

LG Chem, Ltd. and Subsidiaries
Consolidated Interim Financial Statements
March 31, 2017 and 2016

LG Chem, Ltd. and Subsidiaries
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March 31, 2017 and 2016

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Report on Review of Interim Financial Statements

(English Translation of a Report Originally Issued in Korean)

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

Reviewed Financial Statements

We have reviewed the accompanying consolidated interim financial statements of LG Chem, Ltd. and its subsidiaries (collectively referred to as the “Group”). These financial statements consist of the consolidated interim statement of financial position of the Group as at March 31, 2017, and the related consolidated interim statements of profit or loss, consolidated interim statements of comprehensive income, changes in equity and cash flows for the three-month periods ended March 31, 2017 and 2016, and a summary of significant accounting policies and other explanatory notes, expressed in Korean won.

Management’s Responsibility for the Financial Statements

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

Auditor’s Responsibility

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

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



Conclusion

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

Other Matters

We have audited the consolidated statement of financial position of the Group as at December 31, 2016, and the related consolidated statements of profit or loss, comprehensive income, changes in equity and cash flows for the year then ended, in accordance with Korean Standards on Auditing. We expressed an unqualified opinion on those financial statements in our audit report dated March 8, 2017. These financial statements are not included in this review report. The consolidated statement of financial position as at December 31, 2016, presented herein for comparative purposes, is consistent, in all material respects, with the above audited statement of financial position as at December 31, 2016.

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

May 4, 2017
Seoul, Korea

<p>This report is effective as at May 4, 2017, the review report date. Certain subsequent events or circumstances, which may occur between the review report date and the time of reading this report, could have a material impact on the accompanying consolidated interim financial statements and notes thereto. Accordingly, the readers of the review report should understand that there is a possibility that the above review report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.</p>
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LG Chem, Ltd. and Subsidiaries
Consolidated Interim Statements of Financial Position
March 31, 2017 and December 31, 2016

<i>(in millions of Korean won)</i>	Notes	March 31, 2017 (Unaudited)	December 31, 2016
Assets			
Current assets			
Cash and cash equivalents	3, 5, 6	1,491,895	1,474,367
Trade receivables	3, 5, 7, 32	3,960,711	3,533,699
Other receivables	3, 5, 7, 32	619,792	979,027
Prepaid income taxes		3,737	5,753
Other current assets	14	313,087	260,793
Inventories	9	3,249,779	2,965,191
Assets held for sale	36	9,968	8,104
Total current assets		9,648,969	9,226,934
Non-current assets			
Other receivables	3, 5, 7	191,422	233,152
Other financial assets	3, 5, 8	27,205	23,448
Investments in associates and joint ventures	1, 10, 34	253,975	260,828
Deferred income tax assets	29	167,522	170,177
Property, plant and equipment	11	9,996,018	9,680,133
Intangible assets	12	1,776,750	832,144
Investment properties	13	2,279	2,287
Other non-current assets	14	107,039	57,957
Total non-current assets		12,522,210	11,260,126
Total assets		22,171,179	20,487,060
Liabilities			
Current liabilities			
Trade payables	3, 5, 32	1,807,655	1,723,252
Other payables	3, 5, 32	963,744	971,605
Borrowings	3, 5, 15	2,174,888	2,212,641
Provisions	16	57,494	51,694
Income tax payables		302,477	217,973
Other current liabilities	3, 5, 18	593,819	269,644
Liabilities held for sale	36	155	42
Total current liabilities		5,900,232	5,446,851
Non-current liabilities			
Other payables	3, 5	11,305	14,307
Borrowings	3, 5, 15	971,721	678,000
Provisions	16	162,584	133,821
Net defined benefit liabilities	17	143,754	92,172
Deferred income tax liabilities		39,683	40,675
Other non-current liabilities	18	36,055	30,267
Total non-current liabilities		1,365,102	989,242
Total liabilities		7,265,334	6,436,093

LG Chem, Ltd. and Subsidiaries
Consolidated Interim Statements of Financial Position
March 31, 2017 and December 31, 2016

<i>(in millions of Korean won)</i>	Notes	March 31, 2017 (Unaudited)	December 31, 2016
Equity			
Share capital	1, 20	391,406	369,500
Capital surplus		2,274,386	1,157,772
Other components of equity	22	(355,160)	(15,699)
Accumulated other comprehensive income		(147,282)	(36,993)
Retained earnings	21	12,620,716	12,462,772
Equity attributable to owners of the Parent Company		<u>14,784,066</u>	<u>13,937,352</u>
Non-controlling interest		121,779	113,615
Total equity		<u>14,905,845</u>	<u>14,050,967</u>
Total liabilities and equity		<u>22,171,179</u>	<u>20,487,060</u>

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

LG Chem, Ltd. and Subsidiaries
Consolidated Interim Statements of Profit or Loss
Three-Month Periods Ended March 31, 2017 and 2016

	Notes	Three-Month Period Ended March 31	
		2017 (Unaudited)	2016 (Unaudited)
<i>(in millions of Korean won, except per share amounts)</i>			
Revenue	32, 34	6,486,668	4,874,092
Cost of sales	24, 32	(5,073,053)	(3,939,719)
Gross profit		1,413,615	934,373
Selling and administrative expenses	23, 24, 32	(616,707)	(476,628)
Operating profit	34	796,908	457,745
Finance income	5, 26	63,055	43,322
Finance costs	5, 26	(107,297)	(45,379)
Share of net profit of associates and joint ventures accounted for using the equity method	10	3,231	(2,338)
Other non-operating income	5, 27	209,564	170,650
Other non-operating expenses	5, 28	(267,160)	(200,916)
Profit before income tax	33	698,301	423,084
Income tax expense	29	(150,204)	(84,959)
Profit for the period		<u>548,097</u>	<u>338,125</u>
Profit is attributable to:			
Owners of the Parent Company		531,490	339,762
Non-controlling interests		16,607	(1,637)
Earnings per share attributable to the equity holders of the Parent Company	30		
Basic and diluted earnings per ordinary share		6,936	4,619
Basic and diluted earnings per preferred share		6,949	4,632

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

LG Chem, Ltd. and Subsidiaries
Consolidated Interim Statements of Comprehensive Income
Three-Month Periods Ended March 31, 2017 and 2016

<i>(in millions of Korean won)</i>	Notes	Three-Month Period Ended March 31	
		2017 (Unaudited)	2016 (Unaudited)
Profit for the period		548,097	338,125
Other comprehensive income			
<i>Items that will not be reclassified to profit or loss</i>			
Remeasurements of net defined benefit liability	17	(7,321)	(770)
Shares of remeasurements of net defined benefit liabilities of associates		62	2
Income tax relating to these items		1,770	188
<i>Items that may be subsequently reclassified to profit or loss</i>			
Exchange differences on translation of foreign operations		(112,297)	(8,550)
Changes in valuation of available-for-sale financial instruments	8	81	2,290
Shares of other comprehensive loss of joint ventures and associates		(3,161)	(1,873)
Income tax relating to these items		(3,357)	(819)
Other comprehensive income for the period, net of tax		(124,223)	(9,532)
Total comprehensive income for the period		423,874	328,593
Total comprehensive income for the period is attributable to:			
Owners of the Parent Company		415,710	330,689
Non-controlling interest		8,164	(2,096)

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

LG Chem, Ltd. and Subsidiaries
Consolidated Interim Statements of Changes in Equity
Three-Month Periods Ended March 31, 2017 and 2016

(in millions of Korean won)

	Notes	Attributable to owners of the Parent Company						Non-controlling interests	Total equity
		Share capital	Capital surplus	Other components of equity	Accumulated other comprehensive income	Retained earnings	Total		
Balance at January 1, 2016		369,500	1,157,772	(15,699)	(52,608)	11,532,500	12,991,465	112,057	13,103,522
Comprehensive income									
Profit for the period		-	-	-	-	339,762	339,762	(1,637)	338,125
Remeasurements of net defined benefit liability	17	-	-	-	-	(582)	(582)	-	(582)
Exchange differences on translation of foreign operations		-	-	-	(8,355)	-	(8,355)	(459)	(8,814)
Change in the fair value of available-for-sale financial instruments		-	-	-	1,735	-	1,735	-	1,735
Others		-	-	-	(1,873)	2	(1,871)	-	(1,871)
Total comprehensive income for the period		-	-	-	(8,493)	339,182	330,689	(2,096)	328,593
Transactions with owners									
Dividends	31	-	-	-	-	(331,287)	(331,287)	-	(331,287)
Issuance of share by subsidiaries		-	-	-	-	-	-	5,521	5,521
Total transactions with owners		-	-	-	-	(331,287)	(331,287)	5,521	(325,766)
Balance at March 31, 2016 (Unaudited)		369,500	1,157,772	(15,699)	(61,101)	11,540,395	12,990,867	115,482	13,106,349
Balance at January 1, 2017		369,500	1,157,772	(15,699)	(36,993)	12,462,772	13,937,352	113,615	14,050,967
Comprehensive income									
Profit for the period		-	-	-	-	531,490	531,490	16,607	548,097
Remeasurements of net defined benefit liability	17	-	-	-	-	(5,553)	(5,553)	2	(5,551)
Exchange differences on translation of foreign operations		-	-	-	(107,190)	-	(107,190)	(8,445)	(115,635)
Change in the fair value of available-for-sale financial instruments		-	-	-	62	-	62	-	62
Others		-	-	-	(3,161)	62	(3,099)	-	(3,099)
Total comprehensive income for the period		-	-	-	(110,289)	525,999	415,710	8,164	423,874
Transactions with owners:									
Business combination	35	21,906	1,116,614	(337,211)	-	-	801,309	-	801,309
Purchase of treasury shares	35	-	-	(2,250)	-	-	(2,250)	-	(2,250)
Dividends	31	-	-	-	-	(368,055)	(368,055)	-	(368,055)
Total transactions with owners		21,906	1,116,614	(339,461)	-	(368,055)	431,004	-	431,004
Balance at March 31, 2017 (Unaudited)		391,406	2,274,386	(355,160)	(147,282)	12,620,716	14,784,066	121,779	14,905,845

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

LG Chem, Ltd. and Subsidiaries
Consolidated Interim Statements of Cash Flows
Three-Month Periods Ended March 31, 2017 and 2016

<i>(in millions of Korean won)</i>	Notes	Three-Month Period Ended March 31	
		2017 (Unaudited)	2016 (Unaudited)
Cash flows from operating activities			
Cash generated from operations	33	326,630	940,454
Interest received		8,855	9,205
Interest paid		(27,552)	(14,863)
Dividends received		10,030	-
Income taxes paid		(94,340)	(144,603)
Net cash inflow from operating activities		223,623	790,193
Cash flows from investing activities			
Decrease in other receivables		477,419	228,196
Decrease in other non-current receivables		25,233	16,130
Proceeds from disposal of property, plant and equipment		3,479	2,759
Proceeds from disposal of intangible assets		5,632	240
Government grants received		29,628	-
Proceeds from disposal of investments in subsidiaries		343	-
Business combination, net of cash acquired	35	43,759	-
Increase in other receivables		(162,590)	(168,820)
Increase in other non-current receivables		(25,573)	(43,622)
Acquisition of investments in associates and joint ventures		(3,015)	-
Acquisition of available-for-sale financial assets		(1,201)	(2,616)
Acquisition of property, plant and equipment		(285,818)	(310,517)
Acquisition of intangible assets		(15,175)	(18,118)
Net cash inflow(outflow) from investing activities		92,121	(296,368)
Cash flows from financing activities			
Proceeds from borrowings		641,885	64,291
Capital contribution from non-controlling interests		-	5,574
Repayments of borrowings		(910,562)	(30,170)
Purchase of treasury shares		(2,250)	-
Net cash inflow(outflow) from financing activities		(270,927)	39,695
Net increase in cash and cash equivalents			
Cash and cash equivalents at the beginning of the financial year		1,474,367	1,704,918
Effects of exchange rate changes on cash and cash equivalents		(27,289)	(3,839)
Cash and cash equivalents at the end of the period		1,491,895	2,234,599

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

LG Chem, Ltd. and Subsidiaries

Notes to the Consolidated Interim Financial Statements

March 31, 2017 and 2016 (Unaudited), and December 31, 2016

1. General Information

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

1.1 The Parent Company

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

As at March 31, 2017, the Parent Company has its manufacturing facilities in Yeosu, Daesan, Ochang, Cheongju, Ulsan, Naju, Iksan, Paju and Gimcheon.

The Parent Company is authorized to issue 292 million shares of ordinary shares with par value of ₩5,000 per share. As at March 31, 2017, the Parent Company has issued 70,592,343 ordinary shares (₩352,962 million) and 7,688,800 preferred shares (₩38,444 million). The largest shareholder of the Parent Company is LG Corp., which owns 33.34% of the Parent Company's ordinary shares. Preferred shareholders have no voting rights but are entitled to receive dividends at a rate 1% more than those paid to ordinary shareholders.

