

**LG Chem, Ltd. and Subsidiaries**  
**Interim Consolidated Financial Statements**  
**June 30, 2016 and 2015**

**LG Chem, Ltd. and Subsidiaries**  
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**June 30, 2016 and 2015**

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## Report on Review of Interim Financial Statements

(English Translation of a Report Originally Issued in Korean)

To the Board of Directors and Shareholders of  
LG Chem, Ltd.

### **Reviewed Financial Statements**

We have reviewed the accompanying interim consolidated financial statements of LG Chem, Ltd. and its subsidiaries (collectively referred to as the "Group"). These financial statements consist of the interim consolidated statements of financial position of LG Chem, Ltd. and its subsidiaries as of June 30, 2016, and the related interim consolidated statements of income and comprehensive income for the three-month and six-month periods ended June 30, 2016 and 2015, and interim consolidated statements of changes in equity and cash flows for the six-month periods ended June 30, 2016 and 2015, and a summary of significant accounting policies and other explanatory notes, expressed in Korean won.

### **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with the International Financial Reporting Standards as adopted by the Republic of Korea ('Korean IFRS') 1034, *Interim Financial Reporting*, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

### **Auditor's Responsibility**

Our responsibility is to issue a report on these consolidated financial statements based on our reviews.

We conducted our reviews in accordance with the quarterly and semi-annual review standards established by the Securities and Futures Commission of the Republic of Korea. A review of interim financial information consists of making inquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with the Korean Standards on Auditing and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.



**Conclusion**

Based on our reviews, nothing has come to our attention that causes us to believe the accompanying interim consolidated financial statements do not present fairly, in all material respects, in accordance with the Korean IFRS 1034, *Interim Financial Reporting*.

**Other Matters**

We have audited the consolidated statement of financial position of the Group as of December 31, 2015, and the related consolidated statements of income, comprehensive income, changes in equity and cash flows for the year then ended, in accordance with the Korean Standards on Auditing. We expressed an unqualified opinion on those financial statements in our audit report dated March 9, 2016. These financial statements are not included in this review report. The consolidated statement of financial position as of December 31, 2015, presented herein for comparative purposes, is consistent, in all material respects, with the above audited statement of financial position as of December 31, 2015.

Review standards and their application in practice vary among countries. The procedures and practices used in the Republic of Korea to review such financial statements may differ from those generally accepted and applied in other countries.

A handwritten signature in black ink that reads "Samil PricewaterhouseCoopers". The signature is written in a cursive, flowing style.

Seoul, Korea  
August 16, 2016

This interim report is effective as of August 16, 2016, the review report date. Certain subsequent events or circumstances, which may occur between the review report date and the time of reading this report, could have a material impact on the accompanying interim consolidated financial statements and notes thereto. Accordingly, the readers of the review report should understand that there is a possibility that the above review report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

**LG Chem, Ltd. and Subsidiaries**  
**Interim Consolidated Statements of Financial Position**  
**June 30, 2016 and December 31, 2015**

<i>(in millions of Korean won)</i>	Notes	June 30, 2016 (Unaudited)	December 31, 2015
<b>Assets</b>			
<b>Current assets</b>			
Cash and cash equivalents	3, 5, 6	1,717,576	1,704,918
Trade receivables	3, 5, 7, 32	3,198,473	3,236,622
Other receivables	3, 5, 7, 32	1,108,702	1,163,360
Prepaid income taxes		1,838	1,955
Other current financial assets	3, 5, 8, 9	-	93
Other current assets	14	208,648	203,604
Inventories	10	2,656,837	2,338,553
Non-current assets held for sale	36	67,890	6,500
Total current assets		8,959,964	8,655,605
<b>Non-current assets</b>			
Other receivables	3, 5, 7	235,788	106,484
Other financial assets	3, 5, 8	24,440	15,301
Investments in associates and joint ventures	1, 11, 34	268,951	293,747
Deferred income tax assets	29	144,383	98,459
Property, plant and equipment	12	9,381,351	8,867,209
Intangible assets	13	751,711	501,886
Investment properties	12	14,199	-
Other non-current assets	14	45,321	40,037
Total non-current assets		10,866,144	9,923,123
<b>Total assets</b>		19,826,108	18,578,728
<b>Liabilities and equity</b>			
<b>Liabilities</b>			
<b>Current liabilities</b>			
Trade payables	3, 5, 32	1,328,445	1,172,488
Other payables	3, 5, 32	832,175	825,606
Borrowings	3, 5, 15	2,952,977	2,150,778
Provisions	16	13,079	9,605
Income tax payables	29	260,466	338,777
Other current liabilities	5, 18	260,324	301,727
Non-current liabilities held for sale	36	36	-
Total current liabilities		5,647,502	4,798,981
<b>Non-current liabilities</b>			
Other payables	3, 5	6,955	1,680
Borrowings	3, 5, 15	336,432	507,928
Provisions	16	132,771	26,907
Net defined benefit liabilities	17	170,876	81,192
Deferred income tax liabilities	29	38,724	30,666
Other non-current liabilities	18	29,087	27,852
Total non-current liabilities		714,845	676,225
<b>Total liabilities</b>		6,362,347	5,475,206

**LG Chem, Ltd. and Subsidiaries**  
**Interim Consolidated Statements of Financial Position**  
**June 30, 2016 and December 31, 2015**

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<i>(in millions of Korean won)</i>	<b>Notes</b>	<b>June 30, 2016 (Unaudited)</b>	<b>December 31, 2015</b>
<b>Equity</b>			
<b>Equity attributable to owners of the parent</b>			
Share capital	1, 20	369,500	369,500
Capital surplus		1,157,772	1,157,772
Other components of equity	22	(15,871)	(15,699)
Accumulated other comprehensive loss		(44,133)	(52,608)
Retained earnings	21	11,915,691	11,532,500
		<u>13,382,959</u>	<u>12,991,465</u>
<b>Non-controlling interests</b>		<u>80,802</u>	<u>112,057</u>
<b>Total equity</b>		<u>13,463,761</u>	<u>13,103,522</u>
<b>Total liabilities and equity</b>		<u>19,826,108</u>	<u>18,578,728</u>

The accompanying notes are an integral part of these interim consolidated financial statements.

**LG Chem, Ltd. and Subsidiaries**  
**Interim Consolidated Statements of Income**  
**Three-Month and Six-Month Periods Ended June 30, 2016 and 2015**

	Notes	2016		2015	
		(Unaudited)		(Unaudited)	
		Three months	Six months	Three months	Six months
<b>Revenue</b>	32, 34	5,219,229	10,093,321	5,073,222	9,988,244
<b>Cost of sales</b>	24, 32	(4,074,378)	(8,014,097)	(4,047,657)	(8,168,627)
<b>Gross profit</b>		1,144,851	2,079,224	1,025,565	1,819,617
Selling, general and administrative expenses	23, 24, 32	(532,398)	(1,009,025)	(462,124)	(894,374)
<b>Operating profit</b>	34	612,453	1,070,199	563,441	925,243
Finance income	5, 26	44,558	81,144	31,350	76,813
Finance expenses	5, 26	(89,458)	(128,101)	(38,052)	(94,635)
Share of loss of associates and joint ventures	11	(2,873)	(5,211)	(429)	(1,540)
Other non-operating income	5, 27	163,064	220,274	115,794	179,212
Other non-operating expenses	5, 28, 36	(227,658)	(315,135)	(179,161)	(268,045)
<b>Profit before income tax</b>	33	500,086	923,170	492,943	817,048
<b>Income tax expense</b>	29	(124,602)	(209,561)	(139,975)	(217,928)
<b>Profit for the period</b>		375,484	713,609	352,968	599,120
Attributable to:					
Owners of the Parent Company		376,911	716,674	349,445	592,241
Non-controlling interests		(1,427)	(3,065)	3,523	6,879
<b>Earnings per share</b>					
<b>to owners of the Parent Company (in Korean won)</b>	30				
Basic and diluted earnings per ordinary share		5,124	9,743	4,751	8,051
Basic and diluted earnings per preferred share		5,137	9,768	4,763	8,076

The accompanying notes are an integral part of these interim consolidated financial statements.

**LG Chem, Ltd. and Subsidiaries**  
**Interim Consolidated Statements of Comprehensive Income**  
**Three-Month and Six-Month Periods Ended June 30, 2016 and 2015**

(in millions of Korean won)

	Notes	2016		2015	
		(Unaudited)		(Unaudited)	
		Three months	Six months	Three months	Six months
<b>Profit for the period</b>		375,484	713,609	352,968	599,120
<b>Other comprehensive income</b>					
<b>Items that will not be reclassified to profit or loss:</b>					
Remeasurements of the net defined benefit liability	17	(1,149)	(1,919)	(614)	(1,224)
Shares of remeasurement on net defined benefit liability of associates		4	5	(23)	4
Income tax effect relating to components of other comprehensive income		276	465	148	296
<b>Items that will be reclassified subsequently to profit or loss:</b>					
Currency translation differences		(17,545)	(26,095)	30,065	40,786
Gain on valuation of available-for-sale financial assets		1,568	3,858	-	-
Shares of other comprehensive income (loss) of joint ventures and associates		(1,591)	(3,464)	3,081	449
Reclassification from disposal of joint ventures		45,215	45,215	-	-
Income tax effect relating to components of other comprehensive income		(12,244)	(13,064)	1,109	1,512
<b>Other comprehensive income for the period, net of tax</b>		14,534	5,001	33,766	41,823
<b>Total comprehensive income for the period</b>		390,018	718,610	386,734	640,943
<b>Attributable to:</b>					
Owners of the Parent Company		393,012	723,700	380,957	631,008
Non-controlling interests		(2,994)	(5,090)	5,777	9,935

The accompanying notes are an integral part of these interim consolidated financial statements.

**LG Chem, Ltd. and Subsidiaries**  
**Interim Consolidated Statements of Changes in Equity**  
**Six-Month Periods Ended June 30, 2016 and 2015**

(in millions of Korean won)

Notes	Attributable to Owners of the Parent						Non-controlling interests	Total equity
	Share capital	Capital surplus	Other components of equity	Accumulated other comprehensive loss	Retained earnings	Total		
<b>Balance at January 1, 2015</b>	369,500	1,157,772	(15,699)	(62,233)	10,690,605	12,139,945	125,907	12,265,852
<b>Comprehensive income:</b>								
Profit for the period	-	-	-	-	592,241	592,241	6,879	599,120
Remeasurements of the net defined benefit liability	17	-	-	-	(928)	(928)	-	(928)
Currency translation differences	-	-	-	39,242	-	39,242	3,056	42,298
Others	-	-	-	449	4	453	-	453
<b>Total comprehensive income</b>	-	-	-	39,691	591,317	631,008	9,935	640,943
<b>Transactions with owners:</b>								
Dividends	31	-	-	-	(294,520)	(294,520)	-	(294,520)
<b>Total transactions with owners</b>	-	-	-	-	(294,520)	(294,520)	-	(294,520)
<b>Balance at June 30, 2015 (Unaudited)</b>	369,500	1,157,772	(15,699)	(22,542)	10,987,402	12,476,433	135,842	12,612,275
<b>Balance at January 1, 2016</b>	369,500	1,157,772	(15,699)	(52,608)	11,532,500	12,991,465	112,057	13,103,522
<b>Comprehensive income:</b>								
Profit (loss) for the period	-	-	-	-	716,674	716,674	(3,065)	713,609
Remeasurements of the net defined benefit liability	17	-	-	-	(1,454)	(1,454)	-	(1,454)
Currency translation differences	-	-	-	(25,400)	-	(25,400)	(2,025)	(27,425)
Gain on valuation of available-for-sale financial assets	-	-	-	2,924	-	2,924	-	2,924
Others	-	-	-	30,951	5	30,956	-	30,956
<b>Total comprehensive income (loss)</b>	-	-	-	8,475	715,225	723,700	(5,090)	718,610
<b>Transactions with owners:</b>								
Dividends	31	-	-	-	(331,287)	(331,287)	(15,259)	(346,546)
Issuance of stock by subsidiaries	-	-	-	-	-	-	5,521	5,521
Business combination	35	-	-	-	-	-	(16,349)	(16,349)
Others	-	-	(172)	-	(747)	(919)	(78)	(997)
<b>Total transactions with owners</b>	-	-	(172)	-	(332,034)	(332,206)	(26,165)	(358,371)
<b>Balance at June 30, 2016 (Unaudited)</b>	369,500	1,157,772	(15,871)	(44,133)	11,915,691	13,382,959	80,802	13,463,761

The accompanying notes are an integral part of these interim consolidated financial statements.

**LG Chem, Ltd. and Subsidiaries**  
**Interim Consolidated Statements of Cash Flows**  
**Six-Month Periods Ended June 30, 2016 and 2015**

<i>(in millions of Korean won)</i>	Notes	2016 (Unaudited)	2015 (Unaudited)
<b>Cash flows from operating activities</b>			
Cash generated from operations	33	1,812,348	1,722,192
Interest received		22,241	18,829
Interest paid		(36,397)	(34,240)
Dividends received		-	33,500
Income taxes paid		(351,796)	(151,407)
<b>Net cash inflow from operating activities</b>		<u>1,446,396</u>	<u>1,588,874</u>
<b>Cash flows from investing activities</b>			
Decrease in other receivables		387,980	510,329
Decrease in non-current other receivables		32,703	12,964
Proceeds from disposal of investments in joint ventures		23,724	-
Proceeds from disposal of available-for-sale financial assets		41	2,991
Proceeds from disposal of property, plant and equipment		12,624	2,015
Proceeds from disposal of intangible assets		240	2,670
Increase in other receivables		(297,626)	(636,289)
Increase in non-current other receivables		(73,688)	(15,755)
Acquisition of investments in associates and joint ventures		(3,636)	(150)
Acquisition of available-for-sale financial assets		(3,062)	(422)
Acquisition of property, plant and equipment		(681,545)	(887,827)
Acquisition of intangible assets		(37,702)	(30,489)
Business combination	35	(408,663)	-
<b>Net cash outflow from investing activities</b>		<u>(1,048,610)</u>	<u>(1,039,963)</u>
<b>Cash flows from financing activities</b>			
Proceeds from borrowings		410,693	248,173
Capital contribution from non-controlling interest		5,574	-
Repayments of borrowings		(446,469)	(292,358)
Dividends paid		(346,559)	(294,520)
<b>Net cash outflow from financing activities</b>		<u>(376,761)</u>	<u>(338,705)</u>
<b>Net increase in cash and cash equivalents</b>			
Cash and cash equivalents at the beginning of period		1,704,918	988,016
Exchange loss on cash and cash equivalents		(8,367)	(981)
<b>Cash and cash equivalents at the end of period</b>		<u>1,717,576</u>	<u>1,197,241</u>

The accompanying notes are an integral part of these interim consolidated financial statements.

# LG Chem, Ltd. and Subsidiaries

## Notes to the Interim Consolidated Financial Statements

### June 30, 2016 and 2015 (Unaudited), and December 31, 2015

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#### 1. General information

General information about LG Chem, Ltd. (the "Parent Company"), the controlling company in accordance with Korean IFRS 1110, *Consolidated Financial Statements*, and its subsidiaries (collectively the "Group") is as follows:

##### 1.1 The Parent Company

The Parent Company was spun off on April 1, 2001, from LG Chem Investment Ltd. (formerly LG Chemical Ltd.).

As of June 30, 2016, the Parent Company has its manufacturing facilities in Yeosu, Daesan, Ochang, Cheongju, Ulsan, Naju, Iksan, Paju and Gimcheon.

The Parent Company is authorized to issue 292 million shares of ordinary shares with par value of ₩5,000 per share. As of June 30, 2016, the Parent Company has issued 66,271,100 ordinary shares (₩331,356 million) and 7,628,921 preferred shares (₩38,144 million). The largest shareholder of the Parent Company is LG Corp., which owns 33.53% of the Parent Company's ordinary shares. Preferred shareholders have no voting rights but are entitled to receive dividends at a rate 1% more than those paid to ordinary shareholders.

##### 1.2 Business Overview

The Group is engaged in Basic materials & Chemicals business, Energy solution, IT & Electronic materials, and Advanced materials business. In April 2016, the Parent Company acquired 100% shares of FarmHannong Co.,Ltd. (formerly Dongbu Farm Hannong Co.,Ltd.), which is engaged to manufacture crop protection products, seeds, fertilizers and others.

The Basic materials & Chemicals business includes production of olefin petrochemicals, such as ethylene, propylene, butadiene from Naphtha, and aromatic petrochemicals such as benzene. It also includes production of synthetic resin and synthetic components from olefin, and aromatic petrochemicals. This business bears characteristics of a large-volume process industry. The Group's major products are PE, PP, BPA, ABS, EP, PVC, plasticizers, acrylic, SAP, synthetic rubber, a special resin, and others.

The Energy solution business manufactures and supplies batteries ranging from mobile batteries for mobile phones and laptop computers to automotive batteries for electric vehicles. A demand of small sized batteries for new applications such as electric tools, electric driving devices as well as traditional IT devices is increasing recently and the automotive battery business is also expected to expand rapidly due to an increasing demand of the batteries in associated with enhanced environment regulation in developed countries.

The IT & Electronic material business manufactures and supplies various display materials such as polarizer and LCD glass, and RO water purification filter, which will be the next growth engine for future. Advanced materials business manufactures and supplies display and battery materials for LCD Photoresist, OLED materials, battery materials and others.

