

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES

Consolidated Financial Statements

December 31, 2017

(With Independent Auditors' Report Thereon)

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Independent Auditors' Report

Based on a report originally issued in Korean

The Board of Directors and Shareholders
Hanwha Chemical Corporation

We have audited the accompanying consolidated financial statements of Hanwha Chemical Corporation (the "Company") and its subsidiaries (the "Group"), expressed in Won, which comprise the consolidated statement of financial position as of December 31, 2017, the consolidated statement of comprehensive income, changes in equity and cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Consolidated Financial Statements

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

Auditors' Responsibility

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

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

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

Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as of December 31, 2017 and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with Korean International Financial Reporting Standards.



Other Matters

The consolidated financial statements of the Group as of December 31, 2016, were audited by other auditors, whose report thereon dated March 16, 2017, expressed an unqualified opinion.

The procedures and practices utilized in the Republic of Korea to audit such consolidated financial statements may differ from those generally accepted and applied in other countries.

KPMG Samjong Accounting Corp.

Seoul, Korea
March 17, 2018

This report is effective as of March 17, 2018, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that the above audit report has not been updated to reflect the impact of such subsequent events or circumstances, if any.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Consolidated Statements of Financial Position
As of December 31, 2017 and 2016

<i>In won</i>	Note	December 31, 2017	December 31, 2016
Assets			
Current assets:			
Cash and cash equivalents	5,6,8	₩ 804,983,081,320	1,012,313,392,800
Other financial assets	5,6,10	370,508,335,591	248,706,298,390
Trade receivables and other receivables	5,6,7,9,37	1,706,780,802,682	1,561,381,114,010
Other current assets	11	186,578,903,026	158,917,244,880
Inventories	12	1,143,758,174,436	1,420,646,719,394
Current income tax assets		7,724,630,179	19,261,162,486
Non-current assets held for sale	18	2,133,140,038	102,643,332,657
		<u>4,222,467,067,272</u>	<u>4,523,869,264,617</u>
Non-current assets:			
Available-for-sale financial assets	5,6,13	240,996,854,973	228,523,417,806
Other financial assets	5,6,10,37	63,654,877,410	115,721,738,100
Long-term trade receivables and other receivables	5,6,9	11,540,802,420	5,852,035,754
Investments in associates and joint ventures	14,37	2,682,319,452,285	2,284,495,196,831
Investment property	15	349,947,326,890	397,568,949,417
Property, plant and equipment	16	5,588,231,454,920	5,760,968,279,670
Intangible assets	17	422,049,606,582	426,200,340,285
Other non-current assets	11	26,364,928,595	14,652,706,736
Deferred income tax assets	34	41,915,528,393	60,061,200,087
		<u>9,427,020,832,468</u>	<u>9,294,043,864,686</u>
Total assets		<u>₩ 13,649,487,899,740</u>	<u>13,817,913,129,303</u>

See accompanying notes to the consolidated financial statements.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Consolidated Statements of Financial Position, Continued
As of December 31, 2017 and 2016

<i>In won</i>	Note	December 31, 2017	December 31, 2016
Liabilities			
Current liabilities:			
Trade payables and other payables	4,5,6,19,37	₩ 1,631,912,989,217	1,758,119,346,199
Short-term borrowings	4,5,6,7,20,37	2,641,415,544,664	2,254,968,271,540
Other financial liabilities	4,5,6,10,21	154,756,644,168	152,292,183,040
Provisions	24	49,718,075,735	71,039,304,245
Other current liabilities	22	329,059,425,416	612,467,765,013
Current income tax liabilities		87,327,541,511	114,095,264,206
		<u>4,894,190,220,711</u>	<u>4,962,982,134,243</u>
Non-current liabilities:			
Long-term trade payables and other payables	4,5,6,19	23,136,851,237	46,144,007,092
Long-term borrowings	4,5,6,20	1,775,961,515,451	2,574,625,893,111
Other financial liabilities	4,5,6,10,21	45,092,188,413	22,695,919,236
Net defined benefit liabilities	23	304,696,117,972	393,484,940,783
Long-term employee benefits		15,726,451,910	15,880,880,424
Provisions	24	31,690,006,963	33,523,641,871
Other non-current liabilities	22	1,140,218	7,683,639
Deferred tax liabilities	34	371,520,244,487	300,241,319,975
		<u>2,567,824,516,651</u>	<u>3,386,604,286,131</u>
Total liabilities		<u>7,462,014,737,362</u>	<u>8,349,586,420,374</u>
Equity			
Capital stock	25	829,665,480,000	829,665,480,000
Capital surplus	25	828,953,856,912	828,447,138,477
Capital adjustments	26	(3,180,842,934)	(3,196,563,656)
Accumulated other comprehensive income	27	(5,005,499,799)	43,624,934,648
Retained earnings	28	4,364,715,483,645	3,586,395,957,168
Equity attributable to owner of the Company		<u>6,015,148,477,824</u>	<u>5,284,936,946,637</u>
Non-controlling interests	41	172,324,684,554	183,389,762,292
Total equity		<u>6,187,473,162,378</u>	<u>5,468,326,708,929</u>
Total liabilities and equity		<u>₩ 13,649,487,899,740</u>	<u>13,817,913,129,303</u>

See accompanying notes to the consolidated financial statements.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Consolidated Statements of Comprehensive Income
For the years ended December 31, 2017 and 2016

In won

	Note	2017	2016
Revenue	37	₩ 9,341,813,226,373	9,258,832,683,954
Cost of sales	31,37	7,386,273,362,233	7,211,218,409,715
Gross profit		<u>1,955,539,864,140</u>	<u>2,047,614,274,239</u>
Selling and administrative expenses	30,31	1,199,128,873,623	1,268,396,183,664
Operating income		<u>756,410,990,517</u>	<u>779,218,090,575</u>
Other non-operating income	6,32	484,366,379,060	443,233,894,019
Other non-operating expenses	6,32	(636,244,071,504)	(608,423,304,979)
Financial income	6,33	17,055,963,234	22,321,804,072
Financial expenses	6,33	(148,823,554,720)	(173,291,081,014)
Share of profit of associates and joint ventures	14	593,087,179,674	423,322,323,162
Non-operating income		<u>309,441,895,744</u>	<u>107,163,635,260</u>
Income before income tax expense		<u>1,065,852,886,261</u>	<u>886,381,725,835</u>
Income tax expenses	34	231,318,707,138	115,438,050,287
Net income		<u>834,534,179,123</u>	<u>770,943,675,548</u>
Other comprehensive Income (loss)			
Items that are or may be reclassified to profit or loss:			
Gain (loss) on valuation of available-for-sale financial assets	6	17,252,132,866	(8,556,402,176)
Share of other comprehensive loss of associates and joint ventures		(12,969,823,004)	(11,091,071,939)
Gain on valuation of cash flow hedges	6	207,747,342	723,946,541
Currency translation adjustments		(59,053,846,881)	(52,758,351,859)
Items that will not be reclassified to profit or loss:			
Remeasurement of net defined benefit liabilities		9,636,563,395	(29,265,406,820)
Share of remeasurements of net defined benefit liabilities of associates and joint ventures		<u>1,776,579,632</u>	<u>(2,017,966,342)</u>
Total comprehensive income		<u>₩ 791,383,532,473</u>	<u>667,978,422,953</u>
Net income attributable to:			
Owners of the Company		₩ 824,697,350,081	755,256,458,806
Non-controlling interests		9,836,829,042	15,687,216,742
Total comprehensive income attributable to:			
Owners of the Company		787,227,224,753	663,019,040,451
Non-controlling interests		4,156,307,720	4,959,382,502
Earnings per share attributable to the owners of the Company:	35		
Basic and diluted earnings per common share		5,021	4,604
Basic and diluted earnings per preferred share		5,071	4,648

See accompanying notes to the consolidated financial statements.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Consolidated Statements of Changes in Equity
For the years ended December 31, 2017 and 2016

In won

		Capital stock	Consolidated capital surplus	Consolidated capital adjustment	Consolidated accumulated other comprehensive income (loss)	Consolidated retained earnings	Non-controlling interests	Total
Balance at January 1, 2016	₩	815,316,540,000	829,497,470,364	(2,959,148,816)	104,669,832,306	2,886,852,150,585	297,781,543,773	4,931,158,388,212
Total comprehensive income (loss):								
Net income		-	-	-	-	755,256,458,806	15,687,216,742	770,943,675,548
Other comprehensive income (loss)								
Items that are or may be reclassified to profit or loss:								
Loss on valuation of available-for-sale financial assets		-	-	-	(5,613,401,013)	-	(2,943,001,163)	(8,556,402,176)
Share of other comprehensive loss of associates and joint ventures		-	-	-	(10,988,030,638)	-	(103,041,301)	(11,091,071,939)
Gain (loss) on valuation of cash flow hedges		-	-	-	723,946,541	-	-	723,946,541
Currency translation adjustments		-	-	-	(45,167,412,548)	-	(7,590,939,311)	(52,758,351,859)
Items that will not be reclassified to profit or loss:								
Remeasurement of net defined benefit liabilities		-	-	-	-	(29,191,242,464)	(74,164,356)	(29,265,406,820)
Share of remeasurements of net defined benefit liabilities of associates and joint ventures		-	-	-	-	(2,001,278,233)	(16,688,109)	(2,017,966,342)
Transactions with shareholders:								
Increase in paid-in capital		14,348,940,000	15,569,486,869	-	-	-	-	29,918,426,869
Dividends paid		-	-	-	-	(24,515,683,050)	(4,693,231,000)	(29,208,914,050)
Changes in ownership interests in subsidiaries that do not result in a loss of control:								
Changes in ownership interests in subsidiaries		-	(16,608,249,448)	-	-	-	(114,650,686,632)	(131,258,936,080)
Others		-	(11,569,308)	(237,414,840)	-	(4,448,476)	(7,246,351)	(260,678,975)
Balance at December 31, 2016	₩	<u>829,665,480,000</u>	<u>828,447,138,477</u>	<u>(3,196,563,656)</u>	<u>43,624,934,648</u>	<u>3,586,395,957,168</u>	<u>183,389,762,292</u>	<u>5,468,326,708,929</u>

See accompanying notes to the consolidated financial statements.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Consolidated Statements of Changes in Equity, Continued
For the years ended December 31, 2017 and 2016

In won

		Capital stock	Consolidated capital surplus	Consolidated capital adjustment	Consolidated accumulated other comprehensive income (loss)	Consolidated retained earnings	Non-controlling interests	Total
Balance at January 1, 2017	₩	829,665,480,000	828,447,138,477	(3,196,563,656)	43,624,934,648	3,586,395,957,168	183,389,762,292	5,468,326,708,929
Total comprehensive income (loss):								
Net income		-	-	-	-	824,697,350,081	9,836,829,042	834,534,179,123
Other comprehensive income (loss)								
Items that are or may be reclassified to profit or loss:								
Gain on valuation of available-for- sale financial assets		-	-	-	15,951,312,056	-	1,300,820,810	17,252,132,866
Share of other comprehensive income (loss) of associates and joint ventures		-	-	-	(13,094,435,597)	-	124,612,593	(12,969,823,004)
Gain (loss) on valuation of cash flow hedges		-	-	-	207,753,045	-	(5,703)	207,747,342
Currency translation adjustments		-	-	-	(51,695,063,951)	-	(7,358,782,930)	(59,053,846,881)
Items that will not be reclassified to profit or loss:								
Remeasurement of net defined benefit liabilities		-	-	-	-	9,405,984,987	230,578,408	9,636,563,395
Share of remeasurements of net defined benefit liabilities of associates and joint ventures		-	-	-	-	1,754,324,132	22,255,500	1,776,579,632
Transactions with shareholders:								
Dividends paid		-	-	-	-	(57,538,132,700)	(10,480,000,000)	(68,018,132,700)
Changes in scope of consolidation								
Proceeds from disposal of subsidiaries		-	-	-	-	-	(452,818,108)	(452,818,108)
Changes in ownership interests in subsidiaries that do not result in a loss of control:								
Changes in ownership interests in subsidiaries		-	(12,529,548)	-	-	-	(4,288,567,350)	(4,301,096,898)
Others		-	519,247,983	15,720,722	-	(23)	-	534,968,682
Balance at December 31, 2017	₩	<u>829,665,480,000</u>	<u>828,953,856,912</u>	<u>(3,180,842,934)</u>	<u>(5,005,499,799)</u>	<u>4,364,715,483,645</u>	<u>172,324,684,554</u>	<u>6,187,473,162,378</u>

See accompanying notes to the consolidated financial statements.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Consolidated Statements of Cash Flows
For the years ended December 31, 2017 and 2016

In won

	Note	2017	2016
Cash flows from operating activities:			
Cash generated from operating activities	38	₩ 1,068,111,015,187	1,189,190,757,508
Income taxes paid		(151,879,151,920)	(38,187,146,118)
Net cash generated by operating activities		916,231,863,267	1,151,003,611,390
Cash flows from investing activities:			
Interest received		24,579,651,575	23,385,620,166
Dividends received		208,245,064,975	140,798,394,647
Proceeds from disposal of available-for-sale financial assets		18,510,811,561	262,092,692
Proceeds from disposal of other financial assets		433,109,787,470	553,402,962,009
Proceeds from disposal of investment in associates and joint ventures		2,272,494,915	45,717,452,524
Disposal of investment in subsidiaries		-	(1,814,556,457)
Receipts of Government grants		1,600,000	-
Proceeds from disposal of investment property		1,925,905,641	4,388,569,257
Proceeds from disposal of plant, property and equipment		24,380,712,404	201,344,828,822
Proceeds from disposal of intangible assets		28,086,424,542	3,228,583,405
Proceeds from disposal of assets classified as held for sale		80,138,574,000	-
Acquisition of available-for-sale financial assets		(10,282,946,000)	-
Acquisition of other financial assets		(531,577,263,313)	(441,286,102,879)
Acquisition of investment in associates and joint ventures		(177,203,417,254)	(252,578,062,046)
Acquisition of investment property		(40,541,163)	(3,627,086,716)
Acquisition of property, plant and equipment		(492,370,108,930)	(614,754,964,764)
Acquisition of intangible assets		(12,069,637,291)	(16,471,665,694)
Acquisition of investment in subsidiaries		(892,090,930)	(102,092,410,386)
Net cash used in investing activities		(403,184,977,798)	(460,096,345,420)
Cash flows from financing activities:			
Proceeds from borrowings		1,795,980,797,510	2,063,542,394,626
Proceeds from other financial liabilities		42,000,000	548,025,648
Increase in paid-in capital		-	(242,309,890)
Changes in non-controlling interests		(10,853,327,679)	(29,074,925,235)
Repayment of borrowings		(2,249,383,916,904)	(2,143,944,721,244)
Decrease in other financial liabilities		(185,985,078)	(154,846,779)
Payment of interest		(163,701,983,494)	(184,388,883,510)
Payment of dividends		(57,538,132,700)	(24,515,683,050)
Net cash used in financing activities		(685,640,548,345)	(318,230,949,434)
Net increase (decrease) in cash and cash equivalents		(172,593,662,876)	372,676,316,536
Cash and cash equivalents at January 1		1,012,313,392,800	644,785,721,050
Effects of exchange rate changes on the balance of cash held in foreign currencies		(34,736,648,604)	(5,148,644,786)
Cash and cash equivalents at December 31		₩ 804,983,081,320	1,012,313,392,800

See accompanying notes to the consolidated financial statements

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES

Notes to the Consolidated Financial Statements

For the years ended December 31, 2017 and 2016

1. General

Hanwha Chemical Corporation (the "Company") is headquartered in Janggyo-dong, Jung-gu, Seoul and its manufacturing facilities are located in Ulsan and the petrochemical complex in Yeo-su, Jeolla Namdo, Republic of Korea. The consolidated financial statements for the year ended December 31, 2017 represent ownership interests of the Company and its subsidiaries (the "Group") in associates and joint ventures.

The Company listed its stocks on the Korea Stock Exchange on June 19, 1974. Major shareholders as of December 31, 2017 are composed of Hanwha Corporation with ownership of 36.51%(except treasury stocks) and others.

The Company's Global Depositary Receipts (GDR) are listed on the Singapore Stock Exchange (Singapore Exchange Securities Trading Limited) and listed 21,656,060 shares on April 30, 2014.

(1) Details of subsidiaries

The Group's consolidated subsidiaries as of December 31, 2017 and 2016 are as follows:

Company	Locations	Closing month	Main business	Percentage of ownership	
				December 31, 2017	December 31, 2016
Gyeonggi Yongin Techno Valley Co., Ltd.	Korea	December	Real estate	75.00%	75.00%
Gyeonggi Hwasung Bio Valley Co., Ltd.	Korea	December	Real estate	51.00%	51.00%
Gimhae Techno Valley Co., Ltd.	Korea	December	Real estate	80.00%	80.00%
SEOSAN TECHNO VALLEY	Korea	December	Real estate development and sales	65.00%	65.00%
Asan Techno Valley(*1)	Korea	December	Real estate	100.00%	65.00%
Hanwha Galleria Co., Ltd.	Korea	December	Department store and wholesale, retail	100.00%	100.00%
Hanwha Galleria Timeworld Co., Ltd.	Korea	December	Department store	70.65%	70.65%
Hanwha City Development Co., Ltd.	Korea	December	Real estate	100.00%	100.00%
Hanwha B&B Co., Ltd.	Korea	December	Restaurants business	100.00%	100.00%
NHL Development Co.Ltd	Korea	December	Shipping service	100.00%	100.00%
Hanwha Advanced Materials Corporation	Korea	December	Synthetic resin	100.00%	100.00%
Hanwha Compound Corporation(*2)	Korea	December	Manufacture and sale of packaging material	100.00%	99.99%
Hanwha Chemical Overseas Holdings, Co., Ltd.	Korea	December	Holding company	100.00%	100.00%
Hanwha Q CELLS Corp.	Korea	December	Photovoltaic business	100.00%	100.00%
Hanwha Chemical Trading (Shanghai) Co., Ltd.	China	December	Trading business	100.00%	100.00%
Avenir el Divisadero SpA	Chile	December	EPC business	100.00%	100.00%
BOURTON RENEWABLES LIMITED	England	December	EPC business	-	100.00%
Chandler LLC	U.S.A	December	Real estate development	-	90.00%
Fotovoltaica De Los Andes SpA	Chile	December	Photovoltaic business	100.00%	100.00%
Fotovoltaica Del Desierto SPA	Chile	December	Photovoltaic business	100.00%	100.00%
Fotovoltaica Sol del Norte SpA	Chile	December	Photovoltaic business	100.00%	100.00%
Hale Ka Lae, LLC	U.S.A	December	Real estate development	100.00%	100.00%

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

1. General, Continued

(1) Details of subsidiaries, continued

Company	Locations	Closing month	Main business	Percentage of ownership	
				December 31, 2017	December 31, 2016
Hanwha Advanced Materials America LLC	U.S.A	December	Manufacture of car parts	100.00%	100.00%
Hanwha Advanced Materials Beijing Co., Ltd.	China	December	Manufacture of car parts	100.00%	100.00%
Hanwha Advanced Materials Chongqing Co., Ltd.	China	December	Manufacture of car parts	100.00%	100.00%
Hanwha Advanced Materials Europe, s.r.o.	Czech	December	Manufacture of car parts	100.00%	100.00%
Hanwha Advanced Materials Germany GmbH	Germany	December	Manufacture of car parts	100.00%	100.00%
Hanwha Advanced Materials Holdings USA Inc.	U.S.A	December	Holding company	100.00%	100.00%
Hanwha Advanced Materials Holdings USA LLC	U.S.A	December	Holding company	100.00%	100.00%
Hanwha Advanced Materials Mexico S. De R.L. De C.V.	Mexico	December	Manufacture of car parts	100.00%	100.00%
Hanwha Advanced Materials Shanghai Co., Ltd.	China	December	Manufacture of car parts	100.00%	100.00%
Hanwha America Development Inc.	U.S.A	December	Holding company	100.00%	100.00%
Hanwha America Development LLC	U.S.A	December	Real estate development	100.00%	100.00%
Hanwha AZDEL, Inc.	U.S.A	December	Manufacture of car parts	100.00%	100.00%
Hanwha Chandler LLC	U.S.A	December	Real estate development	-	100.00%
Hanwha Chemical (Ningbo) Co., Ltd.	China	December	Manufacture of compound	100.00%	100.00%
Hanwha Chemical (Thailand) Co., Ltd.	Thailand	December	Manufacture of compound	99.99%	99.99%
HANWHA CHEMICAL INDIA PRIVATE LIMITED	India	March	Trading business	99.99%	99.99%
Hanwha Chemical Malaysia Sdn. Bhd.	Malaysia	December	Trading business	100.00%	100.00%
Hanwha Development Services LLC	U.S.A	December	Real estate development	100.00%	100.00%
Hanwha Hawaii LLC	U.S.A	December	Real estate development	100.00%	100.00%
Hanwha Holdings(USA), Inc.	U.S.A	December	Holding company	80.00%	80.00%
Hanwha International Corp.	U.S.A	December	Holding company	100.00%	100.00%
Hanwha International LLC	U.S.A	December	Trading business	100.00%	100.00%
Hanwha Machinery Americas, Inc.	U.S.A	December	Sales machinery	100.00%	100.00%
Hanwha Parcel O LLC	U.S.A	December	Real estate development	100.00%	100.00%
Hanwha Property USA LLC	U.S.A	December	Real estate development and management	100.00%	100.00%
Hanwha PVPLUS LLC	U.S.A	December	Asset securitization	100.00%	100.00%
Hanwha Q CELLS America Inc.	U.S.A	December	Photovoltaic business	100.00%	100.00%
Hanwha Q CELLS America Project Holdings	U.S.A	December	Photovoltaic business	100.00%	100.00%
Hanwha Q CELLS Australia Pty Ltd.	Australia	December	Photovoltaic business	100.00%	100.00%

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

1. General, Continued

(1) Details of subsidiaries, continued

Company	Locations	Closing month	Main business	Percentage of ownership	
				December 31, 2017	December 31, 2016
Hanwha Q CELLS Canada, Corp.	Canada	December	Photovoltaic business	100.00%	100.00%
Hanwha Q CELLS Chile SpA	Chile	December	Photovoltaic business	100.00%	100.00%
Hanwha Q CELLS Co., Ltd.(*3)	England	December	Photovoltaic business	93.94%	93.98%
Hanwha Q CELLS (Qidong) Co., Ltd.	China	December	Manufacture of silicon ingot	100.00%	100.00%
Hanwha Q CELLS France SAS	France	December	Photovoltaic business	100.00%	100.00%
Hanwha Q CELLS Gmbh	Germany	December	Photovoltaic business	100.00%	100.00%
Hanwha Q CELLS Hong Kong Limited	Hong Kong	December	Investment and procurement	100.00%	100.00%
Hanwha Q CELLS Investment Co., Ltd.	England	December	Holding company	100.00%	100.00%
Hanwha Q CELLS Malaysia Sdn. Bhd.	Malaysia	December	Photovoltaic business	100.00%	100.00%
Hanwha Q CELLS (Nantong) Co., Ltd.	China	December	Photovoltaic business	100.00%	100.00%
Hanwha Q CELLS Peru S.A.C	Peru	December	Photovoltaic business	99.99%	99.99%
HANWHA Q CELLS SOLAR POWER SDN. BHD.	Malaysia	December	Photovoltaic business	100.00%	100.00%
Hanwha Q CELLS Technology Co., Ltd.	China	December	Manufacture of silicon ingot	100.00%	100.00%
Hanwha Q CELLS Technology (Shanghai) Co., Ltd.	China	December	Photovoltaic business	100.00%	100.00%
Hanwha Q CELLS Til Til Dos SpA	Chile	December	EPC business	100.00%	100.00%
Hanwha Q CELLS Til Til Uno SPA	Chile	December	Photovoltaic business	100.00%	100.00%
Hanwha Q CELLS Turkey	Turkey	December	Photovoltaic business	100.00%	100.00%
Hanwha Riverside LLC	U.S.A	December	Real estate development	100.00%	100.00%
Hanwha Solar Electric Power Engineering Co., Ltd.	China	December	Photovoltaic business	100.00%	100.00%
Hanwha Solar Engineering R&D center Co., Ltd.	China	December	R&D	100.00%	100.00%
Hanwha Solar Holdings Co., Ltd.	England	December	Holding company	100.00%	100.00%
Hanwha SolarOne (Laiyang) Co., Ltd.	China	December	Photovoltaic business	100.00%	100.00%
Hanwha SolarOne (Rugao) Co., Ltd.	China	December	Photovoltaic business	100.00%	100.00%
Hanwha SolarOne GmbH	Germany	December	Photovoltaic business	100.00%	100.00%
Hanwha SolarOne Investment Holding Ltd.	England	December	Holding company	100.00%	100.00%
Hanwha SolarOne Power Generation (Wuxi) Co., Ltd.	China	December	Photovoltaic business	100.00%	100.00%
HANWHA TECHM USA LLC	U.S.A	December	Manufacture of car parts	100.00%	100.00%
Hanwha Village Market, LLC	U.S.A	December	Real estate development	100.00%	100.00%
Hanwha West Properties LLC	U.S.A	December	Real estate development	100.00%	100.00%

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

1. General, Continued

(1) Details of subsidiaries, continued

Company	Locations	Closing month	Main business	Percentage of ownership	
				December 31, 2017	December 31, 2016
HARELAW RENEWABLES LIMITED	England	December	EPC business	-	100.00%
HIGH ERCALL RENEWABLES LIMITED	England	December	EPC business	-	100.00%
Huoqiu Hanrui New Energy Power Generation Co., Ltd.	China	December	Photovoltaic business	100.00%	-
KMPT Solarpark Verwaltung GmbH	Germany	December	Photovoltaic business	100.00%	100.00%
Lodz Solar Sp. z o.o.(*4)	Poland	December	EPC business	100.00%	52.00%
Mazovia Solar 1 Sp. Z o.o.(*4)	Poland	December	EPC business	100.00%	52.00%
Mazovia Solar 2 Sp. Z o.o.(*4)	Poland	December	EPC business	100.00%	52.00%
Mazovia Solar 3 Sp. Z o.o.(*4)	Poland	December	EPC business	100.00%	52.00%
Nantong Hanwha Import & Export Co., Ltd.	China	December	Photovoltaic business	100.00%	100.00%
PV Vallenar Uno SpA	Chile	December	Holding company	100.00%	100.00%
SFH Solarpark GmbH	Germany	December	Photovoltaic business	100.00%	100.00%
Solarpark FFT Infrastruktur GmbH & Co. KG	Germany	December	Photovoltaic business	100.00%	100.00%
Solarpark NSTR Infrastruktur GmbH & Co. KG	Germany	December	EPC business	-	100.00%
Solarpark HZBG Infrastruktur GmbH & Co. KG	Germany	December	EPC business	-	100.00%
Universal Bearings LLC	U.S.A	December	Manufacture of Bearings	100.00%	100.00%
WSE Bradley Road Ltd	England	December	Photovoltaic business	100.00%	100.00%
Aslan Gunes Enerjisi A.S.	Turkey	December	Photovoltaic business	100.00%	-
AKD En. Ur. San. ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
AKY 4 En. Ur. San. ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
AKY 5 En. Ur. San. ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
RTE 4 En. Ur. San. ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
BSN 5 En. Ur. San. ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
Tesla 1 Gunes En. Ur. San. Ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
Tesla 2 Gunes En. Ur. San. Ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
Tesla 6 Gunes En. Ur. San. Ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
Tesla 7 Gunes En. Ur. San. Ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
Tesla 8 Gunes En. Ur. San. Ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
Tesla 9 Gunes En. Ur. San. Ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
Tesla 10 Gunes En. Ur. San. Ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
Tesla 11 Gunes En. Ur. San. Ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

1. General, Continued

(1) Details of subsidiaries, continued

Company	Locations	Closing month	Main business	Percentage of ownership	
				December 31, 2017	December 31, 2016
Tesla 12 Gunes En. Ur. San. Ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
Tesla 13 Gunes En. Ur. San. Ve Tic. A.S.	Turkey	December	Photovoltaic business	100.00%	-
Hiprom Enerji Yatirimlari A.S.	Turkey	December	Photovoltaic business	100.00%	-
Sipahi Enerji Uretim A.S.	Turkey	December	Photovoltaic business	100.00%	-
Kuantum Enerji Uretim A.S.	Turkey	December	Photovoltaic business	100.00%	-
Nuans Enerji Uretim A.S.	Turkey	December	Photovoltaic business	100.00%	-
Birinci Enerji Uretim A.S.	Turkey	December	Photovoltaic business	100.00%	-
Varlik Enerji Uretim A.S.	Turkey	December	Photovoltaic business	100.00%	-
Tugce Enerji Uretim A.S.	Turkey	December	Photovoltaic business	100.00%	-
Bolca Enerji Uretim A.S.	Turkey	December	Photovoltaic business	100.00%	-
Sema Enerji Uretim Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Alkin Enerji Uretim Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Kartal Enerji Uretim Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Mutlak Enerji Uretim Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Elcin Enerji Uretim Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Yapici Enerji Uretim A.S.	Turkey	December	Photovoltaic business	100.00%	-
Yilmazer Enerji Uretim A.S.	Turkey	December	Photovoltaic business	100.00%	-
Yenicag 1 Enerji Elektrik Gunes Enerjisi Uretimi Proje Pazarlama Dagitim Sanayi Ticaret Ltd.Sti.	Turkey	December	Photovoltaic business	100.00%	-
Papatya Enerji Elektrik Gunes Enerjisi Uretimi Proje Pazarlama Dagitim Sanayi Ticaret Ltd.Sti.	Turkey	December	Photovoltaic business	100.00%	-
Kayrabey Enerji Elektrik Gunes Enerjisi Uretimi Proje Pazarlama Dagitim Sanayi Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Maki Enerji Elektrik Gunes Enerjisi Uretimi Proje Pazarlama Dagitim Sanayi Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
BDI Enerji Elektrik Gunes Enerjisi Uretimi Proje Pazarlama Dagitim Sanayi Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Fnt Gida Turizm Ic Ve Dis Ticaret Sanayi Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Meva Muhendislik Bilisim Enerji Insaat Iletisim Turizm San.Ve Dis Tic. Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Serimer Optik Medikal Kirtasiye Temizlik Insaat Ithalat Ihra cat Sanayi Tic. Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Marel Bilisim Muhendislik Enerji Insaat Iletisim Turizm GidaSan. Ve Dis Tic. Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

1. General, Continued

(1) Details of subsidiaries, continued

Company	Locations	Closing month	Main business	Percentage of ownership	
				December 31, 2017	December 31, 2016
Fior Gunes Enerjisi Anonim Sirketi	Turkey	December	Photovoltaic business	100.00%	-
Aceka Turizm ve Insaat A.S.	Turkey	December	Photovoltaic business	100.00%	-
Altaylar Altyapi ve Malzeme Hizmetleri A.S.	Turkey	December	Photovoltaic business	100.00%	-
Bilgidar iletisim Egitim ve Danismanlik Hizmetleri Tic. Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Greenland Altyapi ve Malzeme Hizmetleri A.S.	Turkey	December	Photovoltaic business	100.00%	-
Hazar Altyapi ve Malzeme Hizmetleri A.S.	Turkey	December	Photovoltaic business	100.00%	-
Kartal Altyapi ve Malzeme Hizmetleri A.S.	Turkey	December	Photovoltaic business	100.00%	-
Kent Altyapi ve Malzeme Hizmetleri A.S.	Turkey	December	Photovoltaic business	100.00%	-
Lisola Elektrik Uretim Ins.ve Tic.Ltd.Sti.	Turkey	December	Photovoltaic business	100.00%	-
Toprakkale Altyapi ve Malzeme Hizmetleri A.S.	Turkey	December	Photovoltaic business	100.00%	-
Ulu Gunes Enerjisi AnonimSirketi	Turkey	December	Photovoltaic business	100.00%	-
Onan Enerji Uretim A.S.	Turkey	December	Photovoltaic business	100.00%	-
Eflak Enerji Sanayi ve Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Dimetoka Enerji Sanayi ve Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Varna Enerji Sanayi ve Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Segah Enerji Sanayi ve Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
isfahan Enerji Sanayi ve Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Buselik Enerji Sanayi ve Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Kaniye Enerji Sanayi ve Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Hersek Enerji Sanayi ve Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Turaneli Enerji Sanayi ve Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Moravia Enerji Sanayi ve Ticaret Ltd. Sti.	Turkey	December	Photovoltaic business	100.00%	-
Uno Enerji A.S.	Turkey	December	Photovoltaic business	100.00%	-

(*1) Due to the payout of the invested capital to some shareholders upon completion of the project and retirement of shares during the year ended December 31, 2017, the Group's ownership percentage increased.

