

LG Chem, Ltd. and Subsidiaries

Consolidated Financial Statements

December 31, 2015 and 2014

LG Chem, Ltd. and Subsidiaries
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December 31, 2015 and 2014

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Independent Auditor's Report
(English Translation of a Report Originally Issued in Korean)

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

We have audited the accompanying consolidated financial statements of LG Chem, Ltd. and its subsidiaries (collectively the "Group"), which comprise the consolidated statements of financial position as of December 31, 2015 and 2014, and the consolidated statements of income, comprehensive income, changes in equity and cash flows for the years then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

Management's responsibility for the financial statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with the 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 responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with the 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 financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the 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 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 accounting estimates made by management, as well as evaluating the overall presentation of the 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 consolidated financial statements present fairly, in all material respects, the financial position of LG Chem, Ltd. and its subsidiaries as of December 31, 2015 and 2014, and their financial performance and cash flows for the years then ended in accordance with the 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.

A handwritten signature in black ink that reads "Samil PicuwaterhouseCoopers". The signature is written in a cursive style and is positioned in the center of the page.

Seoul, Korea
March 9, 2016

This report is effective as of March 9, 2016, 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, 2015 and 2014

<i>(in millions of Korean won)</i>	Notes	2015	2014
Assets			
Current assets			
Cash and cash equivalents	3, 5, 6	1,704,918	988,016
Trade receivables	3, 5, 7, 32	3,236,622	3,239,283
Other receivables	3, 5, 7, 32	1,163,360	916,796
Prepaid income taxes		1,955	1,421
Other current financial assets	3, 5, 8, 9	93	783
Other current assets	14	203,604	283,373
Inventories	10	2,338,553	2,711,188
Non-current assets held for sale	36	6,500	5,961
Total current assets		8,655,605	8,146,821
Non-current assets			
Other receivables	3, 5, 7	106,484	74,223
Other financial assets	3, 5, 8	15,301	6,153
Investments in associates and joint ventures	1, 11, 34	293,747	489,450
Deferred income tax assets	29	98,459	96,823
Property, plant and equipment	12	8,867,209	8,699,536
Intangible assets	13	501,886	525,020
Other non-current assets	14	40,037	89,620
Total non-current assets		9,923,123	9,980,825
Total assets		18,578,728	18,127,646
Liabilities and equity			
Liabilities			
Current liabilities			
Trade payables	3, 5, 32	1,172,488	1,337,866
Other payables	3, 5, 32	825,606	901,648
Borrowings	3, 5, 15	2,150,778	2,205,720
Provisions	16	9,605	5,265
Current income tax liabilities	29	338,777	116,107
Other current liabilities	5, 18	301,727	242,443
Total current liabilities		4,798,981	4,809,049
Non-current liabilities			
Other payables	3, 5	1,680	54,645
Borrowings	3, 5, 15	507,928	727,830
Provisions	16	26,907	23,434
Net defined benefit liabilities	17	81,192	86,892
Deferred income tax liabilities	29	30,666	159,944
Other non-current liabilities	18	27,852	-
Total non-current liabilities		676,225	1,052,745
Total liabilities		5,475,206	5,861,794

LG Chem, Ltd. and Subsidiaries
Consolidated Statements of Financial Position
December 31, 2015 and 2014

<i>(in millions of Korean won)</i>	Notes	2015	2014
Equity			
Equity attributable to owners of the parent			
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		(52,608)	(62,233)
Retained earnings	21	11,532,500	10,690,605
		<u>12,991,465</u>	<u>12,139,945</u>
Non-controlling interests		112,057	125,907
Total equity		<u>13,103,522</u>	<u>12,265,852</u>
Total liabilities and equity		<u>18,578,728</u>	<u>18,127,646</u>

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

LG Chem, Ltd. and Subsidiaries
Consolidated Statements of Income
Years Ended December 31, 2015 and 2014

<i>(in millions of Korean won, except per share amounts)</i>	Notes	2015	2014
Revenue	32, 34	20,206,583	22,577,830
Cost of sales	24, 32	(16,540,541)	(19,573,940)
Gross profit		3,666,042	3,003,890
Selling and administrative expenses	23, 24, 32	(1,842,474)	(1,693,129)
Operating profit	34	1,823,568	1,310,761
Finance income	5, 26	151,789	127,118
Finance expenses	5, 26	(234,460)	(168,973)
Share of profit of associates and joint ventures	11	11,013	19,567
Other non-operating income	5, 27, 36	539,907	379,141
Other non-operating expenses	5, 28	(742,174)	(507,753)
Profit before income tax	33	1,549,643	1,159,861
Income tax expense	29	(401,112)	(305,836)
Profit for the year		1,148,531	854,025
Attributable to:			
Owners of the parent		1,152,987	867,924
Non-controlling interests		(4,456)	(13,899)
Earnings per share			
to owners of the parent (in won)	30		
Basic and diluted earnings per ordinary share		15,674	11,798
Basic and diluted earnings per preferred share		15,724	11,848

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

LG Chem, Ltd. and Subsidiaries
Consolidated Statements of Comprehensive Income
Years Ended December 31, 2015 and 2014

<i>(in millions of Korean won)</i>	Notes	2015	2014
Profit for the year		1,148,531	854,025
Other comprehensive income			
Items that will not be reclassified to profit or loss:			
Remeasurements of net defined benefit liability	17	(20,789)	(72,955)
Shares of remeasurement on net defined benefit liability of associates		1	(13)
Income tax effect relating to components of other comprehensive income		5,031	17,655
Items that will be reclassified subsequently to profit or loss:			
Currency translation differences		33,330	26,280
Loss on valuation of available-for-sale financial instruments	8	(780)	-
Shares of other comprehensive income of joint ventures and associates		(32,445)	(1,412)
Income tax effect relating to components of other comprehensive income		11,597	1,433
Other comprehensive loss for the year, net of tax		(4,055)	(29,012)
Total comprehensive income for the year		1,144,476	825,013
Attributable to:			
Owners of the parent		1,146,855	837,637
Non-controlling interests		(2,379)	(12,624)

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

LG Chem, Ltd. and Subsidiaries
Consolidated Statements of Changes in Equity
Years Ended December 31, 2015 and 2014

(in millions of Korean won)

	Notes	Attributable to owners of the parent						Non-controlling interests	Total equity
		Share capital	Capital surplus	Other components of equity	Accumulated other comprehensive income	Retained earnings	Total		
Balance at January 1, 2014		369,500	1,157,772	(15,699)	(87,259)	10,172,632	11,596,946	128,716	11,725,662
Comprehensive income:									
Profit for the year		-	-	-	-	867,924	867,924	(13,899)	854,025
Remeasurements of net defined benefit liability	17	-	-	-	-	(55,300)	(55,300)	-	(55,300)
Currency translation differences		-	-	-	26,438	-	26,438	1,275	27,713
Others		-	-	-	(1,412)	(13)	(1,425)	-	(1,425)
Total comprehensive income		-	-	-	25,026	812,611	837,637	(12,624)	825,013
Transactions with owners:									
Dividends		-	-	-	-	(294,520)	(294,520)	(5,309)	(299,829)
Incorporation of a subsidiary		-	-	-	-	-	-	15,597	15,597
Others		-	-	-	-	(118)	(118)	(473)	(591)
Total transactions with owners		-	-	-	-	(294,638)	(294,638)	9,815	(284,823)
Balance at December 31, 2014		369,500	1,157,772	(15,699)	(62,233)	10,690,605	12,139,945	125,907	12,265,852
Balance at January 1, 2015		369,500	1,157,772	(15,699)	(62,233)	10,690,605	12,139,945	125,907	12,265,852
Comprehensive income:									
Profit for the year		-	-	-	-	1,152,987	1,152,987	(4,456)	1,148,531
Remeasurements of net defined benefit liability	17	-	-	-	-	(15,758)	(15,758)	-	(15,758)
Currency translation differences		-	-	-	31,860	-	31,860	2,077	33,937
Loss on valuation of available-for-sale financial instruments		-	-	-	(591)	-	(591)	-	(591)
Others		-	-	-	(21,644)	1	(21,643)	-	(21,643)
Total comprehensive income		-	-	-	9,625	1,137,230	1,146,855	(2,379)	1,144,476
Transactions with owners:									
Dividends	31	-	-	-	-	(294,520)	(294,520)	(14,880)	(309,400)
Issuance of stock by subsidiaries		-	-	-	-	-	-	3,681	3,681
Others		-	-	-	-	(815)	(815)	(272)	(1,087)
Total transactions with owners		-	-	-	-	(295,335)	(295,335)	(11,471)	(306,806)
Balance at December 31, 2015		369,500	1,157,772	(15,699)	(52,608)	11,532,500	12,991,465	112,057	13,103,522

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

LG Chem, Ltd. and Subsidiaries
Consolidated Statements of Cash Flows
Years Ended December 31, 2015 and 2014

<i>(in millions of Korean won)</i>	Notes	2015	2014
Cash flows from operating activities			
Cash generated from operations	33	3,415,850	2,430,461
Interest received		34,737	43,697
Interest paid		(65,092)	(83,162)
Dividends received		33,500	18,788
Income taxes paid		(246,865)	(415,359)
Net cash inflow from operating activities		<u>3,172,130</u>	<u>1,994,425</u>
Cash flows from investing activities			
Decrease in other receivables		934,141	953,973
Decrease in non-current other receivables		27,111	28,035
Proceeds from disposal of available-for-sale financial assets		2,991	-
Proceeds from disposal of property, plant and equipment		163,684	10,721
Proceeds from disposal of intangible assets		14,115	(14)
Gonvernment grants received		69,410	-
Increase in other receivables		(1,143,614)	(1,304,098)
Increase in non-current other receivables		(45,599)	(39,443)
Acquisition of available-for-sale financial assets		(12,852)	(114)
Acquisition of investments in associates and joint ventures		(150)	(41,935)
Acquisition of property, plant and equipment		(1,633,410)	(1,411,268)
Acquisition of intangible assets		(73,611)	(50,098)
Business combination	35	-	(136,418)
Net cash outflow from investing activities		<u>(1,697,784)</u>	<u>(1,990,659)</u>
Cash flows from financing activities			
Proceeds from borrowings		186,139	494,236
Capital contribution from non-controlling interest		3,691	15,555
Repayments of borrowings		(637,885)	(647,657)
Dividends paid		(309,412)	(299,850)
Net cash outflow from financing activities		<u>(757,467)</u>	<u>(437,716)</u>
Net increase (decrease) in cash and cash equivalents		716,879	(433,950)
Cash and cash equivalents at the beginning of year		988,016	1,399,054
Exchange gain on cash and cash equivalents		23	22,912
Cash and cash equivalents at the end of year		<u>1,704,918</u>	<u>988,016</u>

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

LG Chem, Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2015 and 2014

1. General information

General information about LG Chem, Ltd. (the "Parent Company") and its subsidiaries (collectively the "Group") is as follows:

1.1 The Parent Company

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

The Parent Company merged with LG Polycarbonate Ltd. on April 1, 2011.

As of December 31, 2015, the Parent Company has its manufacturing facilities in Yeosu, Daesan, Ochang, Cheongju, Ulsan, Naju, Iksan, Paju and Gimcheon.

The Parent Company is authorized to issue 292 million shares of ordinary shares with par value of ₩5,000 per share. As of December 31, 2015, 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, IT & Electronic materials, Energy solution and Advanced materials business.

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, synthetic rubber, and synthetic compounds from olefin, and aromatic petrochemicals. This business bears characteristics of large-volume process industry. The Group's major products are ABS, PC, EP, PE, PP, synthetic rubber, acrylic, plasticizers, SAP, PVC, BPA, special resin, and others.

The Energy solution business manufactures and supplies Li-ion batteries ranging from mobile batteries for laptop computers, tablet PCs and mobile phones to automotive batteries for electric vehicles. In April 2011, the Group completed the construction of the vehicle battery plant in Ochang, North Chungcheong Province, and supplies batteries to major car manufacturers, such as GM, Hyundai/KIA Motor Company, Renault, Ford, and Volvo.

The IT & Electronic material business manufactures and supplies various display materials such as polarizer, LCD glass and PCB materials. As the LCD industry enters the maturity stage, its growth is slowing down. But the Group expects that demand for polarizers will constantly increase as a result of growth of UHDTV and big screen TV markets. In addition, the Group completed the expansion of two polarizer production lines in Nanjing, China, in order to proactively respond to the demand in China, the recording rapid growth to become next world's largest panel market in 2014, and is expected to expand the third line in 2016.

