DOOSAN CORPORATION

SEPARATE FINANCIAL STATEMENTS
AS OF AND FOR THE YEARS ENDED
DECEMBER 31, 2015 AND 2014

ATTACHMENT: INDEPENDENT AUDITOR'S REPORT

Doosan Corp.

Deloitte.

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INDEPENDENT AUDITOR'S REPORT

English Translation of Independent Auditor's Report Originally Issued in Korean on March 17, 2016

To the Shareholders and Board of Directors of
Doosan Corporation:

Report on the Separate Financial Statements

We have audited the accompanying separate financial statements of Doosan Corporation (the "Company"), which comprise the separate statements of financial position as of December 31, 2015 and 2014, respectively, and the related separate statements of income, separate statements of comprehensive income, separate statements of changes in shareholders' equity and separate statements of cash flows, all expressed in Korean won, for the years ended December 31, 2015 and 2014, respectively, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Separate Financial Statements

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

Auditor's Responsibility

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

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the separate financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the separate financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the separate financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the separate financial statements.

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

Deloitte.

Opinion

In our opinion, the separate financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2015 and 2014, and its financial performance and its cash flows for the years ended December 31, 2015 and 2014, respectively, in accordance with K-IFRS.

Others

We conducted our audit of separate financial statements of the Company as of and for the year ended December 31, 2014, in accordance with the former KSAs, known as auditing standards generally accepted in Korea.

Deloitte Anjin LLC

March 17, 2016

Notice to Readers

This report is effective as of March 17, 2016, the auditor's report date. Certain subsequent events or circumstances may have occurred between the auditor's report date and the time the auditor's report is read. Such events or circumstances could significantly affect the separate financial statements and may result in modifications to the auditor's report.

DOOSAN CORPORATION (the "Company")

SEPARATE FINANCIAL STATEMENTS
AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2015 AND 2014

The accompanying separate financial statements, including all footnote disclosures, were prepared by, and are the responsibility of, the Company.

Lee, Jae Kyung

Chief Executive Officer

DOOSAN CORPORATION

DOOSAN CORPORATION
SEPARATE STATEMENTS OF FINANCIAL POSITION
AS OF DECEMBER 31, 2015 AND 2014

ASSETS	Notes	December 31, 2015	December 31, 2014
		(In Korean won)	
CURRENT ASSETS			
Cash and cash equivalents	4, 10, 33	₩166,196,173,370	₩102,345,354,637
Short-term financial instruments	4, 10	-	2,000,000,000
Short-term investment securities	4, 6, 10	1,496,808,705	8,496,808,705
Trade receivables	4, 7, 10, 32	264,518,468,962	290,812,641,894
Other receivables	4, 7, 10, 32	94,931,871,631	18,308,522,931
Derivative assets	4, 9, 10	1,369,096,083	392,751,917
Inventories	8	152,350,618,864	187,628,890,903
Other current assets		32,670,581,571	29,625,257,260
Total Current Assets		713,533,619,186	639,610,228,247
NON-CURRENT ASSETS			
Long-term financial instruments	4, 5, 10	89,000,000	91,500,000
Long-term investment securities	4, 6, 10, 31	1,298,484,897	1,599,904,897
Investments in subsidiaries and associates	11	1,974,362,829,801	1,986,348,829,801
Property, plant and equipment	3, 12, 31	420,943,368,462	410,840,788,554
Intangible assets	3, 13	178,567,737,024	182,873,348,570
Investment properties	3, 14, 31	166,553,969,630	265,497,527,680
Long-term other receivables	4, 7, 10, 32	4,352,632,835	3,727,124,973
Deposits	4, 5, 10	18,521,029,348	19,008,887,769
Total Non-Current Assets		2,764,689,051,997	2,869,987,912,244
TOTAL ASSETS		₩3,478,222,671,183	₩3,509,598,140,491

(Continued)

DOOSAN CORPORATION
SEPARATE STATEMENTS OF FINANCIAL POSITION (CONTINUED)
AS OF DECEMBER 31, 2015 AND 2014

LIABILITIES AND SHAREHOLDERS' EQUITY	Notes	December 31, 2015	December 31, 2014
		(In Korean won)	
CURRENT LIABILITIES			
Trade payables	4, 10, 32	₩203,708,855,167	₩229,182,082,362
Other payables	4, 10, 32	52,885,805,296	61,936,690,973
Short-term borrowings	4, 10, 15, 31	186,276,165,308	98,000,049,022
Current portion of bonds	4, 10, 15	159,847,135,641	119,890,416,590
Current portion of long-term borrowings	4, 10, 15	120,058,631,760	105,284,545,160
Derivative liabilities	4, 9, 10	135,330,375	4,230,262,978
Current tax liabilities	28	37,513,356,058	11,591,080,740
Provisions	3, 17	5,831,898,372	6,549,518,315
Other current liabilities		104,096,698,200	106,049,656,617
Total Current Liabilities		870,353,876,177	742,714,302,757
NON-CURRENT LIABILITIES			
Bonds	4, 10, 15	199,469,886,713	358,942,067,434
Long-term borrowings	4, 10, 15, 31	223,210,052,048	197,710,887,578
Retirement benefit obligation	3, 16	43,834,501,348	44,352,892,646
Long-term other liabilities	4, 10	8,981,764,284	12,879,088,470
Derivative liabilities	4, 9, 10	10,874,431	-
Provisions	3, 17	794,758,314	742,772,748
Deferred tax liabilities	3, 28	19,049,175,623	40,340,377,625
Other non-current liabilities		3,261,473,089	1,377,484,548
Total Non-Current Liabilities		498,612,485,850	656,345,571,049
Total Liabilities		1,368,966,362,027	1,399,059,873,806
SHAREHOLDERS' EQUITY			
Share capital	1, 18	134,838,235,000	134,838,235,000
Capital surplus	18, 19	668,081,593,735	667,084,734,735
Other equity items	20	(426,551,441,992)	(368,143,306,594)
Accumulated other comprehensive income	6, 9, 21	42,962,896,798	35,661,283,165
Retained earnings	22	1,689,925,025,615	1,641,097,320,379
Total Shareholders' Equity		2,109,256,309,156	2,110,538,266,685
TOTAL LIABILITIES AND EQUITY		₩3,478,222,671,183	₩3,509,598,140,491

(Concluded)

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

DOOSAN CORPORATION
SEPARATE STATEMENTS OF INCOME
FOR THE YEARS ENDED DECEMBER 31, 2015 AND 2014

	Note	2015	2014
		(In Korean won)	
OPERATING REVENUES			
Sales – merchandise and finished goods	23, 32	₩1,495,267,405,665	₩1,554,227,672,553
Sales – other	23, 32	263,954,700,604	270,897,595,918
Dividend income	23, 32	114,334,239,479	170,247,405,680
Total operating revenues	3	1,873,556,345,748	1,995,372,674,151
OPERATING EXPENSES			
Cost of sales – merchandise and finished goods	24, 32	(1,193,643,327,976)	(1,252,890,527,247)
Cost of sales – other	24, 32	(183,433,098,795)	(181,995,615,576)
Selling and administrative expenses	24, 25, 32	(283,078,757,946)	(304,038,488,164)
Total operating expenses		(1,660,155,184,717)	(1,738,924,630,987)
OPERATING INCOME	2	213,401,161,031	256,448,043,164
Finance income	4, 10, 26	25,521,703,612	21,798,846,857
Finance expenses	4, 10, 26	(58,549,437,420)	(60,206,589,322)
Other non-operating income	27	18,820,298,177	10,847,688,734
Other non-operating expenses	27	(39,158,837,933)	(22,808,270,722)
INCOME BEFORE INCOME TAX EXPENSE		160,034,887,467	206,079,718,711
INCOME TAX EXPENSE	28	(36,711,227,654)	(19,680,389,040)
NET INCOME		₩123,323,659,813	₩186,399,329,671
EARNINGS PER SHARE	29		
Basic earnings per common share		₩6,090	₩8,942
Diluted earnings per common share		6,090	8,939
Basic earnings per old-type preferred share		6,140	8,992
Diluted earnings per old-type preferred share		6,140	8,992

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

DOOSAN CORPORATION
SEPARATE STATEMENTS OF COMPREHENSIVE INCOME
FOR THE YEARS ENDED DECEMBER 31, 2015 AND 2014

	Note	2015	2014
		(In Korean won)	
NET INCOME		₩123,323,659,813	₩186,399,329,671
OTHER COMPREHENSIVE INCOME (LOSS)			
Items that will not be reclassified subsequently to profit or loss:			
Remeasurements of net defined benefit liabilities	16	(2,229,208,977)	3,228,122,650
Revaluation surplus	12	3,451,633,199	-
Items that may be reclassified subsequently to profit or loss:			
Gain (loss) on valuation of derivatives	9	3,849,980,434	(3,757,439,093)
Total other comprehensive income (loss)	21	5,072,404,656	(529,316,443)
TOTAL COMPREHENSIVE INCOME		₩128,396,064,469	₩185,870,013,228

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

DOOSAN CORPORATION
SEPARATE STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
FOR THE YEARS ENDED DECEMBER 31, 2015 AND 2014

	Share capital	Capital surplus	Other equity items	Accumulated other comprehensive income	Retained earnings	Total
	(In Korean won)					
Balance at January 1, 2014	₩132,894,150,000	₩638,681,932,971	₩(340,529,784,128)	₩39,434,337,058	₩1,524,909,615,358	₩1,995,390,251,259
Total comprehensive income:						
Net income	-	-	-	-	186,399,329,671	186,399,329,671
Remeasurements of net defined benefit liabilities	-	-	-	-	3,228,122,650	3,228,122,650
Revaluation surplus	-	-	-	(15,614,800)	15,614,800	-
Loss on valuation of derivatives	-	-	-	(3,757,439,093)	-	(3,757,439,093)
Subtotal	-	-	-	(3,773,053,893)	189,643,067,121	185,870,013,228
Transactions with shareholders directly reflected in shareholders' equity and others:						
Exercise of share option	19,750,000	415,428,500	(144,838,500)	-	-	290,340,000
Cancellation of share option	-	1,667,522,000	(2,047,220,325)	-	-	(379,698,325)
Recognition of share-based payments	-	-	4,232,591,256	-	-	4,232,591,256
Payment of dividends	-	-	-	-	(73,455,362,100)	(73,455,362,100)
Acquisition of treasury stock	-	-	(29,654,054,897)	-	-	(29,654,054,897)
Changes incurred by merger	1,924,335,000	18,045,917,359	-	-	-	19,970,252,359
Adjustment by merger	-	8,273,933,905	-	-	-	8,273,933,905
Subtotal	1,944,085,000	28,402,801,764	(27,613,522,466)	-	(73,455,362,100)	(70,721,997,802)
Balance at December 31, 2014	₩134,838,235,000	₩667,084,734,735	₩(368,143,306,594)	₩35,661,283,165	₩1,641,097,320,379	₩2,110,538,266,685

(Concluded)

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

DOOSAN CORPORATION
SEPARATE STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY (CONTINUED)
FOR THE YEARS ENDED DECEMBER 31, 2015 AND 2014

	Share capital	Capital surplus	Other equity items	Accumulated other comprehensive income	Retained earnings	Total
	(In Korean won)					
Balance at January 1, 2015	₩134,838,235,000	₩667,084,734,735	₩(368,143,306,594)	₩35,661,283,165	₩1,641,097,320,379	₩2,110,538,266,685
Total comprehensive income:						
Net income	-	-	-	-	123,323,659,813	123,323,659,813
Remeasurements of net defined benefit liabilities	-	-	-	-	(2,229,208,977)	(2,229,208,977)
Revaluation surplus	-	-	-	3,451,633,199	-	3,451,633,199
Gain on valuation of derivatives	-	-	-	3,849,980,434	-	3,849,980,434
Subtotal	-	-	-	7,301,613,633	121,094,450,836	128,396,064,469
Transactions with shareholders directly reflected in shareholders' equity and others:						
Cancelation of share option	-	996,859,000	(1,123,329,915)	-	-	(126,470,915)
Recognition of share-based payments	-	-	2,675,745,257	-	-	2,675,745,257
Payment of dividends	-	-	-	-	(72,266,745,600)	(72,266,745,600)
Acquisition of treasury stock	-	-	(59,960,550,740)	-	-	(59,960,550,740)
Subtotal	-	996,859,000	(58,408,135,398)	-	(72,266,745,600)	(129,678,021,998)
Balance at December 31, 2015	₩134,838,235,000	₩668,081,593,735	₩(426,551,441,992)	₩42,962,896,798	₩1,689,925,025,615	₩2,109,256,309,156

(Concluded)

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

DOOSAN CORPORATION
SEPARATE STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED DECEMBER 31, 2015 AND 2014

	2015	2014
	(In Korean won)	
CASH FLOWS FROM OPERATING ACTIVITIES		
Cash generated from operations:	₩164,736,082,190	₩128,281,722,342
Net income	123,323,659,813	186,399,329,671
Adjustments	41,356,222,442	(17,125,158,008)
Changes in operating assets and liabilities	56,199,935	(40,992,449,321)
Interest received	3,343,697,097	3,676,461,726
Interest paid	(37,144,771,337)	(40,838,579,029)
Dividends received	112,813,923,862	170,401,567,128
Income tax paid	(33,309,303,764)	(14,868,100,516)
Net cash provided by operating activities	210,439,628,048	246,653,071,651
CASH FLOWS FROM INVESTING ACTIVITIES		
Cash inflows from investing activities:		
Decrease in short-term financial instruments	2,000,000,000	300,000,000
Disposal of short-term investment securities	7,000,000,000	-
Decrease in short-term loans	154,086,920	691,775,304
Decrease in long-term financial instruments	2,500,000	-
Disposal of long-term investment securities	1,857,201,132	-
Disposal of investments in subsidiaries	39,449,260	25,346,462,603
Disposal of property, plant and equipment	3,865,211,626	1,901,973,123
Disposal of intangible assets	-	681,818,182
Disposal of investment properties	34,069,281,263	102,000,000
Decrease in long-term loans	1,135,323,705	427,723,843
Increase by merger	-	778,887,608
Increase in government subsidy	400,879,904	216,837,895
Subtotal	50,523,933,810	30,447,478,558
Cash outflows for investing activities:		
Acquisition of long-term investment securities	162,500,000	100,000,000
Acquisition of investments in subsidiaries	60,000,000,000	164,382,422,616
Acquisition of property, plant and equipment	49,282,901,721	30,324,784,252
Acquisition of intangible assets	6,119,861,964	2,623,575,647
Increase in long-term loans	1,999,441,863	1,535,298,500
Subtotal	(117,564,705,548)	(198,966,081,015)
Net cash used in investing activities	(67,040,771,738)	(168,518,602,457)

(Continued)

DOOSAN CORPORATION
SEPARATE STATEMENTS OF CASH FLOWS (CONTINUED)
FOR THE YEARS ENDED DECEMBER 31, 2015 AND 2014

	2015	2014
	(In Korean won)	
CASH FLOWS FROM FINANCING ACTIVITIES		
Cash inflows from financing activities		
Increase in short-term borrowings	₩88,280,514,518	₩24,061,234,680
Increase in long-term borrowings	165,000,000,000	101,833,600,000
Exercise of share option	-	290,340,000
Subtotal	253,280,514,518	126,185,174,680
Cash outflows for financing activities		
Repayment of bonds	120,000,000,000	50,000,000,000
Repayment of long-term borrowings	129,576,872,284	69,277,801,440
Repayment of financial lease debt	10,985,323,308	9,929,247,890
Payment of dividends	72,266,745,600	73,455,362,100
Subtotal	(332,828,941,192)	(202,662,411,430)
Net cash used in financing activities	(79,548,426,674)	(76,477,236,750)
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	389,097	(26,994,101)
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	63,850,818,733	1,630,238,343
CASH AND CASH EQUIVALENTS AT THE BEGINNING OF YEAR	102,345,354,637	100,715,116,294
CASH AND CASH EQUIVALENTS AT THE END OF YEAR	₩166,196,173,370	₩102,345,354,637

(Concluded)

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

DOOSAN CORPORATION
NOTES TO SEPARATE FINANCIAL STATEMENTS
AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2015 AND 2014

1. GENERAL:

Doosan Corporation (the “Company”) was incorporated on December 18, 1933, under the name of Sohwa-Kirin Beer, Ltd. to manufacture and sell beer. The Company has changed its name to Dongyang Beer, Ltd. in February 1948 to OB Beer, Ltd. in February 1996 and to Doosan Corporation on September 1, 1998.

Since June 1973, the Company’s shares have been listed in the Korea. After several capital issues, the Company’s share capital as of December 31, 2015, is ₩134,838 million, including ₩26,984 million of preferred shares.

The Company’s common shares as of December 31, 2015, are owned as follows:

	Number of common shares owned	Ownership percentage (%)
Related parties	9,369,395	44.05
Treasury stock	5,977,528	28.10
Others	5,923,965	27.85
Total	21,270,888	100.00

Meanwhile, 48.3% of preferred shares are owned by the largest shareholder and others and 51.7% of preferred shares are owned by others.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

The Company maintains its official accounting records in Korean won and prepares separate financial statements in conformity with Korean International Financial Reporting Standards ("K-IFRS"), in the Korean language (Hangul).