FarmHannong Co.,Ltd., a newly acquired subsidiary, manufactures and sells crop protection products, seeds, fertilizers and others. The crop protection business provides high value products such as environmentally-friendly pesticide. The fertilizer business leads developing a next generation fertilizers such as eco friendly organic and functional fertilizers, and potting soil. The seed business puts priority on retaining and developing rare breed with high profit in order to remain competitive in a future food industry.

**LG Chem, Ltd. and Subsidiaries**  
**Notes to the Interim Consolidated Financial Statements**  
**June 30, 2016 and 2015 (Unaudited), and December 31, 2015**

**1.3 Consolidated Subsidiaries, Associates and Joint Ventures**

June 30, 2016

	Percentage of ownership (%)	Business location	Fiscal year-end	Business activities
<b>Consolidated subsidiaries</b>				
Ningbo LG Yongxing Chemical Co., Ltd. <sup>1</sup>	75	China	December 31	ABS/SBL manufacturing and sales
Ningbo Zhenhai LG Yongxing Trade Co., Ltd. <sup>1</sup>	75	China	December 31	ABS sales
LG Chem HK Ltd.	100	Hong Kong	December 31	Sales and trading
LG Chem America, Inc.	100	USA	December 31	Sales and trading
LG Chemical India Pvt. Ltd. <sup>2</sup>	100	India	December 31	Synthetic resin manufacturing and sales
LG Polymers India Pvt. Ltd. <sup>2</sup>	100	India	December 31	PS manufacturing
LG Chemical (Guangzhou) Engineering Plastics Co., Ltd.	100	China	December 31	EP manufacturing and sales
LG Chem (Nanjing) Information & Electronics Materials Co., Ltd. <sup>3</sup>	100	China	December 31	Battery/ Polarizer Manufacturing and sales
LG Chem (Taiwan), Ltd.	100	Taiwan	December 31	Polarizer manufacturing and sales
LG Chem Display Materials (Beijing) Co., Ltd.	100	China	December 31	Polarizer manufacturing
Tianjin LG Bohai Chemical Co., Ltd. <sup>4</sup>	75	China	December 31	PVC, VCM, EDC manufacturing and sales
Tianjin LG BOTIAN Chemical Co., Ltd. <sup>4</sup>	56	China	December 31	SBS manufacturing and sales
LG Chem (China) Investment Co., Ltd.	100	China	December 31	China holding company
LG Chem (Tianjin) Engineering Plastics Co., Ltd.	100	China	December 31	ABS/EP manufacturing and sales
LG Chem Europe GmbH	100	Germany	December 31	Sales and trading
LG Chem Poland Sp. z o.o.	100	Poland	December 31	Polarizer manufacturing
LG Chem Michigan Inc.	100	USA	December 31	Automotive battery research and manufacturing
LG Chem Power Inc.	100	USA	December 31	Automotive battery research
LGC Petrochemical India Private Ltd.	100	India	December 31	Synthetic resin manufacturing and sales
HAENGBOKNURI CO.,LTD.	100	Korea	December 31	Facility management and general cleaning
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	100	Turkey	December 31	Sales and trading
LG Chem Japan Co., Ltd.	100	Japan	December 31	Sales and trading
LG NanoH2O, Inc. <sup>5</sup>	100	USA	December 31	Water purification filter research and manufacturing
NanoH2O Singapore Private Ltd. <sup>5</sup>	100	Singapore	December 31	Water purification filter research and manufacturing
NanoH2O (Jiangsu) Water Processing Technology Co. Ltd. <sup>5</sup>	100	China	December 31	Water purification filter research and manufacturing
Nanjing LG Chem New Energy Battery Co., Ltd. <sup>6</sup>	50	China	December 31	Automotive battery manufacturing and sales
LG Chem (Chongqing) Engineering Plastics Co., Ltd.	100	China	December 31	EP manufacturing and sales
LG Chem Wroclaw Energy sp. z o.o. <sup>7</sup>	100	Poland	December 31	Automotive battery research and manufacturing
FarmHannong Co.,Ltd. <sup>8</sup>	100	Korea	December 31	Agricultural pesticide manufacturing
Cecel.Co.,Ltd <sup>8</sup>	71	Korea	December 31	Biologicals manufacturing
FarmCeres Co.,Ltd. <sup>8</sup>	100	Korea	December 31	Agricultural materials distribution
FarmBiotec Co.,Ltd. <sup>8</sup>	100	Korea	December 31	Sanitizer and insecticide for house manufacturing
AGROTECH CO.,LTD. <sup>8</sup>	100	Korea	December 31	Agricultural pesticide manufacturing
FarmPFI Co., Ltd. <sup>8</sup>	100	Korea	December 31	Other food additives manufacturing
FarmHwaong Co.,Ltd. <sup>8,9</sup>	58	Korea	December 31	Vegetables and fruit farming
SaemangeumFarm Co.,Ltd <sup>8</sup>	90	Korea	December 31	Crop farming

# LG Chem, Ltd. and Subsidiaries

## Notes to the Interim Consolidated Financial Statements

### June 30, 2016 and 2015 (Unaudited), and December 31, 2015

FarmHungnong Co.,Ltd. <sup>8</sup>	100	Korea	December 31	Seed manufacturing and distribution
ChemGreen Energy Co.,Ltd <sup>8</sup>	100	Korea	December 31	Chemicals manufacturing
Dongbu Farm Hannong (Heilongjiang) Chemical Corp. <sup>8</sup>	100	China	December 31	Agricultural pesticide manufacturing
Dongbu Farm Hannong Australia Pty., Ltd. <sup>8</sup>	100	Australia	December 31	Fertilizer manufacturing and distribution

#### Associates

LG Holdings (HK) Ltd.	26	Hong Kong	December 31	Sales and trading
TECWIN Co., Ltd.	21	Korea	December 31	Environment solution and Construction of chemical plant
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA. <sup>10</sup>	100	Brazil	December 31	Sales and trading
LG Chem Malaysia SDN.BHD. <sup>10</sup>	100	Malaysia	December 31	Sales and trading
LG Fuel Cell Systems Inc.	20	USA	December 31	Power fuel cell research
Superfert Dongbu Pty Ltd. <sup>8</sup>	50	Australia	December 31	Fertilizer sales

#### Joint ventures

LG VINA Chemical Co., Ltd.	40	Vietnam	December 31	DOP production and sales
HL Greenpower Co., Ltd.	49	Korea	December 31	Battery manufacturing for electric automobile
SEETEC Co., Ltd.	50	Korea	December 31	Plant utility and distribution, research assistance service
CNOOC & LG Petrochemicals Co., Ltd.	50	China	December 31	ABS manufacturing and sales
KLPE Limited Liability Partnership <sup>11</sup>	50	Kazakhstan	December 31	PE manufacturing and sales

<sup>1</sup> As of June 30, 2016, Ningbo LG Yongxing Chemical Co.,Ltd. owns 100% of Ningbo Zhenhai LG Yongxing Trade Co.,Ltd. shares.

<sup>2</sup> As of June 30, 2016, LG Chemical India Pvt. Ltd. owns 100% of LG Polymer India Pvt. Ltd. shares.

<sup>3</sup> During the period, the Parent Company acquired additional shares of LG Chem (Nanjing) Information & Electronics Materials Co., Ltd. for \ 12,750 million.

<sup>4</sup> As of June 30, 2016, Tianjin LG Bohai Chemical Co., Ltd. owns 20.30% of Tianjin LG BOTIAN Chemical Co., Ltd. shares.

<sup>5</sup> As of June 30, 2016, LG NanoH2O, Inc. owns 100% of NanoH2O Singapore Private Ltd. and NanoH2O (Jiangsu) Water Processing Technology Co. Ltd. shares.

<sup>6</sup> Although the Parent Company owns 50% of the voting rights of LG Chem (Nanjing) New Energy Battery Co., Ltd., the Parent Company is considered to have control over the investee as the Parent Company can exercise the majority voting rights in its decision-making process in accordance with the shareholders' agreement.

<sup>7</sup> LG Chem Wroclaw Energy sp.z o.o. was established during the six-month period ended June 30, 2016, and the Parent Company newly acquired 100% shares of LG Chem Wroclaw Energy sp.z o.o. for \ 1 million.

<sup>8</sup> The Parent Company newly acquired 100% shares of Dongbu Farm Hannong Co.,Ltd. for \ 424,500 million. Dongbu Farm Hannong Co.,Ltd. changed its name to FarmHannong Co.,Ltd., and the Parent Company acquired additional shares for \ 300,000 million during the six-month period ended June 30, 2016. FarmHannong Co.,Ltd. holds 100% shares of FarmCeres Co.,Ltd., FarmBiotec Co.,Ltd., AGROTECH CO.,LTD., FarmPFI Co., Ltd., SaemangeumFarm Co.,Ltd,

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FarmHungnong Co.,Ltd., ChemGreen Energy Co.,Ltd, Dongbu Farm Hannong (Heilongjiang) Chemical Corp. and Dongbu Farm Hannong Australia Pty., Ltd., and also holds 71.05% shares of Cecel.Co.,Ltd, 57.87% shares of FarmHwaong Co.,Ltd., and 50% shares of Superfert Dongbu Pty Ltd.

<sup>9</sup>As of June 30, 2016, FarmHwaong Co.,Ltd.'s assets and liabilities are classified as non-current assets and liabilities held for sale (Note 36).

<sup>10</sup>Classified as an investment in associate due to its small size.

<sup>11</sup>The Parent Company decided to discontinue the business of KLPE Limited Liability Partnership and collected \ 23,724 million of investments through capital reduction with consideration (Note 11).

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**1.4 Summarized Financial Information of Subsidiaries, Associates and Joint Ventures**

Summarized financial information (before elimination of intercompany transactions and adjustments for differences in accounting policies) of subsidiaries, associates and joint ventures is as follows:

(in millions of Korean won)

	June 30, 2016				
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the period
<b>Consolidated subsidiaries</b>					
Ningbo LG Yongxing Chemical Co.,Ltd.	581,037	199,912	381,125	728,829	29,344
Ningbo Zhenhai LG Yongxing Trade Co.,Ltd.	8,486	6,003	2,483	16,600	371
LG Chem HK Ltd.	107,224	89,515	17,709	261,656	157
LG Chem America, Inc.	165,837	149,224	16,613	308,331	119
LG Chemical India Pvt. Ltd.	32,725	50	32,675	-	10
LG Polymers India Pvt. Ltd.	94,312	29,599	64,713	105,876	6,842
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	97,664	31,544	66,120	67,998	3,762
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	2,116,884	1,441,106	675,778	1,031,378	(37,974)
LG Chem (Taiwan), Ltd.	127,517	66,758	60,759	98,753	2,288
LG Chem Display Materials (Beijing) Co.,Ltd.	37,300	10,022	27,278	29,210	1,260
Tianjin LG Bohai Chemical Co.,Ltd.	350,885	287,776	63,109	210,247	(35,430)
Tianjin LG BOTIAN Chemical Co.,Ltd.	53,735	57,244	(3,509)	65,285	5,860
LG Chem (China) Investment Co.,Ltd.	193,767	86,476	107,291	26,479	3,609
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	61,908	14,375	47,533	44,255	2,596
LG Chem Europe GmbH	152,424	128,634	23,790	203,410	5,374
LG Chem Poland Sp. z o.o.	52,082	22,537	29,545	41,662	2,053
LG Chem Michigan Inc.	213,494	155,002	58,492	105,232	23,002
LG Chem Power Inc.	17,608	11,507	6,101	19,915	3,720
LGC Petrochemical India Private Ltd.	1,818	390	1,428	2,073	236
HAENGBOKNURI CO.,LTD.	1,740	616	1,124	2,828	(31)
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	3,843	2,579	1,264	12,570	72
LG Chem Japan Co.,Ltd.	3,274	489	2,785	2,766	296
LG NanoH <sub>2</sub> O, Inc. <sup>1</sup>	14,693	8,659	6,034	8,519	384
Nanjing LG Chem New Energy Battery Co.,Ltd.	240,282	200,897	39,385	34,443	(6,587)
LG Chem (Chongqing) Engineering Plastics Co.,Ltd.	22,500	14,861	7,639	-	(729)
LG Chem Wroclaw Energy sp. z o.o.	1	-	1	-	-
FarmHannong Co.,Ltd. <sup>1</sup>	1,184,413	616,602	567,811	188,555	(72,657)
<b>Associates</b>					
LG Holdings (HK) Ltd.	381,899	104,918	276,981	26,846	8,946
TECWIN Co., Ltd.	54,375	20,160	34,215	-	-
LG Chem BRASIL INTERMEDICAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	92	90	2	-	-
LG Chem Malaysia SDN.BHD.	188	25	163	-	-
LG Fuel Cell Systems Inc.	34,608	71,138	(36,530)	1,350	(23,414)
<b>Joint ventures</b>					
LG VINA Chemical Co., Ltd.	17,893	9,725	8,168	27,343	1,145
HL Greenpower Co., Ltd.	122,120	89,816	32,304	70,564	(1,497)
SEETEC Co., Ltd.	377,235	44,586	332,649	229,323	8,691
CNOOC & LG Petrochemicals Co., Ltd.	252,861	239,463	13,398	114,117	(15,047)

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<sup>1</sup> Included its subsidiaries' financial information from an intermediate parent perspective and not applied adjustments of a fair value evaluation due to the business combination in the consolidated financial statements.

(in millions of Korean won)

	December 31, 2015				
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the year
<b>Consolidated subsidiaries</b>					
Tianjin LG DAGU Chemical Co.,Ltd. <sup>1</sup>	-	-	-	270,731	(10,510)
Ningbo LG Yongxing Chemical Co.,Ltd.	663,855	241,238	422,617	1,565,866	78,702
Ningbo Zhenhai LG Yongxing Trade Co.,Ltd.	7,592	5,421	2,171	20,397	396
LG Chem HK Ltd.	141,299	123,634	17,665	526,785	519
LG Chem America, Inc.	140,912	124,340	16,572	651,564	1,348
LG Chemical India Pvt. Ltd.	32,714	24	32,690	56	75
LG Polymers India Pvt. Ltd.	83,470	24,269	59,201	191,675	5,508
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	99,325	33,686	65,639	143,607	10,930
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	1,806,199	1,093,230	712,969	2,089,196	28,648
LG Chem (Taiwan), Ltd.	128,178	60,282	67,896	254,171	11,375
LG Chem Display Materials (Beijing) Co.,Ltd.	38,551	11,920	26,631	78,270	2,278
Tianjin LG Bohai Chemical Co.,Ltd.	376,831	277,324	99,507	391,032	(95,576)
Tianjin LG BOTIAN Chemical Co.,Ltd.	58,701	68,109	(9,408)	128,770	11,327
LG Chem (China) Investment Co.,Ltd.	170,212	65,865	104,347	46,435	5,881
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	60,359	14,347	46,012	89,033	5,709
LG Chem Europe GmbH	121,161	102,859	18,302	338,029	3,924
LG Chem Poland Sp. z o.o.	60,186	31,880	28,306	79,101	973
LG Chem Michigan Inc.	207,006	170,928	36,078	91,710	8,345
LG Chem Power Inc.	9,258	6,811	2,447	34,524	1,998
LGC Petrochemical India Private Ltd.	1,380	159	1,221	3,645	376
HAENGBOKNURI CO.,LTD	1,823	669	1,154	4,803	229
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	3,020	1,835	1,185	33,139	834
LG Chem Japan Co.,Ltd.	2,450	329	2,121	4,500	499
LG NanoH2O, Inc.	25,184	19,506	5,678	19,730	(21,198)
Nanjing LG Chem New Energy Battery Co.,Ltd.	83,282	41,949	41,333	737	(3,541)
LG Chem (Chongqing) Engineering Plastics Co.,Ltd.	9,666	1,133	8,533	-	(823)
<b>Associates</b>					
LG Holdings (HK) Ltd.	388,565	114,797	273,768	53,235	15,067
TECWIN Co., Ltd.	54,375	20,160	34,215	63,834	2,725
LG Chem BRASIL INTERMEDICAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	92	90	2	1,515	104
LG Chem Malaysia SDN.BHD.	188	25	163	334	28
LG Fuel Cell Systems Inc.	37,788	69,553	(31,765)	2,388	(38,309)
<b>Joint ventures</b>					
LG VINA Chemical Co.,Ltd.	18,172	8,839	9,333	59,739	2,131
HL Greenpower Co., Ltd.	97,772	63,978	33,794	102,388	(2,510)
SEETEC Co., Ltd.	372,616	48,658	323,958	507,701	19,121
CNOOC & LG Petrochemicals Co.,Ltd.	287,448	258,875	28,573	221,192	(27,835)
KLPE Limited Liability Partnership	191,947	8,884	183,063	-	51,128

<sup>1</sup> During 2015, Tianjin LG Bohai Chemical Co., Ltd. merged with Tianjin LG DAGU Chemical Co., Ltd. The financial information above was the information before the merger.