Advanced materials business manufactures and supplies display and battery materials for LCD Photoresist, OLED materials, battery materials and others. LCD Photoresist is ranking second in global market share based on its outstanding quality. In addition, the Group manufactures OLED, next generation display materials in order to prepare for post LCD era.

LG Chem, Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2015 and 2014

1.3 Consolidated subsidiaries, associates and joint ventures

	2015			
	Percentage of ownership (%)	Business location	Fiscal year-end	Business activities
Consolidated subsidiaries				
Ningbo LG Yongxing Chemical Co., Ltd. ¹	75	China	December 31	ABS/SBL manufacturing and sales
Ningbo Zhenhai LG Yongxing Trading Co., Ltd. ¹	75	China	December 31	ABS sales
LG Chem HK Ltd.	100	Hong Kong	December 31	Sales and trading
LG Chem America, Inc.	100	USA	December 31	Sales and trading
LG Chemical India Pvt. Ltd. ²	100	India	December 31	Synthetic resin manufacturing and sales
LG Polymers India Pvt. Ltd. ²	100	India	December 31	PS manufacturing
LG Chemical (Guangzhou) Engineering Plastics Co., Ltd.	100	China	December 31	EP manufacturing and sales
LG Chem (Nanjing) Information & Electronics Materials Co., Ltd. ³	100	China	December 31	Battery/ Polarizer Manufacturing and sales
LG Chem (Taiwan), Ltd.	100	Taiwan	December 31	Polarizer manufacturing and sales
LG Chem Display Materials (Beijing) Co., Ltd.	100	China	December 31	Polarizer manufacturing
Tianjin LG Bohai Chemical Co., Ltd. ^{4, 5}	75	China	December 31	PVC, VCM, EDC manufacturing and sales
Tianjin LG BOTIAN Chemical Co., Ltd. ⁵	56	China	December 31	SBS manufacturing and sales
LG Chem (China) Investment Co., Ltd. ⁶	100	China	December 31	China holding company
LG Chem (Tianjin) Engineering Plastics Co., Ltd.	100	China	December 31	ABS/EP manufacturing and sales
LG Chem Europe GmbH	100	Germany	December 31	Sales and trading
LG Chem Poland Sp. z o.o. ⁷	100	Poland	December 31	Polarizer manufacturing
LG Chem Michigan Inc.	100	USA	December 31	Automotive battery research and manufacturing
LG Chem Power Inc.	100	USA	December 31	Automotive battery research
LGC Petrochemical India Private Ltd.	100	India	December 31	Synthetic resin manufacturing and sales
Haengboknuri	100	Korea	December 31	Facility management and general cleaning
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	100	Turkey	December 31	Sales and trading
LG Chem Japan Co., Ltd.	100	Japan	December 31	Sales and trading
LG NanoH2O, Inc. ⁸	100	USA	December 31	Water purification filter research and manufacturing
NanoH2O Singapore Private Ltd. ⁸	100	Singapore	December 31	Water purification filter research and manufacturing
NanoH2O (Jiangsu) Water Processing Technology Co. Ltd. ⁸	100	China	December 31	Water purification filter research and manufacturing
Nanjing LG Chem New Energy Battery Co., Ltd. ⁹	50	China	December 31	Automotive battery manufacturing and sales
LG Chem (Chongqing) Engineering Plastics Co., Ltd. ¹⁰	100	China	December 31	EP manufacturing and sales
Associates				
LG Holdings (HK) Ltd.	26	Hong Kong	December 31	Sales and trading
TECWIN Co., Ltd.	21	Korea	December 31	Environment solution and Construction of chemical plant
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA. ¹¹	100	Brazil	December 31	Sales and trading
LG Chem Malaysia SDN.BHD. ¹²	100	Malaysia	December 31	Sales and trading
LG Fuel Cell Systems Inc.	20	USA	December 31	Power fuel cell research

LG Chem, Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

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Joint ventures

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

¹ As of December 31, 2015, Ningbo LG Yongxing Chemical Co.,Ltd. owns 100% of Ningbo Zhenhai LG Yongxing Trade Co.,Ltd. shares.

² As of December 31, 2015, LG Chemical India Pvt. Ltd. owns 100% of LG Polymer India Pvt. Ltd. shares.

³ During the year, the Parent Company acquired additional shares of LG Chem (Nanjing) Information & Electronics Materials Co., Ltd. for \ 16,504 million.

⁴ During the year, Tianjin LG Bohai Chemical Co., Ltd. merged with Tianjin LG DAGU Chemical Co., Ltd.

⁵ As of December 31, 2015, Tianjin LG Bohai Chemical Co., Ltd. owns 20.30% of Tianjin LG BOTIAN Chemical Co., Ltd. shares.

⁶ During the year, the Parent Company acquired additional shares of LG Chem (China) Investment Co., Ltd. for \ 6,417 million.

⁷ During the year, the Parent Company acquired additional shares of LG Chem Poland Sp. z o.o. for \ 11,546 million.

⁸ During the year, the Parent Company acquired additional shares of NanoH2O, Inc. for \ 93,899 million. LG NanoH2O, Inc. owns 100% of NanoH2O Singapore Private Ltd. and NanoH2O (Jiangsu) Water Processing Technology Co. Ltd. shares.

⁹ During the year, the Parent Company acquired additional shares of Nanjing LG Chem New Energy Battery Co., Ltd. for \ 9,201 million. Although the Parent Company owns 50% of the voting rights of Nanjing LG Chem 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.

¹⁰ LG Chem (Chongqing) Engineering Plastics Co., Ltd. was established During the year, and the Parent Company newly acquired 100% shares of LG Chem (Chongqing) Engineering Plastics Co., Ltd. for \ 9,269 million.

¹¹ Classified as an investment in associate due to its small size.

¹² LG Chem Malaysia SDN.BHD. was established during the year and classified as an investment in associate due to its small size. The Parent Company newly acquired 100% shares of LG Chem Malaysia SDN.BHD. for \ 150 million.

LG Chem, Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2015 and 2014

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, 2015				
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the year
Consolidated subsidiaries					
Tianjin LG DAGU Chemical Co., Ltd. ¹	-	-	-	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 NanoH2O, Inc.	25,184	19,506	5,678	19,730	(21,198)
Nanjing LG Chem New Energy Battery Co., Ltd.	83,282	41,949	41,333	737	(3,541)
LG Chem (Chongqing) Engineering Plastics Co., Ltd.	9,666	1,133	8,533	-	(823)
Associates					
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)
Joint ventures					
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

LG Chem, Ltd. and Subsidiaries
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¹ During the year, Tianjin LG Bohai Chemical Co., Ltd. merged with Tianjin LG DAGU Chemical Co., Ltd. The financial information above was the information before the merger.

(in millions of Korean won)

	December 31, 2014				
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the year
Consolidated subsidiaries					
Tianjin LG DAGU Chemical Co., Ltd.	181,399	134,814	46,585	377,551	(30,177)
Ningbo LG Yongxing Chemical Co., Ltd.	739,541	341,938	397,603	1,870,054	81,306
Ningbo Zhenhai LG Yongxing Trading Co., Ltd.	5,639	3,874	1,765	13,100	239
LG Chem HK Ltd.	100,332	84,306	16,026	547,380	731
LG Chem America, Inc.	175,151	160,887	14,264	704,740	1,035
LG Chemical India Pvt. Ltd.	32,635	39	32,596	470	95
LG Polymers India Pvt. Ltd.	81,160	28,311	52,849	226,436	6,063
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	95,367	41,059	54,308	156,389	8,527
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	1,546,814	882,779	664,035	1,952,241	66,908
LG Chem (Taiwan), Ltd.	145,032	80,991	64,041	335,978	13,769
LG Chem Display Materials (Beijing) Co., Ltd.	34,136	10,028	24,108	47,626	1,402
Tianjin LG Bohai Chemical Co., Ltd.	334,434	178,432	156,002	405,238	(43,707)
Tianjin LG BOTIAN Chemical Co., Ltd.	61,248	81,579	(20,331)	85,156	(13,689)
LG Chem (China) Investment Co., Ltd.	204,239	112,455	91,784	34,739	2,592
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	68,586	25,229	43,357	94,019	4,600
LG Chem Europe GmbH	133,687	118,619	15,068	361,953	2,932
LG Chem Poland Sp. z o.o.	33,062	17,100	15,962	79,568	(298)
LG Chem Michigan Inc.	193,990	167,994	25,996	36,607	(1,409)
LG Chem Power Inc.	6,964	6,634	330	24,185	(74)
LGC Petrochemical India Private Limited	1,134	302	832	2,818	456
Haengboknuri	1,442	517	925	3,922	254
LG CHEM TK Kimya SANAVI VE TIC. Ltd. STI	8,308	7,833	475	26,847	249
LG Chem Japan Co., Ltd.	2,044	525	1,519	3,854	258
LG NanoH2O, Inc.	20,862	90,487	(69,625)	4,452	(26,187)
Nanjing LG Chem New Energy Battery Co., Ltd.	31,780	14	31,766	-	(124)
Associates					
LG Holdings (HK) Ltd.	381,532	126,574	254,958	48,569	13,131
TECWIN Co., Ltd.	41,075	9,422	31,653	46,325	1,379
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	115	237	(122)	1,361	(211)
LG Fuel Cell Systems Inc.	25,518	17,838	7,680	4,258	(62,363)
Joint ventures					
LG VINA Chemical Co.,Ltd.	24,392	15,187	9,205	67,887	2,557
HL Greenpower Co.,Ltd.	93,757	57,473	36,284	138,121	2,194
SEETEC Co.,Ltd.	420,071	48,225	371,846	581,648	57,558
CNOOC & LG Petrochemicals Co.,Ltd.	281,457	225,730	55,727	129,141	(22,209)
KLPE Limited Liability Partnership	276,809	13,576	263,233	-	10,108

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1.5 Changes in scope for consolidation

Subsidiary newly included in the consolidation for the year ended December 31, 2015:

Subsidiary	Reason
LG Chem (Chongqing) Engineering Plastics Co., Ltd.	Newly acquired

Subsidiary excluded from the consolidation for the year ended December 31, 2015:

Subsidiary	Reason
Tianjin LG DAGU Chemical Co., Ltd.	Merged with Tianjin LG Bohai Chemical Co., Ltd.

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 periods presented, unless otherwise stated.

2.1 Basis of preparation

The Group maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with the International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS). The accompanying 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.

The preparation of the consolidated financial statements requires the use of certain critical accounting estimates. It also requires management to exercise judgment in the process of 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

(1) New and amended standards adopted by the Group

The Group newly applied the following amended and enacted standards and interpretations for the annual period beginning on January 1, 2015, and this application does not have a material impact on the financial statements.

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- Amendment to Korean IFRS 1019, *Employee Benefits*
- Annual improvements to Korean IFRS 2010-2012 Cycle
- Annual improvements to Korean IFRS 2011-2013 Cycle

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

New standards and amendments issued but not effective for the financial year beginning January 1, 2015, and not early adopted are enumerated below. The Group expects that these standards and amendments would not have a material impact on its consolidated financial statements.

- Amendment to Korean IFRS 1001, *Presentation of Financial Statements*
- Korean IFRS 1016, *Property, plant and equipment*, and Korean IFRS 1041, *Agriculture and fishing: Productive plants*
- Korean IFRS 1016, *Property, plant and equipment*, and Korean IFRS 1038, *Intangible assets: Amortization based on revenue*
- Korean IFRS 1109, *Financial Instruments*
- Korean IFRS 1110, *Consolidated Financial Statements*, Korean IFRS 1028, *Investments in Associates and Joint Ventures*, and Korean IFRS 1112, *Disclosures of Interests in Other Entities: Exemption for consolidation of investee*
- Korean IFRS 1111, *Joint Agreements*
- Annual Improvements to Korean IFRS 2012-2014 Cycle
- Korean IFRS 1115, *Revenue from Contracts with Customers*

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 (including special purpose entities) over which the Company has control. The Company controls the corresponding investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. The consolidation of a subsidiary begins from the date the Company obtains control of a subsidiary and ceases when the Company loses control of the subsidiary.

The Group applies the acquisition method to account for business combinations. 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 initially measured at their fair values at the acquisition date. The Group recognizes any non-controlling interest in the acquiree on an acquisition-by-acquisition basis in the event of liquidation, either at fair value or at the non-controlling interest's proportionate share of the recognized amounts of acquiree's identifiable net assets. All other non-controlling interests are measured at their acquisition-date fair values, unless another measurement basis is required by IFRSs. Acquisition-related costs are

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expensed as incurred.