(1) Basis of preparation

The Company has prepared the separate financial statements in accordance with the K-IFRS. The Company's financial statements are separate financial statements prepared in accordance with K-IFRS 1027, Consolidated and Separated Financial Statements, in which the controlling company, investors of associates or participants of joint control company have stated as cost method.

The significant accounting principles as applied in the separate financial statements correspond to those pertaining to the annual separate financial statements for the year ended December 31, 2014.

The accompanying separate financial statements have been prepared on the historical cost basis, except for certain properties/non-current assets and financial instruments that are measured at fair values, as explained in the accounting policies below. Historical cost is based on the fair values of the consideration given in exchange for assets.

The principal accounting policies are set out below.

1) Amendments to K-IFRS and new interpretations that are mandatorily effective for the current year

Amendments to K-IFRS 1019 – Employee Benefits

The amendments permits the Company to recognize amount of contributions as a reduction in the service cost in which the related service is rendered if the amount of the contributions are independent of the number of years of service. The application of these amendments has no significant impact on the disclosure in the Company's separate financial statements.

Annual Improvements to K-IFRS 2010-2012 Cycle

The amendments to K-IFRS 1002 (i) changes the definitions of 'vesting condition' and 'market condition'; and (ii) add definitions for 'performance condition' and 'service condition' which were previously included within the definition of 'vesting condition'. The amendments to K-IFRS 1103 Business Combinations clarify the classification and measurement of the contingent consideration in business combination. The amendments to K-IFRS 1108 clarify that a reconciliation of the total of the reportable segments' assets should only be provided if the segment assets are regularly provided to the chief operating decision maker. The application of these amendments has no significant impact on the disclosure in the separate financial statements.

Annual Improvements to K-IFRS 2011-2013 Cycle

The amendments to K-IFRS 1103 clarify that it excludes the accounting for the formation of a joint arrangement in the financial statements of the joint arrangement itself from the scope of K-IFRS 1103 'Business Combination. The amendments to K-IFRS 1113 'Fair Value Measurements' and K-IFRS 1040 'Investment Properties' exist. The application of these amendments has no significant impact on the disclosure in the Company's separate financial statements.

2) New and revised K-IFRS in issue but not yet effective

Amendments to K-IFRS 1001 – Presentation of Financial Statements

The amendments to K-IFRS 1001 clarify the concept of applying materiality in practice and restrict an entity reducing the understandability of its financial statements by obscuring material information with immaterial information or by aggregating material items that have different natures or functions. The amendments to K-IFRS 1001 are effective for annual periods beginning on or after January 1, 2016.

Amendments to K-IFRS 1016 – Property, Plant and Equipment

The amendments to K-IFRS 1016 prohibit the company from using a revenue-based depreciation method for items of property, plant and equipment. The amendments are effective for the annual periods beginning on or after January 1, 2016.

Amendments to K-IFRS 1038 – Intangible Assets

The amendments to K-IFRS 1038 do not allow presumption that revenue is an appropriate basis for the amortization of intangible assets, which the presumption can only be limited when the intangible asset expressed as a measure of revenue or when it can be demonstrated that revenue and consumption of the economic benefits of the intangible asset are highly correlated. The amendments apply prospectively for annual periods beginning on or after January 1, 2016.

Amendments to K-IFRS 1016 – Property, plant and equipment and K-IFRS – 1041 Agriculture: Bearer Plants

The amendments to K-IFRS 1016 'Property, Plant and Equipment' and K-IFRS 1041 'Agriculture' define a bearer plant and require biological assets that meet the definition of a bearer plant to be accounted for as property, plant and equipment in accordance with K-IFRS 1016, instead of K-IFRS 1041. The amendments to K-IFRS 1016 and K-IFRS 1041 are effective for annual periods beginning on or after January 1, 2016.

Amendments to K-IFRS 1110 – Consolidated Financial Statements & K-IFRS 1112 Disclosure of interests in other entities & K-IFRS 1028 Investment in associates

The amendments clarify that in applying the equity method of accounting to an associate or a joint venture that is an investment entity, an investor may retain the fair value measurements that the associate or joint venture used for its subsidiaries. The amendments are effective for annual periods beginning on or after January 1, 2016.

Amendments to K-IFRS 1111 – Accounting for Acquisitions of Interests in Joint Operations

The amendments to K-IFRS 1111 provide guidance on how to account for the acquisition of a joint operation that constitutes a business as defined in K-IFRS 1103. A joint operator is also required to disclose the relevant information required by K-IFRS 1103 and other standards for business combinations. The amendments to K-IFRS 1111 are effective for the annual periods beginning on or after January 1, 2016.

Amendments to K-IFRS 1109 – Financial Instruments

The amendments to K-IFRS 1109 contain the requirements for the classification and measurement of financial assets and financial liabilities based on a business model whose objective is achieved both by collecting contractual cash flows and selling financial assets and based on the contractual terms that give rise on specified dates to cash flows, impairment methodology based on the expected credit losses, and broadened types of instruments that qualify as hedging instruments and the types of risk components of non-financial items that are eligible for hedge accounting and the change of the hedge effectiveness test. The amendments are effective for annual periods beginning on or after January 1, 2018.

Amendments to K-IFRS 1115 – Revenue from Contracts with Customers

The core principle under K-IFRS 1115 is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The amendments introduces a five-step approach to revenue recognition and measurement: 1) Identify the contract with a customer, 2) Identify the performance obligations in the contract, 3) Determine the transaction price, 4) Allocate the transaction price to the performance obligations in the contract, 5) Recognize revenue when (or as) the entity satisfies a performance obligation. This standard will supersede K-IFRS 1011 'Construction Contracts,' K-IFRS 1018 'Revenue,' K-IFRS 2113 'Customer Loyalty Programs,' K-IFRS 2115 'Agreements for the Construction of Real Estate,' K-IFRS 2118 'Transfers of Assets from Customers' and K-IFRS 2031 'Revenue-Barter Transactions Involving Advertising

Services.' The amendments are effective for annual periods beginning on or after January 1, 2018.

Annual Improvements to K-IFRS 2012-2014 cycle

The Annual Improvements include amendments to a number of K-IFRSs. The amendments introduce specific guidance in K-IFRS 1105 'Non-current Assets Held for Sale and Discontinued Operations' for when an entity reclassifies an asset (or disposal group) from held for sale to held for distribution to owners (or vice versa), such a change is considered as a continuation of the original plan of disposal not as a change to a plan of sale. Other amendments in the Annual Improvements include K-IFRS 1107 'Financial Instruments: Disclosures,' K-IFRS 1019 Employee Benefits, and K-IFRS 1034 Interim Financial Reporting.

Amendments to K-IFRS 1027 – Separate Financial Statements

The following amendments discuss accounting for investment in subsidiaries, related parties, and joint ventures at cost basis and allow the selection of the application of K-IFRS 1039 Financial Instruments: Recognition and Measurement or the application of equity method accounting under K-IFRS 1028 Investment in Associates and Joint Ventures. The amendments are effective for the annual periods beginning on or after January 1, 2016.

The Company does not anticipate that the application of these new and revised K-IFRS that have been issued, but not effective will have any material impact on the Company' separate financial statements

(2) Accounting Treatment related to the Emission Rights Cap and Trade Scheme

The Company classifies the emission rights as intangible assets. Emission rights allowances the government allocated free of charge are measured at nil, and emission rights allowances purchased are measured at cost, which the Company paid to purchase the allowances. If emission rights the government allocated free of charge are sufficient to settle the emission rights allowances allotted for vintage year, the emissions liabilities are measured at nil. However, for the emissions liabilities that exceed the allowances allocated free of charge, the shortfall is measured at best estimate at the end of the reporting period.

(3) Investments in subsidiaries, joint ventures and associates

The Company has elected to use book value under previous generally accepted accounting principles as deemed cost for subsidiaries, joint ventures and associates at the date of transition to K-IFRS. After the date of transition, subsidiaries, joint ventures and associates are measured at cost.

The requirements of K-IFRS 1036 are applied to determine whether it is necessary to recognize any impairment loss with respect to the Company's investment in a subsidiary or an associate. When necessary, the entire carrying amount of the investment is tested for impairment by comparing its recoverable amount (higher of value in use and fair value less costs to sell) with its carrying amount, any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized in accordance with K-IFRS 1036 to the extent that the recoverable amount of the investment subsequently increases.

(4) Goodwill

Goodwill resulting from an acquisition of a business is carried at cost as established at the date of acquisition of the business less accumulated impairment losses, if any.

For the purpose of impairment testing, goodwill is allocated to each of the cash-generating units (CGUs) (or groups of CGUs) that is expected to benefit from the synergies of the combination.

A CGU to which goodwill has been allocated is tested for impairment annually, or more frequently when there is indication that the unit may be impaired. If the recoverable amount of the CGU is less than its carrying amount, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then to the other assets of the unit on a pro rata basis based on the carrying amount of each asset in the unit. Any impairment loss for goodwill is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

On disposal of the relevant CGU, the attributable amount of goodwill is included in the determination of the profit or loss on disposal.

(5) Non-current assets held for sale

Non-current assets and disposal groups are classified as held for sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. This condition is regarded as met only when the sale is highly probable and the non-current asset (or disposal group) is available for immediate sale in its present condition. Management must be committed to the sale, which should be expected to qualify for recognition as a completed sale within one year from the date of classification.

Non-current assets (and disposal groups) classified as held for sale are measured at the lower of their previous carrying amount and fair value less costs to sell.

(6) Revenue Recognition

Revenue is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates and other similar allowances. The Company recognizes revenue when the amount of revenue can be reliably measured; when it is probable that future economic benefits will flow to the entity; and when specific criteria have been met for each of the Company's activities, as described below.

1) Sale of goods

Revenue from the sale of goods is recognized when the Company has transferred to the buyer the significant risks and rewards of ownership of the goods.

2) Rendering of services

Revenue from a contract to provide services is recognized by reference to the stage of completion of the contract. Depending on the nature of the transaction, the Company determines the stage of completion by reference to surveys of work performed, services performed to date as a percentage of total services to be performed or the proportion that costs incurred to date bear to the estimated total costs of the transaction, as applicable.

3) Dividend and interest income

Dividend income from investments is recognized when the shareholders' right to receive payment has been established (provided that it is probable that the economic benefits will flow to the Company and the amount of income can be measured reliably).

Interest income from a financial asset is recognized when it is probable that the economic benefits will flow to the Company and the amount of income can be measured reliably. Interest income is accrued on a time basis, by reference to the principal outstanding and at the effective interest rate applicable, which is the rate that exactly discounts estimated future cash receipts through the expected life of the financial asset to that asset's net carrying amount on initial recognition.

4) Rental income

The Company's policy for recognition of revenue from operating leases is described in Note 2-(7).

(7) Lease

Leases are classified as finance leases whenever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases.

1) The Company as lessor

Amounts due from lessees under finance leases are recognized as receivables at the amount of the Company's net investment in the leases. Finance lease income is allocated to accounting periods so as to reflect a constant periodic rate of return on the Company's net investment outstanding in respect of the leases.

Rental income from operating leases is recognized on a straight-line basis over the term of the relevant lease. Initial direct costs incurred in negotiating and arranging an operating lease are added to the carrying amount of the leased asset and recognized on a straight-line basis over the lease term.

2) The Company as lessee

Assets held under finance leases are initially recognized as assets of the Company at their fair value at the inception of the lease or, if lower, at the present value of the minimum lease payments. The corresponding liability to the lessor is included in the separate statement of financial position as a finance lease obligation.

Lease payments are apportioned between finance expenses and reduction of the lease obligation, so as to achieve a constant rate of interest on the remaining balance of the liability. Finance expenses are recognized immediately in profit or loss, unless they are directly attributable to qualifying assets, in which case they are capitalized in accordance with the Company's general policy on borrowing costs (see Note 2-(9)). Contingent rentals are recognized as expenses in the periods in which they are incurred.

Operating lease payments are recognized as an expense on a straight-line basis over the lease term, except where another systematic basis is more representative of the time pattern in which economic benefits from the leased asset are consumed. Contingent rentals arising under operating leases are recognized as an expense in the period in which they are incurred.

(8) Foreign currencies

The separate financial statements of the Company are presented in the currency of the primary economic environment in which the entity operates (its functional currency). For the purpose of the separate financial statements, the results and financial position of each group entity are expressed in Korean won, which is the functional currency of the entity and the presentation currency for the separate financial statements.

In preparing the financial statements, transactions in currencies other than the entity's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Non-monetary items carried at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined. Non-monetary items that are measured in terms of historical cost in a foreign currency are not retranslated.

Exchange differences are recognized in profit or loss in the period in which they arise, except for:

- exchange differences on foreign currency borrowings relating to assets under construction for future productive use, which are included in the cost of those assets when they are regarded as an adjustment to interest costs on those foreign currency borrowings
- exchange differences on transactions entered into in order to hedge certain foreign currency risks (see Note 2-(22) below for hedging accounting policies)
- exchange differences on monetary items receivable from or payable to a foreign operation for which settlement is neither planned nor likely to occur (therefore, forming part of the net investment in the foreign operation), which are recognized initially in other comprehensive income and reclassified from equity to profit or loss on disposal or partial disposal of the net investment.

(9) Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale.

Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization.

All other borrowing costs are recognized in profit or loss in the period in which they are incurred.

(10) Retirement benefit costs and termination benefits

The Company operates a defined benefit pension plan. The cost of providing benefits is determined using the projected unit credit method, with actuarial valuations being carried out at the end of each reporting period. Remeasurement, comprising actuarial gains and losses, the effect of the changes to the asset ceiling (if applicable) and the return on plan assets are reflected immediately in the separate statement of financial position with a charge or credit recognized in other comprehensive income in the period in which they occur. Remeasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss. Past service cost is recognized in profit or loss in the period of a plan amendment. Net interest is calculated by applying the discount rate at the beginning of the period to the net defined benefit liability or asset.

Defined benefit costs are composed of service cost (including current service cost, past service cost, as well as gains and losses on curtailments and settlements), net interest expense (income) and remeasurement.

The Company presents the service cost and net interest expense (income) components in profit or loss, and the remeasurement component in other comprehensive income. Curtailment gains and losses are accounted for as past service costs.

The retirement benefit obligation recognized in the separate statement of financial position represents the actual deficit or surplus in the Company's defined benefit plans. Any surplus resulting from this calculation is limited to the present value of any economic benefits available in the form of refunds from the plans or reductions in future contributions to the plans.

A liability for a termination benefit is recognized at the earlier of when the entity can no longer withdraw the offer of the termination benefit and when the entity recognizes any related restructuring costs.

Contributions to defined contribution retirement benefit plans are recognized as an expense when employees have rendered service entitling them to the contributions.

(11) Share-based payment transactions of the Company

Equity-settled share-based payments to employees are measured at the fair value of the equity instruments at the grant date.

The fair value determined at the grant date of the equity-settled share-based payments is expensed on a straight-line basis over the vesting period, based on the Company's estimate of equity instruments that will eventually vest. At the end of each reporting period, the Company revises its estimate of the number of equity instruments expected to vest. The impact of the revision of the original estimates, if any, is recognized in profit or loss, such that the cumulative expense reflects the revised estimate, with a corresponding adjustment in other component of equity.

(12) Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax.

1) Current tax

The tax currently payable is based on taxable profit for the year. Taxable profit differs from profit as reported in the separate statement of profit or loss and comprehensive income because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Company's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

2) Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the financial statements and the corresponding tax bases used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized. Such deferred tax assets and liabilities are not recognized if the temporary difference arises from goodwill or from the initial recognition (other than in a business combination) of other assets and liabilities in a transaction that affects neither the taxable profit nor the accounting profit.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

3) Current and deferred taxes for the year

Current and deferred taxes are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case, the current and deferred taxes are also recognized in other comprehensive income or directly in equity, respectively. Where current tax or deferred tax arises from the initial accounting for a business combination, the tax effect is included in the accounting for the business combination.

(13) Government grants

Government grants are not recognized until there is reasonable assurance that the Company will comply with the conditions attaching to them and that the grants will be received.

The benefit of a government loan at a below-market rate of interest is treated as a government grant, measured as the difference between proceeds received and the fair value of the loan based on prevailing market interest rates.

Government grants related to assets are presented in the separate statement of financial position by deducting the grant from the carrying amount of the asset. The related grant is recognized in profit or loss over the life of a depreciable asset as a reduced depreciation expense.

Government grants related to income are recognized in profit or loss on a systematic basis over the periods in which the Company recognizes as expenses the related costs for which the grants are intended to compensate. Government grants that are receivable as compensation for expenses or losses already incurred or for the purpose of giving immediate financial support to the Company with no future-related costs are recognized in profit or loss in the period in which they become receivable.

(14) Property, plant and equipment

Property, plant and equipment are stated at cost less subsequent accumulated depreciation and accumulated impairment losses, other than land, for which revaluation model is applied after initial recognition. The cost of an item of property, plant and equipment is directly attributable to their purchase or construction, which includes any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. It also includes the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located.

