

**LG Chem, Ltd. and Subsidiaries**  
**Consolidated Financial Statements**  
**December 31, 2016 and 2015**

**LG Chem, Ltd. and Subsidiaries**  
**Index**  
**December 31, 2016 and 2015**

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## Independent Auditor's Report

(English Translation of a Report Originally Issued in Korean)

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

We have audited the accompanying consolidated financial statements of LG Chem, Ltd. and its subsidiaries (collectively referred to as "the Group"), which comprise the consolidated statements of financial position as at December 31, 2016 and 2015, and the consolidated statements of profit or loss, consolidated statements of comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies and other explanatory information.

### Management's Responsibilities for the Financial Statements

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

### Auditor's Responsibilities

Our responsibility is to express an opinion on the consolidated financial statements based on our audits. We conducted our audits in accordance with Korean Standards on Auditing. Those standards require that we comply with ethical requirements, and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to



design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### **Opinion**

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of LG Chem, Ltd. and its subsidiaries as at December 31, 2016 and 2015, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with Korean IFRS.

### **Other Matter**

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

Seoul, Korea  
March 8, 2017

This report is effective as of March 8, 2017, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that there is a possibility that the above audit report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

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

<i>(in millions of Korean won)</i>	Notes	2016	2015
<b>Assets</b>			
<b>Current assets</b>			
Cash and cash equivalents	3, 5, 6	1,474,367	1,704,918
Trade receivables	3, 5, 7, 32	3,533,699	3,236,622
Other receivables	3, 5, 7, 32	979,027	1,163,360
Prepaid income taxes		5,753	1,955
Other current financial assets	3, 5, 8, 9	-	93
Other current assets	14	260,793	203,604
Inventories	10	2,965,191	2,338,553
Assets held for sale	36	8,104	6,500
Total current assets		9,226,934	8,655,605
<b>Non-current assets</b>			
Other receivables	3, 5, 7	233,152	106,484
Other financial assets	3, 5, 8	23,448	15,301
Investments in associates and joint ventures	1, 11, 34	260,828	293,747
Deferred income tax assets	29	170,177	98,459
Property, plant and equipment	12	9,680,133	8,867,209
Intangible assets	13	832,144	501,886
Investment properties	12	2,287	-
Other non-current assets	14	57,957	40,037
Total non-current assets		11,260,126	9,923,123
<b>Total assets</b>		20,487,060	18,578,728
<b>Liabilities</b>			
<b>Current liabilities</b>			
Trade payables	3, 5, 32	1,723,252	1,172,488
Other payables	3, 5, 32	971,605	825,606
Borrowings	3, 5, 15	2,212,641	2,150,778
Provisions	16	51,694	9,605
Income tax payables	29	217,973	338,777
Other current liabilities	3, 5, 18	269,644	301,727
Liabilities held for sale	36	42	-
Total current liabilities		5,446,851	4,798,981
<b>Non-current liabilities</b>			
Other payables	3, 5	14,307	1,680
Borrowings	3, 5, 15	678,000	507,928
Provisions	16	133,821	26,907
Net defined benefit liabilities	17	92,172	81,192
Deferred income tax liabilities	29	40,675	30,666
Other non-current liabilities	18	30,267	27,852
Total non-current liabilities		989,242	676,225
<b>Total liabilities</b>		6,436,093	5,475,206

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

<i>(in millions of Korean won)</i>	<b>Notes</b>	<b>2016</b>	<b>2015</b>
<b>Equity</b>			
Share capital	1, 20	369,500	369,500
Capital surplus		1,157,772	1,157,772
Other components of equity	22	(15,699)	(15,699)
Accumulated other comprehensive income		(36,993)	(52,608)
Retained earnings	21	12,462,772	11,532,500
<b>Equity attributable to owners of the Parent Company</b>		<u>13,937,352</u>	<u>12,991,465</u>
<b>Non-controlling interest</b>		113,615	112,057
<b>Total equity</b>		<u>14,050,967</u>	<u>13,103,522</u>
<b>Total liabilities and equity</b>		<u>20,487,060</u>	<u>18,578,728</u>

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

**LG Chem, Ltd. and Subsidiaries**  
**Consolidated Statements of Profit or Loss**  
**Years Ended December 31, 2016 and 2015**

(in millions of Korean won, except per share amounts)

	<b>Notes</b>	<b>2016</b>	<b>2015</b>
<b>Revenue</b>	32, 34	20,659,296	20,206,583
<b>Cost of sales</b>	24, 32	<u>(16,595,060)</u>	<u>(16,540,541)</u>
<b>Gross profit</b>		4,064,236	3,666,042
Selling and administrative expenses	23, 24, 32	<u>(2,072,316)</u>	<u>(1,842,474)</u>
<b>Operating profit</b>	34	1,991,920	1,823,568
Finance income	5, 26	179,940	151,789
Finance costs	5, 26	(300,243)	(234,460)
Share of net profit of associates and joint ventures accounted for using the equity method	11	(3,791)	11,013
Other non-operating income	5, 27	540,612	539,907
Other non-operating expenses	5, 28, 36	<u>(748,610)</u>	<u>(742,174)</u>
<b>Profit before income tax</b>	33	1,659,828	1,549,643
<b>Income tax expense</b>	29	<u>(378,834)</u>	<u>(401,112)</u>
<b>Profit for the period</b>		<u>1,280,994</u>	<u>1,148,531</u>
<b>Profit is attributable to:</b>			
Owners of the Parent Company		1,281,124	1,152,987
Non-controlling interests		(130)	(4,456)
<b>Earnings per share attributable to the equity holders of the Parent Company</b>	30		
Basic and diluted earnings per ordinary share		17,417	15,674
Basic and diluted earnings per preferred share		17,467	15,724

The above consolidated statements of profit or loss should be read in conjunction with the accompanying notes.

**LG Chem, Ltd. and Subsidiaries**  
**Consolidated Statements of Comprehensive Income**  
**Years Ended December 31, 2016 and 2015**

<i>(in millions of Korean won)</i>	<b>Notes</b>	<b>2016</b>	<b>2015</b>
<b>Profit for the period</b>		<u>1,280,994</u>	<u>1,148,531</u>
<b>Other comprehensive income</b>			
<i>Items that will not be reclassified to profit or loss</i>			
Remeasurements of net defined benefit liability	17	(24,766)	(20,789)
Shares of remeasurements of net defined benefit liabilities of associates		(26)	1
Income tax relating to these items		5,982	5,031
<i>Items that may be subsequently reclassified to profit or loss</i>			
Exchange differences on translation of foreign operations		(17,173)	33,330
Changes in valuation of available-for-sale financial instruments	8	2,392	(780)
Shares of other comprehensive loss of joint ventures and associates		(2,330)	(32,445)
Reclassification from disposal of joint ventures		43,378	-
Income tax relating to these items		(13,267)	11,597
<b>Other comprehensive income for the period, net of tax</b>		<u>(5,810)</u>	<u>(4,055)</u>
<b>Total comprehensive income for the period</b>		<u>1,275,184</u>	<u>1,144,476</u>
<b>Total comprehensive income for the period is attributable to:</b>			
Owners of the Parent Company		1,277,921	1,146,855
Non-controlling interest		(2,737)	(2,379)

The above consolidated statements of comprehensive income should be read in conjunction with the accompanying notes.



**LG Chem, Ltd. and Subsidiaries**  
**Consolidated Statements of Changes in Equity**  
**Years Ended December 31, 2016 and 2015**

(in millions of Korean won)

		Attributable to owners of the Parent Company							
	Notes	Share capital	Capital surplus	Other components of equity	Accumulated other comprehensive income	Retained earnings	Total	Non-controlling interests	Total equity
<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		-	-	-	-	1,152,987	1,152,987	(4,456)	1,148,531
Remeasurements of net defined benefit liability	17	-	-	-	-	(15,758)	(15,758)	-	(15,758)
Exchange differences on translation of foreign operations		-	-	-	31,860	-	31,860	2,077	33,937
Change in the fair value of available-for-sale financial instruments		-	-	-	(591)	-	(591)	-	(591)
Others		-	-	-	(21,644)	1	(21,643)	-	(21,643)
<b>Total comprehensive income for the period</b>		-	-	-	9,625	1,137,230	1,146,855	(2,379)	1,144,476
<b>Transactions with owners</b>									
Dividends	31	-	-	-	-	(294,520)	(294,520)	(14,880)	(309,400)
Issuance of share by subsidiaries		-	-	-	-	-	-	3,681	3,681
Others		-	-	-	-	(815)	(815)	(272)	(1,087)
<b>Total transactions with owners</b>		-	-	-	-	(295,335)	(295,335)	(11,471)	(306,806)
<b>Balance at December 31, 2015</b>		369,500	1,157,772	(15,699)	(52,608)	11,532,500	12,991,465	112,057	13,103,522
<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 for the period		-	-	-	-	1,281,124	1,281,124	(130)	1,280,994
Remeasurements of net defined benefit liability	17	-	-	-	-	(18,792)	(18,792)	8	(18,784)
Exchange differences on translation of foreign operations		-	-	-	(16,468)	-	(16,468)	(2,615)	(19,083)
Change in the fair value of available-for-sale financial instruments		-	-	-	1,813	-	1,813	-	1,813
Others		-	-	-	30,270	(26)	30,244	-	30,244
<b>Total comprehensive income for the period</b>		-	-	-	15,615	1,262,306	1,277,921	(2,737)	1,275,184
<b>Transactions with owners:</b>									
Dividends	31	-	-	-	-	(331,287)	(331,287)	(15,259)	(346,546)
Issuance of share by subsidiaries		-	-	-	-	-	-	13,343	13,343
Business combination	35	-	-	-	-	-	-	6,461	6,461
Others		-	-	-	-	(747)	(747)	(250)	(997)
<b>Total transactions with owners</b>		-	-	-	-	(332,034)	(332,034)	4,295	(327,739)
<b>Balance at December 31, 2016</b>		369,500	1,157,772	(15,699)	(36,993)	12,462,772	13,937,352	113,615	14,050,967

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

**LG Chem, Ltd. and Subsidiaries**  
**Consolidated Statements of Cash Flows**  
**Years Ended December 31, 2016 and 2015**

<i>(in millions of Korean won)</i>	<b>Notes</b>	<b>2016</b>	<b>2015</b>
<b>Cash flows from operating activities</b>			
Cash generated from operations	33	3,083,208	3,415,850
Interest received		44,349	34,737
Interest paid		(74,867)	(65,092)
Dividends received		18,426	33,500
Income taxes paid		(554,419)	(246,865)
<b>Net cash inflow from operating activities</b>		<u>2,516,697</u>	<u>3,172,130</u>
<b>Cash flows from investing activities</b>			
Decrease in other receivables		901,547	934,141
Decrease in other non-current receivables		58,706	27,111
Proceeds from disposal of investments in joint ventures		23,724	-
Proceeds from disposal of available-for-sale financial assets		62	2,991
Proceeds from disposal of property, plant and equipment		17,522	163,684
Proceeds from disposal of intangible assets		540	14,115
Government grants received		-	69,410
Increase in other receivables		(610,722)	(1,143,614)
Increase in other non-current receivables		(97,272)	(45,599)
Acquisition of investments in associates and joint ventures		(17,555)	(150)
Acquisition of available-for-sale financial assets		(3,461)	(12,852)
Acquisition of property, plant and equipment		(1,398,503)	(1,633,410)
Acquisition of intangible assets		(74,111)	(73,611)
Business combination, net of cash acquired	35	(537,276)	-
<b>Net cash outflow from investing activities</b>		<u>(1,736,799)</u>	<u>(1,697,784)</u>
<b>Cash flows from financing activities</b>			
Proceeds from borrowings		611,891	186,139
Capital contribution from non-controlling interests		12,969	3,691
Repayments of borrowings		(1,285,656)	(637,885)
Dividends		(346,485)	(309,412)
<b>Net cash outflow from financing activities</b>		<u>(1,007,281)</u>	<u>(757,467)</u>
<b>Net increase (decrease) in cash and cash equivalents</b>		(227,383)	716,879
Cash and cash equivalents at the beginning of the financial year		1,704,918	988,016
Effects of exchange rate changes on cash and cash equivalents		(3,168)	23
<b>Cash and cash equivalents at the end of the year in the consolidated statement of financial position</b>		<u>1,474,367</u>	<u>1,704,918</u>

The above consolidated statements of cash flows should be read in conjunction with the accompanying notes.

# LG Chem, Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2016 and 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 referred to as “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. (now LG Corp., formerly LG Chemical Ltd.).

As at December 31, 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 at December 31, 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 solutions, IT & Electronics 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 solutions 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 and cylindrical batteries applied to EV 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. A demand for ESS is expanding with an increasing importance of efficient usage of electricity and generation of renewable energy.

The IT & Electronics material business manufactures and supplies various kinds of IT materials such as polarizer, Glass Substrate, OLED film, semiconductor materials and RO membranes, 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 Consolidated Financial Statements

### December 31, 2016 and 2015

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

	December 31, 2016			
	Percentage of ownership (%)	Business location	Closing month	Business activities
<b>Consolidated subsidiaries</b>				
Ningbo LG Yongxing Chemical Co., Ltd. <sup>1</sup>	75	China	December	ABS/SBL manufacturing and sales
Ningbo Zhenhai LG Yongxing Trade Co., Ltd. <sup>1</sup>	75	China	December	ABS sales
LG Chem HK Ltd.	100	Hong Kong	December	Sales and trading
LG Chem America, Inc.	100	USA	December	Sales and trading
LG Chemical India Pvt. Ltd. <sup>2</sup>	100	India	December	Synthetic resin manufacturing and sales
LG Polymers India Pvt. Ltd. <sup>2</sup>	100	India	December	PS manufacturing
LG Chemical (Guangzhou) Engineering Plastics Co., Ltd.	100	China	December	EP manufacturing and sales
LG Chem (Nanjing) Information & Electronics Materials Co., Ltd. <sup>3</sup>	100	China	December	Battery/ Polarizer Manufacturing and sales
LG Chem (Taiwan), Ltd.	100	Taiwan	December	Polarizer manufacturing and sales
LG Chem Display Materials (Beijing) Co., Ltd.	100	China	December	Polarizer manufacturing
Tianjin LG Bohai Chemical Co., Ltd. <sup>4</sup>	75	China	December	PVC, VCM, EDC manufacturing and sales
Tianjin LG BOTIAN Chemical Co., Ltd. <sup>4</sup>	56	China	December	SBS manufacturing and sales
LG Chem (China) Investment Co., Ltd. <sup>5</sup>	100	China	December	China holding company
LG Chem (Tianjin) Engineering Plastics Co., Ltd.	100	China	December	ABS/EP manufacturing and sales
LG Chem Europe GmbH	100	Germany	December	Sales and trading
LG Chem Poland Sp. z o.o.	100	Poland	December	Polarizer manufacturing
LG Chem Michigan Inc.	100	USA	December	Automotive battery research and manufacturing
LG Chem Power Inc.	100	USA	December	Automotive battery research
LGC Petrochemical India Private Ltd.	100	India	December	Synthetic resin manufacturing and sales
HAENGBOKNURI CO.,LTD.	100	Korea	December	Facility management and general cleaning
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	100	Turkey	December	Sales and trading
LG Chem Japan Co., Ltd.	100	Japan	December	Sales and trading
LG NanoH2O, Inc. <sup>6</sup>	100	USA	December	Water processing membrane research and manufacturing
NanoH2O Singapore Private Ltd. <sup>6</sup>	100	Singapore	December	Water processing membrane research and manufacturing
NanoH2O (Jiangsu) Water Processing Technology Co. Ltd. <sup>6</sup>	100	China	December	Water processing membrane research and manufacturing
Nanjing LG Chem New Energy Battery Co., Ltd. <sup>7</sup>	50	China	December	Automotive battery manufacturing and sales
LG Chem (Chongqing) Engineering Plastics Co., Ltd.	100	China	December	EP manufacturing and sales
LG Chem Wroclaw Energy sp. z o.o. <sup>8</sup>	100	Poland	December	Automotive battery research and manufacturing
LG Chem(HUIZHOU) Petrochemical Co., Ltd. <sup>9</sup>	70	China	December	ABS manufacturing and sales
FarmHannong Co.,Ltd. <sup>10</sup>	100	Korea	December	Agricultural pesticide manufacturing
Cecel.Co.,Ltd <sup>10</sup>	71	Korea	December	Biologicals manufacturing
FarmBiotec Co.,Ltd. <sup>10</sup>	100	Korea	December	Sanitizer and insecticide for house manufacturing
AGROTECH CO.,LTD. <sup>10</sup>	100	Korea	December	Agricultural pesticide manufacturing
FarmHwaong Co.,Ltd. <sup>10,11</sup>	58	Korea	December	Vegetables and fruit farming
Dongbu Farm Hannong (Heilongjiang) Chemical Co., Ltd. <sup>10</sup>	100	China	December	Agricultural pesticide manufacturing

# LG Chem, Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2016 and 2015

#### Associates

LG Holdings (HK) Ltd.	26	Hong Kong	December	Sales and trading
TECWIN Co., Ltd.	21	Korea	December	Environment solution and Construction of chemical plant
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA. <sup>12</sup>	100	Brazil	December	Sales and trading
LG Chem Malaysia SDN.BHD. <sup>12</sup>	100	Malaysia	December	Sales and trading
LG Fuel Cell Systems Inc. <sup>13</sup>	22	USA	December	Power fuel cell research

#### Joint ventures

LG VINA Chemical Co., Ltd.	40	Vietnam	December	DOP production and sales
HL Greenpower Co., Ltd.	49	Korea	December	Battery manufacturing for electric automobile
SEETEC Co., Ltd.	50	Korea	December	Plant utility and distribution, research assistance service

<sup>1</sup> As at December 31, 2016, Ningbo LG Yongxing Chemical Co.,Ltd. owns 100% of Ningbo Zhenhai LG Yongxing Trade Co.,Ltd.'s shares.