Goodwill is recognized as the excess of the aggregate of the consideration transferred, the amount of any non-controlling interest in the acquiree, and the acquisition-date fair value of the acquirer's previously held equity interest in the acquiree over the identifiable net assets acquired. If this consideration is lower than the fair value of the net assets of the subsidiary acquired, the difference is recognized in profit or loss.

Balances of receivables and payables, income and expenses and unrealized gains on transactions between the Group subsidiaries are eliminated. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

(2) Associates

Associates are all entities over which the Group has significant influence, and investments in associates are initially recognized at acquisition cost using the equity method. 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 any objective evidence that the investment in the associate is impaired, the Group recognizes the difference between the recoverable amount of the associate and its book value 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 has rights to the assets, and obligations for the liabilities, relating to the joint operation and recognizes the assets, liabilities, revenues and expenses relating to its interest in a joint operation. A joint venture has rights to the net assets relating to the joint venture and accounts for that investment using the equity method.

2.4 Segment reporting

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 the 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 prevailing at the dates of the transactions or valuation w items are re-measured. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are

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recognized in profit or loss.

Exchange differences arising on non-monetary financial assets and liabilities such as equity instruments at fair value through profit or loss and available-for-sale equity instruments are recognized in profit or loss and included in other comprehensive income, respectively, as part of the fair value gain or loss.

(3) Translation into the presentation currency

The results and financial position of all consolidated entities that have a functional currency different from the presentation currency are translated 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.

2.7 Financial assets

(1) Classification and measurement

The Group classifies its financial assets in 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 purchases and sales of financial assets are recognized on trade date.

At initial recognition, financial assets are measured at fair value plus, in the case of financial assets not carried at fair value through profit or loss, transaction costs. Transaction costs of financial assets carried at fair value through profit or loss are expensed in the statement of income. After the initial recognition, available-for-sale financial assets and financial assets at fair value through profit or loss are subsequently carried at fair value. Loans and receivables, and held-to-maturity investments are subsequently carried at amortized cost using the effective interest rate method.

Changes in fair value of financial assets at fair value through profit or loss are recognized in profit or loss and changes in fair value of available-for-sale financial assets are recognized in other comprehensive income. When the available-for-sale financial assets are sold or impaired, the fair value adjustments recorded in equity are reclassified into profit or loss.

(2) 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 are impaired. A financial asset or a group of financial assets is/are impaired and impairment losses are incurred only if there is objective evidence of

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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 the allowance account. Impairment of other financial assets is directly deducted from their carrying amount. The Group writes off financial assets when the assets are determined no longer recoverable.

The objective evidence that a financial asset is impaired includes significant financial difficulty of the issuer or obligor; a delinquency in interest or principal over three months; or the disappearance of an active market for that financial asset because of financial difficulties. A significant or a prolonged decline in the fair value of an available-for-sale equity instrument below its cost is also objective evidence of impairment.

(3) Derecognition

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

2.8 Derivative 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. Changes in the fair value of the derivatives that are not qualified for hedge accounting are recognized in the statement of income within 'other non-operating income (expenses)' or 'finance income (expenses)' according to 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. The Group changed its inventory valuation method from moving-average method to monthly total-average method in order to evaluate inventory more rationally for certain inventories including raw materials and merchandise for the year ended December 31, 2015. The purpose of this accounting policy change is to more accurately match income and expense, and to improve the reasonable allocation of periodical profit and loss. We reflected this accounting policy change beginning this fiscal year because it is impossible to reasonably determine the cumulative effect on the financial statements.

2.10 Non-current assets held-for-sale

Non-current assets (or disposal group) are classified as assets held-for-sale when their carrying amount is to be recovered principally through sale of asset and when 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.

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2.11 Property, plant and equipment

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

Land is not depreciated. Depreciation on other assets is calculated using the straight-line method to allocate the difference between their cost and their residual values over their estimated useful lives, is as follows:

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

The depreciation method, residual values and useful lives of property, plant and equipment are reviewed at the end of each reporting period and, if appropriate change of depreciation is incurred, accounted for as changes in accounting estimates.

2.12 Borrowing costs

Borrowing costs incurred in the acquisition or construction of a qualifying asset are capitalized in the period when it is prepared for its intended use, and investment income earned on the temporary investment of borrowings made specifically for the purpose obtaining a qualifying asset is deducted from the borrowing costs eligible for capitalization during the period. Other borrowing costs are recognized as expenses for the period in which they are incurred.

2.13 Government grants

Government grants are recognized at their fair values when there is reasonable assurance that the grant will be received and the Group will comply with the conditions attached to it. Government grants related to assets are presented by deducting the grants in arriving at the carrying amount of the assets, and grants related to income are deferred and presented by deducting the related expenses.

2.14 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.

Internally generated software development costs are the aggregate costs recognized after meeting the asset recognition criteria, including technical feasibility, and determined to have future economic benefits. Membership rights are regarded as intangible assets with indefinite useful life and not amortized because there is no foreseeable limit to the period over which the assets are expected to be utilized. Intangible assets with definite useful life that are amortized using the

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straight-line method over their estimated useful lives, are as follows:

Software development costs	3 - 6 years
Industrial property rights	5 - 15 years
Others	6 - 20 years

2.15 Research and development

Costs associated with research are recognized as an expense when it is 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.

2.16 Impairment of non-financial assets

Goodwill or intangible assets with indefinite useful lives are not subject to amortization and are tested annually for impairment. Assets that are subject to amortization are reviewed 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 to sell and value in use. Non-financial assets, other than goodwill, that suffered impairment are reviewed for possible reversal of the impairment at each reporting date.

2.17 Financial liabilities

(a) Classification and measurement

Financial liabilities at fair value through profit or loss are financial instruments held for trading. Financial liabilities are classified in this category if incurred principally for the purpose of repurchasing them in the near term. Derivatives that are not designated as hedges or bifurcated from financial instruments containing embedded derivatives are also categorized 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

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transfer of financial assets does not qualify for derecognition, as financial liabilities carried at amortized cost and presented as 'trade payables', 'borrowings', and 'other payables' in the statement of financial position.

(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, cancelled or expired or when the terms of an existing financial liability are substantially modified.

2.18 Current and deferred income tax

The tax expense for the period consists of current and deferred tax. Tax is recognized on the profit for the period in the statement of income, 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 calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting period.

Deferred tax is recognized for temporary differences arising between the tax bases of assets and liabilities and their carrying amounts as expected tax consequences at the recovery or settlement of the carrying amounts of the assets and liabilities. However, deferred tax assets and liabilities are not recognized if they arise 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 to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences can be utilized.

Deferred tax liability is recognized for taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint ventures, except to the extent that the Company 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, deferred tax asset is recognized for 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 against current tax liabilities and when the deferred income taxes assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

2.19 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.

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2.20 Greenhouse Gas Emissions Allowances and Obligation

With Enforcement of Allocation and Trading of Greenhouse Gas Emissions Allowances, allowances that are received free of charge from the government are measured at zero while allowances 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 allowances that will be submitted to the government and the best estimate of expenditure required to settle the obligation at the end of reporting period for any excess emission. The allowances and emissions obligations are classified as intangible assets and provisions, respectively, in the statement of financial position.

2.21 Employee benefits

(1) Post-employment benefits

The Group has both defined benefit and defined contribution plans. A defined contribution plan is a pension plan under which the Group pays fixed contributions into a separate entity. The contributions are recognized as employee benefit expenses when an employee has rendered service. A defined benefit plan is a pension plan that is not a defined contribution plan.

Typically defined benefit plans define an amount of pension benefit that an employee will receive on retirement, usually dependent on one or more factors such as age, years of service and compensation. 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 and that have terms to maturity approximating to the terms of the related pension obligation. The remeasurements of the net defined benefit liability are recognized in other comprehensive income.

If any plan amendments, curtailments, or settlements occur, past service costs or any gains or losses on settlement are recognized as profit or loss for the year.

(2) Other long-term employee benefits

Certain Group companies provide long-term employee benefits, which 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 year. These liabilities are valued annually by independent qualified actuaries.

2.22 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 activities of the Group. It is stated as net of value added taxes, returns, rebates and discounts, after elimination of intra-company transactions.

The Group recognizes revenue when the amount of revenue can be reliably measured; when it is probable that future economic benefits will flow to the entity; and when specific criteria have been

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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.

(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. 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 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.

2.23 Leases

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 where all the risks and rewards of ownership are not transferred to the Group are classified as operating leases. Lease payments under operating leases are recognized as expenses on a straight-line basis over the lease term.

Leases where the Group has substantially all the risks and rewards of ownership are classified as finance leases and recognized as lease assets and liabilities at the lower of the fair value of the leased property and the present value of the minimum lease payments on the opening date of the lease period.

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.

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3 Financial risk management

3.1 Financial risk factors

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

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

(1) Market risk

1) Foreign exchange risk

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

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

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

As of December 31, 2015 and 2014, 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>	2015		2014	
	Assets	Liabilities	Assets	Liabilities
USD	1,789,793	2,440,000	1,918,095	2,527,236
EUR	78,023	127,879	66,431	106,051
JPY	16,686	135,589	33,347	110,044
GBP and others	43,027	1,318	3,135	2,225

As of December 31, 2015 and 2014, 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>	2015		2014	
	10% Increase	10% Decrease	10% Increase	10% Decrease
USD	(65,021)	65,021	(60,914)	60,914

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

2) Price risk

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

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

<i>(in millions of Korean won)</i>	2015		2014	
	10% Increase	10% Decrease	10% Increase	10% Decrease
KOSPI	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 caused by fluctuations in interest rates and minimizing net interest expense.

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

The impact of 1% (100 basis points) higher/lower of interest rate with all other variables held constant on the Group's post-tax profit for the years ended December 31, 2015 and 2014, and on equity as of December 31, 2015 and 2014, is as follows:

<i>(in millions of Korean won)</i>	Impact on post-tax profit		Impact on equity	
	2015	2014	2015	2014
Increase	(17,373)	(17,107)	(17,373)	(17,107)
Decrease	17,373	17,107	17,373	17,107

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(2) Credit risk

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

As of December 31, 2015 and 2014, the maximum degrees of credit exposures are as follows:

(in millions of Korean won)

	2015		
	Before allowance	Allowance for doubtful accounts	Book value (maximum exposure)
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
Total	6,224,685	(13,270)	6,211,415

(in millions of Korean won)

	2014		
	Before allowance	Allowance for doubtful accounts	Book value (maximum exposure)
Loans and receivables (excluding cash on hand)	5,233,335	(16,581)	5,216,754
Financial assets at fair value through profit or loss	783	-	783
Total	5,234,118	(16,581)	5,217,537

Details of financial guarantees provided by the Group are disclosed in Notes 3.1.(3) and 19.

The Group has established the following policies and procedures to manage credit risks.

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

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

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

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(3) Liquidity risk

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

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

(in millions of Korean won)

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

(in millions of Korean won)

	December 31, 2014			
	Less than			
	1 year	1 to 2 years	2 to 5 years	Over 5 years
Borrowings (excluding finance lease liabilities)	2,240,804	408,399	342,708	59
Trade and other payables	2,239,514	54,595	50	-
Total	4,480,318	462,994	342,758	59

2) The table below analyzes the derivatives into relevant maturity groupings based on the remaining period at the reporting date to the contractual maturity date.

(in millions of Korean won)

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

(in millions of Korean won)

	December 31, 2014			
	Less than			
	1 year	1 to 2 years	2 to 5 years	Over 5 years
Gross settled derivatives				
Trading derivatives inflow	52,445	-	-	-
Trading derivative outflow	(51,662)	-	-	-
Total	783	-	-	-

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3) The table below analyzes the Group's financial guarantee contracts into relevant maturity groupings based on the remaining period at the reporting date to the contractual maturity date.

<i>(in millions of Korean won)</i>	December 31, 2014			
	Less than 1 year	1 to 2 years	2 to 5 years	Over 5 years
Financial guarantee contracts ¹	1,041	-	-	-

¹ The Parent Company have provided LG Hausys Ltd. the joint guarantee for obligations outstanding as of April 1, 2009, the spin-off date. As of December 31, 2015, LG Hausys Ltd. redeemed all relevant payables. The amounts represent the maximum amount of the guarantee as of December 31, 2014, in which the guarantee could be called.