1.2 Business Overview

The Group is engaged in Basic materials & Chemicals business, Energy solutions, IT & Electronics materials and Advanced materials business, and also engaged in Life Sciences business acquired through a merger with LG Life Sciences, Ltd. in January 2017. In April 2016, the Parent Company acquired 100% shares of FarmHannong Co.,Ltd. (formerly Dongbu Farm Hannong Co.,Ltd.), which is engaged to manufacture crop protection products, seeds, fertilizers and others.

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

The Energy solutions business manufactures and supplies batteries ranging from IT & New application batteries for mobile phones and laptop computers, to automotive batteries for electric vehicles and ESS batteries. A demand of small sized batteries for new applications such as electric tools and electric driving devices as well as traditional IT devices is increasing recently and the automotive battery business is also expected to expand rapidly due to an increasing demand of the batteries in associated with enhanced environment regulation in developed countries. A demand for ESS is expanding with an increasing importance of efficient usage of electricity and generation of renewable energy.

The IT & Electronics material business manufactures and supplies various kinds of IT materials such as polarizer, Glass Substrate, OLED film, semiconductor materials and RO membranes, which will be the next growth engine for future. Advanced materials business manufactures and supplies display and battery materials for LCD Photoresist, OLED materials, battery materials and others.

The Life Sciences business manufactures pharmaceutical products, such as quinolone antibiotics 'Factive', human growth hormone 'Eutropin', diabetes drug 'Zemiglo', Bovine Somatotropin 'Boostin', uninsured hyaluronic acid filler 'YVOIRE' and others, as well as fine chemical products, such as herbicide for rice farming and others.

LG Chem, Ltd. and Subsidiaries

Notes to the Consolidated Interim Financial Statements

March 31, 2017 and 2016 (Unaudited), and December 31, 2016

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

1.3 Consolidated Subsidiaries, Associates and Joint Ventures

March 31, 2017				
	Percentage of ownership (%)	Business location	Closing month	Business activities
Consolidated subsidiaries				
Ningbo LG Yongxing Chemical Co., Ltd. ¹	75	China	December	ABS/SBL manufacturing and sales
Ningbo Zhenhai LG Yongxing Trade Co., Ltd. ¹	75	China	December	ABS sales
LG Chem HK Ltd.	100	Hong Kong	December	Sales and trading
LG Chem America, Inc.	100	USA	December	Sales and trading
LG Chemical India Pvt. Ltd. ²	100	India	December	Synthetic resin manufacturing and sales
LG Polymers India Pvt. Ltd. ²	100	India	December	PS manufacturing
LG Chemical (Guangzhou) Engineering Plastics Co., Ltd.	100	China	December	EP manufacturing and sales
LG Chem (Nanjing) Information & Electronics Materials Co., Ltd.	100	China	December	Battery/ Polarizer Manufacturing and sales
LG Chem (Taiwan), Ltd.	100	Taiwan	December	Polarizer manufacturing and sales
LG Chem Display Materials (Beijing) Co., Ltd.	100	China	December	Polarizer manufacturing
Tianjin LG Bohai Chemical Co., Ltd. ³	75	China	December	PVC, VCM, EDC manufacturing and sales
Tianjin LG BOTIAN Chemical Co., Ltd. ³	56	China	December	SBS manufacturing and sales
LG Chem (China) Investment Co., Ltd.	100	China	December	China holding company
LG Chem (Tianjin) Engineering Plastics Co., Ltd.	100	China	December	ABS/EP manufacturing and sales
LG Chem Europe GmbH	100	Germany	December	Sales and trading
LG Chem Poland Sp. z o.o.	100	Poland	December	Polarizer manufacturing
LG Chem Michigan Inc.	100	USA	December	Automotive battery research and manufacturing
LG Chem Power Inc.	100	USA	December	Automotive battery research
LGC Petrochemical India Private Ltd.	100	India	December	Synthetic resin manufacturing and sales
Haengboknuri Co., Ltd.	100	Korea	December	Facility management and general cleaning
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	100	Turkey	December	Sales and trading
LG Chem Japan Co., Ltd.	100	Japan	December	Sales and trading
LG NanoH2O, Inc. ⁴	100	USA	December	Water processing membrane research and manufacturing
NanoH2O Singapore Private Ltd. ⁴	100	Singapore	December	Water processing membrane research and manufacturing
NanoH2O (Jiangsu) Water Processing Technology Co. Ltd.	100	China	December	Water processing membrane research and manufacturing
Nanjing LG Chem New Energy Battery Co., Ltd. ⁵	50	China	December	Automotive battery manufacturing and sales
LG Chem (Chongqing) Engineering Plastics Co., Ltd.	100	China	December	EP manufacturing and sales
LG Chem Wroclaw Energy sp. z o.o.	100	Poland	December	Automotive battery research and manufacturing

LG Chem, Ltd. and Subsidiaries

Notes to the Consolidated Interim Financial Statements

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LG Chem(HUIZHOU) Petrochemical Co., Ltd.	70	China	December	ABS manufacturing and sales
FarmHannong Co.,Ltd. ⁶	100	Korea	December	Agricultural pesticide manufacturing
Cecel.Co.,Ltd ⁶	71	Korea	December	Biologicals manufacturing
Agrotech Co., Ltd. ⁶	100	Korea	December	Agricultural pesticide manufacturing
FarmHwaong Co.,Ltd. ^{6,7}	58	Korea	December	Vegetables and fruit farming
Dongbu Farm Hannong (Heilongjiang) Chemical Co., Ltd. ⁶	100	China	December	Agricultural pesticide manufacturing
LG Life Sciences India Pvt. Ltd. ⁸	100	India	December	Pharmaceutical products sales
LG Life Sciences (Beijing) Co., Ltd. ⁸	100	China	December	Pharmaceutical products sales
LG Life Sciences (Thailand) Ltd. ⁸	100	Thailand	December	Pharmaceutical products sales
LG Life Sciences America Inc. ⁸	100	USA	December	Agricultural pesticide sales
Sarangnuri Ltd. ⁸	100	Korea	December	Pharmaceutical products sales
Associates				
LG Holdings (HK) Ltd.	26	Hong Kong	December	Sales and trading
TECWIN Co., Ltd.	21	Korea	December	Environment solution and Construction of chemical plant
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA. ⁹	100	Brazil	December	Sales and trading
LG Chem Malaysia SDN.BHD. ⁹	100	Malaysia	December	Sales and trading
LG Fuel Cell Systems Inc.	22	USA	December	Power fuel cell research
FJ Composite Material Co., Ltd. ¹⁰	33	Japan	May	Heat diffuser research and manufacturing
Joint ventures				
LG VINA Chemical Co., Ltd.	40	Vietnam	December	DOP production and sales
HL Greenpower Co., Ltd.	49	Korea	December	Battery manufacturing for electric automobile
SEETEC Co., Ltd.	50	Korea	December	Plant utility and distribution, research assistance service

¹ As at March 31, 2017, Ningbo LG Yongxing Chemical Co.,Ltd. owns 100% of Ningbo Zhenhai LG Yongxing Trade Co.,Ltd.'s shares.

² As at March 31, 2017, LG Chemical India Pvt. Ltd. owns 100% of LG Polymer India Pvt. Ltd.'s shares.

³ As at March 31, 2017, Tianjin LG Bohai Chemical Co., Ltd. owns 20.30% of Tianjin LG BOTIAN Chemical Co., Ltd.'s shares.

⁴ As at March 31, 2017, LG NanoH2O, Inc. owns 100% of NanoH2O Singapore Private Ltd.'s shares.

⁵ Although the Parent Company owns less than 50% of the voting rights of LG Chem (Nanjing) New Energy Battery Co., Ltd., the Parent Company is considered to have control over the investee as the Parent Company can exercise the majority voting rights in its decision-making process in accordance with the shareholders' agreement.

⁶ As at March 31, 2017, FarmHannong Co., Ltd. owns 100% of Agrotech Co.,Ltd., Dongbu Farm Hannong (Heilongjiang) Chemical Co., Ltd., and also holds 71.05% of Cecel Co., Ltd., and 57.87% of FarmHwaong Co., Ltd. During the period ended March 31, 2017, FarmHannong Co., Ltd. disposed of a subsidiary, FarmBiotec Co.,Ltd.

⁷ As at March 31, 2017, FarmHwaong Co.,Ltd.'s assets and liabilities are classified as assets and liabilities held for sale (Note 36).

⁸ During the period ended March 31, 2017, the Group acquired subsidiaries of LG Life Sciences, Ltd. due to the merger with LG Life Sciences, Ltd.

⁹ Classified as an investment in associate due to its small size.

¹⁰ During the period ended March 31, 2017, the Parent Company newly acquired shares of FJ Composite Material Co., Ltd. for ₩3,015 million.

LG Chem, Ltd. and Subsidiaries
Notes to the Consolidated Interim Financial Statements
March 31, 2017 and 2016 (Unaudited), and December 31, 2016

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)

	March 31, 2017				
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the period
Subsidiaries					
Ningbo LG Yongxing Chemical Co.,Ltd.	713,932	266,419	447,513	528,347	49,107
Ningbo Zhenhai LG Yongxing Trade Co.,Ltd.	8,579	5,774	2,805	9,783	212
LG Chem HK Ltd.	87,778	70,189	17,589	132,673	209
LG Chem America, Inc.	192,477	171,094	21,383	186,942	3,108
LG Chemical India Pvt. Ltd.	32,733	14	32,719	-	6
LG Polymers India Pvt. Ltd.	112,588	38,089	74,499	66,477	5,708
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	105,936	42,007	63,929	46,608	1,110
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	2,187,748	1,439,166	748,582	662,410	34,048
LG Chem (Taiwan), Ltd.	124,539	62,732	61,807	45,939	1,308
LG Chem Display Materials (Beijing) Co.,Ltd.	35,362	8,848	26,514	15,064	717
Tianjin LG Bohai Chemical Co.,Ltd.	309,734	254,634	55,100	132,224	8,665
Tianjin LG BOTIAN Chemical Co.,Ltd.	55,742	62,496	(6,754)	42,332	(4,754)
LG Chem (China) Investment Co.,Ltd.	210,298	95,056	115,242	15,812	2,214
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	64,736	19,088	45,648	24,542	493
LG Chem Europe GmbH	185,921	159,715	26,206	126,984	4,789
LG Chem Poland Sp. z o.o.	47,089	16,553	30,536	20,907	1,094
LG Chem Michigan Inc.	225,233	140,761	84,472	51,610	7,108
LG Chem Power Inc.	25,735	13,254	12,481	11,313	713
LGC Petrochemical India Private Ltd.	2,170	388	1,782	1,044	84
Haengboknuri Co., Ltd.	1,896	743	1,153	1,654	(6)
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	5,528	4,199	1,329	5,056	104
LG Chem Japan Co.,Ltd.	3,063	262	2,801	1,448	158
LG NanoH2O, Inc. ¹	10,901	3,067	7,834	4,215	713
NanoH2O (Jiangsu) Water Processing Technology Co. Ltd.	4,350	1,163	3,187	-	(1,733)
Nanjing LG Chem New Energy Battery Co.,Ltd.	288,435	242,344	46,091	49,503	5,538
LG Chem (Chongqing) Engineering Plastics Co.,Ltd.	37,899	33,947	3,952	4,564	(1,184)
LG Chem Wroclaw Energy sp. z o.o.	60,504	49,700	10,804	5,329	2,653
LG Chem(HUIZHOU) Petrochemical Co., Ltd.	315,339	249,486	65,853	75,710	(907)
FarmHannong Co.,Ltd. ¹	1,257,828	695,633	562,195	253,921	34,702
LG Life Sciences India Pvt. Ltd.	6,598	4,727	1,871	2,535	(382)
LG Life Sciences (Beijing) Co., Ltd.	1,171	9	1,162	199	8
LG Life Sciences (Thailand) Ltd.	6,952	4,560	2,392	5,565	905
LG Life Sciences America Inc.	12,741	12,098	643	4,481	194
Sarangnuri Ltd.	169	34	135	67	17
Associates					
LG Holdings (HK) Ltd.	307,999	41,769	266,230	11,925	3,690
TECWIN Co., Ltd.	64,015	25,735	38,280	-	-
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	115	130	(15)	526	(15)
LG Chem Malaysia SDN.BHD.	220	31	189	138	(8)
LG Fuel Cell Systems Inc.	58,501	69,152	(10,651)	435	(8,715)

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FJ Composite Material Co., Ltd.	8,134	3,278	4,856	766	122
Joint ventures					
LG VINA Chemical Co., Ltd.	20,656	11,614	9,042	13,390	755
HL Greenpower Co., Ltd.	150,535	115,684	34,851	85,422	331
SEETEC Co., Ltd.	332,695	40,601	292,094	124,368	6,019

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

(in millions of Korean won)