(*2) Due to the consolidation and retirement of shares during the year ended December 31, 2017, the Group's ownership percentage increased.

(*3) Due to the issuance of additional shares only to certain shareholders during the year ended December 31, 2017, the Group's ownership percentage decreased.

(*4) Due to the acquisition of additional ownership during the year ended December 31, 2017, the Group's ownership percentage increased.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

1. General, Continued

(2) Changes of scope of consolidation

Subsidiaries newly included in the consolidation and excluded from the consolidation during the year ended December 31, 2017, are as follows:

(i) Subsidiaries newly included in the consolidation for the year ended December 31, 2017, are as follows:

Subsidiaries	Reason
Aslan Gunes Enerjisi A.S.	
AKD En. Ur. San. ve Tic. A.S.	
AKY 4 En. Ur. San. ve Tic. A.S.	
AKY 5 En. Ur. San. ve Tic. A.S.	
RTE 4 En. Ur. San. ve Tic. A.S.	
BSN 5 En. Ur. San. ve Tic. A.S.	
Tesla 1 Gunes En. Ur. San. Ve Tic. A.S.	
Tesla 2 Gunes En. Ur. San. Ve Tic. A.S.	
Tesla 6 Gunes En. Ur. San. Ve Tic. A.S.	
Tesla 7 Gunes En. Ur. San. Ve Tic. A.S.	
Tesla 8 Gunes En. Ur. San. Ve Tic. A.S.	
Tesla 9 Gunes En. Ur. San. Ve Tic. A.S.	
Tesla 10 Gunes En. Ur. San. Ve Tic. A.S.	
Tesla 11 Gunes En. Ur. San. Ve Tic. A.S.	
Tesla 12 Gunes En. Ur. San. Ve Tic. A.S.	
Tesla 13 Gunes En. Ur. San. Ve Tic. A.S.	
Hiprom Enerji Yatirimlari A.S.	
Sipahi Enerji Uretim A.S.	
Kuantum Enerji Uretim A.S.	
Nuans Enerji Uretim A.S.	
Birinci Enerji Uretim A.S.	
Varlik Enerji Uretim A.S.	
Tugce Enerji Uretim A.S.	Newly acquired
Bolca Enerji Uretim A.S.	
Sema Enerji Uretim Ltd. Sti.	
Alkin Enerji Uretim Ltd. Sti.	
Kartal Enerji Uretim Ltd. Sti.	
Mutlak Enerji Uretim Ltd. Sti.	
Elcin Enerji Uretim Ltd. Sti.	
Yapici Enerji Uretim A.S.	
Yilmazer Enerji Uretim A.S.	
Yenicag 1 Enerji Elektrik Gunes Enerjisi Uretimi Proje Pazarlama Dagitim Sanayi Ticaret Ltd. Sti.	
Papatya Enerji Elektrik Gunes Enerjisi Uretimi Proje Pazarlama Dagitim Sanayi Ticaret Ltd. Sti.	
Kayrabey Enerji Elektrik Gunes Enerjisi Uretimi Proje Pazarlama Dagitim Sanayi Ticaret Ltd. Sti.	
Maki Enerji Elektrik Gunes Enerjisi Uretimi Proje Pazarlama Dagitim Sanayi Ticaret Ltd. Sti.	
BDI Enerji Elektrik Gunes Enerjisi Uretimi Proje Pazarlama Dagitim Sanayi Ticaret Ltd. Sti.	
Fnt Gida Turizm Ic Ve Dis Ticaret Sanayi Ltd. Sti.	
Meva Muhendislik Bilisim Enerji Insaat Iletisim Turizm San. Ve Dis Tic. Ltd. Sti.	
Serimer Optik Medikal Kirtasiye Temizlik Insaat Ithalat Ihracat Sanayi Tic. Ltd. Sti.	
Marel Bilisim Muhendislik Enerji Insaat Iletisim Turizm Gida San. Ve Dis Tic. Ltd. Sti.	
Fior Gunes Enerjisi Anonim Sirketi	
Aceka Turizm ve Insaat A.S.	
Altaylar Altyapi ve Malzeme Hizmetleri A.S.	
Bilgidar iletisim Egitim ve Danismanlik Hizmetleri Tic. Ltd. Sti.	

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

1. General, Continued

(2) Changes of scope of consolidation, continued

Subsidiaries	Reason
Greenland Altyapi ve Malzeme Hizmetleri A.S.	
Hazar Altyapi ve Malzeme Hizmetleri A.S.	
Kartal Altyapi ve Malzeme Hizmetleri A.S.	
Kent Altyapi ve Malzeme Hizmetleri A.S.	
Lisola Elektrik Uretim Ins.ve Tic.Ltd.Sti.	
Toprakkale Altyapi ve Malzeme Hizmetleri A.S.	
Ulu Gunes Enerjisi AnonimSirketi	
Onan Enerji Uretim A.S.	
Eflak Enerji Sanayi ve Ticaret Ltd. Sti.	
Dimetoka Enerji Sanayi ve Ticaret Ltd. Sti.	
Varna Enerji Sanayi ve Ticaret Ltd. Sti.	Newly acquired
Segah Enerji Sanayi ve Ticaret Ltd. Sti.	
isfahan Enerji Sanayi ve Ticaret Ltd. Sti.	
Buselik Enerji Sanayi ve Ticaret Ltd. Sti.	
Kaniye Enerji Sanayi ve Ticaret Ltd. Sti.	
Hersek Enerji Sanayi ve Ticaret Ltd. Sti.	
Turanelli Enerji Sanayi ve Ticaret Ltd. Sti.	
Moravia Enerji Sanayi ve Ticaret Ltd. Sti.	
Uno Enerji A.S.	
Huoqiu Hanrui New Energy Power Generation Co., Ltd.	

(ii) Subsidiaries excluded from the consolidation during the year ended December 31, 2017, are as follows:

Subsidiaries	Reason
BOURTON RENEWABLES LIMITED	
Chandler LLC	
Hanwha Chandler LLC	
HARELAW RENEWABLES LIMITED	Liquidation
HIGH ERCALL RENEWABLES LIMITED	
Solarpark NSTR Infrastruktur GmbH & Co. KG	
Solarpark HZBG Infrastruktur GmbH & Co. KG	

(3) Financial information of major subsidiaries

Financial information of major subsidiaries as of and for the year ended December 31, 2017, is as follows:

In thousands won

	Assets	Liabilities	Equity	Revenue	Net income (loss)
Gyeonggi Yongin Techno Valley Co., Ltd.	₩ 204,860,723	211,420,684	(6,559,961)	-	(6,550,848)
Gyeonggi Hwasung Bio Valley Co., Ltd.	24,072,716	16,842,577	7,230,139	135,772,682	16,012,180
Gimhae Techno Valley Co., Ltd.	60,348,222	42,269,712	18,078,510	285,201,613	32,361,423
SEOSAN TECHNO VALLEY	31,849,485	23,691,713	8,157,772	19,093,011	2,954,345
Asan Techno Valley	1,640,421	23,289	1,617,132	51,432,201	1,906,318
Hanwha Galleria Co., Ltd.	1,846,478,962	864,808,084	981,670,878	370,623,458	11,438,123
Hanwha Galleria Timeworld Co., Ltd.	475,031,077	245,858,993	229,172,084	330,703,011	(12,784,641)
Hanwha City Development Co., Ltd.	241,715,280	19,609,632	222,105,648	3,254,275	22,483,113

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES **Notes to the Consolidated Financial Statements, Continued** **For the years ended December 31, 2017 and 2016**

1. General, Continued

(3) Financial information of major subsidiaries, continued

In thousands won

		Assets	Liabilities	Equity	Revenue	Net income (loss)
Hanwha B&B Co., Ltd.	₩	11,418,883	2,839,820	8,579,063	14,023,678	264,252
NHL Development Co., Ltd.		87,671,097	8,449,549	79,221,548	38,219,595	(14,110,575)
Hanwha Advanced Materials Corporation		950,014,156	556,012,678	394,001,478	602,346,790	(4,052,309)
Hanwha Compound Corporation		86,415,104	16,577,785	69,837,319	99,813,086	(940,420)
Hanwha Chemical Overseas Holdings, Co., Ltd.		96,126,175	376	96,125,799	-	(51,060)
Hanwha Chemical Trading (Shanghai) Co., Ltd.		42,403,027	26,982,426	15,420,601	137,220,609	2,966,192
Hanwha Advanced Materials Beijing Co., Ltd.		72,398,162	31,808,802	40,589,360	55,697,225	40,468
Hanwha Advanced Materials Europe, s.r.o.		100,456,385	75,185,408	25,270,977	88,156,182	(3,216,810)
Hanwha Advanced Materials Holdings USA Inc.		42,422,894	3,411,656	39,011,238	-	-
Hanwha Advanced Materials Mexico S. De R.L. De C.V.		48,752,902	42,540,670	6,212,232	31,841,629	(3,408,723)
Hanwha Advanced Materials Shanghai Co., Ltd.		55,764,807	31,613,048	24,151,759	49,774,454	(644,200)
Hanwha America Development Inc.		104,269,990	3,744,391	100,525,599	-	1,165,114
Hanwha Chemical (Ningbo) Co., Ltd.		311,904,313	103,980,348	207,923,965	362,168,055	30,610,415
Hanwha Chemical (Thailand) Co., Ltd.		36,241,704	9,053,697	27,188,007	24,036,319	836,170
Hanwha Chemical Malaysia Sdn. Bhd.		47,057,086	33,366,338	13,690,748	171,105,995	2,063,029
Hanwha Holdings(USA), Inc. (*1)		750,638,803	467,666,083	282,972,720	638,440,031	4,214,017
Hanwha International Corp.		53,846,926	2,483,044	51,363,882	-	24,481
Hanwha Q CELLS Australia Pty Ltd.		20,475,749	20,086,934	388,815	49,467,790	(433,985)
Hanwha Q CELLS Chile SpA		18,856,534	8,458,046	10,398,488	4,587,754	(9,093,797)
Hanwha Q CELLS Co., Ltd. (*2)		2,624,166,038	1,582,228,801	1,041,937,237	2,216,860,880	(64,652,035)
Hanwha Q CELLS GmbH		351,337,837	159,028,485	192,309,352	298,509,030	5,763,169
Hanwha Q CELLS Investment Co., Ltd.		461,150,125	115,914,718	345,235,407	-	(1,373,315)
Hanwha Q CELLS Malaysia Sdn. Bhd.		586,822,330	443,219,248	143,603,082	738,165,072	35,425,485
Hanwha Q CELLS Turkey (*3)		152,052,846	131,144,552	20,908,294	77,278,794	(9,106,878)
Hanwha Solar Holdings Co., Ltd.		800,214,402	-	800,214,402	-	(18,389)

(*1) Financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 17 subsidiaries.

(*2) Financial information of intermediate parent company Hanwha Q CELLS Co., Ltd. and its 18 subsidiaries.

(*3) Financial information of intermediate parent company Hanwha Q CELLS Turkey and its 63 subsidiaries.

2. Significant accounting policies

(1) Basis of Preparation

The Company and its subsidiaries (the "Group") have prepared the consolidated financial statements in accordance with the Korean International Financial Reporting Standards ("K-IFRS").

The principal accounting policies are set out below. Except for the effect of the Amendments to K-IFRSs and new interpretations set out below, the principal accounting policies used to prepare the consolidated financial statements as of and for the year ended December 31, 2017 are consistent with the accounting policies used to prepare the consolidated financial statements as of and for the year ended December 31, 2016.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(1) Basis of Preparation, continued

The accompanying consolidated financial statements have been prepared on the historical cost basis except for certain 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.

(i) Amendments to K-IFRSs and new interpretations that are mandatorily effective for the current year

Amendments to K-IFRS No.1007 – Statement of Cash Flows

The amendment requires that changes in liabilities arising from financial activities are disclosed. The disclosure requirements of the amendments are included in Note 38. (2).

Amendments to K-IFRS No.1012 – Income Taxes

The amendment clarifies that unrealized losses on fixed-rate debt instruments measured at fair value and measured at cost for tax purposes give rise to a deductible temporary difference regardless of whether the holder expects to recover the carrying amount of the debt instrument by sale or by use and that the estimate of probable future taxable profit may include the recovery of some of assets for more than their carrying amount. When the Group assesses whether there will be sufficient taxable profit, the Group should compare the deductible temporary differences with future taxable profit that excludes tax deductions resulting from the reversal of those deductible temporary differences. The application of this amendment has no significant impact on the disclosure in the Group's consolidated financial statements.

(ii) The Group has not applied the following new and revised K-IFRSs that have been issued but are not yet effective.

Amendments to K-IFRS No.1109 – Financial Instruments

K-IFRS No.1109 Financial Instruments sets out requirements for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items. This standard replaces K-IFRS No.1039 Financial Instruments: Recognition and Measurement.

(a) Classification and measurement – Financial assets

K-IFRS No.1109 contains a new classification and measurement approach for financial assets that reflects the business model in which assets are managed and their cash flow characteristics. K-IFRS No.1109 contains three principal classification categories for financial assets: measured at amortized cost, FVOCI and FVTPL. The standard eliminates the existing K-IFRS No.1039 categories of held to maturity, loans and receivables and available for sale. Under K-IFRS No.1109, derivatives embedded in contracts where the host is a financial asset in the scope of the standard are never bifurcated. Instead, the hybrid financial instrument as a whole is assessed for classification.

Based on its assessment, the Group does not believe that the new classification requirements will have a material impact on its accounting for trade receivables, loans, investments in debt securities and investments in equity securities that are managed on a fair value basis.

(b) Impairment – Financial assets and contract assets

K-IFRS No.1109 replaces the 'incurred loss' model in K-IFRS No.1039 with a forward-looking 'expected credit loss'(ECL) model. This will require considerable judgement about how changes in economic factors affect ECLs, which will be determined on a probability-weighted basis. The new impairment model will apply to financial assets measured at amortized cost or FVOCI, except for investments in equity instruments, and to contract assets.

Under K-IFRS No.1109, loss allowances will be measured on either of the following bases:

- 12-month ECLs: these are ECLs that result from possible default events within the 12 months after the reporting date
- lifetime ECLs: these are ECLs that result from all possible default events over the expected life of a financial instrument

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(1) Basis of Preparation, continued

Lifetime ECL measurement applies if the credit risk of a financial asset at the reporting date has increased significantly since initial recognition and 12-month ECL measurement applies if it has not. An entity may determine that a financial asset's credit risk has not increased significantly if the asset has low credit risk at the reporting date. However, lifetime ECL measurement always applies for trade receivables and contract assets without a significant financing component. Based on its assessment, the Group believes that the impairment requirements in K-IFRS No.1109 will have not a material impact on loss allowances of the financial instruments held by the Group.

(c) Classification – Financial liabilities

K-IFRS No.1109 largely retains the existing requirements in K-IFRS No.1039 for the classification of financial liabilities. The Group's assessment did not indicate any material impact regarding the classification of financial liabilities at 1 January 2018.

(d) Hedge accounting

The Group believes that the Hedge accounting requirements in K-IFRS No.1109 will have not a material impact on the disclosure in the Group's consolidated financial statements.

(e) Disclosures

K-IFRS No.1109 will require extensive new disclosures, in particular about hedge accounting, credit risk and ECLs.

(f) Transition

Changes in accounting policies resulting from the adoption of K-IFRS No.1109 will generally be applied retrospectively, except as described below.

- The Group will take advantage of the exemption allowing it not to restate comparative information for prior periods with respect to classification and measurement (including impairment) changes. Differences in the carrying amounts of financial assets and financial liabilities resulting from the adoption of K-IFRS No.1109 will generally be recognized in retained earnings and reserves as at 1 January 2018.
- The following assessments have to be made on the basis of the facts and circumstances that exist at the date of initial application.
 - The determination of the business model within which a financial asset is held.
 - The designation and revocation of previous designations of certain financial assets and financial liabilities as measured at FVTPL.
 - The designation of certain investments in equity instruments not held for trading as at FVOCI.

Amendments to K-IFRS No.1115 – Revenue from Contracts with Customers

K-IFRS No.1115 establishes a comprehensive framework for determining whether, how much and when revenue is recognized. It replaces existing revenue recognition guidance, including K-IFRS No.1018 Revenue, K-IFRS No.1011 Construction Contracts and K-IFRS No.2031 Revenue: Barter Transactions Involving Advertising Services, K-IFRS No.2113 Customer Loyalty Programmes, K-IFRS No.2115 Agreements for the Construction of Real Estate, K-IFRS No.2118 Transfers of Assets from Customers.

(a) Sales of goods

For the sale of goods, revenue is currently recognized when the goods are delivered to the customers' premises, which is taken to be the point in time at which the customer accepts the goods and the related risks and rewards of ownership transfer. Revenue is recognized at this point provided that the revenue and costs can be measured reliably, the recovery of the consideration is probable and there is no continuing management involvement with the goods. However, Under K-IFRS No.1115, revenue will be recognized when a customer obtains control of the goods.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(1) Basis of Preparation, continued

For certain contracts that permit the customer to return an item, revenue is currently recognized when a reasonable estimate of the returns can be made, provided that all other criteria for revenue recognition are met. If a reasonable estimate cannot be made, then revenue recognition is deferred until the return period lapses or a reasonable estimate of returns can be made. Under K-IFRS No.1115, revenue will be recognized for these contracts to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur.

For the loyalty programme operated by the Group, revenue is currently allocated between the loyalty programme and the paper products using the residual value method. That is, consideration is allocated to the loyalty programme based on the fair value of the loyalty points and the remainder of the consideration is allocated to the paper products. The amount allocated to the loyalty programme is deferred, and is recognized as loyalty points are redeemed or expire. Under K-IFRS No.1115, consideration will be allocated between the loyalty programme and the paper products based on their relative stand-alone selling prices.

Under K-IFRS No.1115, the assessment will be based on whether the Group controls the specific goods before transferring them to the end customer, rather than whether it has exposure to significant risks and rewards associated with the sale of goods.

(b) Rendering of services

The Group recognizes revenue from the provision of services at the time the services are rendered. Under K-IFRS No.1115, if multiple services are performed under a single contract, the total consideration of service contracts is distributed to each service according to the individual selling prices.

The Group performed a preliminary assessment of the potential impact on the consolidated financial statements based on the current situation and available information as of December 31, 2017 to assess the financial impact of the application of these amendments K-IFRS No.1115. Based on the assessment, the Group believes that the impact of application on K-IFRS No.1115 is not significant.

Amendments to K-IFRS No.1116 – Leases

K-IFRS No.1116 'Lease', published on May 22, 2017, is effective for annual periods beginning on or after 1 January 2019, with earlier adoption permitted. It replaces existing leases guidance, including K-IFRS No.1017 Leases, K-IFRS No.2104 Determining whether an Arrangement contains a Lease, K-IFRS No.2015 Operating Leases – Incentives and K-IFRS No.2027 Evaluating the Substance of Transactions Involving the Legal Form of a Lease.

At inception of an arrangement, the Group determines whether the arrangement is or contains a lease. At the date of initial application, it is recognize a lease or the contract contains a lease in accordance with this Standard. However, the Group may not judge again all contracts by applying the simplified method for contracts before the first application date.

The lessee and the lessor must account for each lease element of the lease as a lease, separate from the non-lease element non-lease (element awards) in an agreement that the contract contains a lease or lease.

A lessee recognizes a right-of-use asset representing its right to use the underlying asset and a lease liability representing its obligation to make lease payments. There are recognition exemptions for short-term leases and leases of low-value items. The method of accounting for each lease element and associated non-lease element as one lease element can be selected and applied for each type of underlying asset. The accounting for lease provider did not change significantly with the accounting treatment of the current K-IFRS No.1017.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES

Notes to the Consolidated Financial Statements, Continued

For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(1) Basis of Preparation, continued

<Accounting as a lessee>

The lessee recognizes the cumulative effect of applying the retrospective application for each past reporting period (full retrospective law) and the initial application at the date of initial application, in accordance with K-IFRS No.1008, 'Changes in Accounting Policies and Accounting Estimates and Errors' (Cumulative Effect Batch Reconciliation Action).

In assessing the financial impact of the first application of K-IFRS No.1116, the Group is analyzing the possible impact on the consolidated financial statements based on the context and available information at December 31, 2017. Until the analysis is complete, it is difficult to provide a reasonable estimate of the financial impact.

(2) Basis of Consolidation

The consolidated financial statements incorporate the financial statements of the Company and entities (including structured entities) controlled by the Company (and its subsidiaries). Control is achieved where the Group 1) has the power over the investee, 2) is exposed, or has rights, to variable returns from its involvement with the investee, and 3) has the ability to use its power to affect its returns. The Group reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control listed above.

When the Group has less than a majority of the voting rights of an investee, it has power over the investee when the voting rights are sufficient to give it the practical ability to direct the activities of the investee unilaterally. The Group considers all relevant facts and circumstances in assessing whether or not The Group's voting rights in an investee are sufficient to give it power, including:

- the size of the Group's holding of voting rights relative to the size and dispersion of holdings of the other vote holders;
- potential voting rights held by The Group, other vote holders or other parties;
- rights arising from other contractual arrangements; and
- any additional facts and circumstances that indicate that the Group has, or does not have, the current ability to direct the relevant activities at the time that decisions need to be made, including voting patterns at previous shareholders' meetings.

Income and expenses of subsidiaries acquired or disposed of during the year are included in the consolidated statement of comprehensive income from the date the Group gains control until the date when the Group ceases to control the subsidiary. Profit or loss and each component of other comprehensive income are attributed to the owners of the Group and to the non-controlling interests. Total comprehensive income of subsidiaries is attributed to the owners of the Group and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with the Group's accounting policies.

All intra-group transactions and related assets and liabilities, income and expenses are eliminated in full on consolidation.

Changes in the Group's ownership interests in subsidiaries that do not result in the Group losing control over the subsidiaries are accounted for as equity transactions. The carrying amounts of the Group's interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognized directly in equity and attributed to owners of the Group.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(2) Basis of Consolidation, continued

When the Group loses control of a subsidiary, a gain or loss on disposal is calculated as the difference between (i) the aggregate of the fair value of the consideration received and the fair value of any retained interest and (ii) the previous carrying amount of the assets (including goodwill), and liabilities of the subsidiary and any non-controlling interests. When assets of the subsidiary are carried at revalued amounts or fair values and the related cumulative gain or loss has been recognized in other comprehensive income and accumulated in equity, the amounts previously recognized in other comprehensive income and accumulated in equity are accounted for as if the Group had directly disposed of the relevant assets (i.e. reclassified to profit or loss or transferred directly to retained earnings). The fair value of any investment retained in the former subsidiary at the date when control is lost is recognized as the fair value on initial recognition for subsequent accounting under K-IFRS No.1039 Financial Instruments: Recognition and Measurement or, when applicable, the cost on initial recognition of an investment in an associate or a joint venture.

(3) Business combinations

Acquisitions of businesses are accounted for using the acquisition method. The consideration transferred in a business combination is measured at fair value, which is calculated as the sum of the fair values of the assets transferred by the Group, liabilities incurred by the Group to the former owners of the acquiree and the equity interests issued by the Group in exchange for control of the acquiree. Acquisition-related costs are generally recognized in profit or loss as incurred.

At the acquisition date, the identifiable assets acquired and the liabilities assumed are recognized at their fair value at the acquisition date, except that:

- deferred tax assets or liabilities and liabilities or assets related to employee benefit arrangements are recognized and measured in accordance with K-IFRS No.1012 Income Taxes and K-IFRS No.1019 Employee Benefits respectively;
- liabilities or equity instruments related to share-based payment arrangements of the acquiree or share-based payment arrangements of the Group entered into to replace share-based payment arrangements of the acquiree are measured in accordance with K-IFRS No.1012 Share-based Payment at the acquisition date; and
- assets (or disposal groups) that are classified as held for sale in accordance with K-IFRS No.1105 Non-current Assets Held for Sale and Discontinued Operations are measured in accordance with that standard.

Goodwill is measured as the excess of the sum of: a) the consideration transferred, b) the amount of any non-controlling interests in the acquiree, and c) the fair value of the acquirer's previously held equity interest in the acquiree (if any); over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed. If, after reassessment, the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed exceeds the sum of: a) the consideration transferred, b) the amount of any non-controlling interests in the acquiree, and c) the fair value of the acquirer's previously held interest in the acquiree (if any); the excess is recognized immediately in profit or loss as a bargain purchase gain.

Non-controlling interests that are present ownership interests and entitle their holders to a proportionate share of the entity's net assets in the event of liquidation may be initially measured either at fair value or at the non-controlling interests' proportionate share of the recognized amounts of the acquiree's identifiable net assets. The choice of measurement basis is made on a transaction-by-transaction basis. Other types of non-controlling interests are measured at fair value or, when applicable, on the basis specified in another K-IFRS.

When the consideration transferred by the Group in a business combination includes assets or liabilities resulting from a contingent consideration arrangement, the contingent consideration is measured at its acquisition-date fair value and included as part of the consideration transferred in a business combination. Changes in the fair value of the contingent consideration that qualify as measurement period adjustments are adjusted retrospectively, with corresponding adjustments against goodwill. Measurement period adjustments are adjustments that arise from additional information obtained during the 'measurement period' (which cannot exceed one year from the acquisition date) about facts and circumstances that existed at the acquisition date.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(3) Business combinations, continued

The subsequent accounting for changes in the fair value of the contingent consideration that do not qualify as measurement period adjustments depends on how the contingent consideration is classified. Contingent consideration that is classified as equity is not remeasured at subsequent reporting dates and its subsequent settlement is accounted for within equity. Contingent consideration that is classified as an asset or a liability is remeasured at subsequent reporting dates in accordance with K-IFRS No.1039 Financial Instruments: Recognition and Measurement, or K-IFRS No.1037 Provisions, Contingent Liabilities and Contingent Assets, as appropriate, with the corresponding gain or loss being recognized in profit or loss.

When a business combination is achieved in stages, the Group's previously held equity interest in the acquiree is remeasured to fair value at the acquisition date and the resulting gain or loss, if any, is recognized in profit or loss. Amounts arising from interests in the acquiree prior to the acquisition date that have previously been recognized in other comprehensive income are reclassified to profit or loss where such treatment would be appropriate if that interest were disposed of.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period (see above), or additional assets or liabilities are recognized, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognized at that date.

(4) Investments in associates and joint ventures

An associate is an entity over which the Group has significant influence. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

The results and assets and liabilities of associates or joint ventures are incorporated in these consolidated financial statements using the equity method of accounting, except when the investment is classified as held for sale, in which case it is accounted for in accordance with K-IFRS No.1105 Non-current Assets Held for Sale and Discontinued Operations. Under the equity method, an investment in an associate or a joint venture is initially recognized in the consolidated statement of financial position at cost and adjusted thereafter to recognize the Group's share of the profit or loss and other comprehensive income of the associate or joint venture. When the Group's share of losses of an associate or a joint venture exceeds the Group's interest in that associate or joint venture (which includes any long-term interests that, in substance, form part of the Group's net investment in the associate or joint venture), the Group discontinues recognizing its share of further losses. Additional losses are recognized only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate or joint venture.

