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 Korea Electric Power Corporation:

We have audited the accompanying consolidated statement of financial statements of Korea Electric Power Corporation and subsidiaries (the "Company"), which comprise the consolidated statements of financial position as at December 31, 2017 and 2016, the consolidated statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the 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 audits. We conducted our audits in accordance with Korean Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on 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 Company as of December 31, 2017 and 2016 and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with Korean International Financial Reporting Standards.

Emphasis of Matters

Without qualifying our audit report, we draw attention to the following key audit matters of the build-to-order industry that were of significance in our audit of the consolidated financial statements as of and for the year ended December 31, 2017, which determination is based on auditor's professional judgment and communications with those who charged with governance, in accordance with Practical Guide of Korean Standards on Auditing 2016-1. This matter was addressed in the context of our audit of the consolidated financial statements as a whole, and we do not provide a separate opinion on this matter. We have considered the results from audit procedures for these key audit matters in forming our audit opinion on the 2017 consolidated financial statements.

When the outcome of a construction contract can be estimated reliably, the Company recognizes contract revenue and costs based on the percentage-of-completion method at the end of the reporting period. Also, the gross amount due from customers for contract work is presented for all contracts in which costs incurred plus recognized profits exceed progress billings. The gross amount due to customers for contract work is presented for all contracts work is presented for all contracts in which costs incurred plus recognized profits exceed progress billings exceed costs incurred plus recognized profits. The related accounting policies and disclosures are included in note 3.(8) and 20 to the consolidated financial statements.

Total contract revenue is measured based on an agreed contract price; however, it may fluctuate due to the variation of construction work. The measurement of contract revenue is affected by various uncertainties resulting from unexpected future events. Total contract costs are estimated based on the estimates of future costs such as material costs, labor costs and construction period. The uncertainty of estimated total contract costs and changes in such estimates have an impact on the completion progress and contract revenue for each reporting period.

Considering the impacts from these uncertainty and changes in estimates on profit or loss for the current or future periods, we identified the Company's revenue recognition accounting policy utilizing the input method, uncertainty of estimated total contract costs, assessment of the percentage-of-completion and accounting for the variation of construction works as significant risks.

We conducted the following audit procedures for the significant risks described above as of and for the year ended December 31, 2017:

- Assessment of the appropriateness of accounting policy of revenues recognition by the input method
- Inquiry, inspection of documents and analytical review of current progress and significant changes in major projects as of period end
- Inquiry, inspection of documents and analytical review of financial indicators such as contract price, estimated contract costs, cost ratio, ratio of amounts due from customers for contract work, major components of total contract costs, accumulated contract costs, fluctuations in total contract costs and others
- Testing of design and operating effectiveness of internal controls over the accounting for changes in construction contract terms and conditions
- Testing of design and operating effectiveness of internal controls over new construction contracts
- Recalculation of the percentage of completion for the contracts in which the percentage of completion was significantly changed
- Test of details of appropriateness of input costs, cut-off, and attribution of costs to each construction contract by inspection of supporting document for selected samples

Other Matter

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. Accordingly, this report and the accompanying consolidated financial statements are for use by those knowledgeable about Korean auditing standards and their application in practice.

KPMG Somjang Accounting Corp.

KPMG Samjong Accounting Corp. Seoul, Korea March 15, 2018

This report is effective as of March 15, 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.

KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES Consolidated Statements of Financial Position

As of December 31, 2017 and 2016

In millions of won	Note	2017	2016
<u>Assets</u>			
Current assets			
Cash and cash equivalents	5,6,7,45	₩ 2,369,739	3,051,353
Current financial assets, net	5,10,11,12,45	1,958,357	2,671,989
Trade and other receivables, net	5,8,14,20,45,46,47	7,928,972	7,788,876
Inventories, net	13	6,002,086	5,479,443
Income tax refund receivables	41	100,590	19,163
Current non-financial assets	15	753,992	631,860
Assets held-for-sale	42	27,971	65,842
Total current assets		19,141,707	19,708,526
Non-current assets			
Non-current financial assets, net	5,6,9,10,11,12,45	2,038,913	2,657,494
Non-current trade and other receivables, net	5,8,14,45,46,47	1,754,797	1,903,515
Property, plant and equipment, net	18,27,49	150,882,414	145,743,056
Investment properties, net	19,27	284,714	353,680
Goodwill	16	2,582	2,582
Intangible assets other than goodwill, net	21,27,46	1,187,121	980,821
Investments in associates	4,17	3,837,421	4,092,252
Investments in joint ventures	4,17	1,493,275	1,418,196
Deferred tax assets	41	919,153	795,131
Non-current non-financial assets	15	246,818	181,789
Total non-current assets		162,647,208	158,128,516
Total Assets	4	₩181,788,915_	177,837,042

(Continued)

KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES Consolidated Statements of Financial Position, Continued As of December 31, 2017 and 2016

In millions of won Note 2017 2016 Liabilities Current liabilities Trade and other payables, net 5,22,24,45,47 ₩ 5,999,521 5,585,411 Current financial liabilities, net 5,11,23,45,47 9,194,552 8,942,329 508,402 Income tax payables 41 1,843,288 Current non-financial liabilities 20,28,29 5,584,308 6,368,210 26,45 1,999,988 Current provisions 2,137,498 **Total current liabilities** 23,424,281 24,739,226 Non-current liabilities Non-current trade and other payables, net 5,22,24,45,47 3.223.480 3.558.175 Non-current financial liabilities, net 5,11,23,45,47 45,980,899 44,835,562 Non-current non-financial liabilities 28,29 8,072,434 7,591,605 Employee benefits liabilities, net 25,45 1,483,069 1,686,258 Deferred tax liabilities 41 10,415,397 8,948,520 Non-current provisions 26,45 16,224,714 13,427,151 85,399,993 **Total non-current liabilities** 80,047,271 **Total Liabilities** ₩ 108,824,274 104,786,497 4

<u>Equity</u>

Contributed capital	1,30,45		
Share capital	Υ	√ 3,209,820	3,209,820
Share premium		843,758	843,758
		4,053,578	4,053,578
Retained earnings	31		
Legal reserves		1,604,910	1,604,910
Voluntary reserves		34,833,844	31,847,275
Unappropriated retained earnings		16,931,804	19,721,686
		53,370,558	53,173,871
Other components of equity	34		
Other capital surplus		1,233,793	1,235,146
Accumulated other comprehensive loss		(271,457)	(33,875)
Other equity		13,294,973	13,294,973
		14,257,309	14,496,244
Equity attributable to owners of the controlling company		71,681,445	71,723,693
Non-controlling interests	16, 33	1,283,196	1,326,852
Total Equity	Ą	√72,964,641	73,050,545
Total Liabilities and Equity	A	↓ 181,788,915	177,837,042

See accompanying notes to the consolidated financial statements.

KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES Consolidated Statements of Comprehensive Income For the years ended December 31, 2017 and 2016

In millions of won, except per share information	Note		2017	2016
Sales	4,35,45,47			
Sales of goods		₩	55,772,548	55,379,487
Sales of services			351,157	356,743
Sales of construction services Revenue related to transfer of assets from	20		3,212,184	4,026,857
customers			478,973	427,297
Cost of sales	13,25,43,47		59,814,862	60,190,384
Cost of sales of goods			(48,454,036)	(41,237,372)
Cost of sales of services			(597,423)	(557,037)
Cost of sales of construction services			(3,047,396)	(3,755,144)
			(52,098,855)	(45,549,553)
Gross profit			7,716,007	14,640,831
Selling and administrative expenses	25,36,43,47		(2,762,855)	(2,639,232)
Operating profit	4		4,953,152	12,001,599
Other non-operating income	37		390,145	412,887
Other non-operating expense	37		(180,055)	(188,624)
Other gains, net	38		156,627	70,498
Finance income	5,11,39		1,530,618	791,543
Finance expenses	5,11,40		(3,127,952)	(2,437,087)
Profit related to associates, joint ventures and subsidiaries	4,17			
Share in profit of associates and joint			0.44 507	004 405
ventures Gain on disposal of investments in			241,537	224,435
associates and joint ventures			609	52
Share in loss of associates and joint ventures			(323,225)	(243,361)
Loss on disposal of investments in associates and joint ventures Impairment loss on investments in associates			-	(2,935)
and joint ventures	17		(27,238)	(115,539)
			(108,317)	(137,348)
Profit before income tax			3,614,218	10,513,468
Income tax expense	41		(2,172,824)	(3,365,141)
Profit for the period		₩	1,441,394	7,148,327

(Continued)

KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES Consolidated Statements of Comprehensive Income, Continued For the years ended December 31, 2017 and 2016

In millions of won, except per share information	Note		2017	2016
Other comprehensive income (loss)	5,11,25,31,34			
Items that will not be reclassified subsequently to profit or loss: Remeasurement of defined benefit liability, net				
of tax Share in other comprehensive income (loss) of	25,31	₩	170,337	(75,926)
associates and joint ventures, net of tax Items that are or may be reclassified subsequently to profit or loss:	31		10,067	(2,515)
Net change in the unrealized fair value of available-for-sale financial assets, net of tax Net change in the unrealized fair value of derivatives using cash flow hedge accounting,	34		(7,098)	61,279
net of tax Foreign currency translation of foreign	5,11,34		20,868	28,414
operations, net of tax	34		(134,196)	41,360
Share in other comprehensive loss of associates and joint ventures, net of tax	34	_	(154,694)	(54,914)
Other comprehensive loss, net of tax		_	(94,716)	(2,302)
Total comprehensive income for the period		₩ _	1,346,678	7,146,025
Profit or loss attributable to:				
Owners of the controlling company	44	₩	1,298,720	7,048,581
Non-controlling interests		_	142,674	99,746
		₩	1,441,394	7,148,327
Total comprehensive income attributable to:				
Owners of the controlling company		₩	1,230,194	7,041,557
Non-controlling interests		_	116,484	104,468
		₩ _	1,346,678	7,146,025
Earnings per share	44			
Basic and diluted earnings per share		₩	2,023	10,980

See accompanying notes to the consolidated financial statements.

Consolidated Statements of Changes in Equity For the years ended December 31, 2017 and 2016

In millions of won		Equity a	ttributable to own	ers of the controlling c	ompany		
	Co	ontributed capital	Retained earnings	Other components of equity	Subtotal	Non- controlling interests	Total equity
Balance at January 1, 2016	₩	4,053,578	48,187,241	14,393,648	66,634,467	1,308,008	67,942,475
Total comprehensive income (loss) for the period							
Profit for the period		-	7,048,581	-	7,048,581	99,746	7,148,327
Items that will not be reclassified subsequently to profit or loss:							
Remeasurement of defined benefit liability, net of tax Share in other comprehensive income (loss) of associates		-	(69,330)	-	(69,330)	(6,596)	(75,926)
and joint ventures, net of tax		-	(2,532)	-	(2,532)	17	(2,515)
Items that are or may be reclassified subsequently to profit or loss:							
Net change in the unrealized fair value of available-for-sale financial assets, net of tax				61,275	61,275	4	61,279
Net change in the unrealized fair value of		-	-	01,275	01,275	4	61,279
derivatives using cash flow hedge accounting,							
net of tax		-	-	27,075	27,075	1,339	28,414
Foreign currency translation of foreign				27,070	27,070	1,000	20,111
operations, net of tax		-	-	31,406	31,406	9,954	41,360
Share in other comprehensive income (loss) of					·		
associates and joint ventures, net of tax		-	-	(54,918)	(54,918)	4	(54,914)
Transactions with owners of the Company,							
recognized directly in equity							
Dividends paid		-	(1,990,089)	-	(1,990,089)	(99,982)	(2,090,071)
Issuance of shares of capital by subsidiaries and others Equity transaction within consolidation scope –		-	-	1,750	1,750	14,809	16,559
other than issuance of share capital		-	-	36,008	36,008	12,299	48,307
Changes in consolidation scope		-	-	-	-	3,705	3,705
Dividends paid (hybrid securities)		<u> </u>				(16,455)	(16,455)
Balance at December 31, 2016	₩	4,053,578	53,173,871	14,496,244	71,723,693	1,326,852	73,050,545

(Continued)

Consolidated Statements of Changes in Equity, Continued For the years ended December 31, 2017 and 2016

In millions of won		Equity a	ttributable to own	ers of the controlling c	ompany		
	(Contributed capital	Retained earnings	Other components of equity	Subtotal	Non- controlling interests	Total equity
Balance at January 1, 2017	₩	4,053,578	53,173,871	14,496,244	71,723,693	1,326,852	73,050,545
Total comprehensive income (loss) for the period							
Profit for the period		-	1,298,720	-	1,298,720	142,674	1,441,394
Items that will not be reclassified subsequently to profit or loss:							
Remeasurement of defined benefit liability, net of tax Share in other comprehensive income (loss) of associates		-	158,991	-	158,991	11,346	170,337
and joint ventures, net of tax Items that are or may be reclassified subsequently to profit or loss:		-	10,065	-	10,065	2	10,067
Net change in the unrealized fair value of available-for-sale financial assets, net of tax Net change in the unrealized fair value of		-	-	(7,102)	(7,102)	4	(7,098)
derivatives using cash flow hedge accounting, net of tax Foreign currency translation of foreign		-	-	19,614	19,614	1,254	20,868
operations, net of tax Share in other comprehensive income (loss) of		-	-	(95,103)	(95,103)	(39,093)	(134,196)
associates and joint ventures, net of tax Transactions with owners of the Company,		-	-	(154,991)	(154,991)	297	(154,694)
recognized directly in equity							
Dividends paid		-	(1,271,089)	-	(1,271,089)	(70,252)	(1,341,341)
Issuance of shares of capital by subsidiaries and others		-	-	(1,378)	(1,378)	18,381	17,003
Changes in consolidation scope		-	-	-	-	7,337	7,337
Dividends paid (hybrid securities)		-	-	-	-	(15,856)	(15,856)
Repayment of hybrid securities		-	-	-	-	(99,750)	(99,750)
Others	_		<u> </u>	25	25		25
Balance at December 31, 2017	₩	4,053,578	53,370,558	14,257,309	71,681,445	1,283,196	72,964,641

See accompanying notes to the consolidated financial statements.

Consolidated Statements of Cash Flows

For the years ended December 31, 2017 and 2016

In millions of won	2017	2016
Cash flows from operating activities		
	₩ 1,441,394	7,148,327
Adjustments for:		
Income tax expense	2,172,824	3,365,141
Depreciation	9,660,039	8,881,273
Amortization	113,672	79,715
Employee benefit expense	391,360	373,753
Bad debt expense	126,326	37,815
Interest expense	1,789,552	1,752,868
Loss on sale of financial assets	2,343	9
Loss on disposal of property, plant and equipment	70,514	4,996
Loss on abandonment of property, plant, and equipment	424,091	426,519
Impairment loss on property, plant and equipment	51,067	-
Impairment loss on intangible assets	20	3,945
Loss on disposal of intangible assets	183	158
Increase to provisions	1,690,120	1,782,732
Loss (gain) on foreign currency translation, net	(902,878)	253,468
Valuation and transaction loss (gain) on derivative		
instruments, net	1,043,628	(231,630)
Share in loss of associates and joint ventures, net	81,688	18,926
Gain on disposal of financial assets	(1,130)	(1,482)
Gain on disposal of property, plant and equipment	(48,316)	(74,035)
Gain on disposal of intangible assets	(564)	-
Gain on disposal of investments in associates and joint ventures	(609)	(52)
Loss on disposal of investments in associates and joint ventures	-	2,935
Impairment loss on investments in associates and joint ventures	27,238	115,539
Interest income	(206,143)	(241,778)
Dividend income	(11,477)	(9,446)
Impairment loss on available-for-sale financial assets	2,713	86,703
Others, net	16,679	66,260
Changes in:	16,492,940	16,694,332
Trade receivables	(218,328)	200,529
Non-trade receivables	(31,807)	(68,322)
Accrued income	577,838	69,151
Other receivables	(1,271)	10,093
Other current assets	37,576	(259,492)
Inventories	(1,373,438)	(1,439,545)
Other non-current assets	(1,070,400) (46,079)	(1,433,343) (2,792)
Trade payables	342,126	141,994
Non-trade payables	(214,704)	(8,379)
Accrued expenses	(715,305)	(153,172)
Other payables	292	(100,172)
Other current liabilities	(126,323)	284,417
Other confermation abilities	763,958	809,699
Investments in associates and joint ventures (dividends received)	106,983	75,407
Provisions	(1,390,606)	(1,527,129)
Provisions Payments of employee benefit obligations	(1,390,606) (69,489)	(1,527,129) (53,477)
Plan assets	(325,080)	(312,125)
านานออดเอ	(2,683,657)	(2,233,143)
	(2,083,057)	(2,233,143)

(Continued)

Consolidated Statements of Cash Flows, Continued

For the years ended December 31, 2017 and 2016

In millions of won		2017	2016
Cash generated from operating activities	₩	15,250,677	21,609,516
Dividends received (available-for-sale financial assets)		10,590	10,294
Interest paid		(1,886,303)	(2,041,379)
Interest received		173,226	240,878
Income taxes paid		(2,298,296)	(3,298,757)
Net cash from operating activities	•	11,249,894	16,520,552
Cash flows from investing activities			
Proceeds from disposals of associates and joint ventures		10,542	46,644
Acquisition of associates and joint ventures		(206,753)	(113,222)
Proceeds from disposals of property, plant and equipment		85,801	207,960
Acquisition of property, plant and equipment		(12,535,958)	(12,028,789)
Proceeds from disposals of intangible assets		1,072	430
Acquisition of intangible assets		(143,887)	(124,422)
Proceeds from disposals of financial assets		5,296,680	10,876,017
Acquisition of financial assets		(4,786,717)	(8,130,621)
Increase in loans		(218,698)	(206,092)
Collection of loans		120,967	117,561
Increase in deposits		(397,078)	(468,734)
Decrease in deposits		110,383	161,166
Receipt of government grants		55,533	32,878
Net cash inflow from changes in consolidation scope		-	3,754
Other cash inflow from investing activities, net		1,414	(20,400)
Net cash used in investing activities		(12,606,699)	(9,645,870)
Cash flows from financing activities			
Proceeds from (repayment of) short-term borrowings, net		370,328	(49,604)
Proceeds from long-term borrowings and debt securities		10,098,067	2,302,060
Repayment of long-term borrowings and debt securities		(8,198,882)	(7,750,047)
Payment of finance lease liabilities		(122,919)	(118,215)
Settlement of derivative instruments, net		33,434	73,246
Change in non-controlling interest		23,582	10,538
Repayment of hybrid bond		(99,750)	-
Dividends paid (hybrid bond)		(15,856)	(16,455)
Dividends paid		(1,340,387)	(2,088,429)
Other cash outflow from financing activities, net		(2,023)	(570)
Net cash from (used in) financing activities	•	745,594	(7,637,476)
Net decrease in cash and cash equivalents before effect of			
exchange rate fluctuations		(611,211)	(762,794)
Effect of exchange rate fluctuations on cash held		(70,403)	31,082
Net decrease in cash and cash equivalents		(681,614)	(731,712)
Cash and cash equivalents at January 1		3,051,353	3,783,065
Cash and cash equivalents at December 31	₩	2,369,739	3,051,353

See accompanying notes to the consolidated financial statements.

1. Reporting Entity (Description of the controlling company)

Korea Electric Power Corporation ("KEPCO"), the controlling company as defined in Korean International Financial Reporting Standards ("K-IFRS") 1110 'Consolidated Financial Statements', was incorporated on January 1, 1982 in accordance with the Korea Electric Power Corporation Act (the "KEPCO Act") to engage in the generation, transmission and distribution of electricity and development of electric power resources in the Republic of Korea. KEPCO also provides power plant construction services. KEPCO's stock was listed on the Korea Stock Exchange on August 10, 1989 and KEPCO listed its Depository Receipts (DR) on the New York Stock Exchange on October 27, 1994. KEPCO's head office is located in Naju, Jeollanam-do.

As of December 31, 2017, KEPCO's share capital amounts to \4/3,209,820 million and KEPCO's shareholders are as follows:

	Number of shares	Percentage of ownership
Government of the Republic of Korea	116,841,794	18.20%
Korea Development Bank	211,235,264	32.90%
Other (*)	313,887,019	48.90%
	641,964,077	100.00%

(*) The number of shares held by foreign shareholders are 194,050,746 shares (30.23%) as of December 31, 2017.

In accordance with the Restructuring Plan enacted on January 21, 1999 by the Ministry of Trade, Industry and Energy, KEPCO spun off its power generation divisions on April 2, 2001, resulting in the establishment of six power generation subsidiaries.

2. Basis of Preparation

The consolidated financial statements of Korea Electric Power Corporation and subsidiaries (the "Company") were authorized for issuance by the Board of Directors on February 23, 2018, which will be submitted for approval at the shareholders' meeting held on March 30, 2018.

(1) Statement of compliance

These consolidated financial statements have been prepared in accordance with K-IFRS, as prescribed in the Act on External Audits of Corporations in the Republic of Korea.

(2) Basis of measurement

These consolidated financial statements have been prepared on the historical cost basis, except for the following material items in the consolidated statements of financial position:

- ✓ derivative financial instruments are measured at fair value
- ✓ available-for-sale financial assets are measured at fair value
- liabilities for defined benefit plans are recognized at the net of the total present value of defined benefit obligations less the fair value of plan assets

(3) Functional and presentation currency

These consolidated financial statements are presented in Korean won ("Won"), which is KEPCO's functional currency and the currency of the primary economic environment in which the Company operates.

(4) Use of estimates and judgments

The preparation of the consolidated financial statements in conformity with K-IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

The followings 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.

 Useful lives of property, plant and equipment, estimations on provision for decommissioning costs The Company reviews the estimated useful lives of property, plant and equipment at the end of each annual reporting period. Management's assumptions could affect the determination of estimated economic useful lives.

The Company records the fair value of estimated decommissioning costs as a liability in the period in which the Company incurs a legal obligation associated with the retirement of long-lived assets that result from acquisition, construction, development and/or normal use of the assets. The Company is required to record a liability for the dismantling (demolition) of nuclear power plants and disposal of spent fuel and low and intermediate radioactive wastes.

(ii) Deferred tax

The Company recognizes deferred tax assets and liabilities based on the differences between the financial statement carrying amounts and the tax bases of assets and liabilities of each consolidated taxpaying entity. However, the amount of deferred tax assets may be different if the Company does not realize estimated future taxable income during the carryforward periods.

(iii) Valuations of financial instruments at fair values

The Company's accounting policies and disclosures require the measurement of fair values, for both financial and nonfinancial assets and liabilities. The Company has an established control framework with respect to the measurement of fair values. This includes a valuation team that has overall responsibility for overseeing all significant fair value measurements, including Level 3 fair values, and reports directly to the financial officer.

The valuation team regularly reviews significant unobservable inputs and valuation adjustments. If third party information, such as broker quotes or pricing services, is used to measure fair values, then the valuation team assesses the evidence obtained from the third parties to support the conclusion that such valuations meet the requirements of K-IFRS including the level in the fair value hierarchy in which such valuation techniques should be classified.

When measuring the fair value of an asset or a liability, the Company uses market observable data as far as possible. Fair values are categorized into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows.

If the inputs used to measure the fair value of an asset or a liability might be categorized in different levels of the fair value hierarchy, then the fair value measurement is categorized in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement. The Company recognizes transfers between levels of the fair value hierarchy at the end of the reporting period during which the change has occurred.

(iv) Defined employee benefit liabilities

The Company offers its employees defined 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. For actuarial valuations, certain inputs such as discount rates and future salary increases are estimated. Defined benefit plans contain significant uncertainties in estimations due to its long-term nature (refer to note 25).

(4) Use of estimates and judgments, continued

(v) Unbilled revenue

Energy delivered but not metered nor billed is calculated at the reporting date and is estimated based on consumption statistics and selling price estimates. Determination of the unbilled revenues at the end of the reporting period is sensitive to the estimated consumptions and prices based on statistics. Unbilled revenue recognized as of December 31, 2017 and 2016 are W1,672,385 million and W1,615,322 million, respectively.

(vi) Construction contracts

When the outcome of a construction contract can be estimated reliably, revenue and costs are recognized based on the stage of completion of the contract activity utilizing the cost-based input method at the end of the reporting period. In applying the cost-based input method, it is necessary to use estimates and assumptions related to the total estimated costs expected to be incurred in the future, costs incurred which are not related to construction progress, changes in costs due to change of contract or design, etc. Total contract revenue is measured based on an agreed contract price; however, it may fluctuate due to the variation of construction work. The measurement of contract revenue is affected by various uncertainties resulting from unexpected future events.

(vii)Continuing operation of Wolsong Unit 1 nuclear power plant

Wolsong unit 1 nuclear power plant of the Company commenced operations on November 21, 1982 and its 30-year of designed life was expired on November 20, 2012. On February 27, 2015, the Nuclear Safety and Security Commission (NSSC) evaluated the safety of operation on the Wolsong Unit 1 nuclear power plant and approved to continue its operation until November 20, 2022. As described in note 50, the lawsuit related to the validity of the approval of NSSC is currently ongoing.

According to the Eighth Basic Plan for Electricity Supply and Demand by the Ministry of Trade, Industry and Energy, Wolsong Unit 1 nuclear power plant is expected to go through a comprehensive evaluation for the feasibility of continuous operation including economic efficiency and acceptability of household and community in 2018.