<sup>2</sup> As at December 31, 2016, LG Chemical India Pvt. Ltd. owns 100% of LG Polymer India Pvt. Ltd.'s shares.

<sup>3</sup> During the year, the Parent Company acquired additional shares of LG Chem (Nanjing) Information & Electronics Materials Co., Ltd. for ₩80,356 million.

<sup>4</sup> As at December 31, 2016, Tianjin LG Bohai Chemical Co., Ltd. owns 20.30% of Tianjin LG BOTIAN Chemical Co., Ltd.'s shares.

<sup>5</sup> During the year, the Parent Company acquired additional shares of LG Chem (China) Investment Co., Ltd. for ₩7,165 million.

<sup>6</sup> As at December 31, 2016, LG NanoH2O, Inc. owns 100% of NanoH2O Singapore Private Ltd.'s shares. The Parent Company acquired 100% shares of NanoH2O (Jiangsu) Water Processing Technology Co. Ltd. for ₩6,400 million from NanoH2O Singapore Private Ltd during the year.

<sup>7</sup> Although the Parent Company owns less than 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. During the year, the Parent Company acquired additional shares of LG Chem (Nanjing) New Energy Battery Co., Ltd., for ₩7,823 million.

<sup>8</sup> LG Chem Wroclaw Energy sp.z o.o. was established during the year, and the Parent Company newly acquired 100% shares of LG Chem Wroclaw Energy sp.z o.o. for ₩10,468 million.

<sup>9</sup> During the year, the Parent Company acquired additional 20% shares of CNOOC & LG Petrochemicals Co., Ltd. for ₩58,771 million, and investment in joint ventures of ₩40,230 million was reclassified to investment in subsidiaries. After acquiring control, the Company changed its name to LG Chem(HUIZHOU) Petrochemical Co., Ltd.

<sup>10</sup> During the year, 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 year. FarmHannong Co.,Ltd. owns 100% shares of FarmBiotec Co.,Ltd., AGROTECH CO.,LTD., and Dongbu Farm Hannong (Heilongjiang) Chemical Co.,Ltd. and also holds 71.05% shares of Cecel.Co.,Ltd, and 57.87% shares of FarmHwaong Co.,Ltd. Meanwhile, FarmHannong Co.,Ltd. merged with FarmHungnong Co.,Ltd. and ChemGreen Energy Co.,Ltd. The Parent Company's subsidiaries (FarmCeres Co.,Ltd., FarmPFI Co., Ltd., SaemangeumFarm Co.,Ltd, and Dongbu Farm Hannong Australia Pty., Ltd.) and an associate (Superfert Dongbu Pty Ltd.) were liquidated during the year.

<sup>11</sup> As at December 31, 2016, FarmHwaong Co.,Ltd.'s assets and liabilities are classified as assets and liabilities held for sale (Note 36).

<sup>12</sup> Classified as an investment in associate due to its small size.

<sup>13</sup> During the year, the Parent Company acquired additional shares of LG Fuel Cell Systems Inc. for ₩17,555 million.

**LG Chem, Ltd. and Subsidiaries**  
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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)

	December 31, 2016				Profit (loss) for the year
	Assets	Liabilities	Equity	Revenue	
<b>Subsidiaries</b>					
Ningbo LG Yongxing Chemical Co.,Ltd.	676,217	249,084	427,133	1,528,940	77,200
Ningbo Zhenhai LG Yongxing Trade Co.,Ltd.	8,464	5,687	2,777	32,158	677
LG Chem HK Ltd.	108,970	90,142	18,828	493,682	561
LG Chem America, Inc.	176,522	156,627	19,895	639,788	2,559
LG Chemical India Pvt. Ltd.	32,761	6	32,755	-	16
LG Polymers India Pvt. Ltd.	89,187	18,073	71,114	199,043	11,082
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	112,309	45,195	67,114	155,333	5,240
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	2,357,476	1,593,091	764,385	2,316,666	(29,160)
LG Chem (Taiwan), Ltd.	133,777	66,712	67,065	195,361	5,909
LG Chem Display Materials (Beijing) Co.,Ltd.	37,473	9,910	27,563	56,893	1,758
Tianjin LG Bohai Chemical Co.,Ltd.	311,868	262,247	49,621	449,390	(48,051)
Tianjin LG BOTIAN Chemical Co.,Ltd.	54,947	57,176	(2,229)	131,343	7,032
LG Chem (China) Investment Co.,Ltd.	243,675	129,390	114,285	49,394	3,730
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	65,316	17,080	48,236	96,062	3,645
LG Chem Europe GmbH	177,371	154,464	22,907	429,444	5,025
LG Chem Poland Sp. z o.o.	50,133	20,220	29,913	75,698	2,979
LG Chem Michigan Inc.	245,278	161,224	84,054	195,733	44,920
LG Chem Power Inc.	20,042	7,253	12,789	37,173	10,013
LGC Petrochemical India Private Ltd.	2,153	398	1,755	4,229	484
HAENGBOKNURI CO.,LTD.	1,950	790	1,160	5,965	5
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	4,139	2,757	1,382	21,437	410
LG Chem Japan Co.,Ltd.	3,115	368	2,747	5,259	502
LG NanoH2O, Inc. <sup>1</sup>	11,318	3,565	7,753	17,713	1,413
NanoH2O (Jiangsu) Water Processing Technology Co. Ltd.	6,463	1,242	5,221	-	(1,110)
Nanjing LG Chem New Energy Battery Co.,Ltd.	298,201	254,678	43,523	100,003	(17,562)
LG Chem (Chongqing) Engineering Plastics Co.,Ltd.	41,390	35,957	5,433	10,302	(2,812)
LG Chem Wroclaw Energy sp. z o.o.	18,009	9,725	8,284	-	(2,059)
LG Chem(HUIZHOU) Petrochemical Co., Ltd.	334,007	262,755	71,252	-	-
FarmHannong Co.,Ltd. <sup>1</sup>	1,129,257	601,749	527,508	325,327	(133,178)
<b>Associates</b>					
LG Holdings (HK) Ltd.	379,243	98,434	280,809	51,421	13,671
TECWIN Co., Ltd.	64,015	25,735	38,280	83,975	4,065
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	89	112	(23)	1,801	(23)
LG Chem Malaysia SDN.BHD.	226	17	209	578	47
LG Fuel Cell Systems Inc.	59,468	74,366	(14,898)	2,998	(47,508)
<b>Joint ventures</b>					
LG VINA Chemical Co., Ltd.	19,786	10,121	9,665	51,609	2,266
HL Greenpower Co., Ltd.	151,411	116,896	34,515	219,496	723
SEETEC Co., Ltd.	351,603	45,529	306,074	467,225	17,053

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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>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 Trading 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	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 NanoH <sub>2</sub> O, 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 INTERMEDIACAO 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.

# LG Chem, Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

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#### 1.5 Changes in Scope for Consolidation

Subsidiaries newly included in the consolidation for the year ended December 31, 2016, are as follows:

Subsidiary	Reason
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 Co., Ltd.	Business combination
Dongbu Farm Hannong Australia Pty., Ltd.	Business combination
LG Chem Wroclaw Energy sp. z o.o.	Newly established
LG Chem(HUIZHOU) Petrochemical Co., Ltd.	Business combination

Subsidiaries excluded from the consolidation for the year ended December 31, 2016, are as follows:

Subsidiary	Reason
FarmHungnong Co.,Ltd.	Merged with FarmHannong Co.,Ltd.
ChemGreen Energy Co.,Ltd	Merged with FarmHannong Co.,Ltd.
FarmCeres Co.,Ltd.	Liquidated
FarmPFI Co., Ltd.	Liquidated
SaemangeumFarm Co.,Ltd	Liquidated
Dongbu Farm Hannong Australia Pty., Ltd.	Liquidated

## 2. Summary of Significant Accounting Policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years 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 International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS). The accompanying 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 consolidated financial statements.

The consolidated financial statements of the Group have been prepared in accordance with Korean IFRS. These are the standards, subsequent amendments and related interpretations issued by the International Accounting Standards Board (IASB) that have been adopted by the Republic of Korea.



# LG Chem, Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2016 and 2015

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The preparation of financial statements requires the use of critical accounting estimates. Management also needs to exercise judgement in applying the Group's accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 4.

#### 2.2 Changes in Accounting Policy and Disclosures

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

The Group has applied the following standards and amendments for the first time for their annual reporting period commencing January 1, 2016. The adoption of these amendments did not have a material impact on the current period or any prior period and is not likely to affect future periods.

- 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*
- Amendment to Korean IFRS 1016 *Property, Plant and Equipment*, and Korean IFRS 1041 *Agriculture*
- 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 Arrangement*
- Annual Improvements to Korean IFRS 2012-2014 *Cycle*

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

Certain new accounting standards and interpretations that have been published that are not mandatory for December 31, 2016 reporting periods and have not been early adopted by the Group are set out below.

- Korean IFRS 1109 *Financial Instruments*

The new standard for financial instruments issued on September 25, 2015 are effective for annual periods beginning on or after January 1, 2018 with early application permitted. This standard will replace Korean IFRS 1039 *Financial Instruments: Recognition and Measurement*. The Group will apply the standards for annual periods beginning on or after January 1, 2018.

The standard requires retrospective application with some exceptions. For example, an entity is not required to restate prior period in relation to classification and measurement (including impairment) of financial instruments. The standard requires prospective application of its hedge accounting requirements for all hedging relationships except the accounting for time value of options and other exceptions.

Korean IFRS 1109 *Financial Instruments* requires all financial assets to be classified and measured on the basis of the entity's business model for managing financial assets and the contractual cash flow characteristics of the financial assets. A new impairment model, an expected credit loss model, is introduced and any subsequent changes in expected credit losses will be recognized in profit or loss. Also, hedge accounting rules amended to extend the hedging relationship, which consists only of eligible hedging instruments and hedged items, qualifies for hedge accounting.

# LG Chem, Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

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An effective implementation of Korean IFRS 1109 requires preparation processes including financial impact assessment, accounting policy establishment, accounting system development and the system stabilization. The impact on the Group's financial statements due to the application of the standard is dependent on judgements made in applying the standard, financial instruments held by the Group and macroeconomic variables.

With the implementation of Korean IFRS 1109 the Group is preparing for internal management process and is beginning to adjust accounting system for financial instruments reporting. Also, the Group is analyzing the financial effects of applying the standard.

#### - Korean IFRS 1115 *Revenue from Contracts with Customers*

The Group will apply Korean IFRS 1115, *Revenue from Contracts with Customers* issued on November 6, 2015 for annual reporting periods beginning on or after January 1, 2018. Earlier adoption is permitted under Korean IFRS. This standard replaces Korean IFRS 1018 *Revenue*, Korean IFRS 1011 *Construction Contracts*, Interpretation 2031, *Revenue-Barter Transactions Involving Advertising Services*, Interpretation 2113, *Customer Loyalty Programs*, Interpretation 2115, *Agreements for the Construction of Real Estate* and Interpretation 2118, *Transfers of assets from customers*. The Group will apply Korean IFRS 1115 *Revenue from Contracts with Customers* within annual reporting periods beginning on or after January 1, 2018.

The new standard is based on the principle that revenue is recognized when control of a good or service transfers to a customer so the notion of control replaces the existing notion of risks and rewards. A new five-step process must be applied before revenue from contract with customer can be recognized:

- Identify contracts with customers
- Identify the separate performance obligation
- Determine the transaction price of the contract
- Allocate the transaction price to each of the separate performance obligations, and
- Recognize the revenue as each performance obligation is satisfied.

As at December 31, 2016, the Group is preparing for internal management process and is beginning to adjust accounting system in relation to implementation of Korean IFRS 1115. Also, the Group is analyzing the financial effects of applying the standard.

- Amendments to Korean IFRS 1007 *Statement of Cash Flows*
- Amendments to Korean IFRS 1012 *Income Tax*
- Amendments to Korean IFRS 1102 *Share-based Payment*

# LG Chem, Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2016 and 2015

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#### 2.3 Consolidation

The Group has prepared the consolidated financial statements in accordance with Korean IFRS 1110 *Consolidated Financial Statements*.

##### *(1) Subsidiaries*

Subsidiaries are all entities over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power to direct the activities of the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases.

The acquisition method of accounting is used to account for business combinations by the Group. The consideration transferred is measured at the fair values of the assets transferred, and identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The Group recognizes any non-controlling interest in the acquired entity on an acquisition-by-acquisition basis either at fair value or at the non-controlling interest's proportionate share of the acquired entity's net identifiable assets. All other non-controlling interests are measured at fair values, unless otherwise required by other standards. Acquisition-related costs are expensed as incurred.

The excess of consideration transferred, amount of any non-controlling interest in the acquired entity and acquisition-date fair value of any previous equity interest in the acquired entity over the fair value of the net identifiable assets acquired is recorded as goodwill. If those amounts are less than the fair value of the net identifiable assets of the business acquired, the difference is recognized directly in the profit or loss as a bargain purchase.

Intercompany transactions, balances and unrealized gains on transactions between group companies are eliminated. Unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the transferred asset. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

##### *(2) Associates*

Associates are entities over which the Group has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting, after initially being recognized at cost. Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interest in the associates. If there is objective evidence of impairment for the investment in the associate, the Group recognizes the difference between the recoverable amount of the associate and its carrying amount as impairment loss.

##### *(3) Joint Arrangements*

A joint arrangement, wherein two or more parties have joint control, is classified as either a joint operation or a joint venture. A joint operator recognizes its direct right to the assets, liabilities, revenues and expenses of joint operations and its share of any jointly held or incurred assets, liabilities, revenues and expenses. Interests in joint ventures are accounted for using the equity method, after initially being recognized at cost in the consolidated statement of financial position.

# LG Chem, Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2016 and 2015

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#### 2.4 Segment Reporting

Information of each operating segment is reported in a manner consistent with the business segment reporting provided to the chief operating decision-maker (Note 34). The chief operating decision-maker, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as the Corporate Management Committee that makes strategic decisions.

#### 2.5 Foreign Currency Translation

##### *(1) Functional and presentation currency*

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which each entity operates (the "functional currency"). The consolidated financial statements are presented in Korean won, which is the Parent Company's functional and presentation currency.

##### *(2) Transactions and balances*

Foreign currency transactions are translated into the functional currency using the exchange rates at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies at year end exchange rates are generally recognized in profit or loss.