Subsequent costs are recognized in carrying amount of an asset or as a separate asset if it is probable that future economic benefits associated with the assets will flow to the Company and the cost of an asset can be measured reliably. Routine maintenance and repairs are expensed as incurred.

The Company does not depreciate land. Depreciation expense is computed using the straight-line method based on the estimated useful lives of the assets as follows:

	Estimated useful lives (in years)
Buildings	5–50
Structures	2–30
Machinery	2–15
Tools, furniture, fixtures and others	2–10

If each part of an item of property, plant and equipment has a cost that is significant in relation to the total cost of the item, it is depreciated separately.

The Company reviews the depreciation method, the estimated useful lives and residual values of property, plant and equipment at the end of each annual reporting period. If expectations differ from previous estimates, the changes are accounted for as a change in an accounting estimate.

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on derecognition of the property (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in profit or loss in the period in which the property is derecognized.

(15) Investment properties

Investment properties are properties held to earn rentals and/or for capital appreciation (including property under construction for such purposes). Investment properties are measured initially at cost, including transaction costs. Subsequent to initial recognition, investment properties are stated at fair value, with any gains or losses arising on fair value fluctuation recognized in profit or loss.

Subsequent costs are recognized in carrying amount of an asset or as a separate asset if it is probable that future economic benefits associated with the assets will flow into the Company and the cost of an asset can be measured reliably. Routine maintenance and repairs are expensed as incurred.

An investment property is derecognized upon disposal or when the investment property is permanently withdrawn from use and no future economic benefits are expected from the disposal. Any gain or loss arising on derecognition of the property (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in profit or loss in the period in which the property is derecognized.

(16) Intangible assets

1) Intangible assets acquired separately

Intangible assets with finite useful lives that are acquired separately are carried at cost, less accumulated amortization and accumulated impairment losses. Amortization is recognized on a straight-line basis over their estimated useful lives. The estimated useful life and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis. Intangible assets with indefinite useful lives that are acquired separately are carried at cost less accumulated impairment losses.

2) Internally generated intangible assets - research and development expenditure

Expenditure on research activities is recognized as an expense in the period in which it is incurred.

Expenditure arising from development (or from the development phase of an internal project) is recognized as an intangible asset if, and only if, the development project is designed to produce new or substantially improved products, and the Company can demonstrate the technical and economic feasibility and measure reliably the resources attributable to the intangible asset during its development.

Subsequent to initial recognition, internally generated intangible assets are reported at cost, less accumulated amortization and accumulated impairment losses, on the same basis as intangible assets that are acquired separately.

3) Intangible assets acquired in a business combination

Intangible assets that are acquired in a business combination are recognized separately from goodwill and are initially recognized at their fair value at the acquisition date (which is regarded as their cost). Subsequent to initial recognition, intangible assets acquired in a business combination are reported at cost less accumulated amortization and accumulated impairment losses, on the same basis as intangible assets that are acquired separately.

4) Derecognition of intangible assets

An intangible asset is derecognized on disposal or when no future economic benefits are expected from its use. Gains or losses arising from derecognition of an intangible asset, measured as the difference between the net disposal proceeds and the carrying amount of the asset, are recognized in profit or loss when the asset is derecognized.

5) Amortization of intangible assets

Intangible assets other than memberships with indefinite useful lives are amortized using the straight-line method with acquiring cost, except for residual value, with the amortization beginning when the asset is available for use. The estimated useful lives of the assets are as follows:

	Estimated useful lives (in years)
Development costs	5–10
Industrial rights	5
Other intangible assets	4–15

(17) Impairment of tangible and intangible assets other than goodwill

At the end of each reporting period, the Company reviews the carrying amounts of its tangible and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the CGU to which the asset belongs.

Memberships with indefinite useful lives and intangible assets not yet available for use are tested for impairment at least annually, and whenever there is an indication that the asset may be impaired.

Recoverable amount is the higher of fair value less costs to sell and value in use. If the recoverable amount of an asset (or a CGU) is estimated to be less than its carrying amount, the carrying amount of the asset (or the CGU) is reduced to its recoverable amount and the reduced amount is recognized in profit or loss.

Where an impairment loss subsequently reverses, the carrying amount of the asset (or a CGU) is increased to the revised estimate of its recoverable amount, but so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset (or the CGU) in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

(18) Inventories

Inventories are stated at the lower of cost and net realizable value. Cost of inventories, except for those in transit, are measured under the weighted-average method [on a first-in, first-out basis] and consists of the purchase price, cost of conversion and other costs incurred in bringing the inventories to their present location and condition. Net realizable value represents the estimated selling price for inventories, less all estimated costs of completion and costs necessary to make the sale.

When inventories are sold, the carrying amount of those inventories is recognized as an expense (cost of sales) in the period in which the related revenue is recognized. The amount of any write-down of inventories to net realizable value and all losses of inventories is recognized as an expense in the period the write-down or loss occurs. The amount of any reversal of any write-down of inventories, arising from an increase in net realizable value, is recognized as a reduction in the amount of inventories recognized as an expense in the period in which the reversal occurs.

(19) Provisions

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that the Company will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows (where the effect of the time value of money is material). The discount rate used is a pretax rate that reflects current market assessments of the time value of money and the risks specific to the liability. Where discounting is used, the increase in the provision due to the passage is recognized in profit or loss as borrowing cost.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, a receivable is recognized as an asset if it is virtually certain that reimbursement will be received and the amount of the receivable can be measured reliably.

At the end of each reporting period, the remaining provision balance is reviewed and assessed to determine if the current best estimate is being recognized. If the existence of an obligation to transfer economic benefit is no longer probable, the related provision is reversed during the period.

(20) Financial instruments

Financial assets and financial liabilities are recognized when an entity becomes a party to the contractual provisions of the instruments. Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss (“FVTPL”) are recognized immediately in profit or loss.

Financial assets are classified into the following specified categories: ‘financial assets at FVTPL’, ‘held-to-maturity investments’, ‘available-for-sale (“AFS”) financial assets’ and ‘loans and receivables’. The classification depends on the nature and purpose of the financial assets and is determined at the time of initial recognition.

1) Effective interest method

The effective interest method is a method of calculating the amortized cost of a debt instrument and of allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the debt instrument, or, where appropriate, a shorter period, to the net carrying amount on initial recognition.

Income is recognized on an effective interest basis for debt instruments other than those financial assets classified as at FVTPL.

2) Financial assets at FVTPL

FVTPL includes financial assets classified as held for trading and financial assets designated at FVTPL upon initial recognition. A financial asset is classified as FVTPL if it has been acquired principally for the purpose of selling or repurchasing it in the near term. All derivative assets, except for derivatives that are designated and effective hedging instruments, are classified as held-for-trading financial assets. Financial assets at FVTPL are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss.

3) Held-to-maturity investments

Non-derivative financial assets with fixed or determinable payments and fixed maturity dates that the Company has the positive intent and ability to hold to maturity are classified as held-to-maturity investments. Held-to-maturity investments are measured at amortized cost using the effective interest method less any impairment, with revenue recognized on an effective-yield basis.

4) AFS financial assets

AFS financial assets are non-derivatives that are either designated as AFS or are not classified as (a) loans and receivables, (b) held-to-maturity investments, or (c) financial assets at FVTPL.

They are subsequently measured at fair value at the end of each reporting period. Changes in the carrying amount of AFS financial assets are recognized in other comprehensive income (as (investments revaluation reserve)). When the investment is disposed of or is determined to be impaired, the cumulative gain or loss previously accumulated in other comprehensive income is reclassified to profit or loss.

Dividends on AFS equity instruments are recognized in profit or loss when the Company's right to receive the dividends is established.

AFS equity investments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured and derivatives that are linked to and must be settled by delivery of such unquoted equity investments are measured at cost less any identified impairment losses at the end of each reporting period.

5) Loans and receivables

Trade receivables, loans and other receivables that have fixed or determinable payments that are not quoted in an active market are classified as 'loans and receivables.' Loans and receivables are measured at amortized cost using the effective interest method, less any impairment. Interest income is recognized by applying the effective interest rate, except for short-term receivables when the effect of discounting is immaterial.

6) Impairment of financial assets

Financial assets, other than those at FVTPL, are assessed for indicators of impairment at the end of each reporting period. Financial assets are considered to be impaired when there is objective evidence that more events occurred after the initial recognition of the financial asset, the estimated future cash flows of the investment have been affected.

For AFS equity investments, a significant or prolonged decline in the fair value of the security below its cost is considered to be objective evidence of impairment.

For certain categories of financial asset, such as trade receivables, assets that are assessed not to be impaired individually are, in addition, assessed for impairment on a collective basis. Objective evidence of impairment for a portfolio of receivables could include the Company's past experience of collecting payments, an increase in the number of delayed payments in the portfolio past the average credit period, as well as observable changes in national or local economic conditions that correlate with default on receivables.

For financial assets carried at amortized cost, the amount of the impairment loss recognized is the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the financial asset's original effective interest rate.

For financial assets that are carried at cost, the amount of the impairment loss recognized is the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the current market rate of return for a similar financial asset. Such impairment loss will not be reversed in subsequent periods.

When an AFS financial asset is considered to be impaired, cumulative gains or losses previously recognized in other comprehensive income are reclassified to profit or loss in the period.

For financial assets measured at amortized cost, if, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognized, the previously recognized impairment loss is reversed through profit or loss to the extent that the carrying amount of the investment at the date the impairment is reversed does not exceed what the amortized cost would have been had the impairment not been recognized.

In respect to AFS equity securities, impairment losses previously recognized in profit or loss are not reversed through profit or loss. Any increase in fair value subsequent to an impairment loss is recognized in other comprehensive income. In respect to AFS debt securities, impairment losses are subsequently reversed through profit or loss if an increase in the fair value of the investment can be objectively related to an event occurring after the recognition of the impairment loss.

7) Derecognition of financial assets

The Company derecognizes a financial asset only when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity. If the Company neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Company recognizes its retained interest in the asset and an associated liability for amounts it may have to pay. If the Company retains substantially all the risks and rewards of ownership of a transferred financial asset, the Company continues to recognize the financial asset and also recognizes a collateralized borrowing for the proceeds received.

On derecognition of a financial asset, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulated gain or loss that had been recognized in other comprehensive income and accumulated in equity is recognized in profit or loss.

On derecognition of a financial assets other than in its entirety (e.g., when the Company retains an option to repurchase part of a transferred asset, or it retains a residual interest and such an retained interest indicates that the transferor has neither transferred nor retained substantially all the risks and rewards of ownership and has retained control of the transferred asset), the Company allocates the previous carrying amount of the financial asset between the part it continues to recognize under continuing involvement and the part it no longer recognizes on the basis of the relative fair value of those parts on the date of the transfer.

(21) Financial liabilities and equity instruments

1) Classification as debt or equity

Debt and equity instruments are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangement and the definitions of financial liability and an equity instrument.

2) Equity instruments

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Equity instruments issued by the Company are recognized at the proceeds received, net of direct issue costs.

Repurchase of the Company's own equity instruments is recognized and deducted directly in equity. No gain or loss is recognized in profit or loss on the purchase, sale, issue or cancellation of the Company's own equity instruments.

3) Compound instruments

The component parts of compound instruments (convertible bonds) issued by the Company are classified separately as financial liabilities and equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and equity instrument. Conversion option that will be settled by the exchange of a fixed amount of cash or another financial asset for a fixed number of the Company's own equity instruments is an equity instrument.

At the date of issue, the fair value of the liability component is estimated using the prevailing market interest rate for a similar non-convertible instrument. This amount is recorded as a liability on an amortized cost basis using the effective interest method until extinguished upon conversion or at the instrument's maturity date.

The conversion option classified as equity is determined by deducting the amount of the liability component from the fair value of the compound instrument as a whole. This is recognized and included in equity, net of income tax effects, and is not subsequently remeasured. In addition, the conversion option classified as equity will remain in equity until the conversion option is exercised, in which case, the balance recognized in equity will be transferred to share premium. No gain or loss is recognized in profit or loss upon conversion or expiration of the conversion option.

4) Financial liabilities

Financial liabilities are recognized when the Company becomes a party to the contractual provisions of the instruments. Financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the issue of financial liabilities are deducted from the fair value of the financial liabilities on initial recognition. Transaction costs directly attributable to acquisition of financial liabilities at FVTPL are recognized immediately in profit or loss.

Financial liabilities are classified as either financial liabilities at FVTPL or other financial liabilities.

5) Financial liabilities at FVTPL

Financial liabilities are classified as at FVTPL when the financial liability is either held for trading or it is designated as FVTPL.

Financial liabilities at FVTPL are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss. The net gain or loss recognized in profit or loss incorporates any interest paid on the financial liability and is included in the 'other income and expenses' line item in the separate statement of comprehensive income.

6) Other financial liabilities

Other financial liabilities are subsequently measured at amortized cost using the effective interest method, with interest expense recognized on an effective yield basis.

7) Financial guarantee contracts

A financial guarantee contract is a contract that requires the issuer to make specified payments to reimburse the holder for a loss it incurs because a specified debtor fails to make payments when due in accordance with the terms of a debt instrument.

Financial guarantee contract liabilities are initially measured at their fair values and, if not designated as at FVTPL, are subsequently measured at the higher of:

- the amount of the obligation under the contract, as determined in accordance with K-IFRS 1037 'Provisions, Contingent Liabilities and Contingent Assets' and
- the amount initially recognized, less cumulative amortization recognized in accordance with the K-IFRS 1018, *Revenue*

8) Derecognition of financial liabilities

The Company derecognizes financial liabilities when the Company's obligations are discharged, canceled or they expire. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

(22) Derivative financial instruments

The Company enters into a variety of derivative financial instruments to manage its exposure to foreign exchange rate risk, including cross currency swaps.

Derivatives are initially recognized at fair value at the date the derivative contract is entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately, unless the derivative is designated and effective as a hedging instrument, in such case, the timing of the recognition in profit or loss depends on the nature of the hedge relationship.

A derivative with a positive fair value is recognized as a financial asset; a derivative with a negative fair value is recognized as a financial liability. A derivative is presented as a non-current asset or a non-current liability if the remaining maturity of the instrument is more than 12 months and it is not expected to be realized or settled within 12 months. Other derivatives are presented as current assets or current liabilities.

1) Embedded derivatives

Derivatives embedded in non-derivative host contracts are treated as separate derivatives when they meet the definition of a derivative, their risks and characteristics are closely related to those of the host contracts and the contracts are not measured at FVTPL.

2) Hedge accounting

The Company designates certain hedging instruments, which include derivatives, embedded derivatives and non-derivatives in respect to foreign currency risk, as either fair value hedges, cash flow hedges or hedges of net investments in foreign operations.

At the inception of the hedge relationship, the entity documents the relationship between the hedging instrument and the hedged item, along with its risk management objectives and its strategy for undertaking various hedge transactions. Furthermore, at the inception of the hedge and on an ongoing basis, the Company documents whether the hedging instrument is highly effective in offsetting changes in fair values or cash flows of the hedged item.

3) Fair value hedges

Changes in the fair value of derivatives that are designated and qualify as fair value hedges are recognized in profit or loss immediately, together with any changes in the fair value of the hedged asset or liability that are attributable to the hedged risk. The change in the fair value of the hedging instrument and the change in the hedged item attributable to the hedged risk are recognized in the line of the separate statements of comprehensive income relating to the hedged item.

Hedge accounting is discontinued when the Company revokes the hedging relationship, when the hedging instrument expires or is sold, terminated or exercised, or when it no longer qualifies for hedge accounting. The fair value adjustment to the carrying amount of the hedged item arising from the hedged risk is amortized to profit or loss from that date.

4) Cash flow hedges

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognized in other comprehensive income. The gain or loss relating to the ineffective portion is recognized immediately in profit or loss, and is included in the ‘Finance income and expenses’ line item.

Amounts previously recognized in other comprehensive income and accumulated in equity are reclassified to profit or loss in the periods when the hedged item is recognized in profit or loss, in the same line of the separate statements of comprehensive income as the recognized hedged item.

Hedge accounting is discontinued when the Company revokes the hedging relationship, when the hedging instrument expires or is sold, terminated or exercised, or it no longer qualifies for hedge accounting. Any gain or loss accumulated in equity at that time remains in equity and is recognized when the forecast transaction is ultimately recognized in profit or loss. When a forecast transaction is no longer expected to occur, the gain or loss accumulated in equity is recognized immediately in profit or loss.

(23) Fair value

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Company takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date. Fair value for measurement and/or disclosure purposes in these separate financial statements is determined on such a basis, except for share-based payment transactions that are within the scope of K-IFRS 1102, leasing transactions that are within the scope of K-IFRS 1017 ‘Leases’ and measurements that have some similarities to fair value but are not fair value, such as net realizable value in K-IFRS 1002, *Inventories*, or value in use in K-IFRS 1036.

In addition, for financial reporting purposes, fair value measurements are categorized into Levels 1, 2 or 3 based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in their entireties, which are described in Note 10.

(24) Approval of financial statements

The separate financial statements as of and for the year ended December 31, 2015, were approved by the Board of Directors on March 2, 2016.