The Korean government plans to refund to the Company for reasonable expenditures incurred in relation to the phase-out of nuclear power plants in accordance with the energy transformation policy established by Korean government. In doing so, after discussions with relevant government agencies and upon approval by the Cogress, the Korean government is considering to use available resource including utilizing relevant fund to make the refund. Also, Korean government plans to establish relevant legal basis of providing refund including utilizing available resource, if necessary.

(5) Changes in accounting policies

(i) Amendments to K-IFRS 1007 'Statement of Cash Flows'

The Company has adopted the amendments to K-IFRS 1007 'Statement of Cash Flows', since January 1, 2017. The amendments require changes in liabilities arising from financing activities to be disclosed. The amendments are not required to provide comparative information for prior periods when applying for the first time. Information about changes in liabilities arising from financing activities is included in note 23 and note 24.

(ii) Amendments to K-IFRS 1012 'Income Taxes'

The Company has adopted the amendments to K-IFRS 1012 'Income Taxes', since January 1, 2017. The amendments clarify 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 Company assesses whether there will be sufficient taxable profit, the Company should compare the deductible temporary differences with future taxable profit that excludes tax deductions resulting from the reversal of those deductible temporary differences. The Company believes that there is no significant impact on the Company's consolidated financial statements and did not retroactively restate the comparative consolidated financial statements for the prior period.

(6) New standards and amendments not yet adopted

The following new standards, including K-IFRS 1109 'Financial Instruments' and K-IFRS 1115 'Revenue from Contracts with Customers', interpretations and amendments to existing standards have been published but are not mandatory for the Company for annual periods beginning on January 1, 2017, and the Company has not early adopted them.

The Company will apply K-IFRS 1109 'Financial Instruments' and K-IFRS 1115 'Revenue from Contracts with Customers' for annual periods beginning on January 1, 2018. The Company has conducted a detailed assessment upon adoption of these standards and based on the circumstance and information available when these financial statements were authorized for issuance.

(i) K-IFRS 1109 'Financial Instruments'

K-IFRS 1109 sets out the requirements for recognizing and measuring financial assets, financial liabilities and certain contracts to buy or sell non-financial items. It replaces existing guidance in K-IFRS 1039 'Financial Instruments: Recognition and Measurement'.

The Company will apply the exemption allowing it not to restate the comparative information for prior periods upon adoption of K-IFRS 1109. The Company will retroactively apply the cumulative effect of the adoption of K-IFRS 1109 in retained earnings as of the date of initial application (January 1, 2018).

Expected impacts on the consolidated financial statements are categorized as follows:

① Classification and measurement of financial assets

K-IFRS 1109 includes a new classification and measurement of financial assets that reflects the business model in which assets are managed and their cash flow characteristics.

Under K-IFRS 1109, financial assets are classified into three principal categories; measured at amortized cost, fair value through other comprehensive income (FVOCI) and fair value through profit or loss (FVTPL) based on the business model in which assets are managed and their cash flow characteristics. Under K-IFRS 1109, derivatives embedded in hybrid contracts where the host is a financial asset are not bifurcated. Instead, the hybrid financial instrument as a whole is assessed for classification.

The criteria for classification and measurement of financial assets under K-IFRS 1109 are as follows:

- A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at FVTPL: 1) the asset is held within a business model whose objective is to hold assets to collect contractual cash flows; and 2) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.
- A financial asset is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL: 1) the asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and 2) the contractual terms of the financial asset give rise on specified dates to cash flow that are solely payments of principal and interest on the principal amount outstanding. On initial recognition of equity investment that is not held for trading, the Company may irrevocably elect to present subsequent changes in fair value in OCI, and will not reclassify(recycle) the those items in OCI to profit or loss subsequently.
- A financial asset is measured at FVTPL if the contractual terms of the financial asset give rise to specified dates to cash flows that are not solely payments of principal and interest on the principal amount outstanding, the debt instrument is held within a business model whose objective is to sell the asset, or the equity instruments that are not elected to be designated as measured at FVOCI.

As of December 31, 2017, the Company has financial assets at fair value through profit or loss amounting to W133,532 million, available-for-sale financial assets amounting to W699,833 million, held-to-maturity investments amounting to W3,144 million and loans and receivables amounting to W15,203,663 million.

(6) New standards and amendments not yet adopted, continued

Based on the result of the detailed assessment to date, the expected impacts on the Company's financial assets (excluding derivative instruments) on the date of initial application (January 1, 2018) are as follows:

In millions of won				
Classification	Classification		Amount	Amount
based on	based on		based on	based on
K-IFRS 1039	K-IFRS 1109		K-IFRS 1039	K-IFRS 1109
Financial assets at FVTPL	FVTPL	₩	111,512	111,512
Loans and receivables	Amortized cost		15,203,663	14,412,339
Loans and receivables	FVTPL		-	791,324
Available-for-sale financial assets	FVOCI		699,833	476,941
Available-for-sale financial assets	FVTPL		-	222,892
Held-to-maturity investments	Amortized cost	_	3,144	3,144
Total financial assets (excluding deriv	ative instruments)	₩	16,018,152	16,018,152

Upon adoption of K-IFRS 1109, W791,324 million of loans and receivables and W222,892 million of available-for-sale financial assets will be measured at FVTPL. The Company has elected to measure W476,941 million of the equity securities classified as available-for-sale financial assets as FVOCI under K-IFRS 1109. Accordingly, from January 1, 2018, gains and losses from changes of fair value of the equity securities are recognized in other comprehensive income, impairment losses are not recognized in profit or loss, and gains and losses are not reclassified at disposal.

② Classification and measurement of financial liabilities

Under K-IFRS 1109, the amount of change in the fair value attributable to the changes in the credit risk of the financial liabilities is presented in OCI, not recognized in profit or loss, and the OCI amount will not be reclassified (recycled) to profit or loss. However, if doing so creates or increase an accounting mismatch, the amount of change in the fair value is recognized in profit or loss.

The Company did not elect financial liabilities to be designated as FVTPL and believes that there is no significant impact on the Company's consolidated financial statements upon adoption of K-IFRS 1109.

③ Impairment: Financial assets and contract assets

K-IFRS 1109 replaces the 'incurred loss' model in the existing standard with a forward-looking 'expected credit loss' (ECL) model for debt instruments, lease receivables, contractual assets, loan commitments, financial guarantee contracts.

Under K-IFRS 1109, impairment losses are likely to be recognized earlier than using the incurred loss model under the existing guidance in K-IFRS 1039 as loss allowances will be measured on either of the 12-month or lifetime ECL based on the extent of increase in credit risk since inception as shown in the below table.

	Classification	Loss allowances
Stage 1	Credit risk has not increased	12-month ECL: ECLs that resulted from possible default
	significantly since the initial recognition	events within the 12 months after the reporting date
Stage 2	Credit risk has increased significantly since the initial recognition	Lifetime ECL: ECL that resulted from all possible default events over the expected life of a financial instrument
Stage 3	Credit-impaired	

(6) New standards and amendments not yet adopted, continued

Under K-IFRS 1109, an entity shall always measure the loss allowance at an amount equal to lifetime expected credit losses for trade receivables or contract assets that result from transactions that are within the scope of K-IFRS 1115 and that do not contain a significant financing component in accordance with K-IFRS 1115 and if the trade receivables or contract assets include a significant financing component, an entity may choose as its accounting policy to measure the loss allowance at an amount equal to lifetime expected credit losses.

As of December 31, 2017, the Company has debt instruments in financial assets measured at amortized cost amounting to W15,464,202 million (loans and receivables) and has recognized loss allowances of W260,539 million.

Upon adoption of K-IFRS 1109, the Company plans to elect to measure the loss allowance at an amount equal to lifetime expected credit losses for trade receivables, contract assets and lease receivables that include a significant financing component. Based on the result of the detailed assessment to date, the expected impacts on the Company's loss allowances on the date of initial application (January 1, 2018) are as follows:

In millions of won

Туре	Amount based on	Amount based on	Increase (decrease)
	K-IFRS 1039 (A)	K-IFRS 1109 (B)	(B-A)
Trade and other receivables ₩	251,591	258,360	6,769
Other financial assets	8,948	8.948	
Total 😽	260,539	267,308	6,769

④ Hedge accounting

When initially applying K-IFRS 1109, an entity may elect as its accounting policy to continue to apply the hedge accounting requirements of K-IFRS 1039. The Company plans to elect to continue apply the hedge accounting requirements of K-IFRS 1039.

As of December 31, 2017, the Company has asset and liabilities designated as hedged items amounting to W10,606 million and W277,130 million, respectively.

(ii) K-IFRS 1115 'Revenue from Contracts with Customers'

K-IFRS 1115 sets out a comprehensive framework for determining whether revenue is recognized, the extent of revenue recognized, and when revenue is recognized. It replaces existing revenue recognition guidance, including K-IFRS 1018 'Revenue', K-IFRS 1011 'Construction Contracts', K-IFRS 2031 'Revenue-Barter transactions involving advertising services', K-IFRS 2113 'Customer Loyalty Programs', K-IFRS 2115 'Agreements for the construction of real estate', K-IFRS 2118 'Transfers of assets from customers'.

The Company will retroactively apply and recognize the cumulative effect of the adoption of K-IFRS 1115 at the date of initial application (January 1, 2018) and has determined to retroactively apply to only those contracts that were not completed as of the date of initial application (January 1, 2018). Accordingly, the Company will not restate the comparative periods.

Existing K-IFRS standards and interpretations including K-IFRS 1018 provide revenue recognition guidance by transaction types such as sales of goods, rendering of services, interest income, royalty income, dividend income and construction revenue; however, under the new standard, K-IFRS 1115, the five-step approach (Step 1: Identify the contract(s) with a customer, Step 2: Identify the performance obligations in the contract, Step 3: Determine the transaction price, Step 4: Allocate the transaction price to the performance obligations in the contract, Step 5: Recognize revenue when the entity satisfied a performance obligation) is applied for all types of contracts or agreements.

(6) New standards and amendments not yet adopted, continued

Expected impacts on the consolidated financial statements are categorized as follows:

① Identify the performance obligations in the contract

The Company is engaged in the generation, transmission and distribution of electricity and development of electric power resources, and electricity sales revenue accounts for 91.3% of consolidated revenue for the year ended December 31, 2017.

Under K-IFRS 1115, supplying electricity is a series of distinct goods or services identified as a single performance obligation. The Company is also engaged in contracts with customers for transmission and distribution, provision of power generation byproducts, EPC business, O&M, etc. that are identified as different performance obligations for each contract.

Based on the result of the detailed assessment to date, the Company believes that the impact of identifying separate the performance obligations in the contract on the Company's revenue is not significant.

② Variable consideration

The Company may be subject to a variation of consideration paid by the customer due to the progressive electricity billing system, discounts on electricity bills for policy purposes, penalties and delinquent payment, etc. In applying K-IFRS 1115, the Company estimates an amount of variable consideration by using the expected value method that the Company expects to better predict the amount of consideration to which it will be entitled, and includes in the transaction price some or all of an amount of variable consideration only to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

Based on the result of the detailed assessment to date, the Company believes that the impact of variable consideration on the Company's revenue is not significant.

(6) New standards and amendments not yet adopted, continued

③ Performance obligations satisfied over time

The Company provides its customers with services such as EPC business, O&M, etc. over time. The Company recognizes revenues based on the percentage-of-completion on a reasonable basis.

Under K-IFRS 1115, an entity recognizes revenue over time if one of the following criteria is met:

- (a) the customer simultaneously receives and consumes the benefits provided by the entity's performance as the entity performs;
- (b) the entity's performance creates or enhances an asset that the customer controls as the asset is created or enhanced; or
- (c) the entity's performance does not create an asset with an alternative use to the entity and the entity has an enforceable right to payment for performance completed to date.

Based on the result of the detailed assessment to date, the impact of the revenue recognition over time based on the percentage-of-completion on the Company's revenue is not significant.

(iii) K-IFRS 1116 'Lease'

K-IFRS 1116 replaces K-IFRS 1017 'Lease', and K-IFRS 2104 'Determining whether an Arrangement contains a Lease'. This standard is effective for annual reporting periods beginning on or after January 1, 2019, with early adoption permitted if K-IFRS 1115 'Revenue from Contracts with Customers' has also been applied.

Under K-IFRS 1116, a lessee shall apply this standard to its leases either:

(a) retrospectively to each prior reporting period presented applying K-IFRS 1008 'Accounting Policies, Changes in Accounting Estimates and Errors'; or

(b) retrospectively with the cumulative effect of initially applying the standard recognized at the date of initial application.

The Company has not yet determined the transition approach for K-IFRS 1116.

(6) New standards and amendments not yet adopted, continued

K-IFRS 1116 provides a single lessee accounting model in which the lessee recognizes lease related assets and liabilities in the statement of financial position. A lessee is required to recognize a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments. Lease recognition may be exempted for short-term leases and leases for which the underlying asset is of low value. Accounting for a lessor is similar to the existing standard that classifies each of its leases as either an operating lease or a finance lease.

Upon adoption of K-IFRS 1116, the nature of the costs associated with the lease will change as the operating lease payments recognized based on a straight-line basis will change to depreciation expense of a right-of-use asset and interest expense of the lease liability and no significant impact is expected on the Company's finance lease.

The Company plans to conduct a detailed assessment of the potential impact from the application of K-IFRS 1116 during the year ended December 31, 2018.

3. Significant Accounting Policies

The significant accounting policies applied by the Company in preparation of its consolidated financial statements are included below. Except as described in note 2.(5), the accounting policies applied by the Company in these consolidated financial statements are the same as those applied by the Company in its consolidated financial statements as of and for the year ended December 31, 2016.

(1) Basis of consolidation

The consolidated financial statements are the financial statements of a group in which the assets, liabilities, equity, income, expenses and cash flows of the parent and its subsidiaries are presented as those of a single economic entity. Subsidiaries are controlled by the Company. The Company controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

Income and expense of a subsidiary acquired or disposed of during the year are included in the consolidated statement of comprehensive income from the effective date of acquisition and up to the effective date of disposal, as appropriate. Total comprehensive income of subsidiaries is attributed to the owners of the Company 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 those of the Company.

Transactions within the Company are eliminated during the consolidation.

Changes in the Company's ownership interests in a subsidiary that do not result in the Company losing control over the subsidiary are accounted for as equity transactions. The carrying amounts of the Company's interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiary. 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 Company.

(1) Basis of consolidation, continued

When the Company loses control of a subsidiary, the income 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 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 1039 'Financial Instruments: Recognition and Measurement' or, when applicable, the cost on initial recognition of an investment in an associate or a jointly controlled entity.

(2) Business combinations

A business combination is accounted for by applying the acquisition method, unless it is a combination involving entities or businesses under common control.

The consideration transferred in a business combination is measured at fair value, which is calculated as the sum of the acquisition-date fair values of the assets transferred by the Company, liabilities incurred by the Company to the former owners of the acquiree and the equity interests issued by the Company in exchange for control of the acquiree. Acquisition-related costs are generally recognized in income 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 1012 'Income Taxes' and K-IFRS 1019 'Employee Benefits', respectively;
- assets (or disposal groups) that are classified as held for sale in accordance with K-IFRS 1105 'Non-current Assets Held for Sale' are measured in accordance with that standard.

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

Non-controlling interest that is present on acquisition day and entitles the holder to a proportionate share of the entity's net assets in an event of liquidation, may be initially measured either at fair value or at the non-controlling interest's proportionate share of the recognized amounts of the acquiree's identifiable net assets. The choice of measurement can be elected 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 other K-IFRSs.

(2) Business combinations, continued

When the consideration transferred by the Company 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.

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 re-measured 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 re-measured at subsequent reporting dates in accordance with K-IFRS 1039 'Financial Instruments: Recognition and Measurement', or with K-IFRS 1037 'Provisions', Contingent Liabilities and Contingent Assets, as appropriate, with the corresponding gain or loss being recognized in income or loss.

When a business combination is achieved in stages, the Company's previously held equity interest in the acquiree is remeasured to fair value at the acquisition date (i.e. the date when the Company obtains control) and the resulting gain or loss, if any, is recognized in income 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 income 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 Company 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.

The assets and liabilities acquired under business combinations under common control are recognized at the carrying amounts recognized previously in the consolidated financial statements of the ultimate parent. The difference between consideration transferred and carrying amounts of net assets acquired is recognized as part of share premium.

(3) Investments in associates

An associate is an entity over which the Company has significant influence and that is neither a subsidiary nor an interest in a joint venture. Significant influence is the power to participate in the financial and operating policy decisions of the investee but does not control or joint control over those policies.

The results and assets and liabilities of associates are incorporated in these consolidated financial statements using the equity method of accounting. If the investment is classified as held for sale, in which case it is accounted for in accordance with K-IFRS 1105 'Non-current Assets Held for Sale', any retained portion of an investment in associates that has not been classified as held for sale shall be accounted for using the equity method until disposal of the portion that is classified as held for sale takes place. If the Company holds 20% ~ 50% of the voting power of the investee, it is presumed that the Company has significant influence.

After the disposal takes place, the Company shall account for any retained interest in associates in accordance with K-IFRS 1039 'Financial Instruments: Recognition and Measurement' unless the retained interest continues to be an associates, in which case the entity uses the equity method.

Under the equity method, an investment in an associate is initially recognized in the consolidated statement of financial position at cost and adjusted thereafter to recognize the Company's share of the income or loss and other comprehensive income of the associate. When the Company's share of losses of an associate exceeds the Company's interest in that associate (which includes any long-term interests that, in substance, form part of the Company's net investment in the associate), the Company discontinues recognizing its share of further losses. Additional losses are recognized only to the extent that the Company has incurred legal or constructive obligations or made payments on behalf of the associate.

Any excess of the cost of acquisition over the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities of an associate recognized at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Company'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 income or loss. The requirements of K-IFRS 1039 'Financial Instruments: Recognition and Measurement' are applied to determine whether it is necessary to recognize any impairment loss with respect to the Company's investment in an associate. When necessary, the entire carrying amount of the investment (including goodwill) is tested for impairment in accordance with K-IFRS 1036 'Impairment of Assets' as a single asset 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 loss is recognized in accordance with K-IFRS 1036 to the extent that the recoverable amount of the investment subsequently increases.

Upon disposal of an associate that results in the Company losing significant influence over that associate, 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 1036. The difference between the previous carrying amount of the associate attributable to the retained interest and its fair value is included in the determination of the gain or loss on disposal of the associate. In addition, the Company accounts for all amounts previously recognized in other comprehensive income in relation to that associate on the same basis as would be required if that associate had directly disposed of the related assets or liabilities. Therefore, if a gain or loss previously recognized in other comprehensive income by that associate would be reclassified to income or loss on the disposal of the related assets or liabilities, the Company reclassifies the gain or loss from equity to income or loss (as a reclassification adjustment) when it loses significant influence over that associate.

When the Company transacts with its associate, incomes and losses resulting from the transactions with the associate are recognized in the Company's consolidated financial statements only to the extent of interests in the associate that are not related to the Company.

(4) Joint arrangements

A joint arrangement is an arrangement of which two or more parties have joint control. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control. Joint arrangements are classified into two types - joint operations and joint ventures. A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement (i.e. joint operators) have rights to the assets, and obligations for the liabilities, relating to the arrangement. A joint venture is a joint arrangement whereby the parties that have joint ventures) have rights to the net assets of the arrangement.

If the Company is a joint operator, the Company is to recognize and measure the assets and liabilities (and recognize the related revenues and expenses) in relation to its interest in the arrangement in accordance with relevant K-IFRSs applicable to the particular assets, liabilities, revenues and expenses. If the joint arrangement is a joint venture, the Company is to account for that investment using the equity method accounting in accordance with K-IFRS 1028 'Investment in Associates and Joint Ventures' (refer to note 3.(3)), except when the Company is applicable to the K-IFRS 1105 'Non-current Assets Held for Sale'.

(5) Non-current assets held for sale

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

When the Company 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 Company will retain a non-controlling interest in its former subsidiary after the sale.

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

(6) Goodwill

The Company measures goodwill which acquired in a business combination at the amount recognized at the date on which it obtains control of the acquiree (acquisition date) less any accumulated impairment losses. Goodwill acquired in a business combination is allocated to each CGU that is expected to benefit from the synergies arising from the business acquired.

The Company assesses at the end of each reporting period and whenever there is an indication that the asset may be impaired. An impairment loss is recognized if the carrying amount of an asset or a CGU exceeds its recoverable amount. Impairment losses are recognized in profit or loss.

Any impairment identified at the CGU level will first reduce the carrying value of goodwill and then be used to reduce the carrying amount of the other assets in the CGU on a pro rata basis. Except for impairment losses in respect of goodwill which are never reversed, an impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

(7) Revenue recognition

Revenue from the sale of goods, rendering of services or use of the Company assets is measured at the fair value of the consideration received or receivable, net of returns, trade discounts and volume rebates, which are recognized as a reduction of revenue. Revenue is recognized when the amount of revenue can be measured reliably and it is probable that the economic benefits associated with the transaction will flow to the Company.

(i) Sales of goods

The Korean government approves the utility rates charged to customers by the Company's power transmission and distribution division. The Company's utility rates are designed to recover the Company's reasonable costs plus a fair investment return.

The Company recognize revenue from electricity sales revenue based on power sold (transferred to the customer) up to the reporting date. To determine the amount of power sold, the Company estimates daily power volumes of electricity for residential, commercial, general, etc. The differences between the current month's estimated amount and actual (meter-read) amount, is adjusted for (trued-up) during the subsequent month.

(ii) Sales of services

Revenue from services rendered is recognized in profit or loss in proportion to the stage of completion of the transaction at the reporting date. The stage of completion is assessed by reference to surveys of work performed or 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 or other methods that reliably measures the services performed.

(iii) Dividend income and interest income

Dividend income is recognized in profit or loss on the date that the Company's right to receive payment is established, which in the case of quoted securities is the ex-dividend date.

Interest income is recognized as it accrues in profit or loss, using the effective interest method. 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.

(iv) Rental income

The Company's policy for recognition of revenue from operating leases is described in note 3.(9) below.

(v) Deferral of revenue – Transfer of Assets from Customers

The Company recovers a substantial amount of the cost related to its electric power distribution facilities from customers through the transfer of assets, while the remaining portion is recovered through electricity sales from such customers in the future. As such, the Company believes there exists a continued service obligation to the customers in accordance with K-IFRS 2118 'Transfer of Assets from Customers', when the Company receives an item of property, equipment, or cash for constructing or acquiring an item of property or equipment, in exchange for supplying electricity to customers. The Company defers the amounts received, which are subsequently recognized as revenue on a straight-line basis over the estimated service period which does not exceed the transferred asset's useful life.

(8) Construction services revenue

The Company provides services related to the construction of power plants related to facilities of its customers, mostly in foreign countries.

When the outcome of a construction contract can be estimated reliably, revenue and costs are recognized based on 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.

When the outcome of a construction contract cannot be estimated reliably, contract revenue is recognized to the extent of contract costs incurred when it is probable the revenue will be realized. 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 income less recognized losses exceed progress billings, the surplus is presented as amounts due from customers for contract work. For contracts where progress billings exceed contract costs incurred to date plus recognized income less recognized losses, the surplus is presented as the amounts due to customers for contract work. Amounts received before the related work is performed are included in the consolidated statements of financial position, as a liability, as advance received. Amounts billed for work performed but not yet paid by the customer are included in the consolidated statements of financial position as accounts and other receivables.

(9) Leases

The Company classifies and accounts for leases as either a finance or operating lease, depending on the terms. Leases where the Company assumes substantially all of the risks and rewards of ownership are classified as finance leases. All other leases are classified as operating leases.

(i) The Company as lessor

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

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

(ii) The Company as lessee

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.

Assets held under finance leases are initially recognized as assets of the Company at their fair value at the inception of the lease or, if lower, at the present value of the minimum lease payments. The corresponding liability to the lessor is included in the 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 income or loss, unless they are directly attributable to qualifying assets, in which case they are capitalized in accordance with the Company's general policy on borrowing costs. Contingent rentals are recognized as expenses in the periods in which they are incurred.

(9) Leases, continued

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.

(iii) Determining whether an arrangement contains a lease At inception of an arrangement, the Company determines whether the arrangement is or contains a lease.

At inception or on reassessment of an arrangement that contains a lease, the Company separates payments and other consideration required by the arrangement into those for the lease and those for other elements on the basis of their relative fair values. If the Company concludes for a finance lease that it is impracticable to separate the payments reliably, then an asset and a liability are recognized at an amount equal to the fair value of the underlying asset.

(10) Foreign currencies

Transactions in foreign currencies are translated to the respective functional currencies of the Company entities at exchange rates at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are retranslated to the functional currency using the reporting date's exchange rate. Non-monetary assets and liabilities denominated in foreign currencies that are measured at fair value are retranslated to the functional currency at the exchange rate at the date that the fair value was determined.

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 (refer to note 3.(25) Derivative financial instruments, including hedge accounting); 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 income or loss on disposal or partial disposal of the net investment.

For the purpose of presenting financial statements, the assets and liabilities of the Company'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.

When a foreign operation is disposed of, the relevant amount in the translation is transferred to profit or loss as part of the gain or loss on disposal.

(11) Borrowing costs

The Company capitalizes borrowing costs directly attributable to the acquisition, construction or production of a qualifying asset as part of the cost of that asset. Other borrowing costs are recognized in expense as incurred. A qualifying asset is an asset that requires a substantial period of time to get ready for its intended use or sale.

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

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

(12) Government grants

Government grants are not recognized unless there is reasonable assurance that the Company will comply with the grant's conditions and that the grant will be received.

Benefit from a government loan at a below-market interest rate 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.