Non-monetary items that are measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was determined. Translation differences on assets and liabilities carried at fair value are reported as part of the fair value gain or loss. For example, translation differences on non-monetary assets and liabilities such as equities held at fair value through profit or loss are recognized in profit or loss as part of the fair value gain or loss and translation differences on non-monetary assets such as equities classified as available-for-sale financial assets are recognized in other comprehensive income.

##### *(3) Translation into the presentation currency*

The results and financial position of foreign operations that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- i) assets and liabilities for each statement of financial position presented are translated at the closing rate at the end of the reporting period;
- ii) income and expenses for each statement of income are translated at monthly average exchange rates; and
- iii) equity is translated at the historical exchange rate; and
- iv) all resulting exchange differences are recognized in other comprehensive income.

#### 2.6 Cash and Cash Equivalents

Cash and cash equivalents include cash in hand, deposits held at call with banks, other short-term highly liquid investments with original maturities of three months or less.

# LG Chem, Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2016 and 2015

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#### 2.7 Financial Assets

##### *(a) Classification and measurement*

The Group classifies its financial assets into the following categories: financial assets at fair value through profit or loss, available-for-sale financial assets, loans and receivables, and held-to-maturity financial assets. Regular way purchases and sales of financial assets are recognized on trade-date, the date on which the Group commits to purchase or sell the asset.

At initial recognition, the Group measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss. Available-for-sale financial assets and financial assets at fair value through profit or loss are subsequently carried at fair value. And, loans and receivables and held-to-maturity investments are subsequently carried at amortized cost using the effective interest method.

Gains or losses arising from changes in the fair value of financial assets at fair value through profit or loss are recognized in profit or loss within other income or other expenses. Gains or losses arising from changes in the available-for-sale financial assets are recognized in other comprehensive income, and amounts are reclassified to profit or loss when the associated assets are sold or impaired.

##### *(b) Impairment*

The Group assesses at the end of each reporting period whether there is objective evidence that a financial asset or a group of financial assets is impaired. A financial asset or a group of financial assets is impaired and impairment losses are incurred only if there is objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset (a 'loss event') and that loss event (or events) has an impact on the estimated future cash flows of the financial asset or a group of financial assets that can be reliably estimated.

Impairment of loans and receivables is presented as a deduction in an allowance account, and that of other financial assets is directly deducted from their carrying amount. The Group writes off financial assets when the assets are determined to be no longer recoverable.

The Group considers that there is objective evidence of impairment if significant financial difficulties of the debtor, or delinquency in interest or principal payments for more than three months is indicated. Moreover, in the case of equity investments classified as available-for-sale, a significant decline in the fair value of the security below its cost significantly or prolonged decline is considered an objective evidence of impairment.

##### *(c) Derecognition*

If a transfer does not result in derecognition because the Group has retained substantially all the risks and rewards of ownership of the transferred asset, the Group continues to recognize the transferred asset in its entirety and recognizes a financial liability for the consideration received. The Group classified the financial liability as 'borrowings' in the statement of financial position (Note 15).

# LG Chem, Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2016 and 2015

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#### 2.8 Derivative Financial Instruments

Derivatives are initially recognized at fair value on the date when a derivative contract is entered into and are subsequently re-measured at their fair value at the end of each reporting period. Changes in the fair value of any derivative instrument that does not qualify for hedge accounting are recognized immediately in profit or loss within 'other non-operating income (expenses)' or 'finance income (costs)' based on the nature of transactions.

#### 2.9 Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using weighted average cost method, except for goods in transit which is determined using the specific identification method.

#### 2.10 Biological Assets

Biological assets are measured at its fair value less estimated costs to sell and a change in fair value less estimated costs to sell of biological assets is included in profit or loss for the period in which it arises.

#### 2.11 Assets Held for sale

Assets are classified as held for sale when their carrying amount will be recovered principally through a sale transaction rather than through continuing use and a sale is considered highly probable. The assets are measured at the lower amount between their carrying amount and the fair value less costs to sell.

#### 2.12 Property, Plant and Equipment

Property, plant and equipment are stated at historical cost less accumulated depreciation and accumulated impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Depreciation of all property, plant and equipment, except for land, is calculated using the straight-line method to allocate their cost or revalued amounts, net of their residual values, over their estimated useful lives as follows:

	Useful lives
Buildings	25 - 50 years
Structures	5 - 50 years
Machinery	4 - 15 years
Others	1 - 6 years

The assets' depreciation method, residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

# LG Chem, Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

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#### 2.13 Investment Property

Investment property is property held to earn rentals or for capital appreciation or both. An investment property is measured initially at its cost. An investment property is measured after initial measurement at depreciated cost (less any accumulated impairment losses). The Group depreciates investment properties, except for land, using the straight-line method over their useful lives of 15 ~ 50 years.

#### 2.14 Borrowing Costs

General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalized during the period of time that is required to complete and prepare the asset for its intended use or sale. Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization. Other borrowing costs are expensed in the period in which they are incurred.

#### 2.15 Government Grants

Grants from the government are recognized at their fair value where there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions. Government grants related to assets are presented in the statement of financial position either by deducting the grant in arriving at the carrying amount of the asset, and government grants related to costs are deferred and recognized in the profit or loss over the period necessary to match them with the costs that they are intended to compensate.

#### 2.16 Intangible Assets

Goodwill is measured as explained in Note 2.3.(1) and carried at its cost less accumulated impairment losses. Impairment losses on goodwill are not reversed.

Intangible assets, except for goodwill, are initially recognized at its historical cost and carried at its cost less accumulated amortization and accumulated impairment losses.

Software development costs that are directly attributable to internally generated by the Group are recognized when the criteria; such as, technically feasible, generate probable future economic benefits and other, are met. Membership rights that have an indefinite useful life are not subject to amortization because there is no foreseeable limit to the period over which the assets are expected to be utilized. The Group amortizes intangible assets with a limited useful life using the straight-line method over the following periods:

	<b>Useful lives</b>
Software development costs	3 - 6 years
Industrial property rights	5 - 15 years
Others	5 - 20 years

# LG Chem, Ltd. and Subsidiaries

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#### 2.17 Research and Development

Costs associated with research are recognized as an expense as incurred. Costs that are identifiable, controllable and directly attributable to development projects are recognized as intangible asset when the following criteria are met:

- It is technically feasible to complete the development project so that it will be available for use;
- Management intends to complete the development project for its own use or selling;
- There is an ability to use or sell the development project;
- It can be demonstrated how the development project will generate probable future economic benefits;
- Adequate technical, financial resources and other resources to complete the development and to use or sell the development project are available; and
- The expenditure attributable to the development project during its development can be reliably measured.

Other development expenditures that do not meet these criteria are recognized as an expense as incurred. Development costs previously recognized as an expense are not recognized as an asset in a subsequent period. Capitalized development costs that are recognized as intangible assets are amortized using the straight-line method over their estimated useful lives of three to six years when the assets are available for use and are tested for impairment.

#### 2.18 Impairment of Non-financial Assets

Goodwill and intangible assets that have an indefinite useful life are not subject to amortization and are tested annually for impairment, or more frequently if events or changes in circumstances indicate that they might be impaired. Other assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. Non-financial assets other than goodwill that suffered an impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

#### 2.19 Financial Liabilities

##### *(a) Classification and measurement*

The Group's financial liabilities at fair value through profit or loss are financial instruments held for trading. A financial liability is held for trading if it is incurred principally for the purpose of repurchasing in the near term. A derivative that is not a designated as hedging instruments and an embedded derivative that is separated are also classified as held for trading.

The Group classifies non-derivative financial liabilities, except for financial liabilities at fair value through profit or loss, financial guarantee contracts and financial liabilities that arise when a transfer of financial assets does not qualify for derecognition, as financial liabilities carried at amortized cost and present as 'trade payables', 'borrowings', and 'other payables' in the statement of financial position.



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#### *(b) Derecognition*

Financial liabilities are removed from the statement of financial position when it is extinguished; for example, when the obligation specified in the contract is discharged or cancelled or expired or when the terms of an existing financial liability are substantially modified.

#### **2.20 Current and Deferred Tax**

The tax expense for the period consists of current and deferred tax. Current and deferred tax is recognized in profit or loss, except to the extent that it relates to items recognized in other comprehensive income or directly in equity. In this case, the tax is also recognized in other comprehensive income or directly in equity, respectively. The tax expense is measured at the amount expected to be paid to the taxation authorities, using the tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Deferred income tax is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. However, deferred income tax is not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss.

Deferred tax assets are recognized only if it is probable that future taxable amounts will be available to utilize those temporary differences and losses.

The Group recognizes a deferred tax liability all taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint arrangements, except to the extent that the Group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. In addition, The Group recognizes a deferred tax asset for all deductible temporary differences arising from such investments to the extent that it is probable the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis.

#### **2.21 Provisions**

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation and the increase in the provision due to passage of time is recognized as interest expense.

#### **2.22 Greenhouse Gas Emissions Permits and Obligations**

With enforcement of *The Act on the Allocation and Trading of Greenhouse Gas Emission Permits*, the permits that are received free of charge from the government are measured at zero while permits purchased are measured at acquisition cost and stated net of accumulated impairment loss. Emissions obligations are measured as the sum of the carrying amount of the allocated permits that will be submitted to the government and the best estimate of expenditure required to

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settle the obligation at the end of reporting period for any excess emission. The permits and emissions obligations are classified as intangible assets and provisions, respectively, in the consolidated statement of financial position.

#### 2.23 Employee Benefits

##### *(a) Post-employment benefits*

The Group operates both defined contribution and defined benefit pension plans. For defined contribution plans, the Group pays contribution to publicly or privately administered pension insurance plans on mandatory, contractual or voluntary basis. The Group has no further payment obligation once the contribution have been paid. The contribution are recognized as employee benefit expense when they are due.

A defined benefit plan is a pension plan that is not a defined contribution plan. Generally, post-employment benefits are payable after the completion of employment, and the benefit amount depended on the employee's age, periods of service or salary levels. The liability recognized in the statement of financial position in respect of defined benefit pension plans is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid, and that have terms approximating to the terms of the related obligation. Remeasurement gains and losses arising from experience adjustments and changes in actuarial assumptions are recognized in the period in which they occur, directly in other comprehensive income.

Changes in the present value of the defined benefit obligation resulting from plan amendments or curtailments are recognized immediately in profit or loss as past service costs.

##### *(b) Other long-term employee benefits*

Certain entities within the Group provide long-term employee benefits that are entitled to employees with service period for ten years and above. The expected costs of these benefits are accrued over the period of employment using the same accounting methodology as used for defined benefit pension plans. The Group recognizes service cost, net interest on other long-term employee benefits and remeasurements as profit or loss for the periods. These liabilities are valued annually by an independent qualified actuary.

#### 2.24 Revenue Recognition

Revenue is measured at the fair value of the consideration received or receivable for the sale of goods or rendering of services arising from the normal course of the business. Amounts disclosed as revenue are net of value added taxes, returns, rebates and discounts and after elimination of inter-company transactions.

The Group recognizes revenue when the amount of revenue can be reliably measured, it is probable that future economic benefits will flow to the Group and when specific criteria have been met for each of the Group's activities as described below. The Group bases its estimate on historical results, taking into consideration the type of customer, the type of transaction and the specifics of each arrangement.

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#### *(a) Sales of goods*

Sales of goods are recognized upon delivery of products to customers. The Group recognizes provisions for product warranties and sales returns based on reasonable expectation reflecting warranty obligation and sales return rates incurred historically.

#### *(b) Interest income*

Interest income is recognized using the effective interest method according to the time passed. When a loan and receivable is impaired, the Group reduces the carrying amount to its recoverable amount and continues unwinding the discount as interest income. Interest income on impaired loans and receivables is recognized using the original effective interest rate.

#### *(c) Dividend income*

Dividend income is recognized when the right to receive payment is established.

#### *(d) Royalty income*

Royalty income is recognized on an accrual basis in accordance with the substance of the relevant agreements.

### **2.25 Lease**

A lease is an agreement, whereby the lessor conveys to the lessee, in return for a payment or series of payments, the right to use an asset for an agreed period of time. Leases in which a significant portion of the risks and rewards of ownership are not transferred to the Group are classified as operating leases. Payments made under operating leases are charge to profit or loss on a straight-line basis over the period of lease.

Leases where the Group, as lessee, has substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalized at the lease's inception at the fair value of the leased property or, if lower, the present value of the minimum lease payments. The corresponding rental obligations, net of finance charges, are included in other short-term and long-term payables. Each lease payment is allocated between the liability and finance cost.

If the Group is a lessor, a lease is classified as a finance lease if it transfers substantially all the risks and rewards incidental to ownership at the inception of the lease. A lease other than a finance lease is classified as an operating lease. Lease income from operating leases is recognized in income on a straight-line basis over the lease term. Initial direct costs incurred by the lessor in negotiating and arranging an operating lease is added to the carrying amount of the leased asset and recognized as an expense over the lease term on the same basis as the lease 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 financial performance of the Group. The Group uses derivative financial instruments to hedge certain risk exposures.

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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, investment of excess liquidity.

(1) Market risk

1) Foreign exchange risk

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

Management has set up a policy to require group 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 at December 31, 2016 and 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>December 31, 2016</b>		<b>December 31, 2015</b>	
	<b>Assets</b>	<b>Liabilities</b>	<b>Assets</b>	<b>Liabilities</b>
USD	1,667,146	2,263,717	1,789,793	2,440,000
EUR	78,532	90,506	78,023	127,879
JPY	29,169	113,351	16,686	135,589
GBP and others	33,534	2,187	43,027	1,318

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

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>		<b>December 31, 2015</b>	
	<b>10% Increase</b>	<b>10% Decrease</b>	<b>10% Increase</b>	<b>10% Decrease</b>
USD	(59,657)	59,657	(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.

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2) Price risk

The Group is exposed to equity securities price risk arises from investments held by the Group and classified in the separate statement of financial position either as available-for-sale or at fair value through profit or loss. The Group's equity investments are publicly traded and are related to the KOSPI index.

The table below summarizes the impact of increases/decreases of the listed stock price index on the Group's equity before tax effects as at December 31, 2016 and 2015. The analysis is based on the assumption that the equity index has increased/decreased by 10% with all other variables held constant, and that all the Group's equity instruments moved in line with the index.

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>		<b>December 31, 2015</b>	
	<b>10%</b>	<b>10%</b>	<b>10%</b>	<b>10%</b>
	<b>Increase</b>	<b>Decrease</b>	<b>Increase</b>	<b>Decrease</b>
KOSPI	1,134	(1,134)	1,067	(1,067)

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 in interest rates fluctuations and 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 table below summarizes the impact of increases/decreases of interest rate on the Group's equity and post-tax profit for the period. The analysis is based on the assumption that the interest rate has increased/decreased by 1% (100 basis points) with all other variables held constant.

<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	(17,451)	(17,373)	(17,451)	(17,373)
Decrease	17,451	17,373	17,451	17,373

(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.

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The maximum exposure to credit risk as at December 31, 2016 and 2015, is as follows:

*(in millions of Korean won)*

	<b>December 31, 2016</b>		
	<b>Amount before provision</b>	<b>Provision for impairment</b>	<b>Book amount (maximum exposure)</b>
Loans and receivables (excluding cash on hand)	6,233,784	(13,594)	6,220,190
Financial assets at fair value through profit or loss	-	-	-
<b>Total</b>	<b>6,233,784</b>	<b>(13,594)</b>	<b>6,220,190</b>

*(in millions of Korean won)*

	<b>December 31, 2015</b>		
	<b>Amount before provision</b>	<b>Provision for impairment</b>	<b>Book amount (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>

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**

Finance team of the Group 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 (where applicable) on any of its borrowing facilities. The Group's liquidity management policy involves projecting cash flows in major currencies and considering the level of liquid assets necessary to meet these, monitoring balance sheet liquidity ratios against internal and external regulatory requirements and maintaining debt financing plans.

