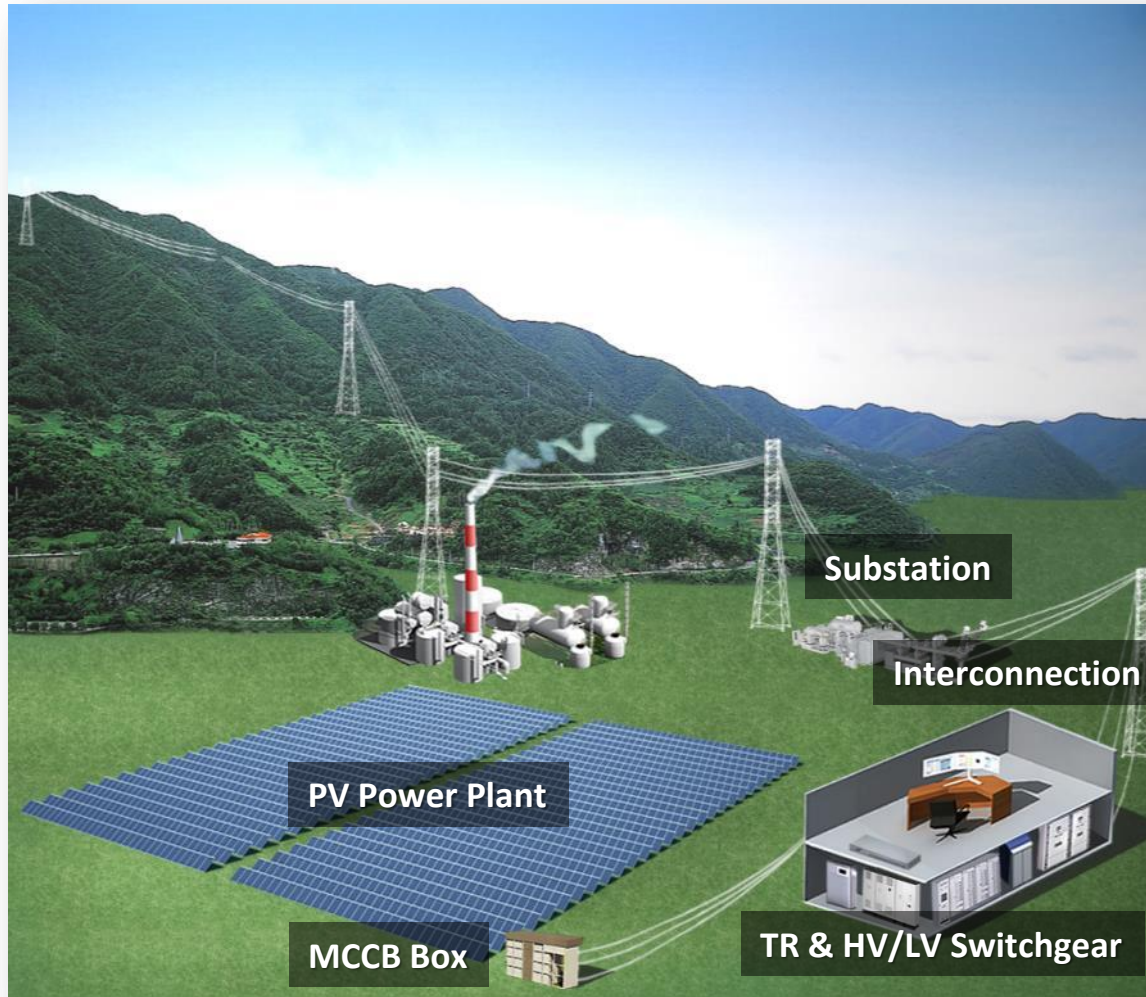
• PCS : Power Conditioning System

• PMS : Power Management System

• BMS : Battery Management System

# 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.



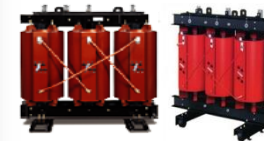
## System Components



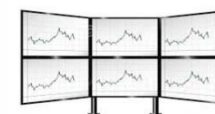
**PV Power System**  
- Module  
- Inverter  
- Balance of System



- HV Switchgear  
- MV Switchgear  
- LV Switchgear



**Transformer**



**Monitoring(SCADA)**

## III. Appendix



# Appendix 1. Condensed Statement

## Income statement

(unit : bwn, %)

Segment	3Q 2017	2Q 2018	3Q 2018	YoY	QoQ
Sales	591	661	602	1.9%	△8.8%
Cost of Sales	△470	△529	△484	3.0%	△8.5%
Gross Profit	122	132	119	△2.6%	△10.0%
(%)	(20.6%)	(20.0%)	(19.7%)	-	-
SG&A	△66	△67	△66	△0.6%	△0.7%
Operating Profit	55	65	53	△5.0%	△19.5%
(%)	(9.4%)	(9.9%)	(8.7%)	-	-
Non-OP and Loss	△5	△9	△7	38.2%	△16.4%
Profit before tax	50	57	45	△9.5%	△19.9%
Net Income	38	40	35	△7.9%	△12.8%
(%)	(6.4%)	(6.1%)	(5.8%)	-	-
EBITDA Margin	12.7%	12.1%	11.4%	-	-