(i) If the Company received grants related to assets

Government grants whose primary condition is that the Company purchase, construct or otherwise acquire long-term assets are deducted in calculating the carrying amount of the asset. The grant is recognized in profit or loss over the life of a depreciable asset as a reduced depreciation expense.

(ii) If the Company received grants related to income

Government grants which are intended to compensate the Company for expenses incurred are recognized as other income (government grants) in profit or loss over the periods in which the Company recognizes the related costs as expenses.

(13) Employee benefits

When an employee has rendered service to the Company during a period, the Company recognizes the contribution payable to a defined contribution plan in exchange for that service as a liability (accrued expense).

For defined benefit pension plans and other post-employment benefits, the net periodic pension expense is actuarially determined by "Pension Actuarial System" developed by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid and that have terms to maturity approximating the terms of the related pension liability. However, if there is not a deep market, market yields on government bonds are used.

Net defined benefit liability's measurement is composed of actuarial gains and losses, return on plan assets excluding net interest on net defined benefit liability, and any change in the effect of the asset ceiling, excluding net interest, which are immediately recognized in other comprehensive income. The actuarial gains or losses recognized in other comprehensive income which will not be reclassified into net profit or loss for later periods are immediately recognized in retained earnings. Past service cost will be recognized as expenses upon the earlier of the date of change or reduction to the plan, or the date of recognizing termination benefits.

The retirement benefit obligation recognized in the statement of financial position represents the present value of the defined benefit obligation as adjusted for unrecognized actuarial gains and losses and unrecognized past service cost, and as reduced by the fair value of plan assets. Any asset resulting from this calculation is limited to unrecognized actuarial losses and past service cost, plus the present value of available refunds and reductions in future contributions to the plan.

(14) Income taxes

Income tax expense comprises current and deferred tax. Current tax and deferred tax are recognized in profit or loss except to the extent that it relates to a business combination, or items recognized directly in equity or in other comprehensive income.

(i) Current tax

Current tax is the expected tax payable or receivable on the taxable profit or loss for the year, using tax rates enacted or substantively enacted at the end of the reporting period and any adjustment to tax payable in respect of previous years. The taxable profit is different from the accounting profit for the period since the taxable profit is calculated excluding the temporary differences, which will be taxable or deductible in determining taxable profit (tax loss) of future periods, and non-taxable or non-deductible items from the accounting profit.

(ii) Deferred tax

Deferred tax is recognized, using the asset-liability method, in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. A deferred tax liability is recognized for all taxable temporary differences. A deferred tax asset is recognized for all deductible temporary differences to the extent that it is probable that taxable profit will be available against which they can be utilized. However, deferred tax is not recognized for the following temporary differences: taxable temporary differences arising on the initial recognition of goodwill, or the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting profit or loss nor taxable income.

The measurement of deferred tax liabilities and deferred tax assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities. Deferred tax assets or deferred tax liabilities on investment properties measured at fair value, unless any contrary evidence exists, are measured using the assumption that the carrying amount of the property will be recovered entirely through sale.

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

The carrying amount of a deferred tax asset is reviewed at the end of each reporting period and reduces the carrying amount to the extent that it is no longer probable that sufficient taxable profit will be available to allow the benefit of part or all of that deferred tax asset to be utilized.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply to the period when the asset is realized or the liability is settled, 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 deferred tax assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period to recover or settle the carrying amount of its assets and liabilities.

Deferred tax assets and liabilities are offset only if there is a legally enforceable right to offset the related current tax liabilities and assets, and they relate to income taxes levied by the same tax authority and they intend to settle current tax liabilities and assets on a net basis.

(iii) Current and deferred tax for the year

Current and deferred tax are recognized in income 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.

(15) Property, plant and equipment

Property, plant and equipment are initially measured at cost and after initial recognition, are carried at cost less accumulated depreciation and accumulated impairment losses. The cost of property, plant and equipment includes expenditures arising directly from the construction or acquisition of the asset, 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 and 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 the carrying amount of property, plant and equipment at cost or, if appropriate, as separate items if it is probable that future economic benefits associated with the item will flow to the Company and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognized. The costs of the day-to-day servicing are recognized in profit or loss as incurred.

Property, plant and equipment, except for land, are depreciated on a straight-line basis over estimated useful lives that appropriately reflect the pattern in which the asset's future economic benefits are expected to be consumed. For loaded nuclear fuel related to long-term raw materials and spent nuclear fuels related to asset retirement costs, the Company uses the production method to measure and recognizes as expense the economic benefits of the assets.

The estimated useful lives of the Company's property, plant and equipment are as follows:

	Useful lives (years)
Buildings	8 ~ 40
Structures	8 ~ 50
Machinery	2 ~ 32
Vehicles	3 ~ 8
Loaded heavy water	30
Asset retirement costs	18, 30, 40, 60
Finance lease assets	6 ~ 32
Ships	9
Others	4 ~ 15

A component that is significant compared to the total cost of property, plant and equipment is depreciated over its separate useful life.

Depreciation methods, residual values and useful lives of property, plant and equipment are reviewed at the end of each reporting period and if change is deemed appropriate, it is treated as a change in accounting estimate. As a result of such annual review, useful lives of certain machinery were changed during 2016. Depreciation expenses increased by W160,985 million for the year ended December 31, 2016. Depreciation expenses are expected to increase by W130,514 million and W91,197 million for the years ending December 31, 2017 and 2018, respectively, and to decrease by W382,696 million for the years after December 31, 2018.

Property, plant and equipment are derecognized on disposal, or when no future economic benefits are expected from its use or disposal. Gains or losses arising from derecognition of a property, plant and equipment, measured as the difference between the net disposal proceeds and the carrying amount of the asset, are recognized in income or loss when the asset is derecognized.

(16) Investment property

Property held for the purpose of earning rentals or benefiting from capital appreciation is classified as investment property. Investment property is initially measured at its cost. Transaction costs are included in the initial measurement. Subsequently, investment property is carried at depreciated cost less any accumulated impairment losses.

Subsequent costs are recognized in the carrying amount of investment property at cost or, if appropriate, as separate items if it is probable that future economic benefits associated with the item will flow to the Company and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognized. The costs of the day-to-day servicing are recognized in profit or loss as incurred.

Investment property except for land, are depreciated on a straight-line basis over 8 ~ 40 years as estimated useful lives.

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 income or loss in the period in which the property is derecognized.

(17) 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. 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) Research and development

Expenditure on research activities is recognized as an expense in the period in which it is incurred. An internallygenerated intangible asset arising from development (or from the development phase of an internal project) is recognized if, and only if, all of the following have been demonstrated:

- The technical feasibility of completing the intangible asset so that it will be available for use or sale;
- The intention to complete the intangible asset and use or sell it;
- The ability to use or sell the intangible asset;
- How the intangible asset will generate probable future economic benefits;
- The availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
- The ability to measure reliably the expenditure attributable to the intangible asset during its development.

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 listed above. When the development expenditure does not meet the criteria listed above, an internally-generated intangible asset cannot be recognized and the expenditure is recognized in income or loss in the period in which it is incurred.

Internally-generated intangible assets are reported at cost less accumulated amortization and accumulated impairment losses.

(17) Intangible assets, continued

The estimated useful lives and amortization methods of the Company's intangible assets with finite useful lives are as follows:

	Useful lives (years)	Amortization methods
Usage rights for donated assets	10 ~ 20	Straight line
Software	4, 5	Straight line
Industrial rights	5 ~ 10	Straight line
Development expenses	5	Straight line
Leasehold rights	10	Straight line
Others	3 ~ 50 or Indefinite	Straight line
Mining right	-	Unit of production

(iii) Intangible assets acquired in a business combination

Intangible assets that are acquired in a business combination are recognized separately from goodwill 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 or disposal. Gains or losses arising from derecognition of an intangible asset are measured as the difference between the net disposal proceeds and the carrying amount of the asset and are recognized in income or loss when the asset is derecognized.

(18) Greenhouse gas emissions rights (allowances) and obligations

In connection with Enforcement of Allocation and Trading of Greenhouse Gas Emissions Allowances, the Company applies the following accounting policies for greenhouse gas emissions rights and obligations.

(i) Greenhouse gas emissions rights

Greenhouse gas emissions rights consist of the allowances received free of charge from the government and the ones purchased. The cost of the greenhouse gas emissions rights includes expenditures arising directly from the acquisition and any other costs incurred during normal course of the acquisition.

Greenhouse gas emissions rights are held by the Company to fulfill the legal obligation and recorded as intangible assets. To the extent that the portion to be submitted to the government within one year from the end of reporting period, the greenhouse gas emissions rights are classified as current assets. Greenhouse gas emissions rights recorded as intangible assets are initially measured at cost and substantially remeasured at cost less accumulated impairment losses.

Greenhouse gas emissions rights are derecognized on submission to the government or when no future economic benefits are expected from its use or disposal.

(ii) Greenhouse gas emissions obligations

Greenhouse gas emissions obligations are the Company's present legal obligation to submit the greenhouse gas emissions allowances to the government and recognized when an outflow of resources is probable and a reliable estimate can be made of the amount of the obligation. Greenhouse gas emissions obligations are measured as the sum of the carrying amount of the allocated rights that will be submitted to the government and the best estimate of expenditure required to settle the obligation at the end of the reporting period for any excess emission.

(19) Impairment of non-financial assets other than goodwill

At the end of each reporting period, the Company reviews the carrying amounts of its tangible and intangible assets with definite useful lives 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). Where it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. Where a reasonable and consistent basis of 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 and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

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. An impairment loss is recognized immediately in profit or loss, unless the relevant asset is carried at a revalued amount, in which case the impairment loss is treated as a revaluation decrease.

When 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, to the extent 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 cash-generating unit) in prior years. A reversal of an impairment loss is recognized immediately in profit or loss, unless the relevant asset is carried at a revalued amount, in which case the reversal of the impairment loss is treated as a revaluation increase.

(20) Inventories

Inventories are measured at the lower of cost and net realizable value. Cost of inventories for inventories in transit are measured by using specific identification method. Cost of inventories, except for those in transit, are measured under the weighted average method 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 is the estimated selling price in the ordinary course of business, less the estimated costs of completion and selling expenses. The amount of any write-down of inventories to net realizable value and all losses of inventories are 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, are recognized as a reduction in the amount of inventories recognized as an expense in the period in which the reversal occurs.

(21) Provisions

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

The risks and uncertainties that inevitably surround many events and circumstances are taken into account in reaching the best estimate of a provision. Where the effect of the time value of money is material, provisions are determined at the present value of the expected future cash flows.

(21) Provisions, continued

Where some or all of the expenditures required to settle a provision are expected to be reimbursed by another party, the reimbursement shall be recognized when, and only when, it is virtually certain that reimbursement will be received if the entity settles the obligation. The reimbursement shall be treated as a separate asset.

Provisions are reviewed at the end of each reporting period and adjusted to reflect the current best estimates. If it is no longer probable that an outflow of resources embodying economic benefits will be required to settle the obligation, the provision is reversed.

(i) Provision for employment benefits

The Company determines the provision for employment benefits as the incentive payments based on the results of the individual performance evaluation or management assessment.

(ii) Provision for decommissioning costs of nuclear power plants

The Company records the fair value of estimated decommissioning costs as a liability in the period in which the Company incurs a legal obligation associated with retirement of long-lived assets that result from acquisition, construction, development and/or normal use of the assets. Accretion expense consists of period-to-period changes in the liability for decommissioning costs resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flows.

(iii) Provision for disposal of spent nuclear fuel

Under the Radioactive Waste Management Act, the Company is levied to pay the spent nuclear fuel fund for the management of spent nuclear fuel. The Company recognizes the provision of present value of the payments.

(iv) Provision for low and intermediate radioactive wastes

Under the Radioactive Waste Management Act, the Company recognizes the provision for the disposal of low and intermediate radioactive wastes in best estimate of the expenditure required to settle the present obligation.

(v) Provision for Polychlorinated Biphenyls ("PCBs")

Under the regulation of Persistent Organic Pollutants Management Act, enacted in 2007, the Company is required to remove PCBs, a toxin, from the insulating oil of its transformers by 2025. As a result of the enactments, the Company is required to inspect the PCBs contents of transformers and dispose of PCBs in excess of safety standards under the legally settled procedures. The Company's estimates and assumptions used to determine fair value can be affected by many factors, such as the estimated costs of inspection and disposal, inflation rate, discount rate, regulations and the general economy.

(vi) Provisions for power plant regional support program

Power plant regional support programs consist of scholarship programs to local students, local economy support programs, local culture support programs, environment development programs, and local welfare programs. The Company recognizes the provision in relation to power plant regional support program.

(vii) Provisions for transmission and transformation facilities-neighboring areas support program

The Company has present obligation to conduct transmission and transformation facilities-neighboring areas support program under Act on assistance to transmission and transformation facilities-neighboring areas. The Company recognizes the provision of estimated amount to fulfill the obligation.

(viii) Renewable Portfolio Standard ("RPS") provisions

RPS program is required to generate a specified percentage of total electricity to be generated in the form of renewable energy and provisions are recognized for the governmental regulations to require the production of energies from renewable energy sources such as solar, wind and biomass.

(22) Non-derivative financial assets

The Company recognizes and measures non-derivative financial assets by the following four categories: financial assets at fair value through profit or loss, held-to-maturity investments, loans and receivables and available-for-sale financial assets. The Company recognizes financial assets in the statement of financial position when the Company becomes a party to the contractual provisions of the instrument. Upon initial recognition, non-derivative financial assets are measured at their fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the asset's acquisition or issuance.

A regular way purchase or sale of financial assets shall be recognized and derecognized, as applicable, using trade date accounting or settlement date accounting. A regular way purchase or sale is a purchase or sale of a financial asset under a contract whose terms require delivery of the asset within the time frame established generally by regulation or convention in the marketplace concerned.

(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 financial assets at fair value through profit or loss.

(ii) Financial assets at fair value through profit or loss (FVTPL)

A financial asset is classified as financial assets are classified at fair value through profit or loss if it is held for trading or is designated as such upon initial recognition. Upon initial recognition, transaction costs are recognized in profit or loss when incurred. A financial assets its acquired principally for the purpose of selling it in the near term are classified as a short-term financial assets held for trading and also all the derivatives including an embedded derivate that is not designated and effective as a hedging instrument are classified at the short-term trading financial asset as well. Financial assets at fair value through profit or loss are measured at fair value, and changes therein are 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 Company manages together and has a recent actual pattern of short term profit taking; or
- It is derivative, including an embedded derivative that is not designated and effective as a hedging instrument.

A financial asset other than a financial asset held for trading may be designated as at financial assets at fair value through profit or loss 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 Company's documented risk management or investment strategy, and information about the grouping is provided internally on that basis; or
- It forms a part of a contract containing one or more embedded derivatives, and with K-IFRS 1039 'Financial Instruments: Recognition and Measurement', permits the entire combined contract (asset or liability) to be designated as at financial assets at fair value through profit or loss.
(22) Non-derivative financial assets, continued

Financial assets at fair value through profit or loss are stated at fair value, with any gains or losses arising on remeasurement recognized in income or loss. The net gain or loss recognized in income or loss incorporates any dividend or interest earned on the financial asset and is included in the 'finance income and finance expenses' line item in the consolidated statement of comprehensive income.

(iii) Held-to-maturity investments

A non-derivative financial asset with a fixed or determinable payment and fixed maturity, for which the Company has the positive intention and ability to hold to maturity, are classified as held-to-maturity investments. Subsequent to initial recognition, held-to-maturity investments are measured at amortized cost using the effective interest method.

(iv) Available-for-sale financial assets

Available-for-sale financial assets are those non-derivative financial assets that are designated as available-for-sale or are not classified as financial assets at fair value through profit or loss, held-to-maturity investments or loans and receivables.

Gains and losses arising from changes in fair value are recognized in other comprehensive income and accumulated in the valuation reserve. However, impairment losses, interest calculated using the effective interest method, and foreign exchange gains and losses on monetary assets are recognized in income or loss. Unquoted equity investments which are not traded in an active market, whose fair value cannot be measured reliably are carried at cost.

When a financial asset is derecognized or impairment losses are recognized, the cumulative gain or loss previously recognized in other comprehensive income is reclassified from equity to profit or loss.

Dividends on an available-for-sale equity instrument are recognized in profit or loss when the Company's right to receive payment is established.

The fair value of available-for-sale monetary assets denominated in a foreign currency is determined in that foreign currency and translated at the spot rate at the end of the reporting period. The foreign exchange gains and losses that are recognized in income 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.

(v) Loans and receivables

Loans and receivables are financial assets with fixed or determinable payments that are not quoted in an active market. Subsequent to initial recognition, loans and receivables are measured at amortized cost using the effective interest method except for loans and receivables of which the effect of discounting is immaterial.

(vi) Impairment of financial assets

Financial assets, other than those at financial assets at fair value through profit or loss, 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, as a result of one or more events that occurred after the initial recognition of the financial asset, the estimated future cash flows of the investment have been affected.

For listed and unlisted equity investments classified as available-for-sale financial asset, a significant or prolonged decline in the fair value of the security below its cost is considered to be objective evidence of impairment in addition to the criteria mentioned below.

For all other financial assets, objective evidence of impairment could include:

- Significant financial difficulty of the issuer or counterparty; or
- Breach of contract, such as a 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.

(22) Non-derivative financial assets, continued

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

For financial assets recorded 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 carried at cost, the amount of the impairment loss is measured as the difference between the asset's carrying amount and the present value of the 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 income or loss.

When an available-for-sale financial asset is considered to be impaired, cumulative gains or losses previously recognized in other comprehensive income are reclassified to income 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 available-for-sale 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 available-for-sale 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) De-recognition of financial assets

The Company derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows on the financial asset in a transaction in which substantially all the risks and rewards of ownership of the financial asset are transferred. Any interest in transferred financial assets that is created or retained by the Company is recognized as a separate asset or liability. If the Company retains substantially all the risks and rewards of ownership of the transferred financial assets, the Company continues to recognize the transferred financial assets and recognizes financial liabilities for the consideration received.

On de-recognition 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 cumulative gain or loss that had been recognized in other comprehensive income and accumulated in equity is recognized in income or loss.

(22) Non-derivative financial assets, continued

On de-recognition of a financial asset other than in its entirety (e.g. when the Company retains an option to repurchase part of a transferred asset), the Company allocates the previous carrying amount of the financial asset between the part it continues to recognize under continuing involvement, and the part it no longer recognizes on the basis of the relative fair values 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 no longer recognized and any cumulative gain or loss allocated to it 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 values of those parts.

(23) Non-derivative financial liabilities and equity instruments issued by the Company

(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.

(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 Company are recognized at the proceeds received, net of direct issue costs.

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

(iii) Financial liabilities

Financial liabilities are recognized when the Company becomes a party to the contractual provisions of the instruments. Financial liabilities are initially measured at fair value. Transaction cost that are directly attributable to the issue of financial liabilities are added to or deducted from the fair value of the financial liabilities, as appropriate, 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 fair value through profit or loss or other financial liabilities.

(iv) Financial liabilities at fair value through profit or loss (FVTPL)

Financial liabilities are classified as at financial liabilities at fair value through profit or loss when the financial liability is either held for trading or it is designated as financial liabilities at fair value through profit or loss.

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 Company 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.

(23) Non-derivative financial liabilities and equity instruments issued by the Company, continued

A financial liability other than a financial liability held for trading 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 Company 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 Company'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 liabilities at fair value through profit or loss are stated at fair value, with any gains or losses arising on remeasurement recognized in income or loss. The net gain or loss recognized in income or loss incorporates any interest paid on the financial liability and is included in 'finance income and finance expenses'.

(v) Other financial liabilities

Other financial liabilities, including borrowings, are initially measured at fair value, net of transaction costs.

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 through the expected life of the financial liability, or (where appropriate) a shorter period, to the net carrying amount on initial recognition.

(vi) Financial guarantee contract liabilities

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; or (b) the amount initially recognized less, cumulative amortization recognized in accordance with K-IFRS 1018 'Revenue'.

(vii) De-recognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company's obligations 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 income or loss.

(24) Service Concession Arrangements

The Company recognizes revenues from construction services and operating services related to service concession arrangements in accordance with K-IFRS 1011 'Construction Contracts' and K-IFRS 1018 'Revenue', respectively. If the Company performs more than one service under a single contract or arrangement, consideration received or receivable is allocated by reference to the relative fair values of the services delivered, when the amounts are separately identifiable.

The Company recognizes a financial asset to the extent that it has an unconditional contractual right to receive cash or another financial asset for the construction services and an intangible asset to the extent that it receives a right (license) to charge users of the public service. Borrowing costs attributable to the arrangement are recognized as an expense in the period in which they are incurred unless the Company has a contractual right to receive an intangible asset (a right to charge users of the public service). In this case, borrowing costs attributable to the arrangement are capitalized during the construction phase of the arrangement.

(25) Derivative financial instruments, including hedge accounting

The Company 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 and others.

Derivatives are initially recognized at fair value. Subsequent to initial recognition, derivatives are measured at fair value. The resulting gain or loss is recognized in income or loss immediately unless the derivative is designated and effective as a hedging instrument, in such case the timing of the recognition in income 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) Separable embedded derivatives

Derivatives embedded in other financial instruments or other host contracts are treated as separate derivatives when their risks and characteristics are not closely related to those of the host contracts and when the host 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 is part of, is more than 12 months and it is not expected to be realized or settled within 12 months. All other embedded derivatives are presented as current assets or current liabilities.

(ii) Hedge accounting

The Company designates certain hedging instruments, which include derivatives, embedded derivatives and nonderivatives in respect of foreign currency risk, as either fair value hedges or cash flow hedges. 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 Company documents whether the hedging instrument is highly effective in offsetting changes in fair values or cash flows of the hedged item.

(iii) Fair value hedges

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

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

(25) Derivative financial instruments, including hedge accounting, continued

(iv) 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 income or loss, and is included in the 'finance income and expense'.

Amounts previously recognized in other comprehensive income and accumulated in equity are reclassified to income or loss in the periods when the hedged item is recognized in income or loss, in the same line of the consolidated 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 Company revokes the hedging relationship, when the hedging instrument expires or is sold, terminated, or exercised, or it no longer qualifies for hedge accounting. Any gain or loss accumulated in equity at that time remains in equity and is recognized when the forecast transaction is ultimately recognized in income or loss. When a forecast transaction is no longer expected to occur, the gain or loss accumulated in equity is recognized immediately in income or loss.

4. Segment, Geographic and Other Information

(1) Segment determination and explanation of the measurements

The Company's operating segments are its business components that generate discrete financial information that is reported to and regularly reviewed by the Company's the chief operating decision maker, the Chief Executive Officer, for the purpose of resource allocation and assessment of segment performance. The Company's reportable segments are 'Transmission and distribution', 'Electric power generation (Nuclear)', 'Electric power generation (Non-nuclear)', 'Plant maintenance & engineering service' and 'Others'; others mainly represent the business unit that manages the Company's foreign operations.

Segment operating profit (loss) is determined the same way that consolidated operating profit is determined under K-IFRS without any adjustment for corporate allocations. The accounting policies used by each segment are consistent with the accounting policies used in the preparation of the consolidated financial statements. Segment assets and liabilities are determined based on separate financial statements of the entities instead of on a consolidated basis. There are various transactions between the reportable segments, including sales of property, plant and equipment and so on, that are conducted on an arms-length basis at market prices that would be applicable to an independent third-party. For subsidiaries which are in a different segment from that of its immediate parent company, their carrying amount in separate financial statements is eliminated in the consolidating adjustments in the tables below. In addition, consolidation adjustments in the table below include adjustments of the amount of investment in associates and joint ventures from the cost basis amount reflected in segment assets to that determined using equity method in the consolidated financial statements.

KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES Notes to the Consolidated Financial Statements, Continued December 31, 2017

4. Segment, Geographic and Other Information, Continued

(2) Financial information of the segments for the years ended December 31, 2017 and 2016, respectively, are as follows:

In millions of won

				2017				
Segment	Total segment revenue	Intersegment revenue	Revenue from external customers	Operating profit	Depreciation and amortization	Interest income	Interest expense	Profit related associates, joint ventures and subsidiaries
Transmission and distribution W Electric power generation	59,965,739	2,044,160	57,921,579	1,553,554	3,466,410	49,987	737,971	(105,166)
(Nuclear)	9,415,752	9,359,468	56,284	1,385,765	3,267,510	21,034	487,503	3,637
Electric power generation	22 705 016	01 00E 0E1	010 565	1 515 026	2 05 4 275	10.000	406 176	(6.710)
(Non-nuclear) Plant maintenance &	22,795,816	21,885,251	910,565	1,515,936	2,954,375	18,860	486,176	(6,718)
engineering service	2,621,440	2,211,716	409,724	252,534	109,001	10,801	2,967	(70)
Others	655,062	138,352	516,710	63,298	36,001	130,003	103,782	-
Consolidation adjustments	(35,638,947)	(35,638,947)		182,065	(59,586)	(24,542)	(28,847)	
W	59,814,862		59,814,862	4,953,152	9,773,711	206,143	1,789,552	(108,317)

KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES Notes to the Consolidated Financial Statements, Continued December 31, 2017

4. Segment, Geographic and Other Information, Continued

(2) Financial information of the segments for the years ended December 31, 2017 and 2016, respectively, are as follows, continued:

In millions of won

2016								
Segment	Total segment revenue	Intersegment revenue	Revenue from external customers	Operating profit	Depreciation and amortization	Interest income	Interest expense	Profit related associates, joint ventures and subsidiaries
Transmission and distribution $\begin{subarray}{c} \label{eq:subarray} \end{subarray}$	60,289,581	1,890,489	58,399,092	4,881,540	3,226,700	80,882	844,200	(128,402)
(Nuclear)	11,168,579	11,129,385	39,194	3,819,778	3,130,820	33,111	474,590	(1,082)
Electric power generation	04.004.000		000 470	0.011.010	0 500 000	04.474	050.007	(0.0.10)
(Non-nuclear) Plant maintenance &	21,394,223	20,561,044	833,179	3,211,318	2,523,306	24,171	359,607	(8,342)
engineering service	2,618,388	2,190,207	428,181	196,989	98,843	10,672	2,156	478
Others	567,836	77,098	490,738	89,301	26,817	115,928	97,926	-
Consolidation adjustments	(35,848,223)	(35,848,223)	<u> </u>	(197,327)	(45,498)	(22,986)	(25,611)	
₩_	60,190,384		60,190,384	12,001,599	8,960,988	241,778	1,752,868	(137,348)

4. Segment, Geographic and Other Information, Continued

(3) Information related to segment assets and segment liabilities as of and for the years ended December 31, 2017 and 2016 are as follows:

In millions of won

		20	17		
Segment		Segment assets	Investments in associates and joint ventures	Acquisition of non- current assets	Segment liabilities
Transmission and distribution	₩	106,540,154	3,366,309	6,606,512	50,757,798
Electric power generation (Nuclear)		55,011,096	11,843	2,083,967	29,252,816
Electric power generation (Non-nuclear)		47,938,084	1,904,224	3,250,524	26,337,295
Plant maintenance & engineering service		3,273,959	48,320	145,779	1,176,627
Others		7,798,400	-	569,447	3,013,743
Consolidation adjustments	_	(38,772,778)		23,616	(1,714,005)
Consolidated totals	₩_	181,788,915	5,330,696	12,679,845	108,824,274

In millions of won

2016									
Segment		Segment assets	Investments in associates and joint ventures	Acquisition of non- current assets	Segment liabilities				
Transmission and distribution	₩	105,321,129	4,121,462	6,345,004	49,854,420				
Electric power generation (Nuclear)		52,782,915	15,384	1,945,610	27,366,938				
Electric power generation (Non-nuclear)		47,427,642	1,320,203	3,508,313	26,205,049				
Plant maintenance & engineering service		3,106,909	53,399	180,715	1,218,047				
Others		7,423,132	-	365,470	2,761,262				
Consolidation adjustments	-	(38,224,685)		(191,901)	(2,619,219)				
Consolidated totals	₩	177,837,042	5,510,448	12,153,211	104,786,497				

(4) Geographic information

The following information on revenue from external customers and non-current assets is determined by the location of the customers and the assets:

In millions of won		Revenue from externa	al customers	Non-current assets (*2)			
Geographical unit		2017	2016	2017	2016		
Domestic Overseas (*1)	₩	56,131,780 3,683,082	55,737,308 4,453,076	153,436,810 4,497,535	148,297,677 4,474,699		
	₩	59,814,862	60,190,384	157,934,345	152,772,376		

(*1) Middle East and other Asian countries make up the majority of overseas revenue and non-current assets.

(*2) Amount excludes financial assets and deferred tax assets.

(5) Information on significant customers

There is no individual customer comprising more than 10% of the Company's revenue for the years ended December 31, 2017 and 2016.

5. Classification of Financial Instruments

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

In millions of won			201	7		
	Financial assets at fair value through profit or loss	Loans and receivables	Available- for-sale financial assets	Held-to- maturity investments	Derivative assets (using hedge accounting)	Total
Current assets						
Cash and cash equivalents		2,369,739	-	-	-	2,369,739
Current financial assets						
Held-to-maturity investments	-	-	-	5	-	5
Derivative assets	12,923	-	-	-	12	12,935
Other financial assets	-	1,945,417	-	-	-	1,945,417
Trade and other receivables		7,928,972				7,928,972
	12,923	12,244,128		5	12	12,257,068
Non-current assets						
Non-current financial assets						
Available-for-sale financial assets	-	-	699,833	-	-	699,833
Held-to-maturity investments	-	-	-	3,139	-	3,139
Derivative assets	9,097	-	-	-	10,594	19,691
Other financial assets	111,512	1,204,738	-	-	-	1,316,250
Trade and other receivables	-	1,754,797	-	-	-	1,754,797
	120,609	2,959,535	699,833	3,139	10,594	3,793,710
<i>†</i> ∨	133,532	15,203,663	699,833	3,144	10,606	16,050,778

In millions of won			201	6		
	Financial assets at fair value through profit or loss	Loans and receivables	Available- for-sale financial assets	Held-to- maturity investments	Derivative assets (using hedge accounting)	Total
Current assets						
Cash and cash equivalents 🛛 😽		3,051,353	-	-	-	3,051,353
Current financial assets						
Held-to-maturity investments	-	-	-	114	-	114
Derivative assets	79,709	-	-	-	113,574	193,283
Other financial assets	-	2,478,592	-	-	-	2,478,592
Trade and other receivables		7,788,876				7,788,876
	79,709	13,318,821		114	113,574	13,512,218
Non-current assets						
Non-current financial assets						
Available-for-sale financial assets	-	-	1,014,732	-	-	1,014,732
Held-to-maturity investments	-	-	-	3,130	-	3,130
Derivative assets	287,768	-	-	-	300,323	588,091
Other financial assets	-	1,051,541	-	-	-	1,051,541
Trade and other receivables		1,903,515				1,903,515
	287,768	2,955,056	1,014,732	3,130	300,323	4,561,009
Δ	4367,477	16,273,877	1,014,732	3,244	413,897	18,073,227

3,251

3,251

18,278

18,278

21,529

5. Classification of Financial Instruments, Continued

Debt securities

Borrowings

Debt securities

Derivative liabilities

Trade and other payables

₩

Derivative liabilities

Trade and other payables

Non-current liabilities

(2) Classification of financial liabilities as of December 31, 2017 and 2016 are as follows:

In millions of won			2017		
		Financial liabilities at fair value through profit or loss	Financial liabilities recognized at amortized cost	Derivative liabilities (using hedge accounting)	Total
Current liabilities					
Borrowings	₩	-	1,165,985	-	1,165,985
Debt securities		-	7,957,300	-	7,957,300
Derivative liabilities		51,090	-	20,177	71,267
Trade and other payables		-	5,999,521	-	5,999,521
		51,090	15,122,806	20,177	15,194,073
Non-current liabilities					
Borrowings		-	2,434,624	-	2,434,624
Debt securities		-	43,189,483	-	43,189,483
Derivative liabilities		99,839	-	256,953	356,792
Trade and other payables			3,223,480		3,223,480
		99,839	48,847,587	256,953	49,204,379
	₩	150,929	63,970,393	277,130	64,398,452
In millions of won			2016		
		Financial liabilities at fair value through profit or loss	Financial liabilities recognized at amortized cost	Derivative liabilities (using hedge accounting)	Total
Current liabilities					
Borrowings	₩	-	1,115,521	-	1,115,521

7,823,557

5,585,411

14,524,489

1,773,891

42,926,236

3,558,175

48,258,302

62,782,791

7,823,557

5,585,411

14,527,740

1,773,891

42,926,236

135,435

3,558,175

48,393,737

62,921,477

3,251

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117,157

117,157

117,157

5. Classification of Financial Instruments, Continued

(3) Classification of comprehensive income from financial instruments for the years ended December 31, 2017 and 2016 are as follows:

In millions of won			2017	2016
Cash and cash equivalents	Interest income	₩	35,474	61,380
Available-for-sale financial assets	Dividends income Impairment loss on available-for-sale		11,477	9,446
	financial assets Gain (loss) on disposal of		(2,713)	(86,703)
	available-for-sale financial assets		(1,213)	1,473
Held-to-maturity investments	Interest income		82	97
Loans and receivables	Interest income		30,014	25,106
Trade and other receivables	Interest income		102,727	102,237
Short-term financial instruments	Interest income		29,412	45,763
Long-term financial instruments	Interest income		8,144	7,195
Financial assets at fair value through profit	Interest income		290	-
or loss	Gain (loss) on valuation of derivatives		(214,100)	113,671
	Loss on transaction of derivatives		(37,266)	(8,039)
	Gain on valuation of financial assets		12	-
Derivative assets	Gain (loss) on valuation of derivatives (profit or loss)		(41,129)	145,458
(using hedge accounting)	Gain on valuation of derivatives			
	(equity, before tax) (*)		2,453	50,047
	Loss on transaction of derivatives		(58,299)	(13,994)
Financial liabilities carried at	Interest expense of borrowings			
amortized cost	and debt securities		(1,240,727)	(1,202,065)
	Loss on repayment of financial liabilities		(5)	(23,000)
	Interest expense of trade and other payables		(57,160)	(68,375)
	Interest expense of others		(491,665)	(482,428)
	Gain (loss) on foreign currency transactions			
	and translations		1,075,215	(290,485)
Financial liabilities at fair	Gain (loss) on valuation of derivatives		(179,879)	23,225
value through profit or loss	Gain (loss) on transaction of derivatives		(27,175)	17,045
Derivative liabilities (using hedge accounting)	Gain (loss) on valuation of derivatives (profit or loss) Gain (loss) on valuation of derivatives		(439,559)	5,714
	(equity, before tax) (*)		29,431	(3,297)
	Loss on transaction of derivatives		(46,221)	(51,450)

(*) Items are included in other comprehensive income or loss. All other income and gain listed above are included in finance income, and all expense and losses listed above are included in finance expenses in the consolidated statements of comprehensive income.

6. Restricted Deposits

Restricted deposits as of December 31, 2017 and 2016 are as follows:

In millions of won		_	2017	2016
Cash and cash equivalents	Escrow accounts	₩	53	91
	Deposits for government project		15,365	16,457
	Collateral provided for borrowings		79,569	80,327
	Collateral provided for lawsuit		2	241
	Deposits for transmission regional support			
	program		2,320	2,137
Short-term financial instruments	Bidding guarantees		119	118
	Restriction on withdrawal related to 'win-win growth program'			
	for small and medium enterprises		34,000	33,000
Other current receivables	Deposit for lawsuit		-	16,000
Financial assets at fair value through profit or loss	Decommissioning costs of nuclear power plants		108,512	_
Non-current available-for-sale	Decommissioning costs of nuclear power		100,012	
financial asset	plants		214,156	437,015
Long-term financial instruments	Guarantee deposits for checking account		2	2
	Guarantee deposits for banking accounts at oversea branches		302	342
	Decommissioning costs of nuclear power			
	plants		337,234	214,121
	Funds for developing small and medium enterprises (*)	_	200,000	200,000
		₩	991,634	999,851

(*) Deposits for small and medium enterprise at IBK and others for construction of Bitgaram Energy Valley and support for high potential businesses as of December 31, 2017 and 2016.

7. Cash and Cash Equivalents

Cash and cash equivalents as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Cash	₩	132	119
Other demand deposits		968,966	1,725,785
Short-term deposits classified as cash equivalents		559,239	120,594
Short-term investments classified as cash equivalents		841,402	1,204,855
	₩	2,369,739	3,051,353

8. Trade and Other Receivables

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

In millions of won			201	7	
		Gross amount	Allowance for doubtful accounts	Present value discount	Book value
Current assets					
Trade receivables	₩	7,499,285	(173,583)	-	7,325,702
Other receivables		614,212	(9,199)	(1,743)	603,270
		8,113,497	(182,782)	(1,743)	7,928,972
Non-current assets					
Trade receivables		449,191	-	(414)	448,777
Other receivables		1,380,983	(68,809)	(6,154)	1,306,020
		1,830,174	(68,809)	(6,568)	1,754,797
	₩	9,943,671	(251,591)	(8,311)	9,683,769
In millions of won			201	6	
Current essets		Gross amount	Allowance for doubtful accounts	Present value discount	Book value

		amount	doubtful accounts	discount	value
Current assets					
Trade receivables	₩	7,260,227	(71,985)	-	7,188,242
Other receivables		652,782	(50,071)	(2,077)	600,634
		7,913,009	(122,056)	(2,077)	7,788,876
Non-current assets					
Trade receivables		491,509	-	-	491,509
Other receivables		1,455,860	(37,590)	(6,264)	1,412,006
		1,947,369	(37,590)	(6,264)	1,903,515
	₩	9,860,378	(159,646)	(8,341)	9,692,391

8. Trade and Other Receivables, Continued

(2) Other receivables as of December 31, 2017 and 2016 are as follows:

In millions of won		2017								
		Gross amount	Allowance for doubtful accounts	Present value discount	Book value					
Current assets										
Non-trade receivables	₩	314,256	(9,199)	-	305,057					
Accrued income		54,002	-	-	54,002					
Deposits		228,317	-	(1,743)	226,574					
Finance lease receivables		13,067	-	-	13,067					
Others		4,570	-	-	4,570					
		614,212	(9,199)	(1,743)	603,270					
Non-current assets										
Non-trade receivables		112,983	(59,117)	-	53,866					
Accrued income		182	-	-	182					
Deposits		331,071	-	(6,154)	324,917					
Finance lease receivables		849,554	-	-	849,554					
Others		87,193	(9,692)	-	77,501					
		1,380,983	(68,809)	(6,154)	1,306,020					
	₩	1,995,195	(78,008)	(7,897)	1,909,290					

In millions of won			201	6	
		Gross amount	Allowance for doubtful accounts	Present value discount	Book value
Current assets					
Non-trade receivables	W	360,021	(50,071)	-	309,950
Accrued income		62,063	-	-	62,063
Deposits		193,720	-	(2,077)	191,643
Finance lease receivables		12,225	-	-	12,225
Others		24,753	-	-	24,753
		652,782	(50,071)	(2,077)	600,634
Non-current assets					
Non-trade receivables		80,393	(26,942)	-	53,451
Accrued income		174	-	-	174
Deposits		320,935	-	(6,264)	314,671
Finance lease receivables		960,649	-	-	960,649
Others		93,709	(10,648)	-	83,061
		1,455,860	(37,590)	(6,264)	1,412,006
	₩	2,108,642	(87,661)	(8,341)	2,012,640

(3) Trade and other receivables are classified as loans and receivables, and are measured using the effective interest method. No interest is accrued for trade receivables related to electricity for the duration between the billing date and the payment due dates. But once trade receivables are overdue, the Company imposes a monthly interest rate of 1.5% on the overdue trade receivables. The Company holds deposits of three months' expected electricity usage for customers requesting temporary usage and customers with past defaulted payments.

8. Trade and Other Receivables, Continued

(4) Aging analysis of trade receivables as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Trade receivables: (not overdue, not impaired)	₩	7,698,604	7,592,363
Trade receivables: (overdue, not impaired)		7,117	820
Less than 60 days		7,117	820
Trade receivables: (impairment reviewed)		242,755	158,553
60 ~ 90 days		39,070	44,277
90 ~ 120 days		17,502	18,917
120 days ~ 1 year		55,242	42,534
Over 1 year		130,941	52,825
		7,948,476	7,751,736
Less: allowance for doubtful accounts		(173,583)	(71,985)
Less: present value discount		(414)	
	₩	7,774,479	7,679,751

The Company assesses at the end of each reporting period whether there is any objective evidence that trade receivables are impaired, and provides allowances for doubtful accounts which includes impairment for trade receivables that are individually significant. The Company considers receivables as overdue if the receivables are outstanding 60 days after the maturity and sets an allowance based on past experience of collection.

(5) Aging analysis of other receivables as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Other receivables: (not overdue, not impaired)	₩	1,810,075	1,887,620
Other receivables: (overdue, not impaired)		47,532	46,887
Less than 60 days		47,532	46,887
Other receivables: (impairment reviewed)		137,588	174,135
60 ~ 90 days		44	7,352
90 ~ 120 days		1,017	2,160
120 days ~ 1year		11,042	17,613
Over 1 year		125,485	147,010
		1,995,195	2,108,642
Less: allowance for doubtful accounts		(78,008)	(87,661)
Less: present value discount		(7,897)	(8,341)
	₩	1,909,290	2,012,640

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

In millions of won		20)17	2016			
	Tra	de receivables	Other receivables	Trade receivables	Other receivables		
Beginning balance	₩	71,985	87,661	51,956	91,746		
Bad debt expense		126,714	1,778	38,719	233		
Write-off		(32,995)	(3,129)	(18,939)	(928)		
Reversal		-	(2,166)	-	(5,489)		
Others		7,879	(6,136)	249	2,099		
Ending balance	₩	173,583	78,008	71,985	87,661		

9. Available-for-sale Financial Assets

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

In millions of won		2017						
		Beginning balance	Acquisition	Disposal (*1)	Valuation	Impairment	Others	Ending balance
Listed	₩	268,171	106	-	8,156	(97)	(1,883)	274,453
Unlisted		746,561	233,179	(461,423)	(2,908)	(2,616)	(87,413)	425,380
		1,014,732	233,285	(461,423)	5,248	(2,713)	(89,296)	699,833
Short-term available-for-sale financial assets		-	-	-	-	-	-	-
Long-term available-for-sale financial assets	₩	1,014,732	233,285	(461,423)	5,248	(2,713)	(89,296)	699,833

(*1) The Company recognized gain and loss on disposal of available-for-sale financial assets amounted to W1,130 million and W2,343 million, respectively, from the partial sales of Hanwha-KOSEP New Renewable Energy Private Special Assets Investment Trust 1 and others for the year ended December 31, 2017.

In millions of won					2016	5		
		Beginning balance	Acquisition	Disposal (*1)	Valuation	Impairment	Others	Ending balance
Listed Unlisted	₩	196,579 387,900	- 449,484	(3,398) (1,828)	74,139 (12,346)	(9,122) (77,581)	9,973 932	268,171 746,561
		584,479	449,484	(5,226)	61,793	(86,703)	10,905	1,014,732
Short-term available-for-sale financial assets		-	-	-	-	-	-	-
Long-term available-for-sale financial assets	₩	584,479	449,484	(5,226)	61,793	(86,703)	10,905	1,014,732

(*1) The Company recognized gain and loss on disposal of available-for-sale financial assets amounted to W1,482 million and W9 million, respectively, from the sales of shares of Kwanglim Co., Ltd., TONGYANG Inc., TONGYANG networks Inc., Nexolon Co., Ltd. and SsangYong E&C Co., Ltd. and from the partial sales of IBK-AUCTUS Green Growth Private Equity Firm, Hanwha-KOSEP New Renewable Energy Private Special Assets Investment Trust 1 and Korea investment – Hanwha KT Master Lease Private Special Investment Trust for the year ended December 31, 2016.

n millions of won	2017								
	Shares	Ownership		Acquisition cost	Book value	Fair value			
isted									
Korea District Heating Corp.	2,264,068	19.55%	₩	173,201	165,277	165,277			
Ssangyong Motor Co., Ltd.	38,568	0.03%		428	197	197			
Sungjee Construction. Co., Ltd.	10,530	0.01%		49	8	8			
Korea Line Corp.	18	0.00%		1	-				
Jamkwang Engineering & Construction Co., Ltd.	46	0.00%		15	-				
Pumyang Construction Co., Ltd. (*7)	35	0.00%		2	-				
ELCOMTEC Co., Ltd.	32,875	0.04%		217	72	72			
PAN ocean Co., Ltd.	1,492	0.00%		14	8	8			
Dongbu Corporation (*6)	955	0.02%		12	10	10			
KSP Co., Ltd.	6,324	0.08%		24	24	24			
STX Heavy Industries Co., Ltd.	35,749	0.14%		191	165	165			
PT Adaro Energy Tbk	480,000,000	1.50%		71,554	70,531	70,531			
Energy Fuels Inc.	1,711,814	2.38%		16,819	3,300	3,300			
Baralaba Coal Company Limited	99,763	0.07%		18,445	22	22			
Denison Mines Corp.	58,284,000	10.42%		84,134	34,292	34,292			
ission 3.0	300,000	0.14%		-	15	15			
ission Uranium Corp.	800,000	0.16%		785	532	532			
				365,891	274,453	274,453			
Inlisted (*1)									
orea investment – Korea EXIM Bank CERs									
Private Special Asset Investment Trust I	1,758,731,002	14.18%		1,752	571				
roika Overseas Resource Development Private Equity Firm	13,340,012,100	3.66%		13,340	1,553				
3K-AUCTUS Green Growth Private Equity Firm ilobal Dynasty Overseas Resource Development	152	6.29%		41	41				
Private Equity Firm	2,242,437,289	7.46%		2,242	2,242				
ntellectual Discovery, Ltd.	1,000,000	8.81%		5,000	954				
lanwha-KOSEP New Renewable Energy		= 0000			4 0 0 0				
Private Special Assets Investment Trust 1	4,176,751,013	5.00%		4,328	4,328				
Construction Guarantee (*2)	571	0.02%		601	833	833			
Plant & Mechanical Contractors Financial Cooperative of Korea	144	0.03%		126	126				
ire Guarantee	40	0.01%		20	20				
Corea Software Financial Cooperative	5,186	1.09%		3,301	3,301				
Ingineering Financial Cooperative	486	0.05%		60	60				
Electric Contractors Financial Cooperative	1,000	0.04%		216	216				
Corea Specialty Contractor Financial Cooperative	476	0.01%		417	417				
nformation & Communication Financial Cooperative	121	0.02%		26	26				
Korea Electric Engineers Association	400	0.24%		40	40				
Camsung investment – Investment Pool for Public funds 1 (*5) Corea investment – Hanwha KT Master Lease Private Special Investment Trust (*5)	-	-		53,220 26,586	53,739 26,591	53,739 26,591			
(yobo Royal-Class Repo Plus Fixed Income 1Y 2nd (*5)	-	-		33,000	33,008	33,008			
	-	-							
(yobo Royal-Class Repo Plus Fixed Income 2Y 1st (*5)	-	-		50,000	50,399 50,419	50,399			
(yobo Royal-Class Repo Plus A1 ABCP 1Y (*5)	-	- 0.14%		50,000 1,092	50,419	50,419			
		111/1%		1 (197)	97	-			
Iwan Young Steel Co., Ltd. SAMBO AUTO. Co., Ltd.	10,916 15,066	0.02%		38	38				

In millions of won	2017							
	Shares	Ownership	Acquisition cost	Book value	Fair value			
Dae Kwang Semiconductor Co., Ltd.	589	0.07% ₩	∀ 6	6				
Sanbon Department Store	828	0.01%	124	3				
Miju Steel Mfg. Co., Ltd.	99,804	0.23%	50	50				
Sungwon Co., Ltd. (formerly, BnB Sungwon Co., Ltd.)	589	0.07%	15	15				
Hana Civil Engineering Co., Ltd.	23	0.00%	1	1				
KC Development Co., Ltd.	839	0.02%	6	6				
IMHWA Corp.	329	0.11%	5	5				
DALIM Special Vehicle Co., Ltd.	58	0.08%	10	10				
ASA JEONJU Co., Ltd.	34,846	1.34%	697	69				
Moonkyung Silica Co., Ltd.	42	0.56%	-	-				
Sungkwang Timber Co., Ltd.	9	0.34%	4	4				
Yongbo Co., Ltd.	61	0.20%	3	3				
HJ Steel Co., Ltd.	218	0.07%	2	2				
KS Remicon Co., Ltd.	12	0.04%	3	3				
Joongang Platec Co., Ltd.	3,591	0.75%	72	35				
Pyungsan SI Ltd.	434	0.01%	9	9				
Samgong Development Co., Ltd.	12	0.01%	7	7				
Joongang Development Co., Ltd.	540	0.12%	8	8				
AJS Co., Ltd.	12,906	0.23%	32	32				
SHIN-E B&P Co., Ltd.	119	0.13%	10	10				
MSE Co., Ltd.	429	0.13%	9	9				
Irim Nano Tec Co., Ltd.	1,520	0.07%	15	15				
Youngjin Hi-Tech Co., Ltd.	2,512	0.25%	126	21				
Buyoung Co., Ltd.	270	0.00%	3	3				
llsuk Co., Ltd.	152	0.17%	10	10				
Dongyang Telecom Co., Ltd.	1,760	0.01%	11	11				
Jongwon Remicon Co., Ltd.	31	0.18%	13	13				
Ace Heat Treating Co., Ltd.	477	1.43%	72	72				
Zyle Daewoo Motor Sales Co., Ltd.	22	0.00%	-	-				
Daewoo Development Co., Ltd.	8	0.00%	-	-				
Seyang Inc.	537	0.05%	27	27				
Seungri Enterprise Co., Ltd.	93	0.05%	3	3				
Onggane Food Co., Ltd	5	0.07%	1	1				
Shin-E P&C Co., Ltd.	12	0.00%	1	1				
Ejung Ad Co., Ltd.	132	0.09%	3	3				
Solvus Co., Ltd.	1,056	0.04%	3	3				
Myung Co., Ltd.	89	0.05%	2	2				
Shinil Engineering Co., Ltd.	887	0.06%	3	3				
Biwang Industry Co., Ltd	406	0.04%	2	2				
Huimun Co., Ltd.	263	0.26%	4	4				
Young Sung Co., Ltd.	89	0.40%	26	26				
Yuil Industrial Electronics Co., Ltd.	804	0.32%	15	15				
DN TEK Inc.	12,401	0.29%	61	5				
Kwang Jin Structure Co., Ltd.	3,072	0.60%	31	31				