3. SIGNIFICANT ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTIES:

In the application of the Company's accounting policies, which are described in Note 2, management is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised if the revision affects only that period or in the period of the revision and future periods if the revision affects both current and future periods.

(1) Revenue recognition

Revenue from a contract to provide services is recognized by reference to the stage of completion of the contract. The stage of completion of the contract is determined as reasonable estimation and is subject to change as related factors change.

(2) Impairment of goodwill

Determining whether goodwill is impaired requires an estimation of the value in use of the CGUs to which goodwill has been allocated. The value in use calculation requires the directors to estimate the future cash flows expected to arise from the CGU and a suitable discount rate in order to calculate the present value.

(3) Defined benefit obligation

The Company's defined benefit obligation is determined based on the actuarial valuation carried out at the end of each annual reporting period. Actuarial assumptions are the Company's best estimates of the variables, such as discount rates, rates of expected future salary increases and mortality rates.

(4) Warranty provision

Provisions for the expected cost of warranty obligations are recognized at the best estimate of the expenditure required to settle the Company's current and future obligations. Provisions are determined by the estimate based on past experience.

(5) Revaluation model on land and fair value model on investment in real properties

As stated in Note 12 and Note 14, the Company uses evaluation technique, including inputs that are not based on observable market data to approximate revalued amount of land classified as property, plant and equipment and fair value of investment property. The Company's management believes that the evaluation technique and assumptions that are used for valuation on land and investment in real properties are fair.

(6) Deferred tax

Recognition and measurement of deferred tax assets and liabilities require the management's judgment, in particular, whether to recognize if the scope of deferred tax assets is affected by management's judgment and assumption in the future.

(7) Estimated useful lives of property, plant, equipment and intangible assets

Useful lives for depreciation are determined by the management's judgment.

4. FINANCIAL RISK MANAGEMENT:

The Company is exposed to various financial risks, such as market (foreign currency risk and interest rate risk), credit and liquidity related to the operations of the Company. The purpose of risk management policy is to minimize potential risks, which could have an adverse effect on financial performance.

Financial risk management activities are performed by Treasury and International Finance department, in accordance with the aforementioned documented risk management policies. In addition, the Company enters into derivative contracts to hedge against certain risks.

(1) Market risk

1) Foreign currency risk

The Company is exposed to foreign currency risk since it makes transactions in foreign currencies. Foreign currency risk arises from forecast transactions, recognized assets and liabilities and net investments in foreign operations.

Foreign currency risk is managed by the Company's policy on foreign currencies. The Company's basis for foreign currency management is to reduce income/loss volatility. The Company reduces exposure to foreign currency risk by matching the inflow and the outflow of foreign currencies (natural hedge) and manages foreign currency risk by using currency derivatives, such as currency forwards, for the remaining exposure.

The book value of the Company's monetary assets and liabilities denominated in foreign currencies, which represents the maximum exposure to foreign currency risk as of December 31, 2015 and 2014, is as follows (in millions of Korean won):

	December 31, 2015					
	USD	EUR	JPY	GBP	Others (*)	Total
Assets	₩172,232	₩25,670	₩529	₩26,754	₩8,435	₩233,620
Liabilities	(153,118)	(1,285)	(1,394)	(470)	(286)	(156,553)
Net assets (liabilities)	₩19,114	₩24,385	₩(865)	₩26,284	₩8,149	₩77,067

	December 31, 2014					
	USD	EUR	JPY	GBP	Others (*)	Total
Assets	₩139,005	₩18,850	₩1,453	₩18,735	₩3,163	₩181,206
Liabilities	(137,796)	(2,338)	(2,003)	(802)	(660)	(143,599)
Net assets (liabilities)	₩1,209	₩16,512	₩(550)	₩17,933	₩2,503	₩37,607

(*) Others are assets and liabilities denominated in foreign currencies other than USD, EUR, JPY and GBP.

Net foreign currency translation gain/loss for the years ended December 31, 2015 and 2014, is ₩(3,588) million and ₩(869) million, respectively.

A sensitivity analysis on the Company's income before tax for the period, assuming a 10% increase and decrease in currency exchange rates, for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015		2014	
	10% decrease in KRW against foreign currency	10% increase in KRW against foreign currency	10% decrease in KRW against foreign currency	10% increase in KRW against foreign currency
Income before tax impact	₩7,707	₩(7,707)	₩3,761	₩(3,761)

The above-mentioned sensitivity analysis is based on monetary assets and liabilities denominated in foreign currencies other than the Company's functional currency as of December 31, 2015 and 2014.

2) Interest rate risk

The Company's interest rate risk is related to borrowings and bank deposits with floating interest rates, and related interest income and expense are exposed to interest rate risk. The Company is exposed to interest rate risk mainly due to its borrowing with floating interest rates. The purpose of interest rate risk management is to minimize uncertainty and financial expense arising from interest rate fluctuation.

To manage its interest rate risk, the Company minimizes external borrowings using internal funds and reduces borrowings with high interest rates and maintains an appropriate balance between borrowings with floating interest rate and fixed-interest rate and short-term and long-term borrowings. The Company manages its interest rate risk preemptively through regular monitoring and adjustments to the changing domestic and overseas markets conditions and nature of its interest rates.

The book value of the Company's financial assets and liabilities with floating interest rates exposed to interest rate risk as of December 31, 2015 and 2014, is as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Financial assets	₩155,865	₩72,065
Financial liabilities	(352,212)	(305,043)
Net assets (liabilities)	₩(196,347)	₩(232,978)

A sensitivity analysis on the Company's income before tax assuming a 1% increase and decrease in interest rates for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015		2014	
	1% increase	1% decrease	1% increase	1% decrease
Income before tax impact	₩(1,963)	₩1,963	₩(2,330)	₩2,330

3) Price risk

The Company is exposed to equity price risks arising from its listed equity investments among AFS equity investments. The Company periodically measures the risk as the fair value or future cash flows of equity investments may fluctuate due to the changes in market prices. Important investments in the Company's portfolio are individually managed, and acquisition and disposal are approved by the Board of Directors.

(2) Credit risk

The credit risk refers to risk of financial losses to the Company when the counterparty defaults on the obligations of the contract. The credit risk arises from AFS financial assets, which are not equity securities, deposits in financial institution, financial derivatives and guarantee limit as well as from the Company's normal transaction and investing activity. To manage credit risk, the Company evaluates the creditworthiness of each customer or counterparty considering the financial status, past experience and other factors. The Company establishes credit limit for each customer and counterparty.

The Company evaluates the creditworthiness using open financial information and information provided by credit rating institution when the Company contracts with new customers. The Company decides credit transaction limit and is provided with collateral and guarantee based on evaluation.

Also, the Company revaluates customers' creditworthiness periodically, reassesses credit transaction limit and readjusts level of collateral. The Company reports the present condition of delayed collection and collection measures periodically to financial assets, which has delayed collection and takes measures by causes of delay.

A. The maximum credit risk exposure

The maximum credit risk exposure for financial assets maintained by the Company and the book value for the financial assets as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Loans and receivables:		
Cash and cash equivalents (*)	₩166,132	₩102,278
Financial instruments	89	2,092
Accounts and other receivables	363,803	312,848
Deposits	18,521	19,009
AFS financial assets:		
Asset-backed securities ("ABS")	1,497	1,497
Debt securities	-	7,000
Derivative assets	1,369	393
Total	₩551,411	₩445,117

(*) Cash on hand is excluded.

Apart from the above-mentioned financial assets, financial guarantee liabilities of the Company are explained in Note 30.

B. The Company's receivables' aging analysis as of December 31, 2015 and 2014, is as follows (in millions of Korean won):

	December 31, 2015						
	Individually assessed receivables	Receivables assessed for impairment on a collective basis					
		Within due	0–3 months	3–6 months	6–12 months	More than 12 months	Total
Trade receivables	₩79,261	₩193,412	₩4,191	₩3,403	₩2,457	₩3,728	₩286,452
Other receivables	9,311	82,277	2,649	239	338	11	94,825
Accrued income	-	122	-	-	-	-	122
Loans	6	5,456	-	-	-	-	5,462
Total	₩88,578	₩281,267	₩6,840	₩3,642	₩2,795	₩3,739	₩386,861

	December 31, 2014						
	Individually assessed receivables	Receivables assessed for impairment on a collective basis					
		Within due	0–3 months	3–6 months	6–12 months	More than 12 months	Total
Trade receivables	₩60,188	₩248,803	₩1,973	₩165	₩995	₩596	₩312,720
Other receivables	8,729	4,464	5,002	1	7	94	18,297
Accrued income	-	108	-	-	-	-	108
Loans	6	4,746	-	-	-	-	4,752
Total	₩68,923	₩258,121	₩6,975	₩166	₩1,002	₩690	₩335,877

An allowance for the above-mentioned individually impaired receivables for the years ended December 31, 2015 and 2014, is ₩22,272 million and ₩21,747 million, respectively.

Among individually assessed receivables, receivables not impaired are as follows (in millions of Korean won):

	December 31, 2015				
	0–3 months	3–6 months	6–12 months	More than 12 months	Total
Trade receivables	₩33,317	₩8,064	₩1,935	₩6,015	₩49,331
Other receivables	2,954	110	1,714	3,514	8,292
Total	₩36,271	₩8,174	₩3,649	₩9,529	₩57,623

	December 31, 2014				
	0–3 months	3–6 months	6–12 months	More than 12 months	Total
Trade receivables	₩18,810	₩6,052	₩2,427	₩4,601	₩31,890
Other receivables	4,376	1,550	1,193	591	7,710
Total	₩23,186	₩7,602	₩3,620	₩5,192	₩39,600

An allowance account is recognized by applying appropriate allowance rate for receivables that can be assessed to be impaired individually due to insolvency, bankruptcy and others. A group of financial assets that are not individually significant and have similar credit risk characteristics is assessed for impairment on a collective basis. An allowance account is recognized based on aging analysis and the Company's past experience of receivables collection.

AFS financial assets, held-to-maturity financial assets, deposits in financial institutions and derivative instruments are individually assessed to be impaired.

(3) Liquidity risk

Liquidity risk is the risk that the Company will encounter difficulty in meeting its financial liabilities' obligations related to its financing for its operation. The Company forecasts cash flows from operating, investing and financing activities through a cash flow budget.

A summary of the Company's non-derivative liabilities' maturity as of December 31, 2015 and 2014, is as follows (in millions of Korean won):

	December 31, 2015					
		Nominal cash flows according to contract				
	Book value	Total	Less than 1 year	1–2 years	2–5 years	More than 5 years
Financial liabilities	₩1,152,455	₩1,152,820	₩729,531	₩49,377	₩360,434	₩13,478
Interest on financial liabilities	-	51,503	22,012	14,703	14,499	289
Total	₩1,152,455	₩1,204,323	₩751,543	₩64,080	₩374,933	₩13,767

	December 31, 2014					
		Nominal cash flows according to contract				
	Book value	Total	Less than 1 year	1–2 years	2–5 years	More than 5 years
Financial liabilities	₩1,182,139	₩1,184,748	₩613,512	₩285,882	₩258,378	₩26,976
Interest on financial liabilities	-	75,543	32,258	19,090	21,829	2,366
Total	₩1,182,139	₩1,260,291	₩645,770	₩304,972	₩280,207	₩29,342

The above-mentioned maturity analysis is based on undiscounted cash flow according to the contract, which is different from non-derivative liabilities in the separate statements of financial position.

Apart from the above-mentioned non-derivative liabilities, as of December 31, 2015, financial guarantee contract liabilities of the Company are explained in Note 30.

(4) Capital risk

The Company performs capital risk management to maintain its ability to continuously provide profits to shareholders and parties in interest and to maintain optimum capital structure to reduce capital expenses.

The Company manages its capital structure through dividend payments to shareholders, returns capital to shareholders and issues new shares and sells its assets for debt reduction. Debt-to-equity ratio calculated as total liabilities divided by equity is used as an index to manage the Company's capital similar to overall industry practice.

Debt-to-equity ratios as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Total liabilities	₩1,368,966	₩1,399,060
Total equity	2,109,256	2,110,538
Debt-to-equity ratio	64.90%	66.29%

5. RESTRICTED FINANCIAL ASSETS:

Details of restricted financial assets as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014	Description
Long-term financial instruments	₩89	₩92	Bank transaction deposits, establish the right of pledge and others

6. INVESTMENT SECURITIES:

Investment securities as of December 31, 2015 and 2014, are summarized as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Current:		
AFS financial assets:		
ABS	₩1,497	₩1,497
Monetary Bond Trust Subordinated beneficiary certificate	-	7,000
Total	₩1,497	₩8,497
Non-Current:		
AFS financial assets:		
Equity securities in non-listed company		
The Korea Economic Daily	₩56	₩56
Parnas Hotel	50	50
Korea Housing Guarantee Co., Ltd.	-	464
Kang Won Ilbo	57	57
KMA Consultants Inc.	20	20
Subtotal	183	647
Beneficiary certificate		
Korea Development Bank ("KDB")	4	4
Kyungnam creative economy innovation fund	112	-
Subtotal	116	4
Investments in funds		
Software Mutual Benefit Association	50	50
Engineering Mutual Benefit Association	14	14
Korea Defense Industry Association	374	324
Korea Marine Equipment Association	1	1
Construction Guarantee	139	139
Machinery Financial Cooperative	371	371
Electric Contractor's Financial Cooperative	50	50
Subtotal	999	949
Total	₩1,298	₩1,600

Beneficiary certificate, equity securities in non-listed company and investments in funds are carried at cost because there is no quoted market price and their fair value cannot be measured.

7. TRADE AND OTHER RECEIVABLES:

(1) Trade and other receivables as of December 31, 2015 and 2014, consist of the following (in millions of Korean won):

	December 31, 2015			December 31, 2014		
	Gross	Allowance for doubtful accounts	Book value	Gross	Allowance for doubtful accounts	Book value
Current:						
Trade receivables	₩286,271	₩(21,753)	₩264,518	₩312,539	₩(21,726)	₩290,813
Other receivables	94,790	(1,084)	93,706	18,262	(1,081)	17,181
Accrued income	122	-	122	108	-	108
Loans	1,109	(5)	1,104	1,025	(5)	1,020
Total	₩382,292	₩(22,842)	₩359,450	₩331,934	₩(22,812)	₩309,122
Non-Current:						
Trade receivables	₩181	₩(181)	₩ -	₩181	₩ (181)	₩ -
Other receivables	35	(35)	-	35	(35)	-
Loans	4,353	-	4,353	3,727	-	3,727
Total	₩4,569	₩(216)	₩4,353	₩3,943	₩(216)	₩3,727

(2) The changes in allowance for doubtful accounts are as follows (in millions of Korean won):

	Year ended December 31, 2015			
	January 1, 2015	Increase	Written off	December 31, 2015
Trade receivables	₩(21,726)	₩(77)	₩50	₩(21,753)
Other receivables	(1,081)	(3)	-	(1,084)
Short-term loans	(5)	-	-	(5)
Long-term trade receivables	(181)	-	-	(181)
Long-term other receivables	(35)	-	-	(35)
Total	₩(23,028)	₩(80)	₩50	₩(23,058)

Bad debt expense to impaired trade receivables is included in selling, general and administrative expenses, and bad debt expense to impaired other receivables is included in other non-operating expenses in the separate statements of income.

8. INVENTORIES:

Inventories as of December 31, 2015 and 2014, are summarized as follows (in millions of Korean won):

	December 31, 2015			December 31, 2014		
	Acquisition cost	Valuation allowance	Book value	Acquisition cost	Valuation allowance	Book value
Merchandise	₩13,691	₩(1,933)	₩11,758	₩18,859	₩(2,129)	₩16,730
Finished goods	35,692	(2,676)	33,016	39,149	(2,129)	37,020
Work in progress	26,091	(64)	26,027	29,905	(119)	29,786
Raw materials	67,542	(2,769)	64,773	83,704	(2,546)	81,158
Materials in transit	13,685	-	13,685	20,024	-	20,024
Others	3,092	-	3,092	2,911	-	2,911
Total	₩159,793	₩(7,442)	₩152,351	₩194,552	₩(6,923)	₩187,629

Losses on inventory valuation (charged to reversals of loss on inventory valuation deducted from the cost of sales) amounted to ₩519 million and ₩(2,076) million for the years ended December 31, 2015 and 2014, respectively.