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

(in millions of Korean won)

	December 31, 2016			
	Less than 1 year	Between 1-2 years	Between 2-5 years	Over 5 years
Borrowings (excluding financial lease liabilities)	2,239,782	373,198	258,839	84,402
Finance lease liabilities	5,000	5,000	15,000	15,000
Trade and other payables	2,694,857	12,307	1,784	216
<b>Total</b>	<b>4,939,639</b>	<b>390,505</b>	<b>275,623</b>	<b>99,618</b>

(in millions of Korean won)

	December 31, 2015			
	Less than 1 year	Between 1-2 years	Between 2-5 years	Over 5 years
Borrowings (excluding financial 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>

- 2) The Group has no derivatives contracts as at December 31, 2016. The table below analyzes the derivatives into relevant maturity groupings based on the remaining maturity as at December 31, 2015.

(in millions of Korean won)

	December 31, 2015			
	Less than 1 year	Between 1-2 years	Between 2-5 years	Over 5 years
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 provided for third parties as at December 31, 2016 and 2015.

### 3.2 Capital Risk Management

The Group's objectives when managing capital are to safeguard the Group's ability to continue as a going concern, so the Group can continue 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 at December 31, 2016 and 2015, were as follows:

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<i>(in millions of Korean won, except for ratios)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
Total borrowings (Note 15) (A)	2,890,641	2,658,706
Less: cash and cash equivalents (B)	<u>(1,474,367)</u>	<u>(1,704,918)</u>
Net debt (C=A+B)	<u>1,416,274</u>	<u>953,788</u>
Total liabilities (D)	6,436,093	5,475,206
Total equity (E)	<u>14,050,967</u>	<u>13,103,522</u>
Total capital (F=C+E)	<u>15,467,241</u>	<u>14,057,310</u>
Gearing ratio (C/F)	9.2%	6.8%
Debt-to-equity ratio (D/E)	45.8%	41.8%

**3.3 Fair Value**

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

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>		<b>December 31, 2015</b>	
	<b>Carrying amount</b>	<b>Fair value</b>	<b>Carrying amount</b>	<b>Fair value</b>
<b>Financial assets (current)</b>				
Cash and cash equivalents	1,474,367	1	1,704,918	1
Deposits held by financial institutions	732,871	1	988,628	1
Trade receivables	3,533,699	1	3,236,622	1
Other receivables (excluding deposits held by financial institutions)	246,156	1	174,732	1
Derivative financial instruments	-	-	93	93
<b>Financial assets (non-current)</b>				
Deposits held by financial institutions	64,485	1	21,418	1
Other receivables (excluding deposits held by financial institutions)	168,667	1	85,066	1
Other non-current financial assets (carried at cost)	11,829	2	6,055	2
Other non-current financial assets (carried at fair value)	11,619	11,619	9,246	9,246
<b>Financial liabilities (current)</b>				
Trade and other payables	2,694,857	1	1,998,094	1
Current borrowings (excluding finance lease liabilities)	2,207,755	1	2,145,893	1
Current finance lease liabilities	4,886	1	4,885	1
Other current liabilities (dividends payable)	12	1	1,055	1
<b>Financial liabilities (non-current)</b>				
Non-current borrowings (excluding finance lease liabilities)	647,728	1	473,842	479,411
Non-current finance lease liabilities	30,272	31,411	34,086	35,361
Other non-current payables	14,307	1	1,680	1



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<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. Certain equity securities are measured at cost (2016: ₩11,829 million, 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.

(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 at December 31, 2016 and 2015, are as follows:

<i>(in percentage)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
Discount rate	1.63%~2.57%	1.88%~2.60%

(3) Fair value hierarchy

Items that are measured at fair value or for which the fair value is disclosed are categorized by the fair value hierarchy levels, 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).

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

(in millions of Korean won)

	December 31, 2016			
	Level 1	Level 2	Level 3	Total
<b>Financial assets/liabilities measured at fair value</b>				
Other non-current financial assets (carried at fair value)	11,619	-	-	11,619
<b>Financial assets/liabilities not measured at fair value</b>				
Non-current finance lease liabilities	-	31,411	-	31,411

(in millions of Korean won)

	December 31, 2015			
	Level 1	Level 2	Level 3	Total
<b>Financial assets/liabilities measured at fair value</b>				
Derivative financial instruments	-	93	-	93
Other non-current financial assets (carried at fair value)	9,246	-	-	9,246
<b>Financial assets/liabilities not measured at fair value</b>				
Non-current borrowings (excluding finance lease liabilities)	-	479,411	-	479,411
Non-current finance lease liabilities	-	35,361	-	35,361

**4. Critical Accounting Estimates and Assumptions**

The preparation of financial statements requires the Group makes estimates and assumptions concerning the future. The estimates and judgements are continuously evaluated with consideration to factors such as events reasonably predictable in the foreseeable future within the present circumstance according to historical experience. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are addressed below.

(1) Estimated impairment of goodwill

The Group tests whether goodwill has suffered any impairment on an annual basis. The recoverable amount of a cash generating unit (CGU) is determined based on value-in-use calculations (Note 13).

(2) Income taxes

The Group's taxable income generated from these operations are subject to income taxes based on tax laws and interpretations of tax authorities in numerous jurisdictions. There are many transactions and calculations for which the ultimate tax determination is uncertain (Note 29).

If certain portion of the taxable income is not used for investments or increase in wages or dividends in accordance with the *Tax System For Recirculation of Corporate Income*, the Group is liable to pay additional income tax calculated based on the tax laws. The new tax system is effective for three years from 2015. Accordingly, the measurement of current and deferred income tax is affected by the tax effects from the new tax system. As the Group's income tax is dependent on the investments, increase in wages and dividends, there is an uncertainty measuring the final tax effects.

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(3) Provisions

The Group recognizes provisions for product warranties and estimated returns as explained in Note 16. These provisions are estimated based on past experience.

(4) Net defined benefit liability

The present value of net defined benefit liability depends on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate (Note 17).

**5. Financial Instruments by Category**

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

*(in millions of Korean won)*

Financial assets	December 31, 2016			
	Loans and receivables	Financial assets at fair value through profit or loss	Available-for-sale financial assets	Total
Cash and cash equivalents	1,474,367	-	-	1,474,367
Trade receivables	3,533,699	-	-	3,533,699
Other receivables	979,027	-	-	979,027
Other non-current receivables	233,152	-	-	233,152
Other non-current financial assets	-	-	23,448	23,448
<b>Total</b>	<b>6,220,245</b>	<b>-</b>	<b>23,448</b>	<b>6,243,693</b>

*(in millions of Korean won)*

Financial liabilities	December 31, 2016			
	Financial liabilities at fair value through profit or loss	Financial liabilities at amortized cost	Other financial liabilities <sup>1</sup>	Total
Trade payables	-	1,723,252	-	1,723,252
Other payables	-	971,605	-	971,605
Borrowings (current)	-	1,759,033	453,608	2,212,641
Other current liabilities (dividends payable)	-	12	-	12
Other non-current payables	-	14,307	-	14,307
Borrowings (non-current)	-	647,728	30,272	678,000
<b>Total</b>	<b>-</b>	<b>5,115,937</b>	<b>483,880</b>	<b>5,599,817</b>

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Financial assets	December 31, 2015			Total
	Loans and receivables	Financial assets at fair value through profit or loss	Available-for-sale financial assets	
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)

Financial liabilities	December 31, 2015			Total
	Financial liabilities at fair value through profit or loss	Financial liabilities at amortized cost	Other financial liabilities <sup>1</sup>	
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 are financial liabilities that are not subject to the categorizations such as finance lease liabilities, financial liabilities related to transfer transactions not qualified for derecognition.

**LG Chem, Ltd. and Subsidiaries**  
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Net gains or losses on each category of financial instruments for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
<b>Financial instruments at fair value through profit or loss</b>		
Loss on valuation/disposal (profit or loss)	(1,501)	(141)
<b>Available-for-sale financial assets</b>		
Gain on disposal	18	32
Dividend income	-	-
<b>Loans and receivables</b>		
Interest income	40,274	37,516
Gain on foreign currency translation	67,900	21,131
Gain (loss) on foreign exchange	(10,898)	82,893
<b>Financial liabilities measured at amortized cost</b>		
Interest expense	(70,050)	(55,307)
Loss on foreign currency translation	(83,441)	(63,125)
Loss on foreign exchange	(59,699)	(78,643)
Loss on redemption of debentures	(3,031)	-
<b>Other financial liabilities</b>		
Interest expense	(11,795)	(9,661)
Loss on foreign currency translation	(20,277)	(9,218)
Gain (loss) on foreign exchange	5,046	(47,994)

**6. Cash and Cash Equivalents**

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

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
Bank deposits and cash on hand	478,058	272,824
Deposits held by financial institutions and others	996,309	1,432,094
<b>Total</b>	<b>1,474,367</b>	<b>1,704,918</b>

As at December 31, 2016 and 2015, cash and cash equivalents include ₩1,452 million (2015: ₩8,667 million) which are held by a subsidiary. These deposit are subject to regulatory restriction and are therefore not available for general use by the other entities within the Group.

**LG Chem, Ltd. and Subsidiaries**  
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**7. Trade and Other Receivables**

Trade and other receivables and its provisions for impairment, as at December 31, 2016 and 2015, are as follows:

*(in millions of Korean won)*

	<b>December 31, 2016</b>		
	<b>Gross amount</b>	<b>Provision for impairment</b>	<b>Carrying amount</b>
Trade receivables <sup>1</sup>	3,545,918	(12,219)	3,533,699
Other current receivables	979,412	(385)	979,027
Other non-current receivables <sup>2</sup>	234,142	(990)	233,152
<b>Total</b>	<b>4,759,472</b>	<b>(13,594)</b>	<b>4,745,878</b>

*(in millions of Korean won)*

	<b>December 31, 2015</b>		
	<b>Gross amount</b>	<b>Provision for impairment</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 at December 31, 2016, trade receivables transferred to financial institutions have been accounted for as a collateralized borrowing and financial assets not fully derecognized are as follows (Note 15):

*(in millions of Korean won)*

	<b>Loans and receivables (trade receivables collateralized borrowings)</b>	
	<b>December 31, 2016</b>	<b>December 31, 2015</b>
Carrying amount of transferred assets	448,722	1,032,581
Carrying amount of related liabilities	(448,722)	(1,032,581)

<sup>2</sup> As at December 31, 2016, ₩482 million of other non-current receivables represents deposits which are restricted from withdrawal in connection with maintaining checking accounts (2015: ₩3,318 million).

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

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Current</b>		
Non-trade receivables	195,087	127,621
Deposits held by financial institutions <sup>1</sup>	732,871	988,628
Accrued income	4,230	7,944
Loans	21,127	12,452
Guarantee deposits provided	25,712	26,715
	<u>979,027</u>	<u>1,163,360</u>
<b>Non-current</b>		
Non-trade receivables	16	29,316
Deposits held by financial institutions <sup>2</sup>	64,485	21,418
Loans	291	318
Guarantee deposits provided	168,360	55,432
	<u>233,152</u>	<u>106,484</u>
<b>Total</b>	<u>1,212,179</u>	<u>1,269,844</u>

<sup>1</sup> As at December 31, 2016, ₩1,338 million is pledged as a collateral for borrowings and others.

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

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

<i>(in millions of Korean won)</i>	<b>December 31, 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>3,451,627</u>	<u>1,200,755</u>	<u>3,149,419</u>	<u>1,256,160</u>
<b>Past due but not impaired</b>				
Up to 3 months	79,103	7,297	68,341	5,797
Between 3-6 months	1,984	1,178	9,277	2,869
Over 6 months	3,504	2,949	2,618	5,018
	<u>84,591</u>	<u>11,424</u>	<u>80,236</u>	<u>13,684</u>
<b>Impaired receivables</b>	9,700	1,375	19,906	331
	<u>3,545,918</u>	<u>1,213,554</u>	<u>3,249,561</u>	<u>1,270,175</u>

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Movements on the provision for impairment of trade and other receivables for the periods ended December 31, 2016 and 2015, are as follows:

*(in millions of Korean won)*

	<b>December 31, 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	1,388	-	116	-
Write-off	(2,052)	-	(21,131)	-
Reversals	-	-	(486)	-
Exchange differences	(1,293)	-	(89)	-
<b>Ending balance</b>	<b>12,219</b>	<b>-</b>	<b>385</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	-	-	-	-
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 at December 31, 2016 and 2015, the carrying amounts of trade and other receivables are approximation of their fair values.

**8. Other Financial Assets**

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

*(in millions of Korean won)*

	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Other financial assets</b>		
Derivatives (Note 9)	-	93
Available-for-sale financial assets	23,448	15,301
Less: current portion	-	(93)
	<b>23,448</b>	<b>15,301</b>



**LG Chem, Ltd. and Subsidiaries**  
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Changes in available-for-sale financial assets for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Beginning balance</b>	15,301	6,153
Business combination	2,270	-
Acquisitions / Transfer	3,463	12,852
Disposals	(44)	(2,959)
Gain (loss) on valuation (before income tax effects)	2,392	(780)
Exchange differences	66	35
<b>Ending balance</b>	<u>23,448</u>	<u>15,301</u>

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

No impairment losses on available for sale financial assets were recognized for the periods ended December 31, 2016 and 2015.

**9. Derivative Financial Instruments**

Details of derivative financial instruments as at December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 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>

As at December 31, 2016, there is no derivative financial contracts and details of derivative financial contracts as at 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 / Biological Assets**

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

*(in millions of Korean won)*

	<b>December 31, 2016</b>		
	<b>Gross Amount</b>	<b>Valuation allowance</b>	<b>Carrying amount</b>
Merchandise	111,742	(2,438)	109,304
Finished / Semi-finished products	1,699,252	(84,326)	1,614,926
Work-in-process <sup>1</sup>	785	-	785
Raw materials	822,044	(11,088)	810,956
Supplies	114,525	-	114,525
Materials-in-transit	314,695	-	314,695
<b>Total</b>	<b>3,063,043</b>	<b>(97,852)</b>	<b>2,965,191</b>

*(in millions of Korean won)*

	<b>December 31, 2015</b>		
	<b>Gross Amount</b>	<b>Valuation allowance</b>	<b>Carrying amount</b>
Merchandise	77,133	(1,264)	75,869
Finished / Semi-finished products	1,315,776	(45,135)	1,270,641
Work-in-process <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 changes in biological assets for the periods ended December 31, 2016 and 2015, are as follows:

*(in millions of Korean won)*

	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Beginning balance</b>	-	-
Acquisition due to business combinations	247	-
Copulation failure and disposal	(54)	-
Decrease due to sales	(193)	-
<b>Ending balance</b>	<b>-</b>	<b>-</b>

Fair value of the Group's biological assets applied a standard selling price based on actual selling price to external customers and the standard unit price is set based on the Group's recent trading price.

During the year, the cost of inventories recognized as expense and included in 'cost of sales' amounted to ₩12,200,672 million (2015: ₩12,269,055 million).

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

Changes in investments in associates and joint ventures for the periods ended December 31, 2016 and 2015, are as follows:

(in millions of Korean won)

	December 31, 2016								
	Beginning balance	Acquisitions / transfer	Dividends	Share of profit (loss) of associates and joint ventures	Share of other comprehensive income (expense) of associates and joint ventures	Impairment loss	Disposal	Others	Ending balance
LG VINA Chemical Co., Ltd.	3,742	-	(926)	907	151	-	-	-	3,874
HL Greenpower Co., Ltd.	16,559	-	-	369	-	-	-	(1)	16,927
LG Holdings (HK) Ltd.	73,012	-	-	3,555	(1,724)	-	-	-	74,843
TECWIN Co., Ltd.	6,535	-	-	679	-	-	-	-	7,214
SEETEC Co., Ltd.	155,539	-	(17,500)	10,263	-	-	-	31	148,333
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	579	-	-	-	-	-	-	-	579
LG Chem Malaysia SDN.BHD	150	-	-	-	-	-	-	-	150
CNOOC & LG Petrochemicals Co., Ltd.	14,287	-	-	(7,780)	(367)	-	(6,140)	-	-
KLPE Limited Liability Partnership <sup>1</sup>	20,079	-	-	264	(582)	-	(19,761)	-	-
LG Fuel Cell Systems Inc.	3,265	17,555	-	(12,048)	192	-	-	(56)	8,908
	<u>293,747</u>	<u>17,555</u>	<u>(18,426)</u>	<u>(3,791)</u>	<u>(2,330)</u>	<u>-</u>	<u>(25,901)</u>	<u>(26)</u>	<u>260,828</u>

<sup>1</sup> During the year, the Group decided to discontinue the business of KLPE Limited Liability Partnership and completed the disposal by collecting ₩23,724 million of the investments.