	December 31, 2016				
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the year
Subsidiaries					
Ningbo LG Yongxing Chemical Co.,Ltd.	676,217	249,084	427,133	1,528,940	77,200
Ningbo Zhenhai LG Yongxing Trade Co.,Ltd.	8,464	5,687	2,777	32,158	677
LG Chem HK Ltd.	108,970	90,142	18,828	493,682	561
LG Chem America, Inc.	176,522	156,627	19,895	639,788	2,559
LG Chemical India Pvt. Ltd.	32,761	6	32,755	-	16
LG Polymers India Pvt. Ltd.	89,187	18,073	71,114	199,043	11,082
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	112,309	45,195	67,114	155,333	5,240
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	2,357,476	1,593,091	764,385	2,316,666	(29,160)
LG Chem (Taiwan), Ltd.	133,777	66,712	67,065	195,361	5,909
LG Chem Display Materials (Beijing) Co.,Ltd.	37,473	9,910	27,563	56,893	1,758
Tianjin LG Bohai Chemical Co.,Ltd.	311,868	262,247	49,621	449,390	(48,051)
Tianjin LG BOTIAN Chemical Co.,Ltd.	54,947	57,176	(2,229)	131,343	7,032
LG Chem (China) Investment Co.,Ltd.	243,675	129,390	114,285	49,394	3,730
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	65,316	17,080	48,236	96,062	3,645
LG Chem Europe GmbH	177,371	154,464	22,907	429,444	5,025
LG Chem Poland Sp. z o.o.	50,133	20,220	29,913	75,698	2,979
LG Chem Michigan Inc.	245,278	161,224	84,054	195,733	44,920
LG Chem Power Inc.	20,042	7,253	12,789	37,173	10,013
LGC Petrochemical India Private Ltd.	2,153	398	1,755	4,229	484
Haengboknuri Co., Ltd.	1,950	790	1,160	5,965	5
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	4,139	2,757	1,382	21,437	410
LG Chem Japan Co.,Ltd.	3,115	368	2,747	5,259	502
LG NanoH2O, Inc. ¹	11,318	3,565	7,753	17,713	1,413
NanoH2O (Jiangsu) Water Processing Technology Co. Ltd.	6,463	1,242	5,221	-	(1,110)
Nanjing LG Chem New Energy Battery Co.,Ltd.	298,201	254,678	43,523	100,003	(17,562)
LG Chem (Chongqing) Engineering Plastics Co.,Ltd.	41,390	35,957	5,433	10,302	(2,812)
LG Chem Wroclaw Energy sp. z o.o.	18,009	9,725	8,284	-	(2,059)
LG Chem(HUIZHOU) Petrochemical Co., Ltd.	334,007	262,755	71,252	255,129	(15,559)
FarmHannong Co.,Ltd. ¹	1,129,257	601,749	527,508	325,327	(133,178)
Associates					
LG Holdings (HK) Ltd.	379,243	98,434	280,809	51,421	13,671
TECWIN Co., Ltd.	64,015	25,735	38,280	83,975	4,065
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	89	112	(23)	1,801	(23)
LG Chem Malaysia SDN.BHD.	226	17	209	578	47

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LG Fuel Cell Systems Inc.	59,468	74,366	(14,898)	2,998	(47,508)
Joint ventures					
LG VINA Chemical Co., Ltd.	19,786	10,121	9,665	51,609	2,266
HL Greenpower Co., Ltd.	151,411	116,896	34,515	219,496	723
SEETEC Co., Ltd.	351,603	45,529	306,074	467,225	17,053

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

1.5 Changes in Scope for Consolidation

Subsidiaries newly included in the consolidation for the period ended March 31, 2017, are as follows:

Subsidiary	Reason
LG Life Sciences India Pvt. Ltd.	Business combination
LG Life Sciences (Beijing) Co., Ltd.	Business combination
LG Life Sciences (Thailand) Ltd.	Business combination
LG Life Sciences America Inc.	Business combination
Sarangnuri Ltd.	Business combination

Subsidiaries excluded from the consolidation for the period ended March 31, 2017, are as follows:

Subsidiary	Reason
FarmBiotec Co.,Ltd.	Disposed interests of subsidiary

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2. Summary of Significant Accounting Policies

The principal accounting policies applied in the preparation of these consolidated interim 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 International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS). The accompanying consolidated interim financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

The Group's consolidated interim financial statements for the period ended March 31, 2017, have been prepared in accordance with Korean IFRS 1034 *Interim Financial Reporting*. These consolidated interim financial statements have been prepared in accordance with Korean IFRS which is effective or early adopted as at March 31, 2017.

(a) New and amended standards adopted by the Group

The Group has applied the following standards and amendments for the first time for their annual reporting period commencing January 1, 2017. The adoption of these amendments did not have a material impact on the current period or any prior period and is not likely to affect future periods.

- Amendments to Korean IFRS 1007 *Statement of Cash Flows*
- Amendments to Korean IFRS 1012 *Income Tax*
- Amendments to Korean IFRS 1112 *Disclosure of Interests in Other Entities*

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

Certain new accounting standards and interpretations that have been published that are not mandatory for annual reporting period commencing January 1, 2017 and have not been early adopted by the Group are set out below.

- Korean IFRS 1109 *Financial Instruments*

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

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

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

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

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

- Korean IFRS 1115 *Revenue from Contracts with Customers*

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

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

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

As at March 31, 2017, the Group is preparing for internal management process and is beginning to adjust accounting system in relation to implementation of Korean IFRS 1115. Also, the Group is analyzing the financial effects of applying the standard.

- Amendments to Korean IFRS 1102 *Share-based Payment*
- Amendments to Korean IFRS 1028 *Investments in Associates and Joint Ventures*
- Enactments to Interpretation 2122 *Foreign Currency Transactions and Advance Consideration*

2.2 Accounting Policies

Significant accounting policies and method adopted in the preparation of the consolidated interim financial statements are consistent with those of the consolidated financial statements for the year ended December 31, 2016, except for the changes due to the application of amendment and enactments of standards described in Note 2.1 (a) and the one described below.

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2.2.1 Income tax expense

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

3. Financial risk Management

3.1 Financial Risk Factors

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

(1) Market risk

1) Foreign exchange risk

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

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

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

As at March 31, 2017 and December 31, 2016, 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>	March 31, 2017		December 31, 2016	
	Assets	Liabilities	Assets	Liabilities
USD	1,881,933	2,397,436	1,667,146	2,263,717
EUR	141,885	114,551	78,532	90,506
JPY	31,942	144,595	29,169	113,351
GBP and others	69,304	3,173	33,534	2,187

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As at March 31, 2017 and December 31, 2016, 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>	March 31, 2017		December 31, 2016	
	10% Increase	10% Decrease	10% Increase	10% Decrease
USD	(51,550)	51,550	(59,657)	59,657

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 end of the reporting period.

2) Price risk

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

The table below summarizes the impact of increases/decreases of the listed stock price index on the Group's equity before tax effects as at March 31, 2017 and December 31, 2016. The analysis is based on the assumption that the equity index has increased/decreased by 10% with all other variables held constant, and that all the Group's equity instruments moved in line with the index.

<i>(in millions of Korean won)</i>	March 31, 2017		December 31, 2016	
	10% Increase	10% Decrease	10% Increase	10% Decrease
KOSPI	1,225	(1,225)	1,134	(1,134)

3) Interest rate risk

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

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

The table below summarizes the impact of increases/decreases of interest rate on the Group's post-tax profit for the periods ended March 31, 2017 and 2016, and on equity as at March 31, 2017 and December 31, 2016. The analysis is based on the assumption that the interest rate has increased/decreased by 1% (100 basis points) with all other variables held constant.

<i>(in millions of Korean won)</i>	Impact on post-tax profit		Impact on equity	
	2017	2016	March 31, 2017	December 31, 2016
Increase	(18,452)	(17,195)	(18,452)	(17,195)
Decrease	18,452	17,195	18,452	17,195

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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.

The maximum exposure to credit risk as at March 31, 2017 and December 31, 2016, is as follows:

(in millions of Korean won)

	March 31, 2017		
	Amount before provision	Provision for impairment	Book amount (maximum exposure)
Loans and receivables (excluding cash on hand)	6,278,209	(14,444)	6,263,765
Total	6,278,209	(14,444)	6,263,765

(in millions of Korean won)

	December 31, 2016		
	Amount before provision	Provision for impairment	Book amount (maximum exposure)
Loans and receivables (excluding cash on hand)	6,233,784	(13,594)	6,220,190
Total	6,233,784	(13,594)	6,220,190

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

Finance team of the Group monitors rolling forecasts of the Group's liquidity requirements to ensure it has sufficient cash to meet operational needs while maintaining sufficient headroom on its undrawn committed borrowing facilities at all times so that the Group does not breach borrowing limits or covenants (where applicable) on any of its borrowing facilities. The Group's liquidity management policy involves projecting cash flows in major currencies and considering the level of liquid assets necessary to meet these, monitoring balance sheet liquidity ratios against internal and external regulatory requirements and maintaining debt financing plans.

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

(in millions of Korean won)

	March 31, 2017			
	Less than 1 year	Between 1-2 years	Between 2-5 years	Over 5 years
Borrowings (excluding financial lease liabilities)	2,201,204	607,874	372,979	41,081
Finance lease liabilities	5,322	5,217	15,533	15,665
Trade and other payables	2,771,399	8,687	2,485	133
Total	4,977,925	621,778	390,997	56,879

(in millions of Korean won)

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

3.2 Capital Risk Management

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

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

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The gearing ratio and debt-to-equity ratio as at March 31, 2017 and December 31, 2016, were as follows:

<i>(in millions of Korean won, except for ratios)</i>	March 31, 2017	December 31, 2016
Total borrowings (Note 15) (A)	3,146,609	2,890,641
Less: cash and cash equivalents (B)	<u>(1,491,895)</u>	<u>(1,474,367)</u>
Net debt (C=A+B)	<u>1,654,714</u>	<u>1,416,274</u>
Total liabilities (D)	7,265,334	6,436,093
Total equity (E)	<u>14,905,845</u>	<u>14,050,967</u>
Total capital (F=C+E)	<u>16,560,559</u>	<u>15,467,241</u>
Gearing ratio (C/F)	10.0%	9.2%
Debt-to-equity ratio (D/E)	48.7%	45.8%

3.3 Fair Value

(1) Carrying amount and fair value of financial instruments by category as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017		December 31, 2016	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets (current)				
Cash and cash equivalents	1,491,895	1	1,474,367	1
Deposits held by financial institutions	417,326	1	732,871	1
Trade receivables	3,960,711	1	3,533,699	1
Other receivables (excluding deposits held by financial institutions)	202,466	1	246,156	1
Financial assets (non-current)				
Deposits held by financial institutions	64,599	1	64,485	1
Other receivables (excluding deposits held by financial institutions)	126,823	1	168,667	1
Other non-current financial assets (carried at cost)	15,504	2	11,829	2
Other non-current financial assets (carried at fair value)	11,701	11,701	11,619	11,619
Financial liabilities (current)				
Trade and other payables	2,771,399	1	2,694,857	1
Current borrowings (excluding finance lease liabilities)	2,169,766	1	2,207,755	1
Current finance lease liabilities	5,122	1	4,886	1
Other current liabilities (dividends payable)	368,067	1	12	1
Financial liabilities (non-current)				
Non-current borrowings (excluding finance lease liabilities)	939,939	946,347	647,728	1
Non-current finance lease liabilities	31,782	33,030	30,272	31,411
Other non-current payables	11,305	1	14,307	1

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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. Certain equity securities are measured at cost (March 31, 2017: ₩15,504 million, December 31, 2016: ₩11,829 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:

Fair values of financial liabilities(non-current) are based on cash outflows discounted using Korean won currency note yield in the same credit grade with the Parent Company (AA+), and the applied discount rates as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in percentage)</i>	March 31, 2017	December 31, 2016
Discount rate	1.55%~2.63%	1.63%~2.57%

(3) Fair value hierarchy

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

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

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Fair value hierarchy classifications of the financial instruments that are measured at fair value or its fair value is disclosed as at March 31, 2017 and December 31, 2016, are as follows:

(in millions of Korean won)

	March 31, 2017			
	Level 1	Level 2	Level 3	Total
Financial assets/liabilities measured at fair value				
Other non-current financial assets (carried at fair value)	11,701	-	-	11,701
Financial assets/liabilities not measured at fair value				
Non-current borrowings (excluding finance lease liabilities)	-	946,347	-	946,347
Non-current finance lease liabilities	-	33,030	-	33,030

(in millions of Korean won)

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

4. Critical Accounting Estimates and Assumptions

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

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

5. Financial Instruments by Category

Categorizations of financial instruments as at March 31, 2017 and December 31, 2016, are as follows:

(in millions of Korean won)

	March 31, 2017			
	Loans and receivables	Financial assets at fair value through profit or loss	Available-for- sale financial assets	Total
Cash and cash equivalents	1,491,895	-	-	1,491,895
Trade receivables	3,960,711	-	-	3,960,711
Other receivables	619,792	-	-	619,792
Other non-current receivables	191,422	-	-	191,422
Other non-current financial assets	-	-	27,205	27,205
Total	6,263,820	-	27,205	6,291,025

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(in millions of Korean won)

Financial liabilities	March 31, 2017			Total
	Financial liabilities at fair value through profit or loss	Financial liabilities at amortized cost	Other financial liabilities ¹	
Trade payables	-	1,807,655	-	1,807,655
Other payables	-	963,744	-	963,744
Borrowings (current)	-	1,498,366	676,522	2,174,888
Other current liabilities (dividends payable)	-	368,067	-	368,067
Other non-current payables	-	11,305	-	11,305
Borrowings (non-current)	-	939,939	31,782	971,721
Total	-	5,589,076	708,304	6,297,380

(in millions of Korean won)

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

(in millions of Korean won)

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

¹ Other financial liabilities are financial liabilities that are not subject to the categorizations such as finance lease liabilities, financial liabilities related to transfer transactions not qualified for derecognition.