3.2 Capital risk management

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

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

The gearing ratio and debt-to-equity ratio as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won, except for ratios)</i>	2015	2014
Total borrowings (Note 15) (A)	2,658,706	2,933,550
Less: cash and cash equivalents (B)	(1,704,918)	(988,016)
Net debt (C=A+B)	953,788	1,945,534
Total liabilities (D)	5,475,206	5,861,794
Total equity (E)	13,103,522	12,265,852
Total capital (F=C+E)	14,057,310	14,211,386
Gearing ratio (C/F)	6.8%	13.7%
Debt-to-equity ratio (D/E)	41.8%	47.8%

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3.3 Fair value estimation

(1) Carrying amount and fair value of financial instruments by category As of December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

	2015		2014	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets (current)				
Cash and cash equivalents	1,704,918	1	988,016	1
Financial deposits	988,628	1	780,489	1
Trade receivables	3,236,622	1	3,239,283	1
Other receivables (excluding financial deposits)	174,732	1	136,307	1
Derivative financial instruments	93	93	783	783
Financial assets (non-current)				
Financial deposits	21,418	1	27,236	1
Other non-current receivables (excluding financial deposits)	85,066	1	46,987	1
Other non-current financial assets (carried at cost)	6,055	2	6,153	2
Other non-current financial assets (carried at fair value)	9,246	9,246	-	-
Financial liabilities (current)				
Trade and other payables	1,998,094	1	2,239,514	1
Current borrowings (excluding finance lease liabilities)	2,145,893	1	2,205,720	1
Current finance lease liabilities	4,885	1	-	-
Other current liabilities (dividends payable)	1,055	1	1,402	1
Financial liabilities (non-current)				
Non-current borrowings (excluding finance lease liabilities)	473,842	479,411	727,830	740,170
Non-current finance lease liabilities	34,086	35,361	-	-
Other non-current payables	1,680	1	54,645	52,955

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

² All other non-current financial assets of the Group consist of available-for-sale equity securities and are measured at cost (2015: ₩ 6,055 million, 2014: ₩ 6,153 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:

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1) Derivative financial instruments

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

2) Financial liabilities (non-current)

Fair values of financial liabilities(non-current) are based on cash outflows discounted using Korean won currency note yield in the same credit grade with the Parent Company (AA+), and the applied discount rates as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Discount rate	1.88%~2.60%	2.26%~2.68%

(3) Fair value hierarchy

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

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

Fair value hierarchy classifications of the financial assets and financial liabilities that are measured at fair value or its fair value is disclosed as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015			
	Level 1	Level 2	Level 3	Total
Financial assets/liabilities that are measured at fair value				
Derivative financial instruments	-	93	-	93
Other non-current financial assets (carried at fair value)	9,246	-	-	9,246
Non-current borrowings (excluding finance lease liabilities)	-	479,411	-	479,411
Other non-current payables	-	35,361	-	35,361
<i>(in millions of Korean won)</i>	2014			
	Level 1	Level 2	Level 3	Total
Financial assets/liabilities that are measured at fair value				
Derivative financial assets	-	783	-	783
Non-current borrowings (excluding finance lease liabilities)	-	740,170	-	740,170
Other non-current payables	-	52,955	-	52,955

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4 Critical accounting estimates and assumptions

The Group makes estimates and assumptions concerning the future. The estimates and assumptions 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 annually whether goodwill has suffered any impairment. The recoverable amounts of cash-generating units have been determined based on value-in-use calculations (Note 13).

(2) Income taxes

The Group is operating in numerous countries and the income generated from these operations is 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, 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 system. As the Group's income tax is dependent on the investments, increase in wages and dividends, there exists uncertainty with regard to measuring the final tax effects.

(3) Provisions

The Group recognizes provisions for product warranties and sales return as of the reporting date as described in Note 16. The amounts are estimated based on historical data.

(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).

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5 Financial instruments by category

Categorizations of financial instruments as of December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

Financial assets	2015			Total
	Loans and receivables	Assets at fair value through profit or loss	Assets classified as available-for-sale	
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
Total	6,211,384	93	15,301	6,226,778

(in millions of Korean won)

Financial liabilities	2015			Total
	Financial liabilities at fair value through profit or loss	Liabilities at amortized cost	Other liabilities ¹	
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
Total	-	3,587,983	1,071,552	4,659,535

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(in millions of Korean won)

	2014			
	Loans and receivables	Assets at fair value through profit or loss	Assets classified as available-for- sale	Total
Financial assets				
Cash and cash equivalents	988,016	-	-	988,016
Trade receivables	3,239,283	-	-	3,239,283
Other receivables	916,796	-	-	916,796
Other current financial assets	-	783	-	783
Other non-current receivables	74,223	-	-	74,223
Other non-current financial assets	-	-	6,153	6,153
Total	5,218,318	783	6,153	5,225,254

(in millions of Korean won)

	2014			
	Financial liabilities at fair value through profit or loss	Liabilities at amortized cost	Other liabilities¹	Total
Financial liabilities				
Trade payables	-	1,337,866	-	1,337,866
Other payables	-	901,648	-	901,648
Borrowings (current)	-	1,220,999	984,721	2,205,720
Other current liabilities (dividends payable)	-	1,042	-	1,042
Other non-current payables	-	54,645	-	54,645
Borrowings (non-current)	-	727,830	-	727,830
Total	-	4,244,030	984,721	5,228,751

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

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Net gains (losses) on financial instruments by category for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Assets at fair value through profit or loss		
Loss on valuation/ disposal (profit or loss)	(141)	(1,423)
Available-for-sale financial assets		
Gain on disposal	32	-
Dividend income	-	202
Loans and receivables		
Interest income	37,516	45,463
Gain (loss) on foreign currency translation	21,131	(634)
Gain on foreign exchange	82,893	37,900
Liabilities at amortized cost		
Interest expense	(55,307)	(75,414)
Gain (loss) on foreign currency translation	(63,125)	8,718
Loss on foreign exchange	(78,643)	(28,633)
Other liabilities		
Interest expense	(9,661)	(10,145)
Loss on foreign currency translation	(9,218)	(8,082)
Loss on foreign exchange	(47,994)	(24,285)

6 Cash and cash equivalents

Details of cash and cash equivalents as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Bank deposits and cash on hand	272,824	290,451
Financial deposits, others	1,432,094	697,565
Total	<u>1,704,918</u>	<u>988,016</u>

As of December 31, 2015, cash and cash equivalents include deposits with banks of ₩ 8,667 million (2014: ₩ 984 million) held by a subsidiary which are not freely remissible to the Parent Company because of currency exchange restrictions.

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7 Trade and other receivables

Trade and other receivables, net of allowance for doubtful accounts, as of December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

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

(in millions of Korean won)

	2014		
	Original amount	Allowance for doubtful accounts	Carrying amount
Trade receivables ¹	3,255,864	(16,581)	3,239,283
Other current receivables	916,796	-	916,796
Other non-current receivables ²	74,223	-	74,223
Total	4,246,883	(16,581)	4,230,302

¹ As of December 31, 2015 and 2014, trade receivables transferred to financial institutions but not fully derecognized are as follows (Note 15):

	Loans and receivables (trade receivables collateralized borrowings)	
	2015	2014
Carrying amount of transferred assets	1,032,581	984,721
Carrying amount of related liabilities	(1,032,581)	(984,721)

² As of December 31, 2015, ₩ 3,318 million in other non-current receivables represents deposits which are restricted from withdrawal in connection with maintaining checking accounts (2014: ₩ 671 million).

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Details of other receivables as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Current		
Non-trade receivables	127,621	111,874
Financial deposits ¹	988,628	780,489
Accrued income	7,944	5,058
Loans	12,452	-
Deposits	26,715	19,375
	<u>1,163,360</u>	<u>916,796</u>
Non-current		
Non-trade receivables	29,316	15
Financial deposits ^{1,2}	21,418	27,236
Loans	318	305
Deposits	55,432	46,667
	<u>106,484</u>	<u>74,223</u>
Total	<u>1,269,844</u>	<u>991,019</u>

¹ As of December 31, 2015, certificates of deposits included within financial deposits amounting to ₩ 35,800 million have been pledged as collateral to SH Corporation in relation to the acquisition of LG Science Park land. The financial deposits had been set as collaterals, but were cancelled in 2015.

² As of December 31, 2015, ₩ 18,100 million is restricted from being withdrawn in relation to Agreement of cooperation between large and small&medium sized companies.

The aging analysis of these trade and other receivables as of December 31, 2015 and 2014, is as follows:

<i>(in millions of Korean won)</i>	2015		2014	
	Trade receivables	Other receivables	Trade receivables	Other receivables
Receivables not past due	3,149,419	1,256,491	3,115,050	972,297
Past due but not impaired				
Up to 3 months	68,341	5,797	125,642	14,874
3 to 6 months	9,277	2,869	5,202	745
Over 6 months	2,618	5,018	1,136	3,103
	<u>80,236</u>	<u>13,684</u>	<u>131,980</u>	<u>18,722</u>
Impaired receivables	19,906	-	8,834	-
	<u>3,249,561</u>	<u>1,270,175</u>	<u>3,255,864</u>	<u>991,019</u>

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The movements in bad debts allowance for the years ended December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

	2015			
	Trade receivables		Other receivables	
	Current	Non-current	Current	Non-current
Beginning balance	16,581	-	-	-
Additions	-	-	331	-
Write-off	(777)	-	-	-
Reversals	(2,506)	-	-	-
Exchange differences	(359)	-	-	-
Ending balance	12,939	-	331	-

(in millions of Korean won)

	2014			
	Trade receivables		Other receivables	
	Current	Non-current	Current	Non-current
Beginning balance	14,951	-	-	-
Additions	2,435	-	-	-
Write-off	(971)	-	-	-
Reversals	-	-	-	-
Exchange differences	166	-	-	-
Ending balance	16,581	-	-	-

As of December 31, 2015 and 2014, the carrying amounts of trade and other receivables approximate their fair values.

8 Other financial assets

Details of other financial assets as of December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

	2015	2014
Other financial assets		
Derivatives (Note 9)	93	783
Available-for-sale financial assets	15,301	6,153
Less: current portion	(93)	(783)
	15,301	6,153

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The movements in financial assets classified as available-for-sale for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Beginning balance	6,153	5,952
Acquisition / Reclassification	12,852	197
Disposal	(2,959)	-
Loss on valuation (before income tax effect)	(780)	-
Exchange differences	35	4
Ending balance	<u>15,301</u>	<u>6,153</u>
Less: current portion	-	-
	<u>15,301</u>	<u>6,153</u>

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

No impairment losses were recognized for financial assets classified as available-for-sale for the years ended December 31, 2015 and 2014.

9 Derivative financial instruments

Details of derivative financial assets and liabilities as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015		2014	
	Assets	Liabilities	Assets	Liabilities
Current				
Held-for-trading	<u>93</u>	<u>-</u>	<u>783</u>	<u>-</u>
	<u>93</u>	<u>-</u>	<u>783</u>	<u>-</u>

Details of derivative financial contracts as of December 31, 2015 and 2014, are as follows:

Classification	Contractor	Contract date	2015		
			Contract amount (in thousands)	Contract period	Contract terms
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
Classification	Contractor	Contract date	2014		
			Contract amount (in thousands)	Contract period	Contract terms
Forward exchange	Shinhan bank and four others	2014.12.03, others	US\$ 10,000, others	2015.01.02 ~ 2015.01.06	\ 1,117.95/ US\$ 1, others

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10 Inventories

Details of inventories as of December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

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

(in millions of Korean won)

	2014		
	Original amount	Valuation allowance	Carrying amount
Merchandise	74,386	(1,150)	73,236
Finished products	1,168,497	(41,951)	1,126,546
Semi-finished products	430,141	-	430,141
Work-in-process	832	-	832
Raw materials	731,657	(3,510)	728,147
Supplies	95,163	-	95,163
Materials-in-transit	257,123	-	257,123
Total	2,757,799	(46,611)	2,711,188

During the year, the cost of inventories recognized as expense and included in 'cost of sales' amounted to ₩ 12,269,055 million (2014: ₩ 15,701,320 million).