## Statement of Financial position

(unit : bwn, %)

Segment	3Q 2017	2Q 2018	3Q 2018	QoQ	YoY
<b>Total Assets</b>	<b>2,299</b>	<b>2,361</b>	<b>2,359</b>	<b>3%</b>	<b>△0%</b>
Current Assets	1,469	1,542	1,553	6%	1%
Cash&Cash Equivalents	393	359	379	△4%	5%
Inventories	170	176	208	23%	18%
Other Current Assets	906	1,006	965	7%	△4%
Non-Current Assets	830	819	806	△3%	△2%
Tangible Assets	586	571	565	△4%	△1%
Intangible Assets	116	118	116	0%	△2%
Other Non-Current Assets	128	130	125	△3%	△4%
<b>Total Liabilities</b>	<b>1,167</b>	<b>1,161</b>	<b>1,129</b>	<b>△3%</b>	<b>△3%</b>
Current Liabilities	614	698	714	16%	2%
Short-term borrowings	184	146	195	6%	34%
Non-Current Liabilities	553	463	415	△25%	△10%
Long-term borrowings	529	449	399	△24%	△11%
<b>Equity</b>	<b>1,132</b>	<b>1,200</b>	<b>1,229</b>	<b>9%</b>	<b>2%</b>
<b>Current Ratio</b>	239%	221%	218%	△9%	△1%
<b>Equity/Total Assets</b>	49%	51%	52%	6%	3%
<b>Total Liabilities/Equity</b>	103%	97%	92%	△11%	△5%
<b>Net debts Ratio</b>	28%	20%	18%	△38%	△11%

## Statements of Cash Flows

(unit : bwn)

Segment	'17.3Q	'18.3Q	YoY
Cash and cash equivalents at the beginning of year	340	262	△79
Cash Flows From Operating Activities	103	127	24
Cash Flows From Investing Activities	△57	85	142
Capex	△33	△34	△0
R&D	△8	△9	△1
Others	△16	128	143
Cash Flows From Financing Activities	7	△97	△104
Effect of exchange rate changes on cash and cash equivalents	△0	2	2
Cash and cash equivalents	393	379	△14

# Appendix 2. Results for the past 3 years

HQ

(unit : bwn)

Segment				15					16					17					18				Y-o-Y (4Q)
				1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	Total	
HQ	Electric Equipment	Sales	Domestic	105	107	108	109	429	95	101	102	101	399	115	111	109	100	435	111	107	106	218	△3%
			Overseas	58	62	67	62	249	61	62	55	57	235	59	61	56	55	230	52	56	50	108	△11%
		Total		164	168	175	172	678	157	163	157	157	634	173	172	165	155	665	163	163	156	326	△6%
		Operating Profit		31	35	41	32	139	36	36	37	33	142	40	36	37	26	139	34	32	30	66	△19%
	Electric Infra	Sales	Domestic	79	107	100	98	384	64	82	105	141	392	90	106	131	120	447	134	115	107	248	△19%
			Overseas	12	16	15	33	75	36	33	20	46	134	41	40	38	55	174	30	44	23	74	△40%
		Total		91	122	115	130	459	100	114	125	187	526	130	147	169	175	621	164	159	130	322	△23%
		Operating Profit		△2	△0	7	2	7	△5	0	△7	8	△4	0	2	13	14	29	14	10	4	24	△69%
	Automation	Sales	Domestic	47	43	48	49	187	46	48	47	45	186	48	49	51	44	193	54	56	48	110	△6%
			Overseas	21	22	21	25	89	26	23	19	20	88	24	24	26	20	94	26	21	21	48	△22%
		Total		68	65	69	74	276	72	71	66	65	274	72	73	77	64	287	80	78	69	158	△11%
		Operating Profit		4	4	8	4	19	9	6	6	6	27	8	10	12	6	36	11	12	9	23	△24%
	Convergence Business	Sales	Domestic	45	83	67	76	271	38	46	30	56	171	26	36	31	52	145	32	90	68	122	118%
			Overseas	11	7	23	28	69	17	17	31	42	107	23	26	24	15	89	16	27	23	43	△4%
		Total		56	89	90	105	340	56	63	61	98	278	48	63	55	68	234	48	117	91	165	65%
		Operating Profit		△11	△0	△3	△3	△18	△10	△15	△11	△31	△67	△14	△9	△8	△28	△60	△8	1	△3	△7	58%
	Subtotal	Sales	Domestic	277	339	323	332	1,271	244	277	284	343	1,148	278	303	322	317	1,220	330	369	328	699	2%
			Overseas	102	106	126	149	482	141	134	125	164	564	146	151	145	145	587	124	148	117	273	△20%
		Total		379	445	449	481	1,753	385	411	409	507	1,712	425	454	467	461	1,807	455	517	445	972	△5%
		Operating Profit		22	38	53	35	148	29	27	25	16	97	34	38	53	18	143	50	55	39	106	△27%