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Net gains or losses on each category of financial instruments for the periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Financial instruments at fair value through profit or loss		
Loss on valuation/disposal (profit or loss)	-	(1,501)
Risk aversion derivatives		
Gain on disposal	170	-
Available-for-sale financial assets		
Interest income		-
Dividend income	196	-
Loans and receivables		
Interest income	7,461	11,373
Gain on foreign currency translation	(71,981)	(77,715)
Gain (loss) on foreign exchange	(123,808)	36,984
Financial liabilities measured at amortized cost		
Interest expense	(24,723)	(13,351)
Loss on foreign currency translation	32,765	34,456
Loss on foreign exchange	42,005	(16,887)
Other financial liabilities		
Interest expense	(3,476)	(2,703)
Loss on foreign currency translation	24,537	37,719
Gain (loss) on foreign exchange	52,684	(24,483)

6. Cash and Cash Equivalents

Details of cash and cash equivalents as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Bank deposits and cash on hand	493,363	478,058
Deposits held by financial institutions and others	998,532	996,309
Total	1,491,895	1,474,367

As at March 31, 2017 and December 31, 2016, cash and cash equivalents include ₩1,134 million (December 31, 2016: ₩1,452 million) which are subject to a restriction on the use in association with the national R&D projects.

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7. Trade and Other Receivables

Trade and other receivables and its provisions for impairment, as at March 31, 2017 and December 31, 2016, are as follows:

(in millions of Korean won)

	March 31, 2017		
	Gross amount	Provision for impairment	Carrying amount
Trade receivables ¹	3,973,013	(12,302)	3,960,711
Other current receivables	620,944	(1,152)	619,792
Other non-current receivables ²	192,412	(990)	191,422
Total	4,786,369	(14,444)	4,771,925

(in millions of Korean won)

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

¹ As at March 31, 2017, trade receivables transferred to financial institutions have been accounted for as a collateralized borrowing and financial assets not fully derecognized are as follows (Note 15):

(in millions of Korean won)

	Loans and receivables (trade receivables collateralized borrowings)	
	March 31, 2017	December 31, 2016
Carrying amount of transferred assets	671,400	448,722
Carrying amount of related liabilities	(671,400)	(448,722)

² As at March 31, 2017, ₩549 million(December 31, 2016: ₩482 million) of other non-current receivables represents deposits which are restricted from withdrawal in connection with maintaining checking accounts.

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Details of other receivables as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Current		
Non-trade receivables	155,330	195,087
Deposits held by financial institutions ¹	417,326	732,871
Accrued income	3,156	4,230
Loans	15,546	21,127
Guarantee deposits provided	28,434	25,712
	<u>619,792</u>	<u>979,027</u>
Non-current		
Non-trade receivables	2,407	16
Deposits held by financial institutions ²	64,599	64,485
Loans	305	291
Guarantee deposits provided	124,111	168,360
	<u>191,422</u>	<u>233,152</u>
Total	<u>811,214</u>	<u>1,212,179</u>

¹ As at March 31, 2017, ₩1,338 million(December 31, 2016: ₩1,338 million) is pledged as a collateral for borrowings and others.

² As at March 31, 2017, ₩63,400 million(December 31, 2016: ₩63,400 million) is restricted from being withdrawn in relation to large, small and medium-sized companies cooperation agreement and others.

The aging analysis of trade and other receivables as at March 31, 2017 and December 31, 2016, is as follows:

<i>(in millions of Korean won)</i>	March 31, 2017		December 31, 2016	
	Trade receivables	Other receivables	Trade receivables	Other receivables
Receivables not past due	3,879,622	803,844	3,451,627	1,200,755
Past due but not impaired				
Up to 3 months	75,303	5,858	79,103	7,297
Between 3-6 months	5,246	301	1,984	1,178
Over 6 months	2,698	1,211	3,504	2,949
	<u>83,247</u>	<u>7,370</u>	<u>84,591</u>	<u>11,424</u>
Impaired receivables	10,144	2,142	9,700	1,375
Total	<u>3,973,013</u>	<u>813,356</u>	<u>3,545,918</u>	<u>1,213,554</u>

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Movements on the provision for impairment of trade and other receivables for the three-month period ended March 31, 2017 and for the year ended December 31, 2016, are as follows:

(in millions of Korean won)

	March 31, 2017			
	Trade receivables		Other receivables	
	Current	Non-current	Current	Non-current
Beginning balance	12,219	-	385	990
Business combination (Note 35)	2,018	-	-	-
Additions	-	-	767	-
Write-off	(116)	-	-	-
Reversals	(1,499)	-	-	-
Exchange differences	(320)	-	-	-
Ending balance	12,302	-	1,152	990

(in millions of Korean won)

	December 31, 2016			
	Trade receivables		Other receivables	
	Current	Non-current	Current	Non-current
Beginning balance	12,939	-	331	-
Business combination (Note 35)	1,237	-	21,644	990
Additions	1,388	-	116	-
Write-off	(2,052)	-	(21,131)	-
Reversals	-	-	(486)	-
Exchange differences	(1,293)	-	(89)	-
Ending balance	12,219	-	385	990

As at March 31, 2017 and December 31, 2016, the carrying amounts of trade and other receivables are approximation of their fair values.

8. Other Financial Assets

Details of other financial assets as at March 31, 2017 and December 31, 2016, are as follows:

(in millions of Korean won)

	March 31, 2017	December 31, 2016
Other financial assets		
Available-for-sale financial assets	27,205	23,448
	<u>27,205</u>	<u>23,448</u>

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Changes in available-for-sale financial assets for the three-month period ended March 31, 2017 and for the year ended December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Beginning balance	23,448	15,301
Business combination (Note 35)	2,669	2,270
Acquisitions / Transfer	1,201	3,463
Disposals	-	(44)
Gain on valuation (before income tax effects)	81	2,392
Exchange differences	(194)	66
Ending balance	<u>27,205</u>	<u>23,448</u>

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

No impairment losses on available for sale financial assets were recognized for the periods ended March 31, 2017 and 2016.

9. Inventories

Details of inventories as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017		
	Gross Amount	Valuation allowance	Carrying amount
Merchandise	118,349	(4,164)	114,185
Finished / Semi-finished products	1,870,613	(94,372)	1,776,241
Work-in-process ¹	13,724	-	13,724
Raw materials	889,804	(10,233)	879,571
Supplies	122,914	-	122,914
Materials-in-transit	343,144	-	343,144
Total	<u>3,358,548</u>	<u>(108,769)</u>	<u>3,249,779</u>

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

During the period ended March 31, 2017, the cost of inventories recognized as expense and included in 'cost of sales' amounted to ₩4,051,200 million (2016: ₩2,881,075 million).

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10. Investments in Associates and Joint Ventures

Changes in investments in associates and joint ventures for the three-month period ended March 31, 2017 and for the year ended December 31, 2016, are as follows:

(in millions of Korean won)

	March 31, 2017							Ending balance
	Beginning balance	Acquisitions / transfer	Dividends	Share of profit (loss) of associates and joint ventures	Share of other comprehensive income (expense) of associates and joint ventures	Disposal	Others	
LG VINA Chemical Co., Ltd.	3,874	-	-	302	(551)	-	-	3,625
HL Greenpower Co., Ltd.	16,927	-	-	148	-	-	3	17,078
LG Holdings (HK) Ltd.	74,843	-	-	959	(4,750)	-	-	71,052
TECWIN Co., Ltd.	7,214	-	-	794	-	-	-	8,008
SEETEC Co., Ltd.	148,333	-	(10,000)	3,318	-	-	-	141,651
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	579	-	-	-	-	-	-	579
LG Chem Malaysia SDN.BHD	150	-	-	-	-	-	-	150
LG Fuel Cell Systems Inc.	8,908	-	-	(2,328)	2,214	-	59	8,853
FJ Composite Materials Co., Ltd.	-	3,015	-	38	(74)	-	-	2,979
	<u>260,828</u>	<u>3,015</u>	<u>(10,000)</u>	<u>3,231</u>	<u>(3,161)</u>	<u>-</u>	<u>62</u>	<u>253,975</u>

(in millions of Korean won)

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

¹ During 2016, the Group decided to discontinue the business of KLPE Limited Liability Partnership and completed the disposal by collecting ₩23,724 million of the investments.

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11. Property, Plant and Equipment

Changes in property, plant and equipment for the three-month period ended March 31, 2017 and for the year ended December 31, 2016, are as follows:

	March 31, 2017										
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Equipment	Others	Construction -in-progress	Machinery -in-transit	Total
Beginning balance	1,470,226	2,181,396	651,061	4,288,509	8,594	384,777	95,905	100,360	473,111	26,194	9,680,133
Cost	1,507,154	2,796,650	1,145,962	12,656,297	41,183	1,005,567	323,646	238,906	484,950	26,194	20,226,509
Accumulated depreciation	-	(575,932)	(479,210)	(8,305,213)	(32,439)	(611,202)	(225,767)	(138,098)	-	-	(10,367,861)
Accumulated impairment	(36,928)	(39,322)	(15,691)	(62,575)	(150)	(9,588)	(1,974)	(448)	(11,839)	-	(178,515)
Business combination (Note 35)	62,738	81,497	6,590	109,011	197	8,256	2,918	-	164,722	57,392	493,321
Acquisitions/ Transfer	179	45,853	13,979	226,312	7,971	29,362	12,887	23	266,827	15,264	618,657
Disposals/ Transfer	(337)	(158)	(23)	(3,581)	(7)	(523)	(209)	-	(305,744)	(32,257)	(342,839)
Exchange differences	(317)	(24,122)	(5,748)	(67,423)	(46)	(2,361)	(623)	-	(7,510)	-	(108,150)
Depreciation	-	(17,585)	(12,019)	(242,406)	(1,087)	(31,559)	(8,600)	(17,040)	-	-	(330,296)
Impairment	-	-	-	(9,249)	-	(2,126)	(44)	-	(1,343)	-	(12,762)
Transfer to assets held for sale (Note 36)	-	-	-	(1,022)	-	(1,020)	(4)	-	-	-	(2,046)
Ending balance	1,532,489	2,266,881	653,840	4,300,151	15,622	384,806	102,230	83,343	590,063	66,593	9,996,018
Cost	1,569,418	2,905,863	1,163,236	12,930,930	47,785	1,038,881	347,804	236,508	602,807	66,593	20,909,825
Accumulated depreciation	-	(600,377)	(494,263)	(8,569,672)	(32,015)	(644,504)	(243,630)	(152,717)	-	-	(10,737,178)
Accumulated impairment	(36,929)	(38,605)	(15,133)	(61,107)	(148)	(9,571)	(1,944)	(448)	(12,744)	-	(176,629)

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	December 31, 2016										
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Equipment	Others	Construction -in-progress	Machinery -in-transit	Total
Beginning 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)
Business combination (Note 35)	414,123	77,141	43,795	266,818	1,019	4,737	3,631	-	3,109	-	814,373
Acquisitions/ Transfer	147,464	187,602	49,349	840,388	1,821	167,536	42,775	30,982	1,319,406	55,261	2,842,584
Disposals/ Transfer	(1,441)	(5,607)	(150)	(17,518)	(34)	(8,475)	(650)	-	(1,391,481)	(39,604)	(1,464,960)
Exchange differences	(161)	(5,427)	(346)	(57,826)	1	(1,834)	(474)	-	23,871	-	(42,196)
Depreciation	-	(66,347)	(46,139)	(943,927)	(3,729)	(126,050)	(30,985)	(65,611)	-	-	(1,282,788)
Impairment	-	(15,975)	(1,945)	(26,015)	(8)	(810)	(474)	(448)	(6,108)	-	(51,783)
Transfer to assets held for sale (Note 36)	-	-	-	(1,685)	-	(162)	(459)	-	-	-	(2,306)
Ending balance	1,470,226	2,181,396	651,061	4,288,509	8,594	384,777	95,905	100,360	473,111	26,194	9,680,133
Cost	1,507,154	2,796,650	1,145,962	12,656,297	41,183	1,005,567	323,646	238,906	484,950	26,194	20,226,509
Accumulated depreciation	-	(575,932)	(479,210)	(8,305,213)	(32,439)	(611,202)	(225,767)	(138,098)	-	-	(10,367,861)
Accumulated impairment	(36,928)	(39,322)	(15,691)	(62,575)	(150)	(9,588)	(1,974)	(448)	(11,839)	-	(178,515)

During the period ended March 31, 2017, the Group capitalized ₩1,111 million of borrowing costs (2016: ₩2,050 million), which recognized from borrowings in relation to acquisition of property, plant and equipment, on property, plant and equipment. The capitalization rate of borrowings used to determine the amount of borrowing costs eligible for capitalization is 2.23% (2016: 1.78%).