Any excess of the cost of acquisition over the Group's share of the net fair value of the identifiable assets, liabilities and contingent liabilities of an associate or a joint venture recognized at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Group's share of the net fair value of the identifiable assets, liabilities and contingent liabilities over the cost of acquisition, after reassessment, is recognized immediately in profit or loss.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(4) Investments in associates and joint ventures, continued

Upon disposal of an associate or a joint venture that results in the Group losing significant influence over that associate or joint venture, any retained investment is measured at fair value at that date and the fair value is regarded as its fair value on initial recognition as a financial asset in accordance with K-IFRS No.1039 Financial Instruments: Recognition and Measurement. The difference between the previous carrying amount of the associate or joint venture attributable to the retained interest and its fair value is included in the determination of the gain or loss on disposal of the associate or joint venture. In addition, the Group accounts for all amounts previously recognized in other comprehensive income in relation to that associate or joint venture on the same basis we would be required if that associate or joint venture had directly disposed of the related assets or liabilities. Therefore, if a gain or loss previously recognized in other comprehensive income by that associate or joint venture would be reclassified to profit or loss on the disposal of the related assets or liabilities, the Group reclassifies the gain or loss from equity to profit or loss (as reclassification adjustment) when it loses significant influence over that associate or joint venture.

When the Group reduces its ownership interest in an associate or a joint venture but the Group continues to use the equity method, the Group reclassifies to profit or loss the proportion of the gain or loss that had previously been recognized in other comprehensive income relating to that reduction in ownership interest if that gain or loss would be reclassified to profit or loss on the disposal of the related assets or liabilities. In addition, the Group applies K-IFRS No.1105 Non-current Assets Held for Sale and Discontinued Operations to a portion of investment in an associate or a joint venture that meets the criteria to be classified as held for sale.

The requirements of K-IFRS No.1039 Financial Instruments: Recognition and Measurement are applied to determine whether it is necessary to recognize any impairment loss with respect to the Group's investment in an associate or a joint venture. When necessary, the entire carrying amount of the investment (including goodwill) is tested for impairment in accordance with K-IFRS No.1036 Impairment of Assets 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 No.1036 Impairment of Assets to the extent that the recoverable amount of the investment subsequently increases.

The Group continues to use the equity method when an investment in an associate becomes an investment in a joint venture or an investment in a joint venture becomes an investment in an associate. There is no remeasurement to fair value upon such changes in ownership interests.

When an entity transacts with an associate or a joint venture of the Group, profits and losses resulting from the transactions with the associate or joint venture are recognized in the Group's consolidated financial statements only to the extent of interests in the associate or joint venture that are not related to the Group.

(5) Interests in joint operations

A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

When an entity undertakes its activities under joint operations, the Group as a joint operator recognizes in relation to its interest in a joint operation:

- its assets, including its share of any assets held jointly;
- its liabilities, including its share of any liabilities incurred jointly;
- its revenue from the sale of its share of the output arising from the joint operation;
- its share of the revenue from the sale of the output by the joint operation; and
- its expenses, including its share of any expenses incurred jointly.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(5) Interests in joint operations, continued

The Group accounts for the assets, liabilities, revenues and expenses relating to its interest in a joint operation in accordance with the K-IFRSs applicable to the particular assets, liabilities, revenues and expenses.

When an entity transacts with a joint operation in which an entity is a joint operator (such as a sale or contribution of assets), the Group is considered to be conducting the transaction with the other parties to the joint operation, and gains and losses resulting from the transactions are recognized in the Group's consolidated financial statements only to the extent of other parties' interests in the joint operation.

When an entity transacts with a joint operation in which an entity is a joint operator (such as a purchase of assets), the Group does not recognize its share of the gains and losses until it resells those assets to a third party.

(6) 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 Group's cash-generating units (or groups of cash-generating units) that is expected to benefit from the synergies of the combination.

A cash-generating unit 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 cash-generating unit 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 cash-generating unit, the attributable amount of goodwill is included in the determination of the profit or loss on disposal.

(7) 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.

When the Group is committed to a sale plan involving loss of control of a subsidiary, all of the assets and liabilities of that subsidiary are classified as held for sale when the criteria described above are met, regardless of whether the Group will retain a non-controlling interest in its former subsidiary after the sale.

When the Group is committed to a sale plan involving disposal of an investment, or a portion of an investment, in an associate or joint venture, the investment or the portion of the investment that will be disposed of is classified as held for sale when the criteria described above are met, and the Group discontinues the use of the equity method in relation to the portion that is classified as held for sale. Any retained portion of an investment in an associate or a joint venture that has not been classified as held for sale continues to be accounted for using the equity method. The Group discontinues the use of the equity method at the time of disposal when the disposal results in the Group losing significant influence over the associate or joint venture.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(7) Non-current assets held for sale, continued

After the disposal takes place, the Group accounts for any retained interest in the associate or joint venture in accordance with K-IFRS No.1039 Financial Instruments: Recognition and Measurement unless the retained interest continues to be an associate or a joint venture, in which case the Group uses the equity method.

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.

(8) 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 Group recognizes revenue when the amount of revenue can be reliably measured; when it is probable that future economic benefits will flow to the entity; and when specific criteria have been met for each of the Group's activities, as described below.

(i) Sale of goods

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

(ii) 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 Group 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.

(iii) Royalties

Royalty revenue is recognized on an accrual basis in accordance with the substance of the relevant agreement (provided that it is probable that the economic benefits will flow to the Group and the amount of revenue can be measured reliably).

(iv) Dividend and interest income

Dividend income from investments is recognized when the shareholder's right to receive payment has been established (provided that it is probable that the economic benefits will flow to the Group 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 Group 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.

(v) Rental income

The Group's policy for recognition of revenue from operating leases is described in Note 2.(10).

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(8) Revenue recognition, continued

(vi) Customer Royalty Program

The Group operates a customer loyalty program to provide customers with incentives to buy their goods or services. If a customer buys goods or services, the entity grants the customer awards credits (often described as 'points'). The customer can redeem the award credits for awards such as free or discounted goods or services. The awards credits are accounted separately as identifiable component of the sales transaction(s) in which they are granted (the 'initial sales'). The fair value of the consideration received or receivable in respect of the initial sale shall be allocated between the award credits and the other components of the sale. If the Group supplies the awards itself, it shall recognize the consideration allocated to award credits as revenue when award credits are redeemed and it fulfills its obligation to supply awards. The amount of revenue recognized shall be based on the number of award credits that have been redeemed in exchange for awards, related to the total number expected to be redeemed. If the third party supplies the awards, the Group shall assess whether it is collecting the consideration allocated to the award credits on its own account (as the principal in the transaction) or on behalf of the third party (as agent for the third party). The amount of revenue recognized shall be net amount retained on its own account.

(9) Construction contracts

Where the outcome of a construction contract can be estimated reliably, revenue and costs are recognized by reference to the stage of completion of the contract activity at the end of the reporting period, measured based on the proportion of contract costs incurred for work performed to date relative to the estimated total contract costs, except where this would not be representative of the stage of completion. Variations in contract work, claims and incentive payments are included to the extent that the amount can be measured reliably and its receipt is considered probable.

Where the outcome of a construction contract cannot be estimated reliably, contract revenue is recognized to the extent of contract costs incurred that it is probable will be recoverable. Contract costs are recognized as expenses in the period in which they are incurred.

When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognized as an expense immediately.

When contract costs incurred to date plus recognized profits less recognized losses exceed progress billing, the surplus is shown as amounts due from customers for contract work. For contracts where progress billings exceed contract costs incurred to date plus recognized profits less recognized losses, the surplus is shown as the amounts due to customers for contract work. Amounts received before the related work is performed are included in the consolidated statement of financial position, as a liability, as advances received. Amounts billed for work performed but not yet paid by the customer are included in the consolidated statement of financial position under trade and other receivables.

(10) 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.

(i) The Group as lessor

Amounts due from lessees under finance leases are recognized as receivables at the amount of the Group'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 Group'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.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(10) Lease, continued

(ii) The Group as lessee

Assets held under finance leases are initially recognized as assets of the Group 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 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 Group's general policy on borrowing costs (Note 2.(12)). 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.

In the event that lease incentives are received to enter into operating leases, such incentives are recognized as a liability. The aggregate benefit of incentives is recognized as a reduction of rental expense on a straight-line basis, except where another systematic basis is more representative of the time pattern in which economic benefits from the leased asset are consumed.

(11) Foreign currencies

The individual financial statements of each group entity are presented in the currency of the primary economic environment in which the entity operates (its functional currency). For the purpose of the consolidated 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 consolidated financial statements.

In preparing the financial statements of the individual entities, 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 (Note 2.(25) below for hedging accounting policies); and
- 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.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(11) Foreign currencies, continued

For the purpose of presenting consolidated financial statements, the assets and liabilities of the Group's foreign operations are expressed in Korean Won using exchange rates prevailing at the end of the reporting period. Income and expense items are translated at the average exchange rates for the period, unless exchange rates fluctuated significantly during that period, in which case the exchange rates at the dates of the transactions are used. Exchange differences arising, if any, are recognized in other comprehensive income and accumulated in equity (attributed to non-controlling interests as appropriate).

On the disposal of a foreign operation (i.e. a disposal of the Group's entire interest in a foreign operation, or a disposal involving loss of control over a subsidiary that includes a foreign operation, or partial disposal of an interest in a joint arrangement or an associate that includes a foreign operation of which the retained interest becomes a financial asset), all of the accumulated exchange differences in respect of that operation attributable to the owners of the Group are reclassified to profit or loss. Any exchange differences that have previously been attributed to non-controlling interests are derecognized, but they are not reclassified to profit or loss.

In the case of a partial disposal (i.e. no loss of control) of a subsidiary that includes a foreign operation, the proportionate share of accumulated exchange differences are re-attributed to non-controlling interests in equity and are not recognized in profit or loss. For all other partial disposals (i.e. partial disposals of associates or joint arrangements that do not result in the Group losing significant influence or joint control), the proportionate share of the accumulated exchange differences is reclassified to profit or loss.

Goodwill and fair value adjustments arising on the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and translated at the closing rate. Exchange differences arising are recognized in other comprehensive income.

(12) 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.

(13) Government grants

Government grants are not recognized until there is reasonable assurance that the Group 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 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 reduction of depreciation expense.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
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2. Significant accounting policies, Continued

(13) Government grants, continued

Government grants related to income are recognized in profit or loss on a systematic basis over the periods in which the Group 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 Group with no future related costs are recognized in profit or loss in the period in which they become receivable.

(14) Retirement benefit costs and termination benefits

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

For defined benefit retirement benefit plans, 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 (excluding interest), is reflected immediately in the 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 Group 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 consolidated statement of financial position represents the actual deficit or surplus in the Group'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.

Discretionary contributions made by employees or third parties reduce service cost upon payment of these contributions to the plan. When the formal terms of the plans specify that there will be contributions from employees or third parties, the accounting depends on whether the contributions are linked to service, as follows:

If the contributions are not linked to services (e.g. contributions are required to reduce a deficit arising from losses on plan assets or from actuarial losses), they are reflected in the remeasurement of the net defined benefit liability (asset).

If contributions are linked to services, they reduce service costs. For the amount of contribution that is dependent on the number of years of service, the entity reduces service cost by attributing the contributions to periods of service using the attribution method required by K-IFRS No.1019 paragraph 70 for the gross benefits. For the amount of contribution that is independent of the number of years of service, the entity reduces service cost in the period in which the related service is rendered / reduces service cost by attributing contributions to the employees' periods of service in accordance with K-IFRS No.1019 paragraph 70.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(15) Share-based payment arrangements

(i) Share-based payment transactions of the Group

Equity-settled share-based payments to employees and others providing similar services 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 Group's estimate of equity instruments that will eventually vest. At the end of each reporting period, the Group 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.

Equity-settled share-based payment transactions with parties other than employees are measured at the fair value of the goods or services received, except where that fair value cannot be estimated reliably, in which case they are measured at the fair value of the equity instruments granted, measured at the date the entity obtains the goods or the counterparty renders the service.

For cash-settled share-based payments, a liability is recognized for the goods or services acquired, measured initially at the fair value of the liability. At the end of each reporting period until the liability is settled, and at the date of settlement, the fair value of the liability is remeasured, with any changes in fair value recognized in profit or loss for the year.

(ii) Share-based payment transactions of the acquire in a business combination

When the share-based payment awards held by the employees of an acquiree (acquiree awards) are replaced by the Group's share-based payment awards (replacement awards), both the acquiree awards and the replacement awards are measured in accordance with K-IFRS No.1102 Share-based payment at the acquisition date. The portion of the replacement awards that is included in measuring the consideration transferred in a business combination equals the market-based measure of the acquiree awards multiplied by the ratio of the portion of the vesting period completed to the greater of the total vesting period or the original vesting period of the acquire award. The excess of the market-based measure of the replacement awards over the market-based measure of the acquiree awards included in measuring the consideration transferred is recognized as remuneration cost for post-combination service.

However, when the acquiree awards expire as a consequence of a business combination and the Group replaces those awards when it does not have an obligation to do so, the replacement awards as measured at their market-based measure in accordance with K-IFRS No.1102. All of the market-based measure of the replacement awards is recognized as remuneration cost for post-combination service.

At the acquisition date, when the outstanding equity-settled share-based payment transactions held by the employees of an acquiree are not exchanged by the Group for its share-based payment transactions, the acquiree share-based payment transactions are measured at their market-based measure at the acquisition date. If the share-based payments have vested by the acquisition date, they are included as part of the non-controlling interest in the acquiree. However, if the share-based payment transactions have not vested by the acquisition date, the market based measure of the unvested share-based payment transactions is allocated to the non-controlling interest in the acquiree based on the ratio of the portion of the vesting period completed to the greater of the total vesting period or the original vesting period of the share-based payment transaction. The balance is recognized as remuneration cost for post-combination service.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(16) Taxation

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

(i) Current tax

The tax currently payable is based on taxable profit for the year. Taxable profit differs from profit as reported in the consolidated 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 Group's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

(ii) Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the consolidated 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.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates, and interests in joint ventures, except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments and interests are only recognized to the extent that it is probable that there will be sufficient taxable profits against which to utilize the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

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 Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Deferred tax assets and liabilities are offset if, and only if the Group has a legally enforceable right to set off current tax assets against current tax liabilities, and the deferred tax assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities which intend either to settle current tax liabilities and assets on a net basis, or to realize the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

(iii) Current and deferred tax for the year

Current and deferred tax 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 tax 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.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(17) Property, plant and equipment

Property, plant and equipment are stated at cost less subsequent accumulated depreciation and accumulated impairment losses. 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 into the Group and the cost of an asset can be measured reliably. Routine maintenance and repairs are expensed as incurred.

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

<i>Years</i>	<u>Estimated useful lives</u>
Buildings	5–60
Structures	8–55
Machinery	2–15
Vehicles	1–10
Tools and equipments	1–20
Others	1–12

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 Group 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.

(18) Investment property

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 reported at cost less accumulated depreciation and accumulated impairment losses.

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 Group and the cost of an asset can be measured reliably. Routine maintenance and repairs are expensed as incurred.

While land is not depreciated, all other investment property is depreciated based on the respective assets estimated useful lives ranging from 5 ~ 60 years using the straight-line method.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(18) Investment property, continued

The estimated useful lives, residual values and depreciation method are reviewed at the end of each reporting period, with the effect of any changes in estimate accounted for on a prospective basis.

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.

(19) Intangible assets

(i) 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 as follows:

<i>Years</i>	<u>Estimated useful lives</u>
Industrial property rights	5–10
Land use rights	44–50
Memberships	20
Other intangible assets	1–20

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.

(ii) 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, only if, the development project is designed to produce new or substantially improved products, and the Group can demonstrate the technical and economical feasibility and measure reliably the resources attributable to the intangible asset during its development.

Development expenditure is amortized on a straight-line basis over 5 to 10 years depending on their economic useful lives.

The amount initially recognized for internally-generated intangible assets is the sum of the expenditure incurred from the date when the intangible asset first meets the recognition criteria. Where no internally-generated intangible asset can be recognized, development expenditure is recognized in profit or loss in the period in which it is incurred.

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.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(19) Intangible assets, continued

(iii) 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.

(iv) 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, and are recognized in profit or loss when the asset is derecognized.

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

At the end of each reporting period, the Group 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 Group estimates the recoverable amount of the cash-generating unit to which the asset belongs. Where a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to the smallest group of cash-generating units for which a reasonable and consistent allocation basis can be identified.

Intangible assets 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 or value in use. If the recoverable amount of an asset (or a cash-generating unit) is estimated to be less than its carrying amount, the carrying amount of the asset (or the cash-generating unit) 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 cash-generating unit) 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 cash-generating unit) in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

(21) Inventories

Inventories are stated at the lower of cost and net realizable value. Cost of inventories, except for those in 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.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(22) Provisions

Provisions are recognized when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that the Group 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 pre-tax 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.

(i) Warranties

Provisions for the expected cost of warranty obligations under local sale of goods legislation are recognized at the date of sale of the relevant products, at the directors' best estimate of the expenditure required to settle the Group's obligation.

(23) Financial assets

Financial assets and financial liabilities are recognized when a group 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 are recognized immediately in profit or loss.

All regular way purchases or sales of financial assets are recognized and derecognized on a trade date basis. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

Financial assets are classified into the following specified categories: 'financial assets at fair value through profit or loss (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.

(i) 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.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(23) Financial assets, continued

(ii) Financial assets at FVTPL

Financial assets are classified as at FVTPL when the financial asset is contingent consideration that may be paid by an acquirer as part of business combination to which K-IFRS No.1103 applies, financial asset held for trading or designated as at FVTPL upon initial. Financial assets acquired for the purpose of selling in the near term are classified as held for trading. All derivative instruments, including embedded derivatives that are accounted for separately from the host contracts, are classified as held for trading unless they are designated as effective hedging instruments. Financial assets at FVTPL are measured at fair value, with gains and losses recognized in profit or loss.

A financial asset is classified as held for trading if:

- it has been acquired principally for the purpose of selling it in the near term; or
- on initial recognition it is part of a portfolio of identified financial instruments that the Group manages together and has a recent actual pattern of short-term profit-taking; or
- it is a derivative that is not designated and effective as a hedging instrument.

A financial asset other than a financial asset held for trading or contingent consideration that may be paid by an acquirer as part of a business combination may be designated as at FVTPL upon initial recognition if:

- such designation eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise; or
- the financial asset forms part of a group of financial assets or financial liabilities or both, which is managed and its performance is evaluated on a fair value basis, in accordance with the Group's documented risk management or investment strategy, and information about the grouping is provided internally on that basis; or
- it forms part of a contract containing one or more embedded derivatives, and K-IFRS 1039 Financial Instruments: Recognition and Measurement permits the entire combined contract (asset or liability) to be designated as at FVTPL.

Financial assets 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 dividend or interest earned on the financial asset and is included in the '[other gains and losses]' line item in the consolidated statement of comprehensive income.

(iii) Held-to-maturity investments

Non-derivatives financial assets with fixed or determinable payments and fixed maturity dates that the Group 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.

(iv) Available-for-sale ("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 fair value through profit or loss.

They are subsequently measured at fair value at the end of each reporting period. Changes in the carrying amount of AFS monetary financial assets relating to changes in foreign currency rates (see below), interest income calculated using the effective interest method and dividends on AFS equity investments are recognized in profit or loss. Other 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 Group's right to receive the dividends is established.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(23) Financial assets, continued

The fair value of AFS monetary financial assets denominated in a foreign currency is determined in that foreign currency and translated at the spot rate prevailing at the end of the reporting period. The foreign exchange gains and losses that are recognized in profit or loss are determined based on the amortized cost of the monetary asset. Other foreign exchange gains and losses are recognized in other comprehensive income.

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.

(v) 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.

(vi) 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 that 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 all other financial assets, objective evidence of impairment includes:

- significant financial difficulty of the issuer or counterparty; or
- default or delinquency in interest or principal payments; or
- it becoming probable that the borrower will enter bankruptcy or financial re-organization; or
- the disappearance of an active market for that financial asset because of financial difficulties.

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 Group'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.

The carrying amount of the financial asset is reduced by the impairment loss directly for all financial assets with the exception of trade receivables, where the carrying amount is reduced through the use of an allowance account. When a trade receivable is considered uncollectible, it is written off against the allowance account.

Subsequent recoveries of amounts previously written off are credited against the allowance account. Changes in the carrying amount of the allowance account are recognized in profit or loss.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(23) Financial assets, continued

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 of 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 of 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.

(vii) Derecognition of financial assets

The Group 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 Group neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Group recognizes its retained interest in the asset and an associated liability for amounts it may have to pay. If the Group retains substantially all the risks and rewards of ownership of a transferred financial asset, the Group continues to recognize the financial asset and also recognizes a collateralized borrowing for the proceeds received.

On derecognition of a financial asset in its entirety, 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 Group 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 Group 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. The difference between the carrying amount allocated to the part that is no longer recognized and the sum of the consideration received for the part that is no longer recognized and any cumulative gain or loss allocated to it that had been recognized in other comprehensive income is recognized in profit or loss. A cumulative gain or loss that had been recognized in other comprehensive income is allocated between the part that continues to be recognized and the part that is no longer recognized on the basis of the relative fair value of those parts.

(24) Financial liabilities and equity instruments

(i) 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.

(ii) 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 Group are recognized at the proceeds received, net of direct issue costs.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(24) Financial liabilities and equity instruments, continued

Repurchase of the Group'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 Group's own equity instruments.

(iii) Compound instruments

The component parts of compound instruments (convertible bonds) issued by the Group 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 Group'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.

Transaction costs that relate to the issue of the convertible notes are allocated to liability and equity components in proportion to the allocation of the gross proceeds. Transaction costs relating to equity component are recognized directly in equity. Transaction costs relating to the liability component are included in the carrying amount of the liability component and are amortized over the lives of the convertible notes using the effective interest method.

(iv) Financial liabilities

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

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

(v) Financial liabilities at FVTPL

Financial liabilities are classified as at FVTPL when the financial liability is contingent consideration that may be paid by an acquirer as part of a business combination to which K-IFRS No.1103 applies, or held for trading, or it is designated as at FVTPL.

A financial liability is classified as held for trading if:

- it has been acquired principally for the purpose of repurchasing it in the near term; or
- on initial recognition it is part of a portfolio of identified financial instruments that the Group manages together and has a recent actual pattern of short-term profit-taking; or
- it is a derivative that is not designated and effective as a hedging instrument.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(24) Financial liabilities and equity instruments, continued

A financial liability other than a financial liability held for trading or contingent consideration that may be paid by an acquirer as part of a business combination may be designated as at FVTPL upon initial recognition if:

- such designation eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise; or
- the financial liability forms part of a group of financial assets or financial liabilities or both, which is managed and its performance is evaluated on a fair value basis, in accordance with the Group's documented risk management or investment strategy, and information about the grouping is provided internally on that basis; or
- it forms part of a contract containing one or more embedded derivatives, and K-IFRS No.1039 Financial Instruments: Recognition and Measurement permits the entire combined contract (asset or liability) to be designated as at 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 gains and losses' line item in the consolidated statement of comprehensive income.

(vi) 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.

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

(vii) 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 instruments.

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:

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

(viii) Derecognition of financial liabilities

The Group derecognize financial liabilities when the Group's obligation are discharged, cancelled 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.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(25) Derivative financial instruments

The Group enters into a variety of derivative financial instruments to manage its exposure to interest rate and foreign exchange rate risk, including foreign exchange forward contracts, interest rate swaps and 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.

(i) 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 economic characteristics are not closely related to those of the host contracts and the contracts are not measured at FVTPL.

An embedded derivative is presented as a non-current asset or a non-current liability if the remaining maturity of the hybrid instrument to which the embedded derivative relates is more than 12 months and it is not expected to be realized or settled within 12 months. Other embedded derivatives are presented as current assets or current liabilities.

(ii) Hedge accounting

The Group designates certain hedging instruments, which include derivatives, embedded derivatives and non-derivatives in respect of foreign currency risk, as either fair value hedges, cash flow hedges, or hedges of net investments in foreign operations. Hedges of foreign exchange risk on firm commitments are accounted for as cash flow hedges.

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 Group documents whether the hedging instrument is highly effective in offsetting changes in fair values or cash flows of the hedged item.

(iii) 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 'other gains and losses' 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 statement of comprehensive income as the recognized hedged item. However, when the forecast transaction that is hedged results in the recognition of a non-financial asset or a non-financial liability, the gains and losses previously accumulated in equity are transferred from equity and included in the initial measurement of the cost of the non-financial asset or non-financial liability.

Hedge accounting is discontinued when the Group 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.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

2. Significant accounting policies, Continued

(26) 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 Group 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 consolidated financial statements is determined on such a basis, except for share-based payment transactions that are within the scope of K-IFRS No. 1102 Share-based payment, leasing transactions that are within the scope of K-IFRS No.1017 Leases, and measurements that have some similarities to fair value but are not fair value, such as net realisable value in K-IFRS 1002 Inventories or value in use in K-IFRS No.1036 Impairment of Assets.

In addition, for financial reporting purposes, fair value measurements are categorized into Level 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 its entirety, which are described as follows:

- (Level 1) inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the Group can access at the measurement date;
- (Level 2) inputs are inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly; and
- (Level 3) inputs are unobservable inputs for the asset or liability.

(27) Accounting related to the Greenhouse Gas Emission Rights (Allowances) and Obligations

The Group 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 Group 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.

(28) Segment reporting

Each operating segment is reported Information of each operating segment is reported in a manner consistent with the business segment reporting provided to the chief operating decision-maker (Note 39). The chief operating decision-maker is responsible for allocating resources and assessing performance of the operating segments.

(29) Approval of Issuance of the Financial Statements

The issuance of the December 31, 2017 financial statements of the Group was authorized for issuance by the Board of Directors on March 16, 2018, which will be submitted for approval at the annual shareholder's meeting on March 27, 2018.

3. Critical Accounting Judgments And Key Sources of Estimation Uncertainty

In the application of the Group 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. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. 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.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

3. Critical Accounting Judgments And Key Sources of Estimation Uncertainty, Continued

The following are the key assumptions concerning the future, and other key sources of estimation uncertainty at the end of the reporting period, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year.

(1) Impairment of goodwill

Determining whether goodwill is impaired requires an estimation of the value in use of the cash-generating units 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 cash-generating unit and a suitable discount rate in order to calculate present value.

(2) Defined Benefit Plan

The Group'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 Group's best estimates of the variables in determining the cost of providing post-retirement benefits such as discount rates, rates of expected future salary increases and mortality rates. Significant estimation uncertainty is likely to persist in making such assumptions due to the long-term nature of post-retirement benefit plan. As of December 31, 2017, net defined benefit liability of the plan is ₩304,696 million (2016: ₩393,485 million), as detailed in Note 23.

(3) Useful lives of property, plant and equipment

As described at Note 2.(12) above, the Group reviews the estimated useful lives of property, plant and equipment at the end of each annual reporting period.

(4) Valuation of Financial Instruments

As described in Note 2.(21), the Group uses valuation techniques that include inputs that are not based on observable market data to estimate the fair value of certain type of financial instruments. Note 5 provides detailed information about key assumptions used in the determination of the fair value of financial instruments, as well as the detailed sensitivity analysis for these assumptions. The directors believe that the chosen valuation techniques and assumptions used are appropriate in determining the fair value of financial instruments.

(5) Uncertainty on the Estimation of Earnings Accumulation Tax (EAT)

Under the Earnings Accumulation Tax (EAT) regime, the Group may incur increased tax burden depending on its level of investment, payroll increase or cash dividends for the three years from 2015. There is uncertainty in the estimation of the tax impact to the Group which is reviewed by the management per the current level of investment, payroll increase or cash dividends.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

4. Financial Risk Management

(1) Financial risk management factors

The Group is exposed to diverse financial risks such as market risk (including foreign exchange risk and interest rate risk), credit risk and liquidity risk due to various activities. The Group's overall risk management policy focuses on the unpredictability of financial markets and seeks to minimize the potential adverse effects on the Group's financial performance.

(i) Market risk

(a) Foreign exchange risk

The Group is exposed to foreign exchange risk when future commercial transactions or recognized assets or liabilities are denominated in a currency that is not the Group's functional currency. These transactions are mainly conducted in USD, EUR, JPY and other foreign currencies.

The Group adopts a foreign exchange risk management policy for each respective entity by considering the nature of business and whether that are countermeasures to mitigate foreign exchange risk. In addition, the Group manages maximum losses within an acceptable range regarding foreign exchange risk exposure by using a foreign exchange risk management model and assesses, manages and reports, on a regular basis, foreign exchange exposure risk to management.

The following table shows the sensitivity for each foreign currency on income before income tax, with all other variables held constant, as of December 31, 2017 and 2016, respectively, when exchange rates change by 1% for the foreign exchange positions held by the Group.

<i>In thousands won</i>		December 31, 2017		December 31, 2016	
		1% increase	1% decrease	1% increase	1% decrease
USD	₩	(8,685,341)	8,685,341	(7,299,793)	7,299,793
EUR		339,376	(339,376)	83,231	(83,231)
JPY		250,749	(250,749)	436,354	(436,354)
	₩	<u>(8,095,216)</u>	<u>8,095,216</u>	<u>(6,780,208)</u>	<u>6,780,208</u>

The table above shows the sensitivity analysis performed on monetary assets and liabilities denominated in foreign currencies other than the Group's functional currency. The effect of changes in foreign exchange rates due to the hedging effectiveness of derivative instrument transactions was also considered.

(b) Interest rate risk

The Group is exposed to fair value risk of deposits and borrowings due to changes in future market interest rates and is exposed to interest rate risk such as changes in cash flows of interest income and expense mainly arising from deposits and borrowings with variable interest rate terms.