(in millions of Korean won)

	December 31, 2015								
	Beginning balance	Acquisitions / transfer	Dividends	Share of profit (loss) of associates and joint ventures	Share of other comprehensive income (expense) of associates and joint ventures	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>2</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>

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<sup>2</sup> During 2015, the Kazakhstan KLPE Limited Liability Partnership, managed as a separate cash-generating unit (hereafter 'CGU') in Basic materials & Chemicals segments, was tested for impairment because its economic performance was lower than expected. The recoverable amounts of CGU were determined based on value-in-use calculations.

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)

	<b>December 31, 2015</b>
	<b>KLPE Limited Liability Partnership</b>
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 property, plant and equipment for the periods ended December 31, 2016 and 2015, are as follows:

(in millions of Korean won)

	<b>December 31, 2016</b>										
	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)	414,123	77,141	43,795	266,818	1,019	4,737	3,631	-	3,109	-	814,373
Acquisitions/ Transfer	147,464	187,602	49,349	840,388	1,821	167,536	42,775	30,982	1,319,406	55,261	2,842,584
Disposals/ Transfer	(1,441)	(5,607)	(150)	(17,518)	(34)	(8,475)	(650)	-	(1,391,481)	(39,604)	(1,464,960)
Exchange differences	(161)	(5,427)	(346)	(57,826)	1	(1,834)	(474)	-	23,871	-	(42,196)
Depreciation	-	(66,347)	(46,139)	(943,927)	(3,729)	(126,050)	(30,985)	(65,611)	-	-	(1,282,788)
Impairment	-	(15,975)	(1,945)	(26,015)	(8)	(810)	(474)	(448)	(6,108)	-	(51,783)
Transfer to assets held for sale (Note 36)	-	-	-	(1,685)	-	(162)	(459)	-	-	-	(2,306)
<b>Ending balance</b>	<b>1,470,226</b>	<b>2,181,396</b>	<b>651,061</b>	<b>4,288,509</b>	<b>8,594</b>	<b>384,777</b>	<b>95,905</b>	<b>100,360</b>	<b>473,111</b>	<b>26,194</b>	<b>9,680,133</b>
Cost	1,507,154	2,796,650	1,145,962	12,656,297	41,183	1,005,567	323,646	238,906	484,950	26,194	20,226,509
Accumulated depreciation	-	(575,932)	(479,210)	(8,305,213)	(32,439)	(611,202)	(225,767)	(138,098)	-	-	(10,367,861)
Accumulated impairment	(36,928)	(39,322)	(15,691)	(62,575)	(150)	(9,588)	(1,974)	(448)	(11,839)	-	(178,515)

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(in millions of Korean won)

	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 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 year, the Group capitalized ₩4,932 million of borrowing costs (2015: ₩6,899 million), which recognized from borrowings in relation to acquisition of property, plant and equipment, on property, plant and equipment. The capitalization rate of borrowings used to determine the amount of borrowing costs eligible for capitalization is 1.89% (2015: 1.83%).

As at December 31, 2016, certain property, plant and equipment have been pledged as collaterals for borrowings and credit line agreements (Note 19).

Line items including depreciation in the consolidated statements of profit or loss for the periods ended December 31, 2016 and 2015, are as follows:

(in millions of Korean won)	2016	2015
Cost of sales	1,196,548	1,140,374
Selling and administrative expenses	85,722	74,810
Others	518	414
<b>Total</b>	<b>1,282,788</b>	<b>1,215,598</b>

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

(in millions of Korean won)	December 31, 2016	December 31, 2015
Cost- capitalized finance leases	42,669	42,669
Accumulated depreciation	(8,534)	(4,267)
<b>Net book amount</b>	<b>34,135</b>	<b>38,402</b>

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The Group leases machinery under non-cancellable finance lease agreements. The lease terms are 10 years and the contracts include 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 2016, Glass Substrate business, a CGU in IT & Electronic materials and Advanced materials segment, was tested for impairment as its economic performance was lower than expected. During 2015, LED Encap business, a CGU of IT & Electronic materials and Advanced materials segment, was tested for impairment due to significant price drop of products. During 2015, the US battery division for vehicles, a separate CGU in Energy solution business segment, was tested for reversal of impairment because the Group expected that future economic performance would 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 periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>	
	<b>Glass Substrate</b>	<b>LED Encap</b>	<b>Battery division for vehicles (U.S.)</b>
<b>Impaired (reversed) amount</b>			
Property, plant and equipment	47,699	16,727	(24,803)
Intangible assets	535	1,093	(99)
<b>Key assumptions</b>			
Pre-tax discount rate	9.5%	11.7%	13.8%
Growth rate for subsequent years exceeding five years	0%	0%	0%

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

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Changes in investment properties for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korea won)</i>	December 31, 2016			December 31, 2015		
	Land	Building	Total	Land	Building	Total
<b>Beginning balance</b>	-	-	-	-	-	-
Cost	-	-	-	-	-	-
Accumulated depreciation	-	-	-	-	-	-
Business combination (Note 35)	10,754	4,522	15,276	-	-	-
Acquisitions/ Transfer	-	-	-	-	-	-
Disposals/ Transfer	(9,739)	(3,141)	(12,880)	-	-	-
Depreciation	-	(109)	(109)	-	-	-
<b>Ending balance</b>	<b>1,015</b>	<b>1,272</b>	<b>2,287</b>	<b>-</b>	<b>-</b>	<b>-</b>
Cost	1,015	1,400	2,415	-	-	-
Accumulated depreciation	-	(128)	(128)	-	-	-

As at December 31, 2016, the carrying amounts of property, plant and equipment classified as investment properties are approximation of their fair values.

Details of gain or loss on investment properties for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	2016	2015
Rental income	554	-
Depreciation	(109)	-
<b>Total</b>	<b>445</b>	<b>-</b>

**13. Intangible Assets**

Changes in intangible assets for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2016					
	Software development costs	Industrial property rights	Goodwill	Memberships	Others	Total
<b>Beginning balance</b>	61,670	200,779	143,599	49,642	46,196	501,886
Business combination (Note 35)	17,500	123,364	105,223	1,674	32,855	280,616
Acquisitions/ Transfer	58,486	38,956	-	2,309	14,591	114,342
Disposals/ Transfer	(10,087)	(804)	-	(826)	(57)	(11,774)
Exchange differences	(212)	1,104	3,431	(6)	(384)	3,933
Amortization	(22,151)	(18,362)	-	-	(13,801)	(54,314)
Impairment	(2,353)	(155)	-	-	(37)	(2,545)
<b>Ending balance</b>	<b>102,853</b>	<b>344,882</b>	<b>252,253</b>	<b>52,793</b>	<b>79,363</b>	<b>832,144</b>

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(in millions of Korean won)

	December 31, 2015					
	Software development costs	Industrial property rights	Goodwill	Memberships	Others	Total
<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>

Line items including amortization of intangible assets for the periods ended December 31, 2016 and 2015, as follows:

(in millions of Korean won)

	2016	2015
Cost of sales	11,454	10,778
Selling and administrative expenses	42,860	30,120
<b>Total</b>	<b>54,314</b>	<b>40,898</b>

The Group recognized total research and development costs of ₩678,027 million (2015: ₩556,649 million) as expenses.

Goodwill is allocated to the Group's CGUs identified for each operating segment. The carrying amounts of goodwill allocation by CGUs as at December 31, 2016 and 2015, are as follows:

(in millions of Korean won)

	2016						Total
	Acquisition of LG Petrochemical Co., Ltd.	Acquisition of SAP business	Acquisition of LG NanoH2O, Inc.	Acquisition of FarmHannong Co., Ltd.	Acquisition of PSAA business	Acquisition of LG Chem(HUIZHOU) Petrochemical Co., Ltd.	
<b>Basic materials &amp; Chemicals</b>							
NCC	3,020	-	-	-	-	-	3,020
ABS	1,484	-	-	-	-	14,253	15,737
PO	1,059	-	-	-	-	-	1,059
PVC	502	-	-	-	-	-	502
Acrylic	493	25,222	-	-	-	-	25,715
Plasticizer	95	-	-	-	-	-	95
BPA	162	-	-	-	-	-	162
Others	1,378	-	-	-	-	-	1,378
<b>IT &amp; Electronic materials and Advanced materials</b>							
RO	-	-	113,615	-	-	-	113,615
PSAA	-	-	-	-	4,112	-	4,112
<b>Common and others</b>							
FarmHannong Co., Ltd.	-	-	-	86,858	-	-	86,858
<b>Total</b>	<b>8,193</b>	<b>25,222</b>	<b>113,615</b>	<b>86,858</b>	<b>4,112</b>	<b>14,253</b>	<b>252,253</b>



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	2015			Total
	Acquisition of LG Petrochemical Co., Ltd.	Acquisition of SAP business	Acquisition of LG NanoH2O, Inc.	
<b>Basic materials &amp; Chemicals</b>				
NCC	2,361	-	-	2,361
ABS	1,250	-	-	1,250
PO	1,063	-	-	1,063
PVC	759	-	-	759
Acrylic	653	25,222	-	25,875
Plasticizer	143	-	-	143
BPA	125	-	-	125
Others	1,839	-	-	1,839
<b>IT &amp; Electronic materials and Advanced materials</b>				
RO	-	-	110,184	110,184
<b>Total</b>	<b>8,193</b>	<b>25,222</b>	<b>110,184</b>	<b>143,599</b>

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.

During 2015, RO membranes business, managed as a separate cash-generating unit in Information & Electronic materials and Advanced materials segment, was tested for impairment because its economic performance is lower than expected.

The carrying amount exceeding its recoverable amount is all attributed to goodwill.

During 2016 and 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)

	2016		Impaired amount
	Pre-tax discount rate	Growth rate for subsequent years after five years	
Acquisition of LG Petrochemical Co., Ltd.	10.9%	0.0%	-
Acquisition of SAP business	10.9%	0.0%	-
Acquisition of LG NanoH2O, Inc.	8.9%	1.0%	-
Acquisition of FarmHannong Co.,Ltd.	10.1%	1.0%	-
Acquisition of PSAA business	13.3%	0.0%	-
Acquisition of LG Chem(HUIZHOU) Petrochemical Co., Ltd.	8.1%	0.0%	-

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	2015		
	Pre-tax discount rate	Growth rate for subsequent years after five years	Impaired amount
Acquisition of LG Petrochemical Co., Ltd.	11.7%	0.0%	-
Acquisition of SAP business	11.7%	0.0%	-
Acquisition of LG NanoH2O, Inc.	9.3%	0.5%	75,365

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

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

(in millions of Korean won)

	December 31, 2016	December 31, 2015
<b>Current</b>		
Prepayments to suppliers	111,521	96,914
Prepaid expenses	27,484	20,839
Prepaid value added tax	111,787	70,015
Others	10,001	15,836
<b>Total</b>	<b>260,793</b>	<b>203,604</b>
<b>Non-current</b>		
Long-term prepaid expenses	47,037	29,118
Others	10,920	10,919
<b>Total</b>	<b>57,957</b>	<b>40,037</b>

**15. Borrowings**

Borrowings as at December 31, 2016 and 2015, consist of:

(in millions of Korean won)

	December 31, 2016	December 31, 2015
<b>Current</b>		
Short-term borrowings	1,633,898	1,839,678
Current-portion of long-term borrowings of bank loans	343,935	206,304
Current-portion of debentures	229,922	99,911
Finance lease liabilities	4,886	4,885
	<b>2,212,641</b>	<b>2,150,778</b>
<b>Non-current</b>		
Long-term borrowings	607,996	274,069
Debentures	39,732	199,773
Finance lease liabilities	30,272	34,086
	<b>678,000</b>	<b>507,928</b>
<b>Total</b>	<b>2,890,641</b>	<b>2,658,706</b>

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

<i>(in millions of Korean won)</i>	<b>Bank</b>	<b>Latest maturity date</b>	<b>Interest rate(%) as at December 31, 2016</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
Notes discounted <sup>1</sup> (Negotiable notes)	Woori Bank, others	Jun. 01, 2017	Libor + 0.50 and others	448,722	1,032,581
Bank loans	Nonghyup Bank, others	Dec. 28, 2017	2.14 and others	1,185,176	807,097
<b>Total</b>				<u>1,633,898</u>	<u>1,839,678</u>

<sup>1</sup> As at December 31, 2016, trade receivables transferred to financial institutions but not derecognized are accounted for as collateralized borrowing transaction (Note 7).

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

<i>(in millions of Korean won)</i>	<b>Bank</b>	<b>December 31, 2016</b>				
		<b>Annual interest rate (%)</b>	<b>Latest maturity date</b>	<b>Amount in Korean won</b>	<b>Current</b>	<b>Non-current</b>
<b>Borrowings in Korean won</b>	KEB Hana Bank <sup>1</sup>	1.75	Dec. 15, 2019	1,058	353	705
<b>Borrowings in foreign currencies</b>	Sumitomo Mitsui Banking Corporation	3Libor + 0.60	Apr. 03, 2017	24,170	24,170	-
	Sumitomo Mitsui Banking Corporation	3Libor + 1.05	Oct. 28, 2019	36,904	-	36,904
	Standard Chartered Bank	3Libor + 1.00	Nov. 20, 2017	48,313	48,313	-
	Construction Bank of China	PBOC x 0.90	Nov. 13, 2023	32,476	2,915	29,561
	Communications Bank of China	PBOC	Sept. 20, 2021	27,721	3,465	24,256
	Agricultural Bank of China	3Libor + 0.80	June 29, 2020	32,291	5,889	26,402
	Agricultural Bank of China	PBOC x 0.90	Sept. 03, 2022	31,533	-	31,533
	Bank of America	6Libor + 1.60	Oct. 24, 2017	36,057	36,057	-
	Bank of America	3Libor + 1.50	Aug. 13, 2018	36,057	-	36,057
	Bank of China	3Libor + 0.95	Dec. 05, 2021	32,195	3,606	28,589
	BNP PARIBAS	EURIBOR + 0.99	Dec. 13, 2019	6,560	-	6,560
	BNP PARIBAS	WIBOR + 0.55	Dec. 13, 2019	90	-	90
	CITI	6Libor + 2.00	Mar. 10, 2017	18,029	18,029	-
	CNOOC Finance	PBOC x 0.90	Dec. 23, 2021	80,914	7,263	73,651
	HSBC	3Libor + 1.00	Dec. 20, 2018	120,190	-	120,190
	HSBC	3Libor + 1.05	Sept. 19, 2018	48,076	-	48,076
	HSBC	3Libor + 1.05	Nov. 12, 2018	48,076	-	48,076
	HSBC	3Libor + 1.05	Apr. 19, 2019	56,495	7,217	49,278
	JP Morgan	3Libor + 0.85	Jan. 15, 2018	24,037	-	24,037
	JP Morgan	3Libor + 1.05	Jan. 15, 2018	24,031	-	24,031
	Mizuho Banking Corporation	3Libor + 1.02	Apr. 16, 2017	48,076	48,076	-
	Mizuho Banking Corporation	3Libor + 0.75	May 27, 2017	66,468	66,468	-
	United Overseas Bank	3Libor + 0.85	Dec. 21, 2017	72,114	72,114	-
<b>Total</b>				<u>951,931</u>	<u>343,935</u>	<u>607,996</u>

<sup>1</sup> Other receivables are pledged as collaterals for the above long-term borrowings (Note 19).