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11 Investments in associates and joint ventures

Changes in the carrying amount of investments in associates and joint ventures for the years ended December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

	2015							
	Beginning balance	Acquisitions /transfer	Dividends	Share of profit (loss) of associates	Share of other comprehensive income (expense) of associates	Impairment loss	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 ¹	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>1</u>	<u>293,747</u>

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

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)

	2015
	KLPE Limited Liability Partnership
Impaired amount	139,929
Pre-tax discount rate	8.8%
Growth rate for subsequent years after five years	0.0%

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	2014						
	Beginning balance	Acquisitions /transfer	Dividends	Share of profit (loss) of associates	Share of other comprehensive income (expense) of associates	Others	Ending balance
LG VINA Chemical Co., Ltd.	3,473	-	(974)	1,022	161	-	3,682
HL Greenpower Co., Ltd.	16,746	-	-	1,109	-	(40)	17,815
LG Holdings (HK) Ltd.	63,445	-	-	3,414	1,262	-	68,121
TECWIN Co., Ltd.	5,955	-	(20)	220	-	-	6,155
SEETEC Co., Ltd.	164,735	-	(17,500)	30,505	-	27	177,767
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	579	-	-	-	-	-	579
CNOOC & LG Petrochemicals Co., Ltd.	38,745	-	-	(11,104)	223	-	27,864
KLPE Limited Liability Partnership	139,774	33,533	-	4,953	(2,846)	-	175,414
LG Fuel Cell Systems Inc.	14,415	8,402	-	(10,552)	(212)	-	12,053
Total	447,867	41,935	(18,494)	19,567	(1,412)	(13)	489,450

12 Property, plant and equipment

Changes in the carrying amounts of property, plant and equipment for the years ended December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

	2015										
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Equipment	Others	Construction -in-progress	Machinery -in-transit	Total
Beginning balance	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)
Effects of change in foreign currency exchange rates	193	5,191	614	5,705	14	1,205	278	-	4,324	-	17,524
Depreciation	-	(60,175)	(42,635)	(900,488)	(3,528)	(116,268)	(29,335)	(63,169)	-	-	(1,215,598)
Impairment	(503)	(7,846)	(1,376)	(4,449)	(13)	(2,118)	(218)	-	(204)	-	(16,727)
Reversal of impairment	-	7,804	2	11,250	9	469	244	-	10,545	-	30,323
Transfer to non-current assets held for sale (Note 36)	-	-	-	(6,394)	-	(106)	-	-	-	-	(6,500)
Ending balance	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)

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	2014										
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Equipment	Others	Construction -in-progress	Machinery -in-transit	Total
Beginning balance	812,828	1,882,957	572,338	3,996,941	9,438	276,456	91,761	73,082	689,264	154,544	8,559,609
Cost	813,367	2,279,332	935,506	10,040,565	36,701	646,873	253,098	210,204	743,592	154,544	16,113,782
Accumulated depreciation	-	(386,539)	(361,532)	(6,005,703)	(27,161)	(363,365)	(160,238)	(137,122)	-	-	(7,441,660)
Accumulated impairment	(539)	(9,836)	(1,636)	(37,921)	(102)	(7,052)	(1,099)	-	(54,328)	-	(112,513)
Business combination (Note 35)	1,105	2,353	-	2,689	-	1,077	403	-	4,003	-	11,630
Acquisitions/ Transfer	97,246	149,538	49,461	972,941	2,591	126,141	26,620	80,760	1,210,236	110,049	2,825,583
Disposals/ Transfer	(490)	(4,627)	(232)	(18,997)	(34)	(9,773)	(1,496)	-	(1,296,143)	(179,862)	(1,511,654)
Exchange differences	(105)	4,283	192	8,500	7	939	252	-	6,569	-	20,637
Depreciation	-	(57,558)	(38,434)	(837,863)	(3,092)	(84,438)	(27,821)	(68,648)	-	-	(1,117,854)
Impairment	(81)	(11,371)	(9,455)	(39,059)	(79)	(1,180)	(477)	-	(20,814)	-	(82,516)
Transfer to non-current assets held for sale	-	-	-	(5,517)	(43)	(311)	(28)	-	-	-	(5,899)
Ending balance	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)

During the year ended December 31, 2015, the Group capitalized ₩ 6,899 million of borrowing costs (2014: ₩ 6,384 million) to property, plant and equipment. The capitalization rate of borrowings used to determine the amount of borrowing costs eligible for capitalization is 1.83% (2014: 2.12%).

The details of property, plant and equipment that have been pledged as collateral for certain bank loan outstanding as of December 31, 2014, but was redeemed as of December 31, 2015, are as follows:

	2014				
	Carrying amount	Collateral value	Related account	Related amount	Mortgagee
Land	3,294	3,844	Borrowings	1,498	Kookmin Bank
Building	9,264	4,943	(Note 15)		

Depreciation of property, plant and equipment for the years ended December 31, 2015 and 2014, was classified as follows:

	2015	2014
Cost of sales	1,140,374	1,050,174
Selling and administrative expenses	74,810	67,447
Others	414	233
Total	1,215,598	1,117,854

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Details of machinery classified as a finance lease as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Cost- capitalized finance leases	42,669	-
Accumulated depreciation	<u>(4,267)</u>	<u>-</u>
Net book value	<u>38,402</u>	<u>-</u>

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

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

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

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

During 2014, the separator division, managed as a CGU in IT & Electronic Materials segments, has been tested for impairment because its sales volume was lower than expected.

During 2014, Chinese PVC division, managed as a CGU of the Basic materials & Chemicals business segment, was tested for impairment due to its deteriorating performance in earnings as a result of a significant price drop of the PVC products.

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 years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015		2014	
	LED Encap	US battery division for vehicles (U.S.)	PVC (China)	Separator division
Impaired (reversed) amount				
Property, plant and equipment	16,727	(24,803)	52,496	23,053
Intangible assets	1,093	(99)	192	415
Key assumptions				
Pre-tax discount rate	11.7%	13.8%	12.0%	14.4%
Growth rate for subsequent years exceeding five years	0%	0%	0%	0%

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The Group decided to dispose of certain non-current assets during 2015 and 2014. The differences between the fair value and book value were recognized as impairment losses (reversal of impairment losses) (Note 36). The amounts classified as other non-operating expenses (income) are as follows:

<i>(in millions of Korean won)</i>	2015	2014
(Reversal of) Impairment loss on property, plant and equipment	(5,520)	6,967
Impairment loss on intangible assets	-	77
	<u>(5,520)</u>	<u>7,044</u>

13 Intangible assets

Changes in the carrying amount of intangible assets for the years ended December 31, 2015 and 2014 are, as follows:

<i>(in millions of Korean won)</i>	2015					
	Software development costs	Industrial property rights	Goodwill	Memberships	Others	Total
Beginning balance	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
Ending balance	<u>61,670</u>	<u>200,779</u>	<u>143,599</u>	<u>49,642</u>	<u>46,196</u>	<u>501,886</u>

<i>(in millions of Korean won)</i>	2014					
	Software development costs	Industrial property rights	Goodwill	Memberships	Others	Total
Beginning balance	45,231	100,770	33,415	51,705	31,972	263,093
Business combination (Note 35)	-	43,716	167,169	-	35	210,920
Acquisitions/ Transfer	31,830	36,994	-	592	10,639	80,055
Disposals/ Transfer	(6,721)	(60)	-	(2,017)	(202)	(9,000)
Exchange differences	109	2,187	10,937	5	63	13,301
Amortization	(14,061)	(9,733)	-	-	(8,809)	(32,603)
Impairment	(316)	(274)	-	(61)	(33)	(684)
Transfer to non-current assets held for sale	(61)	-	-	-	(1)	(62)
Ending balance	<u>56,011</u>	<u>173,600</u>	<u>211,521</u>	<u>50,224</u>	<u>33,664</u>	<u>525,020</u>

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Amortization of intangible assets was classified for the years ended December 31, 2015 and 2014, as follows:

<i>(in millions of Korean won)</i>	2015	2014
Cost of sales	10,778	9,528
Selling and administrative expenses	30,120	23,075
Total	<u>40,898</u>	<u>32,603</u>

Research and development costs recognized as expenses for the year ended December 31, 2015, amount to ₩ 556,649 million (2014: ₩ 511,241 million).

Goodwill is allocated to the Group's CGUs identified according to operating segment. The carrying amounts of allocated goodwill by CGUs as of December 31, 2015, are as follows:

<i>(in millions of Korean won)</i>	Carrying amount
CGUs	
Goodwill arising on the acquisition of LG Petrochemical Co., Ltd.	
NCC	2,361
ABS	1,250
PO	1,063
PVC	759
Acrylic	653
Plasticizer	143
BPA	125
Others	1,839
	<u>8,193</u>
Goodwill arising on the acquisition of SAP business	<u>25,222</u>
Acrylic	<u>25,222</u>
Goodwill arising on the acquisition of LG NanoH2O, Inc.	<u>110,184</u>
Water purification	<u>110,184</u>
Total	<u>143,599</u>

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

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During 2015 and 2014, the amount of impairment loss recognized as other non-operating expenses and key assumptions used for calculation of value in use are as follows:

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

14 Other current and non-current assets

Details of other current and non-current assets as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Current		
Prepayments to suppliers	96,914	55,327
Prepaid expenses	20,839	19,096
Prepaid value added tax	70,015	102,222
Others	15,836	106,728
Total	<u>203,604</u>	<u>283,373</u>
Non-current		
Long-term prepaid expenses	29,118	30,982
Others	10,919	58,638
Total	<u>40,037</u>	<u>89,620</u>

15 Borrowings

The carrying amounts of borrowings as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Current		
Short-term borrowings	1,839,678	1,749,702
Current maturities of bank loans	206,304	356,054
Current maturities of debentures	99,911	99,964
Finance lease liabilities	4,885	-
	<u>2,150,778</u>	<u>2,205,720</u>
Non-current		
Bank loans	274,069	428,412
Debentures	199,773	299,418
Finance lease liabilities	34,086	-
	<u>507,928</u>	<u>727,830</u>
Total	<u>2,658,706</u>	<u>2,933,550</u>

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Details of current borrowings as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	Bank	Latest maturity date	Annual interest rate (%) at 2015	Carrying Amount	
				2015	2014
Notes discounted ¹	Woori Bank, others	2016.06.24	Libor + 0.56, various	1,032,581	984,721
Bank loans	China Bank, others	2016.12.23	Libor+0.50~2.20, various	807,097	764,981
Total				1,839,678	1,749,702

¹ As of December 31, 2015, trade receivables transferred to financial institutions but not derecognized are accounted for as collateralized borrowing transaction (Note 7).

Details of non-current borrowings As of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	Bank	2015				
		Annual interest rate (%)	Latest maturity date	Total amount	Current maturities	Long-term debts
Foreign currency borrowings	Sumitomo Mitsui Banking Corporation	3Libor + 0.60	2017.04.03	23,440	-	23,440
	Standard Chartered Bank	3Libor + 2.20	2016.09.25	16,226	16,226	-
	Standard Chartered Bank	3Libor + 1.0	2017.11.20	28,364	2,836	25,528
	Agricultural Bank of China	3Libor + 0.80	2019.12.28	24,338	2,839	21,499
	Bank of America	6Libor + 1.60	2017.10.24	34,769	-	34,769
	Bank of America	3Libor + 1.50	2018.08.13	34,769	-	34,769
	CITI	6Libor + 2.00	2017.03.10	19,703	2,318	17,385
	HSBC	3Libor + 2.10	2016.01.22	23,180	23,180	-
	HSBC	3COF	2016.04.08	8,245	8,245	-
	HSBC	3Libor + 2.10	2016.08.04	34,769	34,769	-
	HSBC	3Libor + 1.45	2016.09.19	46,359	46,359	-
	HSBC	3Libor + 1.45	2016.11.11	46,359	46,359	-
	JP Morgan	3Libor + 1.75	2016.07.15	23,173	23,173	-
	Mizuho Banking Corporation	3Libor + 1.02	2017.04.16	46,359	-	46,359
Mizuho Banking Corporation	3Libor + 0.75	2017.05.27	70,320	-	70,320	
Total			480,373	206,304	274,069	

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<i>(in millions of Korean won)</i>	2014					
	Bank	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non- current
Won currency borrowings	Kookmin Bank	2.70	2018.07.14	711	127	584
	Kookmin Bank	2.70	2020.03.21	787	79	708
	Korea Development Bank	3.53	2015.07.19	200,000	200,000	-
Foreign currency borrowings	Shanghai Pudong Development Bank	5.40	2015.09.15	884	884	-
	Sumitomo Mitsui Banking Corporation	3Libor + 0.60	2017.04.03	21,984	-	21,984
	Standard Chartered Bank	3Libor + 2.20	2015.12.14	15,147	15,147	-
	Standard Chartered Bank	3Libor + 2.20	2016.09.25	19,475	4,328	15,147
	Agricultural Bank of China	5.54	2015.10.15	1,768	1,768	-
	Bank of America	2.00	2015.08.03	21,637	21,637	-
	Bank of America	6Libor + 1.60	2017.10.24	32,457	-	32,457
	BTMU	3Libor + 1.54	2015.07.20	54,960	54,960	-
	CITI	6Libor + 2.00	2017.03.10	20,556	2,164	18,392
	HSBC	3COF	2016.04.08	7,697	-	7,697
	HSBC	3Libor + 2.10	2016.08.04	32,457	-	32,457
	HSBC	3Libor + 1.45	2016.09.19	43,276	-	43,276
	HSBC	3Libor + 2.10	2016.01.22	32,456	-	32,456
	HSBC	3Libor + 2.10	2016.01.22	43,276	-	43,276
	HSBC	3Libor + 1.45	2016.11.11	43,276	-	43,276
	HSBC	3Libor + 2.10	2016.01.22	21,638	-	21,638
	JP Morgan	3Libor + 1.75	2016.07.15	21,632	-	21,632
	JP Morgan	3Libor + 1.30	2016.11.16	27,480	-	27,480
	Mizuho Banking Corporation	3Libor + 0.75	2017.05.27	65,952	-	65,952
	Nova Scotia Bank	3Libor + 1.54	2015.07.20	54,960	54,960	-
Total				784,466	356,054	428,412

Certain property, plant and equipment have been pledged as collaterals for the above non-current borrowings of Kookmin Bank (Note 12).