The Group has established a policy to manage the uncertainty related to interest rate fluctuations and minimize interest expenses in order to maximize its value.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES Notes to the Consolidated Financial Statements, Continued For the years ended December 31, 2017 and 2016

4. Financial Risk Management, Continued

(1) Financial risk management factors, continued

If the interest rate on variable interest rate borrowings increased/decreased by 1% holding all other variables constant, net profit before income tax as of December 31, 2017 would have been ₩21,220 million (2016: ₩24,716 million) due to the decrease(increase) in interest rate.

(ii) Credit risk

The Group is exposed to credit risk, which is the risk of financial loss to the Group if customers or counterparties to a financial instrument fails to meet its contractual obligations. To minimize such risk, the Group transacts only with customers whose credit rating exceeds a predefined level. The Group evaluates the credit risk of customers with no prior transaction history with the Group using financial and other information provided by credit rating agencies to determine the respective credit line of the new customers.

The Group's maximum exposure to credit risk is the carrying amount of all financial assets (excluding equity instruments), which include cash and cash equivalents deposited at financial institutions and trade receivables and other receivables.

(iii) Liquidity risk

The Group maintains an adequate level of residual limit of borrowings (Note 36) and manages its liquidity risk to maintain adequate liquidity by constantly managing periodic projected cash flows through estimated required cash levels and cash flow management in order to not violate any borrowing limits or commitments on any of its banking facility agreements. When forecasting liquidity, the Group's financing plans, compliance of commitments, compliance of the Group's internal financial ratios and, if applicable, external regulatory or legal requirements regarding currency restrictions are taken into consideration.

(a) Contractual maturities of non-derivative liabilities

Maturity analysis of non-derivative liabilities according to their remaining maturities as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017			
		Within 1 year	1 to 5 years	After 5 years	Total
Borrowings(*1)	₩	2,741,359,841	1,695,118,546	142,888,845	4,579,367,232
Trade payables and other payables		1,632,120,849	23,965,936	-	1,656,086,785
Other financial liabilities(*2)		129,554,295	9,416,942	-	138,971,237
	₩	<u>4,503,034,985</u>	<u>1,728,501,424</u>	<u>142,888,845</u>	<u>6,374,425,254</u>

(*1) Includes projected cash flows of related interest expense.

(*2) Projected cash flows from accrued interest and financial guarantee liabilities are not included.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

4. Financial Risk Management, Continued

(1) Financial risk management factors, continued

In thousands won

		December 31, 2016			
		Within 1 year	1 to 5 years	After 5 years	Total
Borrowings(*1)	₩	2,376,749,357	2,508,094,302	245,024,690	5,129,868,349
Trade payables and other payables		1,758,823,866	48,407,156	-	1,807,231,022
Other financial liabilities(*2)		123,614,902	8,700,512	302,776	132,618,190
	₩	<u>4,259,188,125</u>	<u>2,565,201,970</u>	<u>245,327,466</u>	<u>7,069,717,561</u>

(*1) Includes projected cash flows of related interest expense.

(*2) Projected cash flows from accrued interest and financial guarantee liabilities are not included.

(b) Expected cash flows of derivative liabilities by maturity

Expected cash flows of derivative liabilities by maturity as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017			
		Within 1 year	1 to 5 years	After 5 years	Total
Derivative liabilities(*)	₩	4,946,432	34,649,037	-	39,595,469

(*) Even if derivatives settled gross were classified as assets, expected cash flows are included in the liquidity risk analysis. Derivatives settled on a gross basis whose prices have not yet been determined are reflected in the expected net cash flows.

In thousands won

		December 31, 2016			
		Within 1 year	1 to 5 years	After 5 years	Total
Derivative liabilities(*)	₩	2,296,360	4,138,157	-	6,434,517

(*) Even if derivatives settled gross were classified as assets, expected cash flows are included in the liquidity risk analysis. Derivatives settled on a gross basis whose prices have not yet been determined are reflected in the expected net cash flows.

(c) In addition to the above financial liabilities, the Group has signed financial guarantee contracts and supplemental funding agreements for related parties. If related parties fail to meet an obligation, additional payment obligations by the Group may be incurred within a year (Note 37).

(2) Capital risk management

The Group's capital management objective is to sustain the ability, as a going concern, to consistently deliver profits to shareholders and other stakeholders and to maintain a robust capital structure to reduce the cost of capital. The Group uses the debt-to-equity ratio as an indicator to manage capital. This ratio is calculated by dividing total debt by total equity. Total debt and total equity is presented in the consolidated financial statements as "total liabilities" and "total equity," respectively.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

4. Financial risk management, Continued

(2) Capital risk management, continued

The debt-to-equity ratio of the Group as of December 31, 2017 and 2016 is as follows:

<i>In thousands won</i>		December 31, 2017	December 31, 2016
Total Debt(A)	₩	7,462,014,737	8,349,586,420
Total Equity(B)		6,187,473,162	5,468,326,709
Debt-to-Equity Ratio(A/B)		120.60%	152.69%

5. Fair value

(1) Fair value of financial instruments by category

Fair value of financial instruments by category as of December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		December 31, 2017		December 31, 2016	
		Book value	Fair Value	Book value	Fair Value
Financial assets					
Cash and cash equivalents	₩	804,983,081	804,983,081	1,012,313,393	1,012,313,393
Available-for-sale financial assets(*)		240,476,424	240,476,424	217,975,435	217,975,435
Trade receivables and other receivables		1,718,321,605	1,718,321,605	1,567,233,150	1,567,233,150
Other financial assets:					
Derivative assets		883,763	883,763	10,011,211	10,011,211
Others		433,279,450	433,279,450	354,416,825	354,416,825
	₩	<u>3,197,944,323</u>	<u>3,197,944,323</u>	<u>3,161,950,014</u>	<u>3,161,950,014</u>
Financial liabilities					
Trade payables and other payables	₩	1,655,049,840	1,655,049,840	1,804,263,353	1,804,263,353
Borrowings		4,417,377,060	4,429,659,081	4,829,594,165	4,836,357,750
Other financial liabilities:					
Derivative liabilities		40,476,759	40,476,759	16,020,743	16,020,743
Others		159,372,073	159,372,073	158,967,359	158,967,359
	₩	<u>6,272,275,732</u>	<u>6,284,557,753</u>	<u>6,808,845,620</u>	<u>6,815,609,205</u>

(*) Equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured are measured at cost. As such, they are not subject to fair value measurements (Note 5.(5)).

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

5. Fair value, Continued

(2) Fair value hierarchy

Financial instruments that are carried at fair values by hierarchy level as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017			
		Level 1	Level 2	Level 3	Total
Recurring fair value measurements					
Available-for-sale financial assets	₩	122,545,315	77,051	117,854,058	240,476,424
Derivative assets		-	883,763	-	883,763
Derivative liabilities		-	40,476,759	-	40,476,759
Trade payables and other payables		-	-	46,894,927	46,894,927

In thousands won

		December 31, 2016			
		Level 1	Level 2	Level 3	Total
Recurring fair value measurements					
Available-for-sale financial assets	₩	99,324,959	88,993	118,561,483	217,975,435
Derivative assets		-	10,011,211	-	10,011,211
Derivative liabilities		-	16,020,743	-	16,020,743

(3) Valuation techniques and inputs used in the recurring fair value measurements of financial instruments categorized within Level 2 and Level 3 of the fair value hierarchy are as follows:

- Derivative instruments (currency forwards, options and swaps and interest rate swaps)

Fair value of currency forwards and options is measured based on forward exchange rate quoted in the current market at the end of the reporting period, which has the same remaining period of derivatives to be measured. If the forward exchange rate, which has the same remaining period of currency forward, option, swap and interest rate swap, is not quoted in the current market, fair value is measured using estimates of similar period of forward exchange rate by applying interpolation method with quoted forward exchange rates. As the inputs used to measure fair value of currency forwards and options are supported by observable market data, such as forward exchange rates, the Group classified the estimates of fair value measurements of the currency forwards and options as Level 2 of the fair-value hierarchy.

- Government securities

The fair value of government securities is based on quoted prices in active markets, where available, discounted by the future cash flows of debt securities. The Group classifies government securities as Level 2 of the fair-value hierarchy.

- Unlisted equity securities

Fair value of unlisted equity securities is measured using discounted cash flow projection, and certain assumptions not based on observable market prices or rates, such as sales growth rate, pre-tax operating income ratio and discount rate based on business plan and circumstance of industry are used to estimate the future cash flow. The weighted-average cost of capital used to discount the future cash flows, is calculated by applying the Capital Asset Pricing Model, using the data of similar listed companies. The Group determines that the effect of estimation and assumptions referred above affecting fair value of unlisted equity securities is significant and classifies fair value measurements of unlisted securities as Level 3 of the fair-value hierarchy.

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5. Fair value, Continued

(3) Valuation techniques and inputs used in the recurring fair value measurements of financial instruments categorized within Level 2 and Level 3 of the fair value hierarchy are as follows, continued

- Trade payables and other payables

Trade payables and other payables classified as Level 3 is contingent consideration in the acquisition of share of Hanwha General Chemical Co., Ltd. The discount rate used to discount future cash flows was 2.685% and the discount rate was calculated by discounting the expected cash flow using the probability of occurrence at the time of payment. The Group determines that the effect of estimation and assumptions referred above affecting fair value of trade payables and other payables is significant and classifies fair value measurements of trade payables and other payables as Level 3 of the fair-value hierarchy.

(4) Level 3 fair value

Changes in fair value of financial instruments classified as Level 3 for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		2017	2016
Beginning balance	₩	118,561,483	21,622,730
Moving to Level 3 (*)		3,419,997	-
Substitution from investments in associates and joint ventures		-	96,930,288
Acquisition		42,946	-
Disposal		(12,713,160)	-
Total gain or loss for the period			
- Gains and losses included in other comprehensive income		10,583,591	8,465
- Impairment		(2,040,799)	-
Ending balance	₩	117,854,058	118,561,483

(*) The movement occurred by evaluating the fair value of Hanwha Investment Corp.'s equity instruments.

(5) Financial instruments measured at cost

Details of financial instruments measured at cost as of December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		December 31, 2017	December 31, 2016
Available-for-sale financial assets			
Unlisted equity securities	₩	520,431	10,547,983

The above financial instruments are measured at cost and excluded from the fair value disclosures as they do not have a quoted price in an active market and fair values cannot be measured reliably. The Group does not have any plans to dispose the above instruments in the near future. These instruments will be measured at fair value when the Group can develop a reliable estimate of the fair value.

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6. Financial instruments by category

(1) Carrying amount of financial instruments by category

(i) Carrying amount of financial assets by category as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017			
		Financial assets at fair value through profit and loss	Available-for-sale financial assets	Loans and receivables	Total
Current:					
Cash and cash equivalents	₩	-	-	804,983,081	804,983,081
Trade receivables and other receivables		-	-	1,706,780,803	1,706,780,803
Other financial assets		883,763	-	369,624,573	370,508,336
Non-current:					
Available-for-sale financial assets		-	240,996,855	-	240,996,855
Long-term trade receivables and other receivables		-	-	11,540,802	11,540,802
Other long-term financial assets		-	-	63,654,877	63,654,877
	₩	883,763	240,996,855	2,956,584,136	3,198,464,754

In thousands won

		December 31, 2016			
		Financial assets at fair value through profit and loss	Available-for-sale financial assets	Loans and receivables	Total
Current:					
Cash and cash equivalents	₩	-	-	1,012,313,393	1,012,313,393
Trade receivables and other receivables		-	-	1,561,381,114	1,561,381,114
Other financial assets		2,221,182	-	246,485,116	248,706,298
Non-current:					
Available-for-sale financial assets		-	228,523,418	-	228,523,418
Long-term trade receivables and other receivables		-	-	5,852,036	5,852,036
Other long-term financial assets		7,790,029	-	107,931,709	115,721,738
	₩	10,011,211	228,523,418	2,933,963,368	3,172,497,997

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6. Financial instruments by category, Continued

(1) Carrying amount of financial instruments by category, continued

(ii) Carrying amount of financial liabilities by category as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017			
		Financial liabilities at fair value through profit and loss	Financial liabilities at amortized cost	Others(*)	Total
Current:					
Trade payables and other payables	₩	23,758,076	1,608,154,913	-	1,631,912,989
Short-term borrowings		-	2,629,801,251	11,614,294	2,641,415,545
Other financial liabilities		5,743,687	148,651,331	361,626	154,756,644
Non-current:					
Long-term trade payables and other payables		23,136,851	-	-	23,136,851
Long-term borrowings		-	1,775,961,515	-	1,775,961,515
Other long-term financial liabilities		32,849,385	9,406,294	2,836,509	45,092,188
	₩	<u>85,487,999</u>	<u>6,171,975,304</u>	<u>14,812,429</u>	<u>6,272,275,732</u>

(*) Includes hedging derivative instruments, financial liabilities and financial guarantees related to transfer transactions not qualified for derecognition not applicable to financial liabilities by category.

In thousands won

		December 31, 2016			
		Financial liabilities at fair value through profit and loss	Financial liabilities at amortized cost	Others(*)	Total
Current:					
Trade payables and other payables	₩	-	1,758,119,346	-	1,758,119,346
Short-term borrowings		-	2,233,237,409	21,730,863	2,254,968,272
Other financial liabilities		3,920,547	147,795,888	575,748	152,292,183
Non-current:					
Long-term trade payables and other payables		-	46,144,007	-	46,144,007
Long-term borrowings		-	2,574,625,893	-	2,574,625,893
Other long-term financial liabilities		11,768,516	8,980,188	1,947,215	22,695,919
	₩	<u>15,689,063</u>	<u>6,768,902,731</u>	<u>24,253,826</u>	<u>6,808,845,620</u>

(*) Includes hedging derivative instruments, financial liabilities and financial guarantees related to transfer transactions not qualified for derecognition not applicable to financial liabilities by category.

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6. Financial instruments by category, Continued

(2) Net profit or loss of financial instruments by category

Details of net profit or loss of financial instruments by category for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

		2017			
		Financial instruments at fair value through profit and loss(*1)	Available-for-sale financial assets	Loans and receivables	Financial liabilities at amortized cost(*2)
					Total
Interest income	₩	145,261	-	15,265,802	-
Gain on foreign currency transactions		-	-	242,371,406	19,860,849
Gain on foreign currency translation		-	-	101,227,486	64,062,163
Interest expense		-	-	-	(148,823,555)
Loss on foreign currency transactions		-	-	(115,265,743)	(164,311,831)
Loss on foreign currency translation		-	-	(84,360,081)	(21,795,660)
Bad debt expense		-	-	(42,683,250)	-
Other bad debt expense		-	-	(281,984)	-
Gain on disposal of available-for-sale financial assets		-	5,551,834	-	-
Loss on disposal of available-for-sale financial assets		-	(5,293)	-	-
Impairment loss on available-for-sale financial assets		-	(8,510,137)	-	-
Loss on disposal of trade receivables		-	-	(958,439)	-
Gain on valuation of derivatives		2,185,899	-	-	-
Gain on transactions of derivatives		8,079,730	-	-	-
Loss on valuation of derivatives		(32,822,512)	-	-	-
Loss on transactions of derivatives		(14,224,219)	-	-	-
Dividend income		-	1,644,900	-	-
Others		(1,226,205)	-	-	(571,705)
		<u>(37,862,046)</u>	<u>(1,318,696)</u>	<u>115,315,197</u>	<u>(251,579,739)</u>
Other comprehensive income:					
Gain on valuation of available-for sale financial assets		-	23,278,994	-	-
Gain on valuation of derivatives		265,992	-	-	-
	₩	<u>(37,596,054)</u>	<u>21,960,298</u>	<u>115,315,197</u>	<u>(251,579,739)</u>
					<u>(151,900,298)</u>

(*1) Includes profit and loss of hedging derivative instruments in Note 6.(1).

(*2) Includes profit and loss of financial liabilities and financial guarantees related to transfer transactions not qualified for derecognition in Note 6.(1).(iii).

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
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6. Financial instruments by category, Continued

(2) Net profit or loss of financial instruments by category, continued

In thousands won

		2016				
		Financial instruments at fair value through profit and loss	Available-for-sale financial assets	Loans and receivables	Financial liabilities at amortized cost(*1)	Total
Interest income	₩	-	-	19,159,087	-	19,159,087
Gain on foreign currency transactions		-	-	118,665,637	48,670,836	167,336,473
Gain on foreign currency translation		-	-	92,476,409	19,803,079	112,279,488
Interest expense		-	-	-	(173,291,081)	(173,291,081)
Loss on foreign currency transactions		-	-	(98,989,100)	(86,803,015)	(185,792,115)
Loss on foreign currency translation		-	-	(39,584,444)	(62,372,296)	(101,956,740)
Bad debt expense		-	-	(17,078,887)	-	(17,078,887)
Other bad debt expense		-	-	(4,535,353)	-	(4,535,353)
Reversal of allowance for bad debts		-	-	22,831	-	22,831
Impairment loss on available-for-sale financial assets		-	(5,538,403)	-	-	(5,538,403)
Reversal of impairment loss on available-for-sale financial assets		-	499	-	-	499
Loss on disposal of trade receivables		-	-	(436,450)	-	(436,450)
Gain on valuation of derivatives		5,867,729	-	-	-	5,867,729
Gain on transactions of derivatives		26,625,491	-	-	-	26,625,491
Loss on valuation of derivatives		(16,382,854)	-	-	-	(16,382,854)
Loss on transactions of derivatives		(50,898,484)	-	-	-	(50,898,484)
Dividend income		-	3,162,717	-	-	3,162,717
Others		-	-	-	(3,426,748)	(3,426,748)
		(34,788,118)	(2,375,187)	69,699,730	(257,419,225)	(224,882,800)
Other comprehensive income:						
Loss on valuation of available-for-sale financial assets		-	(12,701,875)	-	-	(12,701,875)
	₩	(34,788,118)	(15,077,062)	69,699,730	(257,419,225)	(237,584,675)

(*1) Includes profit and loss of financial liabilities and financial guarantees related to transfer transactions not qualified for derecognition in Note 6.(1).(ii).

7. Transfers of financial assets

The Group transfers financial assets that are not derecognized in their entirety and counterparties of the related liabilities have recourse for the transferred assets.

All of the transferred financial assets as of December 31, 2017, are trade receivables and the related liabilities are accounted for as short-term borrowings. The carrying amounts and fair value of transferred trade receivables and related liabilities amounted to ₩11,614 million (2016: ₩21,731 million) and the net position is nil.

8. Cash and cash equivalents

Restricted cash and cash equivalents provided as collateral for borrowings and others as of December 31, 2017, are ₩2,863 million (2016: ₩3,357 million) (Note 36).

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

9. Trade receivables and other receivables

(1) Trade receivables and other receivables as of December 31, 2017 and 2016 are as follows:

In thousands won

	December 31, 2017		December 31, 2016	
	Current	Non-current	Current	Non-current
Trade receivables	₩ 1,716,524,366	-	1,543,326,655	100,556
Allowance for doubtful accounts	(79,562,914)	-	(42,962,121)	(100,556)
	<u>1,636,961,452</u>	<u>-</u>	<u>1,500,364,534</u>	<u>-</u>
Other receivables	70,585,879	202,846,742	62,041,232	197,157,976
Allowance for doubtful accounts(*)	(766,528)	(191,305,940)	(1,024,652)	(191,305,940)
	<u>69,819,351</u>	<u>11,540,802</u>	<u>61,016,580</u>	<u>5,852,036</u>
	<u>₩ 1,706,780,803</u>	<u>11,540,802</u>	<u>1,561,381,114</u>	<u>5,852,036</u>

(*) As an allowance for doubtful accounts of other receivables related to lawsuits, the allowance for doubtful accounts is set for the entire other receivables (Note 36.(8)).

(2) The aging analysis of trade receivables and other receivables as of December 31, 2017 and 2016 are as follows:

In thousands won

	December 31, 2017		December 31, 2016	
Receivables not past due:	₩	1,424,959,895		1,437,152,913
Past due but not impaired:				
Less than 3 months		141,312,115		6,116,183
Less than 6 months		68,365,327		60,645,656
Less than 1 year		104,917,273		57,574,515
Over 1 year		54,777,260		43,744,108
		<u>369,371,975</u>		<u>168,080,462</u>
Impaired:				
Less than 3 months		-		2,515,172
Less than 6 months		-		236
Less than 1 year		362,557		458,819
Over 1 year		195,262,560		194,418,817
		<u>195,625,117</u>		<u>197,393,044</u>
	₩	<u>1,989,956,987</u>		<u>1,802,626,419</u>

(*) Classification of not impaired and impaired as a result of the assessment of each individual account.

(3) Changes in allowance for doubtful accounts for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

	2017		2016	
	Trade receivables	Other receivables	Trade receivables	Other receivables
Beginning balance	₩ 43,062,677	192,330,592	31,219,514	192,007,785
Increase	42,683,250	9,920	17,078,887	4,535,353
Reversal	-	-	(22,831)	-
Write-offs	(5,028,072)	(300,744)	(2,541,387)	(275,504)
Changes in scope of consolidation	-	-	(2,431,693)	-
Changes in exchange rates and others	(1,154,941)	32,700	(239,813)	(3,937,042)
Ending balance	₩ <u>79,562,914</u>	<u>192,072,468</u>	<u>43,062,677</u>	<u>192,330,592</u>

(4) Trade receivables and other receivables are provided as collateral for borrowings as of December 31, 2017 (Note 36).

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
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10. Other financial assets

(1) Other financial assets as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017		December 31, 2016	
		Current	Non-current	Current	Non-current
Financial instruments	₩	338,098,391	8,512,640	187,426,926	5,657,950
Loans		12,497,230	27,384,296	39,290,491	56,284,567
Deposits		14,089,701	27,757,941	14,562,787	45,989,192
Accrued revenue		4,939,251	-	5,204,912	-
Derivative assets		883,763	-	2,221,182	7,790,029
	₩	<u>370,508,336</u>	<u>63,654,877</u>	<u>248,706,298</u>	<u>115,721,738</u>

(2) Derivatives

The Group entered into currency forwards, cross currency swaps and other contracts to hedge exchange rate risk of trade receivables denominated in foreign currencies. Derivatives as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017		December 31, 2016	
		Assets	Liabilities	Assets	Liabilities
Trading:					
Currency forwards	₩	300,678	734,312	1,588,489	294,421
Currency options		128,497	15,438,738	3,604,978	6,726,733
Currency swaps		-	22,141,229	4,817,744	8,238,720
Interest rate swaps		454,588	278,793	-	429,189
		<u>883,763</u>	<u>38,593,072</u>	<u>10,011,211</u>	<u>15,689,063</u>
Cash flow hedge:					
Currency swaps		-	1,714,030	-	-
Interest rate swaps		-	169,657	-	331,680
		<u>-</u>	<u>1,883,687</u>	<u>-</u>	<u>331,680</u>
	₩	<u>883,763</u>	<u>40,476,759</u>	<u>10,011,211</u>	<u>16,020,743</u>

(3) Other financial assets are provided as collateral for borrowings as of December 31, 2017 (Note 36).

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11. Other assets

Other assets as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017		December 31, 2016	
		Current	Non-current	Current	Non-current
Advance payments	₩	196,241,073	-	188,968,248	-
Allowances for impairment		(105,906,487)	-	(112,131,156)	-
Prepaid construction costs		415,049	-	595,967	-
Prepaid expenses		29,937,016	12,692,113	24,293,554	7,567,197
Prepaid value added tax and others		65,892,252	13,672,816	57,190,632	7,085,510
	₩	<u>186,578,903</u>	<u>26,364,929</u>	<u>158,917,245</u>	<u>14,652,707</u>

12. Inventories

(1) Inventories as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017			December 31, 2016		
		Acquisition cost	Valuation reserve	Book value	Acquisition cost	Valuation reserve	Book value
Merchandise	₩	221,144,455	(805,354)	220,339,101	178,126,370	(1,832,360)	176,294,010
Finished goods		396,615,780	(14,192,900)	382,422,880	422,125,732	(19,948,498)	402,177,234
Half-finished goods		18,715,798	(442,146)	18,273,652	28,105,058	(88,085)	28,016,973
Work in process		225,313,027	-	225,313,027	523,723,810	-	523,723,810
Raw materials		177,289,002	(12,016,161)	165,272,841	177,749,355	(6,777,274)	170,972,081
Supplies		72,755,757	-	72,755,757	67,660,832	-	67,660,832
Goods in transit		59,380,916	-	59,380,916	51,801,779	-	51,801,779
	₩	<u>1,171,214,735</u>	<u>(27,456,561)</u>	<u>1,143,758,174</u>	<u>1,449,292,936</u>	<u>(28,646,217)</u>	<u>1,420,646,719</u>

(2) The loss on valuation of inventories included in cost of sales in the consolidated statements of comprehensive income for the year ended December 31, 2017 amounts to ₩27,457 million (2016: ₩28,646 million).

(3) Inventories are provided as collateral for borrowings as of December 31, 2017 (Note 36).

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
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13. Available-for-sale financial assets

(1) Available-for-sale financial assets as of December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		December 31, 2017	December 31, 2016
Equity securities			
Listed securities	₩	122,545,315	99,324,959
Unlisted securities		118,374,489	129,109,466
		<u>240,919,804</u>	<u>228,434,425</u>
Debt securities		<u>77,051</u>	<u>88,993</u>
	₩	<u>240,996,855</u>	<u>228,523,418</u>

(2) Changes in available-for-sale financial assets for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		2017	2016
Beginning balance	₩	228,523,418	150,075,320
Acquisition		10,282,946	-
Disposal/Transfer(*1)		(12,964,271)	96,668,195
Valuation		23,278,994	(12,832,794)
Others(*2)		<u>(8,124,232)</u>	<u>(5,387,303)</u>
Ending balance	₩	<u>240,996,855</u>	<u>228,523,418</u>

(*1) Investments in associates were transferred to available-for-sale financial assets amounting to ₩96,930 million during 2016, due to the issuance of unequal shares by Hanwha Q CELLS Korea Corp., a subsidiary, which caused a loss of significant influence (Note 14).

(*2) Includes effects due to changes in scope of consolidation and exchange rate changes and impairment and others.

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14. Investments in associates and joint ventures

(1) Investments in associates and joint ventures as of December 31, 2017 and 2016 are as follows:

In thousands won

In thousands won				Ownership (%)	
Investees	Location	Closing Month	Main business	December 31, 2017	December 31, 2016
Associates:					
Smile Ventures Co., Ltd.(*1)	Korea	December	Wholesale and retail	29.41%	-
Hanwha Savings Bank Co., Ltd.	Korea	December	Bank business	36.05%	36.05%
Hanwha Newly-Development Force Fund(*2)	Korea	December	Fund investment	-	22.50%
Hanwha Station Development Co., Ltd.	Korea	December	Rent business	48.32%	48.32%
HANWHA Eagles Professional Baseball Club	Korea	December	Sports club operating	50.00%	50.00%
Hanwha General Chemical Co., Ltd.	Korea	December	Manufacture of basic compound of petrochemicals	36.05%	36.05%
HANWHA INVESTMENT AND SECURITIES CO., LTD.	Korea	December	Stock Broking	21.76%	21.76%
Hanwha Hotels and Resort Co., Ltd.	Korea	December	Tourism and Lodge Industry	48.78%	48.78%
CRP/Extell Parcel J, L.P.	USA	December	Real Estate Development	49.00%	49.00%
Crystal Solar Inc.	USA	December	Solar Engineering	29.09%	29.09%
GRANSOLAR ATOTONILCO, S.A. DE C.V.	Mexico	December	Construction Business	20.00%	20.00%
GRANSOLAR OCOTLAN, S.A. DE C.V.	Mexico	December	Construction Business	20.00%	20.00%
HongKong YongWang Silicon Investment Co., Ltd.(*2)	Hong Kong	December	Holding Company	-	49.99%
International Polymers Company	Saudi Arabia	December	Manufacture of basic compound	25.00%	25.00%
OneRoof Energy Group, Inc.	Canada	December	Photovoltaic business	46.15%	46.15%
Renew Akshay Urja Privated Limited	India	March	Photovoltaic business	43.87%	43.87%
Saudi Specialized Products Company	Saudi Arabia	December	Manufacture of chemicals	25.00%	25.00%
Joint ventures:					
YEOCHUN NCC Co., Ltd.	Korea	December	Manufacture of basic compound	50.00%	50.00%
Burdur Enerji A.S.	Turkey	December	Photovoltaic business	50.00%	50.00%
Garnet Solar Power Generation Station 1, LLC	USA	December	Photovoltaic business	50.00%	50.00%
Gulf Advanced Cables Insulation Company	Saudi Arabia	December	Manufacture of cable	50.00%	50.00%
HANWHA KALYON GUNES ENERJISI URETIM ANONIM SIRKETI(*3)	Turkey	December	Photovoltaic business	50.00%	-
HANWHA KALYON GUNES TEKNOLOJILERI URETIM ANONIM SIRKETI(*3)	Turkey	December	Manufacture of Photovoltaic Ingots, Wafers, Cells, Modules	50.00%	-
Hanwha Q CELLS PR Solar Holdings LLC	USA	December	Photovoltaic business	50.00%	50.00%
HQC Rock River Solar Holdings LLC	USA	December	Photovoltaic business	50.00%	50.00%
HSP TW TE, LLC(*3)	USA	December	Photovoltaic business	50.00%	-
Lakeshore East Retail LLC	USA	December	Real estate	50.00%	50.00%
Parcel O LLC	USA	December	Real estate	50.00%	50.00%

(*1) The Group newly acquired the company during the year ended December 31, 2017.

(*2) Liquidation process was completed during the year ended December 31, 2017.