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		December 31, 2015				
		Bank	Annual interest rate (%)	Latest maturity date	Amount in Korean won	Current
<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	Sept. 25, 2016	16,226	16,226	-
	Standard Chartered Bank	3Libor + 1.00	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	Sept. 19, 2016	46,359	46,359	-
	HSBC	3Libor + 1.45	Nov. 11, 2016	46,359	46,359	-
	JP Morgan	3Libor + 1.75	July 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>				<u>480,373</u>	<u>206,304</u>

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

		December 31, 2016				
		Financial institution	Annual interest rate (%)	Latest maturity date	Total amount	Current
<b>Debentures in Korean won (non-guaranteed)</b>	Woori Security and others	4.11	Mar. 29, 2017	200,000	200,000	-
	Ebest Investment & securities Co., Ltd. and others	4.75	Oct. 24, 2017	30,000	30,000	-
<b>Debentures in Korean won (collateralized)<sup>1</sup></b>	IBK Securities Co., Ltd. and others	4.70	Mar. 05, 2018	40,000	-	40,000
Less: discount on debentures				(346)	(78)	(268)
<b>Total</b>				<u>269,654</u>	<u>229,922</u>	<u>39,732</u>

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

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		December 31, 2015				
	Financial institution	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
<b>Debentures in Korean won</b>	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 at December 31, 2016 and 2015, are as follows:

(in millions of Korean won)

		December 31, 2016				
Leaser	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current	
Hyundai Oil Bank	3.12	Dec. 31, 2024	35,158	4,886	30,272	

(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 at December 31, 2016 and 2015, is as follows:

(in millions of Korean won)

	December 31, 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	114	4,886	5,000	115	4,885
Between 1-5 years	20,000	1,902	18,098	20,000	1,903	18,097
Over 5 years	15,000	2,826	12,174	20,000	4,011	15,989

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**16. Provisions**

Changes in provisions for other liabilities and charges for the periods ended December 31, 2016 and 2015, are as follows:

(in millions of Korean won)

	December 31, 2016					Total
	Sales returns <sup>1</sup>	Warranty <sup>2</sup>	Greenhouse gas emission <sup>3</sup>	Legal Claims <sup>4</sup>	Restoration <sup>5</sup>	
<b>Beginning balance</b>	5,214	27,578	3,720	-	-	36,512
Business combination (Note 35)	5,026	-	-	2,685	91,665	99,376
Additions	32,320	19,778	31,498	29,891	4,109	117,596
Used	(32,198)	(5,880)	(7,417)	(22,474)	-	(67,969)
<b>Ending balance</b>	10,362	41,476	27,801	10,102	95,774	185,515
Less : current portion	(6,279)	(1,224)	(27,801)	-	(16,390)	(51,694)
<b>Total</b>	<b>4,083</b>	<b>40,252</b>	<b>-</b>	<b>10,102</b>	<b>79,384</b>	<b>133,821</b>

(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>	<b>-</b>	<b>26,907</b>	<b>-</b>	<b>26,907</b>

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

<sup>5</sup> As at December 31, 2016, restoration provisions have been accrued based on the estimated expenses to restore land pollutions and others.

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**17. Net Defined Benefit Liabilities**

Details of net defined benefit liabilities recognized in the statements of financial position as at December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
Present value of defined benefit obligations <sup>1</sup>	885,259	717,770
Fair value of plan assets	<u>(793,087)</u>	<u>(636,578)</u>
<b>Liabilities in the consolidated statement of financial position</b>	<u><b>92,172</b></u>	<u><b>81,192</b></u>

<sup>1</sup> The present value of retirement benefit obligations is net of existing contributions to the National Pension Plan of ₩765 million as at December 31, 2016 (2015: ₩802 million).

The amounts recognized in the consolidated statements of profit or loss for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Current service cost <sup>1</sup>	119,108	101,578
Interest cost	<u>2,944</u>	<u>2,682</u>
<b>Total, included in employee benefit expenses</b>	<u><b>122,052</b></u>	<u><b>104,260</b></u>

<sup>1</sup> The above amounts excluded ₩71 million (2015: ₩555 million) of expenses capitalized to construction in progress and development costs.

Post-employment benefits recognized for defined contribution plan for the year ended December 31, 2016, amounted to ₩2,643 million (2015: ₩1,990 million).

Post-employment benefits recognized in the consolidated statements of profit or loss for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Cost of sales	85,059	75,488
Selling and administrative expenses	<u>39,636</u>	<u>30,762</u>
<b>Total</b>	<u><b>124,695</b></u>	<u><b>106,250</b></u>

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Movements in the present value of defined benefit obligations for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Beginning balance</b>	717,770	605,712
Business combination (Note 35)	52,191	-
Transfer in	11,390	7,620
Transfer out	(5,764)	(5,132)
Current service cost	119,179	102,133
Interest expense	20,419	18,704
Remeasurements:		
Actuarial loss from change in demographic assumptions	3,731	371
Actuarial loss (gain) from change in financial assumptions	(11,225)	30,875
Actuarial loss (gain) from experience adjustments	24,400	(12,108)
Others	3,453	412
Exchange differences	234	283
Payments from plans	(50,519)	(31,100)
<b>Ending balance</b>	<u>885,259</u>	<u>717,770</u>

Movements in the fair value of plan assets for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Beginning balance</b>	636,578	518,820
Business combination (Note 35)	13,080	-
Transfer in	1,384	642
Transfer out	-	(260)
Interest income	17,475	16,022
Remeasurements:		
Return on plan assets (excluding amounts included in interest income)	(4,407)	(1,239)
Contributions:		
Employers	160,421	120,151
Payments from plans	(30,509)	(15,295)
Administrative costs	(935)	(2,263)
<b>Ending balance</b>	<u>793,087</u>	<u>636,578</u>

The actual return on plan assets for the year ended December 31, 2016, was ₩13,068 million (2015: ₩14,783 million).

The significant actuarial assumptions as at December 31, 2016 and 2015, are as follows:

	<b>December 31, 2016</b>	<b>December 31, 2015</b>
Discount rate	2.2% ~ 2.9%	2.8%
Salary growth rate	2.5% ~ 5.1%	5.1%



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The sensitivity analysis for changes in key actuarial assumptions as at December 31, 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	(92,848)	111,740
Salary growth rate:		
Increase (decrease) in defined benefit obligations	108,078	(91,899)

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 prior period.

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

<i>(in millions of Korean won)</i>	<b>December 31, 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	793,087	-	793,087	100%	636,578	-	636,578	100%

As at December 31, 2016, the weighted average duration of defined benefit obligations is 12.1 years.

The Group reviews the funding level on an annual basis and has a policy of eliminating deficit from the fund. Expected contributions to post-employment benefit plans for the year ending December 31, 2017, are ₩176,765 million.

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

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

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Current</b>		
Advances from customers	70,590	49,793
Dividends payable	12	1,055
Withholdings	68,946	17,270
Unearned revenues	6,201	6,889
Accrued expenses	123,895	226,720
<b>Total</b>	<u>269,644</u>	<u>301,727</u>
<b>Non-current</b>		
Long-term accrued expenses	<u>30,267</u>	<u>27,852</u>

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**19. Commitments and Contingencies**

(1) As at December 31, 2016, the Group has been provided with guarantees of ₩21,276 million from the Seoul Guarantee Insurance for the execution of supply contracts and others.

(2) As at December 31, 2016, the Parent Company has provided one blank promissory note to the Korea National Oil Corporation as a collateral in relation to petroleum import surcharges.

(3) As at December 31, 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	-	100	638	-	-	-
Limit of the letter of credit	35,000	213	-	170	600	2	-	-
Limit of discount of notes from export	-	1,308	-	-	-	-	-	-
Limit of guaranteed payments in other foreign currency	-	70	-	-	-	-	-	-
Limit of loan arrangements	-	-	147,558	2,265	5,429	45	3,200	32

The Group also entered into credit line agreements with other financial institutions relating to trade finance and import/export amounting to ₩420,000 million and US\$ 190 million.

(4) As at December 31, 2016, the Parent Company and certain subsidiaries have B2B purchase arrangements with several financial institutions with limit of ₩310,000 million and ₩15,000 million, respectively.

(5) As at December 31, 2016, in relation to price fixing of mobile batteries, the consumers in U.S., Canada and Israel have filed three class actions claims and the customers have filed five separate actions against the Parent Company and certain overseas subsidiaries. However, the ultimate outcome of these cases cannot be determined at the reporting date.

(6) In addition, as at December 31, 2016, the Parent Company and certain overseas subsidiaries have been named as a plaintiff in 13 and 23 legal actions, respectively, involving ₩46,445 million and ₩4,557 million in claims, respectively. They have been named as a defendant in 11 and 19 legal actions, respectively, with ₩51,783 million and ₩5,283 million in claims, respectively. The ultimate outcome of these cases cannot be determined at the reporting date.

(7) As at December 31, 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.

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(9) As at December 31, 2016, the Parent Company has entered into payment guarantee contract of US\$ 1 million and EUR 17 million with financial institutions to guarantee the warrant of certain installed products. The Parent Company has entered into a payment guarantee contract of US\$ 33 million with a financial institution in relation to advance received from customers for certain sales. Also, certain subsidiaries have entered into payment guarantee contract of CNY 310 million with financial institutions in relation to custom of imported raw materials.

(10) As at December 31, 2016, assets pledged as collaterals for the borrowings are as follows::

(in millions of Korean won)

	December 31, 2016			Secured party
	Secured amount	Borrowings / Loan	Limit	
Other receivables	300	Non-current borrowings (Won currency borrowings)	1,058	KEB Hana Bank
Gumi facility, Anseong facility, Genetics institute	52,000	Won currency debentures (Collateralized)	40,000	Creditors
	<u>52,300</u>		<u>41,058</u>	

(11) Capital expenditure arrangement that has not incur at the end of the reporting period is as follows:

(in millions of Korean won)

	December 31, 2016	December 31, 2015
Property, plant and equipment	399,562	297,362

**20. Share Capital**

Changes in share capital and share premium for the periods ended December 31, 2016 and 2015, are as follows:

(in millions of Korean won and in shares)

	Ordinary shares		Preferred shares		Share premium
	Number of shares	Share capital	Number of shares	Share capital	
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
December 31, 2016	<u>66,271,100</u>	<u>331,356</u>	<u>7,628,921</u>	<u>38,144</u>	<u>897,424</u>

Changes in treasury shares for the periods ended December 31, 2016 and 2015, are as follows:

(in millions of Korean won)

	Number of shares		Carrying amount	Gain on disposal 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
December 31, 2016	<u>359,795</u>	<u>5,519</u>	<u>15,484</u>	<u>13,855</u>

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**21. Retained Earnings**

Retained earnings as at December 31, 2016 and 2015, consist of:

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
Legal reserve <sup>1</sup>	300,294	296,178
Discretionary reserve <sup>2</sup>	10,408,789	9,551,785
Retained earnings before appropriation	<u>1,753,689</u>	<u>1,684,537</u>
<b>Total</b>	<b><u>12,462,772</u></b>	<b><u>11,532,500</u></b>

<sup>1</sup> The Group had appropriated up to 50% of its issued share capital in accordance with the commercial Code of the Republic of Korea. The reserve is not available for cash dividends payment, but may be transferred to share capital 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.

**22. Other Components of Equity**

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

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

<sup>1</sup> Includes gain or loss on disposal of investments and investment differences due to changes in equity, net of deferred tax.

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**23. Selling and Administrative Expenses**

Selling and administrative expenses for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Wages and salaries	524,188	465,949
Post-employment benefits (Note 17)	39,636	30,762
Employee benefits	114,396	103,550
Travel expense	44,025	40,315
Water & utilities	33,693	26,051
Packaging expense	6,282	6,379
Rental expenses	75,015	90,471
Commission expenses	284,881	248,240
Depreciation (Note 12)	85,722	74,810
Advertising expense	21,846	16,649
Freight expenses	436,780	436,863
Training expense	14,870	12,471
Amortization (Note 13)	42,860	30,120
Sample expense	17,941	20,666
Development costs	125,976	84,901
Others	204,205	154,277
<b>Total</b>	<b>2,072,316</b>	<b>1,842,474</b>

**24. Breakdown of Expenses by Nature**

Cost of sales, and selling and administrative expenses by nature for the periods ended December 31, 2016 and 2015, consist of:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Changes in inventories of merchandise, finished goods, semi-finished goods and work in process	(176,302)	283,970
Raw materials and consumables used	11,269,812	10,737,692
Purchase of merchandise	1,107,162	1,247,393
Employee benefit expenses (Note 25)	1,758,050	1,628,530
Advertising expenses	23,067	17,900
Freight expenses	471,638	465,566
Commission expenses	472,128	404,653
Depreciation and amortization	1,336,693	1,256,082
Operating lease payments	79,991	66,821
Other expenses	2,325,137	2,274,408
<b>Total</b>	<b>18,667,376</b>	<b>18,383,015</b>

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**25. Employee Benefit Expenses**

Details of employee benefit expenses for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Salaries	1,460,930	1,361,893
Post-employment benefits – Defined benefit plan (Note 17)	122,052	104,260
Post-employment benefits – Defined contribution plan (Note17)	2,643	1,990
Others	172,425	160,387
<b>Total</b>	<b>1,758,050</b>	<b>1,628,530</b>

**26. Finance Income and Costs**

Details of finance income and costs for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
<b>Finance income</b>		
Interest income <sup>1</sup>	40,274	37,516
Gain on foreign exchange	129,052	102,200
Gain on foreign currency translation	8,956	4,814
Gain on disposal of available-for-sale securities	18	32
Gain on disposal of trading derivatives	1,640	7,134
Gain on valuation of trading derivatives	-	93
<b>Total</b>	<b>179,940</b>	<b>151,789</b>
<b>Finance costs</b>		
Interest expense <sup>2</sup>	76,913	58,069
Loss on foreign exchange	142,985	120,013
Loss on foreign exchange translations	74,173	49,010
Loss on disposal of trading derivatives	3,141	7,368
Loss on redemption of debentures	3,031	-
<b>Total</b>	<b>300,243</b>	<b>234,460</b>

<sup>1</sup> Details of interest income for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Deposits held by financial institutions	35,945	34,497
Available-for-sale financial assets	91	-
Other loans and receivables	4,238	3,019
<b>Total</b>	<b>40,274</b>	<b>37,516</b>

<sup>2</sup> Details of interest expense for the periods ended December 31, 2016 and 2015, are as follows:

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<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Interest on bank overdraft and borrowings	62,166	48,278
Interest on finance lease liabilities	1,186	1,303
Interest on debentures	15,321	13,521
Other interest expenses	3,172	1,866
Capitalized interest for qualifying assets	(4,932)	(6,899)
<b>Total</b>	<u>76,913</u>	<u>58,069</u>

**27. Other Non-Operating Income**

Details of other non-operating income for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Gain on foreign exchange	379,385	320,378
Gain on foreign currency translation	78,450	26,323
Gain on disposal of property, plant and equipment	8,284	7,533
Reversal of impairment loss on property, plant and equipment (Note 12)	-	30,323
Reversal of impairment loss on intangible assets (Note 13)	-	99
Gain on disposal of investment in joint ventures (Note 35)	4,004	-
Gain on disposal of business	-	122,295
Others	70,489	32,956
<b>Total</b>	<u>540,612</u>	<u>539,907</u>

**Disposal of OLED lighting business**

The Group disposed of its OLED lighting business to LG Display Co., Ltd. on December 15, 2015.