Details of debentures as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015					
	Financial institution	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
Won currency debentures	Woori Security, others	4.03	2016.12.05	100,000	100,000	-
	Woori Security, others	4.11	2017.03.29	200,000	-	200,000
Less: discount on debentures				(316)	(89)	(227)
Total				299,684	99,911	199,773

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	Financial institution	Annual interest rate (%)	2014			
			Latest maturity date	Total amount	Current	Non-current
Won currency debentures	Woori Security, others	4.03	2016.12.05	100,000	-	100,000
	Woori Security, others	3.96	2015.03.29	100,000	100,000	-
	Woori Security, others	4.11	2017.03.29	200,000	-	200,000
Less: discount on debentures				(618)	(36)	(582)
Total				399,382	99,964	299,418

Details of finance lease liabilities as of December 31, 2015, are as follows:

(in millions of Korean won)

Leaser	2015				
	Annual interest rate (%)	Latest maturity date	Total amount	Current maturities	Long-term debts
Hyundai Oil Bank	3.12	2024.12.31	38,971	4,885	34,086

The present value of finance lease liabilities as of December 31, 2015 and 2014, is as follows:

(in millions of Korean won)

	2015			2014		
	Minimum lease payments	Future finance costs	Present value	Minimum lease payments	Future finance costs	Present value
Within 1 year	5,000	115	4,885	-	-	-
1 to 5 years	20,000	1,903	18,097	-	-	-
Over 5 years	20,000	4,011	15,989	-	-	-

16 Provisions

Changes in the carrying amount of provisions for the years ended December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

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

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(in millions of Korean won)

	2014			
	Sales returns ¹	Warranty ²	Greenhouse gas emission ³	Total
Beginning balance	1,532	17,994	-	19,526
Additions	33,027	8,332	-	41,359
Used	(30,642)	(1,544)	-	(32,186)
Ending balance	3,917	24,782	-	28,699
Less : current portion	(3,917)	(1,348)	-	(5,265)
Total	-	23,434	-	23,434

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

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

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

17 Net defined benefit liability

The amounts recognized in the statements of financial position As of December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

	2015	2014
Present value of retirement benefit obligations ¹	717,770	605,712
Fair value of plan assets	(636,578)	(518,820)
Liability in the statement of financial position	<u>81,192</u>	<u>86,892</u>

¹ The present value of retirement benefit obligations is net of existing contributions to the National Pension Plan of ₩ 802 million as of December 31, 2015 (2014: ₩ 847 million).

The amounts recognized in the statements of income for the years ended December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

	2015	2014
Current service cost ¹	101,578	87,649
Past service cost	-	24,410
Interest cost	2,682	3,685
Total, included in employee benefit expenses	<u>104,260</u>	<u>115,744</u>

¹ The above amounts excluded ₩ 555 million (2014: ₩ 674 million) of expenses capitalized to construction in progress and development costs.

Severance costs recognized for defined contribution plan for the year ended December 31, 2015, amounted to ₩ 1,990 million (2014: ₩ 1,486 million).

The amounts recognized in the statements of income for the years ended December 31, 2015 and

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2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Cost of sales	75,488	87,993
Selling and administrative expenses	30,762	29,237
Total	<u>106,250</u>	<u>117,230</u>

Changes in the present value of defined benefit obligations for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Beginning balance	605,712	438,122
Transfer in	7,620	1,918
Transfer out	(5,132)	(1,468)
Current service cost	102,133	88,323
Past service cost	-	24,410
Interest expense	18,704	18,075
Remeasurements:		
Actuarial gains and losses arising from changes in demographic assumptions	371	1,160
Actuarial gains and losses arising from changes in financial assumptions	30,875	59,097
Actuarial gains and losses arising from experience adjustments	(12,108)	11,485
Others	412	267
Effects of change in foreign currency exchange rates	283	(351)
Payments from plans:	(31,100)	(35,326)
Ending balance	<u>717,770</u>	<u>605,712</u>

Changes in the fair value of plan assets for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Beginning balance	518,820	386,211
Transfer in	642	352
Transfer out	(260)	(638)
Interest income	16,022	14,390
Remeasurements:		
Return on plan assets (excluding amounts included in interest income)	(1,239)	(946)
Contributions:		
Employers	120,151	145,238
Payments from plans	(15,295)	(25,044)
Administrative costs	(2,263)	(743)
Ending balance	<u>636,578</u>	<u>518,820</u>

The actual return on plan assets for the year ended December 31, 2015, was ₩ 14,783 million (2014: ₩ 13,444 million).

The principal actuarial assumptions used as of December 31, 2015 and 2014, are as follows:

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	2015	2014
Discount rate	2.8%	3.1%
Future salary increase	5.1%	5.1%

The sensitivity analysis for changes in key actuarial assumptions as of December 31, 2015, is as follows:

<i>(in millions of Korean won)</i>	Increase by 1%	Decrease by 1%
Discount rate:		
Increase (decrease) in defined benefit obligations	(72,380)	86,551
Future salary increase:		
Increase (decrease) in defined benefit obligations	83,685	(71,602)

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

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

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

Plan assets as of December 31, 2015 and 2014, consist of:

<i>(in millions of Korean won)</i>	2015				2014			
	Quoted price	Unquoted price	Total	Compo- sition	Quoted price	Unquoted price	Total	Compo- sition
Insurance contracts with guaranteed yield	636,578	-	636,578	100%	518,820	-	518,820	100%

As of December 31, 2015, the weighted average duration of the defined benefit obligations is 11.7 years.

The Group reviews the funding level on an annual basis and has a policy to eliminate deficit in the fund. Expected contributions to post-employment benefit plans for the year ending December 31, 2016, are ₩133,672 million.

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18 Other current and non-current liabilities

Details of other current and non-current liabilities as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Current		
Advances from customers	49,793	19,164
Dividends payable	1,055	1,042
Withholding	17,270	28,476
Unearned revenues	6,889	13,793
Non-trade payables	175,040	122,253
Accrued expenses	51,680	57,219
Others	-	496
Total	<u>301,727</u>	<u>242,443</u>
Non-current		
Long-term accrued expenses	<u>27,852</u>	<u>-</u>

19 Commitments and contingencies

- (1) As of December 31, 2015, the Parent Company has been provided with guarantees from the Seoul Guarantee Insurance for the execution of supply contracts.
- (2) As of December 31, 2015, the Parent Company has provided one blank promissory note to the Korea National Oil Corporation as collateral in relation to petroleum import surcharges.
- (3) As of December 31, 2015, the Parent Company and certain overseas subsidiaries have various specific line of credit agreements with several financial institutions, as follows:

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

Classification	<u>The Parent Company</u>		<u>Certain Overseas Subsidiaries</u>				
	KRW	USD	USD	CNY	EUR	INR	PLN
Limit of bank overdraft	64,100	50	140	300	20	-	32
Limit of the letter of credit	90,200	383	170	-	-	-	-
Limit of discount of notes from export	-	1,372	-	-	-	-	-
Limit of guaranteed payments in other foreign currency	-	190	-	-	-	-	-
Limit of loan arrangements	-	-	1,309	2,590	13	3,269	-

The Group also entered into credit line agreements with other financial institutions relating to trade finance and import/export amounting to ₩ 270,000 million and US\$ 180 million.

- (4) As of December 31, 2015, the Parent Company has B2B purchase arrangements with several financial institutions amounting to ₩ 360,000 million.
- (5) As of December 31, 2015, the consumers in U.S. and Canada have filed two class actions and the customers have filed three separate actions against the Parent Company and certain overseas subsidiaries in relation to price fixing of mobile batteries. However, the ultimate

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outcome of these cases cannot be determined at the reporting date.

- (6) In addition, as of December 31, 2015, the Parent Company and certain overseas subsidiaries have been named as a plaintiff in 11 and 29 legal actions, respectively, involving ₩ 4,137 million and ₩ 4,762 million in claims. They respectively have been named as a defendant in eight legal actions with ₩6,483 million and one case with ₩ 96 million in claims, respectively. The ultimate outcome of these cases cannot be determined at the reporting date.
- (7) As of December 31, 2015, the Parent Company has technology license agreements with STYRON EUROPE GmbH and other companies for the production of Polycarbonate products. Further, the Parent Company has entered into manufacture and production technical contracts with Exxon Mobile and others.
- (8) The Parent Company has entered into a license agreement with LG Corp. to use trademarks on the products that the Group manufactures and sells, and on the services the Group provides in relation to its business.
- (9) As of December 31, 2015, the Parent Company has contracts of US\$ 2.6 million and EUR 9.9 million in guarantees with financial institutions in regard to warranty for certain products, and the Parent Company has a contract of US\$ 79 million in guarantees with financial institutions for the advances received from customers.
- (10) As of December 31, 2015, the Parent Company has guaranteed the repayment of various obligations of its subsidiaries. The outstanding balance of such guarantees as of December 31, 2015, amounts to US\$ 150 million and EUR 3 million (total equivalent to ₩ 179,642 million) (2014: US\$ 175 million and EUR 3 million, total equivalent to ₩196,370 million). Details of guarantees provided as of December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

Guarantor	Guarantee beneficiary	Guarantee period	Financial institution	2015		2014	
				Amount of guarantee	Outstanding loan amount	Amount of guarantee	Outstanding loan amount
	LG Chem Europe GmbH	2015.01.02 ~ 2016.01.02	Shinhan Bank	3,842	-	4,010	-
	LG Chem Michigan, Inc.	2014.05.27 ~ 2017.05.27	Mizuho Bank	70,320	70,320	65,952	65,952
The Parent Company	"	2014.03.31 ~ 2017.03.31	SMBC	23,440	23,440	21,984	21,984
	"	2015.04.01 ~ 2016.03.31	SMBC	23,440	-	21,984	-
	"	2013.11.12 ~ 2015.02.16	JP Morgan	-	-	27,480	27,480
	"	2015.08.18 ~ 2016.08.18	Wells Fargo	23,440	23,440	21,984	21,984
	LG NanoH2O, Inc.	2015.10.01 ~ 2016.09.30	Citibank	35,160	12,892	32,976	7,694
Total				179,642	130,092	196,370	145,094

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

Further, as of December 31, 2015, the Group provided no financial guarantee to its associates in relation to their borrowings.