As at March 31, 2017, certain property, plant and equipment have been pledged as collaterals for borrowings and credit line agreements (Note 19).

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Line items including depreciation in the consolidated statements of profit or loss for the periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Cost of sales	305,575	290,284
Selling and administrative expenses	23,806	20,101
Others	915	126
Total	<u>330,296</u>	<u>310,511</u>

Details of machinery and construction-in-progress classified as a finance lease as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017		December 31, 2016	
	Machinery	Construction -in-progress	Machinery	Construction -in-progress
Cost- capitalized finance leases	44,370	2,533	42,669	-
Accumulated depreciation	(10,363)	-	(8,534)	-
Net book amount	<u>34,007</u>	<u>2,533</u>	<u>34,135</u>	-

The Group leases machinery and construction-in-progress under non-cancellable finance lease agreements. The lease terms are 3~10 years and the contracts include an agreement that the ownership of the assets is transferred by the end of the lease term.

The Group reviews annually whether there is any indication that an asset may be impaired. During 2016, Glass Substrate business, a CGU in IT & Electronic materials and Advanced materials segment, was tested for impairment as its economic performance was lower than expected.

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

The amount of impairment loss recognized as other non-operating expenses and key assumptions used for calculation of value in use for the period ended December 31, 2016 is as follows:

<i>(in millions of Korean won)</i>	2016
	Glass Substrate
Impaired amount	
Property, plant and equipment	47,699
Intangible assets	535
Key assumptions	
Pre-tax discount rate	9.5%
Growth rate for subsequent years exceeding five years	0%

The Group decided to dispose of certain non-current assets during the three-month period ended March 31, 2017 and the year ended December 31, 2016. The differences between net fair value and carrying amount were recognized as impairment losses (Note 36).

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12. Intangible Assets

Changes in intangible assets for the three-month period ended March 31, 2017 and for the year ended December 31, 2016, are as follows:

(in millions of Korean won)

	March 31, 2017					
	Development costs	Industrial property rights	Goodwill	Memberships	Others	Total
Beginning balance	102,853	344,882	252,253	52,793	79,363	832,144
Business combination (Note 35)	53,913	12,770	686,229	3,723	203,144	959,779
Acquisitions/ Transfer	17,632	8,364	-	169	2,122	28,287
Disposals/ Transfer	(1,940)	(30)	-	(1,102)	(117)	(3,189)
Exchange differences	(662)	(4,323)	(8,687)	(1,707)	(173)	(15,552)
Amortization	(6,615)	(6,165)	-	-	(8,432)	(21,212)
Impairment	(3,141)	(4)	-	-	(4)	(3,149)
Transfer to assets held for sale (Note 36)	-	(358)	-	-	-	(358)
Ending balance	162,040	355,136	929,795	53,876	275,903	1,776,750

(in millions of Korean won)

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

Line items including amortization of intangible assets for the periods ended March 31, 2017 and 2016, as follows:

(in millions of Korean won)

	2017	2016
Cost of sales	4,402	2,639
Selling and administrative expenses	16,810	8,795
Total	21,212	11,434

During the three-month period ended March 31, 2017, the Group recognized total research and development costs of ₩213,116 million (2016: ₩152,523 million) as expenses.

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13. Investment properties

Changes in investment properties for the three-month period ended March 31, 2017 and for the year ended December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017			December 31, 2016		
	Land	Building	Total	Land	Building	Total
Beginning balance	1,015	1,272	2,287	-	-	-
Cost	1,015	1,400	2,415	-	-	-
Accumulated depreciation	-	(128)	(128)	-	-	-
Business combination (Note 35)	-	-	-	10,754	4,522	15,276
Acquisitions/ Transfer	-	-	-	-	-	-
Disposals/ Transfer	-	-	-	(9,739)	(3,141)	(12,880)
Depreciation	-	(8)	(8)	-	(109)	(109)
Ending balance	1,015	1,264	2,279	1,015	1,272	2,287
Cost	1,015	1,400	2,415	1,015	1,400	2,415
Accumulated depreciation	-	(136)	(136)	-	(128)	(128)

As at March 31, 2017, the carrying amounts of property, plant and equipment classified as investment properties are approximation of their fair values.

Details of gain or loss on investment properties for the three-month periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Rental income	4	-
Depreciation	(8)	-
Total	(4)	-

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14. Other Current and Non-current Assets

Details of other current and non-current assets as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Current		
Prepayments to suppliers and prepaid expenses	110,713	139,005
Prepaid value added tax	183,604	111,787
Others	18,770	10,001
Total	<u>313,087</u>	<u>260,793</u>
Non-current		
Long-term prepayments to suppliers and long-term prepaid expenses	96,125	47,037
Others	10,914	10,920
Total	<u>107,039</u>	<u>57,957</u>

15. Borrowings

Borrowings as at March 31, 2017 and December 31, 2016, consist of:

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Current		
Short-term borrowings	1,800,874	1,633,898
Current-portion of long-term borrowings of bank loans	299,128	343,935
Current-portion of debentures	69,764	229,922
Finance lease liabilities	5,122	4,886
	<u>2,174,888</u>	<u>2,212,641</u>
Non-current		
Long-term borrowings	560,814	607,996
Debentures	379,125	39,732
Finance lease liabilities	31,782	30,272
	<u>971,721</u>	<u>678,000</u>
Total	<u>3,146,609</u>	<u>2,890,641</u>

Details of short-term borrowings as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	Bank	Latest maturity date	Interest rate(%) as at March 31, 2017	March 31, 2017	December 31, 2016
Notes discounted ¹ (Negotiable notes)	Woori Bank, others	2017.12.03	Libor + 0.50 and others	671,400	448,722
Bank loans	Nonghyup Bank, others	2018.12.28	2.14 and others	1,129,474	1,185,176
Total				<u>1,800,874</u>	<u>1,633,898</u>

¹ As at March 31, 2017, trade receivables transferred to financial institutions but not derecognized are accounted for as collateralized borrowing transaction (Note 7).

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Details of long-term borrowings as at March 31, 2017 and December 31, 2016, are as follows:

(in millions of Korean won)	March 31, 2017					
	Bank	Annual interest rate (%)	Latest maturity date	Amount in Korean won	Current	Non- current
Borrowings in Korean won	KEB Hana Bank ¹	1.75	2019.12.15	970	353	617
Borrowings in foreign currencies	Sumitomo Mitsui Banking Corporation	3Libor + 1.05	2019.10.28	55,332	-	55,332
	Standard Chartered Bank	3Libor + 1.00	2017.11.20	45,003	45,003	-
	Construction Bank of China	PBOC × 0.90	2023.11.13	29,114	-	29,114
	Communications Bank of China	PBOC	2021.09.20	24,340	3,245	21,095
	Agricultural Bank of China	3Libor + 0.80	2020.06.29	30,079	5,486	24,593
	Agricultural Bank of China	PBOC × 0.90	2022.09.03	28,722	-	28,722
	Bank of America	6Libor + 1.60	2017.10.24	33,586	33,586	-
	Bank of America	3Libor + 1.50	2018.08.13	33,586	-	33,586
	Bank of China	3Libor + 0.95	2019.12.21	29,989	3,359	26,630
	BNP PARIBAS	EURIBOR + 0.99	2019.12.13	17,835	-	17,835
	BNP PARIBAS	WIBOR + 0.55	2019.12.13	90	-	90
	CNOOC Finance	PBOC × 0.90	2021.12.23	75,780	-	75,780
	HSBC	3Libor + 1.00	2018.12.20	111,955	-	111,955
	HSBC	3Libor + 1.05	2018.09.19	44,782	-	44,782
	HSBC	3Libor + 1.05	2018.11.12	44,782	-	44,782
	HSBC	3Libor + 1.05	2019.04.19	52,624	6,723	45,901
	JP Morgan	3Libor + 0.85	2018.01.15	22,384	22,384	-
	JP Morgan	3Libor + 1.05	2018.01.15	22,390	22,390	-
	Mizuho Banking Corporation	3Libor + 1.02	2017.04.16	44,782	44,782	-
	Mizuho Banking Corporation	3Libor + 0.75	2017.05.27	44,644	44,644	-
	United Overseas Bank	3Libor + 0.85	2017.12.21	67,173	67,173	-
Total				<u>859,942</u>	<u>299,128</u>	<u>560,814</u>

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

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(in millions of
Korean won)

		December 31, 2016				
		Annual	Latest	Amount		
		interest rate (%)	maturity date	in Korean	Current	Non-
				won		current
Borrowings in	Bank					
Korean won	KEB Hana Bank ¹	1.75	2019.12.15	1,058	353	705
Borrowings in foreign	Sumitomo Mitsui Banking					
currencies	Corporation	3Libor + 0.60	2017.04.03	24,170	24,170	-
	Sumitomo Mitsui Banking					
	Corporation	3Libor + 1.05	2019.10.28	36,904	-	36,904
	Standard Chartered Bank	3Libor + 1.00	2017.11.20	48,313	48,313	-
	Construction Bank					
	of China	PBOC x 0.90	2023.11.13	32,476	2,915	29,561
	Communications Bank					
	of China	PBOC	2021.09.20	27,721	3,465	24,256
	Agricultural Bank of China	3Libor + 0.80	2020.06.29	32,291	5,889	26,402
	Agricultural Bank of China	PBOC x 0.90	2022.09.03	31,533	-	31,533
	Bank of America	6Libor + 1.60	2017.10.24	36,057	36,057	-
	Bank of America	3Libor + 1.50	2018.08.13	36,057	-	36,057
	Bank of China	3Libor + 0.95	2021.12.05	32,195	3,606	28,589
	BNP PARIBAS	EURIBOR + 0.99	2019.12.13	6,560	-	6,560
	BNP PARIBAS	WIBOR + 0.55	2019.12.13	90	-	90
	CITI	6Libor + 2.00	2017.03.10	18,029	18,029	-
	CNOOC Finance	PBOC x 0.90	2021.12.23	80,914	7,263	73,651
	HSBC	3Libor + 1.00	2018.12.20	120,190	-	120,190
	HSBC	3Libor + 1.05	2018.09.19	48,076	-	48,076
	HSBC	3Libor + 1.05	2018.11.12	48,076	-	48,076
	HSBC	3Libor + 1.05	2019.04.19	56,495	7,217	49,278
	JP Morgan	3Libor + 0.85	2018.01.15	24,037	-	24,037
	JP Morgan	3Libor + 1.05	2018.01.15	24,031	-	24,031
	Mizuho Banking					
	Corporation	3Libor + 1.02	2017.04.16	48,076	48,076	-
	Mizuho Banking					
	Corporation	3Libor + 0.75	2017.05.27	66,468	66,468	-
	United Overseas Bank	3Libor + 0.85	2017.12.21	72,114	72,114	-
Total				<u>951,931</u>	<u>343,935</u>	<u>607,996</u>

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Details of debentures as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017					
	Financial institution	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
47th Debentures (non-guaranteed/private)	Government Employees Pension Service and others	3.20	2018.04.30	30,000	-	30,000
48th Debentures (non-guaranteed/private)	NH Investment & Securities Co., Ltd. and others	3.77	2019.02.21	50,000	-	50,000
49th Debentures (non-guaranteed/private)	KB Asset Management Co., Ltd	2.82	2018.12.12	100,000	-	100,000
Debentures in Korean won (collateralized)¹	IBK Securities Co., Ltd. and others	4.70	2018.03.05	40,000	40,000	-
Debentures in Korean won (non-guaranteed)	Ebest Investment & securities Co., Ltd. and others	4.75	2017.10.24	30,000	30,000	-
	NH Investment & Securities Co., Ltd. and others	1.93	2020.02.16	100,000	-	100,000
	NH Investment & Securities Co., Ltd. and others	2.26	2022.02.16	100,000	-	100,000
Less: discount on debentures				(1,111)	(236)	(875)
Total				<u>448,889</u>	<u>69,764</u>	<u>379,125</u>