In millions of won	2017						
	Shares	Ownership	Acquisition cost	Book value	Fair value		
Woojin Industry Corporation	3	0.00%	₩ 16	16	-		
Kwang Sung Industry Co., Ltd.	325	0.35%	7	7	-		
Futech Mold Co., Ltd.	274	0.27%	14	14	-		
Woojoo Environment Ind. Co., Ltd.	101	0.11%	13	13	-		
Cheongatti Co., Ltd.	57	0.10%	4	4	-		
Hyungji Esquire Co., Ltd.	55	0.02%	22	22	-		
Kolmar Pharma Co., Ltd.	1,426	0.01%	52	3	-		
Morado Co., Ltd.	209	0.04%	2	2	-		
Myung Sung Tex Co., Ltd.	20	0.00%	2	2	-		
Kwang Sung Co., Ltd.	610	0.53%	31	31	-		
EverTechno. Co.,Ltd.	29,424	0.73%	148	7	-		
Autowel Co.,Ltd.	260	0.38%	14	14	-		
Woobang Construction Co., Ltd.	8	0.00%	8	8	-		
Shin Pyung Co., Ltd.	6	0.03%	3	3	-		
JMC Heavy Industries Co., Ltd.	2,724	0.10%	27	27	-		
Najin Steel Co., Ltd.	37	0.06%	5	5	-		
Sinkwang Industry Co., Ltd.	1,091	1.68%	5	5	-		
Crystal Co., Ltd.	22	0.07%	2	2	-		
Elephant & Friends Co., Ltd.	563	0.61%	3	3	-		
Mireco Co., Ltd.	109	0.25%	11	11	-		
L&K Industry Co., Ltd.	1,615	0.60%	24	24	-		
JO Tech Co., Ltd.	1,263	0.62%	25	25	-		
Kendae Printing Co., Ltd.	422	0.60%	21	21	-		
Dauning Co., Ltd.	231	0.41%	6	6	-		
Korea Trecision Co., Ltd.	22	0.45%	5	5	-		
Ace Track Co., Ltd.	3,130	1.08%	219	59	-		
Taebok Machinery Co., Ltd.	109	1.08%	11	11	-		
Yoo-A Construction Co., Ltd.	105	0.20%	11	11	-		
Dung Hwan Co., Ltd.	531	0.02%	5	5	-		
Hurim Biocell Co., Ltd.	113	0.00%	5	5	-		
Sunjin Power Tech Co., Ltd.	4,941	0.92%	247	32	-		
Smart Power Co.,Ltd.	133,333	4.83%	200	200	-		
Haseung Industries Co.,Ltd.	55	0.62%	28	28	-		
Beer Yeast Korea Inc.	1,388	0.43%	7	7	-		
Daeryung Corporation	207	0.19%	10	10	-		
Korea Bio Red Ginseng Co.,Ltd.	194	0.09%	10	10	-		
ENH Co., Ltd.	1,086	0.19%	54	54	-		
B CON Co.,Ltd.	96	1.16%	6	6	-		
Chunil Metal Co.,Ltd.	11	0.15%	4	4	-		
SsangMa Machine Co., Ltd.	4	0.05%	1	1	-		
SinJin Co., Ltd.	233	0.30%	9	9	-		
Ace Integration Co., Ltd	105	0.09%	24	24	-		
AceInti Agricultiral Co., Ltd.	16	0.02%	5	5	-		

In millions of won	Shares	Ownership	2017 Acquisition cost	Book value	Fair value
KyungDong Co., Ltd.		<u>Ownership</u> 0.01% ¥	Acquisition cost ↓ 1	BOOK Value	
ChunWon Development Co., Ltd.	193	0.19%	39	39	
Wonll Co., Ltd.	999	0.15%	50	50	
SungLim Industrial Co., Ltd.	29	0.03%	1	1	
Korea Minerals Co., Ltd.	191	0.05%	134	1	
HyoDong Development Co., Ltd.	119	0.05%	24	24	
Haspe Tech Co., Ltd.	652	0.55%	24	24	
JoHyun Co., Ltd.	350	1.56%	18	18	
KC Co., Ltd.	5,107	0.17%	3	3	
SeongJi Industrial Co.,Ltd.	41	0.05%	1	1	
DongKwang SD, Inc.	524	0.23%	13	13	
Dong Yang Metal Co., Ltd.	2,951	1.97%	15	15	
Seyang Precision Ind.Co., Ltd.	829	0.23%	41	41	
Dooriwon Food System Co., Ltd.	13	0.27%	1	1	
ShinShin Co., Ltd	339	1.12%	17	17	
Kitorang Co., Ltd.	165	0.24%	49	49	
Sung Kwang Co., Ltd.	23	0.24 %	49 6	49 6	
Hyundai Metal Co., Ltd.	3,757	5.60%	1,416	1,416	
Shinheung petrol. Co. Ltd.	699	0.14%	7	7	
Force TEC Co., Ltd.	3,501	0.02%	, 18	, 18	
Haisung Industrial Systems Co., Ltd.	10,751	0.24%	54	54	
Samsung Tech Co., Ltd.	486	1.28%	97	97	
Tae Hyung Co., Ltd.	28	0.43%	20	20	
Samyangplant Co., Ltd.	323	0.40%	16	16	
Younil Metal Co., Ltd.	41	0.21%	21	21	
Myungjin Tech Co., Ltd.	20	0.54%	4	4	
Hankook Machine Tools Co., Ltd.	719	0.14%	72	72	
Hankook Precision Ind Co., Ltd.	110	0.06%	11	11	
Borneo International Furniture Co., Ltd.	64,037	0.28%	97	14	
CJ Paradise Co.,Ltd	24	0.02%	12	12	
Han Young Technology Company Co.,Ltd.	35	0.02 %	12	12	
Jungdo Aluminm Co.,Ltd.	8,527	0.35%	128	128	
Ilheung Metal Co, Ltd.	280	0.83%	28	28	
STX Offshore & Shipbuilding Co., Ltd	8,622	0.25%	1,078	1,078	
Ptotronics Co., Ltd.	151	0.23%	2	2	
NFT Co., Ltd.	136	0.40%	8	2	
Echoroba Co.,Ltd.	150	0.02%	3	3	
Hyundaitech Co.,Ltd.	1,363	0.87%	27	27	
Eco Alux Co.,Ltd.	239	0.22%	48	48	
Daekyung Industry Co.,Ltd.	9,112	0.94%	13	13	
Dasan Material Co.Ltd.	29	0.04%	10	-	
Fish World Co.,Ltd.	47	0.04 %	2	2	
SG Shinsung Engineering and Construction Co., Ltd.		0.21%	6	6	
Samdo Industry Electric Co.,Ltd.	10 48	0.00%	0	1	
Taejung Industries Co.,Ltd.	48 9,268	0.02%	5	5	
Shinsei Trading Co., Ltd.	9,268			5	
Dynamic Co., Ltd.	04 111	0.72% 0.19%	1	3	
Green Alchemy Co.,Ltd.					
IQ Power Asia Inc.	38,202 16 179	1.48% 0.31%	191 81	191 81	
Youone TBM Engineering & Construction Co., Ltd.	16,179	0.31%	бI	δI	

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

In millions of won				2017		
	Shares	Ownership	_	Acquisition cost	Book value	Fair value
KM Leatech	1,648	0.98%	₩	8	8	-
Wonil T&I Co., Ltd.	229	0.17%		23	23	-
Semist Co.,Ltd.	555	0.80%		3	3	-
DS POWER Co., Ltd. (*8)	580,000	2.34%		2,900	1,223	1,223
Navanakorn Electric Co., Ltd. (*3)	4,442,800	26.93%		17,216	16,410	-
PT. Kedap Saayq	671	10.00%		18,540	-	-
Set Holding (*4)	1,100,220	2.50%		229,255	171,242	171,242
PT. Cirebon Energi Prasarana	22,420	10.00%		2,612	2,401	
				522,782	425,380	387,454
			₩	888,673	699,833	661,907

(*1) Investments in unlisted equity securities held by the Company for which a quoted market price does not exist in an active market and fair value cannot be measured reliably were measured at cost less impairment, if any.

- (*2) The Company has estimated the fair value of the investment in Construction Guarantee based upon the price which would be applied when the investment is returned. The Company has recognized the difference between its fair value and book value as a gain or loss on valuation of available-for-sale financial assets in other comprehensive income or loss during the year ended December 31, 2017.
- (*3) Although the Company holds more than 20% of the equity shares of these investments, the Company cannot exercise significant influence.
- (*4) The Company has estimated the fair value of Set Holding by using the discounted cash flow method and has recognized the difference between its fair value and book value as gain or loss on valuation of available-for-sale financial assets in other comprehensive income or loss during the year ended December 31, 2017.
- (*5) As of December 31, 2017, the Company invested in W285,769 million as beneficiary securities exclusively for payment of decommissioning cost of nuclear power plants. The Company has measured the fair value of the beneficiary securities based on its net asset value.
- (*6) The number of shares owned has changed due to the stock merge (9:7) during the year ended December 31, 2017.
- (*7) The number of shares increased due to the stock split (5:1).
- (*8) As described in note 17, this is reclassified to available-for-sale financial assets due to loss of significant influence of the Company.

Shares 2,264,068	Ownership		Acquisition cost	Book value	Fair value
2,264,068					
2,264,068					
	19.55%	₩	173,201	154,183	154,183
38,568	0.03%		428	304	304
10,530	0.01%		49	21	21
18	0.00%		1	-	
46	0.00%		15	-	
7	0.00%		2	-	
32,875	0.04%		217	74	74
1,492	0.00%		14	7	7
64,037	0.28%		97	103	103
1,229	0.02%		12	12	12
	1.50%		71,554	73,061	73,061
	2.59%				3,385
					42
					36,504
			-		16
			785		459
000,000	0.1770				268,171
				200,171	200,171
24	10.00%		1,207	1,207	
1,758,731,002	14.18%		1,752	571	-
13,340,012,100	3.66%		13,340	1,553	
152	6.29%		41	41	-
2 222 407 420	7 460/		0.000	0.000	
1,000,000	8.81%		5,000	1,375	-
4,256,096,329	5.00%		4,389	4,389	-
571	0.02%		601	819	819
50	0.01%		36	36	
					-
					-
					-
					-
400	0.24%				-
-	-				141,315
-	-				211,920
-	-				53,212 30,568
-	- 0 1/10/				50,500
					-
					-
					-
	46 7 32,875 1,492 64,037 1,229 480,000,000 1,711,814 99,763 58,284,000 300,000 800,000 800,000 24 1,758,731,002 13,340,012,100 152 2,233,407,439 1,000,000 4,256,096,329	46 0.00% 32,875 0.04% 1,492 0.00% 64,037 0.28% 1,229 0.02% 480,000,000 1.50% 1,711,814 2.59% 99,763 0.07% 58,284,000 10.93% 300,000 0.17% 800,000 0.17% 800,000 0.17% 24 10.00% 1,758,731,002 14.18% 13,340,012,100 3.66% 152 6.29% 2,233,407,439 7.46% 1,000,000 8.81% 4,256,096,329 5.00% 571 0.02% 5,186 1.39% 486 0.05% 800 0.03% 476 0.01% 400 0.24% 5,186 1.39% 486 0.05% 800 0.03% 476 0.01% 400 0.24% 70 0.14%	46 0.00% 7 0.00% 32,875 0.04% 1,492 0.00% 64,037 0.28% 1,229 0.02% 480,000,000 1.50% 1,711,814 2.59% 99,763 0.07% 58,284,000 10.93% 300,000 0.17% 800,000 0.17% 800,000 0.17% 13,340,012,100 3.66% 1,000,000 8.81% 4,256,096,329 5.00% 571 0.02% 50 0.01% 40 0.02% 5,186 1.39% 486 0.05% 800 0.03% 476 0.01% 400 0.24% 70 0.01% 400 0.24% 70 0.01% 400 0.24% 70 0.14% 70 0.14% 70 0.14% 70 </td <td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td> <td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td>	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

In millions of won			2016		
	Shares	Ownership	Acquisition cost	Book value	Fair value
Dae Kwang Semiconductor Co., Ltd.	589	0.07% ¥	∀ 6	6	-
Sanbon Department Store	828	0.01%	124	3	-
Miju Steel Mfg. Co., Ltd.	99,804	0.23%	51	51	-
BnB Sungwon Co., Ltd.	589	0.07%	15	15	-
Hana Civil Engineering Co., Ltd.	23	0.00%	1	1	-
KC Development Co., Ltd.	839	0.02%	6	6	-
IMHWA Corp.	329	0.11%	5	5	-
DALIM Special Vehicle Co., Ltd.	58	0.08%	10	10	-
ASA JEONJU Co., Ltd.	34,846	1.34%	697	69	-
Moonkyung Silica Co., Ltd.	42	0.56%	-	-	-
Sungkwang Timber Co., Ltd.	9	0.34%	4	4	-
Yongbo Co., Ltd.	61	0.20%	3	3	-
HJ Steel Co., Ltd.	218	0.07%	2	2	-
KS Remicon Co., Ltd.	12	0.04%	3	3	-
SIN-E Steel Co., Ltd.	109	0.08%	33	33	-
Joongang Platec Co., Ltd.	3,591	0.75%	72	35	-
Pyungsan SI Ltd.	434	0.01%	9	9	-
Samgong Development Co., Ltd.	12	0.01%	7	7	-
Joongang Development Co., Ltd.	540	0.12%	8	8	-
AJS Co., Ltd.	12,906	0.23%	32	32	-
SHIN-E B&P Co., Ltd.	119	0.13%	10	10	-
MSE Co., Ltd.	429	0.13%	9	9	-
Ilrim Nano Tec Co., Ltd.	1,520	0.07%	15	15	-
Youngjin Hi-Tech Co., Ltd.	2,512	0.25%	126	21	-
Dong Woo International Co., Ltd.	90	0.37%	18	18	-
Buyoung Co., Ltd.	270	0.00%	3	3	-
Ilsuk Co., Ltd.	152	0.17%	10	10	-
Dongyang Telecom Co., Ltd.	1,760	0.01%	11	11	-
Han Young Construction Co., Ltd.	35	0.03%	3	3	-
Jongwon Remicon Co., Ltd.	31	0.18%	13	13	-
Ace Heat Treating Co., Ltd.	477	1.43%	72	72	-
Zyle Daewoo Motor Sales Co., Ltd.	22	0.00%	-	-	-
Daewoo Development Co., Ltd.	8	0.00%	-	-	-
Seyang Inc.	537	0.05%	27	27	-
Seungri Enterprise Co., Ltd.	93	0.05%	3	3	-
Onggane Food Co., Ltd	5	0.07%	1	1	-
Shin-E P&C Co., Ltd.	12	0.00%	1	1	-
Ejung Ad Co., Ltd.	132	0.09%	3	3	-
Solvus Co., Ltd.	1,056	0.04%	3	3	-
Myung Co., Ltd.	89	0.05%	2	2	-
Emotion Co., Ltd.	167	0.61%	8	8	-
Youngdong Concrete Co., Ltd.	32	0.32%	7	7	-
Shinil Engineering Co., Ltd.	887	0.06%	3	3	-
Biwang Industry Co., Ltd	406	0.04%	2	2	-
Huimun Co., Ltd.	263	0.26%	4	4	-
Young Sung Co., Ltd.	89	0.40%	27	27	-