(*3) The Group newly established the company during the year ended December 31, 2017.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

14. Investments in associates and joint ventures, Continued

(2) Valuation of Investments in associates and joint ventures under the equity method for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

Investees	2017					
	Beginning balance	Acquisition (Disposal)	Gain or loss on equity method investments	Other Comprehensive income (loss)	Other(*1)	Ending balance
Associates:						
Smile Ventures Co., Ltd. ₩	-	2,500,000	(105,019)	-	-	2,394,981
Hanwha Savings Bank Co., Ltd.	54,389,472	-	8,295,615	18,810	26,586	62,730,483
Hanwha Newly-Development Force Fund	1,578,251	(1,577,013)	(1,238)	-	-	-
Hanwha Station Development Co., Ltd.	101,729,351	(15,554,302)	(7,635,024)	-	(3,204,484)	75,335,541
HANWHA Eagles Professional Baseball Club	1,334,743	-	(600,729)	-	27,260	761,274
Hanwha General Chemical Co., Ltd.	776,457,472	-	198,002,670	(746,546)	166,058	973,879,654
HANWHA INVESTMENT AND SECURITIES CO., LTD.	197,758,690	-	11,630,994	876,872	351,091	210,617,647
Hanwha Hotels and Resort Co., Ltd.	360,855,495	-	(3,594,618)	1,139,920	903,847	359,304,644
CRP/Extell Parcel J, L.P.	-	-	-	-	-	-
Crystal Solar Inc.	-	-	-	-	-	-
GRANSOLAR ATOTONILCO, S.A. DE C.V.	454,050	-	-	-	(25,185)	428,865
GRANSOLAR OCOTLAN, S.A. DE C.V.	454,050	-	-	-	(25,185)	428,865
International Polymers Company	105,537,732	-	12,924,227	(12,644,568)	-	105,817,391
OneRoof Energy Group, Inc.	-	-	-	-	-	-
Renew Akshay Urja Privated Limited	15,724,496	-	2,571,889	-	278,918	18,575,303
Saudi Specialized Products Company	13,567,836	-	(2,858,679)	(1,386,992)	-	9,322,165
	<u>1,629,841,638</u>	<u>(14,631,315)</u>	<u>218,630,088</u>	<u>(12,742,504)</u>	<u>(1,501,094)</u>	<u>1,819,596,813</u>
Joint ventures:						
YEOCHUN NCC Co., Ltd.	602,464,091	-	379,938,480	-	(199,398,619)	783,003,952
Burdur Enerji A.S.	253,305	-	632,347	(95,639)	(45,934)	744,079
Garnet Solar Power Generation Station 1, LLC	3,871,627	-	-	-	(869,110)	3,002,517
Gulf Advanced Cables Insulation Company	7,008,276	7,196,800	(3,562,126)	(946,850)	-	9,696,100
HANWHA KALYON GUNES ENERJISI URETIM ANONIM SIRKETI	-	6,072,933	-	-	(306,547)	5,766,386
HANWHA KALYON GUNES TEKNOLOJILERI URETIM ANONIM SIRKETI	-	21,923,683	-	-	(340,335)	21,583,348
Hanwha Q CELLS PR Solar Holdings LLC	7,455,432	-	(3,247,803)	-	(779,149)	3,428,480
HQC Rock River Solar Holdings LLC	2,551,091	-	768,661	-	(910,082)	2,409,670
HSP TW TE, LLC	-	7,917,533	-	-	(417,733)	7,499,800
Lakeshore East Retail LLC	10,882,515	-	(72,467)	-	(3,373,558)	7,436,490
Parcel O LLC	20,167,222	-	-	-	(2,015,405)	18,151,817
	<u>654,653,559</u>	<u>43,110,949</u>	<u>374,457,092</u>	<u>(1,042,489)</u>	<u>(208,456,472)</u>	<u>862,722,639</u>
₩	<u>2,284,495,197</u>	<u>28,479,634</u>	<u>593,087,180</u>	<u>(13,784,993)</u>	<u>(209,957,566)</u>	<u>2,682,319,452</u>

(*1) Includes gain on bargain purchase, change in foreign currencies and dividends received.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

14. Investments in associates and joint ventures, Continued

(2) Valuation of Investments in associates and joint ventures under the equity method for the years ended December 31, 2017 and 2016 are as follows, continued:

In thousands won

In thousands won		2016					
		Beginning balance	Acquisition (Disposal)	Gain or loss on equity method investments	Other Comprehensive income (loss)	Other(*1)	Ending balance
Investees							
Associates:							
Hanwha Savings Bank Co., Ltd.	₩	54,312,810	-	155,788	(58,637)	(20,489)	54,389,472
Hanwha General Insurance Co., Ltd.		51,803,935	(41,579,144)	1,839,410	(11,682,008)	(382,193)	-
Hanwha Newly-Development Force Fund		4,380,027	(2,925,000)	1,155,436	(1,032,212)	-	1,578,251
Hanwha Station Development Co., Ltd.		54,825,527	44,108,260	4,751,509	-	(1,955,945)	101,729,351
HANWHA Eagles Professional Baseball Club		1,635,496	-	(177,384)	-	(123,369)	1,334,743
Hanwha General Chemical Co., Ltd.		603,751,099	-	184,196,068	(5,158,922)	(6,330,773)	776,457,472
HANWHA Q CELLS Korea Corp.		50,020,548	(88,004,755)	24,293,524	(95,957)	13,786,640	-
HANWHA INVESTMENT AND SECURITIES CO., LTD.		195,015,623	42,644,612	(35,641,635)	(320,301)	(3,939,609)	197,758,690
Hanwha Hotels and Resort Co., Ltd.		374,060,856	-	(11,150,426)	(1,662,830)	(392,105)	360,855,495
CRP/Extell Parcel J, L.P.		-	-	-	-	-	-
Crystal Solar Inc.		4,533,076	-	(3,443,419)	(63,117)	(1,026,540)	-
GRANSOLAR ATOTONILCO, S.A. DE C.V.		467,729	-	-	-	(13,679)	454,050
GRANSOLAR OCOTLAN, S.A. DE C.V.		467,729	-	-	-	(13,679)	454,050
HongKong YongWang Silicon Investment Co., Ltd.		-	-	-	-	-	-
International Polymers Company		84,312,956	-	17,780,290	3,444,486	-	105,537,732
OneRoof Energy Group, Inc.		-	-	-	-	-	-
Renew Akshay Urja Privated Limited		18,306,688	-	(1,388,432)	-	(1,193,760)	15,724,496
Saudi Specialized Products Company		4,298,415	8,718,432	(373,601)	924,590	-	13,567,836
		1,502,192,514	(37,037,595)	181,997,128	(15,704,908)	(1,605,501)	1,629,841,638
Joint ventures:							
YEOCHUN NCC Co., Ltd.		496,441,519	-	242,269,432	-	(136,246,860)	602,464,091
Burdur Enerji A.S.		358,248	-	(36,375)	(41,125)	(27,443)	253,305
Garnet Solar Power Generation Station 1, LLC		4,245,127	-	(221,053)	-	(152,447)	3,871,627
Gulf Advanced Cables Insulation Company		7,457,750	-	(660,643)	211,169	-	7,008,276
Hanwha Q CELLS PR Solar Holdings LLC		-	6,630,430	(32,034)	-	857,036	7,455,432
HQC Rock River Solar Holdings LLC		-	4,530,360	278,185	-	(2,257,454)	2,551,091
Lakeshore East Retail LLC		10,829,007	-	(272,317)	-	325,825	10,882,515
Parcel O LLC		21,550,137	-	-	-	(1,382,915)	20,167,222
		540,881,788	11,160,790	241,325,195	170,044	(138,884,258)	654,653,559
	₩	2,043,074,302	(25,876,805)	423,322,323	(15,534,864)	(140,489,759)	2,284,495,197

(*1) Includes gain on bargain purchase, change in foreign currencies and dividends received.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

14. Investments in associates and joint ventures, Continued

(3) Summary of financial information of key associates and joint ventures as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017					
Investees		Assets	Liabilities	Equity	Revenue	Net income (loss)	Total comprehensive income
Associates:							
Hanwha Savings Bank Co., Ltd.	₩	685,013,940	596,019,156	88,994,784	43,089,007	23,013,784	23,139,578
Hanwha Station Development Co., Ltd.		415,846,935	296,704,716	119,142,219	63,322,149	155,110	72,754
Hanwha General Chemical Co., Ltd.		5,018,363,246	2,081,714,106	2,936,649,140	2,519,571,625	572,528,503	572,049,690
HANWHA INVESTMENT AND SECURITIES CO., LTD.		6,700,447,260	5,825,712,953	874,734,307	1,710,708,927	54,081,671	67,618,782
Hanwha Hotels and Resort Co., Ltd.		2,498,203,402	1,739,926,536	758,276,866	1,147,925,334	(26,209,886)	(22,115,231)
International Polymers Company		933,187,763	516,543,432	416,644,331	304,195,567	51,715,955	1,987,056
Joint ventures:							
YEOCHUN NCC Co., Ltd.		2,566,316,773	952,165,255	1,614,151,518	5,415,957,596	765,741,811	766,944,574
Gulf Advanced Cables Insulation Company		75,633,161	56,240,962	19,392,199	25,501,640	(7,124,253)	(8,984,994)
Lakeshore East Retail LLC		54,594,360	34,744,264	19,850,096	6,227,974	(144,933)	(240,037)
Parcel O LLC		40,259,446	-	40,259,446	-	-	-

In thousands won

		December 31, 2016					
Investees		Assets	Liabilities	Equity	Revenue	Net income (loss)	Total comprehensive income
Associates:							
Hanwha Savings Bank Co., Ltd.	₩	648,085,035	582,229,829	65,855,206	41,087,034	432,186	212,675
Hanwha Station Development Co., Ltd.		434,805,563	309,186,026	125,619,537	65,421,500	14,612,728	14,396,957
Hanwha General Chemical Co., Ltd.		3,955,187,435	1,584,482,342	2,370,705,093	1,279,942,686	524,678,762	525,774,277
HANWHA INVESTMENT AND SECURITIES CO., LTD.		6,928,094,337	6,120,965,845	807,128,492	1,578,838,362	(161,453,070)	(169,295,435)
Hanwha Hotels and Resort Co., Ltd.		2,427,354,787	1,651,748,087	775,606,700	1,119,808,844	695,737	(3,560,395)
International Polymers Company		1,077,920,962	663,263,687	414,657,275	296,023,910	70,376,156	83,921,520
Joint ventures:							
YEOCHUN NCC Co., Ltd.		2,457,726,586	1,210,519,642	1,247,206,944	4,374,003,366	490,009,236	487,515,515
Gulf Advanced Cables Insulation Company		102,522,733	88,506,181	14,016,552	42,314,072	(1,321,287)	(898,948)
Lakeshore East Retail LLC		63,137,687	38,190,295	24,947,392	5,924,063	(240,037)	(240,037)
Parcel O LLC		45,393,840	-	45,393,840	-	-	-

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

14. Investments in associates and joint ventures, Continued

(4) Details of financial information of key associates and joint ventures as of December 31, 2017 and 2016 are as follows:

In thousands won

		YEOCHUN NCC Co., Ltd.		Hanwha General Chemical Co., Ltd.	
		December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Cash and cash equivalents	₩	418,250,476	342,577,560	99,268,129	253,383,096
Current financial liabilities		230,643,796	320,830,186	525,159,221	361,656,535
Non-current financial liabilities		136,569,961	262,497,723	742,109,316	634,741,722
Depreciation(*)		100,345,028	142,172,354	76,363,837	35,878,048
Amortization(*)		2,640,744	3,961,116	14,141,064	1,688,025
Interest income		5,728,099	3,230,685	4,876,783	1,836,433
Interest expense		12,168,255	14,289,329	31,784,798	13,288,924
Income tax expense		245,231,491	156,023,774	23,066,360	388,783

(*) Includes expenses classified as cost of sales and selling expenses.

(5) Dividends received from associates and joint ventures for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

		2017	2016
Associates:			
Hanwha General Insurance Co., Ltd.	₩	-	382,194
Hanwha Station Development Co., Ltd.		3,164,694	1,851,694
Garnet Solar Power Generation Station 1, LLC		603,801	247,743
HQC Rock River Solar Holdings LLC		456,411	170,906
Lakeshore East Retail LLC		2,262,152	-
Joint ventures:			
YEOCHUN NCC Co., Ltd.		200,000,000	135,000,000

(6) Adjustments from financial information of key associates and joint ventures to book value of investments in associates and joint ventures as of December 31, 2017 and 2016 are as follows:

In thousands won

In thousands won		December 31, 2017					
		Net assets at year-end (a) (*)	Group ownership (b)	Interest in net assets(a x b)	Goodwill	Dereconized unrealized gains(losses)	Year-end book value
Investees							
Associates:							
Hanwha Savings Bank Co., Ltd.	₩	88,994,784	36.05%	32,079,516	30,650,967	-	62,730,483
Hanwha Station Development Co., Ltd.		119,142,219	48.32%	57,564,049	-	17,771,492	75,335,541
Hanwha General Chemical Co., Ltd.(*)		2,662,050,053	36.05%	959,545,914	2,693,337	11,640,403	973,879,654
HANWHA INVESTMENT AND SECURITIES CO., LTD. (*)		872,483,526	21.76%	189,860,209	20,787,045	(29,607)	210,617,647
Hanwha Hotels and Resort Co., Ltd. (*)		751,213,337	48.78%	366,437,687	-	(7,133,043)	359,304,644
International Polymers Company		416,644,331	25.00%	104,161,083	1,795,924	(139,616)	105,817,391
Joint ventures:							
YEOCHUN NCC Co., Ltd.		1,614,151,518	50.00%	807,075,759	-	(24,071,807)	783,003,952
Gulf Advanced Cables Insulation Company		19,392,199	50.00%	9,696,100	-	-	9,696,100
Lakeshore East Retail LLC		19,850,096	50.00%	9,925,048	-	(2,488,558)	7,436,490
Parcel O LLC		40,259,446	50.00%	20,129,723	-	(1,977,906)	18,151,817

(*) Associates prepare their consolidated financial statements, which their stated net assets refer to equity attributable to owners of the Group.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

14. Investments in associates and joint ventures, Continued

(6) Adjustments from financial information of key associates and joint ventures to book value of investments in associates and joint ventures as of December 31, 2017 and 2016 are as follows, continued:

In thousands won

Investees	December 31, 2016					
	Net assets at year-end (a) (*)	Group ownership (b)	Interest in net assets(a x b)	Goodwill	Derecognized unrealized gains(losses)	Year-end book value
Associates:						
Hanwha Savings Bank Co., Ltd.	₩ 65,855,206	36.05%	23,738,505	30,650,967	-	54,389,472
Hanwha Station Development Co., Ltd.	125,619,537	48.32%	60,693,591	-	41,035,760	101,729,351
Hanwha General Chemical Co., Ltd. (*)	2,108,112,139	36.05%	759,876,918	2,693,337	13,887,217	776,457,472
HANWHA INVESTMENT AND SECURITIES CO., LTD. (*)	805,494,567	21.76%	175,282,813	20,787,045	1,688,832	197,758,690
Hanwha Hotels and Resort Co., Ltd. (*)	774,752,431	48.78%	377,919,925	-	(17,064,430)	360,855,495
International Polymers Company	414,657,275	25.00%	103,664,319	1,795,924	77,489	105,537,732
Joint ventures:						
YEOCHUN NCC Co., Ltd.	1,247,206,944	50.00%	623,603,472	-	(21,139,381)	602,464,091
Gulf Advanced Cables Insulation Company	14,016,552	50.00%	7,008,276	-	-	7,008,276
Lakeshore East Retail LLC	24,947,392	50.00%	12,473,696	-	(1,591,181)	10,882,515
Parcel O LLC	45,393,840	50.00%	22,696,920	-	(2,529,698)	20,167,222

(*) Associates prepare their consolidated financial statements, which their stated net assets refer to equity attributable to owners of the Group.

(7) Fair value of marketable investments in associates and joint ventures as of December 31, 2017 and 2016 are as follows:

In thousands won

Investees	December 31, 2017		December 31, 2016	
	Fair value	Book value	Fair value	Book value
HANWHA INVESTMENT AND SECURITIES CO., LTD.	₩ 103,306,883	210,617,647	79,775,624	197,758,690
OneRoof Energy Group, Inc.	-	-	1,927,038	-

(8) Changes in cumulative unrecognized equity method losses due to the termination of applying equity method as of December 31, 2017 are as follows:

In thousands won

Investees	Unrecognized losses	
	Year ended December 31, 2017	cumulative loss
OneRoof Energy Group, Inc.	₩ (4,953,797)	(40,430,689)

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

15. Investment property

(1) Investment property as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017			December 31, 2016		
		Acquisition cost	Accumulated depreciation (*)	Book value	Acquisition cost	Accumulated depreciation (*)	Book value
Land	₩	194,601,397	-	194,601,397	223,575,736	-	223,575,736
Buildings		183,817,322	(30,926,543)	152,890,779	195,900,552	(24,331,282)	171,569,270
Structures		8,266,550	(5,811,399)	2,455,151	7,107,439	(4,683,496)	2,423,943
	₩	<u>386,685,269</u>	<u>(36,737,942)</u>	<u>349,947,327</u>	<u>426,583,727</u>	<u>(29,014,778)</u>	<u>397,568,949</u>

(*) Includes accumulated impairment losses.

(2) Changes in investment property for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

		2017			
		Land	Buildings	Structures	Total
Beginning balance	₩	223,575,736	171,569,270	2,423,943	397,568,949
Acquisition		3,655	36,886	-	40,541
Transfer		(9,171,456)	-	805,565	(8,365,891)
Disposal		(1,073,319)	(105,055)	(1,389)	(1,179,763)
Depreciation		-	(4,963,983)	(332,770)	(5,296,753)
Impairment		-	(1,137,689)	(398,391)	(1,536,080)
Changes in exchange rates		(18,733,219)	(12,508,650)	(41,807)	(31,283,676)
Ending balance	₩	<u>194,601,397</u>	<u>152,890,779</u>	<u>2,455,151</u>	<u>349,947,327</u>

In thousands won

		2016			
		Land	Buildings	Structures	Total
Beginning balance	₩	139,883,867	53,686,642	2,746,687	196,317,196
Acquisition		253,223	3,373,864	-	3,627,087
Transfer		80,943,848	113,773,695	-	194,717,543
Disposal		(3,461,923)	(13,075)	-	(3,474,998)
Depreciation		-	(3,642,502)	(322,790)	(3,965,292)
Changes in exchange rates		5,956,721	4,390,646	46	10,347,413
Ending balance	₩	<u>223,575,736</u>	<u>171,569,270</u>	<u>2,423,943</u>	<u>397,568,949</u>

(3) Rental income from investment property for the year ended December 31, 2017 amounted to ₩9,216 million (2016: ₩9,590 million).

(4) The Group assessed the difference between fair value and carrying amounts of investment property as insignificant as of December 31, 2017.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

16. Property, plant and equipment

(1) Property, plant and equipment as of December 31, 2017 and 2016 are as follows:

In thousands won

	December 31, 2017			December 31, 2016		
	Acquisition cost	Accumulated depreciation(*)	Book value	Acquisition cost	Accumulated depreciation(*)	Book value
Land	₩ 1,802,079,129	-	1,802,079,129	1,706,669,222	-	1,706,669,222
Buildings	1,638,236,336	(615,008,779)	1,023,227,557	1,618,710,897	(564,684,098)	1,054,026,799
Structures	360,268,929	(160,600,455)	199,668,474	336,072,054	(148,792,920)	187,279,134
Machineries	5,232,522,489	(3,054,975,113)	2,177,547,376	4,972,806,303	(2,783,658,774)	2,189,147,529
Vehicles	54,377,499	(36,372,510)	18,004,989	60,482,566	(36,846,826)	23,635,740
Tools and equipments	334,929,013	(250,162,793)	84,766,220	321,832,376	(227,593,353)	94,239,023
Other property, plant and equipment	6,253,996	(5,220,328)	1,033,668	35,516,179	(13,025,287)	22,490,892
Construction in progress	281,959,147	(540,288)	281,418,859	482,894,913	(439,730)	482,455,183
Machinery in transit	485,183	-	485,183	1,024,758	-	1,024,758
	<u>₩ 9,711,111,721</u>	<u>(4,122,880,266)</u>	<u>5,588,231,455</u>	<u>9,536,009,268</u>	<u>(3,775,040,988)</u>	<u>5,760,968,280</u>

(*) Includes accumulated impairment losses and government grants.

(2) Changes in property, plant and equipment for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

	2017									
	Land	Buildings	Structures	Machineries	Vehicles	Tools and equipments	Other property, plant and equipment	Construction in progress	Machinery in transit	Total
Beginning balance	₩ 1,706,669,222	1,054,026,799	187,279,134	2,189,147,529	23,635,740	94,239,023	22,490,892	482,455,183	1,024,758	5,760,968,280
Acquisition	1,617,606	25,715,754	491,892	55,753,212	424,622	14,515,254	71,320	381,230,338	7,087,662	486,907,660
Changes in scope of consolidation	2,426,877	-	-	14,083,875	-	-	-	5,539,290	-	22,050,042
Transfer	94,221,200	31,512,454	26,574,024	404,750,566	528,500	12,369,253	-	(572,856,503)	(7,627,237)	(10,527,743)
Disposal	(1,177,748)	(3,294,835)	(207,796)	(4,904,897)	(2,478,342)	(1,944,065)	(18,893,370)	(4,759,636)	-	(37,660,689)
Depreciation	-	(61,318,715)	(14,042,448)	(301,592,375)	(3,990,420)	(32,467,270)	(1,290,080)	-	-	(414,701,308)
Impairment(*)	-	(3,515,791)	-	(130,361,058)	-	(137,247)	-	-	-	(134,014,096)
Changes in exchange rates	(1,678,028)	(19,898,109)	(426,332)	(49,329,476)	(115,111)	(1,808,728)	(1,345,094)	(10,189,813)	-	(84,790,691)
Ending balance	<u>₩ 1,802,079,129</u>	<u>1,023,227,557</u>	<u>199,668,474</u>	<u>2,177,547,376</u>	<u>18,004,989</u>	<u>84,766,220</u>	<u>1,033,668</u>	<u>281,418,859</u>	<u>485,183</u>	<u>5,588,231,455</u>

(*) The Group recognized the unrecoverable amount as an impairment loss with regard to the polysilicon and other operating segments.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
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16. Property, plant and equipment, Continued

(2) Changes in property, plant and equipment for the years ended December 31, 2017 and 2016 are as follows, continued:

In thousands won

	2016									
	Land	Buildings	Structures	Machineries	Vehicles	Tools and equipments	Other property, plant and equipment	Construction in progress	Machinery in transit	Total
Beginning balance	₩1,839,192,122	1,036,907,529	178,857,637	2,407,435,880	26,457,462	86,537,058	12,267,304	461,921,843	953,894	6,050,530,729
Acquisition	1,413,234	63,793,403	3,561,392	93,446,949	1,037,931	13,869,964	16,070,841	405,273,416	10,352,709	608,819,839
Changes in scope of consolidation	-	(293,521)	-	-	(6,077)	(379,625)	-	-	-	(679,223)
Transfer	2,160,783	42,387,959	21,085,729	263,761,419	1,171,117	34,344,380	(3,214,675)	(372,868,320)	(10,281,845)	(21,453,453)
Disposal	(35,621,741)	(21,282,273)	(2,329,999)	(156,375,501)	(548,019)	(7,017,272)	-	(6,177,773)	-	(229,352,578)
Depreciation	-	(62,322,950)	(12,827,675)	(310,736,342)	(4,443,539)	(32,600,860)	(3,388,122)	-	-	(426,319,488)
Impairment(*)	-	-	(388,462)	(84,265,940)	-	(568,574)	-	-	-	(85,222,976)
Assets classified as held for sale	(100,615,594)	-	-	(2,643,333)	-	-	-	-	-	(103,258,927)
Changes in exchange rates	140,418	(5,163,348)	(679,488)	(21,475,603)	(33,135)	53,952	755,544	(5,693,983)	-	(32,095,643)
Ending balance	₩1,706,669,222	1,054,026,799	187,279,134	2,189,147,529	23,635,740	94,239,023	22,490,892	482,455,183	1,024,758	5,760,968,280

(*) The Group recognized the unrecoverable amount as an impairment loss with regard to the polysilicon and electronic materials operating segments.

(3) Impairment of property, plant and equipment

The Group tested the polysilicon operating segment the cash-generating unit, for impairment and recognized impairment loss amounting to ₩79,878 and ₩49,864 million for the years ended December 31, 2017 and 2016, respectively, for the assets whose carrying amount exceeds its recoverable amount. The impairment loss is included in other non-operating expenses as impairment loss in property, plant and equipment.

The recoverable amount of the cash-generating unit is determined on the basis of value-in-use, which is calculated by discounting the future cash flows that are expected to be derived from the continued use of asset. The calculation of value-in-use is based on the following key assumptions:

- Cash flows are projected over a period of five years and are estimated based on past experience, actual operating results and the Group's business plan for the five year period. Cash flows after five years are estimated using a fixed growth rate of 1.00%. This growth rate does not exceed the average long-term growth rate of the industry.
- The selling price of products is applied to the cash flows projection period based on external information.
- Shareholder value is computed by discounting the operating annual cash flows using a discount rate of 9.25% and 9.00% as of December 31, 2017 and 2016.

The key assumptions used in calculating value-in-use reflect management's assessment of the future trends of the industry and are determined by considering external and internal (historical) information.

(4) Capital borrowing costs are ₩3,943 million and ₩9,991 million for the years ended December 31, 2017 and 2016, and the weight-average capitalization rates of interest for the years ended December 31, 2017 and 2016 are 2.31%~4.30% and 0.32%~3.43%.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
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For the years ended December 31, 2017 and 2016

16. Property, plant and equipment, Continued

(5) Line items which include depreciation expenses of property, plant and equipment for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

		2017	2016
Manufacturing cost and others	₩	342,317,501	348,235,034
Selling and administrative expenses(*)		72,383,807	78,084,454
	₩	<u>414,701,308</u>	<u>426,319,488</u>

(*) Includes amounts allocated to ordinary research and development expense.

(6) Property, plant and equipment is provided as collateral for borrowings as of December 31, 2017 (Note 36).

17. Intangible assets

(1) Intangible assets as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017			December 31, 2016		
		Acquisition cost	Accumulated depreciation(*)	Book value	Acquisition cost	Accumulated depreciation(*)	Book value
Goodwill	₩	277,052,249	(23,938,436)	253,113,813	272,910,156	(25,028,072)	247,882,084
Industrial property rights		44,158,038	(31,079,070)	13,078,968	43,275,230	(28,976,679)	14,298,551
Land use rights		88,247,901	(15,446,185)	72,801,716	91,953,898	(13,259,312)	78,694,586
Development costs		30,279,736	(24,999,322)	5,280,414	39,580,031	(33,729,035)	5,850,996
Membership		57,817,406	(3,229,180)	54,588,226	56,591,497	(3,728,743)	52,862,754
Other intangible assets		87,999,822	(64,813,352)	23,186,470	80,886,123	(54,274,754)	26,611,369
	₩	<u>585,555,152</u>	<u>(163,505,545)</u>	<u>422,049,607</u>	<u>585,196,935</u>	<u>(158,996,595)</u>	<u>426,200,340</u>

(*) Includes accumulated impairment losses.

(2) Changes in intangible assets for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

		2017					
		Goodwill	Industrial property rights	Land use rights	Development costs	Membership	Other intangible assets
Beginning balance	₩	247,882,084	14,298,551	78,694,586	5,850,996	52,862,754	26,611,369
Changes in scope of consolidation		11,471,424	-	-	-	-	417,719
Acquisition		-	1,073,860	282,795	685,050	2,907,223	7,120,709
Transfer		-	25,540	(13,169)	54,149	2,329,168	4,625,286
Disposal		-	-	(17,267)	(453,070)	(3,112,859)	(4,506,917)
Amortization		-	(2,291,827)	(1,841,181)	(860,540)	(301,500)	(10,237,719)
Impairment		(6,023)	-	-	-	-	-
Changes in exchange rates		(6,233,672)	(27,156)	(4,304,048)	3,829	(96,560)	(843,977)
Ending balance	₩	<u>253,113,813</u>	<u>13,078,968</u>	<u>72,801,716</u>	<u>5,280,414</u>	<u>54,588,226</u>	<u>23,186,470</u>

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
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17. Intangible assets, Continued

(2) Changes in intangible assets for the years ended December 31, 2017 and 2016 are as follows, continued:

In thousands won

	2016						Total
	Goodwill	Industrial property rights	Land use rights	Development costs	Membership	Other intangible assets	
Beginning balance	₩257,787,029	15,061,213	79,757,663	6,670,261	57,636,174	23,901,751	440,814,091
Changes in scope of consolidation	(856,737)	(538)	-	-	-	(16,499)	(873,774)
Acquisition	-	1,732,172	2,964,096	164,607	6,650	12,739,338	17,606,863
Transfer	-	348,012	142,881	(57,175)	317,822	1,859,437	2,610,977
Disposal	(32,550)	(331,468)	-	-	(2,745,829)	(1,813,070)	(4,922,917)
Amortization	-	(2,315,482)	(1,894,551)	(922,288)	(306,251)	(9,564,636)	(15,003,208)
Impairment(*)	(6,300,324)	-	-	-	(2,065,628)	-	(8,365,952)
Changes in exchange rates	(2,715,334)	(195,358)	(2,275,503)	(4,409)	19,816	(494,952)	(5,665,740)
Ending balance	₩247,882,084	14,298,551	78,694,586	5,850,996	52,862,754	26,611,369	426,200,340

(*) Impairment loss on goodwill of Universal Bearings LLC and others and membership were recognized for the year ended December 31, 2016.

(3) Changes in emission rights for the years ended December 31, 2017 are as follows:

*In thousands won,
quantity in tCO2-eq*

	2015		2016		2017	
	Quantity	Amount(*)	Quantity	Amount(*)	Quantity	Amount
Free allocation	2,234,349	₩ -	2,672,102	₩ -	1,910,414	₩ -
Purchases	10,000	137,000	2	41	-	-
Borrowings	256,276	-	(256,276)	-	-	-
Merger	87,254	-	(151,545)	-	(130,585)	-
Balance of implementation year	2,587,879	₩ 137,000	2,264,283	₩ 41	1,779,829	₩ -

(*) Included in other intangible assets.