9. DERIVATIVES:

(1) Details of these derivative contracts are as follows:

Derivative contracts	Purpose	Description
Foreign currency forwards	Cash flow hedge	Adjustment from foreign currency sales to Korean won to avoid cash flow risk arising from foreign currency forecast sales
Interest rate swap	Derivative instrument not designated as a hedge	Recognized in profit or loss of gap between floating-interest rate and fixed-interest rate

(2) Details of gain and loss on valuation of derivatives as of December 31, 2015 and 2014, are as follows (in millions of Korean won, in thousands of foreign currency):

December 31, 2015						
Buy		Sell				
Currency	Amount	Currency	Amount	Assets (liabilities)	Losses	Other comprehensive income (*)
Foreign currency forwards:						
KRW	119,634	USD	101,000	₩1,010	₩ -	₩1,010
KRW	6,510	GBP	3,600	237	-	237
KRW	13,694	EUR	10,600	1,010	-	1,010
Interest rate swap:						
KRW 5,000, 3.15%		KRW 5,000, MOR 3M+1.60%		(19)	(21)	-
Total				₩1,223	₩(21)	₩1,242

December 31, 2014						
Buy		Sell				
Currency	Amount	Currency	Amount	Assets (liabilities)	Gains (losses)	Other comprehensive income (loss) (*)
Foreign currency forwards:						
KRW	162,089	USD	150,000	₩(3,779)	₩ -	₩(3,779)
KRW	15,716	CNY	89,700	(67)	-	(67)
KRW	6,792	EUR	5,020	19	-	19
KRW	11,263	GBP	6,560	(10)	-	(10)
Total				₩(3,837)	₩ -	₩(3,837)

(*) Other comprehensive income does not reflect corporate tax effect.

10. FINANCIAL INSTRUMENTS:

(1) Categories of financial instruments as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015					
	Financial assets at FVTPL	Loans and receivables	AFS financial assets	Derivatives designated as hedging instruments	Book value	Fair value
Cash and cash equivalents	₩-	₩166,196	₩-	₩-	₩166,196	₩166,196
Financial instruments	-	89	-	-	89	89
Investment securities	-	-	2,795	-	2,795	2,795
Trade and other receivables	-	363,803	-	-	363,803	363,803
Derivative assets	-	-	-	1,369	1,369	1,369
Deposits	-	18,521	-	-	18,521	18,521
Total	₩-	₩548,609	₩2,795	₩1,369	₩552,773	₩552,773

	December 31, 2015					
	Financial liabilities at FVTPL	Financial liabilities at amortized cost	Derivatives designated as hedging instruments	Financial guarantee contract	Book value	Fair value
Trade and other payables	₩-	₩263,593	₩-	₩1,983	₩265,576	₩265,576
Borrowings and bonds	-	888,862	-	-	888,862	888,862
Derivative liabilities	19	-	127	-	146	146
Total	₩19	₩1,152,455	₩127	₩1,983	₩1,154,584	₩1,154,584

	December 31, 2014					
	Financial assets at FVTPL	Loans and receivables	AFS financial assets	Derivatives designated as hedging instruments	Book value	Fair value
Cash and cash equivalents	₩ -	₩102,345	₩ -	₩ -	₩102,345	₩102,345
Financial instruments	-	2,092	-	-	2,092	2,092
Investment securities	-	-	10,097	-	10,097	10,097
Trade and other receivables	-	312,848	-	-	312,848	312,848
Derivative assets	-	-	-	393	393	393
Deposits	-	19,009	-	-	19,009	19,009
Total	₩ -	₩436,294	₩10,097	₩393	₩446,784	₩446,784

	December 31, 2014					
	Financial liabilities at FVTPL	Financial liabilities at amortized cost	Derivatives designated as hedging instruments	Financial guarantee contract	Book value	Fair value
Trade and other payables	₩ -	₩302,311	₩ -	₩1,687	₩303,998	₩303,998
Borrowings and bonds	-	879,828	-	-	879,828	879,828
Derivative liabilities	-	-	4,230	-	4,230	4,230
Total	₩ -	₩1,182,139	₩4,230	₩1,687	₩1,188,056	₩1,188,056

(2) Fair value measurements of financial instruments by fair value hierarchy levels as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015			
	Level 1	Level 2	Level 3	Total
Financial assets:				
Derivatives designated as hedging instruments	₩-	₩1,369	₩-	₩1,369
Financial liabilities:				
Financial liabilities at FVTPL	-	(19)	-	(19)
Derivatives designated as hedging instruments	-	(127)	-	(127)
Total	₩-	₩1,223	₩-	₩1,223

	December 31, 2014			
	Level 1	Level 2	Level 3	Total
Financial assets:				
Derivatives designated as hedging instruments	₩ -	₩393	₩ -	₩393
Financial liabilities:				
Derivatives designated as hedging instruments	-	(4,230)	-	(4,230)
Total	₩ -	₩(3,837)	₩ -	₩(3,837)

The above table does not include information for those financial instruments, which are not measured at fair value because the book value approximates fair value.

The Company uses the following hierarchy for determining and disclosing the fair value of financial instruments by valuation technique. The level of hierarchy of fair value is as follows:

Level 1: Unadjusted quoted prices in active markets for identical assets or liabilities
Level 2: Inputs other than quoted prices that are observable for the asset or liability, either directly or indirectly
Level 3: Inputs that are not based on observable market data (unobservable inputs)

The fair value of financial instruments traded in active markets is based on quoted market prices at the dates of the separate statements of financial position. These instruments are included in Level 1. Instruments included in Level 1 comprise primarily listed equity investments classified as trading securities or AFS.

The fair value of financial instruments that are not traded in an active market (for example, over-the-counter derivatives) is determined by using valuation techniques. These valuation techniques maximize the use of observable market data where it is available and rely as little as possible on entity-specific estimates. If all significant inputs required for fair value of an instrument are observable, the instrument is included in Level 2.

If one or more of the significant inputs is not based on observable market data, the instrument is included in Level 3.

(3) Valuation techniques and inputs used for derivatives designated as hedging instruments (Level 2) are as follows:

Valuation technique	Observable inputs	Explanation of input parameters
Discounted cash flow method	a. Forward exchange rate	It is based on forward exchange rate, disclosed on the market that remaining period is the same till maturity of forward contracts. If the forward exchange rate is not disclosed on the market, it is calculated by using interpolation method.
	b. Discount rate	It is determined by using yield curve that is disclosed at the end of the reporting period.

(4) Comprehensive income (loss) by categories of financial instruments for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015						
	Profit or loss						
	Interest	Dividend	Income on financial guarantee	Impairment	Disposal	Exchange rate fluctuations	Other comprehensive income (*)
Financial assets:							
Loans and receivables	₩3,357	₩-	₩-	₩(80)	₩(1,678)	₩9,106	₩-
AFS financial assets	144	26	-	-	1,393	-	-
Total	₩3,501	₩26	₩-	₩(80)	₩(285)	₩9,106	₩-
Financial liabilities:							
Financial liabilities at amortized cost	₩(38,209)	₩-	₩1,418	₩-	₩351	₩(9,055)	₩-

	2014						
	Profit or loss						
	Interest	Dividend	Income on financial guarantee	Impairment	Disposal	Exchange rate fluctuations	Other comprehensive income (*)
Financial assets:							
Loans and receivables	₩3,088	₩ -	₩ -	₩(561)	₩(1,714)	₩2,571	₩ -
AFS financial assets	588	16	-	-	-	-	-
Total	₩3,676	₩16	₩ -	₩(561)	₩(1,714)	₩2,571	₩ -
Financial liabilities:							
Financial liabilities at amortized cost	₩(41,432)	₩ -	₩730	₩ -	₩ -	₩(3,954)	₩ -

Apart from the above financial instruments, comprehensive income (loss) by derivatives for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015			2014		
	Profit or loss		Other comprehensive income (*)	Profit or loss		Other comprehensive income (*)
	Valuation	Disposal		Valuation	Disposal	
Derivative instrument not designated as a hedge	₩(21)	₩-	₩-	₩ -	₩ -	₩ -
Derivatives designated as hedging instruments	-	(144)	5,079	-	(15)	(4,957)
Total	₩(21)	₩(144)	₩5,079	₩ -	₩(15)	₩(4,957)

(*) Other comprehensive income does not reflect corporate tax effect.

(5) Financial assets and liabilities subject to an enforceable master-netting arrangement or similar agreement as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015		
	Before enforceable master netting	Enforceable master netting	After enforceable master netting
Financial assets:			
Trade receivables	₩12,567	₩(4,653)	₩7,914
Other receivables	360	(23)	337
Total	₩12,927	₩(4,676)	₩8,251
Financial liabilities:			
Trade payables	₩27,071	₩(4,676)	₩22,395

	December 31, 2014		
	Before enforceable master netting	Enforceable master netting	After enforceable master netting
Financial assets:			
Trade receivables	₩17,358	₩ (4,661)	₩12,697
Other receivables	28	(15)	13
Total	₩17,386	₩(4,676)	₩12,710
Financial liabilities:			
Trade payables	₩43,650	₩(4,676)	₩38,974

11. SUBSIDIARIES AND ASSOCIATES:

(1) Subsidiaries and associates as of December 31, 2015 and 2014, consist of the following (in millions of Korean won):

	Location of incorporation	Percentage of ownership (%)	December 31, 2015	December 31, 2014
Subsidiaries:				
Doosan Heavy Industries & Construction Co., Ltd. (“DHC”)	Korea	40.31	₩1,232,946	₩1,232,946
Oricom Inc. (“Oricom”)	Korea	66.89	23,168	23,168
Doosan Tower Co., Ltd. (“Doosan tower”)	Korea	100	231,550	231,550
Doosan Feed & Livestock Co., Ltd.	Korea	100	15,757	15,757
Doosan Hongkong Ltd.	China	100	-	-
Doosan Electro-Materials Singapore Pte Ltd.	Singapore	100	-	-
Doosan (Shanghai) Chemical Materials Co., Ltd.	China	100	-	-
Doosan Bears Inc. (*1)	Korea	100	11,138	11,138
DIP Holdings Co., Ltd. (“DIP”)	Korea	100	164,169	164,169
Doosan Information and Communications America LLC	USA	100	4,889	4,889
Doosan Information and Communications China LLC	China	100	3,230	3,230
Doosan Information and Communications Europe Ltd.	UK	100	4,870	4,870
Doosan Mottrol (Jiangyin) Co., Ltd. (*1)	China	100	21,601	33,587
Doosan Electro-Materials (Changshu) Co., Ltd.	China	100	45,964	45,964
Doosan Electro-Materials America, LLC	USA	100	282	282
Doosan Electro-Materials Luxembourg Sarl	Luxembourg	100	28,111	28,111
Doosan Industrial Vehicle Europe N.A.	Belgium	100	16,934	16,934
Doosan Industrial Vehicle U.K. Ltd.	UK	100	1,909	1,909
Doosan Logistics Europe GmbH	Germany	100	1,909	1,909
Doosan Industrial Vehicle America Corp.	USA	100	27,016	27,016
Doosan Industrial Vehicle Yantai Co., Ltd.	China	100	10,617	10,617
Doosan Fuel Cell America, Inc.	USA	100	61,402	61,402
Treasury stock trust (*2)	Korea	100	60,000	60,000
Subtotal			1,967,462	1,979,448
Associates:				
Doosan Eco Biznet	Korea	29.79	53	53
Guang Dong Xingpu Steel Center	China	21.05	3,854	3,854
MVP Capital Co., Ltd.	Korea	(*3)	-	-
Prestoliteasia	Korea	32.31	468	468
Subtotal			4,375	4,375
Joint venture:				
Sichuan Kelun-Doosan Biotechnology Company Limited	China	50.00	2,526	2,526
Total			₩1,974,363	₩1,986,349

(*1) Decreased due to the recognition of impairment in 2015.

(*2) Investments in treasury stock trust for the years ended December 31, 2015 and 2014 (see Note 32-(4)).

(*3) Excluded due to liquidation in 2015.

(2) Announced market prices of investments in subsidiaries and associates as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015		December 31, 2014	
	Book value	Fair value	Book value	Fair value
Subsidiaries:				
DHC	₩1,232,946	₩905,285	₩1,232,946	₩1,039,320
Oricom	23,168	69,266	23,168	26,248

12. PROPERTY, PLANT AND EQUIPMENT:

(1) Changes in property, plant and equipment for the years ended December 31, 2015 and 2014, consist of the following (in millions of Korean won):

	Year ended December 31, 2015					
	Land	Buildings and structures	Machinery	Tools, furniture, fixtures and others	Construction in progress	Total
Balance at January 1, 2015	₩183,546	₩68,826	₩109,825	₩44,023	₩4,621	₩410,841
Acquisition	9,117	4,142	3,672	16,304	21,870	55,105
Government subsidy	-	-	(13)	(17)	-	(30)
Reclassifications	-	3,327	4,620	785	(10,051)	(1,319)
Disposal	-	(306)	(548)	(188)	(1,439)	(2,481)
Depreciation	(43)	(4,434)	(21,356)	(19,909)	-	(45,742)
Increase in revaluation	4,569	-	-	-	-	4,569
Balance at December 31, 2015	₩197,189	₩71,555	₩96,200	₩40,998	₩15,001	₩420,943
- Acquisition cost	₩161,089	₩118,529	₩331,014	₩147,412	₩15,001	₩773,045
- Accumulated depreciation and impairment	-	(46,974)	(233,647)	(106,358)	-	(386,979)
- Government subsidy	-	-	(1,167)	(56)	-	(1,223)
- Revaluation surplus	36,100	-	-	-	-	36,100

	Year ended December 31, 2014					
	Land	Buildings and structures	Machinery	Tools, furniture, fixtures and others	Construction in progress	Total
Balance at January 1, 2014	₩181,914	₩71,419	₩121,267	₩45,617	₩4,144	₩424,361
Acquisition	1,722	479	5,675	15,459	15,013	38,348
Business combinations (*1)	-	-	350	66	-	416
Government subsidy	-	-	-	(16)	-	(16)
Reclassifications	-	1,797	4,783	2,732	(13,022)	(3,710)
Disposal	(47)	(139)	(217)	(43)	(1,514)	(1,960)
Depreciation	(43)	(4,730)	(22,033)	(19,792)	-	(46,598)
Balance at December 31, 2014	₩183,546	₩68,826	₩109,825	₩44,023	₩4,621	₩410,841
- Acquisition cost	₩152,015	₩113,192	₩357,277	₩133,401	₩4,621	₩760,506
- Accumulated depreciation and impairment	-	(44,366)	(246,022)	(89,310)	-	(379,698)
- Government subsidy	-	-	(1,430)	(68)	-	(1,498)
- Revaluation surplus	31,531	-	-	-	-	31,531

(*1) The Company is merged with Fuelcellpower Co., Ltd. in 2014 (see Note 34).

The Company recognized the land subsequently measured at revaluation amount; if the land were stated at cost, the land would amount to ₩161,107 million and ₩152,015 million as of December 31, 2015 and 2014, respectively.

As of December 31, 2014, the Company's land and buildings are partially pledged as collateral for loans from KDB and others (see Note 31).

(2) The details of revaluation model, which the Company applies to measurement of the land, are as follows:

For the year ended December 31, 2015, the Group initially measured all land assets using fair value at the date of the revaluation. As of December 31, 2015, the fair value of land assets was determined from the appraisal that was undertaken by independently qualified valuators, the First Appraisal & Consulting Co., Ltd ("FACC") and Mirae & Saehan Appraisal Co., Ltd., on October 31, 2015.

FACC and Mirae & Saehan Appraisal Co., Ltd. are members of Korea Association of Property Appraisers and comprise of certified professionals that have a significant amount of industry experience.

(3) Fair value measurements of land assets by fair value hierarchy level as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015			December 31, 2014		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Property:						
Land	₩ -	₩ -	₩197,189	₩ -	₩ -	₩183,546

(4) Valuation techniques and inputs used for fair value measurement of land assets (Level 3) are as follows:

Valuation technique	Significant inputs that are not based on observable market data (unobservable inputs)	Correlation between unobservable inputs and fair value arguments
Official Assessed Reference Land Price (“OARLP”): OARLP of similar parcels nearby the subject land and reflating corrections necessary for differences between the subject and the comparable	a. Fluctuation rate of land price and others	Fair value increases (decreases), if rate of land price increases (decreases).
	b. Parcel conditions and others	Fair value increases (decreases), if correction of parcel conditions and others increases (decreases).
	c. Land conditions affecting the sales price and others	Fair value increases (decreases), if correction of land conditions affecting the sales price increases (decreases).

Change in land whose degree of fair value is classified as Level 3 for the year ended December 31, 2015, is as follows (in millions of Korean won):

		Revaluation			
January 1, 2015	Acquisition	Other comprehensive income (*1)	Net income (*2)	Others	December 31, 2015
₩183,546	9,117	4,554	15	(43)	₩197,189

(*1) Other comprehensive income does not reflect corporate tax effect
(*2) Revaluation gain/losses recognized in profit or loss

(5) Property and equipment acquired through capital lease agreements as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Acquisition cost	₩54,865	₩51,490
Accumulated depreciation	(42,892)	(33,655)
Balance, net	₩11,973	₩17,835

Total minimum lease payments of finance leases liabilities and present value as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015		December 31, 2014	
	Minimum lease payments	Present value	Minimum lease payments	Present value
Less than 1 year	₩10,074	₩9,487	₩10,838	₩10,043
1 year–5 years	8,746	8,442	12,102	11,567
Total	18,820	₩17,929	22,940	₩21,610
Present value adjustment	(891)		(1,330)	
Finance lease payables	₩17,929		₩21,610	

As of December 31, 2015, the Company's leased assets under finance lease are pledged as collateral for obligations under finance leases (see Note 31).