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**1.5 Changes in Scope for Consolidation**

Subsidiaries newly included in the consolidation for the six-month period ended June 30, 2016, are as follows:

<b>Subsidiary</b>	<b>Reason</b>
FarmHannong Co.,Ltd.	Business combination
Cecel.Co.,Ltd	Business combination
FarmCeres Co.,Ltd.	Business combination
FarmBiotec Co.,Ltd.	Business combination
AGROTECH CO.,LTD.	Business combination
FarmPFI Co., Ltd.	Business combination
FarmHwaong Co.,Ltd.	Business combination
SaemangeumFarm Co.,Ltd	Business combination
FarmHungnong Co.,Ltd.	Business combination
ChemGreen Energy Co.,Ltd	Business combination
Dongbu Farm Hannong (Heilongjiang) Chemical Corp.	Business combination
Dongbu Farm Hannong Australia Pty., Ltd.	Business combination
LG Chem Wroclaw Energy sp. z o.o.	Newly established

**2. Summary of Significant Accounting Policies**

The principal accounting policies applied in the preparation of these interim consolidated financial statements are set out below. These policies have been consistently applied to all the periods presented, unless otherwise stated.

**2.1 Basis of Preparation**

The Group maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with the International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS). The accompanying interim consolidated financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

Certain information attached to the Korean language financial statements, but not required for a fair presentation of the Group's financial position, financial performance or cash flows, is not presented in the accompanying interim consolidated financial statements.

The Group's interim consolidated financial statements for the six-month period ended June 30, 2016, have been prepared in accordance with Korean IFRS 1034, *Interim Financial Reporting*. These interim consolidated financial statements have been prepared in accordance with Korean IFRS which is effective or early adopted as of June 30, 2016.

*(a) New and amended standards adopted by the Group*

The Group newly applied the following amended and enacted standards and interpretations for the annual period beginning on January 1, 2016, and this application does not have a material impact on the financial statements.

- Amendment to Korean IFRS 1001, *Presentation of Financial Statements*
- Amendment to Korean IFRS 1011, *Construction Contract*; Korean IFRS 1037, *Provisions, Contingent Liabilities and Contingent Assets*; and Interpretation 2115, *Arrangements for Property Construction*

# LG Chem, Ltd. and Subsidiaries

## Notes to the Interim Consolidated Financial Statements

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- Amendment to Korean IFRS 1016, *Property, Plant and Equipment*, and Korean IFRS 1041, *Agriculture and Fishing: Productive Plants*
- Amendment to Korean IFRS 1016, *Property, Plant and Equipment*, and Korean IFRS 1038, *Intangible assets: Amortization Based on Revenue*
- Amendment to Korean IFRS 1110, *Consolidated Financial Statements*, Korean IFRS 1112, *Disclosures of Interests in Other Entities* and Korean IFRS 1028, *Investments in Associates and Joint Ventures*
- Amendment to Korean IFRS 1111, *Joint Arrangements*
- Annual Improvements to Korean IFRS 2012-2014 Cycle

(b) *New and amended standards and interpretations not yet adopted by the Group*

- Korean IFRS 1109, *Financial Instruments*
- Korean IFRS 1115, *Revenue from Contracts with Customers*

## 2.2 Accounting Policies

Significant accounting policies and methods adopted in the preparation of the interim financial statements are consistent with the accounting policies and methods adopted for the annual financial statements for the year ended December 31, 2015, except for the changes due to the application of amendment and enactments of standards described in Note 2.1 and described below.

### 2.2.1 Income tax expense

Income tax expense for the interim period is recognized based on management's best estimate of the weighted average annual income tax rate expected for the full financial year. The estimated average annual tax rate is applied to the pre-tax income.

## 3. Financial Risk Management

### 3.1 Financial Risk Factors

The Group's activities expose it to a variety of financial risks: market risk, credit risk and liquidity risk. The Group's overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on the Group's financial performance. The Group uses derivative financial instruments to hedge certain exposures.

Risk management is carried out by the Group's finance team under policies approved by the Corporate Management Committee. The finance team identifies, evaluates and hedges financial risks in close co-operation with the Group's operating units. The Corporate Management Committee reviews and approves written principles for overall risk management, as well as written policies covering specific areas, such as foreign exchange risk, interest rate risk, and credit risk, use of derivative financial instruments and non-derivative financial instruments, and investment of surplus liquidity.

(1) Market risk

1) Foreign exchange risk

The Group operates internationally and is exposed to foreign exchange risk arising from various currency exposures, primarily with respect to the US dollar. Foreign exchange risk arises from future commercial transactions and recognized assets and liabilities.

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Management has set up a policy to require consolidated companies to manage their foreign exchange risk against their functional currency. The Group manages maximum loss for currency risk exposures within acceptable range by using currency risk management model and hires employees who are exclusively responsible for currency risk management.

The Group has certain investments in foreign operations, whose net assets are exposed to foreign currency translation risk. Currency exposure arising from the net assets of the Group's foreign operations is managed primarily through borrowings denominated in the relevant foreign currencies.

As of June 30, 2016 and December 31, 2015, the Group's monetary assets and liabilities denominated in currencies other than its functional currency, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>		<b>December 31, 2015</b>	
	<b>Assets</b>	<b>Liabilities</b>	<b>Assets</b>	<b>Liabilities</b>
USD	1,772,632	2,724,286	1,789,793	2,440,000
EUR	101,437	128,770	78,023	127,879
JPY	36,925	111,992	16,686	135,589
GBP and others	40,671	1,340	43,027	1,318

As of June 30, 2016 and December 31, 2015, if the Group's functional currency had weakened / strengthened by 10% against the US dollar with all other variables held constant, profit for the period would have been affected as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>		<b>December 31, 2015</b>	
	<b>10% Increase</b>	<b>10% Decrease</b>	<b>10% Increase</b>	<b>10% Decrease</b>
USD	(95,165)	95,165	(65,021)	65,021

The above sensitivity analysis has been performed for monetary assets and liabilities denominated in foreign currencies other than the Group's functional currency at the reporting date.

2) Price risk

The Company is exposed to equity securities price risk because of investments held by the Company and classified as available-for-sale. The Company's investments in equity of other entities that are publicly traded are related to KOSPI index.

The impact of increases/decreases of the listed stock price indices on the Group's equity before tax effects as of June 30, 2016 and December 31, 2015, is as follows. The analysis is based on the assumption that the stock price indices had increased/decreased by 10% with all other variables held constant and all the Group's listed equity securities moved according to the historical correlation with the index.

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>		<b>December 31, 2015</b>	
	<b>10% Increase</b>	<b>10% Decrease</b>	<b>10% Increase</b>	<b>10% Decrease</b>
KOSPI	1,413	(1,413)	1,067	(1,067)

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3) Interest rate risk

Interest rate risk is defined as the risk that the interest income or expenses arising from deposits and borrowings will fluctuate because of changes in future market interest rate. The interest rate risk mainly arises through floating rate deposits and borrowings. The objective of interest rate risk management lies in maximizing corporate value by minimizing uncertainty caused by fluctuations in interest rates and minimizing net interest expense.

The Group adequately minimizes risks from interest rate fluctuations through various policies, such as sharing excess cash within the Group (internal cash sharing) to minimize external borrowings, avoiding high rate borrowings, reforming capital structure, managing an appropriate ratio of fixed rate borrowings and floating rate borrowings, monitoring a fluctuation of domestic and foreign interest rates daily, weekly and monthly, establishing alternatives, and balancing floating rate short-term borrowings with floating rate deposits.

The impact of 1% (100 basis points) higher/lower of interest rate with all other variables held constant on the Group's post-tax profit for the six-month periods ended June 30, 2016 and 2015, and on equity as of June 30, 2016 and 2015, is as follows:

<i>(in millions of Korean won)</i>	<b>Impact on post-tax profit</b>		<b>Impact on equity</b>	
	<b>2016</b>	<b>2015</b>	<b>2016</b>	<b>2015</b>
Increase	(18,815)	(18,010)	(18,815)	(18,010)
Decrease	18,815	18,010	18,815	18,010

(2) Credit risk

Credit risk is managed on the Group basis. Credit risk arises from cash and cash equivalents, derivative financial instruments and deposits with banks and financial institutions, as well as credit exposures to customers, including outstanding receivables and committed transactions.

As of June 30, 2016 and December 31, 2015, the maximum degrees of credit exposures are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>		
	<b>Before allowance</b>	<b>Allowance for doubtful accounts</b>	<b>Book value (maximum exposure)</b>
Loans and receivables (excluding cash on hand)	6,297,264	(36,793)	6,260,471
Financial assets at fair value through profit or loss	-	-	-
<b>Total</b>	<b>6,297,264</b>	<b>(36,793)</b>	<b>6,260,471</b>

  

<i>(in millions of Korean won)</i>	<b>December 31, 2015</b>		
	<b>Before allowance</b>	<b>Allowance for doubtful accounts</b>	<b>Book value (maximum exposure)</b>
Loans and receivables (excluding cash on hand)	6,224,592	(13,270)	6,211,322
Financial assets at fair value through profit or loss	93	-	93
<b>Total</b>	<b>6,224,685</b>	<b>(13,270)</b>	<b>6,211,415</b>

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Details of financial guarantees provided by the Group are disclosed in Notes 3.1.(3) and 19. The Group has established the following policies and procedures to manage credit risks.

To manage credit risks relating to trade receivables, the Group evaluates the credit rating of customers and determines credit limit for each customer based on the information provided by credit rating agencies and other available financial information before commencing business with customers. The credit risks relating to trade receivables are also mitigated by insurance contracts, collaterals as well as payment guarantees.

The Group has entered into export insurance contracts with Korea Trade Insurance Corporation to mitigate credit risks relating to export trade receivables to overseas customers. The Group is also provided with collaterals by customers depending on their credit rating or payment guarantees from the customers' financial institutions as necessary.

The Group has deposited its cash and cash equivalents, and other long-term deposits in several financial institutions, such as Woori Bank and others. The Group has also entered into derivative contracts with several financial institutions. The Group maintains business relationship with those financial institutions with high credit ratings evaluated by independent credit rating agencies and accordingly, credit risks associated with these financial institutions are limited.

(3) Liquidity risk

Cash flow forecasting is performed by corporate finance team. Finance team monitors rolling forecasts of the Group's liquidity requirements to ensure it has sufficient cash to meet operational needs while maintaining sufficient headroom on its undrawn committed borrowing facilities at all times so that the Group does not breach borrowing limits or covenants on any of its borrowing facilities. Such forecasting takes into consideration the Group's debt financing plans, covenant compliance, compliance with internal statement of financial position ratio targets and, if applicable external regulatory or legal requirements - for example, currency restrictions.

1) The table below analyzes the Group's non-derivative financial liabilities into relevant maturity groupings based on the remaining period at the reporting date to the contractual maturity date. Cash flows presented below are gross cash flows before discount, and includes cash flows of interests expense.

(in millions of Korean won)

	<b>June 30, 2016</b>			
	<b>Less than 1 year</b>	<b>1 to 2 years</b>	<b>2 to 5 years</b>	<b>Over 5 years</b>
Borrowings (excluding finance lease liabilities)	2,947,561	210,082	124,702	-
Finance lease liabilities	5,000	5,000	15,000	17,500
Trade and other payables	2,160,621	6,031	861	62
<b>Total</b>	<b>5,113,182</b>	<b>221,113</b>	<b>140,563</b>	<b>17,562</b>

(in millions of Korean won)

	<b>December 31, 2015</b>			
	<b>Less than 1 year</b>	<b>1 to 2 years</b>	<b>2 to 5 years</b>	<b>Over 5 years</b>
Borrowings (excluding finance lease liabilities)	2,168,916	429,876	51,354	-
Finance lease liabilities	5,000	5,000	15,000	20,000
Trade and other payables	1,998,094	1,680	-	-
<b>Total</b>	<b>4,172,010</b>	<b>436,556</b>	<b>66,354</b>	<b>20,000</b>

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2) The Group has no derivatives contracts as of June 30, 2016. The table below analyzes the derivatives into relevant maturity groupings based on the remaining period as of December 31, 2015, to the contractual maturity date.

(in millions of Korean won)

	<b>December 31, 2015</b>			
	<b>Less than 1 year</b>	<b>1 to 2 years</b>	<b>2 to 5 years</b>	<b>Over 5 years</b>
Gross settled derivatives				
Trading derivatives inflow	23,533	-	-	-
Trading derivatives outflow	(23,440)	-	-	-
<b>Total</b>	<b>93</b>	<b>-</b>	<b>-</b>	<b>-</b>

3) The Group has no financial guarantee contracts as of June 30, 2016 and December 31, 2015.

### 3.2 Capital Risk Management

The Group's capital objectives are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

Consistent with others in the industry, the Group monitors capital on the basis of the gearing ratio. This ratio is calculated as net debt divided by total capital. Net debt is calculated as total borrowings less cash and cash equivalents. Total capital is calculated as 'equity' as shown in the consolidated statement of financial position plus net debt.

The gearing ratio and debt-to-equity ratio as of June 30, 2016 and December 31, 2015, are as follows:

(in millions of Korean won, except for ratios)

	<b>June 30, 2016</b>	<b>December 31, 2015</b>
Total borrowings (Note 15) (A)	3,289,409	2,658,706
Less: cash and cash equivalents (B)	(1,717,576)	(1,704,918)
Net debt (C=A+B)	<u>1,571,833</u>	<u>953,788</u>
Total liabilities (D)	6,362,347	5,475,206
Total equity (E)	13,463,761	13,103,522
Total capital (F=C+E)	15,035,594	14,057,310
Gearing ratio (C/F)	10.5%	6.8%
Debt-to-equity ratio (D/E)	47.3%	41.8%

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**3.3 Fair Value**

(1) Carrying amount and fair value of financial instruments by category as of June 30, 2016 and December 31, 2015, are as follows:

(in millions of Korean won)

	June 30, 2016		December 31, 2015	
	Carrying amount	Fair value	Carrying amount	Fair value
<b>Financial assets (current)</b>				
Cash and cash equivalents	1,717,576	1	1,704,918	1
Financial deposits	931,304	1	988,628	1
Trade receivables	3,198,473	1	3,236,622	1
Other receivables (excluding financial deposits)	177,398	1	174,732	1
Derivative financial instruments	-	-	93	93
<b>Financial assets (non-current)</b>				
Financial deposits	65,629	1	21,418	1
Other non-current receivables (excluding financial deposits)	170,159	1	85,066	1
Other non-current financial assets (carried at cost)	11,355	2	6,055	2
Other non-current financial assets (carried at fair value)	13,085	13,085	9,246	9,246
<b>Financial liabilities (current)</b>				
Trade and other payables	2,160,620	1	1,998,094	1
Current borrowings (excluding finance lease liabilities)	2,948,092	1	2,145,893	1
Current finance lease liabilities	4,885	1	4,885	1
Other current liabilities (dividends payable)	5,950	1	1,055	1
<b>Financial liabilities (non-current)</b>				
Non-current borrowings (excluding finance lease liabilities)	304,238	1	473,842	479,411
Non-current finance lease liabilities	32,194	34,515	34,086	35,361
Other non-current payables	6,955	1	1,680	1

<sup>1</sup> These financial assets and liabilities are not included in the disclosure above as their carrying amount is a reasonable approximation of the fair value.

<sup>2</sup> All other non-current financial assets of the Group consist of available-for-sale equity securities and are measured at cost (June 30, 2016: ₩ 11,355 million, December 31, 2015: ₩ 6,055 million) as the range of reasonable fair value estimates is significant and the probabilities of the various estimates cannot be reasonably assessed. These are not included in the disclosure above (Note 8). The Group does not have any plans to dispose of these available-for-sale equity securities in the near future.

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(2) Fair value for measurement and disclosure are determined based on the following method:

1) Derivative financial instruments

The Group determines derivative financial instruments based on current market conditions. These valuation techniques maximize the use of observable market data where it is available and rely as little as possible on entity specific estimates. The fair value of derivative financial instruments is determined using forward exchange rates at the end of the reporting period with the resulting value discounted back to present value.

2) Financial liabilities (non-current)

Fair values of financial liabilities(non-current) are based on cash outflows discounted using Korean won currency note yield in the same credit grade with the Parent Company (AA+), and the applied discount rates as of June 30, 2016 and December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
Discount rate	1.36%~1.95%	1.88%~2.60%

(3) Fair value hierarchy

Assets measured at fair value or for which the fair value is disclosed are categorized within the fair value hierarchy, and the defined levels are as follows:

- Quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1).
- Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (that is, prices) or indirectly (that is, derived from prices) (Level 2).
- Inputs for the asset or liability that are not based on observable market data (that is, unobservable inputs) (Level 3).

Fair value hierarchy classifications of the financial assets and financial liabilities that are measured at fair value or its fair value is disclosed as of June 30, 2016 and December 31, 2015, are as follows:

*(in millions of Korean won)*

	<b>June 30, 2016</b>			
	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Total</b>
<b>Financial assets/liabilities that are measured at fair value</b>				
Other non-current financial assets (carried at fair value)	13,085	-	-	13,085
Non-current financial lease liabilities	-	34,515	-	34,515

*(in millions of Korean won)*

	<b>December 31, 2015</b>			
	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Total</b>
<b>Financial assets/liabilities that are measured at fair value</b>				
Derivative financial instruments	-	93	-	93
Other non-current financial assets (carried at fair value)	9,246	-	-	9,246
Non-current borrowings (excluding finance lease liabilities)	-	479,411	-	479,411
Non-current financial lease liabilities	-	35,361	-	35,361

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**4. Critical Accounting Estimates and Assumptions**

The Group makes estimates and assumptions concerning the future. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The resulting accounting estimates will, by definition, seldom equal the related actual results.