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

(in millions of Korean won)

	2015	2014
Property, plant and equipment	297,362	478,304

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20 Equity

Changes in share capital and share premium for the years ended December 31, 2015 and 2014, are as follows:

(in millions of Korean won and in shares)

	Ordinary shares		Preferred shares		Share premium
	Number of shares	Amount	Number of shares	Amount	
January 1, 2014	66,271,100	331,356	7,628,921	38,144	897,424
December 31, 2014	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

Changes in treasury shares for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	Number of shares		Carrying amount	Gain on sale of treasury shares
	Ordinary shares	Preferred shares		
January 1, 2014	359,792	5,519	15,484	13,855
Purchase of treasury shares	3	-	-	-
December 31, 2014	359,795	5,519	15,484	13,855
December 31, 2015	359,795	5,519	15,484	13,855

21 Retained earnings

Details of retained earnings as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Legal reserve ¹	296,178	286,864
Discretionary reserve ²	9,551,785	9,077,851
Retained earnings before appropriation	1,684,537	1,325,890
Total	11,532,500	10,690,605

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

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

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22 Other components of equity

Details of other components of equity as of December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Treasury shares (Note 20)	(15,484)	(15,484)
Capital transactions within the Group ¹	(215)	(215)
Total	<u>(15,699)</u>	<u>(15,699)</u>

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

23 Selling and administrative expenses

Selling and administrative expenses for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Wages and salaries	465,949	386,421
Pension costs (Note 17)	30,762	29,237
Welfare expense	103,550	81,809
Travel expense	40,315	35,191
Water & utilities	26,051	25,139
Packaging expense	6,379	5,619
Rental expense	90,471	102,328
Commission expense	248,240	225,284
Depreciation (Note 12)	74,810	67,447
Advertising expense	16,649	16,796
Freight expense	436,863	430,337
Training expense	12,471	12,259
Amortization (Note 13)	30,120	23,075
Sample expense	20,666	12,296
Development costs	84,901	86,415
Others	154,277	153,476
Total	<u>1,842,474</u>	<u>1,693,129</u>

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24 Expenses by nature

Expenses that are recorded by function as cost of sales, and selling and administrative expenses in the statements of income for the years ended December 31, 2015 and 2014, consist of:

<i>(in millions of Korean won)</i>	2015	2014
Changes in inventories	283,970	(70,084)
Raw materials and consumables used	10,737,692	14,466,020
Purchase of merchandise	1,247,393	1,305,384
Employee benefit expense (Note 25)	1,628,530	1,402,341
Advertising expense	17,900	17,936
Transportation expense	465,566	458,308
Service fees	404,653	371,751
Depreciation, amortization	1,256,082	1,150,224
Operating lease payments	66,821	58,633
Other expenses	2,274,408	2,106,556
Total	18,383,015	21,267,069

25 Employee benefit expense

Details of employee benefit expenses for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Wages and salaries	1,361,893	1,166,619
Pension costs – Defined benefit plan (Note 17)	104,260	115,744
Pension costs – Defined contribution plan(Note17)	1,990	1,486
Others	160,387	118,492
Total	1,628,530	1,402,341

26 Finance income and expenses

Details of finance income and expenses for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Finance income		
Interest income ¹	37,516	45,463
Dividend income	-	202
Gain on foreign exchange	102,200	66,961
Gain on foreign currency translation	4,814	6,320
Gain on disposal of available-for-sale securities	32	-
Gain on disposal of trading derivatives	7,134	7,389
Gain on valuation of trading derivatives	93	783
Total	151,789	127,118
Finance expense		
Interest expense ²	58,069	79,175
Loss on foreign exchange	120,013	65,238
Loss on foreign exchange translations	49,010	14,965
Loss on valuation of trading derivatives	7,368	9,595
Total	234,460	168,973

¹ Details of interest income for the years ended December 31, 2015 and 2014, are as follows:

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<i>(in millions of Korean won)</i>	2015	2014
Bank deposits	34,497	43,916
Other loans and receivables	3,019	1,547
Total	<u>37,516</u>	<u>45,463</u>

² Details of interest expense for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Interest on bank overdraft and borrowingsxxxxc	48,278	50,660
Interest on finance lease liabilities	1,303	122
Interest on debentures	13,521	23,994
Other interest expenses	1,866	10,783
Capitalized interest for qualifying assets	(6,899)	(6,384)
Total	<u>58,069</u>	<u>79,175</u>

27 Other non-operating income

Details of other non-operating income for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Gain on foreign exchange	320,378	322,082
Gain on foreign currency translation	26,323	35,686
Gain on disposal of property, plant and equipment	7,533	2,952
Gain on disposal of intangible assets	-	16
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 business	122,295	-
Others	32,956	18,405
Total	<u>539,907</u>	<u>379,141</u>

Transfer of OLED lighting business

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

<i>(in millions of Korean won)</i>	2015
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 years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Loss on foreign exchange	346,309	338,823
Loss on foreign currency translation	33,339	27,039
Loss on disposal of property, plant and equipment	89,846	27,966
Loss on disposal of intangible assets	330	2,395
Impairment loss on property, plant and equipment (Note 12)	16,727	82,516
Impairment loss on intangible assets (Note 13)	76,458	684
Impairment loss on investments in joint ventures (Note 11)	139,929	-
Others	39,236	28,330
Total	742,174	507,753

29 Deferred Tax and Tax Expenses

Income tax expense for the years ended December 31, 2015 and 2014, consists of:

<i>(in millions of Korean won)</i>	2015	2014
Current tax on profit for the year	517,789	296,984
Adjustments in respect of prior years	2,983	42,060
Deferred tax - movement in temporary differences	(129,699)	(70,159)
Deferred tax – tax credit carryforwards	(6,589)	17,863
	<u>384,484</u>	<u>286,748</u>
Deferred tax charged directly to equity	11,597	1,433
Current tax charged directly to equity	5,031	17,655
Income tax expense	<u>401,112</u>	<u>305,836</u>

Income taxes charged directly to other comprehensive income during the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Current tax		
Remeasurements on net defined benefit liabilities	5,031	17,655
Deferred tax		
Shares of other comprehensive income of joint ventures	10,801	-
Currency translation differences	607	1,433
Loss on valuation of available-for-sale financial assets	189	-
Total	<u>11,597</u>	<u>1,433</u>

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The movements in deferred tax assets (liabilities) for the years ended December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

	2015				
	Beginning balance	Profit (loss) for the year	Increase (decrease)		Ending balance
			Other comprehensive income	Exchange differences	
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)
Allowance for doubtful accounts	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>118,102</u>	<u>10,990</u>	<u>(5,476)</u>	<u>51,557</u>
Currency translation differences	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>124,691</u>	<u>11,597</u>	<u>(5,376)</u>	<u>67,791</u>

(in millions of Korean won)

	2014					
	Beginning balance	Business combination	Increase (decrease)		Ending balance	
			Profit (loss) for the year	Other comprehensive income		Exchange differences
Defined benefit liability	89,241	-	43,495	-	3	132,739
Plan assets	(92,321)	-	(32,614)	-	-	(124,935)
Reserve for research and human resources development	(234,740)	-	62,920	-	-	(171,820)
Allowance for doubtful accounts	3,791	-	(2,164)	-	46	1,673
Property, plant and equipment	99,450	-	10,923	-	2,321	112,694
Intangible assets	-	(18,777)	835	-	(939)	(18,881)
Investments in subsidiaries, associates and joint ventures	(7,579)	-	(2,930)	-	(1,782)	(12,291)
Accrued income	(1,123)	-	(322)	-	-	(1,445)
Others	16,984	-	(6,841)	-	64	10,207
	<u>(126,297)</u>	<u>(18,777)</u>	<u>73,302</u>	<u>-</u>	<u>(287)</u>	<u>(72,059)</u>
Currency translation differences	505	-	-	1,433	-	1,938
Tax credit carryforwards	23,350	-	(17,863)	-	-	5,487
Tax loss carryforwards	5,958	-	(4,576)	-	131	1,513
Deferred income tax assets (liabilities)	<u>(96,484)</u>	<u>(18,777)</u>	<u>50,863</u>	<u>1,433</u>	<u>(156)</u>	<u>(63,121)</u>

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The reconciliations between income tax expense and accounting profit for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Profit before income tax	1,549,643	1,159,861
Tax calculated based on applicable tax rate ¹	443,487	313,195
Tax adjustments		
Income not subject to tax	(7,839)	(19,005)
Expenses not deductible for tax purposes	15,816	4,392
Unrecognized deferred income tax for temporary differences in the current year	43,914	22,618
Tax credit	(101,277)	(77,250)
Others	7,011	61,886
Income tax expense	401,112	305,836
Effective tax rate(income tax expense/ profit before income tax)	25.88%	26.37%

¹ The weighted average applicable tax rate on profit before income tax for the year ended December 31, 2015, is 28.62% (2014: 27.00%).

Realization of the future tax benefits related to the deferred tax assets is dependent on many factors, including the Parent company's ability to generate taxable income within the period during which the temporary differences reverse, the outlook of the economic environment, and the overall future industry outlook. Management periodically considers these factors in reaching its conclusion.

The temporary difference not recognized as deferred tax asset or liability that needs to be subtracted or added, is as follows,

<i>(in millions of Korean won)</i>	2015	2014	
Investments in subsidiaries, associates and joint ventures	(340,767)	(364,703)	Permanently re-invested income not distributed as dividend
Investments in subsidiaries, associates and joint ventures	582,494	306,730	No possibility of disposal
Goodwill	(8,193)	(8,193)	
Unused tax loss carryforwards	440,270	316,937	Unprobable future tax income

The expiration of tax loss carryforwards as of December 31, 2015 and 2014, is as follows:

<i>(in millions of Korean won)</i>	2015	2014
2016	8,041	15,624
2017	17,904	17,533
2018	14,885	14,577
2019	89,317	87,494
2020 and afterwards	314,155	184,196

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30 Earnings per share

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

Basic earnings per share attributable to the owners of the Parent Company for the years ended December 31, 2015 and 2014, is computed as follows:

<i>(in millions of Korean won)</i>	2015	2014
Profit attributable to ordinary shares ¹	1,033,114	777,603
Weighted average number of ordinary shares outstanding ²	65,911,305	65,911,308
Basic earnings per ordinary share (in won)	15,674	11,798
<i>(in millions of Korean won)</i>	2015	2014
Profit attributable to preferred shares ¹	119,873	90,321
Weighted average number of preferred shares outstanding ²	7,623,402	7,623,402
Basic earnings per preferred share (in won)	15,724	11,848

¹ Profit attributable to ordinary and preferred shares are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Profit for the year attributable to owners of the Parent Company	1,152,987	867,924
Ordinary shares dividends (A)	296,601	263,645
Preferred shares dividends (B)	34,686	30,875
Undistributed earnings for the year	821,700	573,404
Undistributed earnings available for ordinary shares (C)	736,513	513,958
Undistributed earnings available for preferred shares (D)	85,187	59,446
Profit for the year attributable to ordinary shares (A+C)	1,033,114	777,603
Profit for the year attributable to preferred shares (B+D)	119,873	90,321

² Weighted average numbers of shares are calculated as follows:

Ordinary shares outstanding	Period	2015		
		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
Total				24,057,626,325

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

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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
Total				2,782,541,730

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

Ordinary shares outstanding	2014			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2014. 1. 1 ~ 2014.12.31	65,911,308	365	24,057,627,420
Purchase of treasury shares	2014.12.31 ~ 2014.12.31	(3)	1	(3)
Total				24,057,627,417

Weighted average number of ordinary shares outstanding: $24,057,627,417 / 365 = 65,911,308$ shares

Preferred shares outstanding	2014			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2014. 1. 1 ~ 2014.12.31	7,623,402	365	2,782,541,730
Total				2,782,541,730

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 owners of the Parent Company is identical to basic earnings per share.

31 Dividends

Details of dividends as of December 31, 2015 and 2014, are as follows:

(in millions of Korean won)	2015	2014
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 (in won, %)		
Ordinary shares: cash	4,500 (90%)	4,000 (80%)
Preferred shares: cash	4,550 (91%)	4,050 (81%)
Cash dividends to distribute (in millions of Korean won)		
Ordinary shares	296,601	263,645
Preferred shares	34,686	30,875
	331,287	294,520

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Dividend payout ratios for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Dividends (A)	331,287	294,520
Profit for the year attributable to owners of the Parent Company (B)	1,152,987	867,924
Dividend payout ratio (A/B)	<u>28.73%</u>	<u>33.93%</u>

Dividend yield ratios for the years ended December 31, 2015 and 2014, are as follows:

<i>(in Korean won)</i>	2015		2014	
	Ordinary shares	Preferred Shares	Ordinary shares	Preferred Shares
Dividend per share (A)	4,500	4,550	4,000	4,050
Market value at the end of year (B) ¹	336,000	251,250	186,250	144,375
Dividend yield ratio (A/B)	<u>1.34%</u>	<u>1.81%</u>	<u>2.15%</u>	<u>2.81%</u>

¹ 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 of December 31, 2015 and 2014, LG Corp. is an entity exercising significant influence over the Group as it owns 33.53% of the Parent Company's ordinary shares.