(6) Classification of depreciation expenses for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015	2014
Cost of sales	₩38,344	₩38,906
Selling, general and administrative expenses	5,805	6,131
Research and development cost	1,593	1,561
Total	₩45,742	₩46,598

13. INTANGIBLE ASSETS:

(1) Changes in intangible assets for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	Year ended December 31, 2015				
	Goodwill	Industrial rights	Development costs	Other intangible assets	Total
Balance at January 1, 2015	₩138,361	₩1,257	₩3,402	₩39,853	₩182,873
Acquisition	-	615	1,687	3,818	6,120
Government subsidy	-	-	(371)	-	(371)
Reclassifications	-	-	-	1,319	1,319
Disposal	-	(33)	-	-	(33)
Amortization	-	(515)	(1,057)	(9,762)	(11,334)
Impairment	-	(6)	-	-	(6)
Balance at December 31, 2015	₩138,361	₩1,318	₩3,661	₩35,228	₩178,568
- Acquisition cost	₩138,361	₩3,428	₩32,682	₩77,841	₩252,312
- Accumulated amortization and impairment	-	(2,110)	(24,769)	(42,613)	(69,492)
- Government subsidy	-	-	(4,252)	-	(4,252)

	Year ended December 31, 2014				
	Goodwill	Industrial rights	Development costs	Other intangible assets	Total
Balance at January 1, 2014	₩108,073	₩1,153	₩880	₩40,512	₩150,618
Acquisition	-	294	936	1,404	2,634
Business combinations (*1)	30,288	226	2,186	3,264	35,964
Government subsidy	-	-	(201)	-	(201)
Reclassifications	-	(13)	-	3,723	3,710
Disposal	-	-	-	(724)	(724)
Amortization	-	(403)	(399)	(8,543)	(9,345)
Impairment	-	-	-	217	217
Balance at December 31, 2014	₩138,361	₩1,257	₩3,402	₩39,853	₩182,873
- Acquisition cost	₩138,361	₩2,879	₩30,996	₩67,541	₩239,777
- Accumulated amortization and impairment	-	(1,622)	(22,989)	(27,688)	(52,299)
- Government subsidy	-	-	(4,605)	-	(4,605)

(*1) The Company is merged with Fuelcellpower Co., Ltd. in 2014 (see Note 34).

The carrying amount of membership with indefinite useful lives in other intangible assets item is ₩14,616 million and ₩14,465 million as of December 31, 2015 and 2014, respectively. Meanwhile, expenditure on research and development, which was recognized as expenses, amounted to ₩28,059 million and ₩33,337 million for the years ended December 31, 2015 and 2014, respectively.

(2) Impairment test of goodwill

1) Before recognition of impairment losses, the carrying amount of goodwill was allocated to CGUs as follows (in millions of Korean won):

CGUs	December 31, 2015	December 31, 2014	Description
Mottrol BG	₩84,562	₩84,562	Manufacturing and sale of hydraulic components
Information and communications BU	2,015	2,015	Operation and development of software
FM BU	6,420	6,420	Building maintenance service
Industrial vehicles BG	15,076	15,076	Manufacturing and sale of forklifts
Fuel Cell BU	30,288	30,288	Manufacturing and sale of fuel cell
Total	₩138,361	₩138,361	

2) The recoverable amount of CGU is determined based on a value-in-use calculation, and discount rate used is as follows:

	Mottrol BG	Information and communications BU	FM BU	Industrial vehicles BG	Fuel Cell BU
Discount rate	9.55%	8.98%	10.29%	10.32%	11.52%

The Company uses cash flow projections based on financial budgets approved by the directors covering five-year periods for a value-in-use calculation. The financial budgets are determined based on historical result and expectation of market growth. Cash flows beyond that five-year periods have been extrapolated using a ‘0–3%’ growth rate, continuing the fifth year cash flow. The growth rate does not exceed long-term average growth rate of market, and the discount rates used reflect relevant risks specific to the CGUs.

The result of recoverable amount of the Company calculated based on value-in-use calculation was not to cause the aggregate carrying amount to exceed the aggregate recoverable amount of the CGU. Therefore, no impairment loss is recognized based on the impairment test for the year ended December 31, 2015.

A reasonably possible change in a key assumption would cause the change of recoverable amount. So, management has observed related sales and industrial trend subsequently. Meanwhile, if discount rate changes by 50 basis points, no additional impairment losses will be incurred.

(3) Classification of amortization expense for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015	2014
Cost of sales	₩3,046	₩1,967
Selling, general and administrative expenses	8,113	7,267
Research and development cost	175	111
Total	₩11,334	₩9,345

14. INVESTMENT PROPERTIES:

(1) Changes in investment properties for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	Year ended December 31, 2015		
	Land	Buildings	Total
Balance at January 1, 2015	₩261,312	₩4,186	₩265,498
Disposal	(109,625)	(1,412)	(111,037)
Revaluation	7,664	(71)	7,593
Others	4,500	-	4,500
Balance at December 31, 2015	₩163,851	₩2,703	₩166,554

	Year ended December 31, 2014		
	Land	Buildings	Total
Balance at January 1, 2014	₩257,770	₩4,673	₩262,443
Disposal	(44)	(66)	(110)
Revaluation	3,586	(421)	3,165
Balance at December 31, 2014	₩261,312	₩4,186	₩265,498

The Company's land and buildings included in the above investment property are pledged as collateral for loans from Hana Bank and others (see Note 31).

(2) Details of fair value model that the Company applies for measurement of investment properties are as follows:

For the year ended December 31, 2015, the Group initially measured all investment properties using fair value at the date of the revaluation. As of December 31, 2015, the fair value of investment properties was determined from the appraisal that was undertaken by independently qualified valuators, the First Appraisal & Consulting Co., Ltd ("FACC") and Mirae & Saehan Appraisal Co., Ltd., on November 30, 2015.

FACC and Mirae & Saehan Appraisal Co., Ltd. are members of Korea Association of Property Appraisers, and comprise of certified professionals who have a significant amount of industry experience.

(3) Fair value measurements of land assets by fair value hierarchy level as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015			December 31, 2014		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Property:						
Land	₩ -	₩ -	₩163,851	₩ -	₩ -	₩261,312
Buildings	-	-	2,703	-	-	4,186

(4) Valuation techniques and inputs used for fair value measurement of land assets (Level 3) are as follows:

Valuation technique	Significant inputs that are not based on observable market data (unobservable inputs)	Correlation between unobservable inputs and fair value arguments
A. OARLP: OARLP of similar parcels nearby the subject land and reflating corrections are necessary for differences between the subject and the comparable.	a. Fluctuation rate of land price and others	Fair value increases (decreases), if rate of land price increases (decreases).
	b. Parcel conditions and others	Fair value increases (decreases), if correction of parcel conditions and others increase (decrease).
	c. Land conditions affecting the sales price and others	Fair value increases (decreases), if correction of land conditions affecting the sales price increases (decreases).
B. Sales comparison approach: Fair value is based on sales comparison of a similar object, based on marketability with target object, while measuring fair value as compared with circumstance correction, time correction and individual factors	a. Circumstance correction	Fair value increases (decreases), if circumstance correction increases (decreases).
	b. Regional factors	Fair value increases (decreases), if regional factors increases (decreases).
	c. Comparative value of individual factors	The comparative value of individual factors increases (decreases), if the fair value increases (decreases).
C. Estimated cost price approach: Fair value is based on depreciation and replacement costs considered with structure, building materials, construction condition, building equipment, end use, present condition and management condition	a. Replacement cost	Fair value decreases (increases), if replacement cost increases (decreases).

15. BONDS AND BORROWINGS:

(1) Bonds as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	Annual interest rate (%)	December 31, 2015	December 31, 2014
The 280-2nd	5.64	₩-	₩50,000
The 281-1st	4.95	-	70,000
The 281-2nd	5.21	80,000	80,000
The 282-2nd	4.99	80,000	80,000
The 283-1st	3.84	20,000	20,000
The 283-2nd	4.27	80,000	80,000
The 284	4.33	100,000	100,000
Total		360,000	480,000
Less: Current portion of long-term bonds		(159,847)	(119,890)
Discount on current portion of long-term bonds		(153)	(110)
Discount on non-current portion of long-term bonds		(530)	(1,058)
Long-term bonds		₩199,470	₩358,942

(2) Long-term and short-term borrowings as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

1) Short-term borrowings

	Lender	Annual interest rate (%)	December 31, 2015	December 31, 2014
Usance (document against acceptance and payment)	Woori Bank and others	1.18–1.81	₩2,276	₩3,000
Short-term borrowings in Korean won	Shinhan Bank and others	2.74–3.67	184,000	95,000
Total			₩186,276	₩98,000

Financial liabilities related to transferred trade receivables, which did not meet the derecognition criteria, amounted to ₩2,276 million and ₩3,000 million as of December 31, 2015 and 2014, respectively. The trade receivables were pledged as collateral for these liabilities (see Note 30-(3)).

2) Long-term borrowings

	Annual interest rate (%)	December 31, 2015	December 31, 2014
Borrowings in Korean won:			
KDB	2.75–3.21	₩85,000	₩40,000
Woori Bank	3.35	50,000	-
Shinhan Bank	3.23	40,000	40,000
Kookmin Bank	2.5–3.05	5,135	160
Nonghyup Bank	3.15	30,000	30,000
Korea Housing Guarantee	-	-	2,904
La-union	-	-	50,000
KEB Hana Bank	2.71–3.17	50,000	50,000
Jeonbuk Bank	-	-	12,000
Borrowings in foreign currency:			
KDB	2.39	29,300	27,480
Korea Exim Bank	2.51	53,912	50,563
Total		343,347	303,107
Less: Current portion of long-term borrowings		(120,059)	(105,285)
Discount on current portion of long-term borrowings		-	-
Discount on non-current portion of long-term borrowings		(78)	(111)
Long-term borrowings		₩223,210	₩197,711

16. RETIREMENT BENEFIT OBLIGATION:

The Company operates a defined benefit plan for employees, and the actuarial valuation of plan assets and the defined benefit liability is performed by a reputable actuary using the projected unit credit method.

(1) Details of retirement benefit obligation as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Present value of defined benefit obligation	₩146,339	₩126,146
Fair value of plan assets	(102,504)	(81,793)
Total	₩43,835	₩44,353

(2) Expenses recognized in profit and loss for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Current service cost	₩20,496	₩21,744
Net interest cost	1,678	2,953
Total	₩22,174	₩24,697

(3) Classification of the expenses related to the retirement benefit obligation recognized in the separate statements of income for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015	2014
Cost of sales	₩13,398	₩14,832
Selling, general and administrative expenses	7,810	9,067
Research and development cost	892	798
Income from discontinued operations	74	-
Total	₩22,174	₩24,697

(4) Changes in defined benefit obligations for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Beginning balance	₩126,146	₩118,824
Current service cost	20,496	21,744
Interest cost	4,121	4,979
Transfer in	3,768	3,152
Transfer out	(1,830)	(2,848)
Payment	(8,510)	(14,678)
Remeasurements of defined benefit liabilities:		
- Changes in demographic assumptions	(985)	(121)
- Changes in financial assumptions	2,576	(2,899)
- Others	557	(2,007)
Subtotal	2,148	(5,027)
Ending balance	₩146,339	₩126,146

Changes in plan assets for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Beginning balance	₩81,793	₩51,769
Expected return on plan assets	2,443	2,026
Transfer in	1,337	676
Transfer out	(779)	(694)
Contributions by employer directly to plan assets	23,510	35,162
Payment	(5,008)	(6,377)
Business combinations		-
Remeasurements of plan assets	(792)	(769)
Ending balance	₩102,504	₩81,793

(5) Assumptions used for actuarial valuation as of December 31, 2015 and 2014, are as follows:

	2015	2014
Discount rate	2.90%	3.4%
Expected rate of salary increase	Employee 2.6%–6.0% Director 2.8%	Employee 3.0%–5.0% Director 3.4%

(6) Details of plan assets as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Equity instruments	₩797	₩376
Debt instruments	2,534	2,603
Others	99,173	78,814
Total	₩102,504	₩81,793

Plan assets are mostly invested in assets that have a quoted market price in an active market.

(7) The sensitivity analysis for the significant actuarial assumptions as of December 31, 2015 and 2014, is as follows (in millions of Korean won):

	December 31, 2015		December 31, 2014	
	Amount	Rate	Amount	Rate
Discount rate:				
1% increase	₩(8,848)	(-)6.05%	₩(6,337)	(-)5.02%
1% decrease	10,177	6.96%	5,934	4.70%
Salary increase rate:				
1% increase	9,843	6.73%	3,630	2.88%
1% decrease	(8,737)	(-)5.98%	(6,394)	(-)5.07%

(8) Information about the maturity profile of the defined benefit obligation as of December 31, 2015, is as follows (in millions of Korean won):

	0–1 year	1 year–2 years	2–5 years	5–10 years	Total
Expected payment	₩10,982	₩32,205	₩47,710	₩87,154	₩178,051

The Company expects to contribute ₩31,245 million for the defined benefit plans in 2016.

17. PROVISIONS:

Changes in provisions for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	Year ended December 31, 2015						
	January 1, 2015	Accrual	Use	Merger	December 31, 2015	Current	Non-current
Provision for product warranties	6,430	870	(1,608)	-	5,692	5,692	-
Asset retirement obligations	743	52	-	-	795	-	795
Other provisions	119	60	(39)	-	140	140	-
Total	7,292	982	(1,647)	-	6,627	5,832	795

	Year ended December 31, 2014						
	January 1, 2014	Accrual	Use	Merger	December 31, 2014	Current	Non-current
Provision for product warranties	₩5,355	₩9,666	₩(8,939)	₩348	₩6,430	₩6,430	₩ -
Asset retirement obligations	961	50	(268)	-	743	-	743
Other provisions	2,270	-	(2,273)	122	119	119	-
Total	₩8,586	₩9,716	₩(11,480)	₩470	₩7,292	₩6,549	₩743

The Company estimates expenditure required to settle the Company's obligations from product warranty, refund, related after service and others based on warranty period, historical claim rate and recognition of provision.

18. SHARE CAPITAL AND SHARE PREMIUM:

Changes in share capital and share premium for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won and number of shares):

	Number of shares		Share capital			
	Common shares	Preferred shares	Common shares	Preferred shares	Total	Share premium
Balance at January 1, 2014	20,882,071	5,396,759	₩105,910	₩26,984	₩132,894	₩337,274
Issuance of new shares for merger	384,867	-	1,924	-	1,924	18,046
Exercising share options	3,950	-	20	-	20	416
Balance at December 31, 2014	21,270,888	5,396,759	₩107,854	₩26,984	₩134,838	₩355,736
Balance at January 1, 2015	21,270,888	5,396,759	₩107,854	₩26,984	₩134,838	₩355,736
Balance at December 31, 2015	21,270,888	5,396,759	₩107,854	₩26,984	₩134,838	₩355,736

The Company's number of shares authorized amounted to 400,000,000 shares, with a par value of ₩5,000 per share. There is a difference arising from retirement of shares through retained earnings, and capital stock is not the same as total par value of shares issued.

The number of shares that are having limitation on voting right under commercial law amounted to 5,977,528 and 5,401,098 as of December 31, 2015 and 2014, respectively.

19. OTHER CAPITAL SURPLUS:

Other capital surplus as of December 31, 2015 and 2014, is summarized as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Share premium	₩355,736	₩355,736
Gain from merger	1,390	1,390
Other capital surplus	33,414	32,417
Asset revaluation reserve	277,542	277,542
Total	₩668,082	₩667,085

20. OTHER CAPITAL ITEMS:

(1) Other capital items as of December 31, 2015 and 2014, are summarized as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Treasury stock	₩(300,920)	₩(240,960)
Loss on disposal of treasury stock	(16,738)	(16,738)
Share options	18,426	16,874
Loss on capital reduction	(127,319)	(127,319)
Total	₩(426,551)	₩(368,143)

(2) Treasury stock

The Company acquired registered common stock and non-voting preferred stock, and recognized them as other capital item for the stabilization of stock price. Changes in treasury stock for the year ended December 31, 2015, are as follows (in millions of Korean won, except for share data):

	Number of treasury stock			Carrying amount		
	Common stock	Preferred stock	Total	Common stock	Preferred stock	Total
January 1, 2015	4,894,615	673,054	5,567,669	₩225,907	₩15,053	₩240,960
Acquisition	531,683	-	531,683	59,960	-	59,960
December 31, 2015	5,426,298	673,054	6,099,352	₩285,867	₩15,053	₩300,920

(3) Share-based payment

The Company granted share options to its directors several times. Share options are settled based on the Board of Directors' decision by issuance of new stock, treasury stock or cash settlement. Vesting condition offers two-year service after the resolution at the shareholders' meeting. The number of granted options as of December 31, 2015, is as follows (in Korean won, except for share data):

	Date of grant	Number of granted options	Exercisable period	Exercisable price	Expected fair value at the date of grant
8th	2007.3.16	800	2010.3.16–2017.3.15	₩59,600	₩28,930
9th	2008.3.21	21,600	2011.3.21–2018.3.20	165,100	68,846
10th	2009.3.27	2,450	2012.3.27–2019.3.26	106,500	53,382
12th	2010.3.26	68,260	2013.3.26–2020.3.26	116,500	56,460
13th	2011.3.25	31,300	2014.3.25–2021.3.25	137,500	68,045
14th	2012.3.30	46,200	2015.3.30–2022.3.30	156,200	63,647
15th	2013.3.29	92,400	2016.3.29–2023.3.28	128,100	43,353
16th	2014.3.28	110,600	2017.3.28–2024.3.27	134,300	39,558
17th	2015.3.				
	Total	373,610			

The Company calculated expenses by applying the fair value approach. Assumptions used in determining fair value of share options are as follows:

	Risk-free interest rate	Expected exercisable period	Expected volatility	Expected dividend yield ratio
8th	4.79%	3.00	46.73%	0%
9th	5.18%	3.00	58.89%	0%
10th	3.71%	3.53	69.82%	22%
12th	3.82%	3.27	71.67%	35%
13th	3.66%	3.29	73.42%	40%
14th	3.57%	3.41	62.76%	43%
15th	2.45%	3.42	49.22%	46%
16th	2.88%	3.60	40.90%	48%
17th				

Risk-free interest rate is based on a three-year Treasury bond yield rate.