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

<i>(in millions of Korean won)</i>	December 31, 2016					
	Financial institution	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
Debentures in Korean won (non-guaranteed)	Woori Security and others	4.11	2017.03.29	200,000	200,000	-
	Ebest Investment & securities Co., Ltd. and others	4.75	2017.10.24	30,000	30,000	-
Debentures in Korean won (collateralized)¹	IBK Securities Co., Ltd. and others	4.70	2018.03.05	40,000	-	40,000
Less: discount on debentures				(346)	(78)	(268)
Total				<u>269,654</u>	<u>229,922</u>	<u>39,732</u>

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

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Details of finance lease liabilities as at March 31, 2017 and December 31, 2016, are as follows:

(in millions of Korean won)

Leaser	March 31, 2017				
	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
Hyundai Oil Bank	3.12	2024.12.31	35,428	4,923	30,505
Doarm Engineering Co., Ltd.(Iksan)	3.70	2018.09.30	94	48	46
DoArm Engineering Co., Ltd.(Osong)	3.70	2018.09.30	85	58	27
Chungbuk Technopark	4.13	2023.12.31	1,297	93	1,205
Total			36,904	5,122	31,782

(in millions of Korean won)

Leaser	December 31, 2016				
	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
Hyundai Oil Bank	3.12	2024.12.31	35,158	4,886	30,272
Total			35,158	4,886	30,272

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The present value of finance lease liabilities as at March 31, 2017 and December 31, 2016, is as follows:

(in millions of Korean won)

	March 31, 2017			December 31, 2016		
	Minimum lease payments	Future finance costs	Present value	Minimum lease payments	Future finance costs	Present value
Within 1 year	5,322	200	5,122	5,000	114	4,886
Between 1-5 years	20,750	1,748	19,002	20,000	1,902	18,098
Over 5 years	15,665	2,885	12,780	15,000	2,826	12,174

16. Provisions

Changes in provisions for other liabilities and charges for the three-month period ended March 31, 2017 and for the year ended December 31, 2016, are as follows:

(in millions of Korean won)

	March 31, 2017					
	Sales returns ¹	Warranty ²	Greenhouse gas emission ³	Legal Claims ⁴	Restoration ⁵	Total
Beginning balance	10,362	41,476	27,801	10,102	95,774	185,515
Business combination (Note 35)	5,994	-	59	-	-	6,053
Additions	8,659	5,340	10	27,609	1,335	42,953
Used	(10,222)	(1,130)	-	-	(3,091)	(14,443)
Ending balance	14,793	45,686	27,870	37,711	94,018	220,078
Less : current portion	(10,710)	(2,524)	(27,870)	-	(16,390)	(57,494)
Total	4,083	43,162	-	37,711	77,628	162,584

(in millions of Korean won)

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

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.

⁴ Lawsuit provisions have been accrued for certain pending cases.

⁵ As at March 31, 2017, restoration provisions have been accrued based on the estimated expenses to restore land pollutions and others.

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17. Net Defined Benefit Liabilities

Details of net defined benefit liabilities recognized in the statements of financial position as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Present value of defined benefit obligations ¹	984,494	885,259
Fair value of plan assets	<u>(840,740)</u>	<u>(793,087)</u>
Liabilities in the consolidated statement of financial position	<u>143,754</u>	<u>92,172</u>

¹ The present value of retirement benefit obligations is net of existing contributions to the National Pension Plan of ₩868 million as at March 31, 2017(December 31, 2016: ₩821 million).

The amounts recognized in the consolidated statements of profit or loss for the periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Current service cost	34,909	28,700
Interest cost	<u>726</u>	<u>546</u>
Total, included in employee benefit expenses	<u>35,635</u>	<u>29,246</u>

Post-employment benefits recognized for defined contribution plan for the period ended March 31, 2017, amounted to ₩142 million (2016: ₩109 million).

Post-employment benefits recognized in the consolidated statements of profit or loss for the periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Cost of sales	23,992	20,628
Selling and administrative expenses	<u>11,785</u>	<u>8,727</u>
Total	<u>35,777</u>	<u>29,355</u>

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Movements in the present value of defined benefit obligations for the three-month period ended March 31, 2017 and for the year ended December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Beginning balance	885,259	717,770
Business combination (Note 35)	69,693	52,191
Transfer in	748	11,390
Transfer out	(1,481)	(5,764)
Current service cost	35,091	119,179
Interest expense	6,631	20,419
Remeasurements:		
Actuarial loss from change in demographic assumptions	2,726	3,731
Actuarial loss (gain) from change in financial assumptions	2,629	(11,225)
Actuarial loss (gain) from experience adjustments	-	24,400
Others	-	3,453
Exchange differences	(302)	234
Payments from plans	(16,500)	(50,519)
Ending balance	984,494	885,259

Movements in the fair value of plan assets for the three-month period ended March 31, 2017 and for the year ended December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Beginning balance	793,087	636,578
Business combination (Note 35)	57,771	13,080
Transfer in	-	1,384
Transfer out	(102)	-
Interest income	5,905	17,475
Remeasurements:		
Return on plan assets (excluding amounts included in interest income)	(1,966)	(4,407)
Contributions:		
Employers	3	160,421
Payments from plans	(13,875)	(30,509)
Administrative costs	(83)	(935)
Ending balance	840,740	793,087

The actual return on plan assets for the period ended March 31, 2017, was ₩3,939 million (2016: ₩13,068 million).

The significant actuarial assumptions as at March 31, 2017 and December 31, 2016, are as follows:

	March 31, 2017	December 31, 2016
Discount rate	2.2% ~ 2.8%	2.2% ~ 2.9%
Salary growth rate	2.5% ~ 5.1%	2.5% ~ 5.1%

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The sensitivity analysis for changes in key actuarial assumptions as at March 31, 2017, is as follows:

<i>(in millions of Korean won)</i>	Increase by 1%	Decrease by 1%
Discount rate:		
Increase (decrease) in defined benefit obligations	(103,900)	121,522
Salary growth rate:		
Increase (decrease) in defined benefit obligations	117,643	(102,957)

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

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

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

Plan assets as at March 31, 2017 and December 31, 2016, consist of:

<i>(in millions of Korean won)</i>	March 31, 2017				December 31, 2016			
	Quoted price	Unquoted price	Total	Compo- sition	Quoted price	Unquoted price	Total	Compo- sition
Insurance contracts with guaranteed yield	840,740	-	840,740	100%	793,087	-	793,087	100%

18. Other Current and Non-Current Liabilities

Details of other current and non-current liabilities as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Current		
Advances from customers	52,567	70,590
Dividends payable	368,067	12
Withholdings	52,317	68,946
Unearned revenues	6,960	6,201
Accrued expenses	113,908	123,895
Total	<u>593,819</u>	<u>269,644</u>
Non-current		
Long-term accrued expenses	<u>36,055</u>	<u>30,267</u>

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19. Commitments and Contingencies

- (1) As at March 31, 2017, the Group has been guaranteed from the Seoul Guarantee Insurance for the execution of construction contracts.
- (2) As at March 31, 2017, the Parent Company has provided one blank promissory note to the Korea National Oil Corporation as a collateral in relation to petroleum import surcharges.
- (3) As at March 31, 2017, the Parent Company and certain subsidiaries have various specific line of credit agreements with several financial institutions, as follows:

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

Classification	The Parent Company		Certain Overseas Subsidiaries					
	KRW	USD	KRW	USD	CNY	EUR	INR	PLN
Limit of bank overdraft	69,100	50	-	100	507	20	-	-
Limit of the letter of credit	32,000	378	-	213	200	3	-	-
Limit of discount of notes from export	-	1,481	-	-	-	-	-	-
Limit of guaranteed payments in other foreign currency	-	93	-	-	-	-	-	-
Limit of loan arrangements	-	-	82,470	1,982	7,478	30	3,200	32

The Group also entered into credit line agreements with other financial institutions relating to trade finance and import/export amounting to ₩20,000 million and US\$ 125 million.

- (4) As at March 31, 2017, the Parent Company and certain subsidiaries have B2B purchase arrangements with several financial institutions with limit of ₩339,000 million and ₩15,000 million, respectively.
- (5) As at March 31, 2017, in relation to price fixing of mobile batteries, the consumers in U.S., Canada and Israel have filed three class actions claims and the customers have filed five separate actions against the Parent Company and certain overseas subsidiaries. However, the ultimate outcome of these cases cannot be determined at the reporting date.
- (6) In addition, as at March 31, 2017, the Parent Company and certain overseas subsidiaries have been named as a plaintiff in 9 and 24 legal actions, respectively, involving ₩20,179 million and ₩3,499 million in claims, respectively. They have been named as a defendant in 11 and 17 legal actions, respectively, with ₩48,531 million and ₩4,877 million in claims, respectively. The ultimate outcome of these cases cannot be determined at the reporting date.
- (7) As at March 31, 2017, the Parent Company has technology license agreements with STYRON EUROPE GmbH and other companies for the production of Polycarbonate products. Further, the Parent Company has entered into manufacture and production technical contracts with Exxon Mobile and others
- (8) The Parent Company has entered into a license agreement with LG Corp. to use trademarks on the products that the Group manufactures and sells, and on the services the Group provides in relation to its business.

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(9) As at March 31, 2017, the Parent Company has entered into payment guarantee contract of US\$ 1 million and EUR 14 million with financial institutions to guarantee the warrant of certain installed products. The Parent Company has entered into a payment guarantee contract of US\$ 33 million with a financial institution in relation to advance received from customers for certain sales. Also, certain subsidiaries have entered into payment guarantee contract of CNY 497 million with financial institutions in relation to custom of imported raw materials.

(10) As at March 31, 2017, assets pledged as collaterals for the borrowings are as follows::

<i>(in millions of Korean won)</i>	March 31, 2017			Secured party
	Secured amount	Borrowings / Loan	Limit	
Other receivables	300	Non-current borrowings (Won currency borrowings)	970	KEB Hana Bank
Gumi facility, Anseong facility, Genetics institute	<u>52,000</u>	Won currency debentures (Collateralized)	<u>40,000</u>	Creditors
	<u>52,300</u>		<u>40,970</u>	

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

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

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Property, plant and equipment	699,470	399,562

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20. Share Capital

Changes in share capital and share premium for the three-month period ended March 31, 2017 and for the year ended December 31, 2016, are as follows:

(in millions of Korean won and in shares)

	Ordinary shares		Preferred shares		Share premium
	Number of shares	Share capital	Number of shares	Share capital	
January 1, 2016	66,271,100	331,356	7,628,921	38,144	897,424
December 31, 2016	66,271,100	331,356	7,628,921	38,144	897,424
Share issuance due to business combination	4,321,243	21,606	59,879	300	1,116,614
March 31, 2017	70,592,343	352,962	7,688,800	38,444	2,014,038

Changes in treasury shares for the three-month period ended March 31, 2017 and for the year ended December 31, 2016, are as follows:

<i>(in millions of Korean won and in shares)</i>	Number of shares		Carrying amount	Gain on disposal of treasury shares
	Ordinary shares	Preferred shares		
January 1, 2016	359,795	5,519	15,484	13,855
December 31, 2016	359,795	5,519	15,484	13,855
Purchase of treasury shares due to business combination	1,284,891	10,328	337,211	-
Acquisition of fractional shares due to business combination	7,730	520	2,250	-
March 31, 2017	1,652,416	16,367	354,945	13,855

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21. Retained Earnings

Retained earnings as at March 31, 2017 and December 31, 2016, consist of:

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Legal reserve ¹	301,138	300,294
Discretionary reserve ²	11,410,610	10,408,789
Retained earnings before appropriation	908,968	1,753,689
Total	<u>12,620,716</u>	<u>12,462,772</u>

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.