(4) Intangible assets is provided as collateral for borrowings as of December 31, 2017 (Note 36).

(5) Goodwill is monitored by the management at the operating segment level (cash-generating units or group of cash-generating units). The following is a summary of goodwill allocation for each operating segment:

In thousands won

	December 31, 2017	December 31, 2016
Solar energy business	₩ 203,938,204	195,769,117
HANWHA FINE CHEMICAL CO., LTD.	18,510,215	18,510,215
Others	30,665,394	33,602,752
	₩ 253,113,813	247,882,084

The recoverable amounts of all cash generating units (groups) have been determined based on value-in-use calculations which are estimated on financial budgets approved by management covering a five-year period or net fair value which is the price in an active market less disposal cost.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
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For the years ended December 31, 2017 and 2016

18. Non-current assets held for sale

Non-current assets held for sale as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017	December 31, 2016
Land(*)	₩	-	100,000,000
Machineries and others(*)		2,133,140	2,643,333
	₩	<u>2,133,140</u>	<u>102,643,333</u>

(*) The Group recognized loss on impairment of property, plant and equipment of ₩24,510 million and loss on assets held for sale of ₩616 million when reclassifying this asset as non-current assets held for sale for the year ended December 31, 2016.

19. Trade payables and other payables

Trade payables and other payables as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017		December 31, 2016	
		Current	Non-current	Current	Non-current
Trade payables	₩	1,305,238,736	-	1,234,533,977	-
Other payables		326,674,253	23,136,851	523,585,369	46,144,007
	₩	<u>1,631,912,989</u>	<u>23,136,851</u>	<u>1,758,119,346</u>	<u>46,144,007</u>

20. Borrowings

(1) Borrowings as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017		December 31, 2016	
		Current	Non-current	Current	Non-current
Borrowings from financial institutions	₩	2,011,899,926	737,245,494	1,855,214,660	1,220,470,216
Debentures		629,515,619	1,038,716,021	399,753,612	1,354,155,677
	₩	<u>2,641,415,545</u>	<u>1,775,961,515</u>	<u>2,254,968,272</u>	<u>2,574,625,893</u>

(2) Borrowings from financial institutions as of December 31, 2017 and 2016 are as follows:

In thousands won

	Financial Institutions	December 31, 2017	December 31, 2016
Borrowings in local currency	KDB and others	₩ 933,087,731	990,318,410
Borrowings in foreign currency	Korea Exim bank and others	1,804,443,395	2,025,935,603
Overdraft	Woori bank and others	-	37,700,000
Loans on trade receivables collateral(*)	Woori bank and others	11,614,294	21,730,863
		<u>2,749,145,420</u>	<u>3,075,684,876</u>
Less: Reclassification of current portion		<u>(2,011,899,926)</u>	<u>(1,855,214,660)</u>
		₩ <u>737,245,494</u>	<u>1,220,470,216</u>

(*) The Group discounted trade receivables through factoring agreements with banks, which were accounted for as secured borrowings. Under the terms of the agreements, the Group is contractually obligated to make payments in the event of default by customers (Note 7).

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
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20. Borrowings, Continued

(3) Debentures as of December 31, 2017 and 2016 are as follows:

In thousands won

Issuing Company	Classification	Maturity date	Interest rate (%)	December 31, 2017	December 31, 2016
Hanwha Galleria Co., Ltd.	61-2 th public bonds	-	-	₩ -	30,000,000
Hanwha Galleria Co., Ltd.	63 th public bonds	2018.09.09	2.96	50,000,000	50,000,000
Hanwha Galleria Co., Ltd.	64 th privately placed bonds	2018.08.17	2.90	20,000,000	20,000,000
Hanwha Galleria Co., Ltd.	65 th privately placed bonds	2018.02.28	2.70	10,000,000	10,000,000
Hanwha Galleria Co., Ltd.	66 th privately placed bonds	2018.10.04	2.90	10,000,000	10,000,000
Hanwha Galleria Co., Ltd.	67 th privately placed bonds	2020.04.14	3.65	20,000,000	-
Hanwha Galleria Co., Ltd.	FRN	2020.05.26	3L+1.00	32,142,000	-
Hanwha Galleria Timeworld Co., Ltd.(*)	20 th public convertible bond	2018.09.15	0.25	49,984,800	49,984,800
Hanwha Galleria Timeworld Co., Ltd.	21 th privately placed bonds	2018.04.27	2.90	10,000,000	-
Hanwha Galleria Timeworld Co., Ltd.	22 th privately placed bonds	2019.06.28	3.30	20,000,000	-
Hanwha Advanced Materials Corporation	51 th privately placed bonds	-	-	-	30,000,000
Hanwha Advanced Materials Corporation	52 th FRN	2018.02.13	3L+1.90	32,142,000	36,255,000
Hanwha Advanced Materials Corporation	53 th privately placed bonds	2018.03.30	2.95	10,000,000	10,000,000
Hanwha Advanced Materials Corporation	54 th privately placed bonds	-	-	-	30,000,000
Hanwha Advanced Materials Corporation	55 th FRN	2019.05.19	3L+1.80	32,142,000	36,255,000
Hanwha Advanced Materials Corporation	56 th privately placed bonds	2018.01.29	2.40	20,000,000	20,000,000
Hanwha Advanced Materials Corporation	57 th privately placed bonds	2018.08.27	2.70	10,000,000	-
Hanwha Chemical Corporation	234-2 th public bonds	-	-	-	100,000,000
Hanwha Chemical Corporation	235-2 th public bonds	-	-	-	100,000,000
Hanwha Chemical Corporation	240 th public bonds	-	-	-	110,000,000
Hanwha Chemical Corporation	241 th privately placed bonds	2018.11.17	3.03	100,000,000	100,000,000
Hanwha Chemical Corporation	242 th public bonds	2018.02.05	2.75	103,000,000	103,000,000
Hanwha Chemical Corporation	243-1 th public bonds	2018.05.28	2.69	102,000,000	102,000,000
Hanwha Chemical Corporation	243-2 th public bonds	2020.05.28	3.07	98,000,000	98,000,000
Hanwha Chemical Corporation	244 th FRN	2018.10.08	3L+1.65	53,570,000	60,425,000
Hanwha Chemical Corporation	245-1 th public bonds	2018.10.28	2.75	50,000,000	50,000,000
Hanwha Chemical Corporation	245-2 th public bonds	2020.10.28	3.08	50,000,000	50,000,000
Hanwha Chemical Corporation	246-1 th public bonds	2019.02.24	2.70	56,000,000	56,000,000
Hanwha Chemical Corporation	246-2 th public bonds	2021.02.24	3.09	50,000,000	50,000,000
Hanwha Chemical Corporation	247 th FRN	2019.04.08	3L+1.65	107,140,000	120,850,000
Hanwha Chemical Corporation	248 th public bonds	2019.11.07	0.72	189,822,000	207,362,000
Hanwha Chemical Corporation	249 th public bonds	2020.02.06	2.52	100,000,000	-
Hanwha Chemical Corporation	250 th public bonds	2020.05.25	2.35	100,000,000	-
Hanwha Chemical Corporation	251 th public bonds	2020.09.22	2.35	80,000,000	-
Hanwha Q CELLS Co., Ltd.	FRN	2019.01.11	3L+2.90	106,642,264	120,850,000
				<u>1,672,585,064</u>	<u>1,760,981,800</u>
Add : Call premium				376,135	376,135
Less : Discount on debentures				(4,729,559)	(7,448,646)
Less : Reclassification of current portion				<u>(629,515,619)</u>	<u>(399,753,612)</u>
				<u>₩ 1,038,716,021</u>	<u>1,354,155,677</u>

(*) Convertible debentures as of December 31, 2017 is as follows:

	Details
Issuing company	Hanwha Galleria Timeworld Co., Ltd.
Face value	₩50,000,000 thousand
Book value	₩49,177,706 thousand
Call premium(rate)	Upon issuance: ₩376,250 thousand (0.7525%)
Coupon rate	0.00%
Rate of return at maturity	0.25%
Terms	₩113,500 face value convertible into 1 share
Conversion period	The bonds are convertible to shares from one month after issuance (October 15, 2015) until one month before the maturity (August 15, 2018).

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21. Other financial liabilities

Other financial liabilities as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017		December 31, 2016	
		Current	Non-current	Current	Non-current
Derivative liabilities(Note 10.(2))	₩	5,827,722	34,649,037	4,085,201	11,935,542
Deposits		7,522,478	9,358,081	8,164,836	8,925,805
Accrued expenses		141,128,853	48,213	139,631,052	54,383
Financial guarantee liabilities(*)		277,591	1,036,857	411,094	1,780,189
	₩	<u>154,756,644</u>	<u>45,092,188</u>	<u>152,292,183</u>	<u>22,695,919</u>

(*) The Group provides payment guarantees to related parties as of December 31, 2017 (Note 37).

22. Other liabilities

Other liabilities as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017		December 31, 2016	
		Current	Non-current	Current	Non-current
Advances from customers	₩	267,430,810	-	581,299,914	-
Withholdings		13,350,582	-	10,593,363	-
VAT payables		15,420,639	-	11,869,998	-
Unearned revenues		32,857,394	1,140	8,704,490	7,684
	₩	<u>329,059,425</u>	<u>1,140</u>	<u>612,467,765</u>	<u>7,684</u>

23. Net defined benefit liabilities

(1) Net defined benefit liabilities as of December 31, 2017 and 2016 are as follows:

In thousands won

		December 31, 2017	December 31, 2016
Present value of defined benefit obligation	₩	461,757,370	457,979,344
Fair value of plan assets		(157,061,252)	(64,494,403)
Net defined benefit liabilities	₩	<u>304,696,118</u>	<u>393,484,941</u>

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23. Net defined benefit liabilities, Continued

(2) Changes in the present value of defined benefit obligation for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		2017	2016
Beginning balance	₩	457,979,344	389,125,027
Current service cost		44,856,214	41,661,851
Interest expense		14,903,359	12,756,031
Remeasurements(*)		(14,498,653)	37,527,184
Benefits paid		(39,417,675)	(20,643,124)
Changes in scope of consolidation		-	(2,160,128)
Changes in exchange rates and others		(2,065,219)	(287,497)
Ending balance	₩	<u>461,757,370</u>	<u>457,979,344</u>

(*) Remeasurement of defined benefit obligation is as follows:

<i>In thousands won</i>		2017	2016
Actuarial losses (gains) due to empirical adjustments	₩	(2,207,790)	8,422,299
Actuarial losses due to changes in demographic assumptions		-	24,437,934
Actuarial losses (gains) due to changes in financial assumptions		(12,290,863)	4,666,951
	₩	<u>(14,498,653)</u>	<u>37,527,184</u>

(3) Changes in fair value of plan assets for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		2017	2016
Beginning balance	₩	64,494,403	68,132,626
Interest income		3,331,966	1,846,287
Remeasurements(*)		(1,132,761)	(1,218,159)
Contributions by the employer		98,917,554	-
Benefits paid		(6,415,684)	(4,173,472)
Changes in scope of consolidation		-	(6,778)
Changes in exchange rates and others		(2,134,226)	(86,101)
Ending balance	₩	<u>157,061,252</u>	<u>64,494,403</u>

(*) Return on plan assets (excluding amounts included in interest income).

(4) Plan assets as of December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		December 31, 2017	December 31, 2016
Equity instruments	₩	8,541,776	8,516,098
Debt instruments		3,290,549	3,519,807
Principal guaranteed financial instruments		143,940,464	50,877,521
Others		1,288,463	1,580,977
	₩	<u>157,061,252</u>	<u>64,494,403</u>

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

23. Net defined benefit liabilities, Continued

(5) Expenses recognized in the consolidated statements of comprehensive income for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		<u>2017</u>	<u>2016</u>
Current service cost	₩	44,856,214	41,661,851
Net interest cost		<u>11,571,393</u>	<u>10,909,744</u>
(*)	₩	<u>56,427,607</u>	<u>52,571,595</u>

(*) Retirement benefits of ₩248 million and ₩374 million were transferred to construction in progress under property, plant and equipment for the years ended December 31, 2017 and 2016.

(6) Key actuarial assumptions for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>	<u>2017</u>	<u>2016</u>
Discount rate	3.09 ~ 3.86%	2.25 ~ 3.64%
Expected salary growth rate	3.73 ~ 6.12%	3.59 ~ 6.88%

(7) Sensitivity analysis of defined benefit obligation due to changes in key actuarial assumptions as of December 31, 2017 is as follows:

	<u>Change in assumption</u>	<u>Increase in assumption</u>	<u>Decrease in assumption</u>
Discount rate	1.00%	6.32% Decrease	7.15% Increase
Expected salary growth rate	1.00%	7.17% Increase	6.45% Decrease

24. Provisions

(1) Provisions as of December 31, 2017 and 2016, are as follows:

<i>In thousands won</i>	<u>December 31, 2017</u>		<u>December 31, 2016</u>	
	<u>Current</u>	<u>Non-current</u>	<u>Current</u>	<u>Non-current</u>
Provision for returns	₩ 711,913	-	787,513	-
Provision for restoration	-	1,121,739	-	1,087,800
Provision for product warranties	26,722,972	24,373,268	48,954,603	22,435,842
Provision for litigation	-	6,195,000	2,088,090	10,000,000
Emission liabilities(*)	<u>22,283,191</u>	<u>-</u>	<u>19,209,098</u>	<u>-</u>
	₩ <u>49,718,076</u>	<u>31,690,007</u>	<u>71,039,304</u>	<u>33,523,642</u>

(*) The amount of greenhouse gas estimated to have been discharged for the year ended December 31, 2017, is 2,653,796 tCO₂ (2016: 2,631,296 tCO₂.)

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

24. Provisions, Continued

(2) Changes in provisions for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

		2017					
		Provision for returns	Provision for restoration	Provision for product warranties	Provision for litigation	Emissions liabilities	Total
Beginning balance	₩	787,513	1,087,800	71,390,445	12,088,090	19,209,098	104,562,946
Made		-	33,939	8,327,407	-	28,215,118	36,576,464
Used		-	-	(17,925,048)	(2,056,301)	-	(19,981,349)
Reversal		(75,600)	-	(8,677,548)	(3,835,344)	(25,141,025)	(37,729,517)
Changes in exchange rates and others		-	-	(2,019,016)	(1,445)	-	(2,020,461)
Ending balance	₩	711,913	1,121,739	51,096,240	6,195,000	22,283,191	81,408,083
Current	₩	711,913	-	26,722,972	-	22,283,191	49,718,076
Non-current		-	1,121,739	24,373,268	6,195,000	-	31,690,007

In thousands won

		2016						
		Provision for returns	Provision for restoration	Provision for product warranties	Provision for litigation	Emissions liabilities	Others	Total
Beginning balance	₩	792,918	1,050,000	61,423,416	10,243,134	6,553,316	20,719,534	100,782,318
Changes in scope of consolidation		-	-	(509,628)	-	-	-	(509,628)
Made		33,158	37,800	20,361,272	1,839,556	12,655,782	-	34,927,568
Used		-	-	(6,978,510)	-	-	-	(6,978,510)
Reversal		(38,563)	-	(1,459,699)	-	-	(20,245,400)	(21,743,662)
Changes in exchange rates and others		-	-	(1,446,406)	5,400	-	(474,134)	(1,915,140)
Ending balance	₩	787,513	1,087,800	71,390,445	12,088,090	19,209,098	-	104,562,946
Current	₩	787,513	-	48,954,603	2,088,090	19,209,098	-	71,039,304
Non-current		-	1,087,800	22,435,842	10,000,000	-	-	33,523,642

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

25. Capital stock and surplus

(1) Capital stock as of December 31, 2017 and 2016, are as follows:

In thousands won, except for share data

	December 31, 2017		December 31, 2016	
	Common shares	Preferred shares(*)	Common shares	Preferred shares(*)
Total number of authorized shares	200,000,000	100,000,000	200,000,000	100,000,000
Par value per share	₩ 5	5	5	5
Number of shares issued	164,809,359	1,123,737	164,809,359	1,123,737
Capital stock	₩ 824,046,795	5,618,685	824,046,795	5,618,685

(*) Non-cumulative preferred shares are eligible to receive cash dividends equal to cash dividends for common shares plus an additional 1%.

(2) Capital surplus as of December 31, 2017 and 2016, are as follows:

In thousands won

	December 31, 2017	December 31, 2016
Paid-in capital in excess of par value	₩ 478,258,399	478,258,399
Revaluation reserve	86,071,253	86,071,253
Gain from merger	75,670,859	75,670,859
Other capital surplus	188,953,346	188,446,627
	₩ 828,953,857	828,447,138

26. Capital adjustments

Consolidated capital adjustments as of December 31, 2017 and 2016, are composed of other capital adjustments recognized during the prior acquisition of subsidiaries.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
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For the years ended December 31, 2017 and 2016

27. Accumulated other comprehensive income

Accumulated other comprehensive income as of December 31, 2017 and 2016, are as follows:

<i>In thousands won</i>		December 31, 2017	December 31, 2016
Gain on value of available-for-sale financial assets	₩	46,919,940	30,968,628
Share of other comprehensive income of associates and joint ventures		99,295,380	112,389,816
Gain on valuation of derivatives		735,250	527,497
Currency translation adjustments		(151,956,070)	(100,261,006)
	₩	<u>(5,005,500)</u>	<u>43,624,935</u>

28. Retained Earnings

Consolidated retained earnings as of December 31, 2017 and 2016, are as follows:

<i>In thousands won</i>		December 31, 2017	December 31, 2016
Legal reserves	₩	56,097,264	50,343,451
Voluntary reserves		2,203,477,245	1,932,705,785
Revaluation surplus		697,672,130	721,625,392
Unappropriated retained earnings		<u>1,407,468,845</u>	<u>881,721,329</u>
	₩	<u>4,364,715,484</u>	<u>3,586,395,957</u>

29. Dividends

- (1) During the year ended December 31, 2017, dividends on the Company's common shares of ₩57,089 million (₩350 per share) and dividends on preferred shares of ₩449 million (₩400 per share) were paid out for the year ended December 31, 2016.
- (2) During the year ended December 31, 2016, dividends on the Company's common shares of ₩24,291 million (₩150 per share) and dividends on preferred shares of ₩225 million (₩200 per share) were paid out for the year ended December 31, 2015.
- (3) Dividends on the Company's common shares of ₩57,089 million (₩350 per share) and dividends on preferred shares of ₩449 million (₩400 per share) for the year ended December 31, 2017, are to be proposed at the regular general shareholders' meeting scheduled for March 27, 2018. These consolidated financial statements do not reflect these dividends payable.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

30. Selling and administrative expenses

Selling and administrative expenses for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		2017	2016
Salaries	₩	264,910,275	292,768,385
Retirement benefits		26,764,721	25,345,295
Other long-term employee benefits		902,402	1,174,723
Voluntary resignation benefits		309,386	192,813
Welfare expenses		53,641,888	53,796,111
Rental expenses		58,268,610	66,860,153
Reception expenses		8,497,085	9,425,249
Depreciation on investment property		497,137	509,228
Depreciation on property, plant and equipment		72,383,807	78,084,454
Amortization		11,336,322	10,983,624
Taxes and dues		26,594,629	27,845,686
Advertising expenses		36,139,366	37,409,388
Bad debt expenses		42,683,250	17,078,887
Travel expenses		13,167,185	15,371,424
Traveling expenses for overseas branch		367,362	437,318
Conference expenses		2,193,879	3,042,474
Communication charges		4,484,394	4,848,682
Supplies expenses		3,945,581	4,576,664
Publication expenses		1,065,822	1,173,127
Outsourcing expenses		46,674,897	44,057,548
Freight expenses		138,542,390	86,051,383
Warehousing charges		17,247,621	71,612,233
Sample and packing expenses		5,596,653	7,384,688
Utility expenses		14,561,481	16,829,501
Sales commissions		12,268,583	17,702,586
Export selling expenses		72,959,029	70,956,809
Repair expenses		14,439,959	14,879,527
Insurance expenses		12,764,534	14,912,794
Commissions		134,877,046	158,095,453
Research expenses		38,725,649	35,448,644
Ordinary development expenses		42,020,757	38,471,602
Market development expenses		5,396,601	4,422,430
Maintenance expenses for overseas branch		137,955	567,747
Product warranties expenses		44,935	17,249,730
Training expenses		4,887,310	6,445,618
Product handling commission		3,417,569	-
Miscellaneous expenses		3,024,135	5,488,874
Others		3,388,669	6,895,332
	₩	1,199,128,874	1,268,396,184

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
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31. Nature of expenses

Details of nature of expenses for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>	2017	2016
Changes in finished goods, half-finished goods and work in process ₩	327,908,458	420,666,554
Sales merchandise	1,032,966,016	912,566,769
Use of raw materials and supplies	4,869,392,097	4,568,479,694
Employee benefits(*1)	722,236,877	713,798,373
Welfare expenses	128,357,351	123,021,703
Rental expenses	100,060,380	143,201,973
Depreciations of investment property	5,296,753	3,965,292
Depreciations of property, plant and equipment	414,701,308	426,319,488
Amortization	15,532,767	15,003,208
Freight and warehousing expenses	167,865,902	169,313,071
Utility expenses	134,178,603	144,248,289
Outsourcing expenses	311,493,042	283,390,665
Export selling expenses	73,982,316	71,891,739
Taxes and dues	36,275,694	36,234,528
Others	245,154,672	447,513,247
₩	<u>8,585,402,236</u>	<u>8,479,614,593</u>

(*1) Includes salaries and wages, and retirement benefits.

(*2) The total amount are cost of sales and selling and administrative expenses in the consolidated final statements of comprehensive income.

32. Other non-operating income and expenses

(1) Other non-operating income for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>	2017	2016
Gain on foreign currency transactions ₩	262,232,255	167,336,473
Gain on foreign currency translation	165,289,649	112,279,488
Gain on valuation of derivatives	2,185,899	5,867,729
Gain on disposal of available-for-sale financial assets	5,551,834	-
Gain on disposal of investments in associates and joint ventures	695,482	57,587,191
Gain on transactions of derivatives	8,079,730	27,485,129
Reversal of impairment on available-for-sale financial assets	-	499
Gain on disposal of investment property	746,143	56,677
Gain on disposal of property, plant and equipment	3,355,895	25,161,022
Gain on disposal of intangible assets	20,521,977	350,284
Reversal of allowance for other bad debts	-	22,831
Rental income	277,515	193,689
Gain on bargain purchase	-	35,810
Debt cancelation	-	4,970,106
Others	15,430,000	41,886,966
₩	<u>484,366,379</u>	<u>443,233,894</u>

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

32. Other non-operating income and expenses, Continued

(2) Other non-operating expenses for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		2017	2016
Loss on foreign currency transactions	₩	279,577,574	185,792,115
Loss on foreign currency translation		106,155,741	101,956,740
Loss on valuation of derivatives		32,822,512	16,382,854
Loss on disposal of available-for-sale financial assets		5,293	-
Loss on disposal of investments in associates and joint ventures		-	31,625,095
Impairment loss on available-for-sale financial assets		8,510,137	5,538,403
Impairment loss on investments in associates and joint ventures		-	3,570,087
Loss on transactions of derivatives		14,224,219	50,898,484
Loss on disposal of trade receivables		958,439	436,450
Loss on disposal of investment property		-	275,001
Loss on disposal of property, plant and equipment		16,073,289	45,381,788
Loss on disposal of intangible assets		525,665	2,161,118
Impairment loss on investment property		1,536,080	-
Impairment loss on property, plant and equipment		134,014,096	85,222,976
Impairment loss on intangible assets		6,023	8,365,952
Impairment loss on non-current assets held for sale		-	615,594
Other bad debt expenses		281,984	4,535,353
Loss on inventory abandoned		486,473	5,252,215
Commissions (non-operating)		6,357,681	10,826,644
Donations		12,400,796	11,682,795
Others		22,308,070	37,903,641
	₩	<u>636,244,072</u>	<u>608,423,305</u>

33. Finance income and expenses

(1) Finance income for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		2017	2016
Interest income	₩	15,411,063	19,159,087
Dividends income		<u>1,644,900</u>	<u>3,162,717</u>
	₩	<u>17,055,963</u>	<u>22,321,804</u>

(2) Finance expenses for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		2017	2016
Interest expense	₩	148,823,555	173,291,081

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
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34. Income tax expense

(1) Income tax expense for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>	2017	2016
Current income tax:		
Current income taxes	₩ 135,895,855	112,723,829
Adjustments for prior years	2,850,500	(21,502,331)
	<u>138,746,355</u>	<u>91,221,498</u>
Deferred income tax:		
Changes of temporary differences	89,424,596	6,028,791
Income tax charged directly to equity	<u>3,147,756</u>	<u>18,187,761</u>
Income tax expense	₩ <u>231,318,707</u>	<u>115,438,050</u>

(2) The actual income tax expense on the Group's profit before income tax, which differs from the amount that is computed using the tax calculated at the weighted average of annual corporate income tax rates rate applied to profits of consolidated entities, for the years ended December 31, 2017 and 2016 is as follows:

<i>In thousands won</i>	2017	2016
Profit before income tax	₩ 1,065,852,886	886,381,726
Income tax based on statutory tax rate	<u>257,936,398</u>	<u>214,504,378</u>
Adjustments:		
Permanent differences	(6,619,966)	(47,331,220)
Adjustments for prior years	2,850,500	(21,502,331)
Tax credit	(1,526,615)	(5,541,472)
Effects of unrecognized deferred tax	(19,665,493)	(13,026,316)
Others	<u>(1,656,117)</u>	<u>(11,664,989)</u>
Income tax expense	₩ <u>231,318,707</u>	<u>115,438,050</u>

(3) Income tax credited(charged) directly to equity for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>	2017	2016
Current income tax:		
Remeasurement of net defined benefit liabilities	₩ 225,137	297,616
Deferred income tax:		
Loss (gain) on valuation of available-for-sale financial assets	(6,026,861)	4,145,473
Share of other comprehensive loss of associates and joint ventures	815,170	4,443,792
Gain on valuation of derivatives	(58,245)	(84,249)
Currency translation adjustments	13,323,357	(6,037,723)
Remeasurement of net retirement benefit liabilities	(3,954,465)	9,182,321
Share of remeasurements of net defined benefit liabilities of associates and joint ventures	(264,319)	247,806
Other capital surplus	(896,296)	5,740,211
Other capital adjustments	<u>(15,722)</u>	<u>252,514</u>
	₩ <u>3,147,756</u>	<u>18,187,761</u>

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
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34. Income tax expense, Continued

(4) Changes in deferred income tax for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

		2017				
		January 1, 2017	Profit or loss	Other comprehensive income	Equity	December 31, 2017
Allowance for doubtful accounts	₩	47,249,230	483,352	-	-	47,732,582
Loss on valuation of inventories		3,330,967	966,572	-	-	4,297,539
Gain (loss) on valuation of derivatives		453,317	3,323,280	(58,245)	-	3,718,352
Available-for-sale financial assets		(6,422,163)	3,118,861	(6,026,861)	-	(9,330,163)
Bonuses		7,723,902	(260,771)	-	-	7,463,131
Depreciation		(18,395,816)	(6,363,073)	-	-	(24,758,889)
Defined benefit obligation		100,382,583	5,263,114	(3,954,465)	-	101,691,232
Plan assets		(10,932,785)	(22,725,860)	-	-	(33,658,645)
Revaluation reserve		(25,911,573)	15,473	-	-	(25,896,100)
Revaluation surplus		(199,384,607)	34,115	-	-	(199,350,492)
Share of remeasurements of net defined benefit liabilities of associates and joint ventures		(170,435,675)	(81,206,512)	13,874,208	(912,018)	(238,679,997)
Others		32,162,500	5,004,234	-	-	37,166,734
	₩	(240,180,120)	(92,347,215)	3,834,637	(912,018)	(329,604,716)

In thousands won

<i>In thousands won</i>		2016				
		January 1, 2016	Profit or loss	Other comprehensive income	Equity	December 31, 2016
Allowance for doubtful accounts	₩	47,358,515	(109,285)	-	-	-
Loss on valuation of inventories		8,267,838	(4,936,871)	-	-	-
Gain (loss) on valuation of derivatives		(2,200,079)	2,737,645	(84,249)	-	-
Available-for-sale financial assets		3,011,188	(13,578,824)	4,145,473	-	-
Bonuses		4,744,249	2,979,653	-	-	-
Depreciation		(18,354,657)	(41,159)	-	-	-
Defined benefit obligation		81,965,478	9,234,784	9,182,321	-	-
Plan assets		(10,786,794)	(145,991)	-	-	-
Revaluation reserve		(27,875,092)	1,963,519	-	-	-
Revaluation surplus		(205,746,697)	6,362,090	-	-	-
Share of remeasurements of net defined benefit liabilities of associates and joint ventures		(146,505,222)	(25,674,152)	(1,346,125)	5,992,725	(2,902,901)
Others		34,872,845	(2,710,345)	-	-	-
	₩	(231,248,428)	(23,918,936)	11,897,420	5,992,725	(2,902,901)

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
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34. Income tax expense, Continued

(5) Deductible (taxable) temporary differences not recognized as deferred income tax as of December 31, 2017 is as follows:

In thousands won

		December 31, 2017
Investments in associates and joint ventures (*1)	₩	753,576,190
Payment guarantee fee and others(*2)		78,601,901

(*1) Temporary differences on investments in associates and joint ventures which are not likely to be reversed.

(*2) Temporary differences of assets and liabilities recognized initially through transactions that do not impact accounting or taxable income and are not due to business combination.