Significant accounting estimates and assumptions applied in the preparation of these interim consolidated financial statements are consistent with those of the previous financial period, except for the estimates used to determine income tax expense.

**5. Financial Instruments by Category**

Categorizations of financial instruments as of June 30, 2016 and December 31, 2015, are as follows:

*(in millions of Korean won)*

Financial assets	June 30, 2016			Total
	Loans and receivables	Financial assets at fair value through profit or loss	Available-for-sale financial assets	
Cash and cash equivalents	1,717,576	-	-	1,717,576
Trade receivables	3,198,473	-	-	3,198,473
Other receivables	1,108,702	-	-	1,108,702
Other non-current receivables	235,788	-	-	235,788
Other non-current financial assets	-	-	24,440	24,440
<b>Total</b>	<b>6,260,539</b>	<b>-</b>	<b>24,440</b>	<b>6,284,979</b>

*(in millions of Korean won)*

Financial liabilities	June 30, 2016			Total
	Financial liabilities at fair value through profit or loss	Other financial liabilities at amortized cost	Other financial liabilities <sup>1</sup>	
Trade payables	-	1,328,445	-	1,328,445
Other payables	-	832,175	-	832,175
Borrowings (current)	-	1,911,097	1,041,880	2,952,977
Other current liabilities (dividends payable)	-	5,950	-	5,950
Other non-current payables	-	6,955	-	6,955
Borrowings (non-current)	-	304,238	32,194	336,432
<b>Total</b>	<b>-</b>	<b>4,388,860</b>	<b>1,074,074</b>	<b>5,462,934</b>

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(in millions of Korean won)

	December 31, 2015			
	Loans and receivables	Financial assets at fair value through profit or loss	Available-for- sale financial assets	Total
<b>Financial assets</b>				
Cash and cash equivalents	1,704,918	-	-	1,704,918
Trade receivables	3,236,622	-	-	3,236,622
Other receivables	1,163,360	-	-	1,163,360
Other current financial assets	-	93	-	93
Other non-current receivables	106,484	-	-	106,484
Other non-current financial assets	-	-	15,301	15,301
<b>Total</b>	<b>6,211,384</b>	<b>93</b>	<b>15,301</b>	<b>6,226,778</b>

(in millions of Korean won)

	December 31, 2015			
	Financial liabilities at fair value through profit or loss	Other financial liabilities at amortized cost	Other financial liabilities <sup>1</sup>	Total
<b>Financial liabilities</b>				
Trade payables	-	1,172,488	-	1,172,488
Other payables	-	825,606	-	825,606
Borrowings (current)	-	1,113,312	1,037,466	2,150,778
Other current liabilities (dividends payable)	-	1,055	-	1,055
Other non-current payables	-	1,680	-	1,680
Borrowings (non-current)	-	473,842	34,086	507,928
<b>Total</b>	<b>-</b>	<b>3,587,983</b>	<b>1,071,552</b>	<b>4,659,535</b>

<sup>1</sup> Other financial liabilities include capital lease liabilities that have been excluded from the scope of 'financial liabilities by category' and financial liabilities related to transferred financial assets that are not qualified for derecognition.

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Net gains (losses) on financial instruments by category for the three-month and six-month periods ended June 30, 2016 and 2015, are as follows:

(in millions of Korean won)

	2016		2015	
	Three months	Six months	Three months	Six months
<b>Financial assets at fair value through profit or loss</b>				
Gain (loss) on valuation/ disposal (profit or loss)	-	(1,501)	(562)	720
<b>Available-for-sale financial assets</b>				
Gain on disposal	18	18	32	32
Dividend income	-	-	-	-
<b>Loans and receivables</b>				
Interest income	9,911	21,284	9,479	19,651
Gain (loss) on foreign currency translation	65,361	(12,353)	42,843	35,860
Loss on foreign exchange	(37,116)	(132)	(10,332)	(9,700)
<b>Other financial liabilities at amortized cost</b>				
Interest expense	(20,176)	(33,528)	(13,949)	(28,996)
Loss on foreign currency translation	(62,575)	(28,118)	(10,650)	(14,171)
Gain (loss) on foreign exchange	(4,239)	(21,126)	2,816	(6,768)
Loss on redemption of debentures	(3,031)	(3,031)	-	-
<b>Other financial liabilities</b>				
Interest expense	(2,958)	(5,661)	(2,339)	(4,811)
Gain (loss) on foreign currency translation	(33,712)	4,007	(24,853)	(23,675)
Gain (loss) on foreign exchange	24,215	(268)	6,412	10,169

**6. Cash and Cash Equivalents**

Details of cash and cash equivalents as of June 30, 2016 and December 31, 2015, are as follows:

(in millions of Korean won)

	June 30, 2016	December 31, 2015
Bank deposits and cash on hand	378,778	272,824
Financial deposits, others	1,338,798	1,432,094
<b>Total</b>	<b>1,717,576</b>	<b>1,704,918</b>

As of June 30, 2016, cash and cash equivalents include deposits with banks of ₩ 11,606 million (December 31, 2015: ₩ 8,667 million) held by a subsidiary which are not freely remissible to the Parent Company because of currency exchange restrictions.

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**7. Trade and Other Receivables**

Trade and other receivables, net of allowance for doubtful accounts, as of June 30, 2016 and December 31, 2015, are as follows:

*(in millions of Korean won)*

	<b>June 30, 2016</b>		
	<b>Original amount</b>	<b>Allowance for doubtful accounts</b>	<b>Carrying amount</b>
Trade receivables <sup>1</sup>	3,212,963	(14,490)	3,198,473
Other current receivables	1,130,015	(21,313)	1,108,702
Other non-current receivables <sup>2</sup>	236,778	(990)	235,788
<b>Total</b>	<b>4,579,756</b>	<b>(36,793)</b>	<b>4,542,963</b>

*(in millions of Korean won)*

	<b>December 31, 2015</b>		
	<b>Original amount</b>	<b>Allowance for doubtful accounts</b>	<b>Carrying amount</b>
Trade receivables <sup>1</sup>	3,249,561	(12,939)	3,236,622
Other current receivables	1,163,691	(331)	1,163,360
Other non-current receivables <sup>2</sup>	106,484	-	106,484
<b>Total</b>	<b>4,519,736</b>	<b>(13,270)</b>	<b>4,506,466</b>

<sup>1</sup> As of June 30, 2016, trade receivables transferred to financial institutions but not fully derecognized are as follows (Note 15):

	<b>Loans and receivables (trade receivables collateralized borrowings)</b>	
	<b>June 30, 2016</b>	<b>December 31, 2015</b>
Carrying amount of transferred assets	1,036,995	1,032,581
Carrying amount of related liabilities	(1,036,995)	(1,032,581)

<sup>2</sup> As of June 30, 2016, ₩ 1,492 million in other non-current receivables represents deposits which are restricted from withdrawal in connection with maintaining checking accounts (December 31, 2015: ₩ 3,318 million).

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Details of other receivables as of June 30, 2016 and December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
<b>Current</b>		
Non-trade receivables	131,107	127,621
Financial deposits <sup>1</sup>	931,304	988,628
Accrued income	7,356	7,944
Loans	13,704	12,452
Deposits	25,231	26,715
	<u>1,108,702</u>	<u>1,163,360</u>
<b>Non-current</b>		
Non-trade receivables	29,133	29,316
Financial deposits <sup>2</sup>	65,629	21,418
Loans	696	318
Deposits	140,330	55,432
	<u>235,788</u>	<u>106,484</u>
<b>Total</b>	<u>1,344,490</u>	<u>1,269,844</u>

<sup>1</sup> As of June 30, 2016, ₩ 1,408 million is pledged as collateral for borrowings and others.

<sup>2</sup> As of June 30, 2016, ₩ 63,400 million is restricted from being withdrawn in relation to large, small and medium-sized companies corporation agreement and others (December 31, 2015: ₩ 18,100 million).

The aging analysis of these trade and other receivables as of June 30, 2016 and December 31, 2015, is as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>		<b>December 31, 2015</b>	
	<b>Trade receivables</b>	<b>Other receivables</b>	<b>Trade receivables</b>	<b>Other receivables</b>
<b>Receivables not past due</b>	<u>3,135,556</u>	<u>1,327,042</u>	<u>3,149,419</u>	<u>1,256,491</u>
<b>Past due but not impaired</b>				
Up to 3 months	59,756	11,828	68,341	5,797
3 to 6 months	600	4,132	9,277	2,869
Over 6 months	5,242	1,819	2,618	5,018
	<u>65,598</u>	<u>17,779</u>	<u>80,236</u>	<u>13,684</u>
<b>Impaired receivables</b>	<u>11,809</u>	<u>21,972</u>	<u>19,906</u>	<u>-</u>
	<u>3,212,963</u>	<u>1,366,793</u>	<u>3,249,561</u>	<u>1,270,175</u>

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The movements in bad debts allowance for the six-month period ended June 30, 2016 and for the year ended December 31, 2015, are as follows:

*(in millions of Korean won)*

	<b>June 30, 2016</b>			
	<b>Trade receivables</b>		<b>Other receivables</b>	
	<b>Current</b>	<b>Non-current</b>	<b>Current</b>	<b>Non-current</b>
<b>Beginning balance</b>	12,939	-	331	-
Business combination (Note 35)	1,237	-	21,644	990
Additions	429	-	-	-
Write-off	-	-	-	-
Reversals	-	-	(256)	-
Exchange differences	(115)	-	(406)	-
<b>Ending balance</b>	<b>14,490</b>	<b>-</b>	<b>21,313</b>	<b>990</b>

*(in millions of Korean won)*

	<b>December 31, 2015</b>			
	<b>Trade receivables</b>		<b>Other receivables</b>	
	<b>Current</b>	<b>Non-current</b>	<b>Current</b>	<b>Non-current</b>
<b>Beginning balance</b>	16,581	-	-	-
Business combination (Note 35)	-	-	-	-
Additions	-	-	331	-
Write-off	(777)	-	-	-
Reversals	(2,506)	-	-	-
Exchange differences	(359)	-	-	-
<b>Ending balance</b>	<b>12,939</b>	<b>-</b>	<b>331</b>	<b>-</b>

As of June 30, 2016 and December 31, 2015, the carrying amounts of trade and other receivables approximate their fair values.

**8. Other Financial Assets**

Details of other financial assets as of June 30, 2016 and December 31, 2015, are as follows:

*(in millions of Korean won)*

	<b>June 30, 2016</b>	<b>December 31, 2015</b>
<b>Other financial assets</b>		
Derivative financial assets (Note 9)	-	93
Available-for-sale financial assets	24,440	15,301
Less: current portion	-	(93)
	<b>24,440</b>	<b>15,301</b>

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The movements in available-for-sale financial assets for the six-month period ended June 30, 2016 and for the year ended December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
<b>Beginning balance</b>	15,301	6,153
Acquisition/ Transfer	3,059	12,852
Business combination (Note 35)	2,270	-
Disposal	(23)	(2,959)
Gain (Loss) on valuation (before income tax effect)	3,858	(780)
Exchange differences	(25)	35
<b>Ending balance</b>	<u>24,440</u>	<u>15,301</u>
Less: current portion	-	-
	<u>24,440</u>	<u>15,301</u>

Available-for-sale financial assets consist wholly of equity securities. The unlisted equity securities are measured at cost as the range of reasonable fair value estimates is significant and the probabilities of the various estimates cannot be reasonably assessed.

No impairment losses on available-for-sale financial assets were recognized for the six-month period ended June 30, 2016 and for the year ended December 31, 2015.

**9. Derivative Financial Instruments**

Details of derivative financial assets and liabilities as of June 30, 2016 and December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>		<b>December 31, 2015</b>	
	<b>Assets</b>	<b>Liabilities</b>	<b>Assets</b>	<b>Liabilities</b>
<b>Current</b>				
Held-for-trading	-	-	93	-
	<u>-</u>	<u>-</u>	<u>93</u>	<u>-</u>

The Group has no derivative contracts as of June 30, 2016. Details of derivative financial contracts as of December 31, 2015, are as follows:

<b>Classification</b>	<b>Contractor</b>	<b>Contract date</b>	<b>December 31, 2015</b>		
			<b>Contract amount (in thousands)</b>	<b>Contract period</b>	<b>Contract terms</b>
Forward exchange	Two contracts in Woori bank	2015.12.21, others	US\$ 10,000, Others	2016.01.04 ~ 2016.01.05	\ 1,177.60/ US\$ 1, others

**LG Chem, Ltd. and Subsidiaries**  
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**10. Inventories**

Details of inventories as of June 30, 2016 and December 31, 2015, are as follows:

(in millions of Korean won)

	<b>June 30, 2016</b>		
	<b>Original amount</b>	<b>Valuation allowance</b>	<b>Carrying amount</b>
Merchandise	110,967	(3,460)	107,507
Finished products	899,517	(40,840)	858,677
Semi-finished products	556,099	(9,647)	546,452
Work in progress <sup>1</sup>	854	-	854
Raw materials	754,118	(10,124)	743,994
Supplies	110,139	-	110,139
Materials-in-transit	289,214	-	289,214
<b>Total</b>	<b>2,720,908</b>	<b>(64,071)</b>	<b>2,656,837</b>

(in millions of Korean won)

	<b>December 31, 2015</b>		
	<b>Original amount</b>	<b>Valuation allowance</b>	<b>Carrying amount</b>
Merchandise	77,133	(1,264)	75,869
Finished products	899,341	(45,135)	854,206
Semi-finished products	416,435	-	416,435
Work in progress <sup>1</sup>	275	-	275
Raw materials	658,564	(4,036)	654,528
Supplies	99,811	-	99,811
Materials-in-transit	237,429	-	237,429
<b>Total</b>	<b>2,388,988</b>	<b>(50,435)</b>	<b>2,338,553</b>

<sup>1</sup> Biological assets are included in work in progress, and details of net fair value by biological asset groups as of June 30, 2016 and December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>	<b>Remark</b>
Work in progress	81	-	Bees for pollination

Fair value of the Group's biological assets applied a standard unit price for sales to customers and the standard unit price is set by the Group's recent trading price.

During the six-month period ended June 30, 2016, the cost of inventories amounting to ₩ 5,903,939 million (2015: ₩ 6,134,100 million) was recognized as expense and included in 'cost of sales'.

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**11. Investments in Associates and Joint Ventures**

Changes in the carrying amount of investments in associates and joint ventures for the six-month period ended June 30, 2016 and for the year ended December 31, 2015, are as follows:

(in millions of Korean won)

	June 30, 2016								
	Beginning balance	Acquisitions /transfer	Dividends	Share of profit (loss) of associates	Share of other comprehensive income (loss) of associates	Impairment loss	Disposal	Others	Ending balance
LG VINA Chemical Co., Ltd.	3,742	-	-	458	(924)	-	-	-	3,276
HL Greenpower Co., Ltd.	16,559	-	-	(734)	-	-	-	5	15,830
LG Holdings (HK) Ltd.	73,012	-	-	2,326	(1,993)	-	-	-	73,345
TECWIN Co., Ltd.	6,535	-	-	679	-	-	-	-	7,214
SEETEC Co., Ltd.	155,539	-	-	5,219	-	-	-	-	160,758
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	579	-	-	(576)	-	-	-	-	3
LG Chem Malaysia SDN.BHD	150	-	-	13	-	-	-	-	163
CNOOC & LG Petrochemicals Co., Ltd.	14,287	-	-	(7,523)	(64)	-	-	-	6,700
KLPE Limited Liability Partnership	20,079	-	-	264	(582)	-	(19,761)	-	-
LG Fuel Cell Systems Inc.	3,265	3,635	-	(5,337)	99	-	-	-	1,662
Superfert Dongbu Pty Ltd	-	-	-	-	-	-	-	-	-
	<u>293,747</u>	<u>3,635</u>	<u>-</u>	<u>(5,211)</u>	<u>(3,464)</u>	<u>-</u>	<u>(19,761)</u>	<u>5</u>	<u>268,951</u>

(in millions of Korean won)

	December 31, 2015								
	Beginning balance	Acquisitions /transfer	Dividends	Share of profit (loss) of associates	Share of other comprehensive income (loss) of associates	Impairment loss	Disposal	Others	Ending balance
LG VINA Chemical Co., Ltd.	3,682	-	(993)	861	192	-	-	-	3,742
HL Greenpower Co., Ltd.	17,815	-	-	(1,266)	-	-	-	10	16,559
LG Holdings (HK) Ltd.	68,121	-	-	3,918	973	-	-	-	73,012
TECWIN Co., Ltd.	6,155	-	-	383	(3)	-	-	-	6,535
SEETEC Co., Ltd.	177,767	-	(33,500)	11,276	-	-	-	(4)	155,539
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	579	-	-	-	-	-	-	-	579
LG Chem Malaysia SDN.BHD	-	150	-	-	-	-	-	-	150
CNOOC & LG Petrochemicals Co., Ltd.	27,864	-	-	(13,918)	341	-	-	-	14,287
KLPE Limited Liability Partnership <sup>1</sup>	175,414	-	-	18,683	(34,089)	(139,929)	-	-	20,079
LG Fuel Cell Systems Inc.	12,053	-	-	(8,924)	141	-	-	(5)	3,265
	<u>489,450</u>	<u>150</u>	<u>(34,493)</u>	<u>11,013</u>	<u>(32,445)</u>	<u>(139,929)</u>	<u>-</u>	<u>1</u>	<u>293,747</u>

<sup>1</sup> During 2015, the Kazakhstan KLPE Limited Liability Partnership, managed as a separate cash-generating unit (hereafter 'CGU') in Basic materials & Chemicals segments, has been tested for impairment because its economic performance is lower than expected. The recoverable amounts of CGU have been determined based on value-in-use calculations.