22. Other Components of Equity

Details of other components of equity of the Parent Company as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Treasury shares (Note 20)	(354,945)	(15,484)
Capital transactions within the Group ¹	(215)	(215)
Total	<u>(355,160)</u>	<u>(15,699)</u>

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

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23. Selling and Administrative Expenses

Selling and administrative expenses for the three-month periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Wages and salaries	184,995	128,043
Post-employment benefits (Note 17)	11,785	8,727
Employee benefits	31,957	24,608
Travel expense	11,461	9,352
Water & utilities	10,396	8,762
Packaging expense	1,422	1,709
Rental expenses	19,893	19,824
Commission expenses	79,466	64,493
Depreciation (Note 11 and 13)	23,814	20,101
Advertising expense	5,185	4,063
Freight expenses	128,233	108,424
Training expense	3,128	2,653
Amortization (Note 13)	16,810	8,795
Sample expense	4,076	4,124
Development costs	27,712	21,348
Others	56,374	41,602
Total	616,707	476,628

24. Breakdown of Expenses by Nature

Cost of sales, and selling and administrative expenses by nature for the three-month periods ended March 31, 2017 and 2016, consist of:

<i>(in millions of Korean won)</i>	2017	2016
Changes in inventories of merchandise, finished goods, semi-finished goods and construction-in-progress	(95,795)	46,746
Raw materials and consumables used	3,825,315	2,583,807
Purchase of merchandise	321,680	250,522
Employee benefit expenses (Note 25)	542,881	429,856
Advertising expenses	5,345	4,235
Freight expenses	137,500	116,918
Commission expenses	129,404	102,145
Depreciation and amortization	350,601	321,819
Operating lease payments	21,802	18,005
Other expenses	451,027	542,294
Total	5,689,760	4,416,347

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25. Employee Benefit Expenses

Details of employee benefit expenses for the three-month periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Salaries	458,452	363,132
Post-employment benefits – Defined benefit plan (Note 17)	35,635	29,246
Post-employment benefits – Defined contribution plan (Note17)	142	109
Others	48,652	37,369
Total	<u>542,881</u>	<u>429,856</u>

26. Finance Income and Costs

Details of finance income and costs for the three-month periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Finance income		
Interest income ¹	7,466	11,373
Dividend income	196	-
Gain on foreign exchange	43,594	20,429
Gain on foreign currency translation	11,629	9,880
Gain on disposal of available-for-sale securities	-	1,640
Gain on disposal of trading derivatives	170	-
Total	<u>63,055</u>	<u>43,322</u>
Finance costs		
Interest expense ²	27,088	14,004
Loss on foreign exchange	73,348	23,724
Loss on foreign exchange translations	6,861	4,510
Loss on disposal of trading derivatives	-	3,141
Total	<u>107,297</u>	<u>45,379</u>

¹ Details of interest income for the three-month periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Deposits held by financial institutions	6,501	10,433
Available-for-sale financial assets	5	-
Other loans and receivables	960	940
Total	<u>7,466</u>	<u>11,373</u>

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² Details of interest expense for the three-month periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Interest on bank overdraft and borrowings	20,916	12,167
Interest on finance lease liabilities	737	304
Interest on debentures	5,033	3,131
Other interest expenses	1,513	452
Capitalized interest for qualifying assets	(1,111)	(2,050)
Total	<u>27,088</u>	<u>14,004</u>

27. Other Non-Operating Income

Details of other non-operating income for the three-month periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Gain on foreign exchange	121,089	94,195
Gain on foreign currency translation	51,291	65,523
Gain on disposal of property, plant and equipment	757	1,048
Gain on disposal of intangible assets	4,867	-
Others	31,560	9,884
Total	<u>209,564</u>	<u>170,650</u>

28. Other Non-Operating Expenses

Details of other non-operating expenses for the three-month periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Loss on foreign exchange	120,454	95,286
Loss on foreign currency translation	70,738	76,433
Loss on disposal of property, plant and equipment	21,134	7,044
Loss on disposal of intangible assets	788	154
Impairment loss on property, plant and equipment (Note 12)	12,762	1,216
Impairment loss on intangible assets (Note 13)	3,149	-
Donations	3,741	4,947
Others	34,394	15,836
Total	<u>267,160</u>	<u>200,916</u>

29. Income Taxes

Income tax expense is recognized based on management's best estimate of the weighted average annual income tax rate expected for the full financial year. The estimated average annual rate used for the year ended December 31, 2017, is 21.2% (2016: 19.4%).

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30. Earnings per Share

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

Basic earnings per share attributable to the owners of the Parent Company for the three-month periods ended March 31, 2017 and 2016, is computed as follows:

Basic earnings per ordinary share

<i>(in millions of Korean won and in number of shares)</i>	2017	2016
Profit attributable to ordinary shares ¹	478,177	304,454
Weighted average number of ordinary shares outstanding ²	68,941,301	65,911,305
Basic earnings per ordinary shares (in won)	<u>6,936</u>	<u>4,619</u>

Basic earnings per preferred share

<i>(in millions of Korean won and in number of shares)</i>	2017	2016
Profit attributable to preferred shares ¹	53,313	35,308
Weighted average number of preferred shares outstanding ²	7,672,525	7,623,402
Basic earnings per preferred shares (in won)	<u>6,949</u>	<u>4,632</u>

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

<i>(in millions of Korean won)</i>	2017	2016
Profit attributable to the equity holders of the Parent Company	531,490	339,762
Ordinary shares dividends (A)	86,177	74,150
Preferred shares dividends (B)	9,687	8,672
Undistributed earnings for the period	435,626	256,940
Undistributed earnings available for ordinary shares (C)	392,000	230,304
Undistributed earnings available for preferred shares (D)	43,626	26,636
Profit for the period attributable to ordinary shares (A+C)	478,177	304,454
Profit for the period attributable to preferred shares (B+D)	53,313	35,308

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² Weighted average numbers of shares are calculated as follows:

Ordinary shares outstanding	2017			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2017. 1. 1 ~ 2017. 3. 31	65,911,305	90	5,932,017,450
Share issuance due to business combination	2017. 1. 1 ~ 2017. 3. 31	4,321,243	90	388,911,870
Purchase of treasury shares	2017. 1. 1 ~ 2017. 3. 31	(1,284,891)	90	(115,640,190)
Purchase of treasury shares	2017. 1. 17 ~ 2017. 3. 31	(7,730)	74	(572,020)
Total				6,204,717,110

Weighted average number of ordinary shares outstanding: $6,204,717,110 \div 90 = 68,941,301$ shares

Preferred shares outstanding	2017			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2017. 1. 1 ~ 2017. 3. 31	7,623,402	90	686,106,180
Share issuance due to business combination	2017. 1. 1 ~ 2017. 3. 31	59,879	90	5,389,110
Purchase of treasury shares	2017. 1. 1 ~ 2017. 3. 31	(10,328)	90	(929,520)
Purchase of treasury shares	2017. 1. 17 ~ 2017. 3. 31	(520)	74	(38,480)
Total				690,527,290

Weighted average number of preferred shares outstanding: $690,527,290 \div 90 = 7,672,525$ shares

Ordinary shares outstanding	2016			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2016. 1. 1 ~ 2016.12.31	65,911,305	91	5,997,928,755
Total				5,997,928,755

Weighted average number of ordinary shares outstanding: $5,997,928,755 \div 91 = 65,911,305$ shares

Preferred shares outstanding	2016			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2016. 1. 1 ~ 2016.12.31	7,623,402	91	693,729,582
Total				693,729,582

Weighted average number of preferred shares outstanding: $693,729,582 \div 91 = 7,623,402$ shares.

There were no dilutive potential outstanding ordinary shares at the reporting date. Accordingly, diluted earnings per share is identical to basic earnings per share.

31. Dividends

The ₩368,055 million (2016: ₩331,287 million) of dividends for the year ended December 31, 2016, was paid to the shareholders of the Parent Company in April 2017.

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32. Related Party Transactions

As at March 31, 2017 and 2016, LG Corp. is an entity exercising a significant influence over the Group, which owns 33.34% of the Parent Company's ordinary shares.

Details of associates and other related parties that have sales and other transactions with the Group or have receivables and payables balances as at March 31, 2017 and 2016, are as follows, and the details of investments in subsidiaries, associates and joint ventures are described in Note 1.3:

Related party	Related party's subsidiary (Domestic)	Related party's subsidiary (overseas)	Details
SERVEONE	-	Serveone(Nanjing) Co., LTD. and others	Subsidiary of LG Corp.
LG CNS Co., Ltd.	LG N-Sys Inc.	LG CNS America Inc. and others	Subsidiary of LG Corp.
LG Siltron Incorporated	-	-	Subsidiary of LG Corp.
LG Management Development Institute	-	-	Subsidiary of LG Corp.
LG Sports Ltd.	-	-	Subsidiary of LG Corp.
LG Holdings Japan	-	-	Subsidiary of LG Corp.
LG MMA Corporation	-	-	Joint venture of LG Corp.
LG Display Co., Ltd.	-	LG Display Yantai Co., Ltd. and others	LG Enterprise group ¹
LG Electronics, Inc.	LG Innotek Co., Ltd. and others	Inspur LG Digital Mobile Communications Co., Ltd. and others	LG Enterprise group ¹
LG International Corp.	Pantos Logistics Co.,Ltd. and others	LG International (Japan) Ltd. and others	LG Enterprise group ¹
LG Hausys, Ltd.	-	LG Hausys Tianjin Co., Ltd. and others	LG Enterprise group ¹
LG Household & Health Care Ltd.	Coca-Cola Beverage Co.	-	LG Enterprise group ¹
LG Life Sciences Ltd. ²	-	-	LG Enterprise group ¹
LG Uplus Corp.	-	-	LG Enterprise group ¹
G II R Inc.	HS AD Inc.	-	LG Enterprise group ¹
Silicon Works Co.,Ltd.	-	-	LG Enterprise group ¹

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

² On January 1, 2017, LG Life Sciences Ltd. was merged into the Parent Company.

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Sales and purchases with related parties for the three-month periods ended March 31, 2017 and 2016, are as follows:

(in millions of Korean won)

	2017			
	Sales and others	Purchase and others		
		Purchase of raw materials /merchandises	Acquisition of property, plant and equipment and intangible assets	Others
Entity with a significant influence over the Group				
LG Corp.	-	-	-	15,219
Associates and joint ventures				
SEETEC Co., Ltd.	5,269	28,666	-	24,313
TECWIN Co., Ltd.	-	122	1,003	5
HL Greenpower Co., Ltd.	49,160	-	-	-
Others	7	-	-	674
Other related parties				
LG MMA Corporation	19,921	52,691	-	1,882
SERVEONE and its subsidiaries	3,202	122,737	84,013	29,793
LG CNS Co., Ltd. and its subsidiaries	2,477	39	12,888	14,800
Others	4	-	-	3,341
Others				
LG Display Co., Ltd. and its subsidiaries	330,244	-	-	5
LG Electronics Inc. and its subsidiaries	240,194	56,489	23,123	4,284
LG International Corp. and its subsidiaries	88,504	127,170	2	84,495
LG Hausys, Ltd. and its subsidiaries	54,342	2,291	-	2,016
Others	9,824	7,441	333	1,562
Total	803,148	397,646	121,362	182,389

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(in millions of Korean won)

	2016			
	Sales and others	Purchase and others		
		Purchase of raw materials /merchandises	Acquisition of property, plant and equipment and intangible assets	Others
Entity with a significant influence over the Group				
LG Corp.	-	-	-	11,681
Associates and joint ventures				
SEETEC Co., Ltd.	3,869	26,011	-	19,826
TECWIN Co., Ltd.	-	22	55	-
HL Greenpower Co., Ltd.	14,536	-	-	-
Others	273	-	-	572
Other related parties				
LG MMA Corporation	22,284	26,391	-	990
SERVEONE and its subsidiaries	4,430	101,103	33,218	23,018
LG CNS Co., Ltd. and its subsidiaries	3,138	840	13,729	14,922
Others	-	-	-	3,002
Others				
LG Display Co., Ltd. and its subsidiaries	333,481	-	-	13
LG Electronics Inc. and its subsidiaries	140,148	44,207	19,732	1,554
LG International Corp. and its subsidiaries	67,974	78,847	3	48,262
LG Hausys, Ltd. and its subsidiaries	43,181	-	300	684
Others	5,635	9,408	89	1,931
Total	638,949	286,829	67,126	126,455

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Balances of receivables and payables arising from sales and purchases of goods and services as at March 31, 2017 and December 31, 2016, are as follows:

(in millions of Korean won)

	March 31, 2017			
	Receivables			Total
	Trade receivables and others	Loan receivables	Other receivables	
Entity with a significant influence over the Group				
LG Corp.	-	-	9,172	9,172
Associates and joint ventures				
SEETEC Co., Ltd.	-	-	-	-
TECWIN Co., Ltd.	-	-	-	-
HL Greenpower Co., Ltd.	46,848	-	-	46,848
LG Fuel Cell Systems Inc.	-	9,386	506	9,892
Others	-	-	28	28
Other related parties				
LG MMA Corporation	7,257	-	398	7,655
SERVEONE and its subsidiaries	2,057	-	28,070	30,127
LG CNS Co., Ltd. and its subsidiaries	14,670	-	43	14,713
Others	2	-	4,892	4,894
Others				
LG Display Co., Ltd. and its subsidiaries	177,604	-	1,354	178,958
LG Electronics Inc. and its subsidiaries	270,390	-	30,196	300,586
LG International Corp. and its subsidiaries	44,244	-	701	44,945
LG Hausys, Ltd. and its subsidiaries	42,932	-	344	43,276
Others	23	-	428	451
Total	606,027	9,386	76,132	691,545

(in millions of Korean won)

	March 31, 2017			
	Payables			Total
	Trade payables	Borrowings	Other payables	
Entity with a significant influence over the Group				
LG Corp.	-	-	113,309	113,309
Associates and joint ventures				
SEETEC Co., Ltd.	9,442	-	8,810	18,252
TECWIN Co., Ltd.	49	-	1,533	1,582
HL Greenpower Co., Ltd.	-	-	9	9
LG Fuel Cell Systems Inc.	-	-	-	-
Others	-	-	45	45
Other related parties				
LG MMA Corporation	21,320	-	-	21,320
SERVEONE and its subsidiaries	26,179	-	218,809	244,988
LG CNS Co., Ltd. and its subsidiaries	7,300	-	21,495	28,795
Others	-	-	184	184
Others				
LG Display Co., Ltd. and its subsidiaries	-	-	-	-
LG Electronics Inc. and its subsidiaries	108,949	-	5,738	114,687
LG International Corp. and its subsidiaries	26,852	-	50,296	77,148
LG Hausys, Ltd. and its subsidiaries	3,280	-	795	4,075
Others	2,392	-	3,619	6,011
Total	205,763	-	424,642	630,405

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(in millions of Korean won)

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

(in millions of Korean won)

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

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Fund transactions with related parties for the three-month periods ended March 31, 2017 and 2016, are as follows:

(in millions of Korean won)

	2017		2016	
	Equity contributions in cash (capital reduction)	Loan (Repayment)	Equity contributions in cash (capital reduction)	Loan (Repayments)
Associates and joint ventures				
FJ Composite Materials Co.,LTD.	3,015	-	-	-
Total	3,015	-	-	-

Dividends received from related parties for the three-month periods ended March 31, 2017 and 2016, are as follows:

(in millions of Korean won)

	2017	2016
Associates and joint ventures		
SEETEC Co., Ltd.	10,000	-
Total	10,000	-

There are no dividends paid by the Group to related parties for the three-month periods ended March 31, 2017 and 2016.