35. Earnings per share

(1) Basic earnings per common shares for the years ended December 31, 2017 and 2016 are as follows:

In thousands won, except for share data

		2017	2016
Net income	₩	834,534,179	770,943,676
Net income attributable to owners of the Company		824,697,350	755,256,459
Net income available to common shares		818,998,732	750,032,975
Weighted average number of common shares outstanding		163,110,394	162,921,661
Basic earnings per common shares (In won)	₩	5,021	4,604

(2) Basic earnings per preferred shares for the years ended December 31, 2017 and 2016 are as follows:

In thousands won, except for share data

		2017	2016
Net income	₩	834,534,179	770,943,676
Net income attributable to owners of the Company		824,697,350	755,256,459
Net income available to preferred shares		5,698,618	5,223,484
Weighted average number of preferred shares outstanding		1,123,737	1,123,737
Basic earnings per preferred shares (In won)	₩	5,071	4,648

(*) Preferred shares were issued under former commercial law prior to amendments in 1997. These preferred shares hold the same priority as common shares in terms of dividends pay out and distribution of residual properties. Thus, earnings per share was calculated accordingly.

(3) Potential common shares consist of convertible bonds issued by Hanwha Galleria Timeworld Co., Ltd. Basic and diluted earnings per share for the years ended December 31, 2017 and 2016 are identical since there are no potentially dilutive common shares.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
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36. Commitments and contingencies

(1) Credit limits provided by financial institutions as of December 31, 2017 are as follows:

*In thousands won, In USD, In EUR,
In CNY, In MYR, In CZK, In THB, In MXN*

	Currency	Limit
Overdraft	KRW	39,000,000
	EUR	5,000,000
	THB	30,000,000
Usance	USD	66,740,000
D/A, D/P, Local and foreign trade	USD	134,700,000
	THB	70,000,000
Others	KRW	1,340,121,067
	USD	1,272,451,844
	EUR	43,000,000
	CNY	2,804,337,541
	MYR	838,000,000
	CZK	946,270,538
	THB	90,000,000
	MXN	98,677,000
	KRW	1,379,121,067
	USD	1,473,891,844
	EUR	48,000,000
	CNY	2,804,337,541
	MYR	838,000,000
	CZK	946,270,538
	THB	190,000,000
	MXN	98,677,000

(2) The Group collateralized the following assets as collaterals in relation to borrowings as of December 31, 2017 are as follows:

In thousands won

	Collateral amount	Lender
Cash and cash equivalents	₩ 2,862,885	Agricultural Bank of China and others
Trade receivables and other receivables	132,860,134	Korea Development Bank and others
Other financial assets	184,001,727	Shinhan Bank and others
Inventories	248,243,841	Korea Development Bank and others
Property, plant and equipment	1,803,562,286	Korea Development Bank and others
Intangible assets	30,825,626	KEB Hana Bank and others
Subsidiary equity	34,000,000	Korea Development Bank and others

(*) Other than the collaterals listed above, the Group provided collaterals to related parties (Note 37).

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

36. Commitments and contingencies, Continued

(3) Guarantees provided to others

As of December 31, 2017, the Group provides payment guarantees totaling ₩23,509 million for loans taken out by employees from financial institutions.

As of December 31, 2017, the Group provides payment guarantees and collateral for related parties (Note 37).

(4) Guarantees provided by others as of December 31, 2017, are as follows:

In thousands won, In USD

Guarantor	Detail	Term	Currency	Amount
Seoul Guarantee Insurance	Forest restoration guarantees	2013.09.05 ~ 2018.09.04	KRW	13,120
Seoul Guarantee Insurance	Performance guarantees	2010.11.22 ~ 2019.02.28	KRW	3,578,538
Seoul Guarantee Insurance	Forest restoration guarantees	2014.04.30 ~ 2019.04.29	KRW	79,899
Seoul Guarantee Insurance	Performance bond - NongShim	2017.07.01 ~ 2018.06.30	KRW	30,000
Seoul Guarantee Insurance	Accounts payable - NongShim	2017.01.01 ~ 2017.12.31	KRW	150,000
Seoul Guarantee Insurance	Construction safety management - Gwanggyo branch	2017.09.21 ~ 2019.12.20	KRW	1,793,000
Seoul Guarantee Insurance	Implementation of land acquisition contract – Gwanggyo branch	2016.05.16 ~ 2020.10.30	KRW	19,070,000
Seoul Guarantee Insurance	Refund payment guarantee – Galleria shopping mall	2017.12.20 ~ 2018.12.19	KRW	300,000
Shinhan Bnak	Guarantee for FRN bonds	2017.05.24 ~ 2020.05.26	USD	30,000,000
Shinhan Bnak	Guarantee for FRN bonds	2015.02.13 ~ 2018.02.13	USD	30,000,000
Shinhan Bnak	Guarantee for FRN bonds	2016.05.19 ~ 2019.05.19	USD	20,000,000
The Daegu Bank LTD	Guarantee for FRN bonds	2016.05.19 ~ 2019.05.19	USD	10,000,000
JR 8-ho Consigned Estate	Real Pledged leasehold deposits for 63 Building Tosan Logistics Warehouse	2015.12.01 ~ 2020.11.30	KRW	157,410

(5) In addition to the litigations mentioned in Note 36.(8), the Group is a plaintiff in 13 pending litigations involving an aggregate litigation amount of ₩115,308 million and is a defendant in 12 pending litigations involving an aggregate amount of ₩17,743 million as of December 31, 2017. The outcome of any of these proceedings cannot be reasonably estimated.

(6) In relation to the transfer of stock ownership in Hanwha Energy Corporation, the Group has an arrangement to jointly compensate the transferee with other shareholders up to ₩50,000 million for any specified loss incurred between the date of the transfer and a certain date. A lawsuit is in progress regarding this matter. Litigation amount of ₩16,045 million is included in the amount mentioned in Note 36.(5). The Seoul High Court ruled in favor of the defendants on June 21, 2012. The plaintiff filed an appeal to the Supreme Court on July 25, 2012 and the Supreme Court turned down the appeal on October 15, 2015. The Seoul High Court nullified the delayed indemnification for damages by the Group to the plaintiff on January 20, 2017 of about ₩1,000 million and the plaintiff filed an appeal to the Supreme Court on February 15, 2017. The Group established a provision for litigation for ₩1,840 million as of December 31, 2016, and paid on January 20, 2017 (Note 24).

(7) On July 11, 2005, the Group sold all of its ownership interests in POSCO ENERGY Co., Ltd. (formerly Korea Independent Energy Co., Ltd.) to POSCO. According to the stock sale and purchase agreement, the Group shall indemnify Korea Independent Energy Co., Ltd. from any complaint filed by a third party regarding intake channels and drainage canals used by Korea Independent Energy Co., Ltd. to the extent of 25% of any related loss upon the termination of the electricity power agreement contracted between Korea Independent Energy Co., Ltd. and Korea Electric Power Corporation or until the cause of the claim is resolved. Management does not believe the ultimate resolution would have a material adverse effect on the consolidated financial condition of the Group.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

36. Commitments and contingencies, Continued

- (8) The Hanwha Consortium including the Group signed a memorandum of understanding with Korea Development Bank to acquire ownership in Daewoo Shipbuilding & Marine Engineering Co., Ltd. on November 14, 2008 and paid ₩315,000 million as a performance bond on November 19, 2008. On January 22, 2009, the Hanwha Consortium received a notice from Korea Development Bank rescinding the memorandum of understanding and confiscating the performance bond.

It was determined in accordance with the liquidation entered into among the Group, Hanwha Corporation and Hanwha Engineering & Construction Corporation that the Group's share of the performance bond of ₩315,000 million was ₩190,300 million. Hanwha Consortium was liquidated on May 13, 2009. On June 19, 2009, the Group filed a claim to the Seoul Central District Court demanding the performance bond be returned. The legal case was moved to civil proceedings due to the court ruling not reaching consensus on November 20, 2009.

On February 10, 2011, the Seoul Central District Court ruled against the Group as plaintiff. On June 14, 2012, the Seoul High Court also ruled against the appeal filed on March 2, 2011. The Group filed an appeal to the Supreme Court on July 3, 2012. On July 14, 2016, the Supreme Court made a ruling to overturn the Seoul Central District Court's decision and return the case to the Seoul High Court. On January 11, 2018, the Seoul High Court ruled in favor of the plaintiff, and that the defendant would return ₩117,900 million for the performance bond and accrued interest.

- (9) On April 30, 2015, the Group acquired 27.62% of ownership interest in Hanwha General Chemical Co., Ltd. to strengthen competitive advantage in the petrochemical industry and establish stable revenue growth through product diversification. The stock sale and purchase agreement states that the Group may make additional payments contingent upon performance of HANWHA TOTAL PETROCHEMICAL CO., LTD.

On the other hand, Samsung C&T Corporation and Samsung SDI are entitled to the right of first sale regarding their remaining ownership interests at the time of Hanwha General Chemical Co., Ltd.'s initial public offerings. If Hanwha General Chemical Co., Ltd.'s stock cannot be listed within six years (seven years if requested by the Group) from the end date of the transaction, Samsung C&T Corporation and Samsung SDI have a put option and the Group has a call option in regard to the remaining ownership interests. If Samsung C&T Corporation and Samsung SDI sell their ownership interests, the Group has first priority in buying them. If the Group sells its ownership interest, Samsung C&T Corporation and Samsung SDI have a tag-along right, and the Group has a drag-along right.

- (10) As of December 31, 2017, the Group provided a guarantee of USD 69,258,138.59 in relation to the module supply agreement between Hanwha Q CELLS America Inc. and NextEra.
- (11) As of December 31, 2017, the Group provided a payment guarantee of USD 15,383 in relation to the equipment contracts between Hanwha Q CELLS Chile SpA. and Lti REEnergy GmbH.
- (12) As of December 31, 2017, the Group provided payment guarantees of USD 3,232,400, USD 7,152,419, USD 711,079, and USD 2,015,796 in relation to the equipment contracts between Hanwha Q CELLS Turkey and Sungrow Deutschland GmbH, HABDANK PV-Montaj Sistemleri San. Ve Tic Ltds Sti, Turkey, Tekom-Puk Eletromekanik Sanayi ve Ticaret A.S., Turkey and Europower A.S. Turkey, respectively.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

37. Related Parties

(1) Details of the Group's related parties as of December 31, 2017 are as follows:

Description	Related parties
Associates in domestic	YEOCHUN NCC Co., Ltd. Hanwha General Chemical Co., Ltd. Hanwha Hotels and Resort Co., Ltd. and others
Associates in overseas	International Polymers Company Gulf Advanced Cables Insulation Company and others
Conglomerate(*)	H-Solution Corporation HANWHA S&C Co., Ltd. HANWHA Q CELLS Korea Corp. HANWHA TOTAL PETROCHEMICALS Co., Ltd. and others

(*) Although these companies are not applicable to related parties defined in K-IFRS No. 1024 Paragraph 9, a group of large-size affiliates designated by the Korea Fair Trade Commission are classified as related parties according to the resolution by the Securities & Futures Commission in accordance with substantial relationship defined in K-IFRS 1024 Paragraph 10.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

37. Related Parties, Continued

(2) Transactions with related parties for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

Company name	2017			
	Sales	Disposal of fixed assets	Purchase	Acquisition of fixed assets
Parent company:				
Hanwha Corporation(*1)	₩ 166,083,568	761,825	100,801,212	66,867
Associates:				
Hanwha Savings Bank Co., Ltd.	76,189	-	-	-
Hanwha Station Development Co., Ltd.(*2)	13,379	-	990,028	-
HANWHA Eagles Professional Baseball Club	27,044	-	1,547,243	-
Hanwha General Chemical Co., Ltd.	4,563,512	-	21,742,916	-
HANWHA INVESTMENT AND SECURITIES CO., LTD.	841,185	-	703	-
Hanwha Hotels and Resort Co., Ltd.	4,365,765	-	16,015,516	-
Crystal Solar Inc.	205,005	-	-	-
International Polymers Company	312,861	-	162,275,397	-
Renew Akshay Urja Private Limited	53,523	-	-	-
Saudi Specialized Products Company	241,296	-	-	-
Joint ventures:				
YEOCHUN NCC Co., Ltd.(*3)	16,486,020	-	1,312,885,574	-
Burdur Enerji A.S.	57,119	-	-	-
Gulf Advanced Cables Insulation Company	383,356	-	-	-
Conglomerate:				
174 Power Global Corporation	240,313	-	16,548	-
Dreamplus Production., Co. Ltd.	226	-	-	-
101 Global Co., Ltd.	4,999	-	831,664	-
SIT CO., LTD.	39,445	-	-	-
Yeosu Sea World Corporation	78	-	138,790	-
Ilsan Seaworld, Co., Ltd.	151	-	92,808	-
Gtention	1,712	-	-	-
Kyongju Aerospace Electrical Systems Co., Ltd	4,019	-	-	-
Taekyung Chemical Co., Ltd.	57,806,130	-	-	-
HANWHA 63 CITY CORPORATION	232,169	-	8,606,786	-
Hanwha Engineering & Construction Corporation	2,650,188	1,759,281	90,078,059	-
Hanwha Estate Co., Ltd.	470,772	-	23,647,066	-
Agricultural Corporation Company				
Green Tomorrow Co., Ltd.	2,002	-	-	-
DreamPlus Global seed association of investment	4,800	-	-	-
H-Solution Corporation (formerly HANWHA S&C CO., LTD.)	146,080		30,439,704	
Eco E&O corporation	16,380	-	78,785	-
Jeju Ocean Science Museum Corporation	-	-	224,093	-
Foodist Food Culture(Shanghai) Co., Ltd.	-	-	4,688,999	-
Hanwha Defense Systems Corp.	716,277	2,483,284	-	-
Hanwha Life Asset Co., Ltd.	11,850	-	-	-

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

37. Related Parties, Continued

(2) Transactions with related parties for the years ended December 31, 2017 and 2016 are as follows, continued:

In thousands won

Company name	2017			
	Sales	Disposal of fixed assets	Purchase	Acquisition of fixed assets
Conglomerate:				
Hanwha LIFE INSURANCE CO., LTD. (*4)	₩ 4,357,419	-	18,742,559	650,000
Hanwha General Insurance Co., Ltd.	2,656,347	-	10,456,759	-
Hanwha Insurance Investigation Co., Ltd.	104,283	-	-	-
Hanwha System Corporation	1,146,327	-	-	-
Hanwha Energy Corporation	785,594	-	156,101,934	-
HANWHA S&C Co., Ltd.	273,900	-	10,833,595	-
Hanwha Investment Corp.	6,088	-	-	-
Hanwha Asset Management Co., Ltd.	83,627	-	-	540,000
Hanwha Precision Machinery Co., Ltd.	200,598	-	-	-
Hanwha Land Systems	503,283	-	-	-
HANWHA Q CELLS Korea Corp.	259,951,471	20,103,539	589,604,563	-
HANWHA TECHWIN CO., LTD.	3,125,463	-	654,923	-
HANWHA TOTAL PETROCHEMICAL Co., Ltd.	6,008,427	-	48,218,829	-
Hanwha Power System Co. Ltd.	112,512	-	122,841	-
HUMANPOWER Co., Ltd.	-	-	1,388,987	-
Acropark Golf Corp.	-	-	-	83,247
Altinorda Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	22,628	-	-	-
Bahcesaray Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	22,992	-	-	-
Blue Albatross FZE	-	-	6,254	-
BT1 Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	91,953	-	-	-
Hanwha Europe GmbH	90,607,795	-	1,410,362	-
Hanwha Q CELLS Americas Holdings. Corp.	124,324,254	-	1,031,414	-
Hanwha Q CELLS Japan Co., Ltd.	208,585,638	-	69,996,536	-
Hanwha Techwin Automation Americas, Inc.	5,078	-	-	-
HQC Rock River Solar Power Generation Station LLC	15,071	-	-	-
Meca Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	22,628	-	-	-
Primo Gunes Enerjisi A.S.	369,253	-	-	-
Razin Elektrik Uretim Sanayi ve Ticaret A.S.	115,364	-	-	-
Razin En. San. ve Tic. A.S.	67,206	-	-	-
Razin GES Elektrik Sanayi ve Ticaret A.S.	51,709	-	-	-
Razin Gunes Enerjisi Sanayi ve Ticaret A.S.	51,301	-	-	-
S&P World Networks DMCC	896,767	-	-	-
TRI ENERGY GLOBAL PTE. LTD.	19,224,900	-	-	-
	₩ 979,847,289	25,107,929	2,683,671,447	1,340,114

(*1) The Group paid dividends of ₩20,841 million to Hanwha Corporation for the year ended December 31, 2017.

(*2) The Group received dividends of ₩3,165 million from Hanwha Station Development Co., Ltd. for the year ended December 31, 2017.

(*3) The Group received dividends of ₩200,000 million from YEOCHUN NCC Co., Ltd. for the year ended December 31, 2017.

(*4) The Group received dividends of ₩1,216 million from Hanwha LIFE INSURANCE CO., LTD. for the year ended December 31, 2017.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

37. Related Parties, Continued

(2) Transactions with related parties for the years ended December 31, 2017 and 2016 are as follows, continued:

In thousands won

Company name	2016			
	Sales	Disposal of fixed assets	Purchase	Acquisition of fixed assets
Parent company:				
Hanwha Corporation(*1)	₩ 177,305,285	-	381,649,368	-
Associates:				
Hanwha Savings Bank Co., Ltd.	53,566	-	-	-
Hanwha Station Development Co., Ltd.(*2)	26,402	-	1,141,564	-
HANWHA Eagles Professional Baseball Club	36,080	-	1,866,827	-
Hanwha General Chemical Co., Ltd.	2,881,358	1,248,500	12,306,041	-
HANWHA INVESTMENT AND SECURITIES CO., LTD.	574,395	-	1,534,947	27,000
Hanwha Hotels and Resort Co., Ltd.(*3)	3,734,322	-	16,604,948	-
Crystal Solar Inc.	36,255	-	-	-
International Polymers Company	1,016,825	-	136,627,280	-
Saudi Specialized Products Company	530,861	-	-	-
Joint ventures:				
YEOCHUN NCC Co., Ltd.(*4)	15,907,880	-	1,087,156,531	-
Burdur Enerji A.S.	15,132	-	-	-
Gulf Advanced Cables Insulation Company	2,268,147	-	-	-
Conglomerate:				
174 Power Global Corporation	-	-	1,545	-
101 Global Co., Ltd.	-	-	49,388	-
SIT CO., LTD.	51,643	-	-	-
Yeosu Sea World Corporation	140	-	103,012	-
Ilsan Seaworld, Co., Ltd.	123	-	75,888	-
Kyongju Aerospace Electrical Systems Co., Ltd.	9,980	-	-	-
Taekyung Chemical Co., Ltd.	46,105,306	-	-	-
HANWHA 63 CITY CORPORATION	234,952	-	8,645,212	-
Hanwha Engineering & Construction Corporation(*5)	2,474,134	-	144,868,130	10,682,817
Hanwha Estate Co., Ltd.	377,708	-	23,190,833	-
Agricultural Corporation Company Green Tomorrow Co., Ltd.	3,250	-	-	-
DreamPlus Global seed association of investment	4,800	-	-	-
H-Solution Corporation (formerly HANWHA S&C CO., LTD.)	579,281	-	59,029,652	-
Eco E&O corporation	16,730	-	125,770	-
Jeju Ocean Science Museum Corporation	-	-	166,782	-
Foodist Food Culture(Shanghai) Co., Ltd.	-	-	5,567,293	-
Hanwha Defense Systems Corp.	470,833	-	7,848	-
Hanwha Life Asset Co., Ltd.	24,675	-	-	-

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

37. Related Parties, Continued

(2) Transactions with related parties for the years ended December 31, 2017 and 2016 are as follows, continued:

In thousands won

Company name	2016			
	Sales	Disposal of fixed assets	Purchase	Acquisition of fixed assets
Conglomerate:				
Hanwha LIFE INSURANCE CO., LTD. (*6)	₩ 5,066,735	20,909	19,705,328	-
Hanwha General Insurance Co., Ltd. (*7)	2,271,039	-	10,615,258	-
Hanwha Insurance Investigation Co., Ltd.	103,871	-	-	-
Hanwha System Corporation	581,930	-	-	-
Hanwha Energy Corporation	473,963	-	150,115,675	-
Hanwha Investment Corp.	4,575	-	-	-
Hanwha Asset Management Co., Ltd.	37,547	-	-	-
HANWHA Q CELLS Korea Corp.	158,791,520	-	567,556,710	-
HANWHA TECHWIN CO., LTD.	3,849,785	-	-	-
HANWHA TOTAL PETROCHEMICAL Co., Ltd.	6,034,947	-	26,424,741	-
HUMANPOWER Co., Ltd.	-	-	1,054,490	-
Altinorda Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	848,469	-	-	-
Bahcesaray Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	878,188	-	-	-
Blue Albatross FZE	-	-	53,791	-
BT1 Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	3,557,464	-	-	-
Hanwha America Development Inc.	-	-	964,477	-
Hanwha Europe GmbH	98,251,313	-	1,945,225	-
Hanwha Saudi Contracting Co., Ltd.	134,838	-	-	-
Hanwha Q CELLS Americas Holdings. Corp.	985,136	-	1,102,006	-
Hanwha Q CELLS Japan Co., Ltd.	376,048,022	-	60,173,515	-
Hanwha Techn Hungary Zrt.	-	-	87,278	-
HSSC Stainless Inc.	18,503	-	-	-
Meca Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	848,469	-	-	-
Primo Gunes Enerjisi A.S.	69,696	-	-	-
Razin Elektrik Uretim Sanayi ve Ticaret A.S.	12,317,586	-	-	-
Razin En. San. ve Tic. A.S.	6,389,547	-	-	-
Razin GES Elektrik Sanayi ve Ticaret A.S.	4,796,967	-	-	-
Razin Gunes Enerjisi Sanayi ve Ticaret A.S.	5,206,461	-	-	-
S&P World Networks DMCC	309,015	-	-	-
TRI ENERGY GLOBAL PTE. LTD.	67,941,112	-	-	-
	₩ 1,010,556,761	1,269,409	2,720,517,353	10,709,817

(*1) The Group paid dividends of ₩8,932 million to Hanwha Corporation for the year ended December 31, 2016.

(*2) The Group received dividends of ₩1,852 million from Hanwha Station Development Co., Ltd. for the year ended December 31, 2016.

(*3) The Group acquired ownership interest in Hanwha Station Development Co., Ltd. owned by Hanwha Hotels and Resort Co., Ltd. for ₩44,108 million for the year ended December 31, 2016.

(*4) The Group received dividends of ₩135,000 million from YEOCHUN NCC Co., Ltd. for the year ended December 31, 2016.

(*5) The Group acquired the entire ownership interest of Hanwha America Development Inc. owned by Hanwha Engineering & Construction Corporation for ₩105,574 million for the year ended December 31, 2016.

(*6) The Group received dividends of ₩2,737 million from HANWHA LIFE INSURANCE CO., LTD. for the year ended December 31, 2016. The Group sold its entire ownership interest in Hanwha General Insurance Co., Ltd. to HANWHA LIFE INSURANCE CO., LTD. for ₩43,598 million.

(*7) The Group received dividends of ₩382 million from Hanwha General Insurance Co., Ltd. for the year ended December 31, 2016.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

37. Related Parties, Continued

(3) Outstanding receivables and payables from transactions with related parties as of December 31, 2017 and 2016 are as follows:

In thousands won

Company name	December 31, 2017				
	Receivables			Payables	
	Trade receivables	Loans	Other receivables	Trade payables	Other payables
Parent company:					
Hanwha Corporation	₩ 13,711,046	-	2,940,386	30,263,248	7,712,776
Associates:					
Hanwha Savings Bank Co., Ltd.	-	-	2,002,466	-	-
Hanwha Station Development Co., Ltd.	268,935	-	1,120,000	-	303,344
HANWHA Eagles Professional Baseball Club	42,636	-	359,601	-	60
Hanwha General Chemical Co., Ltd.	1,051,586	-	153,700	2,474,524	224,926
HANWHA INVESTMENT AND SECURITIES CO., LTD.	26,408	-	105,327	-	1,162,166
Hanwha Hotels and Resort Co., Ltd.	710,300	-	58,256,145	197,407	1,171,167
Crystal Solar Inc.	-	1,802,184	535,700	-	-
International Polymers Company	-	9,487,020	1,360,777	32,795,585	-
Saudi Specialized Products Company	-	10,417,693	249,465	-	-
Joint ventures:					
YEOCHUN NCC Co., Ltd.	3,229,271	-	195,856	308,444,979	25,597,951
Burdur Enerji A.S.	119,181	-	-	-	-
Gulf Advanced Cables Insulation Company	-	14,775,028	469,588	-	-
Conglomerate:					
174 Power Global Corporation	-	-	1,268	-	-
101 Global Co., Ltd.	-	-	-	224,086	11,297
SIT CO., LTD.	2,383	-	-	-	-
Yeosu Sea World Corporation	-	-	-	-	12,347
Ilsan Seaworld, Co., Ltd.	-	-	-	-	8,832
Taekyung Chemical Co., Ltd.	1,987,702	-	-	-	-
HANWHA 63 CITY CORPORATION	318	-	-	-	778,498
Hanwha Engineering & Construction Corporation	135,835	-	452,426	16,690,296	334,573
Hanwha Estate Co., Ltd.	83,669	-	-	-	2,262,302
DreamPlus Global seed association of investment	440	-	-	-	-
Jeju Ocean Science Museum Corporation	-	-	-	-	18,230
Foodist Food Culture(Shanghai) Co., Ltd.	-	-	-	21,766	47,747
Hanwha Defense Systems Corp.	174,136	-	34,378	-	-
Hanwha Life Asset Co., Ltd.	499	-	-	-	-

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

37. Related Parties, Continued

(3) Outstanding receivables and payables from transactions with related parties as of December 31, 2017 and 2016 are as follows, continued:

In thousands won

Company name	December 31, 2017				
	Receivables			Payables	
	Trade receivables	Loans	Other receivables	Trade payables	Other payables
Conglomerate:					
Hanwha LIFE INSURANCE CO., LTD.	₩ 152,827	-	115,115,712	-	36,182
Hanwha General Insurance Co., Ltd.	122,909	-	616,948	-	464,727
Hanwha System Corporation	58,687	-	-	-	-
Hanwha Energy Corporation	36,145	-	28,278	15,503,754	-
HANWHA S&C Co., Ltd.	323	-	29,706	1,102,530	6,014,172
Hanwha Investment Corp.	71	-	-	-	-
Hanwha Asset Management Co., Ltd.	536	-	-	-	-
Hanwha Precision Machinery Co., Ltd.	18,072	-	-	-	-
Hanwha Land Systems	80,940	-	-	-	-
HANWHA Q CELLS Korea Corp.	66,669,158	-	5,063,723	189,058,930	-
HANWHA TECHWIN CO., LTD.	87,985	-	53,243	-	-
HANWHA TOTAL PETROCHEMICAL Co., Ltd.	1,017,100	-	-	4,464,635	-
Hanwha Power System Co. Ltd.	95,658	-	-	92,400	10,120
HUMANPOWER Co., Ltd.	-	-	-	-	466,853
Hanwha Europe GmbH	17,798,556	-	-	6,663	24,101
Hanwha Q CELLS Americas Holdings. Corp.	79,900,670	-	3,754	-	140,294
Hanwha Q CELLS Japan Co., Ltd.	34,437,426	-	8,195,632	2,424,382	357,701
Hanwha Techwin Automation Americas, Inc.	-	2,149,288	-	-	-
HQC Rock River Solar Power Generation Station LLC	-	-	923	-	-
Primo Gunes Enerjisi A.S.	-	3,831,253	-	-	-
	₩ 222,021,408	42,462,466	197,345,002	603,765,185	47,160,366

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

37. Related Parties, Continued

(3) Outstanding receivables and payables from transactions with related parties as of December 31, 2017 and 2016 are as follows, continued:

In thousands won

		December 31, 2016					
		Receivables			Payables		
		Trade receivables	Loans	Other receivables	Trade payables	Borrowings	Other payables
Parent company:							
Hanwha Corporation	₩	20,740,643	-	1,838,451	87,292,190	-	11,816,984
Associates:							
Hanwha Savings Bank Co., Ltd.		-	-	1,001,405	-	-	-
Hanwha Station Development Co., Ltd.		373	-	1,401,465	-	-	299,730
HANWHA Eagles Professional Baseball Club		-	-	455,467	-	-	1,514
Hanwha General Chemical Co., Ltd.		829,565	-	-	1,056,060	-	186,487
HANWHA INVESTMENT AND SECURITIES CO., LTD.		30,529	-	9,345,858	-	-	1,162,040
Hanwha Hotels and Resort Co., Ltd.		627,013	-	41,347,262	627,504	-	1,173,167
Crystal Solar Inc.		-	1,849,005	-	-	-	-
International Polymers Company		-	10,382,701	1,968,709	27,180,546	-	-
Saudi Specialized Products Company		-	9,512,614	281,387	-	-	-
Joint ventures:							
YEOCHUN NCC Co., Ltd.		2,631,761	-	281,336	198,507,115	-	77,799,833
Gulf Advanced Cables Insulation Company		-	24,006,993	648,412	-	-	-
Conglomerate:							
174 Power Global Corporation		-	-	-	-	-	377
101 Global Co., Ltd.		-	-	-	54,327	-	-
Yeosu Sea World Corporation		-	-	-	-	-	8,763
Ilsan Seaworld, Co., Ltd.		-	-	-	-	-	9,961
Kyongju Aerospace Electrical Systems Co., Ltd.		10,978	-	-	-	-	-
Taekyung Chemical Co., Ltd.		1,166,009	-	-	-	-	-
HANWHA 63 CITY CORPORATION		132,893	-	-	-	-	767,015
Hanwha Engineering & Construction Corporation		241,316	-	557,548	11,822,678	-	3,912,679
Hanwha Estate Co., Ltd.		139,869	-	-	-	-	2,452,976
Dreamplus Production, Co. Ltd.		440	-	-	-	-	-
H-Solution Corporation (formerly HANWHA S&C CO., LTD.)		122	-	28,516	2,680,978	-	4,397,497
Eco E&O corporation		-	-	-	-	-	18,746

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

37. Related Parties, Continued

(3) Outstanding receivables and payables from transactions with related parties as of December 31, 2017 and 2016 are as follows, continued:

In thousands won

		December 31, 2016				
		Receivables		Payables		
		Trade receivables	Loans	Other receivables	Trade payables	Other payables
					Borrowings	
Conglomerate:						
Jeju Ocean Science Museum Corporation	₩	-	-	-	-	14,717
Foodist Food Culture(Shanghai) Co., Ltd.		-	-	-	72,744	359,731
Hanwha Defense Systems Corp.		394,153	-	-	-	8,633
Hanwha LIFE INSURANCE CO., LTD.		191,557	-	38,778,415	-	102,795
Hanwha General Insurance Co., Ltd.		83,217	-	250,740	200	402,129
Hanwha System Corporation		456	-	-	-	-
Hanwha Energy Corporation		48,163	-	4,400	14,799,818	-
Hanwha Investment Corp.		311	-	-	-	-
Hanwha Asset Management Co., Ltd.		448	-	-	-	-
HANWHA Q CELLS Korea Corp.		45,628,414	-	507,356	170,072,330	180,594
HANWHA TECHWIN CO., LTD.		2,977,323	-	61,382	-	-
HANWHA TOTAL PETROCHEMICAL Co., Ltd.		1,967,567	-	-	4,589,476	729
HUMANPOWER Co., Ltd.		-	-	-	4,783	304,822
Blue Albatross FZE		-	-	-	39,651	-
Hanwha Europe GmbH		19,445,817	-	165,281	25,352	181,018
Hanwha Q CELLS Americas Holdings. Corp.		5,780,009	-	-	-	7,251
Hanwha Q CELLS Japan Co., Ltd.		47,073,021	-	399,460	1,127,549	394,918
Hanwha Q CELLS USA Corp.		-	20,144,062	-	-	-
HSSC Stainless Inc.		17,797	-	-	-	-
Primo Gunes Enerjisi A.S.		-	3,728,178	-	-	84,595
TRI ENERGY GLOBAL PTE. LTD.		223,505	-	-	-	-
₩		<u>150,383,269</u>	<u>69,623,553</u>	<u>99,322,850</u>	<u>519,953,301</u>	<u>105,965,106</u>

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

37. Related Parties, Continued

(4) Loan transactions with related parties for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

		2017			
		Beginning balance	Increase	Decrease	Ending balance
Associates:					
Crystal Solar Inc.	₩	1,849,005	-	-	1,802,184
International Polymers Company		10,382,701	-	-	9,487,020
Saudi Specialized Products Company		9,512,614	1,896,833	-	10,417,693
Joint ventures:					
Gulf Advanced Cables Insulation Company		24,006,993	-	(6,025,822)	14,775,028
Conglomerate:					
Hanwha Q CELLS USA Corp.		20,144,062	-	(17,952,767)	-
Hanwha Techwin Automation Americas, Inc.		-	2,272,800	-	2,149,288
Primo Gunes Enerjisi A.S.		3,728,178	-	-	3,831,253
	₩	<u>69,623,553</u>	<u>4,169,633</u>	<u>(23,978,589)</u>	<u>42,462,466</u>

(*) Includes accrued revenues related to loans.