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During 2015, the amount of impairment loss recognized as other non-operating expenses and key assumptions used for calculation of value in use are as follows:

(in millions of Korean won)

December 31, 2015  
**KLPE Limited Liability Partnership**

Impaired amount	139,929
Pre-tax discount rate	8.8%
Growth rate for subsequent years after five years	0.0%

**12. Property, Plant and Equipment**

Changes in the carrying amounts of property, plant and equipment for the six-month period ended June 30, 2016 and for the year ended December 31, 2015, are as follows:

(in millions of Korean won)

	June 30, 2016										
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Equipment	Others	Construction -in-progress	Machinery- in-transit	Total
<b>Beginning balance</b>	910,241	2,010,009	606,497	4,228,274	9,524	349,835	82,541	135,437	524,314	10,537	8,867,209
Cost	912,108	2,539,113	1,053,036	11,705,377	38,599	863,085	282,407	281,556	565,061	10,537	18,250,879
Accumulated depreciation	-	(505,157)	(434,206)	(7,437,847)	(28,933)	(504,276)	(198,119)	(146,119)	-	-	(9,254,657)
Accumulated impairment	(1,867)	(23,947)	(12,333)	(39,256)	(142)	(8,974)	(1,747)	-	(40,747)	-	(129,013)
Business combination (Note 35)	412,422	36,775	6,551	99,095	569	1,258	1,948	-	2,465	-	561,083
Acquisitions/ Transfer	-	60,049	28,198	440,085	725	72,379	19,687	17,888	668,370	19,867	1,327,248
Disposals/ Transfer	(192)	(4,967)	(97)	(5,392)	(15)	(2,966)	(438)	-	(671,930)	(16,083)	(702,080)
Exchange differences	(123)	(7,736)	(1,015)	(52,246)	(22)	(2,078)	(563)	-	27,665	-	(36,118)
Depreciation	-	(31,289)	(22,354)	(467,896)	(1,832)	(61,391)	(15,278)	(31,220)	-	-	(631,260)
Impairment	-	(243)	(1)	(1,961)	-	(56)	(164)	-	-	-	(2,425)
Transfer to non-current assets held for sale (Note 36)	-	-	-	(1,685)	-	(162)	(459)	-	-	-	(2,306)
<b>Ending balance</b>	<b>1,322,348</b>	<b>2,062,598</b>	<b>617,779</b>	<b>4,238,274</b>	<b>8,949</b>	<b>356,819</b>	<b>87,274</b>	<b>122,105</b>	<b>550,884</b>	<b>14,321</b>	<b>9,381,351</b>
Cost	1,324,215	2,624,686	1,090,102	12,183,514	40,184	924,360	301,479	294,093	591,555	14,321	19,388,509
Accumulated depreciation	-	(538,179)	(458,503)	(7,905,378)	(31,093)	(558,684)	(212,555)	(171,988)	-	-	(9,876,380)
Accumulated impairment	(1,867)	(23,909)	(13,820)	(39,862)	(142)	(8,857)	(1,650)	-	(40,671)	-	(130,778)

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	December 31, 2015										
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Equipment	Others	Construction-in-progress	Machinery-in-transit	Total
<b>Beginning balance</b>	910,503	1,965,575	573,870	4,079,635	8,788	308,911	89,214	85,194	593,115	84,731	8,699,536
Cost	911,867	2,436,140	978,989	10,880,815	36,885	737,092	269,026	251,722	643,843	84,731	17,231,110
Accumulated depreciation	-	(446,856)	(393,474)	(6,707,065)	(27,958)	(419,906)	(178,020)	(166,528)	-	-	(8,339,807)
Accumulated impairment	(1,364)	(23,709)	(11,645)	(94,115)	(139)	(8,275)	(1,792)	-	(50,728)	-	(191,767)
Acquisitions/ Transfer	49	151,299	77,079	1,188,477	4,696	180,650	26,105	113,412	1,492,527	84,262	3,318,556
Disposals/ Transfer	(1)	(51,839)	(1,057)	(145,462)	(442)	(22,908)	(3,747)	-	(1,575,993)	(158,456)	(1,959,905)
Exchange differences	193	5,191	614	5,705	14	1,205	278	-	4,324	-	17,524
Depreciation	-	(60,175)	(42,635)	(900,488)	(3,528)	(116,268)	(29,335)	(63,169)	-	-	(1,215,598)
Impairment	(503)	(7,846)	(1,376)	(4,449)	(13)	(2,118)	(218)	-	(204)	-	(16,727)
Reversal of impairment	-	7,804	2	11,250	9	469	244	-	10,545	-	30,323
Transfer to non-current assets held for sale (Note 36)	-	-	-	(6,394)	-	(106)	-	-	-	-	(6,500)
<b>Ending balance</b>	<b>910,241</b>	<b>2,010,009</b>	<b>606,497</b>	<b>4,228,274</b>	<b>9,524</b>	<b>349,835</b>	<b>82,541</b>	<b>135,437</b>	<b>524,314</b>	<b>10,537</b>	<b>8,867,209</b>
Cost	912,108	2,539,113	1,053,036	11,705,377	38,599	863,085	282,407	281,556	565,061	10,537	18,250,879
Accumulated depreciation	-	(505,157)	(434,206)	(7,437,847)	(28,933)	(504,276)	(198,119)	(146,119)	-	-	(9,254,657)
Accumulated impairment	(1,867)	(23,947)	(12,333)	(39,256)	(142)	(8,974)	(1,747)	-	(40,747)	-	(129,013)

During the six-month period ended June 30, 2016, the Group capitalized ₩ 2,955 million of borrowing costs (2015: ₩ 2,300 million) to property, plant and equipment. The capitalization rate of borrowings used to determine the amount of borrowing costs eligible for capitalization is 1.83% (2015: 2.00%).

As of June 30, 2016, certain property, plant and equipment have been pledged as collateral for borrowings and credit line agreements (Note 19).

Depreciation of property, plant and equipment for the three-month and six-month periods ended June 30, 2016 and 2015, was classified as follows:

(in millions of Korean won)	2016		2015	
	Three months	Six months	Three months	Six months
Cost of sales	299,258	589,542	278,889	559,207
Selling, general and administrative expenses	21,035	41,136	18,224	36,413
Others	456	582	125	246
<b>Total</b>	<b>320,749</b>	<b>631,260</b>	<b>297,238</b>	<b>595,866</b>

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Details of machinery classified as a finance lease as of June 30, 2016 and December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
Cost- capitalized finance leases	42,669	42,669
Accumulated depreciation	<u>(6,400)</u>	<u>(4,267)</u>
Net book value	<u>36,269</u>	<u>38,402</u>

The Group has entered into non-cancellable finance lease contracts with lease term of ten years in regard to machineries, and the contract includes an agreement that the ownership of the assets is transferred by the end of the lease term.

The Group reviews annually whether there is any indication that an asset may be impaired.

During 2015, LED Encap division, managed as separate CGU in advanced Materials segments, was tested for impairment due to significant price drop of products.

During 2015, the US battery division for vehicles, managed as a separate CGU in Energy solution business segments, has been tested for reversal of impairment because the Group expects that future economic performance will significantly exceed the past expectation.

The recoverable amount of the CGU is calculated on a basis of the value in use and impairment (reversal) is mainly related to machinery and equipment used in manufacturing.

The amount of impairment loss (reversal) recognized as other non-operating expenses (income) and key assumptions used for calculation of value in use for the year ended December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2015</b>	
	<b>LED Encap</b>	<b>US battery division for vehicles (U.S.)</b>
<b>Impaired (reversed) amount</b>		
Property, plant and equipment	16,727	(24,803)
Intangible assets	1,093	(99)
<b>Key assumptions</b>		
Pre-tax discount rate	11.7%	13.8%
Growth rate for subsequent years after five years	0%	0%

The Group decided to dispose of certain non-current assets during 2016 and 2015. The differences between net fair value and book value were recognized as impairment losses (reversal of impairment losses) (Note 36).

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Changes in the carrying amounts of investment properties for the six-month period ended June 30, 2016, are as follows:

*(in millions of Korean won)*

	<b>June 30, 2016</b>		
	<b>Land</b>	<b>Buildings</b>	<b>Total</b>
<b>Beginning balance</b>	-	-	-
Cost	-	-	-
Accumulated depreciation	-	-	-
Business combination (Note 35)	10,268	3,967	14,235
Acquisitions/ Transfer	-	-	-
Disposals/ Transfer	-	-	-
Depreciation	-	(36)	(36)
<b>Ending balance</b>	<b>10,268</b>	<b>3,931</b>	<b>14,199</b>
Cost	10,268	4,756	15,024
Accumulated depreciation	-	(825)	(825)

As of June 30, 2016, the carrying amounts of property, plant and equipment classified as investment properties approximate their fair values.

Details of gain and loss from investment properties for the three-month and six-month periods ended June 30, 2016, are as follows:

*(in millions of Korean won)*

	<b>June 30, 2016</b>	
	<b>Three months</b>	<b>Six months</b>
Rental revenue	190	190
Depreciation	(36)	(36)
	<b>154</b>	<b>154</b>

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**13. Intangible Assets**

Changes in the carrying amount of intangible assets for the six-month period ended June 30, 2016 and for the year ended December 31, 2015, are as follows:

(in millions of Korean won)

	<b>June 30, 2016</b>					
	<b>Software development costs</b>	<b>Industrial property rights</b>	<b>Goodwill</b>	<b>Memberships</b>	<b>Others</b>	<b>Total</b>
<b>Beginning balance</b>	61,670	200,779	143,599	49,642	46,196	501,886
Business combination (Note 35)	15,669	98,088	81,984	1,674	26,537	223,952
Acquisitions/ Transfer	27,094	22,431	-	2,296	6,839	58,660
Disposals/ Transfer	(5,526)	(690)	-	(520)	(56)	(6,792)
Exchange differences	(177)	(221)	(687)	(9)	(85)	(1,179)
Amortization	(10,732)	(7,481)	-	-	(6,603)	(24,816)
<b>Ending balance</b>	<b>87,998</b>	<b>312,906</b>	<b>224,896</b>	<b>53,083</b>	<b>72,828</b>	<b>751,711</b>

(in millions of Korean won)

	<b>December 31, 2015</b>					
	<b>Software development costs</b>	<b>Industrial property rights</b>	<b>Goodwill</b>	<b>Memberships</b>	<b>Others</b>	<b>Total</b>
<b>Beginning balance</b>	56,011	173,600	211,521	50,224	33,664	525,020
Acquisitions/ Transfer	32,244	41,861	-	2,405	23,017	99,527
Disposals/ Transfer	(9,416)	(3,434)	-	(2,996)	(32)	(15,878)
Exchange differences	73	2,858	7,443	9	91	10,474
Amortization	(17,283)	(13,121)	-	-	(10,494)	(40,898)
Impairment	(56)	(985)	(75,365)	-	(52)	(76,458)
Reversal of impairment	97	-	-	-	2	99
<b>Ending balance</b>	<b>61,670</b>	<b>200,779</b>	<b>143,599</b>	<b>49,642</b>	<b>46,196</b>	<b>501,886</b>

Amortization of intangible assets was classified for the three-month and six-month periods ended June 30, 2016 and 2015, as follows:

(in millions of Korean won)

	<b>2016</b>		<b>2015</b>	
	<b>Three months</b>	<b>Six months</b>	<b>Three months</b>	<b>Six months</b>
Cost of sales	2,932	5,571	2,619	5,304
Selling, general and administrative expenses	10,450	19,245	7,147	13,740
<b>Total</b>	<b>13,382</b>	<b>24,816</b>	<b>9,766</b>	<b>19,044</b>

Research and development costs recognized as expenses for the six-month period ended June 30, 2016, amount to ₩ 326,052 million (2015: ₩ 276,014 million).

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Goodwill is allocated to the Group's CGUs identified according to operating segment. The carrying amounts of allocated goodwill by CGUs as of June 30, 2016, are as follows:

*(in millions of Korean won)*

CGUs	Carrying amount
<b>Goodwill arising on the acquisition of LG Petrochemical Co., Ltd.</b>	
NCC	2,361
ABS	1,250
PO	1,063
PVC	759
Acrylic	653
Plasticizer	143
BPA	125
Others	1,839
	<u>8,193</u>
<b>Goodwill arising on the acquisition of SAP business</b>	
Acrylic	25,222
	<u>25,222</u>
<b>Goodwill arising on the acquisition of LG NanoH2O, Inc.</b>	
Water purification	109,497
	<u>109,497</u>
<b>Goodwill arising on the acquisition of FarmHannong Co.,Ltd.</b>	
FarmHannong Co.,Ltd.	81,984
	<u>81,984</u>
<b>Total</b>	<u>224,896</u>

During 2015, the US water purification division, managed as a separate cash-generating unit in Information & Electronic Materials segments, has been tested for impairment because its economic performance is lower than expected. The recoverable amounts of CGU have been determined based on value-in-use calculations. These calculations use pre-tax cash flow projections based on financial budgets approved by management covering a five-year period. Management determined the estimated pre-tax cash flow based on past performance and its expectations of market development. Value-in-use is measured by applying the pre-tax discount rates reflecting specific risks relating to the relevant operating segments. The carrying value exceeding its recoverable amount is all attributed to goodwill.

During 2015, the amount of impairment loss recognized as other non-operating expenses and key assumptions used for calculation of value in use are as follows:

<i>(in millions of Korean won)</i>	Acquisition of LG Petrochemical Co., Ltd.	Acquisition of SAP business	Acquisition of LG NanoH2O, Inc.
<b>Impaired amount</b>	-	-	75,365
<b>Key assumptions</b>			
Pre-tax discount rate	11.7%	11.7%	9.3%
Growth rate for subsequent years after five years	0%	0%	0.5%

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**14. Other Current and Non-Current Assets**

Details of other current and non-current assets as of June 30, 2016 and December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
<b>Current</b>		
Prepayments to suppliers	83,851	96,914
Prepaid expenses	29,691	20,839
Prepaid value added tax	84,767	70,015
Others	10,339	15,836
<b>Total</b>	<u>208,648</u>	<u>203,604</u>
<b>Non-current</b>		
Long-term prepaid expenses	34,393	29,118
Others	10,928	10,919
<b>Total</b>	<u>45,321</u>	<u>40,037</u>

**15. Borrowings**

The carrying amount of borrowings as of June 30, 2016 and December 31, 2015, is as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
<b>Current</b>		
Short-term borrowings	2,286,832	1,839,678
Current-portion of long-term borrowings of bank loans	321,533	206,304
Current-portion of debentures	339,727	99,911
Finance lease liabilities	4,885	4,885
	<u>2,952,977</u>	<u>2,150,778</u>
<b>Non-current</b>		
Long-term borrowings	234,665	274,069
Debentures	69,573	199,773
Finance lease liabilities	32,194	34,086
	<u>336,432</u>	<u>507,928</u>
<b>Total</b>	<u>3,289,409</u>	<u>2,658,706</u>

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Details of short-term borrowings as of June 30, 2016 and December 31, 2015, are as follows:

(in millions of Korean won)	Bank	Latest maturity date	Annual interest rate(%) at June 30, 2016	Carrying Amount	
				June 30, 2016	December 31, 2015
Notes discounted <sup>1</sup>	Woori Bank, others	Dec 27,2016	Libor + 0.50 and others	1,036,995	1,032,581
Bank loans <sup>2</sup>	Standard Chartered Bank, others	Jun 27,2017	Libor + 0.75 and others	1,249,837	807,097
<b>Total</b>				<b>2,286,832</b>	<b>1,839,678</b>

<sup>1</sup> As of June 30, 2016, trade receivables transferred to financial institutions but not derecognized are accounted for as collateralized borrowing transaction (Note 7).

<sup>2</sup> Certain property, plant and equipment have been pledged as collateral for the borrowings (Note 19).

Details of long-term borrowings as of June 30, 2016 and December 31, 2015, are as follows:

(in millions of Korean won)	Bank	June 30, 2016				
		Annual interest rate (%)	Latest maturity date	Total amount	Current	Non- current
<b>Borrowings in Korean won<sup>1</sup></b>	KEB Hana Bank	1.75	Dec 15,2019	1,235	353	882
<b>Borrowings in foreign currencies</b>	Sumitomo Mitsui Banking Corporation	3Libor + 0.60	Apr 03,2017	23,294	23,294	-
	Standard Chartered Bank	3Libor + 2.20	Sep 25,2016	13,899	13,899	-
	Standard Chartered Bank	3Libor + 1.00	Nov 20,2017	51,733	10,347	41,386
	Agricultural Bank of China	3Libor + 0.80	Jun 29,2020	33,956	5,675	28,281
	Bank of America	6Libor + 1.60	Oct 24,2017	34,748	-	34,748
	Bank of America	3Libor + 1.50	Aug 13,2018	34,748	-	34,748
	Bank of China	3Libor + 0.95	May 05,2021	28,853	-	28,853
	CITI	6Libor + 2.00	Mar 10,2017	18,532	18,532	-
	HSBC	3Libor + 2.10	Aug 04,2016	34,748	34,748	-
	HSBC	3Libor + 1.45	Sep 19,2016	46,331	46,331	-
	HSBC	3Libor + 1.45	Nov 11,2016	46,331	46,331	-
	HSBC	3Libor + 1.05	Apr 19,2019	48,418	5,810	42,608
	JP Morgan	3Libor + 0.85	Jan 15,2018	23,159	-	23,159
	Mizuho Banking Corporation	3Libor + 1.02	Apr 16,2017	46,331	46,331	-
	Mizuho Banking Corporation	3Libor + 0.75	May 27,2017	69,882	69,882	-
<b>Total</b>				<b>556,198</b>	<b>321,533</b>	<b>234,665</b>

<sup>1</sup> Other receivables are pledged as collateral for the non-current borrowings (Note 19).