SharesYuil Industrial Electronics Co., Ltd.804DN TEK Inc.12,401Daeyang F. M.S Corporation593Kwang Jin Structure Co., Ltd.3,072Woojin Industry Corporation3Kwang Sung Industry Co., Ltd.225Futech Mold Co., Ltd.274Samcheonri Industrial Co., Ltd.101Choogatti Co., Ltd.533Woojio Environment Ind. Co., Ltd.101Choogatti Co., Ltd.55Kolmar Pharma Co., Ltd.209Myung Sung Tex Co., Ltd.209Myung Sung Tex Co., Ltd.200Kwang Sung Co., Ltd.200Woolang Construction Co., Ltd.201EverTechno. Co., Ltd.202Kwang Sung Co., Ltd.203Woobang Construction Co., Ltd.204Autowel Co., Ltd.204Myung Sung Tex Co., Ltd.204Waobang Construction Co., Ltd.204JMC Heavy Industries Co., Ltd.204Waobang Construction Co., Ltd.204Waobang Construction Co., Ltd.205JMC Heavy Industries Co., Ltd.206Woobang Construction Co., Ltd.207Jain Land Co., Ltd.207Jain Land Co., Ltd.204Join Land Co., Ltd.205Join Land Co., Ltd.205Join Land Co., Ltd.206JMC Heavy Industry Co., Ltd.206JMC Heavy Industry Co., Ltd.207Jain Land Co., Ltd.205Join Land Co., Ltd.206JMieco Co., Ltd.206 <t< th=""><th>Ownership W 0.32% W 0.29% 0.40% 0.60% 0.00% 0.35% 0.27% 0.98% 0.11% 0.10% 0.02% 0.01% 0.04% 0.00% 0.05%</th><th>62 23 31 16 7 14 13 13 4 22</th><th>Book value 16 6 23 31 16 7 14 13 13 4</th><th>Fair value - - - - - - - - - -</th></t<>	Ownership W 0.32% W 0.29% 0.40% 0.60% 0.00% 0.35% 0.27% 0.98% 0.11% 0.10% 0.02% 0.01% 0.04% 0.00% 0.05%	62 23 31 16 7 14 13 13 4 22	Book value 16 6 23 31 16 7 14 13 13 4	Fair value - - - - - - - - - -
DN TEK Inc. 12,401 Daeyang F.M.S Corporation 593 Kwang Jin Structure Co., Ltd. 3,072 Woojin Industry Corporation 3 Kwang Sung Industry Co., Ltd. 325 Futech Mold Co., Ltd. 274 Samcheonri Industrial Co., Ltd. 101 Cheongati Co., Ltd. 101 Cheongati Co., Ltd. 101 Cheongati Co., Ltd. 209 Myung Sung Tex Co., Ltd. 201 Kwang Sung Co., Ltd. 201 Kwang Sung Co., Ltd. 201 Kwang Sung Co., Ltd. 202 Kwang Sung Co., Ltd. 204 Autowel Co., Ltd. 201 Kwang Sung Co., Ltd. 204 Mutowel Co., Ltd. 204 Woobang Construction Co., Ltd. 206 JMC Heavy Industries Co., Ltd. 210 Join Land Co., Ltd. 21724 Najin Steel Co., Ltd. 313 Crystal Co., Ltd. 1091 Join Land Co., Ltd. 210 Lighant & Friends Co., Ltd. 210 JO Tech Co., Ltd	0.29% 0.40% 0.60% 0.35% 0.27% 0.98% 0.11% 0.10% 0.02% 0.01% 0.04% 0.00%	62 23 31 16 7 14 13 13 4 22	6 23 31 16 7 14 13 13 4	-
Daeyang F.M.S Corporation 593 Kwang Jin Structure Co., Ltd. 3,072 Woojin Industry Corporation 3 Kwang Sung Industry Co., Ltd. 325 Futech Mold Co., Ltd. 274 Samcheonri Industrial Co., Ltd. 101 Cheongatti Co., Ltd. 101 Cheongatti Co., Ltd. 55 Kolmar Pharma Co., Ltd. 104 Myung Sung Tex Co., Ltd. 209 Myung Sung Tex Co., Ltd. 200 Kwang Sung Co., Ltd. 201 Kwang Sung Co., Ltd. 204 Autowel Co., Ltd. 204 Myung Sung Tex Co., Ltd. 204 Autowel Co., Ltd. 204 Myung Sung Co., Ltd. 206 Woobang Construction Co., Ltd. 204 Mutowel Co., Ltd. 204 Autowel Co., Ltd. 206 Woobang Construction Co., Ltd. 206 JMC Heavy Industries Co., Ltd. 20724 Najin Steel Co., Ltd. 1,091 Join Land Co., Ltd. 1,091 Join Land Co., Ltd. 202	0.40% 0.60% 0.35% 0.27% 0.98% 0.11% 0.10% 0.02% 0.01% 0.04% 0.00%	23 31 16 7 14 13 13 4 22	23 31 16 7 14 13 13 4	•
Kwang Jin Structure Co., Ltd. 3,072 Woojin Industry Corporation 3 Kwang Sung Industry Co., Ltd. 325 Futech Mold Co., Ltd. 274 Samcheonri Industrial Co., Ltd. 533 Woojoo Environment Ind. Co., Ltd. 101 Cheongatti Co., Ltd. 55 Kolmar Pharma Co., Ltd. 55 Kolmar Pharma Co., Ltd. 209 Myung Sung Tex Co., Ltd. 200 Myung Sung Tex Co., Ltd. 201 Kwang Sung Co., Ltd. 204 Autowel Co., Ltd. 204 Autowel Co., Ltd. 204 Woobang Construction Co., Ltd. 204 Woobang Construction Co., Ltd. 204 Mutowel Co., Ltd. 201 Woobang Construction Co., Ltd. 201 JMC Heavy Industries Co., Ltd. 201 Join Land Co., Ltd. 1091 Join Land Co., Ltd. 1091 Join Land Co., Ltd. 102 Lephant & Friends Co., Ltd. 102 Lephant & Friends Co., Ltd. 202 Ace Track Co., Ltd. 203	0.60% 0.00% 0.35% 0.27% 0.98% 0.11% 0.10% 0.02% 0.01% 0.04% 0.00%	31 16 7 14 13 13 4 22	31 16 7 14 13 13 4	- - - - - -
Woojin Industry Corporation 3 Kwang Sung Industry Co., Ltd. 325 Futech Mold Co., Ltd. 274 Samcheonri Industrial Co., Ltd. 533 Woojoo Environment Ind. Co., Ltd. 101 Cheongatti Co., Ltd. 57 Hyungji Esquire Co., Ltd. 55 Kolmar Pharma Co., Ltd. 1426 Morado Co., Ltd. 209 Myung Sung Tex Co., Ltd. 201 Kwang Sung Co., Ltd. 204 Autowel Co., Ltd. 204 Woobang Construction Co., Ltd. 201 Woobang Construction Co., Ltd. 201 Woobang Construction Co., Ltd. 201 JMC Heavy Industries Co., Ltd. 201 Join Land Co., Ltd. 201 Join Land Co., Ltd. 1091 Join Land Co., Ltd. 1091 Join Land Co., Ltd. 122 Elephant & Friends Co., Ltd. 1231 Korea Trecision Co., Ltd. 212	0.00% 0.35% 0.27% 0.98% 0.11% 0.10% 0.02% 0.01% 0.04% 0.00%	16 7 14 13 13 4 22	16 7 14 13 13 4	- - - - -
Kwang Sung Industry Co., Ltd. 325 Futech Mold Co., Ltd. 274 Samcheonri Industrial Co., Ltd. 533 Woojoo Environment Ind. Co., Ltd. 101 Cheongatti Co., Ltd. 55 Hyungji Esquire Co., Ltd. 55 Kolmar Pharma Co., Ltd. 1,426 Morado Co., Ltd. 209 Myung Sung Tex Co., Ltd. 201 Kwang Sung Co., Ltd. 202 Kwang Sung Co., Ltd. 201 EverTechno. Co., Ltd. 204 Autowel Co., Ltd. 204 Morobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 260 Woobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 2724 Najin Steel Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 1,091 Join Land Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 214 Law Ing Co., Ltd. 313 K	0.35% 0.27% 0.98% 0.11% 0.10% 0.02% 0.01% 0.04% 0.00%	7 14 13 13 4 22	7 14 13 13 4	
Futech Mold Co., Ltd. 274 Samcheonri Industrial Co., Ltd. 533 Woojoo Environment Ind. Co., Ltd. 101 Cheongatti Co., Ltd. 57 Hyungji Esquire Co., Ltd. 55 Kolmar Pharma Co., Ltd. 1,426 Morado Co., Ltd. 209 Myung Sung Tex Co., Ltd. 201 Kwang Sung Co., Ltd. 201 Ever Techno. Co., Ltd. 204 Autowel Co., Ltd. 204 Autowel Co., Ltd. 206 Woobang Construction Co., Ltd. 206 Woobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 206 JMC Heavy Industries Co., Ltd. 2724 Najin Steel Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 109 Lek Industry Co., Ltd. 109 Lek Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendee Printing Co., Ltd. 21 Ace Track Co., Ltd. 313 Yoo	0.27% 0.98% 0.11% 0.10% 0.02% 0.01% 0.04% 0.00%	14 13 13 4 22	14 13 13 4	-
Samcheonri Industrial Co., Ltd. 533 Woojoo Environment Ind. Co., Ltd. 101 Cheongatti Co., Ltd. 57 Hyungji Esquire Co., Ltd. 55 Kolmar Pharma Co., Ltd. 1,426 Morado Co., Ltd. 209 Myung Sung Tex Co., Ltd. 201 Kwang Sung Co., Ltd. 201 EverTechno. Co., Ltd. 202 Autowel Co., Ltd. 204 Autowel Co., Ltd. 204 Autowel Co., Ltd. 205 Woobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 20724 Najin Steel Co., Ltd. 2,724 Najin Steel Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 1,091 Join Land Co., Ltd. 1,091 Join Land Co., Ltd. 1,019 Lök Industry Co., Ltd. 1,019 Jo Tech Co., Ltd. 1,021 Jo Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 2,22 Dauning Co., Ltd. 2,313 Korea Trecision Co., Ltd. </td <td>0.98% 0.11% 0.10% 0.02% 0.01% 0.04% 0.00%</td> <td>13 13 4 22</td> <td>13 13 4</td> <td>-</td>	0.98% 0.11% 0.10% 0.02% 0.01% 0.04% 0.00%	13 13 4 22	13 13 4	-
Woojoo Environment Ind. Co., Ltd. 101 Cheongatti Co., Ltd. 57 Hyungji Esquire Co., Ltd. 1426 Morado Co., Ltd. 209 Myung Sung Tex Co., Ltd. 201 Kwang Sung Co., Ltd. 201 EverTechno. Co., Ltd. 201 Autowel Co., Ltd. 201 Woobang Construction Co., Ltd. 201 Woobang Construction Co., Ltd. 201 Shin Pyung Co., Ltd. 201 MC Heavy Industries Co., Ltd. 201 JMC Heavy Industries Co., Ltd. 201 Join Land Co., Ltd. 301 Sinkwang Industry Co., Ltd. 10091 Join Land Co., Ltd. 202 Elephant & Friends Co., Ltd. 1009 L&K Industry Co., Ltd. 101 JO Tech Co., Ltd. 102 Law Ing Co., Ltd. 202 Dauning Co., Ltd. 202 Ace Track Co., Ltd. 203 YooeA Industry Co., Ltd. 100 YooeA Construction Co., Ltd. 100 YooeA Construction Co., Ltd. 103	0.11% 0.10% 0.02% 0.01% 0.04% 0.00%	13 4 22	13 4	
Cheongatti Co., Ltd. 57 Hyungji Esquire Co., Ltd. 55 Kolmar Pharma Co., Ltd. 209 Myung Sung Tex Co., Ltd. 201 Kwang Sung Co., Ltd. 201 EverTechno. Co., Ltd. 29,424 Autowel Co., Ltd. 29,424 Autowel Co., Ltd. 29,424 Autowel Co., Ltd. 260 Woobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 6 JMC Heavy Industries Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 22 Elephant & Friends Co., Ltd. 109 L&K Industry Co., Ltd. 1,091 JO Tech Co., Ltd. 1,091 JO Tech Co., Ltd. 1,091 Low Co., Ltd. 1,091 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 22 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 231 Korea Trecision Co., Ltd. 109 YooAh Industry Co., Ltd. 103	0.10% 0.02% 0.01% 0.04% 0.00%	4 22	4	
Hyungi Esquire Co., Ltd. 55 Kolmar Pharma Co., Ltd. 209 Myung Sung Tex Co., Ltd. 20 Kwang Sung Co., Ltd. 20,424 Autowel Co., Ltd. 29,424 Autowel Co., Ltd. 260 Woobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 6 JMC Heavy Industries Co., Ltd. 724 Najin Steel Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 22 Elephant & Friends Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kerea Printing Co., Ltd. 22 Dauning Co., Ltd. 22 Ace Track Co., Ltd. 231 Korea Trecision Co., Ltd. 109 Yooah Industry Co., Ltd. 109 Yooah Industry Co., Ltd. 109 Yooah Industry Co., Ltd. 105 Dung Hwan Co., Ltd. 531 </td <td>0.02% 0.01% 0.04% 0.00%</td> <td>22</td> <td></td> <td></td>	0.02% 0.01% 0.04% 0.00%	22		
Kolmar Pharma Co., Ltd. 1,426 Morado Co., Ltd. 209 Myung Sung Tex Co., Ltd. 20 Kwang Sung Co., Ltd. 610 EverTechno. Co., Ltd. 29,424 Autowel Co., Ltd. 260 Woobang Construction Co., Ltd. 260 Woobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 6 JMC Heavy Industries Co., Ltd. 2,724 Najin Steel Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 1,091 Join Land Co., Ltd. 22 Elephant & Friends Co., Ltd. 1,091 Join Land Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 221 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 231 Korea Trecision Co., Ltd. 3130 Taebok Machinery Co., Ltd. 310 Yooah Industry Co., Ltd. 313 Yoo-A Construction Co., Ltd. 31	0.01% 0.04% 0.00%			
Morado Co., Ltd. 209 Myung Sung Tex Co., Ltd. 20 Kwang Sung Co., Ltd. 610 EverTechno. Co., Ltd. 29,424 Autowel Co., Ltd. 29,424 Autowel Co., Ltd. 200 Woobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 6 JMC Heavy Industries Co., Ltd. 2,724 Najin Steel Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 22 Elephant & Friends Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 22 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 221 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 231 Yooah Industry Co., Ltd. 109 Yooah Industry Co., Ltd. 103 Yoo-A Construction Co., Ltd. 105 Dung Hwan Co., Ltd. 531 Hurim Biocell Co.,	0.04% 0.00%		22	
Myung Sung Tex Co., Ltd. 20 Kwang Sung Co., Ltd. 610 EverTechno. Co., Ltd. 29,424 Autowel Co., Ltd. 260 Woobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 6 JMC Heavy Industries Co., Ltd. 2,724 Najin Steel Co., Ltd. 2,724 Najin Steel Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 22 Elephant & Friends Co., Ltd. 22 Ilephant & Friends Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 22 Dauning Co., Ltd. 221 Ace Track Co., Ltd. 221 Ace Track Co., Ltd. 3130 Taebok Machinery Co., Ltd. 109 Yooah Industry Co., Ltd. 105 Dung Hwan Co., Ltd. 105 Dung Hwan Co., Ltd. 105 Dung Hwan Co., Ltd. 113 P. J, Trading Co., L	0.00%	52	3	
Kwang Sung Co., Ltd. 610 EverTechno. Co., Ltd. 29,424 Autowel Co., Ltd. 260 Woobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 6 JMC Heavy Industries Co., Ltd. 2,724 Najin Steel Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 22 Elephant & Friends Co., Ltd. 22 Elephant & Friends Co., Ltd. 109 L&K Industry Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 22 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 22 Ace Track Co., Ltd. 3130 Taebok Machinery Co., Ltd. 109 YooaA Industry Co., Ltd. 109 YooaA Construction Co., Ltd. 105 Dung Hwan Co., Ltd. 105 Dung Hwan Co., Ltd. 113 P. J, Trading Co., Ltd. 113 P. J, Trading Co., Ltd. 12 Sunjin Power Tech Co.,		2	2	-
EverTechno. Co., Ltd. 29,424 Autowel Co., Ltd. 260 Woobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 6 JMC Heavy Industries Co., Ltd. 2,724 Najin Steel Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 33 Crystal Co., Ltd. 109 L&K Industry Co., Ltd. 109 L&K Industry Co., Ltd. 1,263 Mireco Co., Ltd. 1,263 Kendae Printing Co., Ltd. 22 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 231 Korea Trecision Co., Ltd. 109 Yooah Industry Co., Ltd. 105 Dung Hwan Co., Ltd. 105 Dung Hwan Co., Ltd. 113 P. J, Trading Co., Ltd. 113 P. J, Trading Co., Ltd. 112 Sunjin Power Tech C	0 500/	2	2	-
Autowel Co., Ltd. 260 Woobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 6 JMC Heavy Industries Co., Ltd. 2,724 Najin Steel Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 22 Elephant & Friends Co., Ltd. 22 Elephant & Friends Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 1,263 Korea Trecision Co., Ltd. 22 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 22 Ace Track Co., Ltd. 310 Yooah Industry Co., Ltd. 109 Yooah Industry Co., Ltd. 103 Yoo-A Construction Co., Ltd. 105 Dung Hwan Co., Ltd. 531 Hurim Biocell Co., Ltd. 113 P. J., Trading Co., Ltd. 113 P. J., Trading Co., Ltd. 4,941	0.53%	31	31	-
Woobang Construction Co., Ltd. 8 Shin Pyung Co., Ltd. 6 JMC Heavy Industries Co., Ltd. 2,724 Najin Steel Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 22 Elephant & Friends Co., Ltd. 22 Elephant & Friends Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 1,263 Korea Trecision Co., Ltd. 22 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 21 Ace Track Co., Ltd. 3130 Taebok Machinery Co., Ltd. 109 Yooah Industry Co., Ltd. 105 Dung Hwan Co., Ltd. 105 Dung Hwan Co., Ltd. 531 Hurim Biocell Co., Ltd. 113 P. J, Trading Co., Ltd. 12 Sunjin Power Tech Co., Ltd. 4,941	0.73%	147	7	-
Shin Pyung Co., Ltd. 6 JMC Heavy Industries Co., Ltd. 2,724 Najin Steel Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 33 Crystal Co., Ltd. 22 Elephant & Friends Co., Ltd. 563 Mireco Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 422 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 22 Ace Track Co., Ltd. 109 Yooah Industry Co., Ltd. 105 Dung Hwan Co., Ltd. 105 Dung Hwan Co., Ltd. 531 Hurim Biocell Co., Ltd. 113 P. J, Trading Co., Ltd. 12 Sunjin Power Tech Co., Ltd. 4,941	0.38%	13	13	-
JMC Heavy Industries Co., Ltd. 2,724 Najin Steel Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 22 Elephant & Friends Co., Ltd. 563 Mireco Co., Ltd. 109 L&K Industry Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 422 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 22 Ace Track Co., Ltd. 310 Yooah Industry Co., Ltd. 109 Yooah Industry Co., Ltd. 103 Yoo-A Construction Co., Ltd. 105 Dung Hwan Co., Ltd. 531 Hurim Biocell Co., Ltd. 113 P. J, Trading Co., Ltd. 12 Sunjin Power Tech Co., Ltd. 4,941	0.00%	8	8	
Najin Steel Co., Ltd. 37 Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 22 Elephant & Friends Co., Ltd. 563 Mireco Co., Ltd. 109 L&K Industry Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 422 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 221 Ace Track Co., Ltd. 231 Yooah Industry Co., Ltd. 3,130 Taebok Machinery Co., Ltd. 109 Yooah Industry Co., Ltd. 103 Yoo-A Construction Co., Ltd. 105 Dung Hwan Co., Ltd. 531 Hurim Biocell Co., Ltd. 113 P. J, Trading Co., Ltd. 12 Sunjin Power Tech Co., Ltd. 4,941	0.03%	3	3	
Sinkwang Industry Co., Ltd. 1,091 Join Land Co., Ltd. 33 Crystal Co., Ltd. 22 Elephant & Friends Co., Ltd. 563 Mireco Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 422 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 22 Ace Track Co., Ltd. 3,130 Taebok Machinery Co., Ltd. 109 Yooah Industry Co., Ltd. 109 Yoo-A Construction Co., Ltd. 105 Dung Hwan Co., Ltd. 531 Hurim Biocell Co., Ltd. 113 P. J, Trading Co., Ltd. 12 Sunjin Power Tech Co., Ltd. 4,941	0.10%	27	27	
Join Land Co., Ltd. 33 Crystal Co., Ltd. 22 Elephant & Friends Co., Ltd. 563 Mireco Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 422 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 231 Korea Trecision Co., Ltd. 21 Ace Track Co., Ltd. 3,130 Taebok Machinery Co., Ltd. 109 Yooah Industry Co., Ltd. 109 Yooah Industry Co., Ltd. 105 Dung Hwan Co., Ltd. 531 Hurim Biocell Co., Ltd. 113 P. J, Trading Co., Ltd. 12 Sunjin Power Tech Co., Ltd. 4,941	0.06%	5	5	
Crystal Co., Ltd.22Elephant & Friends Co., Ltd.563Mireco Co., Ltd.109L&K Industry Co., Ltd.1,615JO Tech Co., Ltd.1,263Kendae Printing Co., Ltd.422Dauning Co., Ltd.231Korea Trecision Co., Ltd.22Ace Track Co., Ltd.3,130Taebok Machinery Co., Ltd.109Yooah Industry Co., Ltd.109Yooah Industry Co., Ltd.105Dung Hwan Co., Ltd.531Hurim Biocell Co., Ltd.113P. J, Trading Co., Ltd.12Sunjin Power Tech Co., Ltd.4,941	1.68%	5	5	
Elephant & Friends Co., Ltd. 563 Mireco Co., Ltd. 109 L&K Industry Co., Ltd. 1,615 JO Tech Co., Ltd. 1,263 Kendae Printing Co., Ltd. 422 Dauning Co., Ltd. 231 Korea Trecision Co., Ltd. 22 Ace Track Co., Ltd. 3130 Taebok Machinery Co., Ltd. 109 Yooah Industry Co., Ltd. 109 Yooah Industry Co., Ltd. 105 Dung Hwan Co., Ltd. 531 Hurim Biocell Co., Ltd. 113 P. J, Trading Co., Ltd. 12 Sunjin Power Tech Co., Ltd. 4,941	0.00%	1	1	
Mireco Co., Ltd.109L&K Industry Co., Ltd.1,615JO Tech Co., Ltd.1,263Kendae Printing Co., Ltd.422Dauning Co., Ltd.231Korea Trecision Co., Ltd.22Ace Track Co., Ltd.3,130Taebok Machinery Co., Ltd.109Yooah Industry Co., Ltd.103Yoo-A Construction Co., Ltd.105Dung Hwan Co., Ltd.531Hurim Biocell Co., Ltd.113P. J, Trading Co., Ltd.12Sunjin Power Tech Co., Ltd.4,941	0.07%	2	2	
L&K Industry Co., Ltd.1,615JO Tech Co., Ltd.1,263Kendae Printing Co., Ltd.422Dauning Co., Ltd.231Korea Trecision Co., Ltd.22Ace Track Co., Ltd.3,130Taebok Machinery Co., Ltd.109Yooah Industry Co., Ltd.105Dung Hwan Co., Ltd.531Hurim Biocell Co., Ltd.113P. J, Trading Co., Ltd.12Sunjin Power Tech Co., Ltd.4,941	0.61%	3	3	
JO Tech Co., Ltd.1,263Kendae Printing Co., Ltd.422Dauning Co., Ltd.231Korea Trecision Co., Ltd.22Ace Track Co., Ltd.3,130Taebok Machinery Co., Ltd.109Yooah Industry Co., Ltd.100Yoo-A Construction Co., Ltd.105Dung Hwan Co., Ltd.531Hurim Biocell Co., Ltd.113P. J, Trading Co., Ltd.12Sunjin Power Tech Co., Ltd.4,941	0.25%	11	11	
Kendae Printing Co., Ltd.422Dauning Co., Ltd.231Korea Trecision Co., Ltd.22Ace Track Co., Ltd.3,130Taebok Machinery Co., Ltd.109Yooah Industry Co., Ltd.130Yoo-A Construction Co., Ltd.105Dung Hwan Co., Ltd.531Hurim Biocell Co., Ltd.113P. J, Trading Co., Ltd.12Sunjin Power Tech Co., Ltd.4,941	0.60%	24	24	
Dauning Co., Ltd.231Korea Trecision Co., Ltd.22Ace Track Co., Ltd.3,130Taebok Machinery Co., Ltd.109Yooah Industry Co., Ltd.130Yoo-A Construction Co., Ltd.105Dung Hwan Co., Ltd.531Hurim Biocell Co., Ltd.113P. J, Trading Co., Ltd.12Sunjin Power Tech Co., Ltd.4,941	0.62%	25	25	
Korea Trecision Co., Ltd.22Ace Track Co., Ltd.3,130Taebok Machinery Co., Ltd.109Yooah Industry Co., Ltd.130Yoo-A Construction Co., Ltd.105Dung Hwan Co., Ltd.531Hurim Biocell Co., Ltd.113P. J, Trading Co., Ltd.12Sunjin Power Tech Co., Ltd.4,941	0.60%	21	21	
Ace Track Co., Ltd.3,130Taebok Machinery Co., Ltd.109Yooah Industry Co., Ltd.130Yoo-A Construction Co., Ltd.105Dung Hwan Co., Ltd.531Hurim Biocell Co., Ltd.113P. J, Trading Co., Ltd.12Sunjin Power Tech Co., Ltd.4,941	0.41%	6	6	
Taebok Machinery Co., Ltd.109Yooah Industry Co., Ltd.130Yoo-A Construction Co., Ltd.105Dung Hwan Co., Ltd.531Hurim Biocell Co., Ltd.113P. J, Trading Co., LTd.12Sunjin Power Tech Co., Ltd.4,941	0.45%	5	5	
Yooah Industry Co., Ltd.130Yoo-A Construction Co., Ltd.105Dung Hwan Co., Ltd.531Hurim Biocell Co., Ltd.113P. J, Trading Co., LTd.12Sunjin Power Tech Co., Ltd.4,941	1.08%	219	59	
Yoo-A Construction Co., Ltd.105Dung Hwan Co., Ltd.531Hurim Biocell Co., Ltd.113P. J, Trading Co., LTd.12Sunjin Power Tech Co., Ltd.4,941	1.08%	11	11	
Dung Hwan Co., Ltd.531Hurim Biocell Co., Ltd.113P. J, Trading Co., LTd.12Sunjin Power Tech Co., Ltd.4,941	0.02%	13	13	
Hurin Biocell Co., Ltd.113P. J, Trading Co., LTd.12Sunjin Power Tech Co., Ltd.4,941	0.20%	11	11	
P. J, Trading Co., LTd. 12 Sunjin Power Tech Co., Ltd. 4,941	0.02%	5	5	
Sunjin Power Tech Co., Ltd. 4,941	0.00%	5	5	
	0.04%	-	-	
Smart Power Co.,Ltd. 133,333	0.92%	247	90	
	5.55%	200	200	
Haseung Industries Co.,Ltd. 55	0.62%	28	28	
Beer Yeast Korea Inc. 1,388	0.43%	7	7	
Daeryung Corporation 207	0.19%	10	10	
Korea Bio Red Ginseng Co.,Ltd. 194	0.09%	10	10	
ENH Co.,Ltd. 1,086	0.19%	54	54	
OCO Co.,Ltd. 123	0.37%	11	11	
B CON Co.,Ltd. 96	1.16%	6	6	
Chunil Metal Co.,Ltd. 11	0.15%	4	4	
Teakwang Tech Co., Ltd. 2,460	0.11%	12	12	
SsangMa Machine Co., Ltd. 4	0.05%	1	1	
SinJin Co., Ltd. 233	0.30%	9	9	
Ace Integration Co., Ltd 93		21	21	
AceInti Agricultiral Co., Ltd. 3	0.09%	1	1	-

In millions of won				2016		
	Shares	Ownership		Acquisition cost	Book value	Fair value
KyungDong Co., Ltd.	130	0.01%	₩	1	1	-
ChunWon Development Co., Ltd.	193	0.19%		39	39	-
Wonll Co., Ltd.	999	0.15%		50	50	-
SungLim Industrial Co., Ltd.	29	0.03%		1	1	-
DaeHa Co., Ltd.	141	0.54%		11	11	-
Korea Minerals Co., Ltd.	191	0.05%		135	135	-
HyoDong Development Co., Ltd.	119	0.15%		24	24	-
Haspe Tech Co., Ltd.	652	0.55%		20	20	-
JoHyun Co., Ltd.	350	1.56%		18	18	-
KC Co., Ltd.	5,107	0.17%		3	3	-
SeongJi Industrial Co.,Ltd.	41	0.05%		1	1	-
Areva nc Expansion	1,077,124	13.49%		288,443	98,472	98,472
Navanakorn Electric Co., Ltd. (*3)	8,885,600	26.93%		17,216	18,509	-
PT. Kedap Saayq	671	10.00%		18,540	-	-
Set Holding (*4)	1,100,220	2.50%		229,255	170,170	170,170
PT. Cirebon Energi Prasarana	22,420	10.00%		2,612	2,709	-
				1,040,553	746,561	706,476
			₩	1,406,326	1,014,732	974,647

- (*1) Investments in unlisted equity securities held by the Company for which a quoted market price does not exist in an active market and fair value cannot be measured reliably were measured at cost less impairment, if any.
- (*2) The Company has estimated the fair value of the investment in Construction Guarantee based upon the price which would be applied when the investment is returned. The Company has recognized the difference between its fair value and book value as a gain or loss on valuation of available-for-sale financial assets in other comprehensive income or loss during the year ended December 31, 2016.
- (*3) Although the Company holds more than 20% of the equity shares of these investments, the Company cannot exercise significant influence.
- (*4) The Company has estimated the fair value of Set Holding by using the discounted cash flow method and has recognized the difference between its fair value and book value as gain or loss on valuation of available-for-sale financial assets in other comprehensive income or loss during the year ended December 31, 2016.
- (*5) As of December 31, 2016, the Company invested in W437,015 million as beneficiary securities exclusively for payment of decommissioning cost of nuclear power plants. The Company has measured the fair value of the beneficiary securities based on its net asset value.
- (*6) The number of shares owned has changed due to the stock merge (500:1) during the year ended December 31, 2016.

10. Held-to-maturity Investments

Held-to-maturity investments as of December 31, 2017 and 2016 are as follows:

In millions of wo	n			2017		
	_	Beginning balance	Acquisition	Disposal	Others	Ending balance
Government bon	ds ₩	3,244	250	(350)	<u> </u>	3,144
	₩_	3,244	250	(350)	<u> </u>	3,144
Current	₩	114	-	(113)	4	5
Non-current		3,130	250	(237)	(4)	3,139
In millions of wo	n			2016		

				2010		
	-	Beginning balance	Acquisition	Disposal	Others	Ending balance
Government bonds	₩_	3,623	149	(528)		3,244
	₩ _	3,623	149	(528)		3,244
Current	₩	380	-	(380)	114	114
Non-current		3,243	149	(148)	(114)	3,130

11. Derivatives

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

In millions of won		2017		201	16
		Current	Non-current	Current	Non-current
Derivative assets					
Currency forward	₩	45	-	8,370	32,806
Currency swap		12	15,711	184,913	540,057
Interest rate swap		-	2,697	-	4,705
Others (*1)		12,878	1,283		10,523
	₩	12,935	19,691	193,283	588,091
Derivative liabilities					
Currency forward	₩	7,862	1,278	1,153	34
Currency swap		61,997	296,098	-	56,612
Interest rate swap		1,408	59,416	2,098	78,789
	₩	71,267	356,792	3,251	135,435

(*1) The Company has a put option to sell shares of DS POWER Co., Ltd, a related party of the Company, and the fair value of the option is recorded in 'Others'.

(2) Currency forward contracts which are not designated as hedging instruments as of December 31, 2017 are as follows:

In millions of won and thousands of foreign currencies

	Contract		Contract amou	nts	Contract
Counterparty	Contract Date	Maturity date	Рау	Receive	exchange rate
KEB Hana Bank	2014.04.10	2021.07.12	55,120	USD 52,000	1,060.0
KEB Hana Bank	2014.04.28	2021.07.12	50,784	USD 48,000	1,058.0
Bank of America	2014.04.29	2021.07.12	105,400	USD 100,000	1,054.0
KEB Hana Bank	2014.05.09	2021.07.12	104,600	USD 100,000	1,046.0
KEB Hana Bank	2017.12.22	2021.07.12	105,079	USD 100,000	1,050.7
Korea Development Bank	2017.12.22	2021.07.12	104,849	USD 100,000	1,038.4
CCB	2017.12.07	2018.01.11	10,921	USD 10,000	1,092.1
Morgan Stanley	2017.11.27	2018.01.03	5,439	USD 5,000	1,087.
Mizuho Bank	2017.11.29	2018.01.05	5,402	USD 5,000	1,080.3
KEB Hana Bank	2017.11.30	2018.01.08	5,437	USD 5,000	1,087.3
Mizuho Bank	2017.12.05	2018.01.09	5,416	USD 5,000	1,083.
Nova Scotia	2017.12.11	2018.01.12	10,922	USD 10,000	1,092.2
Kookmin Bank	2017.12.12	2018.01.15	3,270	USD 3,000	1,090.1
Kookmin Bank	2017.12.13	2018.01.16	10,906	USD 10,000	1,090.
Credit Suisse	2017.12.14	2018.01.17	10,858	USD 10,000	1,085.8
Standard Chartered	2017.12.14	2018.01.18	10,858	USD 10,000	1,085.8
Morgan Stanley	2017.12.15	2018.01.19	10,884	USD 10,000	1,088.3
Nova Scotia	2017.12.18	2018.01.22	10,881	USD 10,000	1,088.
Standard Chartered	2017.12.20	2018.01.22	5,413	USD 5,000	1,082.
Mizuho Bank	2017.12.21	2018.01.26	10,802	USD 10,000	1,080.
Credit Suisse	2017.12.22	2018.01.26	10,778	USD 10,000	1,077.
KEB Hana Bank	2017.12.28	2018.01.29	10,716	USD 10,000	1,071.
ССВ	2017.12.28	2018.01.30	10,706	USD 10,000	1,070.
Nova Scotia	2017.12.29	2018.02.05	10,679	USD 10,000	1,067.
Nova Scotia	2017.12.05	2018.01.05	2,170	USD 2,000	1,084.
Nova Scotia	2017.12.05	2018.01.05	2,164	USD 2,000	1,082.
Nova Scotia	2017.12.07	2018.01.05	6,551	USD 6,000	1,091.
Korea Development Bank	2017.12.14	2018.01.10	11,950	USD 11,000	1,086.
Societe Generale	2017.12.14	2018.01.10	10,865	USD 10,000	1,086.
BTMU Karaa Dayalaamaant Baak	2017.12.20	2018.01.16	11,906	USD 11,000	1,082.
Korea Development Bank CCB	2017.12.20	2018.01.16	15,130	USD 14,000	1,080.
Korea Development Bank	2017.12.21 2017.12.28	2018.01.23 2018.01.31	11,880	USD 11,000 USD 11,000	1,080. 1,071
Nova Scotia	2017.12.28	2018.01.23	11,782 33,209		1,071.
KEB Hana Bank	2017.12.28	2018.01.23	10,712	USD 31,000 USD 10,000	1,071. 1,071.
BTMU	2017.12.28	2018.01.31	10,712	USD 10,000	1,071.
BNP Paribas	2017.12.28	2018.01.17	3,713	USD 3,349	1,108.
Nova Scotia	2017.11.15	2018.01.22	8,837	USD 8,000	1,104.
BTMU	2017.11.29	2018.02.01	7,568	USD 7,000	1,081.
BNP Paribas	2017.11.29	2018.02.01	7,557	USD 7,000	1,079.
Credit Agricole	2017.12.19	2018.01.22	5,429	USD 5,000	1,085.
BTMU	2017.12.20	2018.02.22	10,822	USD 10,000	1,082.
KEB Hana Bank	2017.12.20	2018.01.22	2,879	USD 2,661	1,082.
BNP Paribas	2017.12.20	2018.01.22	5,406	USD 5,000	1,081.
Nonghyup Bank	2017.12.21	2018.01.23	6,467	USD 6,000	1,077.
Nova Scotia	2017.12.27	2018.01.29	5,366	USD 5,000	1,073.
Nova Scotia	2017.12.27	2018.01.05	5,373	USD 5,000	1,074.
KEB Hana Bank	2017.11.23	2018.01.11	9,237	USD 8,500	1,086.
Standard Chartered	2017.12.13	2018.01.15	5,454	USD 5,000	1,090.
Standard Chartered	2017.12.08	2018.01.25	10,921	USD 10,000	1,092.
Standard Chartered	2017.10.31	2018.02.21	5,610	USD 5,000	1,122.
Standard Chartered	2017.11.29	2018.02.21	7,572	USD 7,000	1,081.
Nova Scotia	2017.12.20	2018.03.22	3,978	USD 3,682	1,080.
Nova Scotia	2017.12.20	2018.03.22	5,399	USD 5,000	1,079.
Nova Scotia	2017.12.20	2018.03.22	5,393	USD 5,000	1,078.
Nova Scotia	2017.12.20	2018.03.22	5,393	USD 5,000	1,078.