In thousands won

		2016			
		Beginning balance	Increase	Decrease	Ending balance
Associates:					
Crystal Solar Inc.	₩	-	1,812,750	-	1,849,005
International Polymers Company		9,768,343	-	-	10,382,701
Saudi Specialized Products Company		12,276,967	2,235,655	(5,246,263)	9,512,614
Joint ventures:					
Gulf Advanced Cables Insulation Company		22,707,551	-	-	24,006,993
Conglomerate:					
HANWHA Q CELLS Korea Corp.		35,358,542	116,470,000	(149,669,000)	-
Hanwha Saudi Contracting Co., Ltd.		11,740,229	-	(11,640,144)	-
Hanwha Q CELLS USA Corp.		24,324,928	-	(4,679,200)	20,144,062
Primo Gunes Enerjisi A.S.		5,925,838	3,561,863	(6,132,558)	3,728,178
	₩	<u>122,102,398</u>	<u>124,080,268</u>	<u>(177,367,165)</u>	<u>69,623,553</u>

(*) Includes accrued revenues related to loans.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

37. Related Parties, Continued

(5) Borrowings transactions with related parties for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

		2017			
		Beginning balance	Increase	Decrease	Ending balance
Conglomerate:					
Primo Gunes Enerjisi A.S.	₩	84,595	-	(74,998)	(9,597)

(*) Includes accrued interest related to borrowings.

In thousand won

		2016				
		Beginning balance	Increase	Decrease	Changes in scope of consolidation	Ending balance
Conglomerate:						
Hanwha America Development Inc. (*2)	₩	30,337,705	386,129	-	(29,666,447)	(1,057,387)
Hanwha Europe GmbH		11,524,770	-	(11,890,800)	-	366,030
Hanwha Techm Hungary Zrt.		5,250,173	5,004,320	(10,281,480)	-	26,987
Primo Gunes Enerjisi A.S.		-	84,189	-	-	406
	₩	<u>47,112,648</u>	<u>5,474,638</u>	<u>(22,172,280)</u>	<u>(29,666,447)</u>	<u>(663,964)</u>

(*1) Includes accrued interest related to borrowings.

(*2) Became a subsidiary (originally considered as Conglomerate) as the group acquired additional shares in 2016.

(6) Equity transactions with related parties for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

		Transaction	Company	2017
Joint ventures:	Capital increase		Gulf Advanced Cables Insulation Company	₩ 7,196,800
	Capital increase		HANWHA KALYON GUNES TEKNOLOJILERI URETIM ANONIM SIRKETI	21,871,898
	Capital increase		HANWHA KALYON GUNES ENERJISI URETIM ANONIM SIRKETI	6,064,889
Associates:	Liquidation dividend		Hanwha Newly-Development Force Fund	1,577,013
	Acquisition cost adjustment		Hanwha Station Development Co., Ltd.	(15,554,302)

In thousands won

		Transaction	Company	2016
Joint ventures:	Capital increase		HQC Rock River Solar Holdings LLC	₩ 4,530,360
	Capital increase		HANWHA INVESTMENT AND SECURITIES CO., LTD.	42,644,612
Associates:	Capital increase		Saudi Specialized Products Company	8,718,432
	Capital decrease		Hanwha Newly-Development Force Fund	2,925,000

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

37. Related Parties, Continued

(7) Payment guarantees provided for related parties as of December 31, 2017 are as follows:

In USD

Guarantee	Currency	Guarantee amount		Use of payment guarantee
		Limit	Execution amount	
International Polymers Company	USD	29,368,000	29,368,000	Borrowings from financial institutions
Gulf Advanced Cables Insulation Company	USD	9,470,000	9,470,000	Borrowings from financial institutions
Saudi Specialized Products Company	USD	4,343,300	4,343,300	Borrowings from financial institutions
Burdur Enerji A.S.	USD	40,000,000	9,136,756	Borrowings from financial institutions
	USD	<u>83,181,300</u>	<u>52,318,056</u>	

(8) As of December 31, 2017, the Group pledged collateral of ~~₩~~1,510,600 thousand to its related party, HANWHA INVESTMENT AND SECURITIES CO., LTD. in relation to the deposit for the building in Seo-gu, Daejeon.

(9) As of December 31, 2017, the Group has a contractual arrangement to fund EUR 20,284,671 if Hanwha Q CELLS Korea Corp. fails to deliver on its obligation to secure supplementary financing for Luxbon Solar S.A.

(10) As of December 31, 2017, the Group provides a guarantee of USD 131,000,000 for transactions involving sales of modules between Hanwha Q CELLS Japan Co., Ltd. and MARUBENI CORPORATION, JPY 4,610,000,000 for transactions involving purchases of goods between Hanwha Q CELLS Japan Co., Ltd. and NTT-F, USD 2,526,518 for transactions involving sales of modules between Hanwha Q CELLS Japan Co., Ltd. and Itochu Corporation, JPY 131,348,708 for transactions involving sales of modules between Hanwha Q CELLS Japan Co., Ltd. and JGC Corporation and JPY 296,000,000 for transactions involving sales of modules between Hanwha Q CELLS Japan Co., Ltd. and Vitec Green energy Co., Ltd.

(11) As of December 31, 2017, the Group has a supplementary funding arrangement with KDB Bank and others in connection with Hanwha Q CELLS Korea Corp.'s facility loans amounting to ~~₩~~275,300 million and working capital loans amounting to ~~₩~~200,000 million for the construction of a cell power plant in Jincheon and a module facility in Eumseong.

(12) Details of compensation for key executives for years ended December 31, 2017 and 2016 are as follows:

In thousands won

		2017	2016
Short-term employee benefits	₩	33,574,243	25,867,885
Retirement benefits		5,871,551	4,188,435
Other long-term employee benefits		<u>8,100</u>	<u>3,536</u>
	₩	<u>39,453,894</u>	<u>30,059,856</u>

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

38. Cash Flows

(1) Cash flows generated from operation activities for the years ended December 31, 2017 and 2016 are as follows:

<i>In thousands won</i>		2017	2016
Income before income tax expense	₩	1,065,852,886	886,381,726
Adjustments:			
Retirement benefits(*)		56,179,262	52,197,539
Other long-term employee benefits		2,224,441	3,237,959
Depreciation of investment property		5,296,753	3,965,292
Depreciation of property, plant and equipment		414,701,308	426,319,488
Amortization		15,532,767	15,003,208
Bad debt expenses		42,683,250	17,078,887
Rental expenses		1,454,539	692,940
Transfer (Reversal) of provisions		(1,153,053)	32,718,541
Gain on valuation of derivatives		(2,185,899)	(5,867,729)
Reversal of impairment of available-for-sale financial assets		-	(499)
Gain on foreign currency translation		(165,289,649)	(112,279,488)
Gain on disposal of available-for-sale financial assets		(5,551,834)	-
Gain on disposal of investment in associates and joint ventures		(695,482)	(57,587,191)
Gain on disposal of investment property		(746,143)	(56,677)
Gain on disposal of property, plant and equipment		(3,355,895)	(25,161,022)
Gain on disposal of intangible assets		(20,521,977)	(350,284)
Reversal of allowance for other bad debts		-	(22,831)
Gain on bargain purchase		-	(35,810)
Loss on foreign currency translation		106,155,741	101,956,740
Loss on disposal of trade receivables		958,439	436,450
Loss on disposal of available-for-sale financial assets		5,293	-
Impairment loss of available-for-sale financial assets		8,510,137	5,538,403
Loss on disposal of investment in associates and joint ventures		-	31,625,095
Impairment loss of investment in associates and joint ventures		-	3,570,087
Loss on valuation of derivatives		32,822,512	16,382,854
Loss on disposal of investment property		-	275,001
Loss on disposal of property, plant and equipment		16,073,289	45,381,788
Loss on disposal of intangible assets		525,665	2,161,118
Impairment loss on investment property		1,536,080	-
Impairment loss on property, plant and equipment		134,014,096	85,222,976
Impairment loss on intangible assets		6,023	8,365,952
Impairment loss on non-current assets held for sale		-	615,594
Other bad debt expenses		281,984	4,535,353
Loss on inventory abandoned		486,473	5,252,215
Loss on valuation of inventories		27,456,561	28,646,217
Interest income		(15,411,063)	(19,159,087)
Dividends income		(1,644,900)	(3,162,717)
Interest expense		148,823,555	173,291,081
Share of profit of associates and joint ventures		(593,087,180)	(423,322,323)
Others		(6,214,309)	6,914,291

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

38. Cash Flows, Continued

(1) Cash flows generated from operation activities for the years ended December 31, 2017 and 2016 are as follows, continued:

<i>In thousands won</i>		2017	2016
Changes in assets and liabilities:			
Decrease (increase) in trade receivables	₩	(45,539,619)	113,025,597
Decrease (increase) in other receivables		(10,929,736)	28,542,105
Decrease (increase) in inventories		233,372,420	165,741,463
Decrease (increase) in other financial assets		8,579,405	13,755,159
Decrease (increase) in other current assets		(35,412,062)	(84,820,080)
Decrease (increase) in other non-current assets		(16,265,184)	4,871,461
Increase (decrease) in trade payables		131,722,964	72,205,200
Increase (decrease) in other payables		(69,873,107)	121,982,937
Increase (decrease) in other financial liabilities		6,930,464	16,680,344
Increase (decrease) in other current liabilities		(243,899,168)	(571,396,611)
Increase (decrease) in other long-term liabilities		(7,940)	(14,956)
Payment of severance indemnities		(39,417,675)	(20,643,124)
Decrease in plan assets		(92,501,870)	4,173,472
Payment of other long-term employee benefits		(2,470,772)	(2,108,191)
Provisions		(19,981,349)	(6,978,510)
Payment of derivatives		(1,919,426)	23,413,355
Cash generated from operations	₩	<u>1,068,111,015</u>	<u>1,189,190,758</u>

(*) Excludes ₩248 million (2016: ₩374 million) transferred to construction in progress from ₩56,427 million (2016: ₩52,572 million) for the years ended December 31, 2017 and 2016.

(2) Changes in liabilities from financing activities for the year ended December 31, 2017 are as follows:

<i>In thousands won</i>		Borrowings and Debentures	Dividend payable
Beginning balance	₩	4,829,594,165	-
Changes in scope of consolidation		(210,200)	-
Changes in cash flows from financing activities		(453,403,119)	(68,018,133)
Decrease in retained earnings		-	57,538,133
Decrease in non-controlling interests		-	10,480,000
Others(*)		<u>41,396,214</u>	<u>-</u>
Ending balance	₩	<u>4,417,377,060</u>	<u>-</u>

(*) Includes effects due to exchange rate changes.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

39. Operating Segment Information

The Group has four strategic business units as reportable segments. Each strategic business unit operates to provide distinguished products and services. As required technical capabilities and marketing strategies are different for these business units, they are separately operated. The chief decision maker reviews internal reports for each strategic business unit at least on quarterly basis.

Details of segment reporting are as follows:

- i. Raw materials: manufacturing and distribution of PE, PVC and CA
- ii. Manufacturing: manufacturing and distribution of automotive parts
- iii. Retail: department stores, wholesaling and retailing
- iv. Photovoltaic: manufacturing and distribution of solar products such as ingots and modules
- v. Others: manufacturing, distribution and leasing

(1) Operating income by each reportable segment for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

	2017							Consolidated adjustment	Total
	Raw material	Manufacturing	Retail	Photovoltaic	Subtotal	Others			
Revenue:									
External revenue	₩4,011,795,742	753,345,795	677,519,788	2,463,343,532	7,906,004,857	1,435,808,369	-		9,341,813,226
Inter-segment revenue	315,811,059	229,046,973	37,830,359	951,372,296	1,534,060,687	44,516,536	(1,578,577,223)		-
	₩4,327,606,801	982,392,768	715,350,147	3,414,715,828	9,440,065,544	1,480,324,905	(1,578,577,223)		9,341,813,226
Operating profit(*1)	₩ 631,147,589	2,229,382	22,861,834	14,283,220	670,522,025	75,350,141	10,538,825		756,410,991
Share of profit of associates and joint ventures									593,087,180
Other non-operating income and expenses									(151,877,693)
Finance income and expenses									(131,767,592)
Income before income tax expense									1,065,852,886
Depreciation and amortization(*2)	199,493,102	43,764,892	43,201,230	116,827,211	403,286,435	25,062,603	7,181,790		435,530,828
Loss on valuation of inventories	9,129,517	1,861,921	616,644	13,398,976	25,007,058	2,449,503	-		27,456,561
Bad debt expenses	430,113	3,684	1,853,317	35,257,021	37,544,135	5,139,115	-		42,683,250
Capital expenditures(*3)	209,800,199	72,492,474	108,662,086	83,797,762	474,752,521	52,297,140	(22,569,374)		504,480,287

(*1) Total segment operating income is different from operating income in the consolidated statements of comprehensive income due to unrecognized income on inter-segment transactions, which were eliminated upon consolidation.

(*2) Total amount of depreciation of property, plant and equipment and investment property and amortization of intangible assets.

(*3) Capital expenditures consists of acquisition of property, plant and equipment, investment property and intangible assets.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

39. Operating Segment Information, Continued

(1) Operating income by each reportable segment for the years ended December 31, 2017 and 2016 are as follows, continued:

In thousands won

	2016							
	Raw material	Manufacturing	Retail	Photovoltaic	Subtotal	Others	Consolidated adjustment	Total
Revenue:								
External revenue	₩3,578,144,832	739,600,578	639,157,452	2,845,960,254	7,802,863,116	1,455,969,568	-	9,258,832,684
Inter-segment revenue	293,657,024	284,426,367	34,206,159	1,066,014,208	1,678,303,758	60,039,500	(1,738,343,258)	-
	<u>₩3,871,801,856</u>	<u>1,024,026,945</u>	<u>673,363,611</u>	<u>3,911,974,462</u>	<u>9,481,166,874</u>	<u>1,516,009,068</u>	<u>(1,738,343,258)</u>	<u>9,258,832,684</u>
Operating profit(*1)	₩ 470,966,374	35,881,374	(993,417)	212,526,068	718,380,399	70,421,889	(9,584,197)	779,218,091
Share of profit of associates and joint ventures								423,322,323
Other non-operating income and expenses								(165,189,411)
Finance income and expenses								(150,969,277)
Income before income tax expense								886,381,726
Depreciation and amortization(*2)	200,854,934	44,035,458	44,357,777	122,995,885	412,244,054	25,562,869	7,481,065	445,287,988
Loss on valuation of inventories	8,213,537	873,278	548,248	17,538,962	27,174,025	3,171,774	(1,699,582)	28,646,217
Bad debt expenses	(85,402)	1,621,592	2,991,110	8,000,220	12,527,520	4,551,367	-	17,078,887
Capital expenditures(*3)	306,309,079	86,428,862	40,015,617	167,955,822	600,709,380	34,175,037	(30,700)	634,853,717

(*1) Total segment operating income is different from operating income in the consolidated statements of comprehensive income due to unrecognized income on inter-segment transactions, which were eliminated upon consolidation.

(*2) Total amount of depreciation of property, plant and equipment and investment property and amortization of intangible assets.

(*3) Capital expenditures consists of acquisition of property, plant and equipment, investment property and intangible assets.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

39. Operating Segment Information, Continued

(2) Segment information as of December 31, 2017 and 2016 are as follows:

In thousands won

In thousands won		December 31, 2017							
		Raw material	Manufacturing	Retail	Photovoltaic	Subtotal	Others	Consolidated adjustment	Total
Segment assets:									
Current assets	₩	1,287,340,982	438,986,517	542,515,466	1,944,207,309	4,213,050,274	787,942,500	(778,525,707)	4,222,467,067
Investment in associates and joint ventures		3,724,086,891	439,237,325	171,895,235	2,084,334,911	6,419,554,362	328,022,737	(4,065,257,647)	2,682,319,452
Other non-current assets		2,883,000,661	598,678,561	1,618,518,221	1,223,475,632	6,323,673,075	534,839,047	(113,810,741)	6,744,701,381
	₩	<u>7,894,428,534</u>	<u>1,476,902,403</u>	<u>2,332,928,922</u>	<u>5,252,017,852</u>	<u>16,956,277,711</u>	<u>1,650,804,284</u>	<u>(4,957,594,095)</u>	<u>13,649,487,900</u>
Segment liabilities:									
Current liabilities	₩	1,569,070,137	621,539,184	723,513,229	2,058,259,667	4,972,382,217	654,697,217	(732,889,213)	4,894,190,221
Non-current liabilities		1,376,602,711	200,684,599	389,993,668	427,138,687	2,394,419,665	201,861,682	(28,456,831)	2,567,824,516
	₩	<u>2,945,672,848</u>	<u>822,223,783</u>	<u>1,113,506,897</u>	<u>2,485,398,354</u>	<u>7,366,801,882</u>	<u>856,558,899</u>	<u>(761,346,044)</u>	<u>7,462,014,737</u>

In thousands won

In thousands won		December 31, 2016							
		Raw material	Manufacturing	Retail	Photovoltaic	Subtotal	Others	Consolidated adjustment	Total
Segment assets:									
Current assets	₩	1,271,699,530	401,298,214	461,520,484	2,299,729,495	4,434,247,723	1,047,339,205	(957,717,663)	4,523,869,265
Investment in associates and joint ventures		3,510,395,845	420,012,212	169,395,235	2,252,181,829	6,351,985,121	385,951,961	(4,453,441,885)	2,284,495,197
Other non-current assets		3,106,034,849	602,069,622	1,574,407,514	1,382,767,028	6,665,279,013	658,627,422	(314,357,768)	7,009,548,667
	₩	<u>7,888,130,224</u>	<u>1,423,380,048</u>	<u>2,205,323,233</u>	<u>5,934,678,352</u>	<u>17,451,511,857</u>	<u>2,091,918,588</u>	<u>(5,725,517,316)</u>	<u>13,817,913,129</u>
Segment liabilities:									
Current liabilities	₩	1,583,353,959	430,202,804	774,451,017	1,978,214,730	4,766,222,510	1,141,555,282	(944,795,658)	4,962,982,134
Non-current liabilities		1,819,748,454	336,530,466	415,680,060	967,646,417	3,539,605,397	97,433,937	(250,435,048)	3,386,604,286
	₩	<u>3,403,102,413</u>	<u>766,733,270</u>	<u>1,190,131,077</u>	<u>2,945,861,147</u>	<u>8,305,827,907</u>	<u>1,238,989,219</u>	<u>(1,195,230,706)</u>	<u>8,349,586,420</u>

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

39. Operating Segment Information, Continued

(3) Consolidation adjustments of assets and liabilities for each segment as of December 31, 2017 and 2016, are as follows:

In thousands won

		<u>December 31, 2017</u>	<u>December 31, 2016</u>
Consolidated assets			
Segmental assets:			
Total assets for reportable segments	₩	16,956,277,711	17,451,511,857
Assets of other segments not classified to reportable segments		1,650,804,284	2,091,918,588
Consolidation adjustments:			
Elimination of investments in subsidiaries including equity method adjustment		(4,065,257,647)	(4,453,441,885)
Elimination of intercompany receivables		(759,907,217)	(906,523,533)
Others		(132,429,231)	(365,551,898)
	₩	<u>13,649,487,900</u>	<u>13,817,913,129</u>
Consolidated liabilities			
Segmental liabilities:			
Total liabilities for reportable segments	₩	7,366,801,882	8,305,827,907
Liabilities of other segments not classified to reportable segments		856,558,899	1,238,989,219
Consolidation adjustments:			
Elimination of intercompany payables		(924,871,559)	(1,036,360,106)
Deferred tax liabilities from consolidation adjustments		165,024,078	107,604,854
Others		(1,498,563)	(266,475,454)
	₩	<u>7,462,014,737</u>	<u>8,349,586,420</u>

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

39. Operating Segment Information, Continued

(4) Details of the Group's sales revenues by region for the years ended December 31, 2017 and 2016 and assets by region as of December 31, 2017 and 2016 are as follows:

(i) Regional Sales

In thousands won

		<u>2017</u>	<u>2016</u>
Domestic	₩	5,341,258,441	4,872,578,593
Overseas:			
China		2,613,414,979	3,089,552,764
Germany		297,562,221	137,057,932
Others		1,089,577,585	1,159,643,395
		<u>4,000,554,785</u>	<u>4,386,254,091</u>
	₩	<u>9,341,813,226</u>	<u>9,258,832,684</u>

(ii) Regional Assets

In thousands won

		<u>December 31, 2017</u>	<u>December 31, 2016</u>
Domestic	₩	6,988,140,671	6,698,731,051
Overseas:			
China		991,947,609	1,081,159,100
Germany		230,803,129	217,591,154
Others		858,021,360	886,404,168
		<u>2,080,772,098</u>	<u>2,185,154,422</u>
	₩	<u>9,068,912,769</u>	<u>8,883,885,473</u>

(*) Financial assets and deferred income tax assets are excluded from these amounts.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

40. Significant Changes in Scope of Consolidation

(1) Exclusion of C-space Co., Ltd. from consolidation

C-space Co., Ltd. was sold on April 29, 2016 and excluded from consolidation.

(i) Proceeds received by the Group in exchange for the sale are as follows:

<i>In thousands won</i>		Amount
Cash and cash equivalents	₩	2,390,388

(ii) Sold assets and liabilities of C-space Co., Ltd. are as follows:

<i>In thousands won</i>		Amount
Assets:		
Current assets:		
Cash and cash equivalents	₩	2,371,794
Trade receivables and other receivables		226,685
Other financial assets		2,243,267
Other current assets		41,749
Inventories		1,521,547
Current income tax assets		17,643
Non-current assets:		
Other financial assets		3,655,530
Property, plant and equipment		679,223
Intangible assets		329,407
		<u>11,086,845</u>
Liabilities:		
Current liabilities:		
Trade payables and other payables		(3,972,474)
Borrowings		(1,054,775)
Other financial liabilities		(822,400)
Other current liabilities		(553,959)
Non-current liabilities:		
Other financial liabilities		(450,500)
Net defined benefit liabilities		(2,153,351)
Other long-term employee benefits		(112,816)
		<u>(9,120,275)</u>
	₩	<u>1,966,570</u>

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

41. Non-controlling interests

(1) Changes in accumulated non-controlling interests

Profit or loss allocated to non-controlling interests, net income attributable to non-controlling interests in equity and accumulated non-controlling interests of subsidiaries that are material to the Group for the years ended December 31, 2017 and 2016 are as follows:

In thousands won

	Percentage of non-controlling interests	Accumulated non-controlling interests at the beginning of the year	2017			Accumulated non-controlling interests at the end of the year
			Net income allocated to non-controlling interests	Dividends paid to non-controlling interests	Others	
Hanwha Galleria Timeworld Co., Ltd.	29.35% ₩	70,574,699	(3,186,705)	-	1,726,456	69,114,450
Hanwha Holdings(USA), Inc.	20.00%	61,686,106	946,261	-	(7,785,508)	54,846,859

In thousands won

	Percentage of non-controlling interests	Accumulated non-controlling interests at the beginning of the year	2016			Accumulated non-controlling interests at the end of the year
			Net income allocated to non-controlling interests	Dividends paid to non-controlling interests	Others	
Hanwha Galleria Timeworld Co., Ltd.	29.35% ₩	80,694,006	(5,474,822)	(1,731,231)	(2,913,254)	70,574,699
Hanwha Holdings(USA), Inc.	20.00%	143,599,302	4,958,182	-	(86,871,378)	61,686,106

(2) Summarized financial information of subsidiaries

Summarized financial information for each non-controlling interest that is material to the Group prior to the elimination of intercompany transactions is as follows:

(i) Summarized consolidated statements of financial position

In thousands won

		December 31, 2017	
		Hanwha Galleria Timeworld Co., Ltd.	Hanwha Holdings(USA), Inc.(*)
Current assets	₩	99,201,751	298,395,138
Non-current assets		375,829,326	452,243,665
Current liabilities		206,143,359	312,407,212
Non-current liabilities		39,715,634	155,258,871
Equity		229,172,084	282,972,720

(*) Consolidated financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 17 subsidiaries.

In thousands won

		December 31, 2016	
		Hanwha Galleria Timeworld Co., Ltd.	Hanwha Holdings(USA), Inc.(*)
Current assets	₩	71,094,355	314,299,523
Non-current assets		401,779,364	517,652,447
Current liabilities		167,970,746	473,605,272
Non-current liabilities		68,238,212	42,364,917
Equity		236,664,761	315,981,781

(*) Consolidated financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 19 subsidiaries.

HANWHA CHEMICAL CORPORATION AND SUBSIDIARIES
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2017 and 2016

41. Non-controlling interests, Continued

(2) Summarized financial information of subsidiaries, continued

(ii) Summarized consolidated statements of comprehensive income

In thousands won

		2017	
		Hanwha Galleria Timeworld Co., Ltd.	Hanwha Holdings(USA), Inc.(*)
Revenue	₩	330,703,011	638,440,031
Net income for the year		(12,784,641)	4,214,017
Other comprehensive income (loss)		5,291,964	(36,770,259)
Total comprehensive loss		(7,492,677)	(32,556,242)

(*) Consolidated financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 17 subsidiaries.

In thousands won

		2016	
		Hanwha Galleria Timeworld Co., Ltd.	Hanwha Holdings(USA), Inc.(*)
Revenue	₩	284,781,001	687,983,714
Net income for the year		(11,596,245)	12,191,401
Other comprehensive income (loss)		(9,480,657)	8,009,018
Total comprehensive income (loss)		(21,076,902)	20,200,419

(*) Consolidated financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 19 subsidiaries.

(iii) Summarized consolidated statements of cash flows

In thousands won

		2017	
		Hanwha Galleria Timeworld Co., Ltd.	Hanwha Holdings(USA), Inc.(*)
Cash flows from operating activities	₩	6,768,748	71,930,941
Cash flows from investing activities		11,066,028	(50,720,673)
Cash flows from financing activities		9,529,538	13,619,227
Increase in cash and cash equivalents		27,364,314	34,829,495
Beginning of the year		2,698,876	30,262,157
Effects of foreign exchange rate		(23,400)	(5,270,755)
End of the year	₩	30,039,790	59,820,897

(*) Consolidated financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 17 subsidiaries.

In thousands won

		2016	
		Hanwha Galleria Timeworld Co., Ltd.	Hanwha Holdings(USA), Inc.(*)
Cash flows from operating activities	₩	(46,632,109)	20,508,530
Cash flows from investing activities		(30,313,368)	(22,137,147)
Cash flows from financing activities		21,173,940	(3,646,282)
Decrease in cash and cash equivalents		(55,771,537)	(5,274,899)
Beginning of the year		58,537,284	34,678,387
Effects of foreign exchange rate		(66,871)	858,669
End of the year	₩	2,698,876	30,262,157

(*) Consolidated financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 19 subsidiaries.