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		December 31, 2015					
		Annual interest rate (%)	Latest maturity date	Total amount	Current	Non- current	
(in millions of Korean won)	Bank						
<b>Borrowings in foreign currencies</b>	Sumitomo Mitsui Banking Corporation	3Libor + 0.60	Apr 03,2017	23,440	-	23,440	
	Standard Chartered Bank	3Libor + 2.20	Sep 25,2016	16,226	16,226	-	
	Standard Chartered Bank	3Libor + 1.0	Nov 20,2017	28,364	2,836	25,528	
	Agricultural Bank of China	3Libor + 0.80	Dec 28,2019	24,338	2,839	21,499	
	Bank of America	6Libor + 1.60	Oct 24,2017	34,769	-	34,769	
	Bank of America	3Libor + 1.50	Aug 13,2018	34,769	-	34,769	
	CITI	6Libor + 2.00	Mar 10,2017	19,703	2,318	17,385	
	HSBC	3Libor + 2.10	Jan 22,2016	23,180	23,180	-	
	HSBC	3COF	Apr 08,2016	8,245	8,245	-	
	HSBC	3Libor + 2.10	Aug 04,2016	34,769	34,769	-	
	HSBC	3Libor + 1.45	Sep 19,2016	46,359	46,359	-	
	HSBC	3Libor + 1.45	Nov 11,2016	46,359	46,359	-	
	JP Morgan	3Libor + 1.75	Jul 15,2016	23,173	23,173	-	
	Mizuho Banking Corporation	3Libor + 1.02	Apr 16,2017	46,359	-	46,359	
	Mizuho Banking Corporation	3Libor + 0.75	May 27,2017	70,320	-	70,320	
	<b>Total</b>				480,373	206,304	274,069

Details of debentures as of June 30, 2016 and December 31, 2015, are as follows:

		June 30, 2016				
		Annual interest rate (%)	Latest maturity date	Total amount	Current	Non- current
(in millions of Korean won)	Financial institution					
Debentures in Korean won (non-guaranteed)	Woori Security and others	4.03	Dec 05,2016	100,000	100,000	-
	Woori Security and others	4.11	Mar 29,2017	200,000	200,000	-
	Bookook Securities Co.,Ltd. and others	6.30	Dec 09,2016	39,984	39,984	-
	EBEST INVESTMENT & SECURITIES CO., LTD. and others	4.75	Oct 24,2017	30,000	-	30,000
Debentures in Korean won (collateralized) <sup>1</sup>	IBK Securities Co., Ltd. and others	4.70	Mar 05,2018	40,000	-	40,000
Less: discount on debentures				(684)	(257)	(427)
<b>Total</b>				409,300	339,727	69,573

<sup>1</sup> Certain property, plant and equipment are pledged as collateral for the debentures (Note 19).

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(in millions of Korean won)

		December 31, 2015				
	Financial institution	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
Debentures in Korean won	Woori Security and others	4.03	Dec 05,2016	100,000	100,000	-
	Woori Security and others	4.11	Mar 29,2017	200,000	-	200,000
Less: discount on debentures				(316)	(89)	(227)
<b>Total</b>				<b>299,684</b>	<b>99,911</b>	<b>199,773</b>

Details of finance lease liabilities as of June 30, 2016 and December 31, 2015, are as follows:

(in millions of Korean won)

		June 30, 2016			
Leaser	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
Hyundai Oil Bank	3.12	Dec 31,2024	37,079	4,885	32,194

(in millions of Korean won)

		December 31, 2015			
Leaser	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
Hyundai Oil Bank	3.12	Dec 31,2024	38,971	4,885	34,086

The present value of finance lease liabilities as of June 30, 2016 and December 31, 2015, is as follows:

(in millions of Korean won)

	June 30, 2016			December 31, 2015		
	Minimum lease payments	Future finance costs	Present value	Minimum lease payments	Future finance costs	Present value
Within 1 year	5,000	115	4,885	5,000	115	4,885
1 to 5 years	20,000	1,903	18,097	20,000	1,903	18,097
Over 5 years	17,500	3,403	14,097	20,000	4,011	15,989

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**16. Provisions**

Changes in the carrying amount of provisions for the six-month period ended June 30, 2016 and for the year ended December 31, 2015, are as follows:

(in millions of Korean won)

	June 30, 2016					Total
	Sales returns <sup>1</sup>	Warranty <sup>2</sup>	Greenhouse gas emission <sup>3</sup>	Restoration <sup>4</sup>	Lawsuit <sup>5</sup>	
<b>Beginning balance</b>	5,214	27,578	3,720	-	-	36,512
Business combination (Note 35)	5,026	-	-	90,865	2,685	98,576
Additions	12,333	11,365	10,763	-	-	34,461
Used	(11,894)	(3,443)	(7,417)	-	-	(22,754)
Reversal	-	-	-	-	(945)	(945)
<b>Ending balance</b>	10,679	35,500	7,066	90,865	1,740	145,850
Less : current portion	(5,027)	(986)	(7,066)	-	-	(13,079)
<b>Total</b>	<u>5,652</u>	<u>34,514</u>	<u>-</u>	<u>90,865</u>	<u>1,740</u>	<u>132,771</u>

(in millions of Korean won)

	December 31, 2015			Total
	Sales returns <sup>1</sup>	Warranty <sup>2</sup>	Greenhouse gas emission <sup>3</sup>	
<b>Beginning balance</b>	3,917	24,782	-	28,699
Additions	42,411	5,785	3,720	51,916
Used	(41,114)	(2,989)	-	(44,103)
<b>Ending balance</b>	5,214	27,578	3,720	36,512
Less : current portion	(5,214)	(671)	(3,720)	(9,605)
<b>Total</b>	<u>-</u>	<u>26,907</u>	<u>-</u>	<u>26,907</u>

<sup>1</sup> Sales return provisions have been accrued for the estimated sales return determined based on historical experience.

<sup>2</sup> Warranty provisions have been accrued for the estimated warranty service costs to be incurred based on the terms of warranty and historical experience.

<sup>3</sup> Greenhouse gas emission provisions have been accrued for estimated expenditures to be obligated for any excess emission.

<sup>4</sup> Restoration provisions have been accrued based on the estimated expenses to restore land pollutions.

<sup>5</sup> Lawsuit provisions have been accrued for certain pending cases.

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**17. Net Defined Benefit Liability**

The amounts recognized in the statements of financial position as of June 30, 2016 and December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
Present value of retirement benefit obligations <sup>1</sup>	811,971	717,770
Fair value of plan assets	<u>(641,095)</u>	<u>(636,578)</u>
<b>Liability in the statement of financial position</b>	<b><u>170,876</u></b>	<b><u>81,192</u></b>

<sup>1</sup> The present value of retirement benefit obligations is net of existing contributions to the National Pension Plan of ₩ 846 million as of June 30, 2016 (December 31, 2015: ₩ 802 million).

The amounts recognized in the statements of income for the three-month and six-month periods ended June 30, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>		<b>2015</b>	
	<b>Three months</b>	<b>Six months</b>	<b>Three months</b>	<b>Six months</b>
Current service cost <sup>1</sup>	30,064	58,764	25,323	50,725
Interest cost	<u>810</u>	<u>1,356</u>	<u>670</u>	<u>1,341</u>
<b>Total, included in employee benefit expenses</b>	<b><u>30,874</u></b>	<b><u>60,120</u></b>	<b><u>25,993</u></b>	<b><u>52,066</u></b>

<sup>1</sup> The above amounts excluded ₩ 19 million (2015: ₩ 315 million) of expenses capitalized to construction in progress and development costs.

Severance costs recognized for defined contribution plan for the six-month period ended June 30, 2016, amounted to ₩ 337 million (2015: ₩ 143 million).

The amounts recognized in the statements of income for the three-month and six-month periods ended June 30, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>		<b>2015</b>	
	<b>Three months</b>	<b>Six months</b>	<b>Three months</b>	<b>Six months</b>
Cost of sales	20,532	41,160	18,153	35,522
Selling, general and administrative expenses	<u>10,570</u>	<u>19,297</u>	<u>7,904</u>	<u>16,687</u>
<b>Total</b>	<b><u>31,102</u></b>	<b><u>60,457</u></b>	<b><u>26,057</u></b>	<b><u>52,209</u></b>

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Changes in the present value of defined benefit obligations for the six-month period ended June 30, 2016 and for the year ended December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
<b>Beginning balance</b>	717,770	605,712
Business combination (Note 35)	47,143	-
Transfer in	6,608	7,620
Transfer out	(5,315)	(5,132)
Current service cost	58,782	102,133
Interest expense	10,031	18,704
Remeasurements:		
Actuarial gains and losses arising from changes in demographic assumptions	-	371
Actuarial gains and losses arising from changes in financial assumptions	-	30,875
Actuarial gains and losses arising from experience adjustments	-	(12,108)
Others	-	412
Exchange differences	154	283
Payments from plans	(23,202)	(31,100)
<b>Ending balance</b>	<u>811,971</u>	<u>717,770</u>

Changes in the fair value of plan assets for the six-month period ended June 30, 2016 and for the year ended December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
<b>Beginning balance</b>	636,578	518,820
Business combination (Note 35)	9,070	-
Transfer in	1,384	642
Transfer out	(2,563)	(260)
Interest income	8,674	16,022
Remeasurements:		
Return on plan assets (excluding amounts included in interest income)	(1,919)	(1,239)
Contributions:		
Employers	294	120,151
Payments from plans	(10,423)	(15,295)
Administrative costs	-	(2,263)
<b>Ending balance</b>	<u>641,095</u>	<u>636,578</u>

The actual return on plan assets for the six-month period ended June 30, 2016, was ₩ 6,755 million (for the year ended December 31, 2015: ₩ 14,783 million).

The principal actuarial assumptions used as of June 30, 2016 and December 31, 2015, are as follows:

	<b>June 30, 2016</b>	<b>December 31, 2015</b>
Discount rate	2.3 ~ 3.0%	2.8%
Future salary increase	2.3 ~ 5.1%	5.1%

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The sensitivity analysis for changes in key actuarial assumptions as of June 30, 2016, is as follows:

<i>(in millions of Korean won)</i>	<b>Increase by 1%</b>	<b>Decrease by 1%</b>
Discount rate:		
Increase (decrease) in defined benefit obligations	(79,598)	95,023
Future salary increase:		
Increase (decrease) in defined benefit obligations	91,964	(78,810)

A decrease in corporate bond yields may lead most significantly to an increase in defined benefit liabilities.

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. The sensitivity of the defined benefit obligation to changes in principal actuarial assumptions is calculated using the projected unit credit method, the same method applied when calculating the defined benefit obligations recognized on the statement of financial position.

The methods and types of assumptions used in preparing the sensitivity analysis did not change compared to the previous period.

Plan assets as of June 30, 2016 and December 31, 2015, consist of:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>				<b>December 31, 2015</b>			
	<b>Quoted price</b>	<b>Unquoted price</b>	<b>Total</b>	<b>Compo- sition</b>	<b>Quoted price</b>	<b>Unquoted price</b>	<b>Total</b>	<b>Compo- sition</b>
Insurance contracts with guaranteed yield	641,095	-	641,095	100%	636,578	-	636,578	100%

**18. Other Current and Non-Current Liabilities**

Details of other current and non-current liabilities as of June 30, 2016 and December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
<b>Current</b>		
Advances from customers	47,149	49,793
Dividends payable	5,950	1,055
Withholding	52,896	17,270
Unearned revenues	13,138	6,889
Non-trade payables	9,192	175,040
Accrued expenses	131,999	51,680
<b>Total</b>	<u>260,324</u>	<u>301,727</u>
<b>Non-current</b>		
Long-term accrued expenses	<u>29,087</u>	<u>27,852</u>

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**19. Commitments and Contingencies**

- (1) As of June 30, 2016, the Parent Company and certain subsidiaries have been provided with guarantees from the Seoul Guarantee Insurance for the execution of supply contracts.
- (2) As of June 30, 2016, the Parent Company has provided one blank promissory note to the Korea National Oil Corporation as collateral in relation to petroleum import surcharges.
- (3) As of June 30, 2016, the Parent Company and certain subsidiaries have various specific line of credit agreements with several financial institutions, as follows:

(unit: Korean won in millions, foreign currencies in millions)

Classification	The Parent Company		Certain Overseas Subsidiaries					
	KRW	USD	KRW	USD	CNY	EUR	INR	PLN
Limit of bank overdraft	53,100	50	-	130	300	30	-	32
Limit of the letter of credit	35,000	364	-	205	-	-	-	-
Limit of discount of notes from export	-	1,487	-	-	-	-	-	-
Limit of guaranteed payments in other foreign currency	-	191	-	-	-	-	-	-
Limit of loan arrangements	-	-	147,734	1,670	3,189	5	3,200	-

The Group also entered into credit line agreements with other financial institutions relating to trade finance and import/export amounting to ₩ 20,000 million and US\$ 190 million.

- (4) As of June 30, 2016, the Parent Company and certain subsidiaries have B2B purchase arrangements with several financial institutions with limit of ₩ 320,000 million and ₩ 15,000 million, respectively.
- (5) As of June 30, 2016, the consumers in U.S., Canada and Israel have filed three class actions and the customers have filed four separate actions against the Parent Company and certain overseas subsidiaries in relation to price fixing of mobile batteries. However, the ultimate outcome of these cases cannot be determined at the reporting date.
- (6) In addition, as of June 30, 2016, the Parent Company and certain overseas subsidiaries have been named as a plaintiff in 13 and 29 legal actions, respectively, involving ₩ 34,862 million and ₩ 9,317 million in claims, respectively. They have been named as a defendant in seven and 16 legal actions, respectively, with ₩ 6,411 million and ₩ 5,256 million in claims, respectively. The ultimate outcome of these cases cannot be determined at the reporting date.
- (7) As of June 30, 2016, the Parent Company has technology license agreements with STYRON EUROPE GmbH and other companies for the production of Polycarbonate products. Further, the Parent Company has entered into manufacture and production technical contracts with Exxon Mobile and others.
- (8) The Parent Company has entered into a license agreement with LG Corp. to use trademarks on the products that the Group manufactures and sells, and on the services the Group provides in relation to its business.
- (9) As of June 30, 2016, the Parent Company has contracts of US\$ 2 million and EUR 11 million in guarantees with financial institutions in regard to warranty for certain products, and the

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Parent Company has a contract of US\$ 46 million in guarantees with financial institutions for the advances received from customers.

(10) As of June 30, 2016, the Parent Company has guaranteed the repayment of various obligations of its subsidiaries. The outstanding balance of such guarantees as of June 30, 2016, amounts to US\$ 134 million (total equivalent to ₩ 156,600 million) (December 31, 2015: US\$ 150 million and EUR 3 million, total equivalent to ₩179,642 million). Details of guarantees provided as of June 30, 2016 and December 31, 2015, are as follows:

(in millions of Korean won)

Guarantor	Guarantee beneficiary	Guarantee period	Financial institution	Amount of guarantee		Outstanding loan amount	
				June 30, 2016	December 31, 2015	June 30, 2016	December 31, 2015
The Parent Company	LG Chem Europe GmbH	Jan 02,2015 ~ Jan 02,2016	Shinhan Bank	-	3,842	-	-
	LG Chem Michigan, Inc.	May 27,2014 ~ May 27,2017	Mizuho Bank	69,882	70,320	69,882	70,320
	"	Mar 31,2014 ~ Mar 31,2017	Sumitomo Mitsui Banking Corporation	23,294	23,440	23,294	23,440
	"	Apr 01,2015 ~ Mar 31,2016	Sumitomo Mitsui Banking Corporation	-	23,440	-	-
	"	Aug 18,2015 ~ Aug 18,2016	Wells Fargo	23,294	23,440	17,471	23,440
	LG NanoH2O, Inc.	Oct 01,2015 ~ Sep 30,2016	Citibank	34,941	35,160	6,988	12,892
Farm Hannong Co.,Ltd.	Dongbu Farm Hannong (Heilongjiang) Chemical Corp.	Jun 03,2016 ~ Dec 09,2016	Korea Development Bank	1,390	-	1,223	-
	"	Jun 17,2016 ~ Dec 09,2016	Korea Development Bank	1,112	-	961	-
	"	Sep 22,2015 ~ Sep 29,2016	Korea Development Bank	834	-	699	-
	"	Dec 16,2015 ~ Dec 16,2016	Export-Import Bank of Korea	1,853	-	1,853	-
<b>Total</b>				<b>156,600</b>	<b>179,642</b>	<b>122,371</b>	<b>130,092</b>

Further, as of June 30, 2016, the Group provided no financial guarantee to its associates in relation to their borrowings.