Compensation for key management of the Group for the three-month periods ended March 31, 2017 and 2016, consists of:

(in millions of Korean won)

	2017	2016
Short-term employee benefits	21,354	10,066
Post-employment benefits	884	785
Total	22,238	10,851

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

There are no provisions recognized against receivables from related parties as at March 31, 2017.

As at March 31, 2017, there is no payment guarantees provided by the Group for related parties.

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33. Cash Generated from Operations

Reconciliation between profit before income tax and cash generated from operations for the three-month periods ended March 31, 2017 and 2016, is as follows:

<i>(in millions of Korean won)</i>	2017	2016
Profit before income tax	698,301	423,084
Adjustments for:		
Depreciation	329,389	310,385
Amortization	21,212	11,434
Post-employment benefits	35,635	29,246
Finance income	(67,338)	(88,217)
Finance costs	106,035	98,823
Foreign exchange differences	(57,671)	24,555
Gain on valuation of inventories	(3,569)	(4,489)
Gain on disposal of property, plant and equipment	(757)	(1,048)
Gain on disposal of intangible assets	(4,867)	-
Loss on disposal of property, plant and equipment	21,134	7,044
Loss on disposal of intangible assets	788	154
Impairment loss on property, plant and equipment	12,762	1,216
Impairment loss on intangible assets	3,149	-
Additions to provisions	42,953	18,095
Other expense (income)	(16,337)	2,005
Decrease (increase) in inventories	(220,199)	53,203
Decrease (increase) in trade receivables	(468,546)	89,109
Increase in other receivables	(11,263)	(7,585)
Increase in other current assets	(36,952)	(22,533)
Increase in settlement of derivatives	(2,114)	(1,408)
Increase in trade payables	116,876	9,703
Increase (decrease) in other payables	(56,203)	86,739
Decrease in other current liabilities	(106,488)	(84,094)
Decrease in provisions	(14,443)	(9,100)
Decrease in net defined benefit liabilities	(3,176)	(6,578)
Other cash flows from operations	8,319	711
Cash generated from operations	<u>326,630</u>	<u>940,454</u>

The significant non-cash transactions for the three-month periods ended March 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	2017	2016
Transfer of construction-in-progress	305,744	346,234
Transfer of machinery-in-transit	32,257	7,921
Reclassification of long-term borrowings into current maturities	86,329	216,994
Reclassification of asset held for sale	2,404	3,405

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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	ABS, PC, EP, PE, PP, Acrylic, Alcohol, SAP, PVC, Synthetic rubber, Special resin, BPA, Ethylene, Propylene and others	LG International Corp., LG Electronics Inc., DongbuDaewoo Electronics Inc., National Plastic Co. Ltd., Youl Chon Chemical Co. Ltd., OCI Company Co. Ltd., Mitsubishi Corp. and others
Energy solutions	Mobile batteries, Automotive batteries, Electricity storage batteries and others	Hewlett-Packard Co., General Motors Corp., and others
IT & Electronic materials and Advanced materials ¹	Polarizers, 3D FPR, LCD Photoresist, OLED materials, Battery materials and others	LG Display Co., Ltd., Samsung Display Co., Ltd., BOE, AUO and others
Life Sciences ²	Growth hormone, Vaccine, Antidiabetic, agricultural chemicals and others	HUADONG NINGBO, UNICEF, Intervet and others
Common and others	Crop protection products, Seeds, Fertilizers, General management, sales and R&D	National Agriculture Cooperative Federation and others

¹ The Group presents IT & Electronic materials and Advanced materials as Advanced materials has been included in IT & Electronic materials since 2016. The comparative information was restated to reflect such changes.

² Life Sciences segment was disclosed separately as LG Life Sciences, Ltd. was merged into the Parent Company on January 1, 2017.

The segment information on revenue, profit and loss for the three-month periods ended March 31, 2017 and 2016, is as follows:

	2017					Total
	Basic materials & Chemicals	Energy solutions	IT & Electronic materials and Advanced materials	Life Sciences	Common and others³	
Total segment revenue	4,495,295	999,369	727,043	129,441	256,060	6,607,208
Inter-segment revenue	46,127	-	70,300	91	4,022	120,540
Revenue from external customers ¹	4,449,168	999,369	656,743	129,350	252,038	6,486,668
Operating profit (loss) ²	733,705	(10,352)	29,336	20,580	23,639	796,908

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(in millions of Korean won)

	2016				Total
	Basic materials & Chemicals	Energy solutions	IT & Electronic materials and Advanced materials	Common and others ³	
Total segment revenue	3,511,969	814,381	627,182	1,723	4,955,255
Inter-segment revenue	40,045	84	39,311	1,723	81,163
Revenue from external customers ¹	3,471,924	814,297	587,871	-	4,874,092
Operating profit (loss) ²	466,228	(333)	(8,012)	(138)	457,745

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 measurement 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 at March 31, 2017 and December 31, 2016, is as follows:

(in millions of Korean won)

	March 31, 2017					Total
	Basic materials & Chemicals	Energy solutions	IT & Electronic materials and Advanced materials	Life Sciences	Common and others	
Reportable segment asset ¹	8,741,040	4,367,920	3,233,560	868,073	4,960,586	22,171,179
Investments in associates and joint ventures	4,354	17,078	-	-	232,543	253,975
Reportable segment liability ¹	3,738,946	2,009,629	945,915	341,224	229,620	7,265,334

(in millions of Korean won)

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

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

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The external sales and non-current assets by geographical segments from continuing operations for the three-month periods ended March 31, 2017 and 2016, and as at March 31, 2017 and December 31, 2016, are as follows:

(in millions of Korean won)

	Sales		Non-current assets ¹	
	2017	2016	March 31, 2017	December 31, 2016
Korea ²	2,183,606	1,482,738	9,907,208	8,533,239
China	2,172,330	1,590,752	1,545,601	1,672,386
Asia	1,223,266	965,566	30,212	27,532
America	341,528	305,059	230,242	251,696
Europe	484,963	463,275	61,784	29,711
Others	80,975	66,702	-	-
Total	6,486,668	4,874,092	11,775,047	10,514,564

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

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

There is no single external customer contributes over 10% of the Group's revenue for the three-month period ended March 31, 2017 and for the year ended December 31, 2016.

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35. Business Combination

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

Goodwill of ₩686,229 million arising from the business combination is attributable to sales increase expected from combining the operations of the Group and Life Sciences business. Goodwill recognized through the business combination is not expected to be deductible for income tax purposes.

The following table summarizes the consideration paid for business combination, the fair value of assets acquired and liabilities assumed at the acquisition date:

<i>(in millions of Korean won)</i>	Amount
Consideration	
Equity Securities (Ordinary 4,321,243 shares, Preferred 59,879 shares) ¹	1,138,593
Total consideration	<u>1,138,593</u>
Recognized amounts of identifiable assets acquired and liabilities assumed	
Cash and cash equivalents	43,832
Trade and other (non-current) receivables	112,703
Inventories	123,083
Property, plant and equipment	493,321
Intangible assets	273,550
Other assets	8,315
Trade payables	(38,736)
Borrowings	(729,745)
Provisions	(6,053)
Net defined benefit liabilities	(11,922)
Other liabilities	<u>(153,195)</u>
Treasury shares (Ordinary 1,284,891 shares, Preferred 10,328 shares) ¹	<u>337,211</u>
Fair value of identifiable net assets	<u>452,364</u>
Goodwill	<u>686,229</u>
Total	<u>1,138,593</u>

¹The fair value of ordinary shares, preferred shares and treasury shares acquired were based on the market price at the acquisition date.

With regard to the above business combination, stock issuance cost of ₩73 million was deducted from equity.

The fair value and gross contractual amount for trade and other (non-current) receivables at the acquisition date amount to ₩114,721 million, of which ₩2,018 million is expected to be uncollectible.

The revenues of ₩129,350 million and profit for the three-month period ended March 31, 2017 of ₩18,068 million arose after the acquisition date are reflected in the consolidated interim statement of profit or loss.

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On April 1, 2016, the Parent Company acquired 100% shares of FarmHannong Co.,Ltd. (formerly Dongbu FarmHannong Co.,Ltd.), which is engaged to manufacture domestic agricultural pesticides. As a result of the business combination, the Group expects increase in sales through diversification in market such as entering into new industry and others.

Goodwill of ₩86,858 million arising from the business combination is attributable to the acquired customer base and sales increase expected from combining the operations of the Parent Company and FarmHannong Co.,Ltd.

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

<i>(in millions of Korean won)</i>	Amount
Consideration	
Cash and cash equivalents	424,500
Total consideration	424,500
Recognized amounts of identifiable assets acquired and liabilities assumed	
Cash and cash equivalents	15,837
Trade and other (non-current) receivables	272,140
Inventories	236,255
Assets held for sale	65,591
Property, plant and equipment	561,083
Intangible assets	141,968
Investment properties	14,235
Other assets	9,198
Trade and other (non-current) payables	(150,385)
Borrowings	(678,687)
Provisions	(98,576)
Net defined benefit liabilities	(38,073)
Deferred tax liabilities	(5,472)
Other liabilities	(23,649)
Fair value of identifiable net assets	321,465
Less: non-controlling interest	16,177
	337,642
Goodwill	86,858
Total	424,500

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

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

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

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

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

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

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

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

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

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

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

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

The following table summarizes the consideration paid for LG Chem (HUIZHOU) Petrochemical Co., Ltd., the fair value of assets acquired and liabilities assumed at the acquisition date:

<i>(in millions of Korean won)</i>	Amount
Consideration	
Cash and cash equivalents	58,771
Fair value of investment in joint venture before business combination	8,306
Total consideration	<u>67,077</u>
Recognized amounts of identifiable assets acquired and liabilities assumed	
Cash and cash equivalents	63,968
Trade and other non-current receivables	7,139
Inventories	31,547
Property, plant and equipment	163,129
Intangible assets	19,785
Deferred tax assets	21,605
Other assets	32,421
Trade and other non-current payables	(99,747)
Borrowings	(159,096)
Deferred tax liabilities	(1,377)
Other liabilities	(3,912)
Fair value of identifiable net assets	<u>75,462</u>
Less: non-controlling interest	<u>(22,638)</u>
	<u>52,824</u>
Goodwill	<u>14,253</u>
Total	<u><u>67,077</u></u>

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

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

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36. Assets Held for sale

The Group decided to dispose of Electrolyte division with the approval of management on February 29, 2016. The Group also decided to dispose of 2CCL business and others with the approval of the management on January 17, 2017. The related assets were reclassified as assets held for sale, and the disposal is expected to be completed in 2017. Assets and liabilities of Research Institute and FarmHwaong Co.,Ltd., which is acquired during the course of the business combination of FarmHannong Co.,Ltd., are also included. The disposal is expected to be completed in 2017.

Details of assets of disposal group classified as held for sale as at March 31, 2017 and December 31, 2016, are as follows:

<i>(in millions of Korean won)</i>	March 31, 2017	December 31, 2016
Assets of disposal group		
Property, plant and equipment	8,737	7,213
Intangible assets	358	-
Other receivables and others	873	891
Total	<u>9,968</u>	<u>8,104</u>
Liabilities of disposal group		
Other payables and others	155	42
Total	<u>155</u>	<u>42</u>

Assets of the disposal group were measured at fair value immediately before the initial classification of the assets as held for sale and the related other non-operating expenses for the three-month periods ended March 31, 2017 and 2016, is as follows:

<i>(in millions of Korean won)</i>	2017	2016
Impairment loss on property, plant and equipment	10,382	1,216
Impairment loss on intangible assets	4	-
Total	<u>10,386</u>	<u>1,216</u>