(2) Currency forward contracts which are not designated as hedging instruments as of December 31, 2017 are as follows, continued:

	In millions	of won	and thous	ands of t	foreign	currencies
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	• • •		Contract am	Contract	
Counterparty	Contract Date	Maturity date	Рау	Receive	exchange rate
Nova Scotia	2017.12.14	2018.03.19	205	USD 189	1,084.50
Standard Chartered	2017.12.19	2018.03.21	3,164	USD 2,918	1,084.20
Societe Generale	2017.12.19	2018.03.21	1,177	USD 1,087	1,082.90
Societe Generale	2017.12.19	2018.03.21	5,418	USD 5,000	1,083.60
Societe Generale	2017.12.19	2018.03.21	5,421	USD 5,000	1,084.20
BNP Paribas	2017.12.19	2018.03.21	5,413	USD 5,000	1,082.60
BNP Paribas	2017.12.19	2018.03.21	5,419	USD 5,000	1,083.70
BNP Paribas	2017.12.19	2018.03.21	5,422	USD 5,000	1,084.30
Nova Scotia	2017.12.19	2018.03.21	5,427	USD 5,000	1,085.4
Nova Scotia	2017.12.19	2018.03.21	5,430	USD 5,000	1,085.9
Nova Scotia	2017.12.14	2018.03.19	5,428	USD 5,000	1,085.5
Standard Chartered	2017.12.14	2018.03.19	5,428	USD 5,000	1,085.5
Nova Scotia	2017.11.21	2018.02.26	5,266	USD 4,826	1,091.1
Nova Scotia	2017.11.21	2018.02.26	5,461	USD 5,000	1,092.1
Nova Scotia	2017.11.15	2018.02.21	1,755	USD 1,587	1,106.1
Nova Scotia	2017.11.15	2018.02.21	5,536	USD 5,000	1,107.1
Nova Scotia	2017.11.15	2018.02.21	4,462	USD 4,027	1,108.1
Nova Scotia	2017.10.31	2018.02.06	711	USD 638	1,112.8
Nova Scotia	2017.10.31	2018.02.05	194	USD 173	1,117.8
Nova Scotia	2017.10.31	2018.02.05	5,594	USD 5,000	1,118.8
Nova Scotia	2017.10.31	2018.02.02	5,604	USD 5,000	1,120.8
Nova Scotia	2017.10.31	2018.02.02	5,599	USD 5,000	1,119.8
Nomura	2017.10.31	2018.02.02	5,602	USD 5,000	1,120.4
Credit Agricole	2017.10.31	2018.02.02	5,604	USD 5,000	1,120.7
Credit Agricole	2017.10.31	2018.02.02	5,599	USD 5,000	1,119.7
Standard Chartered	2017.10.31	2018.02.02	5,604	USD 5,000	1,120.7
Standard Chartered	2017.10.31	2018.02.02	5,393	USD 4,817	1,119.7
Societe Generale	2017.10.31	2018.02.02	861	USD 768	1,120.8
Nova Scotia	2017.10.26	2018.01.30	923	USD 822	1,123.4
BNP Paribas	2017.10.13	2018.01.18	652	USD 579	1,125.6
KEB Hana Bank	2017.11.27	2018.11.26	JPY 40,000	398	9.9

(3) Currency swap contracts which are not designated as hedging instruments as of December 31, 2017 are as follows:

In millions of won and thousands of foreign currencies Cor

In millions of won and thousar	us of foreign currencies	Contract	amount	Contract	t interest rate	Contract
Counterparty	Contract year	Pay	Receive	Pay	Receive	exchange rate
Deutsche Bank	2013~2018	110,412	JPY 10,000,000	6.21%	4.19%	11.04
IBK	2013~2018	111,800	USD 100,000	3.16%	2.79%	1,118.00
Bank of America	2013~2018	103,580	JPY 10,000,000	7.05%	4.19%	10.36
Credit Suisse	2014~2019	118,632	CHF 100,000	2.98%	1.50%	1,186.32
Standard Chartered	2014~2019	114,903	CHF 100,000	4.00%	1.50%	1,149.03
Standard Chartered	2014~2029	102,470	USD 100,000	3.14%	3.57%	1,024.7
Societe Generale	2014~2024	105,017	USD 100,000	4.92%	5.13%	1,050.1
KEB Hana Bank	2015~2024	107,970	USD 100,000	4.75%	5.13%	1,079.7
Credit Agricole	2015~2024	94,219	USD 86,920	4.85%	5.13%	1,083.9
Citibank	2012~2022	112,930	USD 100,000	2.79%	3.00%	1,129.3
JP Morgan	2012~2022	112,930	USD 100,000	2.79%	3.00%	1,129.3
Bank of America	2012~2022	112,930	USD 100,000	2.79%	3.00%	1,129.3
Shinhan Bank	2016~2022	112,930	USD 100,000	2.79%	3.00%	1,129.3
HSBC	2012~2022	111,770	USD 100,000	2.89%	3.00%	1,117.7
KEB Hana Bank	2012~2022	111,770	USD 100,000	2.87%	3.00%	1,117.7
Standard Chartered	2012~2022	111,770	USD 100,000	2.89%	3.00%	1,117.7
Deutsche Bank	2012~2022	55,885	USD 50,000	2.79%	3.00%	1,117.7
DBS	2013~2018	108,140	USD 100,000	2.63%	3M Libor+0.84%	1,081.4
DBS	2013~2018	108,140	USD 100,000	2.57%	3M Libor+0.84%	1,081.4
DBS	2013~2018	108,140	USD 100,000	2.57%	3M Libor+0.84%	1,081.4
HSBC	2013~2018	107,450	USD 100,000	3.41%	2.88%	1,074.5
Standard Chartered	2013~2018	107,450	USD 100,000	3.44%	2.88%	1,074.5
JP Morgan	2013~2018	107,450	USD 100,000	3.48%	2.88%	1,074.5
Bank of America	2014~2018	107,450	USD 100,000	3.09%	2.88%	1,074.5
Citibank	2014~2018	107,450	USD 100,000	3.09%	2.88%	1,074.5
HSBC	2014~2019	105,260	USD 100,000	2.48%	2.38%	1,052.6
Standard Chartered	2014~2019	105,260	USD 100,000	2.48%	2.38%	1,052.6
Korea Development Bank	2016~2019	105,260	USD 100,000	2.48%	2.38%	1,052.6
Nomura	2015~2025	111,190	USD 100,000	2.60%	3.25%	1,111.9
Korea Development Bank	2015~2025	111,190	USD 100,000	2.62%	3.25%	1,111.9
Woori Bank	2015~2025	55,595	USD 50,000	2.62%	3.25%	1,111.9
KEB Hana Bank	2015~2025	55,595	USD 50,000	2.62%	3.25%	1,111.9
Woori Bank	2017~2027	111,610	USD 100,000	2.25%	3.13%	1,116.1
KEB Hana Bank	2017~2027	111,610	USD 100,000	2.31%	3.13%	1,116.1
Korea Development Bank	2017~2027	111,610	USD 100,000	2.31%	3.13%	1,116.1

(4) Currency swap contracts which are designated as hedging instruments as of December 31, 2017 are as follows:

In millions of won and thousands of foreign currencies

		Contract amount		Contract interest rate		Contract	
Counterparty	Contract year	Pay	Receive	Рау	Receive	exchange rate	
Citibank	2013~2018	54,570	USD 50,000	2.90%	3M Libor+1.01%	1,091.4	
Standard Chartered	2013~2018	54,570	USD 50,000	2.90%	3M Libor+1.01%	1,091.4	
Credit Suisse	2013~2018	111,410	USD 100,000	3.22%	3M Libor+1.50%	1,114.1	
ISBC	2014~2020	99,901	AUD 100,000	3.52%	5.75%	999.0	
ISBC	2014~2020	100,482	AUD 100,000	3.48%	5.75%	1,004.8	
Standard Chartered	2013~2020	USD 117,250	AUD 125,000	3M Libor+1.25%	5.75%	0.9	
Standard Chartered	2014~2020	126,032	USD 117,250	3.55%	3M Libor+1.25%	1,074.9	
Corea Development Bank	2017~2020	114,580	USD 100,000	1.75%	2.38%	1,145.8	
EB Hana Bank	2017~2020	114,580	USD 100,000	1.75%	2.38%	1,145.8	
Export-import bank of Korea	2017~2020	114,580	USD 100,000	1.75%	2.38%	1,145.8	
P Morgan	2014~2019	107,190	USD 100,000	3M Libor+3.25%	2.75%	1,071.9	
•	2014~2019	107,190	USD 100,000	3M Libor+3.25%	2.75%	1,071.9	
Norgan Stanley	2014~2019	107,190	USD 100,000	3M Libor+3.25%	2.75%	1,071.9	
Deutsche Bank	2016~2021	121,000	USD 100,000		2.50%	1,210.0	
orea Development Bank	2016~2021	121,000	USD 100,000	2.15%	2.50%	1,210.0	
Norgan Stanley	2016~2021	121,000	USD 100,000	3M Libor+2.10%	2.50%	1,210.0	
INP Paribas	2017~2027			3M Libor+2.10% 2.60%	1.70%	1,210.	
lomura		52,457	EUR 40,000				
lomura	2017~2037	59,423	SEK 450,000	2.62%	2.36%	132.	
Credit Agricole	2013~2019	118,343	CHF 100,000	3.47%	1.63%	1,183.	
/lorgan Stanley	2013~2019	59,172	CHF 50,000	3.40%	1.63%	1,183.	
lomura	2013~2019	59,172	CHF 50,000	3.47%	1.63%	1,183.	
lorgan Stanley	2013~2018	107,360	USD 100,000	3.27%	2.88%	1,073.	
Credit Agricole	2013~2018	107,360	USD 100,000	3.34%	2.88%	1,073.	
P Morgan	2013~2018	161,040	USD 150,000	3.34%	2.88%	1,073.	
tandard Chartered	2013~2018	161,040	USD 150,000	3.34%	2.88%	1,073.	
tandard Chartered	2014~2019	104,490	USD 100,000	2.77%	2.63%	1,044.	
Credit Agricole	2014~2019	104,490	USD 100,000	2.77%	2.63%	1,044.	
lorgan Stanley	2014~2019	104,490	USD 100,000	2.70%	2.63%	1,044.	
Standard Chartered	2013~2018	81,188	USD 75,000	2.65%	1.88%	1,082.	
Credit Agricole	2013~2018	81,188	USD 75,000	2.65%	1.88%	1,082.	
Deutsche Bank	2013~2018	81,188	USD 75,000	2.65%	1.88%	1,082.	
Citibank	2013~2018	81,188	USD 75,000	2.65%	1.88%	1,082.	
Societe Generale	2013~2018	106,190	USD 100,000	3.48%	2.63%	1,061.	
3NP Paribas	2013~2018	53,095	USD 50,000	3.48%	2.63%	1,061.9	
EB Hana Bank	2013~2018	53,095	USD 50,000	3.48%	2.63%	1,061.9	
Standard Chartered	2013~2018	106,030	USD 100,000	3.48%	2.63%	1,060.	
NP Paribas	2013~2018	53,015	USD 50,000	3.48%	2.63%	1,060.	
EB Hana Bank	2013~2018	31,809	USD 30,000	3.48%	2.63%	1,060.3	
Societe Generale	2013~2018	21,206	USD 20,000	3.48%	2.63%	1,060.	
ISBC	2013~2018	53,015	USD 50,000	3.47%	2.63%	1,060.	
lomura	2013~2018	53,015	USD 50,000	3.47%	2.63%	1,060.3	
Credit Agricole	2014~2020	110,680	USD 100,000	2.29%	2.50%	1,106.	
Societe Generale	2014~2020	55,340	USD 50,000	2.16%	2.50%	1,106.	
EB Hana Bank	2014~2020	55,340	USD 50,000	2.16%	2.50%	1,106.	
EB Hana Bank	2014~2020	55,340	USD 50,000	2.21%	2.50%	1,106.	
	2014~2020	55,340	USD 50,000	2.21%	2.50%	1,106.	
tandard Chartered	2014~2020	55,340	USD 50,000	2.21%	2.50%	1,106.	
ISBC	2014~2020		USD 50,000				
lomura		55,340 55,240		2.21%	2.50%	1,106.	
BNP Paribas	2014~2020	55,340	USD 50,000	2.21%	2.50%	1,106.	
ISBC	2014~2020	55,340	USD 50,000	2.21%	2.50%	1,106.	
EB Hana Bank	2017~2022	226,600	USD 200,000	1.94%	2.63%	1,133.	
Korea Development Bank	2017~2022	113,300	USD 100,000	1.94%	2.63%	1,133.0	
lomura	2017~2022	113,300	USD 100,000	1.95%	2.63%	1,133.0	
Voori Bank	2017~2022	56,650	USD 50,000	1.95%	2.63%	1,133.	
Kookmin Bank	2017~2022	56,650	USD 50,000	1.95%	2.63%	1,133.0	

(5) Interest rate swap contracts which are not designated as hedging instruments as of December 31, 2017 are as follows:

In millions of won			0	Contract inter	est rate per annum
Counterparty	Contract year		Contract amount	Рау	Receive
JP Morgan	2013~2018	₩	150,000	3.58%	3M CD+0.31%
Credit Suisse	2014~2018		25,000	2.98%	1Y CMT+0.31%
KEB Hana Bank	2017~2022		100,000	2.01%	3M CD+0.24%
KEB Hana Bank	2017~2022		100,000	2.06%	3M CD+0.27%
Nomura (*1)	2017~2037		30,000	2.05%	3.08%
KEB Hana Bank	2017~2021		200,000	2.45%	3M CD+0.32%
Export-import bank of Korea	2015~2031		USD 15,893	2.67%	6M USD Libor
ING Bank	2015~2031		USD 7,861	2.67%	6M USD Libor
BNP Paribas	2015~2031		USD 7,861	2.67%	6M USD Libor

(*1) 2.05% of the contract interest rate for paying is applied for five years from the date of issuance, and 3M CD + 0.10% is applied thereafter.

(6) Interest rate swap contracts which are designated as hedging instruments as of December 31, 2017 are as follows:

In millions of won		Orienteerst	Contract interes	t rate per annum
Counterparty	Contract year	Contract amount	Рау	Receive
BNP Paribas	2009~2027	USD 92,120	4.16%	6M USD Libor
KFW	2009~2027	USD 92,120	4.16%	6M USD Libor
Credit Agricole	2016~2033	USD 96,297	3.98% ~ 4.10%	6M USD Libor
SMBC	2016~2033	USD 125,927	4.05% ~ 4.18%	6M USD Libor
Mizuho Bank	2016~2019	USD 36,890	1.56%	1.35%
SMBC	2016~2019	USD 36,890	1.56%	1.35%

KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES Notes to the Consolidated Financial Statements, Continued **December 31, 2017**

11. Derivatives, Continued

(7) Gains and losses on valuation and transaction of derivatives for the years ended December 31, 2017 and 2016 are as follows and included in finance income and costs in the consolidated statements of comprehensive income:

In millions of won		Net income effects of valuation gain (loss)		Net income effects of transaction gain (loss)		Accumulated other comprehensive income (loss) (*)	
		2017	2016	2017	2016	2017	2016
Currency forward Currency swap Interest rate swap Other derivatives	₩	(41,889) (843,747) 6,909 4,060	15,993 253,035 8,517 10,523	(28,223) (137,376) (3,362)	4,266 (68,266) 7,562	26,810 5,074	40,031 6,719 -
	₩	(874,667)	288,068	(168,961)	(56,438)	31,884	46,750

(*) For the year ended December 31, 2017, the net gain on valuation of derivatives applying cash flow hedge accounting of W20,868 million, net of tax, is included in other comprehensive income or loss.

12. Other Financial Assets

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

In millions of won		201	7	2016		
	-	Current	Non-current	Current	Non-current	
Loans and receivables	₩	244,309	711,069	198,133	683,353	
Allowance for doubtful accounts		-	(8,948)	-	(4,532)	
Present value discount		(976)	(39,813)	(1,001)	(41,746)	
Long-term/short-term financial instruments Financial assets at fair value through profit		1,702,084	542,430	2,281,460	414,466	
or loss	_		111,512			
	₩	1,945,417	1,316,250	2,478,592	1,051,541	

(2) Loans and receivables as of December 31, 2017 and 2016 are as follows:

In millions of won	2017						
-	Face value	Allowance for doubtful accounts	Present value discount	Book value			
Short-term loans and receivables							
Loans for tuition $\qquad \qquad \qquad$	33,763	-	(976)	32,787			
Loans for housing	14,126	-	-	14,126			
Fisheries loan	352	-	-	352			
Other loans	196,068	-	-	196,068			
-	244,309	-	(976)	243,333			
Long-term loans and receivables							
Loans for tuition	408,803	-	(39,716)	369,087			
Loans for housing	140,452	-	-	140,452			
Loans for related parties	94,581	(8,948)	-	85,633			
Fisheries loan	960	-	(97)	863			
Other loans	66,273	-	-	66,273			
-	711,069	(8,948)	(39,813)	662,308			
\mathbf{W}	955,378	(8,948)	(40,789)	905,641			

In millions of won		201	16	
	Face value	Allowance for doubtful accounts	Present value discount	Book value
Short-term loans and receivables				
Loans for tuition $\qquad \qquad \qquad$	29,028	-	(1,001)	28,027
Loans for housing	12,556	-	-	12,556
Fisheries Ioan	352	-	-	352
Other loans	156,197	-	-	156,197
-	198,133		(1,001)	197,132
Long-term loans and receivables				
Loans for tuition	404,200	-	(41,593)	362,607
Loans for housing	125,850	-	-	125,850
Loans for related parties	91,249	(4,532)	-	86,717
Fisheries loan	1,312	-	(153)	1,159
Other loans	60,742	-	-	60,742
	683,353	(4,532)	(41,746)	637,075
\mathbf{W}	881,486	(4,532)	(42,747)	834,207

12. Other Financial Assets, Continued

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

In millions of won		2017	2016
Beginning balance	\mathbf{W}	4,532	-
Bad debt expense		2,465	4,352
Other		1,951	180
Ending balance	₩	8,948	4,532

(4) Long-term and short-term financial instruments as of December 31, 2017 and 2016 are as follows:

In millions of won		2017		2016		
		Current	Non-current	Current	Non-current	
Time deposits	₩	1,479,034	2	1,820,391	30,000	
ABCP		145,000	65,600	351,800	132,600	
СР		58,050	-	16,000	-	
CD		10,000	-	60,443	-	
RP		10,000	1,634	-	1,521	
Others			475,194	32,826	250,345	
	₩	1,702,084	542,430	2,281,460	414,466	
13. Inventories

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

In millions of won		2017					
		Acquisition cost	Valuation allowance	Book value			
Raw materials	₩	3,528,835	(2,829)	3,526,006			
Merchandise		107	-	107			
Work-in-progress		138,709	(1,028)	137,681			
Finished goods		72,923	(1,517)	71,406			
Supplies		1,581,661	(3,940)	1,577,721			
Inventories in transit		679,358	-	679,358			
Other inventories	_	9,807	<u> </u>	9,807			
	₩	6,011,400	(9,314)	6,002,086			
In millions of won			2016				
	_	Acquisition cost	Valuation allowance	Book value			
Raw materials	₩	3,182,711	(1,323)	3,181,388			
Merchandise		20	_	20			
Work-in-progress		118,640	-	118,640			
Finished goods		57,659	-	57,659			
Supplies		1,289,160	(4,553)	1,284,607			
Inventories in transit		827,437	-	827,437			
Other inventories	_	9,692		9,692			
	₩	5,485,319	(5,876)	5,479,443			

The reversal of the allowance for loss on inventory valuation due to increase in the net realizable value of inventory deducted from cost of sales was W437 million and W2,473 million for the years ended December 31, 2017 and 2016, respectively. The amounts of loss from inventory valuation included in other gains or losses for the years ended December 31, 2017 and 2017 and 2016 were W3,875 million and W2,683 million, respectively.

14. Finance Lease Receivables

(1) Finance lease contracts

The Company entered into a power purchase agreement ("PPA") with Jordan Electric Power Company to provide a 373MW level Qatrana gas combined power plant over a 25 year lease term, and accounts for the PPA as a finance lease. Also, the Company has fly-ash pipe conduit finance leases with an average lease term of 7 years. In addition, the Company entered into a PPA with the Comision Federal de Electricidad in Mexico to provide for 25 years of all electricity generated from the power plant after completion of its construction and collect rates consisting of fixed costs (to recover the capital) and variable costs during the contracted period.

(2) Finance lease receivables as of December 31, 2017 and 2016 are as follows and included in current and non-current trade and other receivables, net, in the consolidated statements of financial position:

In millions of won		201	7	201	16
		Minimum lease payments	Present value of minimum lease payments	Minimum lease payments	Present value of minimum lease payments
Less than 1 year	W	49,542	13,067	55,708	12,225
1 ~ 5 years		381,181	203,990	423,152	214,176
More than 5 years		1,398,449	645,564	1,690,492	746,473
	₩	1,829,172	862,621	2,169,352	972,874

(3) There are no impaired finance lease receivables as of December 31, 2017 and 2016.

15. Non-Financial Assets

Non-financial assets as of December 31, 2017 and 2016 are as follows:

In millions of won		2017		2016		
	_	Current	Non-current	Current	Non-current	
Advance payment	₩	109,743	43,872	93,279	71,238	
Prepaid expenses		251,715	90,118	228,142	78,066	
Others (*1)	_	392,534	112,828	310,439	32,485	
	₩	753,992	246,818	631,860	181,789	

(*1) Details of others as of December 31, 2017 and 2016 are as follows:

In millions of won		201	7	2016		
	-	Current	Non-current	Current	Non-current	
Tax refund receivables Greenhouse gas	₩	89,762	1,940	30,959	2,188	
emissions rights		135,211	-	145,105	-	
Other quick assets (*2)	-	167,561	110,888	134,375	30,297	
	₩ _	392,534	112,828	310,439	32,485	

(*2) The Company has recognized W92,128 million of shares in Orano Expansion (formerly, Areva nc Expansion) as noncurrent non-financial assets.