In addition, the Parent Company provides Letter of Comfort (LOC) in relation to certain borrowings of subsidiaries.

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(11) As of June 30, 2016, assets pledged as collateral for the borrowings and credit line agreements are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>			
	<b>Secured amount</b>	<b>Borrowings / Loan</b>	<b>Limit</b>	<b>Secured party</b>
Other receivables	300	Non-current borrowings (Won currency borrowings)	1,235	KEB Hana Bank
Jeongeup potting soil facility	19,600	Short-term borrowings (Bank loans)	10,847	Korea Development Bank
Banwol agrochemicals facility	23,382			
Jeonju pesticides facility		Won currency debentures (Collateralized)	40,000	Creditors
Gumi facility, Anseong facility, Genetics institute	52,000			
Examining land of Nonsan and 2 others	3,000	Limit of the letter of credit and others	1,551	Woori Bank
Land of Eumseong and 1 other	1,006	Limit of the letter of credit	839	Nonghyup Bank
	<u>99,288</u>		<u>54,472</u>	

(12) Capital expenditure contracted for as of the reporting date but not yet incurred is as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
Property, plant and equipment	393,508	297,362

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**20. Equity**

Changes in share capital and share premium for the six-month period ended June 30, 2016 and for the year ended December 31, 2015, are as follows:

*(in millions of Korean won and in shares)*

	Ordinary shares		Preferred shares		Share premium
	Number of shares	Amount	Number of shares	Amount	
January 1, 2015	66,271,100	331,356	7,628,921	38,144	897,424
December 31, 2015	66,271,100	331,356	7,628,921	38,144	897,424
June 30, 2016	66,271,100	331,356	7,628,921	38,144	897,424

Changes in treasury shares for the six-month period ended June 30, 2016 and for the year ended December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	Number of shares		Carrying amount	Gain on sale of treasury shares
	Ordinary shares	Preferred shares		
January 1, 2015	359,795	5,519	15,484	13,855
December 31, 2015	359,795	5,519	15,484	13,855
June 30, 2016	359,795	5,519	15,484	13,855

**21. Retained Earnings**

Details of retained earnings as of June 30, 2016 and December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	June 30, 2016	December 31, 2015
Legal reserve <sup>1</sup>	298,840	296,178
Discretionary reserve <sup>2</sup>	10,408,789	9,551,785
Retained earnings before appropriation	1,208,062	1,684,537
<b>Total</b>	<b>11,915,691</b>	<b>11,532,500</b>

<sup>1</sup> The Commercial Code of the Republic of Korea requires the Group to appropriate for each financial period, as a legal reserve, an amount equal to a minimum of 10% of cash dividends paid until such reserve equals 50% of its issued capital stock. The reserve is not available for cash dividends payment, but may be transferred to capital stock or used to reduce accumulated deficit. When the accumulated legal reserves (the sum of capital reserves and earned profit reserves) are greater than 1.5 times the paid-in capital amount, the excess legal reserves may be distributed in accordance with a resolution of the shareholders' meeting.

<sup>2</sup> The Group separately accumulates a discretionary reserve for research and human resource development through appropriation of retained earnings, which has been included as deductible expense for the corporate income tax return according to the Special Tax Treatment Law. The reserve could be reversed in accordance with the terms of related tax laws.

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**22. Other Components of Equity**

Details of other components of equity as of June 30, 2016 and December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
Treasury shares (Note 20)	(15,484)	(15,484)
Capital transactions within the Group <sup>1</sup>	(387)	(215)
<b>Total</b>	<u>(15,871)</u>	<u>(15,699)</u>

<sup>1</sup> Includes gain (loss) from transactions with non-controlling interests and other reserves of subsidiaries, net of deferred taxes.

**23. Selling, General and Administrative Expenses**

Selling, general and administrative expenses for the three-month and six-month periods ended June 30, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>		<b>2015</b>	
	<b>Three months</b>	<b>Six months</b>	<b>Three months</b>	<b>Six months</b>
Wages and salaries	145,127	273,170	118,476	230,473
Pension costs (Note 17)	10,570	19,297	7,904	16,687
Welfare expense	30,753	55,361	28,030	50,801
Travel expense	11,861	21,213	9,662	17,945
Water & utilities	7,030	15,792	5,811	13,190
Packaging expense	1,543	3,252	1,685	3,302
Charge for use	20,363	40,187	23,457	45,520
Commission expense	73,760	138,253	61,416	114,851
Depreciation (Note 12)	21,035	41,136	18,224	36,413
Advertising expense	4,946	9,009	3,730	7,803
Freight expense	108,821	217,245	109,232	223,325
Training expense	3,517	6,170	3,325	5,486
Amortization (Note 13)	10,450	19,245	7,147	13,740
Sample expense	5,812	9,936	4,773	9,049
Development costs	28,654	50,002	20,057	36,756
Others	48,156	89,757	39,195	69,033
<b>Total</b>	<u>532,398</u>	<u>1,009,025</u>	<u>462,124</u>	<u>894,374</u>

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**24. Expenses by Nature**

Expenses that are recorded by function as cost of sales, and selling, general and administrative expenses in the statements of income for the three-month and six-month periods ended June 30, 2016 and 2015, consist of:

*(in millions of Korean won)*

	2016		2015	
	Three months	Six months	Three months	Six months
Changes in inventories	(45,381)	1,365	(11,625)	255,230
Raw materials and consumables used	2,809,897	5,393,704	2,708,974	5,274,882
Purchase of merchandise	258,348	508,870	316,412	603,988
Employee benefit expense (Note 25)	473,296	903,152	366,970	803,620
Advertising expense	5,325	9,560	4,084	8,365
Transportation expense	117,322	234,240	116,179	237,202
Service fees	119,022	221,167	99,017	185,566
Depreciation, amortization	333,675	655,494	306,879	614,664
Operating lease payments	20,249	38,254	16,105	31,961
Other expenses	515,023	1,057,316	586,786	1,047,523
<b>Total</b>	<b>4,606,776</b>	<b>9,023,122</b>	<b>4,509,781</b>	<b>9,063,001</b>

**25. Employee Benefit Expense**

Details of employee benefit expenses for the three-month and six-month periods ended June 30, 2016 and 2015, are as follows:

*(in millions of Korean won)*

	2016		2015	
	Three months	Six months	Three months	Six months
Wages and salaries	396,800	759,932	297,926	668,410
Pension costs – Defined benefit plan (Note 17)	30,874	60,120	25,993	52,066
Pension costs – Defined contribution plan (Note 17)	228	337	64	143
Others	45,394	82,763	42,987	83,001
<b>Total</b>	<b>473,296</b>	<b>903,152</b>	<b>366,970</b>	<b>803,620</b>

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**26. Finance Income and Expenses**

Details of finance income and expenses for the three-month and six-month periods ended June 30, 2016 and 2015, are as follows:

(in millions of Korean won)

	2016		2015	
	Three months	Six months	Three months	Six months
<b>Finance income</b>				
Interest income <sup>1</sup>	9,911	21,284	9,479	19,651
Gain on foreign exchange	33,710	54,139	18,032	52,865
Gain on foreign currency translation	919	4,063	3,059	2,081
Gain on disposal of available-for-sale financial assets	18	18	32	32
Gain on disposal of trading derivatives	-	1,640	748	2,184
Gain on valuation of trading derivatives	-	-	-	-
<b>Total</b>	<b>44,558</b>	<b>81,144</b>	<b>31,350</b>	<b>76,813</b>
<b>Finance expense</b>				
Interest expense <sup>2</sup>	22,229	36,234	14,896	31,507
Loss on foreign exchange	32,085	55,809	19,075	52,665
Loss on foreign currency translations	32,113	29,886	2,771	8,999
Loss on disposal of trading derivatives	-	3,141	1,310	1,464
Loss on redemption of debentures	3,031	3,031	-	-
<b>Total</b>	<b>89,458</b>	<b>128,101</b>	<b>38,052</b>	<b>94,635</b>

<sup>1</sup> Details of interest income for the three-month and six-month periods ended June 30, 2016 and 2015, are as follows:

(in millions of Korean won)

	2016		2015	
	Three months	Six months	Three months	Six months
Bank deposits	8,662	19,095	9,028	18,476
Available-for-sale financial assets	91	91	-	-
Other loans and receivables	1,158	2,098	451	1,175
<b>Total</b>	<b>9,911</b>	<b>21,284</b>	<b>9,479</b>	<b>19,651</b>

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<sup>2</sup> Details of interest expense for the three-month and six-month periods ended June 30, 2016 and 2015, are as follows:

*(in millions of Korean won)*

	2016		2015	
	Three months	Six months	Three months	Six months
Interest on bank overdraft and borrowings	16,177	28,345	10,777	23,201
Interest on finance lease liabilities	304	608	666	666
Interest on debentures	4,645	7,776	3,128	7,260
Other interest expenses	2,008	2,460	1,717	2,680
Capitalized interest for qualifying assets	(905)	(2,955)	(1,392)	(2,300)
<b>Total</b>	<b>22,229</b>	<b>36,234</b>	<b>14,896</b>	<b>31,507</b>

**27. Other Non-Operating Income**

Details of other non-operating income for the three-month and six-month periods ended June 30, 2016 and 2015, are as follows:

*(in millions of Korean won)*

	2016		2015	
	Three months	Six months	Three months	Six months
Gain on foreign exchange	82,423	176,618	55,435	100,698
Gain on foreign currency translation	66,605	18,689	29,077	41,929
Gain on disposal of property, plant and equipment	4,898	5,947	502	959
Reversal of impairment loss on property, plant and equipment (Note 12)	-	-	24,802	24,802
Reversal of impairment loss on intangible assets (Note 13)	-	-	99	99
Others	9,138	19,020	5,879	10,725
<b>Total</b>	<b>163,064</b>	<b>220,274</b>	<b>115,794</b>	<b>179,212</b>

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**28. Other Non-Operating Expenses**

Details of other non-operating expenses for the three-month and six-month periods ended June 30, 2016 and 2015, are as follows:

*(in millions of Korean won)*

	2016		2015	
	Three months	Six months	Three months	Six months
Loss on foreign exchange	101,188	196,474	55,496	107,197
Loss on foreign currency translation	66,337	29,330	22,025	36,997
Loss on disposal of property, plant and equipment	6,955	13,999	23,565	41,318
Loss on disposal of intangible assets	969	1,124	196	320
Impairment loss on property, plant and equipment (Note 12)	1,210	2,425	-	-
Impairment loss on intangible assets (Note 13)	-	-	75,365	75,365
Loss on disposal of investments in joint ventures	41,252	41,252	-	-
Others	9,747	30,531	2,514	6,848
<b>Total</b>	<b>227,658</b>	<b>315,135</b>	<b>179,161</b>	<b>268,045</b>

**29. Income Taxes**

Income tax expense is recognized based on management's best estimate of the weighted average annual income tax rate expected for the full financial year. The estimated average annual rate used for the year ended December 31, 2016, is 21.3% (for the six-month period ended June 30, 2015: 25.1%).

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**30. Earnings Per Share**

Basic earnings per share is calculated by dividing the profit attributable to owners of the Parent Company by the weighted average number of shares in issue excluding shares purchased by the Parent Company and held as treasury shares. As of the reporting date, the Parent Company has no potential ordinary shares. Preferred shares have a right to participate in the profits of the Parent Company. These participation rights have been considered in presenting the EPS for ordinary shares and preferred shares.

Basic earnings per share attributable to the owners of the Parent Company for the three-month and six-month periods ended June 30, 2016 and 2015, is computed as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>		<b>2015</b>	
	<b>Three months</b>	<b>Six months</b>	<b>Three months</b>	<b>Six months</b>
Profit attributable to ordinary shares <sup>1</sup>	337,751	642,205	313,131	530,673
Weighted average number of ordinary shares outstanding <sup>2</sup>	65,911,305	65,911,305	65,911,305	65,911,305
Basic earnings per ordinary share (in won)	5,124	9,743	4,751	8,051

<i>(in millions of Korean won)</i>	<b>2016</b>		<b>2015</b>	
	<b>Three months</b>	<b>Six months</b>	<b>Three months</b>	<b>Six months</b>
Profit attributable to preferred shares <sup>1</sup>	39,160	74,469	36,314	61,568
Weighted average number of preferred shares outstanding <sup>2</sup>	7,623,402	7,623,402	7,623,402	7,623,402
Basic earnings per preferred share (in won)	5,137	9,768	4,763	8,076

<sup>1</sup> Profit attributable to ordinary and preferred shares are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	
	<b>Three months</b>	<b>Six months</b>
<b>Profit for the period attributable to owners of the Parent Company</b>		
Ordinary shares dividends (A)	376,911	716,674
Preferred shares dividends (B)	74,150	148,300
	8,672	17,343
<b>Undistributed earnings for the period</b>	294,089	551,031
Undistributed earnings available for ordinary shares (C)	263,601	493,905
Undistributed earnings available for preferred shares (D)	30,488	57,126
<b>Profit for the period attributable to ordinary shares (A+C)</b>	337,751	642,205
<b>Profit for the period attributable to preferred shares (B+D)</b>	39,160	74,469

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(in millions of Korean won)

	2015	
	Three months	Six months
<b>Profit for the period attributable to owners of the Parent Company</b>		
Ordinary shares dividends (A)	349,445	592,241
Preferred shares dividends (B)	65,911	131,823
<b>Undistributed earnings for the period</b>	7,719	15,437
Undistributed earnings available for ordinary shares (C)	275,815	444,981
Undistributed earnings available for preferred shares (D)	247,220	398,850
<b>Profit for the period attributable to ordinary shares (A+C)</b>	28,595	46,131
<b>Profit for the period attributable to preferred shares (B+D)</b>	313,131	530,673
	36,314	61,568

<sup>2</sup> Weighted average numbers of shares are calculated as follows:

(in shares)

	2016	2015
Ordinary shares outstanding	66,271,100	66,271,100
Ordinary treasury shares	(359,795)	(359,795)
<b>Weighted average number of ordinary shares outstanding</b>	<u>65,911,305</u>	<u>65,911,305</u>
Preferred shares outstanding	7,628,921	7,628,921
Preferred treasury shares	(5,519)	(5,519)
<b>Weighted average number of preferred shares outstanding</b>	<u>7,623,402</u>	<u>7,623,402</u>

There were no dilutive potential outstanding ordinary shares at the reporting date. Accordingly, diluted earnings per share for profit attributable to owners of the Parent Company is identical to basic earnings per share.

### 31. Dividends

The ₩331,287 million (2015: ₩294,520 million) of dividends for the year ended December 31, 2015, was paid to the shareholders of the Parent Company in April 2016.

### 32. Related Party Transactions

As of June 30, 2016 and December 31, 2015, LG Corp. is an entity exercising a significant influence over the Group which owns 33.53% of the Parent Company's ordinary shares.

Details of associates and other related parties that have sales and other transactions with the Group or have receivables and payables balances as of June 30, 2016 and December 31, 2015, are as follows, and the details of investments in subsidiaries, associates and joint ventures are described in Note 1.3:

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Related parties	Related parties' subsidiaries (Domestic)	Related parties' subsidiaries (foreign)	Details
SERVEONE	-	Serveone(Nanjing) Co., LTD. and others	Subsidiary of LG Corp.
LG CNS Co., Ltd.	LG N-Sys Inc., BNE PARTNERS Inc., Ever ON Co., Ltd.	LG CNS China Inc. and others	Subsidiary of LG Corp.
LG Siltron Incorporated	-	-	Subsidiary of LG Corp.
LG Management Development Institute	-	-	Subsidiary of LG Corp.
LG SPORTS Ltd.	-	-	Subsidiary of LG Corp.
LG MMA Corporation	-	-	Joint venture of LG Corp.