Changes in share options for the year ended December 31, 2015, are as follows:

1) Number of common shares to be issued:

	January 1, 2015	Granted	Exercised	Forfeited	December 31, 2015
8th	800	-	-	-	800
9th	23,100	-	-	(1,500)	21,600
10th	2,900	-	-	(450)	2,450
12th	69,360	-	-	(1,100)	68,260
13th	34,000	-	-	(2,700)	31,300
14th	56,000	-	-	(9,800)	46,200
15th	94,600	-	-	(2,200)	92,400
16th	112,500	-	-	(1,900)	110,600
Total	393,260	-	-	(19,650)	373,610

2) Valuation amount (in millions of Korean won):

	January 1, 2015	Granted	Exercised	Forfeited	December 31, 2015
8th	₩23	₩-	₩-	₩-	₩23
9th	1,591	-	-	(103)	1,488
10th	155	-	-	(24)	131
12th	3,921	-	-	(62)	3,859
13th	2,308	-	-	(184)	2,124
14th	3,564	-	-	(624)	2,940
15th	3,613	485	-	(92)	4,006
16th	1,699	2,191	-	(35)	3,855
Total	₩16,874	₩2,676	₩-	(₩1,124)	₩18,426

The weighted-average remaining contractual period of share options is 6.89 years. Expense to be recognized in the future period amounted to ₩527 million.

21. ACCUMULATED OTHER COMPREHENSIVE INCOME:

Accumulated other comprehensive income as of December 31, 2015 and 2014, is summarized as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Gain (loss) on valuation of derivatives	₩941	₩(2,908)
Revaluation surplus	42,022	38,569
Total	₩42,963	₩35,661

22. RETAINED EARNINGS:

(1) Retained earnings as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Legal reserve	₩43,737	₩35,464
Voluntary reserve	74,999	97,666
Unappropriated retained earnings	1,571,189	1,507,967
Total	₩1,689,925	₩1,641,097

The Commercial Code of the Republic of Korea requires the Company to appropriate an amount equal to a minimum of 10% of annual cash dividends declared as a legal reserve until the reserve equals 50% of its issued share capital.

(2) Changes in retained earnings for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Beginning balance	₩1,641,097	₩1,524,909
Profit for the year	123,324	186,399
Actuarial profit (loss) recognized in retained earnings	(2,229)	3,228
Payment of dividends	(72,267)	(73,455)
Revaluation surplus	-	16
Ending balance	₩1,689,925	₩1,641,097

(3) Separate statements of appropriation of retained earnings for the years ended December 31, 2015 and 2014, are as follows (in Korean won):

	2015	2014
UNAPPROPRIATED RETAINED EARNINGS:		
Unappropriated retained earnings carried over from the prior year	₩1,450,094,702,354	₩1,328,783,124,793
Interim dividend	-	(10,459,154,000)
Net income	123,323,659,813	186,399,329,671
Actuarial (loss) income on defined benefit obligations	(2,229,208,977)	3,228,122,650
Revaluation surplus	-	15,614,800
Subtotal	1,571,189,153,190	1,507,967,037,914
TRANSFER FROM VOLUNTARY RESERVES:		
Reserve for research and human resource	23,333,000,000	22,667,000,000
APPROPRIATIONS:		
Legal reserve	9,126,715,885	8,272,589,960
Cash dividends	91,267,158,850	72,266,745,600
Reserve for research and human resource		-
Subtotal	100,393,874,735	80,539,335,560
UNAPPROPRIATED RETAINED EARNINGS TO BE CARRIED FORWARD TO SUBSEQUENT YEAR	₩1,494,128,278,455	₩1,450,094,702,354

(1) Details of dividends for the years ended December 31, 2015 and 2014, are as follows (in Korean won, except for share data and dividend amount):

	2015			2014		
	Preferred shares (old)	Preferred shares (new)	Common shares	Preferred shares (old)	Preferred shares (new)	Common shares
Face value per share	₩5,000	₩5,000	₩5,000	₩5,000	₩5,000	₩5,000
Interim dividends:						
Number of shares issued	-	-	-	4,411,074	985,685	20,885,121
Number of treasury stocks	-	-	-	(620,812)	(52,242)	(4,690,518)
Share eligible for dividends	-	-	-	3,790,262	933,443	16,194,603
Dividend rate	-	-	-	10%	10%	10%
Dividend per share	-	-	-	500	500	500
Dividend amount (in millions of Korean won)	-	-	-	1,895	467	8,097
Closing price on dividend date	-	-	-	68,060	65,740	124,300
Dividend yield ratio	-	-	-	0.73%	0.76%	0.40%
Year-end dividends:						
Number of shares issued	4,411,074	985,685	21,270,888	4,411,074	985,685	21,270,888
Number of treasury stocks	(620,812)	(52,242)	(5,977,528)	(620,812)	(52,242)	(5,401,098)
Share eligible for dividends	3,790,262	933,443	15,293,360	3,790,262	933,443	15,869,790
Dividend rate	92%	91%	91%	71%	70%	70%
Dividend per share	4,600	4,550	4,550	3,550	3,500	3,500
Dividend amount (in millions of Korean won)	17,435	4,247	69,585	13,456	3,267	55,544
Closing price on dividend date	61,300	61,175	95,050	64,075	63,200	112,000
Dividend yield ratio	7.50%	7.44%	4.79%	5.46%	5.62%	3.13%

23. REVENUES:

Details of revenues for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Sales of goods	₩1,495,267	₩1,554,228
- Manufactured products	1,342,711	1,405,139
- Merchandise	152,556	149,089
Others	378,289	441,145
- Dividend	114,334	170,247
- Others	263,955	270,898
Total	₩1,873,556	₩1,995,373

24. EXPENSES CLASSIFIED BY NATURE:

Expenses classified by nature for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Changes in inventories	₩35,278	₩(23,483)
Purchases of raw materials and goods	790,371	866,709
Employee benefits	348,575	354,660
Depreciation and amortization	57,072	55,943
Total	₩1,231,296	₩1,253,829

25. SELLING AND ADMINISTRATIVE EXPENSES:

Selling and administrative expenses for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Salaries	₩83,407	₩95,615
Bonuses	19,948	13,846
Provision for retirement and severance benefits	7,810	9,067
Share-based payment	2,505	3,714
Employee welfare	18,903	18,002
Travel	7,254	8,035
Communications	782	822
Utilities	1,523	1,510
Sales commission	20,061	17,372
Office expense	600	536
Taxes and dues	4,045	4,826
Rent	14,976	14,673
Depreciation	5,805	6,131
Repairs and maintenance	891	1,224
Entertainment	3,102	3,089
Advertising	6,149	5,058
Automobile maintenance	1,005	1,199
Packaging	2,036	2,832
Research and development	28,059	31,621
Education and training	7,328	9,616
Freight and custody	6,280	6,754
Service fees	21,462	28,988
Maintenance of office	2,878	3,051
Outsourcing fee	5,008	6,163
Sample	1,474	1,286
Bad debt expenses	77	552
Amortization	8,113	7,267
Others	1,598	1,189
Total	₩283,079	₩304,038

26. FINANCE INCOME AND EXPENSES:

Finance income and expenses for the years ended December 31, 2015 and 2014, are summarized as follows (in millions of Korean won):

	2015	2014
Finance income:		
Interest income	₩3,501	₩3,676
Dividend income	26	16
Gain on foreign currency transaction	16,736	14,158
Gain on foreign currency translation	3,433	3,219
Gain on derivative transaction	57	-
Gain on exemption of debt	351	-
Income on financial guarantee	1,418	730
Total	25,522	21,799
Finance expenses:		
Interest expenses	38,209	41,432
Loss on foreign currency transaction	13,097	14,672
Loss on foreign currency translation	7,021	4,088
Loss on derivative transactions	201	15
Loss on valuation of derivatives	21	-
Total	58,549	60,207
Net finance expenses	₩(33,027)	₩(38,408)

27. OTHER NON-OPERATING INCOME AND EXPENSES:

(1) Other non-operating income and expenses for the years ended December 31, 2015 and 2014, consist of the following (in millions of Korean won):

	2015	2014
Other non-operating income:		
Gain on disposal of long-term investment securities	₩1,393	₩ -
Gain on disposal of property, plant and equipment	1,358	292
Gain on disposal of intangible assets	-	119
Reversal of impairment losses on intangible assets	-	217
Gain on disposal of investment properties	401	-
Gain on valuation of investment properties	7,702	5,573
Others	7,966	4,647
Total	18,820	10,848
Other non-operating expenses:		
Loss on disposal of trade receivables	1,678	1,714
Impairment loss of investments in subsidiaries	11,986	4,477
Loss on disposal of property, plant and equipment	336	350
Loss on revaluation of property, plant and equipment	22	-
Loss on disposal of intangible assets	34	161
Impairment loss of intangible assets	6	-
Loss on disposal of investment properties	350	8
Loss on valuation of investment properties	109	2,408
Donations	16,674	7,735
Others	7,964	5,955
Total	39,159	22,808
Net other non-operating expenses	₩(20,339)	₩(11,960)

28. INCOME TAX EXPENSE:

(1) Components of income tax expense for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Current income tax expense	₩59,621	₩15,651
Deferred income tax	(21,291)	(5,310)
Transferred deferred income tax due to merger	-	9,170
Deferred income tax directly charged to equity	(1,619)	169
Income tax expense	₩36,711	₩19,680

(2) Changes in deferred tax assets and liabilities for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	January 1, 2015	Changes		December 31, 2015
		Income	Equity	
Accrued revenues	₩(26)	₩13	₩-	₩ (13)
Allowance for inventories	1,676	125	-	1,801
Investment securities	6,678	(834)	-	5,844
Property, plant and equipment	(45,503)	16,299	(1,102)	(30,306)
Investment properties	(18,394)	2,912	-	(15,482)
Accrued expenses	11,171	846	-	12,017
Retirement benefit obligation	7,796	(647)	712	7,861
Reserve for research and human resource	(18,811)	5,977	-	(12,834)
Others	15,073	(1,781)	(1,229)	12,063
Total	₩(40,340)	₩22,910	₩(1,619)	₩(19,049)

	January 1, 2014	Changes Income	Equity	Merger	December 31, 2014
Accrued revenues	₩(22)	₩1	₩ -	₩(5)	₩(26)
Allowance for inventories	2,160	(502)	-	18	1,676
Investment securities	6,678	-	-	-	6,678
Property, plant and equipment	(44,637)	(827)	-	(39)	(45,503)
Investment properties	(17,558)	(836)	-	-	(18,394)
Accrued expenses	13,539	(2,383)	-	15	11,171
Retirement benefit obligation	13,021	(4,194)	(1,031)	-	7,796
Reserve for research and human resource	(25,180)	6,369	-	-	(18,811)
Others	6,349	(1,657)	1,200	9,181	15,073
Total	₩(45,650)	₩(4,029)	₩169	₩9,170	₩(40,340)

(3) Temporary differences, net loss and tax credit carryforwards, which have not been recognized as deferred income tax assets and expired, unused as of December 31, 2015 and 2014, are nil.

The probability of realizing deferred tax assets depends on the Company's ability to generate taxable income in future years, economic situation and industry forecast. The Company periodically reviews these matters.

(4) Temporary differences from associated investments in subsidiaries, which are not recognized as deferred tax assets, are as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Investments in subsidiaries	₩(799,282)	₩(768,883)

Deferred income tax liabilities are not recognized because the Company is able to control the timing of the reversal of taxable temporary differences relating to subsidiaries.

(5) Tax effects directly recognized in equity as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015			December 31, 2014		
	Before tax	Deferred income tax assets (liabilities)	After tax	Before tax	Deferred income tax assets (liabilities)	After tax
Gain (loss) on valuation of derivatives	₩1,241	₩(300)	₩941	₩(3,838)	₩930	₩(2,908)
Revaluation surplus	55,437	(13,415)	42,022	50,883	(12,314)	38,569
Actuarial gain or loss	(17,839)	4,317	(13,522)	(14,898)	3,605	(11,293)
Total	₩38,839	₩(9,398)	₩29,441	₩32,147	₩(7,779)	₩24,368

(6) A reconciliation of income tax expense and accounting income before income tax expense for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015	2014
Profit before income tax expense	₩160,035	₩206,080
Income tax expense at statutory income tax rate	38,266	49,409
Adjustments:		
Non-temporary difference	(7,125)	(31,649)
Temporary difference not recognized as deferred income tax	(5,864)	3,760
Tax credits	(3,600)	(2,401)
Effect of tax rate change	15,082	-
Additional income tax and tax refund for prior periods	(48)	(438)
Others		999
Income tax expense	₩36,711	₩19,680
Effective tax rate	22.94%	9.55%

29. EARNINGS PER SHARE:

Earnings per share for the years ended December 31, 2015 and 2014, are computed as follows (in Korean won, except for share data):

(1) Basic earnings per share

1) Basic earnings per share for the years ended December 31, 2015 and 2014, are as follows:

	2015	2014
Common stock basic earnings per share	₩6,090	₩8,942
Old-type preferred stock basic earnings per share (*1)	6,140	8,992

(Note 1) The Company calculated earnings per share for old-type preferred share due to the nature of the share, which does not have preferred right on dividends and liquidation; therefore, the stock is considered as common stock, based on K-IFRS 1033 'Earnings per share.'

2) Net income available to common shares is as follows:

	2015	2014
Net income	₩123,323,659,813	₩186,399,329,671
(-)Expected dividends on new-type preferred shares	3,733,772,000	3,267,050,500
(-)Expected residual income attributable to new-type preferred shares	1,950,902,255	5,080,115,430
(-)Expected residual income attributable to old-type preferred shares	23,272,234,606	34,083,329,681
Net income available to common shares	₩94,366,750,952	₩143,968,834,060

(*1) The weighted-average number of common shares and old-type preferred shares outstanding used in basic earnings per share calculation is as follows:

3) The weighted-average number of common shares and old-type preferred shares outstanding used in the earnings per share calculation is as follows:

	Year ended December 31, 2015	
	Common shares	Old-type preferred shares
Beginning outstanding shares	15,853,290	3,790,262
Effect of share option exercised	-	-
Issuance of share capital	-	-
Acquisition of treasury stock	(357,946)	-
Weighted-average number of common shares outstanding	15,495,344	3,790,262

	Year ended December 31, 2014	
	Common shares	Old-type preferred shares
Beginning outstanding shares	16,211,860	3,790,262
Effect of share option exercised	1,835	-
Issuance of share capital	98,062	-
Acquisition of treasury stock	(212,077)	-
Weighted-average number of common shares outstanding	16,099,680	3,790,262

(2) Diluted earnings per share

1) Diluted earnings per share for the years ended December 31, 2015 and 2014, are as follows:

	2015	2014
Common stock diluted earnings per share	₩6,090	₩8,939
Old-type preferred stock diluted earnings per share	6,140	8,992

2) Diluted net income available to common shares is as follows:

	2015	2014
Controlling interest in net income	₩94,366,750,952	₩143,968,834,060
Share-based compensation cost	-	-
Diluted earnings per share	₩94,366,750,952	₩143,968,834,060

3) The weighted-average number of common shares outstanding used in the diluted earnings per share calculation is as follows:

	2015	2014
Beginning outstanding shares	15,495,344	16,099,680
Effect of share option exercised	434	5,779
Weighted-average number of common shares outstanding	15,495,778	16,105,459

4) As there are no potential common shares for old-type preferred share, diluted earnings per share for old-type preferred share are equal to basic earnings per share for old-type preferred share.

(3) Conditions for preferred shares dividends

	Face value	Number of shares issued
Old-type preferred stock (*1)	₩5,000	4,411,074
New-type preferred stock (*2)	5,000	985,685

(*1) Cash dividends available to common shares

(*2) The company should distribute 2% of face value of preferred share annually. In case the Company distributes more than 2% of face value for common share, preferred share is participated in dividend for the exceeded dividend.