<i>(in millions of Korean won)</i>	<b>Amount</b>
Total consideration	160,000
Assets of transferred business:	
Property, plant and equipment	27,244
Intangible assets	3,621
Other assets	7,701
Liabilities of transferred business:	
Other liabilities	861

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**28. Other Non-Operating Expenses**

Details of other non-operating expenses for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Loss on foreign exchange	431,003	346,309
Loss on foreign currency translation	49,051	33,339
Loss on disposal of property, plant and equipment	30,178	89,846
Loss on disposal of intangible assets	1,342	330
Impairment loss on property, plant and equipment (Note 12)	51,783	16,727
Impairment loss on intangible assets (Note 13)	2,545	76,458
Impairment loss on investments in joint ventures (Note 11)	-	139,929
Loss on disposal of investments in joint ventures	41,253	-
Donations	28,564	20,377
Others	112,891	18,859
<b>Total</b>	<b>748,610</b>	<b>742,174</b>

**29. Tax Expense and Deferred Tax**

Details of income tax expense as at December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Current tax on profit for the periods	443,544	517,789
Adjustments in respect of prior years	(8,954)	2,983
Deferred tax - movement in temporary differences	(50,283)	(129,699)
Deferred tax – tax credit carryforwards	1,835	(6,589)
	<u>386,142</u>	<u>384,484</u>
Deferred tax charged directly to equity	(13,290)	11,597
Current tax charged directly to equity	5,982	5,031
Income tax expense	<u>378,834</u>	<u>401,112</u>

The aggregate current and deferred tax charged directly to equity (other comprehensive income) for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
<b>Current tax</b>		
Remeasurements of net defined benefit liabilities	5,982	5,031
<b>Deferred tax</b>		
Shares of other comprehensive income of joint ventures	(10,801)	10,801
Exchange differences on translation of foreign operations	(1,909)	607
Loss on valuation of available-for-sale financial assets	(580)	189
<b>Total</b>	<u>(13,290)</u>	<u>11,597</u>



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Movements in deferred tax assets (liabilities) for the periods ended December 31, 2016 and 2015, are as follows:

(in millions of Korean won)

	<b>2016</b>					<b>Ending balance</b>
	<b>Beginning balance</b>	<b>Increase (decrease)</b>				
		<b>Business combination</b>	<b>Profit (loss) for the periods</b>	<b>Other comprehensive income</b>	<b>Exchange differences</b>	
Defined benefit liability	162,825	9,022	31,399	-	13	203,259
Plan assets	(151,901)	(2,616)	(36,805)	-	-	(191,322)
Reserve for research and human resources development	(116,160)	-	59,693	-	-	(56,467)
Provision for impairment on receivables	1,501	1,513	(2,387)	-	(14)	613
Property, plant and equipment	104,416	(25,012)	(15,326)	-	(2,670)	61,408
Intangible assets	(18,736)	(11,844)	215	-	(757)	(31,122)
Investments in subsidiaries, associates and joint ventures	23,627	6,097	(29,274)	(10,801)	1,873	(8,478)
Accrued income	(1,922)	(199)	1,180	-	-	(941)
Others	47,907	16,190	6,557	(580)	314	70,388
	<u>51,557</u>	<u>(6,849)</u>	<u>15,252</u>	<u>(11,381)</u>	<u>(1,241)</u>	<u>47,338</u>
Exchange differences on translation of foreign operations	2,545	-	-	(1,909)	2	638
Tax credit carryforwards	12,076	-	(1,835)	-	1	10,242
Tax loss carryforwards	1,613	21,605	48,321	-	(255)	71,284
Deferred income tax assets (liabilities)	<u>67,791</u>	<u>14,756</u>	<u>61,738</u>	<u>(13,290)</u>	<u>(1,493)</u>	<u>129,502</u>

(in millions of Korean won)

	<b>2015</b>					<b>Ending balance</b>
	<b>Beginning balance</b>	<b>Increase (decrease)</b>				
		<b>Business combination</b>	<b>Profit (loss) for the periods</b>	<b>Other comprehensive income</b>	<b>Exchange differences</b>	
Defined benefit liability	132,739	-	30,078	-	8	162,825
Plan assets	(124,935)	-	(26,966)	-	-	(151,901)
Reserve for research and human resources development	(171,820)	-	55,660	-	-	(116,160)
Provision for impairment on receivables	1,673	-	(183)	-	11	1,501
Property, plant and equipment	112,694	-	(8,952)	-	674	104,416
Intangible assets	(18,881)	-	1,147	-	(1,002)	(18,736)
Investments in subsidiaries, associates and joint ventures	(12,291)	-	25,650	10,801	(533)	23,627
Accrued income	(1,445)	-	(477)	-	-	(1,922)
Others	10,207	-	42,145	189	(4,634)	47,907
	<u>(72,059)</u>	<u>-</u>	<u>118,102</u>	<u>10,990</u>	<u>(5,476)</u>	<u>51,557</u>
Exchange differences on translation of foreign operations	1,938	-	-	607	-	2,545
Tax credit carryforwards	5,487	-	6,589	-	-	12,076
Tax loss carryforwards	1,513	-	-	-	100	1,613
Deferred income tax assets (liabilities)	<u>(63,121)</u>	<u>-</u>	<u>124,691</u>	<u>11,597</u>	<u>(5,376)</u>	<u>67,791</u>

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The reconciliations between income tax expense and accounting profit for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
<b>Profit before income tax expense</b>	1,659,828	1,549,643
<b>Tax at domestic tax rates applicable to profits in the respective countries<sup>1</sup></b>	443,659	443,487
<b>Tax effects of:</b>		
Income not subject to tax	(10,202)	(7,839)
Expenses not deductible for tax purposes	25,843	15,816
Unrecognized deferred income tax for temporary differences in the current year	1,556	43,914
Tax credit	(64,833)	(101,277)
Others	(17,189)	7,011
<b>Income tax expense</b>	378,834	401,112
Effective tax rate(income tax expense/ profit before income tax)	22.82%	25.88%

<sup>1</sup> The weighted average applicable tax rate on profit before income tax for the year ended December 31, 2016, is 26.73% (2015: 28.62%).

Realization of deferred tax assets is dependent on the Group's ability to generate future taxable profits in excess of the profits arising from the reversal of taxable temporary differences, and economic and industry outlooks. Management periodically reviews on these factors.

Details of deductible (taxable) temporary differences unrecognized as deferred tax assets (liabilities) as at December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>	
Investments in subsidiaries, associates and joint ventures	(380,282)	(340,767)	Permanently re-invested income not distributed as dividend
Investments in subsidiaries, associates and joint ventures	601,391	582,494	No possibility of disposal
Goodwill	(8,193)	(8,193)	
Unused tax loss carryforwards	495,501	440,270	Uncertainty of future tax income

The maturity of unused loss is as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
Less than 1 year	4,820	8,041
Between 1-2 years	7,952	17,904
Between 2-5 years	81,895	14,885
Over 5 years	468,149	403,472

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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 at 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 periods ended December 31, 2016 and 2015, is computed as follows:

**Basic earnings per ordinary share**

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

	<b>2016</b>	<b>2015</b>
Profit attributable to ordinary shares <sup>1</sup>	1,147,967	1,033,114
Weighted average number of ordinary shares outstanding <sup>2</sup>	65,911,305	65,911,305
Basic earnings per ordinary shares (in won)	<u>17,417</u>	<u>15,674</u>

**Basic earnings per preferred share**

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

	<b>2016</b>	<b>2015</b>
Profit attributable to preferred shares <sup>1</sup>	133,157	119,873
Weighted average number of preferred shares outstanding <sup>2</sup>	7,623,402	7,623,402
Basic earnings per preferred shares (in won)	<u>17,467</u>	<u>15,724</u>

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

*(in millions of Korean won)*

	<b>2016</b>	<b>2015</b>
<b>Profit attributable to the equity holders of the Parent Company</b>	1,281,124	1,152,987
Ordinary shares dividends (A)	296,601	296,601
Preferred shares dividends (B)	34,686	34,686
<b>Undistributed earnings for the period</b>	949,837	821,700
Undistributed earnings available for ordinary shares (C)	851,366	736,513
Undistributed earnings available for preferred shares (D)	98,471	85,187
<b>Profit for the period attributable to ordinary shares (A+C)</b>	1,147,967	1,033,114
<b>Profit for the period attributable to preferred shares (B+D)</b>	133,157	119,873

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

	<b>2016</b>		
	<b>Period</b>	<b>Number of shares</b>	<b>Number of days</b>
Ordinary shares outstanding			<b>Number of shares x days</b>
Beginning balance	2016. 1. 1 ~ 2016.12.31	65,911,305	366
<b>Total</b>			<u>24,123,537,630</u>

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Weighted average number of ordinary shares outstanding:  $24,123,537,630 / 366 = 65,911,305$  shares

Preferred shares outstanding	2016			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2016. 1. 1 ~ 2016.12.31	7,623,402	366	2,790,165,132
<b>Total</b>				<b>2,790,165,132</b>

Weighted average number of preferred shares outstanding:  $2,790,165,132 / 366 = 7,623,402$  shares

Ordinary shares outstanding	2015			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2015. 1. 1 ~ 2015.12.31	65,911,305	365	24,057,626,325
<b>Total</b>				<b>24,057,626,325</b>

Weighted average number of ordinary shares outstanding:  $24,057,626,325 / 365 = 65,911,305$  shares

Preferred shares outstanding	2015			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2015. 1. 1 ~ 2015.12.31	7,623,402	365	2,782,541,730
<b>Total</b>				<b>2,782,541,730</b>

Weighted average number of preferred shares outstanding:  $2,782,541,730 / 365 = 7,623,402$  shares.

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

### 31. Dividends

Details of dividends of the Parent Company as at December 31, 2016 and 2015, are as follows:

	2016	2015
Number of shares entitled to dividends: shares issued and outstanding (par value per share: ₩5,000)		
Ordinary shares	65,911,305	65,911,305
Preferred shares	7,623,402	7,623,402
Dividend per share ( <i>in won, %</i> )		
Ordinary shares: cash	5,000 (100%)	4,500 (90%)
Preferred shares: cash	5,050 (101%)	4,550 (91%)
Cash dividends to distribute ( <i>in millions of Korean won</i> )		
Ordinary shares	329,557	296,601
Preferred shares	38,498	34,686
	<b>368,055</b>	<b>331,287</b>

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Dividend payout ratios of the Parent Company for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Dividends (A)	368,055	331,287
Profit for the period attributable to owners of the Parent Company (B)	1,281,124	1,152,987
Dividend payout ratio (A/B)	<u>28.73%</u>	<u>28.73%</u>

Dividend yield ratios of the Parent Company for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in Korean won)</i>	<b>2016</b>		<b>2015</b>	
	<b>Ordinary shares</b>	<b>Preferred Shares</b>	<b>Ordinary shares</b>	<b>Preferred Shares</b>
Dividend per share (A)	5,000	5,050	4,500	4,550
Market value at the end of year (B) <sup>1</sup>	264,700	180,600	336,000	251,250
Dividend yield ratio (A/B)	<u>1.89%</u>	<u>2.8%</u>	<u>1.34%</u>	<u>1.81%</u>

<sup>1</sup> Average price in the stock market during the week preceding the two business days before the record date of the shareholders' list for the general meeting of shareholders related to above dividends.

**32. Related Party Transactions**

As at December 31, 2016 and 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 at December 31, 2016 and 2015, are as follows, and the details of investments in subsidiaries, associates and joint ventures are described in Note 1.3:

<b>Related party</b>	<b>Related party's subsidiary (Domestic)</b>	<b>Related party's subsidiary (overseas)</b>	<b>Details</b>
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 America 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.
LG Display Co., Ltd.	-	LG Display Yantai Co., Ltd. and others	LG Enterprise group <sup>1</sup>
LG Electronics, Inc.	LG Innotek Co., Ltd. and others	Inspur LG Digital Mobile Communications Co., Ltd. and others	LG Enterprise group <sup>1</sup>

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LG International Corp.	Pantos Logistics Co.,Ltd. HI Business Logistics	LG International (Japan) Ltd.	LG Enterprise group <sup>1</sup> and others
LG Hausys, Ltd.	-	LG Hausys Tianjin Co., Ltd.	LG Enterprise group <sup>1</sup> and others
LG Household & Health Care Ltd.	Coca-Cola Beverage Co.	-	LG Enterprise group <sup>1</sup>
LG Life Sciences Ltd.	-	-	LG Enterprise group <sup>1</sup>
LG Uplus Corp.	-	-	LG Enterprise group <sup>1</sup>
G II R Inc.	HS AD Inc.	-	LG Enterprise group <sup>1</sup>
Silicon Works Co.,Ltd.	-	-	LG Enterprise group <sup>1</sup>
LG Holdings Japan	-	-	LG Enterprise group <sup>1</sup>

<sup>1</sup> Although the entity is not the related party of the Group in accordance with Korean IFRS 1024, the entity belongs to a large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

Sales and purchases with related parties for the periods ended December 31, 2016 and 2015, are as follows:

(in millions of Korean won)

	<b>2016</b>			
	Sales and others	Purchase and others		
		Purchase of raw materials /merchandises	Acquisition of property, plant and equipment and intangible assets	Others
<b>Entity with a significant influence over the Group</b>				
LG Corp.	12	-	-	49,446
<b>Associates and joint ventures</b>				
SEETEC Co., Ltd.	11,046	100,780	15	82,477
TECWIN Co., Ltd.	-	208	1,801	-
HL Greenpower Co., Ltd.	119,257	-	-	-
Others	1,750	-	-	2,347
<b>Other related parties</b>				
LG MMA Corporation	81,841	139,894	-	3,118
SERVEONE and its subsidiaries	16,718	476,199	194,929	90,093
LG CNS Co., Ltd. and its subsidiaries	24,411	3,535	92,402	60,378
Others	26	-	-	11,140
<b>Others</b>				
LG Display Co., Ltd. and its subsidiaries	1,326,553	-	-	65
LG Electronics Inc. and its subsidiaries	641,678	250,886	34,515	14,411
LG International Corp. and its subsidiaries	259,371	310,726	10	211,898
LG Hausys, Ltd. and its subsidiaries	204,523	2,965	7,387	78,388
Others	22,373	34,901	310	8,314
<b>Total</b>	<b>2,709,559</b>	<b>1,320,094</b>	<b>331,369</b>	<b>612,075</b>

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	<b>2015</b>			
	<b>Sales and others</b>	<b>Purchase and others</b>		
		<b>Purchase of raw materials /merchandises</b>	<b>Acquisition of property, plant and equipment and intangible assets</b>	<b>Others</b>
<b>Entity with a significant influence over the Group</b>				
LG Corp.	12	-	-	50,241
<b>Associates and joint ventures</b>				
SEETEC Co., Ltd.	21,730	124,971	209	82,992
TECWIN Co., Ltd.	-	53	2,423	14
HL Greenpower Co., Ltd.	54,130	-	-	-
Others	570	-	-	1,669
<b>Other related parties</b>				
LG MMA Corporation	92,023	129,813	-	2,632
SERVEONE and its subsidiaries	18,675	416,148	288,498	95,544
LG CNS Co., Ltd. and its subsidiaries	16,939	17,181	67,775	55,128
Others	26	-	-	9,823
<b>Others</b>				
LG Display Co., Ltd. and its subsidiaries	1,668,928	-	-	-
LG Electronics Inc. and its subsidiaries	564,845	181,409	93,057	14,855
LG International Corp. and its subsidiaries	276,159	283,976	673	76,773
LG Hausys, Ltd. and its subsidiaries	199,349	1,028	14,607	3,274
Others	22,127	39,942	36	8,165
<b>Total</b>	<b>2,935,513</b>	<b>1,194,521</b>	<b>467,278</b>	<b>401,110</b>

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

(in millions of Korean won)

	December 31, 2016			
	Receivables			Total
	Trade receivables and others	Loan receivables	Other receivables	
<b>Entity with a significant influence over the Group</b>				
LG Corp.	-	-	6,572	6,572
<b>Associates and joint ventures</b>				
SEETEC Co., Ltd.	-	-	-	-
TECWIN Co., Ltd.	-	-	-	-
HL Greenpower Co., Ltd.	43,493	-	-	43,493
LG Fuel Cell Systems Inc.	-	9,857	341	10,198
Others	-	-	20	20
<b>Other related parties</b>				
LG MMA Corporation	8,858	-	583	9,441
SERVEONE and its subsidiaries	3,128	-	26,183	29,311
LG CNS Co., Ltd. and its subsidiaries	17,152	-	45	17,197
Others	-	-	4,314	4,314
<b>Others</b>				
LG Display Co., Ltd. and its subsidiaries	105,174	-	81,467	186,641
LG Electronics Inc. and its subsidiaries	236,834	-	22,294	259,128
LG International Corp. and its subsidiaries	37,592	-	904	38,496
LG Hausys, Ltd. and its subsidiaries	36,381	-	341	36,722
Others	1,005	-	937	1,942
<b>Total</b>	<b>489,617</b>	<b>9,857</b>	<b>144,001</b>	<b>643,475</b>

(in millions of Korean won)