# Appendix 2. Results for the past 3 years

## Subsidiaries

(unit : bwn)

Segment				15					16					17					18				Y-o-Y (4Q)
				1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	Total	
Subsidiaries	LS Metal	Sales	Domestic	24	28	26	26	104	25	28	33	40	126	34	37	41	43	156	39	41	33	81	△20%
			Overseas	47	39	44	39	168	45	36	29	37	147	49	39	37	43	167	48	38	38	86	1%
		Total		71	67	70	64	272	70	64	62	77	273	83	76	79	85	323	87	79	71	166	△10%
		Operating Profit		△3	△2	△5	1	△9	1	1	△1	△0	0	0	△0	△1	1	△0	△0	△0	1	△0	206%
	Subsidiaries (Korea)	Sales		15	14	11	17	56	10	11	13	25	58	16	22	19	16	72	15	15	17	30	△11%
		Operating Profit		1	1	0	△0	2	△0	△0	1	2	2	1	3	2	1	7	2	2	1	3	△63%
	Subsidiaries (China)	Sales		31	43	58	49	180	49	53	42	44	188	39	45	38	48	170	39	82	63	121	65%
		Operating Profit		0	2	6	4	13	5	5	4	2	16	1	3	0	3	6	1	10	8	11	32,302%
	Subsidiaries (Vietnam)	Sales		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6	6	10	
		Operating Profit		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Subtotal	Sales		116	124	139	130	508	129	128	117	146	519	138	143	135	149	565	145	182	156	327	15%
		Operating Profit		△2	2	1	5	6	5	5	4	4	18	2	6	1	4	13	3	12	10	15	1,141%

## Consolidated

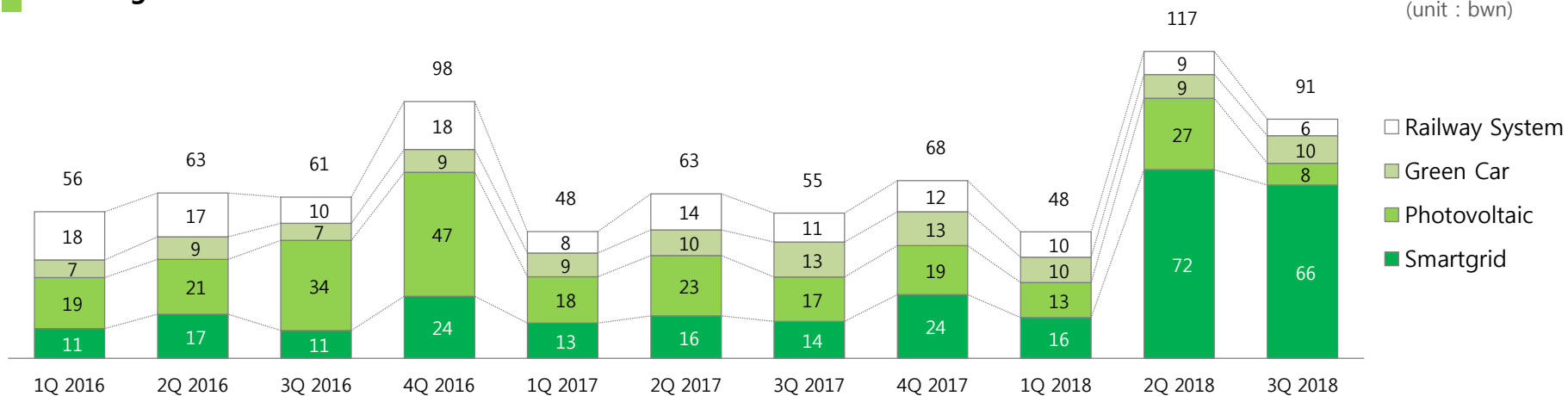
(unit : bwn)

Segment				15					16					17					18				Y-o-Y (4Q)
				1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	Total	
Consolidation adjustment for Sales				△10	△16	△15	△19	△60	△12	△14	△2	10	△18	△3	△9	△11	△5	△29	△8	△39	1	△47	113%
Consolidation adjustment for OP				△1	1	△0	1	1	0	0	1	8	9	0	△0	1	1	3	2	△2	4	0	214%
Total Sales				485	552	573	592	2,202	501	525	524	663	2,214	559	588	591	605	2,344	592	661	602	1,252	2%
Total Operating Profit				19	41	54	41	154	35	32	30	28	124	36	44	55	23	158	55	65	53	121	△5%



# Appendix 3. Sales details for Convergence & Subsidiaries

## Convergence



## Subsidiaries