30. COMMITMENTS AND CONTINGENCIES:

(1) Notes, bills and checks offered in security

The Company pledged two blank notes to Korea Housing Guarantee Co., Ltd. and Korea Defense Industry Association as collateral for long-term borrowings and performance guarantee agreements.

(2) Loan ceiling

As of December 31, 2015, loan ceilings of the Company are as follows (in thousands of foreign currency and in millions of Korean won):

Description	Financial institution	Limitation
Overdraft	Woori Bank and others	15,000
General loans	Shinhan Bank and others	468,000
Other loans	Korea Exim Bank and others	320,012
L/C payment guarantee	KDB and others	USD 67,000
Total		803,012 USD 67,000

(3) Transferred trade receivables

Outstanding trade receivables sold with recourse by the Company are in the amount of ₩2,276 million and ₩3,000 million as of December 31, 2015 and 2014, respectively. Because the Company retains some level of risks and rewards relating to trade receivables, the Company has recognized its carrying amount of it and cash receipt from transfer as short-term borrowings in separate statements of financial position (see Note 15-(2)).

(4) Litigation in progress

The Company is involved in lawsuits as a defendant with claims exposure of ₩17,212 million as of December 31, 2015. The ultimate outcome of the lawsuit cannot presently be determined.

(5) Technical contract

The Company has technical license agreements for the purpose of manufacturing specific products with Nabtesco, Horstman and others for the year ended December 31, 2015, and the Company paid ₩635 million as license fee.

(6) Certification of payment

As of December 31, 2015, guarantees provided by the Company for third parties are as follows (in thousands of foreign currency):

Provided to	Guarantees	Description
Subsidiary:		
Doosan Mottrol (Jiangyin) Co., Ltd.	USD 7,000	An on-site certification of payment
	CNY 95,000	
Doosan Electro Materials (Changshu) Co., Ltd.	USD 59,000	An on-site certification of payment
Doosan Electro-Materials Luxembourg Sarl	USD 30,000	An on-site certification of payment
Circuit Foil Luxembourg Sarl	EUR 14,500	An on-site certification of payment
Doosan Industrial Vehicle U.K	GBP 29,400	An on-site certification of payment
Doosan Industrial Vehicle Yantai Co., Ltd.	USD 10,000	An on-site certification of payment
Doosan Fuel Cell America, Inc.	USD 149,465	An on-site certification of payment
Total	USD 255,465	
	CNY 95,000	
	GBP 29,400	
	EUR 14,500	

As of December 31, 2015, received from third parties are as follows (in thousands of foreign currency and millions of Korean won):

Provider	Amount of certification of payment	Description
Seoul Guarantee Insurance	₩22,456	Performance guarantee
Korea Defense Industry Association and others	82,383	Performance guarantee
KDB and others	USD 19,236	L/C payment guarantee
	₩104,839	
Total	USD 19,236	

Meanwhile, the Company has responsibility of joint liability guarantee with Neoholdings Co., Ltd., which is a spin-off company for existing liabilities prior to spin-off.

(7) Ordinary wages

The Company may have to pay additional wages, if regular bonuses and other salaries fall under the category of ordinary wages. But, the Company sees the possibility of the likeliness of having to pay related amounts to be low, based on the Supreme Court decision.

31. PLEDGED ASSETS:

The Company pledged certain assets as collateral for its financial liabilities as of December 31, 2014, which are as follows (in thousands of foreign currency and millions of Korean won):

Related account	Asset	Institution	Financial debt	Collateralized value
Property, plant and equipment	Chang-won employee apartment	Kookmin Bank	₩135	₩605
	Jeung-pyeong, Ik-san plant and Chang-won plant and others	KDB	85,000	217,490
			USD 25,000	USD 29,734
	Shin-gal plant	Woori Bank	USD 1,142	-
			₩27,000	₩5,000
	Incheon plant	Shinhan Bank	40,000	40,000
Financial lease asset	Machinery and equipment	HP Financial Service and others	17,929	11,980

32. RELATED-PARTY TRANSACTIONS:

(1) Related party

Relationship with the Company	Company name
Subsidiaries	DHC and subsidiaries
	Doosan Infracore Co., Ltd. ("DI") and subsidiaries
	Doosan Engineering & Construction Co., Ltd. ("DEC") and subsidiaries
	Doosan Engine Co., Ltd. ("DE") and subsidiaries
	Oricom
	Hancomm
	Doosan Advertisement (China) Co., Ltd.
	Doosan tower
	Doosan Feed & Livestock Co., Ltd.
	Doosan Bears Inc.
	DIP
	Doosan DST Co., Ltd.
	DRA
	Doosan Real Estate ABS (1st)
	Doosan Real Estate ABS (2nd)
	Doosan Hongkong Ltd.
	Doosan Electro-Materials (SHEN ZHEN) Limited
	Doosan Electro-Materials Singapore Pte Ltd.
	Doosan Shanghai Chemical Limited
	Doosan Information and Communications America, LLC
	Doosan Information and Communications China Co., Ltd.
	Doosan Information and Communications Europe Ltd.
	Doosan Mottrol (Jiangyin) Co., Ltd.
	Doosan Electro-Materials (Changshu) Co., Ltd.
	Doosan Electro-Materials America, LLC
	Doosan Electro-Materials Luxembourg Sarl
	Circuit Foil Luxembourg Sarl
	Doosan Industrial Vehicle Europe N.A.
	Doosan Industrial Vehicle U.K. Ltd.
	Doosan Logistics Europe GmbH
	Doosan Industrial Vehicle America Corp.
	Doosan Industrial Vehicle Yantai Co., Ltd.
	Doosan Fuel Cell America, Inc.
	and others
Associates	Guang Dong Xingpu Steel Center
	Doosan Eco Biznet
	Prestoliteasia
Joint venture	Sichuan Kelun-Doosan Biotechnology Company Limited
Other related parties	Doosan Credit Union
	Yeongang Foundation
	Chung-Ang University
	Neo Trans
	Doosan Infracore Xinjiang Machinery Co., Ltd.
	and others

(2) Significant transactions for the years ended December 31, 2015 and 2014, between the Company and related parties are as follows (in millions of Korean won):

	2015					
	Sales	Sales - other	Disposal of investment properties and others	Purchase	Purchases - others	Purchase of investment properties and others
Subsidiaries:						
DHC and subsidiaries	₩117,672	₩1,344	₩78,015	₩-	₩785	₩-
DI and subsidiaries	163,208	513	29,763	29,894	5,811	-
DEC and subsidiaries	25,167	331	4,961	-	7,872	16,566
DE and subsidiaries	11,406	-	-	-	2,921	-
DIV	171,887	476	-	29,895	486	-
Others	230,692	1,185	-	13,175	12,757	-
Subtotal	720,032	3,848	112,739	72,964	30,632	16,566
Associates	374	-	-	3,399	74	-
Joint venture	988	-	-	-	-	-
Other related parties	11,274	-	-	39	17,591	-
Total	₩732,668	₩3,848	₩112,739	₩76,402	₩48,297	₩16,566

	2014			
	Sales	Sales - other	Purchase	Purchases - others
Subsidiaries:				
DHC and subsidiaries	₩122,497	₩-	₩-	₩520
DI and subsidiaries	211,292	-	33,762	5,927
DEC and subsidiaries	25,968	192	-	5,978
DE and subsidiaries	10,471	-	-	2,819
DIV	164,384	190	32,059	724
Others	258,890	2,147	10,952	12,036
Subtotal	793,502	2,529	76,773	28,004
Associates	20	-	38	55
Joint venture	931	-	-	-
Other related parties	12,320	-	1,692	8,312
Total	₩806,773	₩2,529	₩78,503	₩36,371

(3) As of December 31, 2015 and 2014, significant balances related to the transactions between the Company and related parties are as follows (in millions of Korean won):

	December 31, 2015				December 31, 2014			
	Trade receivables	Other receivables	Trade payables	Other payables	Trade receivables	Other receivables	Trade payables	Other payables
Subsidiaries:								
DHC and subsidiaries	₩14,977	₩54,372	₩56	₩166	₩18,816	₩1,199	₩132	₩414
DI and subsidiaries	18,484	22,109	3,538	641	31,052	1,595	8,937	1,059
DEC and subsidiaries	20,418	11,629	899	2,216	16,630	8,743	706	96
DE and subsidiaries	896	1,690	-	-	1,867	1,563	-	12
DIV	58,074	305	6,723	284	59,734	197	4,294	528
Others	65,507	5,400	11,159	7,786	55,556	5,546	10,417	7,065
Subtotal	178,356	95,505	22,375	11,093	183,655	18,843	24,486	9,174
Associates	-	-	181	-	-	-	-	17
Joint venture	-	586	-	-	-	-	-	-
Other related parties	1,081	1,862	-	614	296	1,686	-	197
Total	₩179,437	₩97,953	₩22,556	₩11,707	₩183,951	₩20,529	₩24,486	₩9,388

(4) Fund and equity transactions for the years ended December 31, 2015 and 2014, between the Company and related parties are as follows (in millions of Korean won):

	Transaction	2015	2014
Subsidiaries:			
Doosan Bears	Capital expansion	-	10,000
Doosan Dong-A Co., Ltd. (*3)	Disposal of share	-	25,000
Doosan Information and Communications Europe Ltd.	Investment in capital as of establishment	-	4,870
Doosan Electro-Materials Luxembourg Sarl	Investment in capital as of establishment	-	25,630
Doosan Fuel Cell America, Inc.	Investment in capital as of establishment	-	53,250
Treasury stock trust	Investment	60,000	60,000
Treasury stock trust	Recovery	(60,000)	(30,000)

(*1) In 2014, the Company disposed the investment of Doosan Dong-A Co., Ltd. for ₩25,000 million.

(*2) Transferred to treasury stock due to the maturity of trust.

(5) The Company provided guarantee to related parties as of December 31, 2015 (see Note 30-(6)).

(6) The Company defines key management personnel as registered officer and non-registered officer (including outside director) who have the authority and responsibility for planning, operation and control and are in charge of business or division unit. Compensation to key management personnel of the Company for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015	2014
Short-term employee benefits	₩38,456	₩35,959
Severance benefits	2,369	3,631
Share-based payments	2,549	3,853
Total	₩43,374	₩43,443

33. SEPARATE STATEMENTS OF CASH FLOWS:

(1) The adjustments and changes in operating assets and liabilities in the separate statements of cash flows for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Adjustments:		
Expenses not involving cash payments and others:		
Interest expense	₩38,209	₩41,432
Income tax expense	36,711	19,680
Foreign currency translation loss	7,021	4,088
Loss on valuation of derivatives	21	-
Loss on disposal of trade receivables	1,678	1,714
Loss on impairment of investment in subsidiary	11,986	4,477
Depreciation	45,742	46,598
Amortization	11,334	9,345
Loss on disposal of property, plant and equipment	336	350
Loss on revaluation of property, plant and equipment	22	-
Loss on disposal of intangible assets	34	161
Impairment of intangible assets	6	-
Loss on disposal of investment properties	350	8
Losses on valuation of investment properties	109	2,408
Severance indemnities	22,174	24,697
Bad debt expense	77	552
Other bad debt expenses	4	-
Contribution to provision for product warranties	929	9,666
Losses on valuation of inventories	519	-
Share-based payment	2,549	3,853
Others	-	11
Subtotal	179,811	169,040
Income not involving cash receipts and others:		
Interest income	3,501	3,676
Dividend income	114,360	170,263
Foreign currency translation gain	3,433	3,219
Gains from liabilities exempted	351	-
Gain on disposal of long-term investment securities	1,393	-

Gain on disposal of property, plant and equipment	1,358	292
Gain on revaluation of property, plant and equipment	37	-
Gain on disposal of intangible asset	-	119
Reversal of impairment losses on intangible assets	-	217
Gain on disposal of investment properties	401	-
Gain on valuation of investment properties	7,702	5,573
Recovery of impairment of inventory	-	2,076
Guarantee profit on financial instruments	1,418	730
Others	4,501	-
Subtotal	(138,455)	(186,165)
Total	₩41,356	₩(17,125)

	2015	2014
Changes in operating assets and liabilities:		
Decrease (increase) in trade receivables	₩26,450	₩(18,822)
Decrease (increase) in other receivables	2,177	(2,638)
Decrease (increase) in inventories	34,760	(21,408)
Increase in other current assets	(3,600)	(4,847)
Increase in long-term other receivables	-	(10)
Decrease in other non-current assets	488	140
Increase (decrease) in trade payables	(25,955)	55,520
Decrease in other payables	(10,814)	(1,200)
Decrease in provisions	(1,647)	(11,480)
Increase (decrease) in other current liabilities	(609)	7,148
Increase (decrease) in long-term other payables	4,439	(254)
Payment of severance benefits	(8,510)	(14,678)
Accrued severance benefits transferred from affiliated companies	1,938	304
Increase in plan assets	(19,061)	(28,767)
Total	₩56	₩(40,992)

(2) Significant non-cash transactions for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Reclassification of investments in subsidiaries to treasury stock	₩59,961	₩29,654
Non-trade receivables for disposal of investment properties	77,018	-
Reclassification of construction in progress to property, plant and equipment and others	10,052	13,022
Reclassification of bonds	160,000	119,890
Reclassification of long-term debts	92,683	105,285
Total	₩399,714	₩267,851

34. BUSINESS COMBINATIONS:

(1) The business combinations for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

Details	2014 Fuelcellpower Co., Ltd.
Object	Finding new opportunities for growth
Principal activity	Manufacturing and sales of fuel cell
Date of acquisition	2014.9.30
Shares acquired	By issuance of new stocks
Purchase price (*1)	₩19,975
Accounting method	Acquisition

(*1) Fair value of merger consideration

2014 Fuelcellpower Co., Ltd.
Fair value of issued stocks of the 384,867 (including the 208,092 treasury stocks obtained by claim of appraisal right) new shares of the transferred corporation (closing price of ₩113,000 on date of merger)

(2) Fair values of assets and liabilities at acquisition date from business combinations are as follows (in millions of Korean won):

	2014
	Fuelcellpower Co., Ltd.
Fair value of assets acquired:	
Current assets	₩14,087
Non-current assets	7,423
Subtotal	21,510
Fair value of liabilities acquired:	
Current liabilities	30,311
Non-current liabilities	1,512
Subtotal	31,823
Fair value of net assets acquired	₩(10,313)

(3) Investment balance in business combinations is as follows (in millions of Korean won):

	2014
	Fuelcellpower Co., Ltd.
Purchase price	₩19,975
Fair value of the identifiable net assets acquired	(10,313)
Goodwill	₩30,288
Capital surplus	-

(4) Net cash flows in business combinations for the year ended December 31, 2015, are as follows (in millions of Korean won):

	2014
	Fuelcellpower Co., Ltd.
Consideration paid-in cash	₩ -
Acquisition of cash and cash equivalents	779
Total	₩779

(5) Details of income in business combinations after acquisition date are as follows (in millions of Korean won):

	2014
	Fuelcellpower Co., Ltd.
Sales	₩8,208
Net income	(162)

Meanwhile, the revenues and net income contributed by Fuelcellpower Co., Ltd. prior to the merger transaction date, which are excluded in the income statement, amount to ₩2,511 million and ₩899 million, respectively.

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Internal Accounting Control System ("IACS") Review Report

English Translation of a Report Originally Issued in Korean on March 17, 2016

To the Representative Director of
Doosan Corporation:

We have reviewed the accompanying Report on the Management's Assessment of IACS (the "Management's Report") of Doosan Corporation (the "Company") as of December 31, 2015. The Management's Report and the design and operation of IACS are the responsibilities of the Company's management. Our responsibility is to review the Management's Report and issue a review report, based on our procedures. The Company's management stated in the accompanying Management's Report that "based on the assessment of the IACS as of December 31, 2015, the Company's IACS has been appropriately designed and is operating effectively as of December 31, 2015, in all material respects, in accordance with the IACS framework established by the Korea Listed Companies Association."

We conducted our review in accordance with the IACS Review Standards established by the Korean Institute of Certified Public Accountants. Those standards require that we plan and perform a review, objective of which is to obtain a lower level of assurance than an audit of the Management's Report, in all material respects. A review includes obtaining an understanding of a company's IACS and making inquiries regarding the Management's Report and, when deemed necessary, performing a limited inspection of underlying documents and other limited procedures.

The Company's IACS represents internal accounting policies and a system to manage and operate such policies to provide reasonable assurance regarding the reliability of financial statements prepared, in accordance with Korean International Financial Reporting Standards, for the purpose of preparing and disclosing reliable accounting information. Because of its inherent limitations, IACS may not prevent or detect a material misstatement of the financial statements. Also, projections of any evaluation of effectiveness of IACS to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Deloitte.

Based on our review, nothing has come to our attention that causes us to believe that the Management's Report referred to above is not fairly stated, in all material respects, in accordance with the IACS Framework established by the Korea Listed Companies Association.

Our review is based on the Company's IACS as of December 31, 2015, and we did not review its IACS subsequent to December 31, 2015. This report has been prepared pursuant to the Acts on External Audit for Stock Companies in the Republic of Korea and may not be appropriate for other purposes or for other users.

Deloitte Anjin LLC

March 17, 2016