Sales and purchases with related parties for the six-month periods ended June 30, 2016 and 2015, are as follows:

(in millions of Korean won)

	2016			
	Sales and others	Purchase and others		
		Purchase of raw material /merchandise	Acquisition of property, plant and equipment and intangible assets	Others
Entity with significant influence over the Group				
LG Corp.	-	-	-	24,082
Associates and joint ventures				
SEETEC Co., Ltd.	6,301	48,306	14	40,018
TECWIN Co., Ltd.	-	37	535	-
HL Greenpower Co., Ltd.	38,158	-	-	-
Others	1,195	-	-	1,155
Other related parties				
LG MMA Corporation	59,339	79,218	-	1,655
SERVEONE and its subsidiaries	8,361	213,933	60,548	51,379
LG CNS Co., Ltd. and its subsidiaries	7,135	1,816	34,224	27,846
Others	-	-	-	5,138
Key management	-	-	-	27,762
<b>Total</b>	<b>120,489</b>	<b>343,310</b>	<b>95,321</b>	<b>179,035</b>

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	<b>2015</b>			
	<b>Sales and others</b>	<b>Purchase and others</b>		
		<b>Purchase of raw material /merchandise</b>	<b>Acquisition of property, plant and equipment and intangible assets</b>	<b>Others</b>
Entity with significant influence over the Group				
LG Corp.	-	-	-	24,509
Associates and joint ventures				
SEETEC Co., Ltd.	17,127	73,571	205	39,072
TECWIN Co., Ltd.	-	38	1,796	-
HL Greenpower Co., Ltd.	30,224	-	-	-
Others	273	-	-	654
Other related parties				
LG MMA Corporation	43,508	67,258	-	1,674
SERVEONE and its subsidiaries	9,525	198,401	167,135	47,915
LG CNS Co., Ltd. and its subsidiaries	6,969	1,552	26,221	26,479
Others	17	-	-	5,187
Key management	-	-	-	28,533
<b>Total</b>	<b>107,643</b>	<b>340,820</b>	<b>195,357</b>	<b>174,023</b>

Balances of receivables and payables arising from sales and purchases of goods and services as of June 30, 2016 and December 31, 2015, are as follows:

(in millions of Korean won)

	<b>June 30, 2016</b>			
	<b>Receivables</b>			
	<b>Trade receivables and others</b>	<b>Loan receivables</b>	<b>Other receivables</b>	<b>Total</b>
Entity with significant influence over the Group				
LG Corp.	-	-	11,101	11,101
Associates and joint ventures				
SEETEC Co., Ltd.	-	-	-	-
TECWIN Co., Ltd.	-	-	-	-
HL Greenpower Co., Ltd.	27,771	-	-	27,771
LG Fuel Cell Systems Inc.	-	9,795	-	9,795
Superfert Dongbu Pty Ltd.	-	-	20,907	20,907
Others	-	-	507	507
Other related parties				
LG MMA Corporation	4,131	-	461	4,592
SERVEONE and its subsidiaries	1,806	-	26,188	27,994
LG CNS Co., Ltd. and its subsidiaries	4,730	-	12	4,742
Others	-	-	3,712	3,712
Key management	-	-	-	-
<b>Total</b>	<b>38,438</b>	<b>9,795</b>	<b>62,888</b>	<b>111,121</b>

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(in millions of Korean won)

	<b>June 30, 2016</b>			
	<b>Payables</b>			
	<b>Trade payables</b>	<b>Borrowings</b>	<b>Other payables</b>	<b>Total</b>
Entity with significant influence over the Group				
LG Corp.	-	-	-	-
Associates and joint ventures				
SEETEC Co., Ltd.	-	-	20,718	20,718
TECWIN Co., Ltd.	27	-	-	27
HL Greenpower Co., Ltd.	-	-	-	-
LG Fuel Cell Systems Inc.	-	-	-	-
Superfert Dongbu Pty Ltd.	-	-	-	-
Others	-	-	61	61
Other related parties				
LG MMA Corporation	12,954	-	-	12,954
SERVEONE and its subsidiaries	4,407	-	136,654	141,061
LG CNS Co., Ltd. and its subsidiaries	724	-	30,206	30,930
Others	-	-	424	424
Key management	-	-	60,309	60,309
<b>Total</b>	<b>18,112</b>	<b>-</b>	<b>248,372</b>	<b>266,484</b>

(in millions of Korean won)

	<b>December 31, 2015</b>			
	<b>Receivables</b>			
	<b>Trade receivables and others</b>	<b>Loan receivables</b>	<b>Other receivables</b>	<b>Total</b>
Entity with significant influence over the Group				
LG Corp.	-	-	11,463	11,463
Associates and joint ventures				
SEETEC Co., Ltd.	-	-	-	-
TECWIN Co., Ltd.	-	-	-	-
HL Greenpower Co., Ltd.	12,833	-	-	12,833
LG Fuel Cell Systems Inc.	-	9,857	-	9,857
Others	-	-	451	451
Other related parties				
LG MMA Corporation	7,801	-	410	8,211
SERVEONE and its subsidiaries	1,929	-	26,199	28,128
LG CNS Co., Ltd. and its subsidiaries	10,228	-	-	10,228
Others	-	-	3,722	3,722
Key management	-	-	-	-
<b>Total</b>	<b>32,791</b>	<b>9,857</b>	<b>42,245</b>	<b>84,893</b>

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(in millions of Korean won)

	December 31, 2015			
	Payables			
	Trade payables	Borrowings	Other payables	Total
Entity with significant influence over the Group				
LG Corp.	-	-	-	-
Associates and joint ventures				
SEETEC Co., Ltd.	-	-	20,725	20,725
TECWIN Co., Ltd.	-	-	215	215
HL Greenpower Co., Ltd.	-	-	5	5
LG Fuel Cell Systems Inc.	-	-	-	-
Others	-	-	60	60
Other related parties				
LG MMA Corporation	8,310	-	-	8,310
SERVEONE and its subsidiaries	1,332	-	149,785	151,117
LG CNS Co., Ltd. and its subsidiaries	1,176	-	30,577	31,753
Others	-	-	296	296
Key management	-	-	59,234	59,234
<b>Total</b>	<b>10,818</b>	<b>-</b>	<b>260,897</b>	<b>271,715</b>

Fund transactions with related parties for the six-month periods ended June 30, 2016 and 2015, are as follows:

(in millions of Korean won)

	2016		2015	
	Equity contributions in cash (capital reduction)	Loan (Repayment)	Equity contributions in cash (capital reduction)	Loan (Repayment)
<b>Associates and joint ventures</b>				
LG Fuel Cell Systems Inc.	3,636	-	-	-
KLPE Limited Liability Partnership	(23,724)	-	-	-
LG Chem Malaysia SDN.BHD.	-	-	150	-
<b>Total</b>	<b>(20,088)</b>	<b>-</b>	<b>150</b>	<b>-</b>

Dividends received from a related party for the six-month periods ended June 30, 2016 and 2015, are as follows:

(in millions of Korean won)

	2016	2015
<b>Associate and joint venture</b>		
SEETEC Co., Ltd.	-	33,500
<b>Total</b>	<b>-</b>	<b>33,500</b>

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Dividends paid to related party for the six-month periods ended June 30, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
<b>Entity with significant influence over the Group</b>		
LG Corp.	111,081	98,753
<b>Total</b>	<u>111,081</u>	<u>98,753</u>

Compensation for key management of the Group for the six-month periods ended June 30, 2016 and 2015, consists of:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Short-term wages and salaries	26,123	27,194
Pension costs	1,639	1,339
<b>Total</b>	<u>27,762</u>	<u>28,533</u>

Key management includes directors and audit committee members having duties and responsibilities over planning, operations and controlling of the Group's business activities.

Allowance for doubtful accounts from related parties and bad debt expenses (reversal) as of June 30, 2016 and December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>		<b>December 31, 2015</b>	
	<b>Allowance for doubtful accounts</b>	<b>Bad debt expenses (reversal)</b>	<b>Allowance for doubtful accounts</b>	<b>Bad debt expenses (reversal)</b>
<b>Associate and joint venture</b>				
Superfert Dongbu Pty Ltd.	20,907	(256)	-	-
<b>Total</b>	<u>20,907</u>	<u>(256)</u>	<u>-</u>	<u>-</u>

Details of the guarantees provided by the Parent Company for related parties at the end of reporting period are disclosed in Note 19.

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**33. Cash Generated From Operations**

Reconciliation between operating profit and net cash inflow (outflow) from operating activities for the six-month periods ended June 30, 2016 and 2015, is as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
<b>Profit before income tax</b>	923,170	817,048
<b>Adjustments for:</b>		
Depreciation	630,714	595,620
Amortization	24,816	19,044
Pension costs	60,120	52,066
Finance income	(48,140)	(65,268)
Financial expenses	100,930	79,040
Foreign exchange differences	2,092	(9,178)
Gain on disposal of property, plant and equipment	(5,947)	(959)
Loss on disposal of property, plant and equipment	13,999	41,318
Loss on disposal of intangible assets	1,124	320
Impairment loss on property, plant and equipment	2,425	-
Impairment loss on intangible assets	-	75,365
Reversal of impairment loss on property, plant and equipment	-	(24,802)
Reversal of impairment loss on intangible assets	-	(99)
Loss on disposal of investments in joint ventures	41,252	-
Other income	118	(10,234)
Inventories	(60,751)	346,212
Trade receivables	218,592	(6,053)
Other receivables	14,625	13,781
Other current assets	15,630	40,401
Settlement of derivatives	(1,408)	1,502
Trade payables	68,712	(129,216)
Other payables	(50,523)	(166,010)
Other current liabilities	(65,126)	111,929
Net defined benefit liabilities	(10,601)	(70,682)
Other cash flows from operations	(63,475)	11,047
<b>Cash generated from operations</b>	<u>1,812,348</u>	<u>1,722,192</u>

The principal non-cash transactions for the six-month periods ended June 30, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Transfer of construction-in-progress	671,930	489,757
Transfer of machinery-in-transit	16,083	50,135
Reclassification of long-term borrowings into current maturities	207,496	6,881
Reclassification of non-current asset held for sale	2,306	-
Acquisition of financial lease assets	-	42,669

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**34. Segment Information**

General information about the Group's reportable segments is as follows:

<b>Segment</b>	<b>Products or services</b>	<b>Major customers</b>
Basic materials& Chemicals	ABS, PC, EP, PE, PP, Acrylic, Alcohol, SAP, PVC, Synthetic rubber, Special resin, BPA, Ethylene, Propylene and others	LG International Corp., LG Electronics Inc., DongbuDaewoo Electronics Inc., National Plastic Co. Ltd., Youl Chon Chemical Co. Ltd., OCI Company Co. Ltd., Mitsubishi Corp. and others
Energy solutions	Portable batteries, automotive batteries, Electricity storage batteries and others	Hewlett-Packard Co., General Motors Corp., and others
IT & Electronic materials and Advanced materials <sup>1</sup>	Polarizers, 3D FPR, LCD Photoresist, OLED materials, Battery materials and others	LG Display Co., Ltd. Samsung Display Co., Ltd. BOE, AUO, and others
Common and others	Crop protection products, Seeds, Fertilizers, General management, sales and R&D	National Agriculture Cooperative Federation and others

<sup>1</sup> The Group presents IT & Electronic materials and Advanced materials as Advanced materials is included in IT & Electronic materials since 2016. The comparative information was restated to reflect such changes.

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The segment information on revenue and profit and loss for the six-month periods ended June 30, 2016 and 2015, is as follows:

(in millions of Korean won)

	<b>2016</b>				<b>Total</b>
	<b>Basic materials &amp; Chemicals</b>	<b>Energy solutions</b>	<b>IT &amp; Electronic materials and Advanced materials</b>	<b>Common and others <sup>3</sup></b>	
Total segment revenue	7,164,723	1,623,371	1,276,853	192,504	10,257,451
Inter-segment revenue	81,756	668	77,757	3,949	164,130
Revenue from external customers <sup>1</sup>	7,082,967	1,622,703	1,199,096	188,555	10,093,321
Operating profit (loss) <sup>2</sup>	1,115,296	(31,547)	(22,601)	9,051	1,070,199

(in millions of Korean won)

	<b>2015</b>				<b>Total</b>
	<b>Basic materials &amp; Chemicals</b>	<b>Energy solutions</b>	<b>IT &amp; Electronic materials and Advanced materials</b>	<b>Common and others <sup>3</sup></b>	
Total segment revenue	7,409,167	1,396,803	1,342,984	2,878	10,151,832
Inter-segment revenue	84,917	1,475	74,318	2,878	163,588
Revenue from external customers <sup>1</sup>	7,324,250	1,395,328	1,268,666	-	9,988,244
Operating profit (loss) <sup>2</sup>	910,570	(38,562)	53,448	(213)	925,243

<sup>1</sup> Revenue from external customers consists of sales of goods. Interest income and dividend income are included in finance income.

<sup>2</sup> Management assesses the performance of the operating segments based on a measure of operating profit of segment.

<sup>3</sup> Common and other segments include operating segments not qualifying as a reportable segment, supporting divisions as well as R&D divisions.

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The segment information on assets and liabilities as of June 30, 2016 and December 31, 2015, is as follows:

(in millions of Korean won)

	<b>June 30, 2016</b>				<b>Total</b>
	<b>Basic materials &amp; Chemicals</b>	<b>Energy solutions</b>	<b>IT &amp; Electronic materials and Advanced materials</b>	<b>Common and others</b>	
Total assets for the segment <sup>1</sup>	8,313,434	4,224,608	3,485,579	3,802,487	19,826,108
Investments in associates and joint ventures	10,142	15,830	-	242,979	268,951
Total liabilities for the segment <sup>1</sup>	3,030,864	1,776,067	1,079,524	475,892	6,362,347

(in millions of Korean won)

	<b>December 31, 2015</b>				<b>Total</b>
	<b>Basic materials &amp; Chemicals</b>	<b>Energy solutions</b>	<b>IT &amp; Electronic materials and Advanced materials</b>	<b>Common and others</b>	
Total assets for the segment <sup>1</sup>	8,094,328	3,796,738	3,174,287	3,513,375	18,578,728
Investments in associates and joint ventures	38,837	16,559	-	238,351	293,747
Total liabilities for the segment <sup>1</sup>	2,516,170	1,707,676	888,111	363,249	5,475,206

<sup>1</sup> Assets and liabilities are measured in a manner consistent with those in the financial statements and allocated on the basis of segment operation.

The external sales and non-current assets by geographical segments from continuing operations for the six-month periods ended June 30, 2016 and 2015, and as of June 30, 2016 and December 31, 2015, are as follows:

(in millions of Korean won)

	<b>Sales</b>		<b>Non-current assets<sup>1</sup></b>	
	<b>2016</b>	<b>2015</b>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
Korea <sup>2</sup>	3,229,757	3,254,932	8,396,768	7,767,917
China	3,263,929	3,352,356	1,457,690	1,306,950
Asia	1,946,811	2,003,988	27,056	28,250
America	610,831	552,157	242,940	242,132
Europe	899,695	682,873	22,807	23,846
Others	142,298	141,938	-	-
<b>Total</b>	<b>10,093,321</b>	<b>9,988,244</b>	<b>10,147,261</b>	<b>9,369,095</b>

<sup>1</sup> Represents aggregate amount of property, plant and equipment, intangible assets and investment properties.

<sup>2</sup> Domestic sales include the exports made through local letters of credit.

There is no external customer attributing to more than 10% of total revenue for the six-month periods ended June 30, 2016 and 2015.

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**35. Business Combination**

During 2016, the Parent Company acquired 100% shares of FarmHannong Co.,Ltd. (formerly Dongbu Farm Hannong Co.,Ltd.), which is engaged to manufacture domestic agricultural pesticides. As a result of the business combination, the Group expects increase in sales through diversification in market such as entering into new industry and others.

Goodwill of \ 81,894 million arising from the business combination is attributable to the acquired customer base and sales increase expected from combining the operations of the Parent Company and FarmHannong Co.,Ltd.

The following table summarizes the consideration paid for FarmHannong Co.,Ltd., the fair value of assets acquired and liabilities assumed at the acquisition date:

<i>(in millions of Korean won)</i>	<b>Amount</b>
Consideration	
Cash and cash equivalents	424,500
Total consideration	<u>424,500</u>
Recognized amounts of identifiable assets acquired and liabilities assumed	
Cash and cash equivalents	15,837
Property, plant and equipment, and investment property	575,318
Intangible assets	141,968
Inventories	242,458
Trade and other (non-current) receivables	272,140
Assets held for sale	65,591
Other assets	10,667
Trade and other (non-current) payables	(150,385)
Borrowings	(678,687)
Deferred income tax liabilities	(8,442)
Pension	(38,073)
Provisions	(98,576)
Other liabilities	<u>(23,649)</u>
Total identifiable net assets	326,167
Less: non-controlling interest	<u>16,349</u>
	<u>342,516</u>
Goodwill	<u>81,984</u>
	<u>424,500</u>

The fair value of trade and other (non-current) receivables is \ 272,140 million including trade receivables with a fair value of \ 200,619 million. The gross contractual amount for trade receivables at the acquisition date amounts to \ 296,011 million, of which \ 23,871 million is expected to be uncollectible.

The revenues of ₩188,555 million and net loss of ₩908 million arised after the acquisition date reflected in the consolidated statement of income.

If the acquisition had occurred on January 1, 2016, the consolidated revenue and profit for the period ended June 30, 2016, would have been ₩10,353,025 million and ₩730,080 million, respectively.

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**36. Non-current Assets and Liabilities Held-for-sale**

The Group decided to dispose of certain non-current assets related to the separator division with the approval of the management on September 25, 2015, and the disposal was completed during the six-month period ended June 30, 2016. The Group also decided to dispose of the electrolyte division with the approval of the management on February 29, 2016. The related assets were reclassified as non-current assets held for sale. The disposal is expected to be completed in 2016. Assets and liabilities of FarmHwaong Co.,Ltd., which is acquired as held for sale due to business combination with FarmHannong Co.,Ltd. in April 2016, are included.

Details of assets of disposal group classified as held-for-sale as of June 30, 2016 and December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>June 30, 2016</b>	<b>December 31, 2015</b>
<b>Assets of disposal group</b>		
Property, plant and equipment	41,891	6,500
Investment properties	25,749	-
Other receivables and others	250	-
	<u>67,890</u>	<u>6,500</u>
<b>Liabilities of disposal group</b>		
Other payables and others	36	-
	<u>36</u>	<u>-</u>

Assets of the disposal group were measured at fair value immediately before the initial classification of the assets as held for sale and the related other non-operating expenses (income) is as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Impairment loss (reversal) on property, plant and equipment	1,216	(5,520)
	<u>1,216</u>	<u>(5,520)</u>

**37. Event after the reporting period**

The Group expects to acquire Adhesive film division of LG HAUSYS, LTD. as approved by the Board of Directors on July 20, 2016.