Details of other related parties that have sales and other transactions with the Group or have receivables and payables balances, other than consolidated subsidiaries, associates and joint ventures (Note 1.3), as of December 31, 2015 and 2014, are as follows:

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

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Sales and purchases with related parties for the years ended December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

	2015			
	Sales and others	Purchase and others		
		Purchase of raw material /merchandise	Acquisition of property, plant and equipment and intangible assets	Others
Entity with significant influence over the Group				
LG Corp.	12	-	-	50,241
Associates and joint ventures				
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
Other related parties				
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	-	-	9,358
Key management	-	-	-	54,834
Total	204,105	688,166	358,905	352,412

(in millions of Korean won)

	2014			
	Sales and others	Purchase and others		
		Purchase of raw material /merchandise	Acquisition of property, plant and equipment and intangible assets	Others
Entity with significant influence over the Group				
LG Corp.	12	-	-	54,191
Associates and joint ventures				
SEETEC Co., Ltd.	58,671	175,822	10	78,008
TECWIN Co., Ltd.	-	378	2,218	32
HL Greenpower Co., Ltd.	80,184	-	-	-
Others	35	-	-	1,371
Other related parties				
LG MMA Corporation	124,087	140,086	-	-
SERVEONE and its subsidiaries	24,382	378,916	212,269	92,212
LG CNS Co., Ltd. and its subsidiaries	5,469	6,647	79,676	49,721
Others	235	-	-	9,270
Key management	-	-	-	40,650
Total	293,075	701,849	294,173	325,455

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Balances of receivables and payables arising from sales and purchases of goods and services as of December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

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

(in millions of Korean won)

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

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(in millions of Korean won)

	2014			
	Receivables			
	Trade receivables and others	Loan receivables	Other receivables	Total
Entity with significant influence over the Group				
LG Corp.	-	-	8,167	8,167
Associates and joint ventures				
SEETEC Co., Ltd.	-	-	-	-
TECWIN Co., Ltd.	-	-	-	-
HL Greenpower Co., Ltd.	18,402	-	-	18,402
Others	-	-	15	15
Other related parties				
LG MMA Corporation	8,398	-	422	8,820
SERVEONE and its subsidiaries	2,872	-	25,903	28,775
LG CNS Co., Ltd. and its subsidiaries	3,435	-	-	3,435
Others	-	-	3,724	3,724
Key management	-	-	-	-
Total	33,107	-	38,231	71,338

(in millions of Korean won)

	2014			
	Payables			
	Trade payables	Borrowings	Other payables	Total
Entity with significant influence over the Group				
LG Corp.	-	-	7	7
Associates and joint ventures				
SEETEC Co., Ltd.	-	-	24,310	24,310
TECWIN Co., Ltd.	-	-	886	886
HL Greenpower Co., Ltd.	-	-	-	-
Others	-	-	-	-
Other related parties				
LG MMA Corporation	10,377	-	-	10,377
SERVEONE and its subsidiaries	1,130	-	179,168	180,298
LG CNS Co., Ltd. and its subsidiaries	175	-	31,055	31,230
Others	-	-	344	344
Key management	-	-	45,751	45,751
Total	11,682	-	281,521	293,203

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Fund transactions with related parties for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015		2014
	Equity contributions in cash	Loan	Equity contributions in cash
Associates and joint ventures			
LG Fuel Cell Systems Inc.	-	9,897	8,402
KLPE Limited Liability Partnership	-	-	33,533
LG Chem Malaysia SDN.BHD.	150	-	-
Total	150	9,897	41,935

Dividends received from related parties for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Associates and joint ventures		
SEETEC Co., Ltd.	33,500	17,500
LG VINA Chemical Co., Ltd.	993	974
TECWIN Co., Ltd.	-	20
Total	34,493	18,494

Dividends provided to related parties for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Entity with significant influence over the Group		
LG Corp.	88,877	88,877

Compensation for key management of the Group for the years ended December 31, 2015 and 2014, consists of:

<i>(in millions of Korean won)</i>	2015	2014
Wages and salaries	52,111	38,505
Pension costs	2,723	2,145
Total	54,834	40,650

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 held against receivables from related parties and thus, no bad debts expense has been recognized in current and prior period.

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

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33 Cash generated from operations

Reconciliation between operating profit and net cash inflow (outflow) from operating activities for the years ended December 31, 2015 and 2014, is as follows:

<i>(in millions of Korean won)</i>	2015	2014
Profit before income tax	1,549,643	1,159,861
Adjustments for:		
Depreciation	1,215,184	1,117,621
Amortization	40,898	32,603
Pension costs	104,260	115,744
Finance income	(78,372)	(88,826)
Finance expenses	147,705	128,366
Foreign exchange differences	66,458	28,771
Gain on disposal of property, plant and equipment	(7,533)	(2,952)
Gain on disposal of intangible assets	-	(16)
Gain on disposal of business	(122,295)	-
Loss on disposal of property, plant and equipment	89,846	27,966
Loss on disposal of intangible assets	330	2,395
Impairment loss on property, plant and equipment	16,727	82,516
Impairment loss on intangible assets	76,458	684
Reversal of impairment loss on property, plant and equipment	(30,323)	-
Reversal of impairment loss on intangible assets	(99)	-
Impairment loss on investments in joint ventures	139,929	-
Other income	(1,417)	(7,581)
Inventories	384,767	(146,102)
Trade receivables	26,208	7,201
Other receivables	32,874	(10,976)
Settlement of derivatives	549	(2,206)
Trade payables	(167,398)	56,460
Other payables	(100,095)	180,447
Net defined benefit liabilities	(131,587)	(154,041)
Other cash flows from operations	163,133	(97,474)
Cash generated from operations	3,415,850	2,430,461

The principal non-cash transactions for the years ended December 31, 2015 and 2014, are as follows:

<i>(in millions of Korean won)</i>	2015	2014
Transfer of construction-in-progress	1,575,993	1,296,143
Transfer of machinery-in-transit	158,456	179,862
Reclassification of long-term borrowings into current maturities	393,389	455,872
Reclassification of non-current asset held for sale	6,500	5,961
Acquisition of financial lease assets	42,669	-

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34 Segment information

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

Segment	Products or services	Major customers
Basic materials & Chemicals ¹	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
IT & Electronic materials	Polarizers, 3D FPR and others	LG Display Co., Ltd. BOE, AUO, and others
Energy solutions	Mobile batteries, automotive batteries, Electricity storage batteries and others	Hewlett-Packard Co., General Motors Corp., and others
Advanced materials ¹	LCD Photoresist, OLED materials, Battery materials and others	LG Display Co., Ltd. Samsung Display Co., Ltd.
Common and others	General management, sales and R&D	

¹ The Group renamed its Petrochemicals business segment as Basic materials & Chemicals, and reclassified part of former IT & Electronic materials business segment into Advanced materials business segment. The comparative information was restated by reflecting such changes.

The segment information on revenue and profit and loss for the years ended December 31, 2015 and 2014, is as follows:

(in millions of Korean won)

	2015					Total
	Basic materials & Chemicals	IT & Electronic materials	Energy solutions	Advanced materials	Common and others³	
Total segment revenue	14,632,461	2,304,710	3,150,333	459,350	6,211	20,553,065
Inter-segment revenue	168,974	16,464	3,227	151,606	6,211	346,482
Revenue from external customers ¹	14,463,487	2,288,246	3,147,106	307,744	-	20,206,583
Operating profit (loss) ²	1,676,940	117,349	520	28,999	(240)	1,823,568

(in millions of Korean won)

	2014					Total
	Basic materials & Chemicals	IT & Electronic materials	Energy solutions	Advanced materials	Common and others³	
Total segment revenue	17,264,522	2,363,615	2,852,627	448,259	6,784	22,935,807
Inter-segment revenue	184,168	7,606	16,873	142,546	6,784	357,977
Revenue from external customers ¹	17,080,354	2,356,009	2,835,754	305,713	-	22,577,830
Operating profit (loss) ²	1,117,308	92,809	64,858	39,613	(3,827)	1,310,761

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- ¹ Revenue from external customers consists of sales of goods. Interest income and dividend income are included in finance income.
- ² Management assesses the performance of the operating segments based on a measure of operating profit of segment.
- ³ 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 of December 31, 2015 and 2014, is as follows:

(in millions of Korean won)

	2015					Total
	Basic materials & Chemicals	IT & Electronic materials	Energy solutions	Advanced materials	Common and others	
Total assets for the segment ¹	8,094,328	2,835,033	3,796,738	339,254	3,513,375	18,578,728
Investments in associates and joint ventures	38,837	-	16,559	-	238,351	293,747
Total liabilities for the segment ¹	2,516,170	803,266	1,707,676	84,845	363,249	5,475,206

(in millions of Korean won)

	2014					Total
	Basic materials & Chemicals	IT & Electronic materials	Energy solutions	Advanced materials	Common and others	
Total assets for the segment ¹	8,900,235	2,710,160	3,365,403	321,403	2,830,445	18,127,646
Investments in associates and joint ventures	207,539	-	17,815	-	264,096	489,450
Total liabilities for the segment ¹	2,616,982	546,207	1,467,896	49,212	1,181,497	5,861,794

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

The external sales and non-current assets by geographical segments from continuing operations for the years ended December 31, 2015 and 2014, and as of December 31, 2015 and 2014, are as follows:

(in millions of Korean won)

	Sales		Non-current assets ¹	
	2015	2014	2015	2014
Korea ²	6,510,954	7,895,399	7,767,917	7,672,556
China	6,693,042	6,851,706	1,306,950	1,118,318
South East Asia	4,022,590	4,805,364	28,250	27,565
America	1,161,018	1,209,538	242,132	379,795
Western Europe	1,539,219	1,402,163	23,846	26,322
Others	279,760	413,660	-	-
Total	20,206,583	22,577,830	9,369,095	9,224,556

- ¹ Represents aggregate amount of property, plant and equipment, and intangible assets.

- ² Domestic sales include the exports made through local letters of credit.

There is no external customer attributing to more than 10% of total revenue for the years ended December 31, 2015 and 2014.

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35 Business combination

During 2014, the Group acquired 100% interest in LG NanoH2O, Inc. (formerly NanoH2O, Inc.), which produces water purification filter and is located in the United States. As a result of the merger, the Group expects revenue growth through market diversification, which includes entering into new industrial markets.

Goodwill amounting to ₩ 167,169 million arising from the business combination is due to the acquisition of LG NanoH2O, Inc.'s pre-existing customer base and the revenue growth generated by combining the operations of the Group and LG NanoH2O, Inc.

The following table summarizes the consideration paid for LG NanoH2O, Inc., the fair value of assets acquired and liabilities assumed at the acquisition date:

<i>(in millions of Korean won)</i>	Amount
Consideration	
Cash and cash equivalents	151,411
	<u>151,411</u>
Recognized amounts of identifiable assets acquired and liabilities assumed	
Cash and cash equivalents	14,993
Property, plant and equipment	11,630
Intangible assets	43,751
Inventories	2,243
Trade and other (non-current) receivables	8,229
Trade and other (non-current) payables	(5,608)
Borrowings	(72,219)
Deferred income tax liabilities	(18,777)
Total identifiable net assets	<u>(15,758)</u>
Goodwill	167,169
Total	<u><u>151,411</u></u>

The fair value of trade and other receivables is equal to the gross contractual amount.

During the prior period's business combination, the Group provided US\$ 70,000 thousand, of which LG Nano H2O, Inc. recognized as borrowings. Above amount was fully collected during the period.

The Trade Receivables and other Receivables and Other Receivables equal to the amount of Contract.

The Group stipulated to provide incentives of US\$ 6,369 thousand and escrowed the amount in financial institution. The above amount was recognized as other long-term receivable and was fully paid during the period.

The Revenue and Net loss of LG Nano H2O, Inc. after the purchase recognized in consolidated Income Statement of 2014 was ₩ 4,452 million and ₩ 26,187 million, respectively.

Had consolidation started at 2014.1.1, the amount that should have been recognized as Revenue and Net loss as of 2014.12.31 was ₩5,612 million and ₩66,088 million, respectively.

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36 Non-current assets held for sale

The Group decided to sell certain non-current assets related to the separator division with the approval of the management on September 25, 2015. The related assets were reclassified as non-current assets held for sale. The disposal is expected to be completed by the first half of 2016.

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

<i>(in millions of Korean won)</i>	Amount
Assets of disposal group	
Property, plant and equipment	<u>6,500</u>
Total	<u><u>6,500</u></u>

Assets of the disposal group were measured at fair value immediately before the initial classification of the assets as held for sale; the related reversal of impairment loss amounting \ 5,520 million was recognized as other non-operating income during 2015.

37 Event after the reporting period

The Group decided to acquire 100% of equity shares of DONGBU FARM HANNONG CO., LTD, as approved by the Board of Directors on January 8, 2016.

The Group decided to withdraw the investments in KLPE Limited Liability Partnership, as approved by the Board of Directors January 26, 2016.

38 Approval of Issuance of the Financial Statements

The issuance of the December 31, 2015 financial statements of the Group was approved by the Board of Directors on January 26, 2016, which is subject to change with the approval of the shareholders at their annual shareholders' meeting.