	December 31, 2016			
	Payables			Total
	Trade payables	Borrowings	Other payables	
<b>Entity with a significant influence over the Group</b>				
LG Corp.	-	-	420	420
<b>Associates and joint ventures</b>				
SEETEC Co., Ltd.	10,009	-	9,695	19,704
TECWIN Co., Ltd.	76	-	140	216
HL Greenpower Co., Ltd.	-	-	-	-
LG Fuel Cell Systems Inc.	-	-	-	-
Others	-	-	95	95
<b>Other related parties</b>				
LG MMA Corporation	15,777	-	-	15,777
SERVEONE and its subsidiaries	726	-	228,113	228,839
LG CNS Co., Ltd. and its subsidiaries	25,757	-	19,494	45,251
Others	-	-	301	301
<b>Others</b>				
LG Display Co., Ltd. and its subsidiaries	-	-	30	30
LG Electronics Inc. and its subsidiaries	78,137	-	4,786	82,923
LG International Corp. and its subsidiaries	19,814	-	24,579	44,393
LG Hausys, Ltd. and its subsidiaries	4,401	-	456	4,857
Others	2,801	-	4,085	6,886
<b>Total</b>	<b>157,498</b>	<b>-</b>	<b>292,194</b>	<b>449,692</b>



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	December 31, 2015			
	Receivables			Total
	Trade receivables and others	Loan receivables	Other receivables	
<b>Entity with a significant influence over the Group</b>				
LG Corp.	-	-	11,463	11,463
<b>Associates and joint ventures</b>				
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
<b>Other related parties</b>				
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	-	-	4,249	4,249
<b>Others</b>				
LG Display Co., Ltd. and its subsidiaries	190,932	-	2,353	193,285
LG Electronics Inc. and its subsidiaries	129,494	-	17,115	146,609
LG International Corp. and its subsidiaries	36,515	-	920	37,435
LG Hausys, Ltd. and its subsidiaries	32,475	-	459	32,934
Others	1,432	-	753	2,185
<b>Total</b>	<b>423,639</b>	<b>9,857</b>	<b>64,372</b>	<b>497,868</b>

(in millions of Korean won)

	December 31, 2015			
	Payables			Total
	Trade payables	Borrowings	Other payables	
<b>Entity with a significant influence over the Group</b>				
LG Corp.	-	-	-	-
<b>Associates and joint ventures</b>				
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
<b>Other related parties</b>				
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
<b>Others</b>				
LG Display Co., Ltd. and its subsidiaries	-	-	-	-
LG Electronics Inc. and its subsidiaries	29,821	-	8,791	38,612
LG International Corp. and its subsidiaries	7,382	-	17,948	25,330
LG Hausys, Ltd. and its subsidiaries	643	-	377	1,020
Others	2,453	-	4,937	7,390
<b>Total</b>	<b>51,117</b>	<b>-</b>	<b>233,716</b>	<b>284,833</b>

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Fund transactions with related parties for the periods ended December 31, 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 (Repayments)
<b>Associates and joint ventures</b>				
LG Fuel Cell Systems Inc.	17,555	-	-	9,897
KLPE Limited Liability Partnership	(23,724)	-	-	-
LG Chem Malaysia Sdn.Bhd.	-	-	150	-
<b>Total</b>	<b>(6,169)</b>	<b>-</b>	<b>150</b>	<b>9,897</b>

Dividends received from related parties for the periods ended December 31, 2016 and 2015, are as follows:

*(in millions of Korean won)*

	2016	2015
<b>Associates and joint ventures</b>		
SEETEC Co., Ltd.	17,500	33,500
LG VINA Chemical Co., Ltd.	926	993
<b>Total</b>	<b>18,426</b>	<b>34,493</b>

Dividends paid to related parties for the periods ended December 31, 2016 and 2015, are as follows:

*(in millions of Korean won)*

	2016	2015
<b>Entity with significant influence over the Group</b>		
LG Corp.	99,987	88,877
<b>Total</b>	<b>99,987</b>	<b>88,877</b>

Compensation for key management of the Group for the periods ended December 31, 2016 and 2015, consists of:

*(in millions of Korean won)*

	2016	2015
Short-term employee benefits	43,427	52,111
Post-employment benefits	3,173	2,723
<b>Total</b>	<b>46,600</b>	<b>54,834</b>

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

There are no provisions recognized against receivables from related parties as at December 31, 2016.

As at December 31, 2016, there is no payment guarantees provided by the Group for related parties.

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**33. Cash Generated from Operations**

Reconciliation between profit before income tax and cash generated from operations for the periods ended December 31, 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>	1,659,828	1,549,643
<b>Adjustments for:</b>		
Depreciation	1,282,379	1,215,184
Amortization	54,314	40,898
Post-employment benefits	122,052	104,260
Finance income	(134,850)	(78,372)
Finance costs	202,963	147,705
Foreign exchange differences	16,249	66,458
Loss on valuation of inventories	20,050	7,529
Gain on disposal of property, plant and equipment	(8,284)	(7,533)
Gain on disposal of business	-	(122,295)
Loss on disposal of property, plant and equipment	30,178	89,846
Loss on disposal of intangible assets	1,342	330
Impairment loss on property, plant and equipment	51,783	16,727
Impairment loss on intangible assets	2,545	76,458
Reversal of impairment loss on property, plant and equipment	-	(30,323)
Reversal of impairment loss on intangible assets	-	(99)
Gain on disposal of investments in joint ventures	(4,004)	-
Loss on disposal of investments in joint ventures	41,253	-
Impairment loss on investments in joint ventures	-	139,929
Additions to provisions	117,596	51,916
Other expense (income)	9,870	(13,184)
Decrease (increase) in inventories	(352,076)	384,767
Decrease (increase) in trade receivables	(12,632)	26,208
Decrease (increase) in other receivables	(5,003)	32,874
Decrease (increase) in other current assets	(2,456)	46,306
Decrease (increase) in settlement of derivatives	(1,408)	549
Increase (decrease) in trade payables	349,246	(167,398)
Increase (decrease) in other payables	69,673	(100,095)
Increase (decrease) in other current liabilities	(85,228)	81,215
Decrease in net defined benefit liabilities	(175,254)	(131,587)
Decrease in provisions	(67,969)	(44,103)
Other cash flows from operations	(98,949)	32,037
<b>Cash generated from operations</b>	<u>3,083,208</u>	<u>3,415,850</u>

The significant non-cash transactions for the periods ended December 31, 2016 and 2015, are as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Transfer of construction-in-progress	1,391,481	1,575,993
Transfer of machinery-in-transit	39,604	158,456
Reclassification of long-term borrowings into current maturities	392,661	393,389
Reclassification of asset held for sale	2,306	6,500
Acquisition of finance 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	Mobile 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.

The segment information on revenue, profit and loss for the periods ended December 31, 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	14,447,066	3,561,601	2,654,965	333,538	20,997,170
Inter-segment revenue	165,492	-	164,171	8,211	337,874
Revenue from external customers <sup>1</sup>	14,281,574	3,561,601	2,490,794	325,327	20,659,296
Operating profit (loss) <sup>2</sup>	2,138,625	(49,337)	(54,965)	(42,403)	1,991,920

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(in millions of Korean won)

	2015				Total
	Basic materials & Chemicals	Energy solutions	IT & Electronic materials and Advanced materials	Common and others <sup>3</sup>	
Total segment revenue	14,632,461	3,150,333	2,763,311	6,211	20,552,316
Inter-segment revenue	168,974	3,227	167,321	6,211	345,733
Revenue from external customers <sup>1</sup>	14,463,487	3,147,106	2,595,990	-	20,206,583
Operating profit (loss) <sup>2</sup>	1,676,940	520	146,348	(240)	1,823,568

<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 measurement 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.

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

(in millions of Korean won)

	December 31, 2016				Total
	Basic materials & Chemicals	Energy solutions	IT & Electronic materials and Advanced materials	Common and others	
Reportable segment asset <sup>1</sup>	8,441,909	4,434,851	3,423,864	4,186,436	20,487,060
Investments in associates and joint ventures	4,604	16,927	-	239,297	260,828
Reportable segment liability <sup>1</sup>	3,342,989	1,985,652	1,007,775	99,677	6,436,093

(in millions of Korean won)

	December 31, 2015				Total
	Basic materials & Chemicals	Energy solutions	IT & Electronic materials and Advanced materials	Common and others	
Reportable segment asset <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
Reportable segment liability <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.

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

*(in millions of Korean won)*

	Sales		Non-current assets <sup>1</sup>	
	2016	2015	December 31, 2016	December 31, 2015
Korea <sup>2</sup>	6,684,895	6,510,954	8,533,239	7,767,917
China	6,935,977	6,693,042	1,672,386	1,306,950
Asia	3,861,368	4,022,590	27,532	28,250
America	1,218,167	1,161,018	251,696	242,132
Europe	1,678,694	1,539,219	29,711	23,846
Others	280,195	279,760	-	-
<b>Total</b>	<b>20,659,296</b>	<b>20,206,583</b>	<b>10,514,564</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 single external customer contributes over 10% of the Group's revenue for the periods ended December 31, 2016 and 2015.

**35. Business Combination**

On April 1, 2016, the Parent Company acquired 100% shares of FarmHannong Co.,Ltd. (formerly Dongbu FarmHannong 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 ₩86,858 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.

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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
Trade and other (non-current) receivables	272,140
Inventories	236,255
Assets held for sale	65,591
Property, plant and equipment	561,083
Intangible assets	141,968
Investment properties	14,235
Other assets	9,198
Trade and other (non-current) payables	(150,385)
Borrowings	(678,687)
Provisions	(98,576)
Net defined benefit liabilities	(38,073)
Deferred tax liabilities	(5,472)
Other liabilities	<u>(23,649)</u>
Fair value of identifiable net assets	321,465
Less: non-controlling interest	<u>16,177</u>
	<u>337,642</u>
Goodwill	<u>86,858</u>
<b>Total</b>	<u><b>424,500</b></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.

FarmHannong Co.,Ltd.'s revenues of ₩325,327 million and loss for the period of ₩56,025 million arise after the acquisition date are reflected in the consolidated statement of profit or loss.

On August 31, 2016, the Parent Company acquired assets and liabilities relating to Pressure Sensitive Adhesive Application business from LG Hausys, Ltd. As a result of the business combination, the Parent Company expects an increase in sales through diversification of market such as adding business portfolio by expanding a business field to an industrial adhesive film area.

Goodwill of ₩4,112 million arose from the business combination is resulted from the customer relationship newly acquired and sales increase from combination of the Parent Company and Pressure Sensitive Adhesive Application business.

The following table summarizes the consideration paid for LG Hausys, Ltd. relating to acquiring Pressure Sensitive Adhesive Application business, the fair value of assets acquired and liabilities assumed at the acquisition date:

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<i>(in millions of Korean won)</i>	<b>Amount</b>
Consideration	
Cash and cash equivalents	75,303
Total consideration	<u>75,303</u>
Recognized amounts of identifiable assets acquired and liabilities assumed	
Trade receivables	15,958
Inventories	9,998
Property, plant and equipment	43,006
Intangible assets	13,487
Other assets	1,298
Trade payables	(12,356)
Net defined benefit liabilities	(200)
Fair value of identifiable net assets	<u>71,191</u>
Goodwill	<u>4,112</u>
<b>Total</b>	<u><b>75,303</b></u>

The fair value and gross contractual amount for trade receivables at the acquisition date are ₩15,958 million. None of trade receivables are expected to be uncollectible.

The revenues of ₩33,745 million and profit for the period of ₩305 million arise after the acquisition date are reflected in the consolidated statement of profit or loss.

The Group has the right to be reimbursed from LG Hausys, Ltd. for damages resulted from lawsuits filed prior to the business combination of the Pressure Sensitive Adhesive Application business.

On December 31, 2016, the Parent Company acquired additional 20% shares of LG Chem (HUIZHOU) Petrochemical Co., Ltd. (formerly, CNOOC & LG Petrochemicals Co., Ltd.), a joint venture, and acquired control in accordance with the shareholders' agreement. As a result of the business combination, the Group expects increase in sales by expanding market share.

Goodwill of ₩14,253 million arose from the business combination is resulted from increase in market share and economies of scale after acquiring control.



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The following table summarizes the consideration paid for LG Chem (HUIZHOU) Petrochemical 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	58,771
Fair value of investment in joint venture before business combination	8,306
Total consideration	<u>67,077</u>
Recognized amounts of identifiable assets acquired and liabilities assumed	
Cash and cash equivalents	63,968
Trade and other non-current receivables	7,139
Inventories	31,547
Property, plant and equipment	163,129
Intangible assets	19,785
Deferred tax assets	21,605
Other assets	32,421
Trade and other non-current payables	(99,747)
Borrowings	(159,096)
Deferred tax liabilities	(1,377)
Other liabilities	(3,912)
Fair value of identifiable net assets	<u>75,462</u>
Less: non-controlling interest	<u>(22,638)</u>
Goodwill	<u>14,253</u>
<b>Total</b>	<u><b>67,077</b></u>

The shares of LG Chem (HUIZHOU) Petrochemical Co., Ltd. held by the Parent Company before business combination are measured at the fair value and the Parent Company recognized a gain on disposal of investments in joint ventures of ₩4,004 million.

The fair value of trade and other non-current receivables at the acquisition date are ₩7,139 million. None of trade and other non-current receivables are expected to be uncollectible.

On November 1, 2016, the Parent Company acquired assets and liabilities relating to Positive electrode business from GSEM Co., Ltd. As a result of the business combination, the Parent Company expects to result in upgrade of Positive electrode manufacturing technologies and enhancement of competency in battery production through vertical integration.

The following table summarizes the consideration paid for GSEM CO., LTD. in relation to acquiring Positive Electrode business, the fair value of assets acquired and liabilities assumed at the acquisition date:

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<i>(in millions of Korean won)</i>	<b>Amount</b>
Consideration	
Cash and cash equivalents	59,307
Total consideration	59,307
Recognized amounts of identifiable assets acquired and liabilities assumed	
Cash and cash equivalents	800
Inventories	12,318
Property, plant and equipment	47,155
Intangible assets	153
Investment properties	1,041
Other assets	928
Provisions	(800)
Net defined benefit liabilities	(838)
Other liabilities	(1,450)
Fair value of identifiable net assets	59,307
Goodwill	-
<b>Total</b>	59,307

The revenues of ₩40 million and profit for the period of ₩3 million arose after the acquisition date are reflected in the consolidated statement of profit or loss.

If all the acquisitions had occurred on January 1, 2016, the consolidated revenue and profit for the year ended December 31, 2016, would have been ₩21,227,009 million and ₩1,271,907 million, respectively.

**36. Assets 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 year 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 assets held for sale. Assets and liabilities of Ulsan Plant, Research Institute and FarmHwaong Co.,Ltd., which is acquired during the course of a business combination of FarmHannong Co.,Ltd., are also included. The disposal is expected to be completed in 2017.

Details of assets of disposal group classified as held for sale as at December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Assets of disposal group</b>		
Property, plant and equipment	7,213	6,500
Investment properties	-	-
Other receivables and others	891	-
<b>Total</b>	8,104	6,500
<b>Liabilities of disposal group</b>		
Other payables and others	42	-
<b>Total</b>	42	-

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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) for the periods ended December 31, 2016 and 2015, is as follows:

<i>(in millions of Korean won)</i>	<b>2016</b>	<b>2015</b>
Impairment loss (reversal) on property, plant and equipment	2,216	(5,520)
<b>Total</b>	<u>2,216</u>	<u>(5,520)</u>

**37. Event after the Reporting Period**

In order to enhance future-oriented business portfolio and leap into a global player of red bio industry by enlarging investment in long-term and stable new drugs development, the Parent Company merged LG Life Sciences, Ltd. on January 1, 2017 with a resolution of the Board of Directors on September 12, 2016.

The Parent Company issued its shares by a ratio described below on the date of merger. The Parent Company is in the process of accounting and is analyzing the financial impact of the merger.

	<b>LG Chem, Ltd.</b>	<b>LG Life Sciences Co., Ltd.</b>
Ordinary shares	<u>1</u>	<u>0.2606772</u>
Preferred shares	<u>1</u>	<u>0.2534945</u>

**38. Approval of Issuance of the Financial Statements**

The consolidated financial statements 2016 were approved for issue by the Board of Directors on January 25, 2017 and are subject to change with approval of shareholders at their Annual General Meeting.