16. Consolidated Subsidiaries

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

				ownership (%)
Subsidiaries	Key operation activities	Location	December 31, 2017	December 31 2016
Korea Hydro & Nuclear Power Co., Ltd.	Power generation	KOREA	100.00%	100.00%
Korea South-East Power Co., Ltd.	Power generation	KOREA	100.00%	100.00%
Korea Midland Power Co., Ltd.	Power generation	KOREA	100.00%	100.00%
Korea Western Power Co., Ltd.	Power generation	KOREA	100.00%	100.00%
Korea Southern Power Co., Ltd.	Power generation	KOREA	100.00%	100.00%
Korea East-West Power Co., Ltd.	Power generation	KOREA	100.00%	100.00%
KEPCO Engineering & Construction Company, Inc.	Architectural engineering for utility	KOREA	65.77%	65.77%
(*1)	plant and others	KONEA	03.7770	03.7770
KEPCO Plant Service & Engineering Co., Ltd.	Utility plant maintenance and others	KOREA	51.00%	51.00%
KEPCO Nuclear Fuel Co., Ltd.	Nuclear fuel	KOREA	96.36%	96.36%
KEPCO KDN Co., Ltd.	Electric power information technology and others	KOREA	100.00%	100.00%
Garolim Tidal Power Plant Co., Ltd. (*2)	Power generation	KOREA	49.00%	49.00%
KEPCO International HongKong Ltd.	Holding company	HONG KONG	100.00%	100.00%
• •		PHILIPPINES	100.00%	100.00%
KEPCO International Philippines Inc.	Holding company			
KEPCO Gansu International Ltd.	Holding company	HONG KONG	100.00%	100.00%
KEPCO Philippines Holdings Inc.	Holding company	PHILIPPINES	100.00%	100.00%
KEPCO Philippines Corporation	Operation of utility plant	PHILIPPINES	100.00%	100.00%
KEPCO Ilijan Corporation	Utility plant rehabilitation and operation	PHILIPPINES	51.00%	51.00%
KEPCO Lebanon SARL	Operation of utility plant	LEBANON	100.00%	100.00%
KEPCO Neimenggu International Ltd.	Holding company	HONG KONG	100.00%	100.00%
KEPCO Shanxi International Ltd.	Holding company	HONG KONG	100.00%	100.00%
KOMIPO Global Pte Ltd.	Holding company	SINGAPORE	100.00%	100.00%
KEPCO Canada Energy Ltd.	Resources development	CANADA	100.00%	100.00%
KEPCO Netherlands B.V.	Holding company	NETHERLANDS	100.00%	100.00%
KOREA Imouraren Uranium Investment Corp.	Holding company	FRANCE	100.00%	100.00%
KEPCO Australia Pty., Ltd.	Resources development	AUSTRALIA	100.00%	100.00%
COSEP Australia Pty., Ltd.	Resources development	AUSTRALIA	100.00%	100.00%
			100.00%	100.00%
COMIPO Australia Pty., Ltd.	Resources development	AUSTRALIA	100.00%	100.00%
COWEPO Australia Pty., Ltd.	Resources development	AUSTRALIA		
<ospo australia="" ltd.<="" pty.,="" td=""><td>Resources development</td><td>AUSTRALIA</td><td>100.00%</td><td>100.00%</td></ospo>	Resources development	AUSTRALIA	100.00%	100.00%
KEPCO Middle East Holding Company Qatrana Electric Power Company	Holding company Construction and operation of	BAHRAIN JORDAN	100.00% 80.00%	100.00% 80.00%
	utility plant		100.00%	100.00%
KHNP Canada Energy, Ltd.	Holding company	CANADA		
KEPCO Bylong Australia Pty., Ltd.	Resources development	AUSTRALIA	100.00%	100.00%
Korea Waterbury Uranium Limited Partnership	Resources development	CANADA	79.64%	79.64%
Korea Electric Power Nigeria Ltd.	Operation of utility plant	NIGERIA	100.00%	100.00%
KEPCO Holdings de Mexico	Holding company	MEXICO	100.00%	100.00%
KST Electric Power Company	Construction and operation of utility plant	MEXICO	56.00%	56.00%
KEPCO Energy Service Company	Operation of utility plant	MEXICO	100.00%	100.00%
KEPCO Netherlands S3 B.V.	Holding company	NETHERLANDS	100.00%	100.00%
PT. KOMIPO Pembangkitan Jawa Bali	Operation of utility plant	INDONESIA	51.00%	51.00%
PT. Cirebon Power Service (*2)	Operation of utility plant	INDONESIA	27.50%	27.50%
OWEPO International Corporation	Operation of utility plant	PHILIPPINES	99.99%	99.99%
KOSPO Jordan LLC	Operation of utility plant	JORDAN	100.00%	100.00%
EWP Philippines Corporation	Holding company	PHILIPPINES	100.00%	100.00%
EWP America Inc.	Holding company	USA	100.00%	100.00%
EWP Renewable Corporation	Holding company	USA	100.00%	100.00%
DG Fairhaven Power, LLC	Power generation	USA	100.00%	100.00%
	-		100.00%	100.00%
DG Whitefield, LLC	Power generation	USA	100.00%	100.00%
Springfield Power, LLC	Power generation	USA		
KNF Canada Energy Limited	Holding company	CANADA	96.36%	96.36%
PT KEPCO Resource Indonesia	Holding company	INDONESIA	100.00%	100.00%
EWP Barbados 1 SRL	Holding company	BARBADOS	100.00%	100.00%
California Power Holdings, LLC	Power generation	USA	100.00%	100.00%
Gyeonggi Green Energy Co., Ltd.	Power generation	KOREA	62.01%	62.01%
PT. Tanggamus Electric Power	Power generation	INDONESIA	52.50%	52.50%
Gyeongju Wind Power Co., Ltd.	Power generation	KOREA	70.00%	70.00%

KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES Notes to the Consolidated Financial Statements, Continued **December 31, 2017**

16. Consolidated Subsidiaries, Continued

(1) Consolidated subsidiaries as of December 31, 2017 and 2016 are as follows, Continued :

				ownership (%)
Subsidiaries	Key operation activities	Location	December 31, 2017	December 3 2016
WP RC Biomass Holdings, LLC	Holding company	USA	100.00%	100.00%
OSEP USA, INC.	Power generation	USA	100.00%	100.00%
T. EWP Indonesia	Holding company	INDONESIA	99.96%	99.95%
EPCO Netherlands J3 B.V.	Holding company	NETHERLANDS	100.00%	100.00%
orea Offshore Wind Power Co., Ltd.	Power generation	KOREA	100.00%	100.00%
ilobal One Pioneer B.V.	Holding company	NETHERLANDS	100.00%	100.00%
Blobal Energy Pioneer B.V.	Holding company	NETHERLANDS	100.00%	100.00%
/ira Power Limited (*3)	Power generation	PAKISTAN	76.00%	76.00%
OSEP Material Co., Ltd. (*4)	Recycling fly ashes	KOREA	86.22%	46.22%
Commerce and Industry Energy Co., Ltd. (*5)	Power generation	KOREA	59.03%	59.03%
EPCO Singapore Holdings Pte., Ltd.	Holding company	SINGAPORE	100.00%	100.00%
OWEPO India Private Limited	Holding company	INDIA	100.00%	100.00%
EPCO KPS Philippines Corp.	Utility plant maintenance and others	PHILIPPINES	51.00%	51.00%
OSPO Chile SpA	Holding company	CHILE	100.00%	100.00%
PT. KOWEPO Sumsel Operation And Maintenance Services	Utility plant maintenance and others	INDONESIA	95.00%	95.00%
leeMang Sunlight Power Co., Ltd.	Operation of utility plant	KOREA	100.00%	100.00%
ujeij Wind Power Company	Operation of utility plant	JORDAN	100.00%	100.00%
OSPO Youngnam Power Co., Ltd.	Operation of utility plant	KOREA	50.00%	50.00%
Il Carbon Professional Private Special Asset Investment Trust 1 (formerly, Global One Carbon Private Equity Investment Trust 2)	Holding company	KOREA	96.67%	96.67%
Chitose Solar Power Plant LLC	Power generation	JAPAN	80.10%	80.10%
EPCO Energy Solution Co. Ltd.	Energy service	KOREA	100.00%	100.00%
Solar School Plant Co., Ltd.	Power generation	KOREA	100.00%	100.00%
OSPO Power Services Limitada	Utility plant maintenance and others	CHILE	65.00%	65.00%
Energy New Industry Specialized Investment Private Investment Trust	Holding company	KOREA	99.75%	99.75%
OEN Bylong Pty., Ltd.	Resources development	AUSTRALIA	100.00%	100.00%
COMIPO Bylong Pty., Ltd.	Resources development	AUSTRALIA	100.00%	100.00%
OWEPO Bylong Pty., Ltd.	Resources development	AUSTRALIA	100.00%	100.00%
COSPO Bylong Pty., Ltd.	Resources development	AUSTRALIA	100.00%	100.00%
EWP Bylong Pty., Ltd.	Resources development	AUSTRALIA	100.00%	100.00%
OWEPO Lao International	Utility plant maintenance and others	LAOS	100.00%	100.00%
EPCO US Inc.	Holding company	USA	100.00%	-
EPCO Alamosa LLC	Holding company	USA	50.10%	-
Cogentrix Solar Services, LLC	Holding company	USA	50.10%	-
Solar Investments I, LLC	Holding company	USA	50.10%	-
Cogentrix of Alamosa, LLC	Power generation	USA	50.10%	-
EPCO-LG CNS Mangilao Holdings LLC	Holding company	USA	70.00%	-
/langilao Investment LLC	Holding company	USA	70.00%	-
EPCO-LG CNS Mangilao Solar, LLC	Power generation	USA	70.00%	-
eju Hanlim Offshore Wind Co., Ltd.	Power generation	KOREA	70.22%	-
T. Siborpa Eco Power	Operation of utility plant	INDONESIA	64.71%	-
3SK E-New Industry Fund VII	Holding company	KOREA	81.47%	-
e-New Industry LB Fund 1	Holding company	KOREA	75.92%	-
Songhyun e-New Industry Fund	Holding company	KOREA	80.45%	-

(*1) Considering treasury stocks, the effective percentage of ownership is 66.08%.

- (*2) These subsidiaries are included in the consolidated financial statements as the Company obtained the majority of the voting power through the shareholders' agreement.
- (*3) As of reporting date, the annual reporting period of all subsidiaries is December 31, except for Mira Power Limited which is November 30.
- (*4) The effective percentage of ownership has increased to 86.22% since Long Lasting Value exercised the put option to sell its investment to KOSEP during the year ended December 31, 2017.
- (*5) The Company guarantees a certain return on investment related to Commerce and Industry Energy Co., Ltd. for the financial investors. The financial investors have a right to sell their shares to the Company which can be exercised 84 months after the date of investment. Accordingly, the purchase price including the return on investment is classified as a liability.

(2) Subsidiaries included in and excluded from consolidation for the years ended December 31, 2017 and 2016 are as follows:

<Subsidiaries included in consolidation during the year ended December 31, 2017.

Subsidiary	Reason
KEPCO US Inc.	Newly established
KEPCO Alamosa LLC	Newly established
Cogentrix Solar Services, LLC	Newly established
Solar Investments I, LLC	Newly established
Cogentrix of Alamosa, LLC	Newly established
KEPCO-LG CNS Mangilao Holdings LLC	Newly established
Mangilao Investment LLC	Newly established
KEPCO-LG CNS Mangilao Solar, LLC	Newly established
Jeju Hanlim Offshore Wind Co., Ltd.	Newly established
PT. Siborpa Eco Power	Newly established
BSK E-New Industry Fund VII	Newly established
e-New Industry LB Fund 1	Newly established
Songhyun e-New Industry Fund	Newly established

There are no subsidiaries excluded from consolidation during the year ended December 31, 2017.

(3) Summary of financial information of consolidated subsidiaries as of and for the years ended December 31, 2017 and 2016 are as follows:

		2017			
Calculation		Total	Total	Calas	Profit (loss)
Subsidiaries	·	assets	liabilities	Sales	for the period
Korea Hydro & Nuclear Power Co., Ltd.	₩	55,011,096	29,252,816	9,415,751	854,34
Korea South-East Power Co., Ltd.		9,879,577	4,844,184	5,387,846	130,37
Korea Midland Power Co., Ltd.		9,893,822	6,148,173	4,167,009	104,59
Korea Western Power Co., Ltd.		9,660,426	5,739,534	4,199,079	110,93
Korea Southern Power Co., Ltd.		9,648,741	5,401,216	4,397,552	98,81
Korea East-West Power Co., Ltd.		8,855,518	4,204,187	4,644,330	217,59
KEPCO Engineering & Construction Company, Inc.		762,166	305,134	490,193	21,22
KEPCO Plant Service & Engineering Co., Ltd.		1,195,086	294,689	1,232,113	135,48
KEPCO Nuclear Fuel Co., Ltd.		792,187	421,088	279,664	4,55
KEPCO KDN Co., Ltd.		524,520	155,715	619,470	48,96
Garolim Tidal Power Plant Co., Ltd.		619	345	-	(1)
KEPCO International HongKong Ltd.		153,529	1	-	4,38
KEPCO International Philippines Inc.		102,323	886	-	47,20
KEPCO Gansu International Ltd.		11,567	493	-	(2
EPCO Philippines Holdings Inc.		127,922	2,621	-	43,2
KEPCO Philippines Corporation		6,293	114	-	2,09
KEPCO Ilijan Corporation		474,624	57,801	109,183	66,32
KEPCO Lebanon SARL		1,069	9,281	-	(21
KEPCO Neimenggu International Ltd.		165,937	-	-	50
EPCO Shanxi International Ltd.		497,990	193,309	-	3,79
KOMIPO Global Pte Ltd.		225,411	1,497	-	21,85
EPCO Canada Energy Ltd.		132	22	-	(3
KEPCO Netherlands B.V.		114,911	49	-	17,30
KOREA Imouraren Uranium Investment Corp.		151,278	131	-	1,49
KEPCO Australia Pty., Ltd.		466,654	569	-	(56
KOSEP Australia Pty., Ltd.		27,076	333	12,096	1,60
KOMIPO Australia Pty., Ltd.		31,441	4,691	12,096	1,13
KOWEPO Australia Pty., Ltd.		31,586	4,691	12,096	1,23
KOSPO Australia Pty., Ltd.		29,472	4,221	12,096	(2,75
EPCO Middle East Holding Company		95,812	90,842	-	2,9
Datrana Electric Power Company		460,206	327,401	18,892	23,3
KHNP Canada Energy, Ltd.		51,994	31	-	(9
KEPCO Bylong Australia Pty., Ltd.		242,364	277,549	-	20,27
Korea Waterbury Uranium Limited Partnership		20,886	136	-	(5
Korea Electric Power Nigeria Ltd.		238	76	2,164	
KEPCO Holdings de Mexico		235	30	-	(2)
KST Electric Power Company		546,242	478,230	120,126	16,15

(3) Summary of financial information of consolidated subsidiaries as of and for the years ended December 31, 2017 and 2016 are as follows, continued:

Out-Start	2017 Total	Total	Cali	Profit (loss)
Subsidiaries	assets	liabilities	Sales	for the period
KEDCO Enorgy Sonvice Company	₩ 1,793	451	6 772	076
KEPCO Energy Service Company			6,773	976
KEPCO Netherlands S3 B.V.	46,642	53	-	2,382
PT. KOMIPO Pembangkitan Jawa Bali	11,261	4,769	20,956	4,666
PT. Cirebon Power Service	2,808	155	7,439	592
KOWEPO International Corporation	-	8	-	(2
	24,077	13,594	7,331	953
EWP Philippines Corporation	1,708	836 67,308	-	(17 (9,737
EWP America Inc. (*1) KNF Canada Energy Limited	79,854 1,884	67,308	23,543	(9,737
PT KEPCO Resource Indonesia	491	51	-	(311
EWP Barbados 1 SRL	235,096	450	-	(2,585
Gyeonggi Green Energy Co., Ltd.	282,408	199,160	95,192	3,203
PT. Tanggamus Electric Power	179,317	160,144	34,281	4,640
Gyeongju Wind Power Co., Ltd.	112,279	82,124	7,219	2,400
KOMIPO America Inc.	10,505	521		2,07
KOSEP USA, INC.	184	9,065	-	26,997
PT. EWP Indonesia	2,035	23	-	1,910
KEPCO Netherlands J3 B.V.	122,612	76	-	12,11
Korea Offshore Wind Power Co., Ltd.	190,195	1,985	-	(6,997
Global One Pioneer B.V.	151	38	-	(80
Global Energy Pioneer B.V.	309	41	-	(87
Mira Power Limited	208,150	163,198	-	73
KOSEP Material Co., Ltd.	2,751	1,448	3,128	32
Commerce and Industry Energy Co., Ltd.	99,129	87,926	30,577	(749
KEPCO Singapore Holdings Pte., Ltd.	3,265	4	-	(24
KOWEPO India Private Limited	781	-	-	(46
KEPCO KPS Philippines Corp.	6,636	235	6,840	555
KOSPO Chile SpA	133,570	50,109	-	1,060
PT. KOWEPO Sumsel Operation And Maintenance	1 050	070	7.054	05
	1,350	279	7,651	659
HeeMang Sunlight Power Co., Ltd.	6,876	3,395	105	(229
Fujeij Wind Power Company	165,636	156,099	-	8,830
KOSPO Youngnam Power Co.,Ltd. HI Carbon Professional Private Special Asset	412,785	333,302	68,973	939
Investment Trust 1 (formerly, Global One Carbon				
Private Equity Investment Trust 2)	3,002	-	-	12
Chitose Solar Power Plant LLC	136,098	121,622	7,083	4,100
KEPCO Energy Solution Co. Ltd.	313,401	12,376	5,544	1,32
Solar School Plant Co., Ltd.	201,482	599	67	874
KOSPO Power Services Limitada	3,901	887	11,067	660
Energy New Industry Specialized Investment Private				
Investment Trust(*3)	506,207	2,118	-	52
KOEN Bylong Pty., Ltd.	5,875	-	-	
KOMIPO Bylong Pty., Ltd.	5,875	-	-	
KOWEPO Bylong Pty., Ltd.	5,875	-	-	
KOSPO Bylong Pty., Ltd.	5,875	-	-	
EWP Bylong Pty., Ltd.	5,875	-	-	
KOWEPO Lao International	3,259	1,452	3,624	1,88
KEPCO US Inc.	16,913	-	-	
KEPCO Alamosa LLC	33,144	492	-	(218
Cogentrix Solar Services, LLC (*2)	84,458	53,116	8,958	(112
KEPCO-LG CNS Mangilao Holdings LLC	24,131	24,395	-	(278
Mangilao Investment LLC	24,131	-	-	
KEPCO-LG CNS Mangilao Solar, LLC	24,002	134	-	(278
Jeju Hanlim Offshore Wind Co., Ltd.	36	-	-	
PT. Siborpa Eco Power	11,562	214	-	(518

- (3) Summary of financial information of consolidated subsidiaries as of and for the years ended December 31, 2017 and 2016 are as follows, continued:
 - (*1) Financial information of EWP America Inc. includes that of six other subsidiaries, EWP Renewable Corporation, DG Fairhaven Power, LLC, DG Whitefield, LLC, Springfield Power, LLC, California Power Holdings, LLC, and EWP RC Biomass Holdings, LLC.
 - (*2) Financial information of Cogentrix Solar Services, LLC includes that of two other subsidiaries, Solar Investments I, LLC and Cogentrix of Alamosa, LLC.
 - (*3) Financial information of Energy New Industry Specialized Investment Private Investment Trust includes that of three other subsidiaries, BSK E-New Industry Fund VII, e-New Industry LB Fund 1 and Songhyun e-New Industry Fund.

(3) Summary of financial information of consolidated subsidiaries as of and for the years ended December 31, 2017 and 2016 are as follows, continued:

		2016			
		Total	Total		Profit (loss)
Subsidiaries	<u> </u>	assets	liabilities	Sales	for the period
Korea Hydro & Nuclear Power Co., Ltd.	₩	52,782,915	27,366,938	11,168,579	2,454,81
Korea South-East Power Co., Ltd.		9,773,778	4,794,330	5,093,598	531,06
Korea Midland Power Co., Ltd.		9,066,666	5,416,336	3,719,981	400,69
Korea Western Power Co., Ltd.		9,810,714	5,866,916	4,169,712	401,93
Korea Southern Power Co., Ltd.		9,806,023	5,637,950	4,200,035	426,33
Korea East-West Power Co., Ltd.		8,967,951	4,488,911	4,210,898	467,60
KEPCO Engineering & Construction Company, Inc.		786,596	364,676	506,012	17,79
KEPCO Plant Service & Engineering Co., Ltd.		1,086,421	301,490	1,214,304	86,65
KEPCO Nuclear Fuel Co., Ltd.		713,230	346,012	309,911	33,11
KEPCO KDN Co., Ltd.		519,901	205,869	588,160	43,12
Garolim Tidal Power Plant Co., Ltd.		632	346	-	-2
KEPCO International HongKong Ltd.		173,138	41	_	4,53
KEPCO International Philippines Inc.		114,141	1,468	_	56,78
KEPCO Gansu International Ltd.		17,928	557	_	(18
KEPCO Philippines Holdings Inc.		125,100	27	_	13,51
KEPCO Philippines Corporation		13,704	8,949		(8,71
KEPCO Ilijan Corporation		558,030	58,449	116,667	51,55
KEPCO Lebanon SARL		1,458	10,312	110,007	81
KEPCO Neimenggu International Ltd.		186,636	10,312	_	7,08
KEPCO Shanxi International Ltd.			210 047	-	5,81
KOMIPO Global Pte Ltd.		549,189	218,047 1,095	-	
KEPCO Canada Energy Ltd.		223,082 202	24	-	36,76 (27,216
			35	-	
		128,014		-	22
KOREA Imouraren Uranium Investment Corp.		154,302	764	-	(68,41)
KEPCO Australia Pty., Ltd.		503,657	1,545	3,670	(19,000
KOSEP Australia Pty., Ltd.		25,174	521	5,357	4,02
KOMIPO Australia Pty., Ltd.		25,413	10	5,388	4,02
KOWEPO Australia Pty., Ltd.		25,550	10	5,357	4,01
KOSPO Australia Pty., Ltd.		25,625	10	5,357	4,03
KEPCO Middle East Holding Company		128,846	125,008	-	6,84
Qatrana Electric Power Company		546,123	417,800	18,866	19,60
KHNP Canada Energy, Ltd.		54,374	46	-	(6,304
KEPCO Bylong Australia Pty., Ltd.		220,721	277,358	-	(2,35
Korea Waterbury Uranium Limited Partnership		20,882	149	-	2,34
Korea Electric Power Nigeria Ltd.		696	493	9,794	3
KEPCO Holdings de Mexico		262	19	-	25
KST Electric Power Company		596,823	539,459	146,295	17,32
KEPCO Energy Service Company		1,309	310	5,337	58
KEPCO Netherlands S3 B.V.		55,609	54	-	3,73
PT. KOMIPO Pembangkitan Jawa Bali		16,246	4,549	21,632	8,98
PT. Cirebon Power Service		3,456	1,228	7,463	30
KOWEPO International Corporation		-	-		
KOSPO Jordan LLC		11,524	687	7,321	31
EWP Philippines Corporation		1,966	955	-	(4
EWP America Inc. (*)		104,809	80,252	33,616	(8,704
<nf canada="" energy="" limited<="" td=""><td></td><td>1,967</td><td>20</td><td>-</td><td>(4)</td></nf>		1,967	20	-	(4)
PT KEPCO Resource Indonesia		913	18	-	(34
EWP Barbados 1 SRL		267,859	425	1,656	(90)
Gyeonggi Green Energy Co., Ltd.		301,126	221,078	108,557	19,21
PT. Tanggamus Electric Power		184,861	167,641	40,903	2,04
Gyeongju Wind Power Co., Ltd.		76,569	49,293	6,413	1,26
KOMIPO America Inc.		11,518	2,432	-	(2,24)
KOSEP USA, INC.		159	39,028	3,791	(72,81
PT. EWP Indonesia		2,154	50	-	1,08

(3) Summary of financial information of consolidated subsidiaries as of and for the years ended December 31, 2017 and 2016 are as follows, continued:

In millions of won

		2016			
		Total	Total		Profit (loss)
Subsidiaries		assets	liabilities	Sales	for the period
Korea Offshore Wind Power Co., Ltd.	₩	37,826	2,048	-	(4,960)
Global One Pioneer B.V.		161	22	-	(54)
Global Energy Pioneer B.V.		338	22	-	(59)
Mira Power Limited		178,141	133,730	-	(954)
KOSEP Material Co., Ltd.		2,398	1,497	3,232	(901)
Commerce and Industry Energy Co., Ltd.		99,432	87,316	28,375	(536)
KEPCO Singapore Holdings Pte., Ltd.		2,568	13	-	(33)
KOWEPO India Private Limited		879	-	-	1
KEPCO KPS Philippines Corp.		7,897	1,213	12,843	2,060
KOSPO Chile SpA		6,656	4,787	-	125
PT. KOWEPO Sumsel Operation and					
Maintenance Services		1,439	700	6,165	(96)
HeeMang Sunlight Power Co., Ltd.		7,102	3,391	12	(308)
Fujeij Wind Power Company		47,935	46,636	-	(873)
KOSPO Youngnam Power Co., Ltd.		284,368	205,680	-	(931)
HI Carbon Professional Private Special Asset Investment Trust 1 (formerly, Global One Carbon					
Private Equity Investment Trust 2)		3,002	-	-	9
Chitose Solar Power Plant LLC		49,728	38,806	-	(811)
KEPCO Energy Solution Co. Ltd.		299,933	233	-	(300)
Solar School Plant Co., Ltd.		200,268	259	1	9
KOSPO Power Services Limitada		4,385	1,262	7,300	2,963
Energy New Industry Specialized Investment Private					
Investment Trust		501,275	33	-	(7)
KOEN Bylong Pty., Ltd.		6,135	-	-	-
KOMIPO Bylong Pty., Ltd.		6,135	-	-	-
KOWEPO Bylong Pty., Ltd.		6,135	-	-	-
KOSPO Bylong Pty., Ltd.		6,135	-	-	-
EWP Bylong Pty., Ltd.		6,135	-	-	-
KOWEPO Lao International		218	181	-	(108)

(*) Financial information of EWP America Inc. includes that of six other subsidiaries, EWP Renewable Corporation, DG Fairhaven Power, LLC, DG Whitefield, LLC, Springfield Power, LLC, California Power Holdings, LLC, and EW PRC Biomass Holdings, LLC.

(4) Significant restrictions on abilities to subsidiaries are as follows:

Company	Nature and extent of any significant restrictions
Gyeonggi Green Energy Co., Ltd.	Acquisition or disposal of assets of more than ₩35 billion, change in the capacity of cogeneration units (except for the change due to performance improvement of equipment, maintenance) will require unanimous consent of all directors.
KOSPO Youngnam Power Co., Ltd.	Dividends can only be paid when all conditions of the loan agreement are satisfied or prior written consent of financial institutions is obtained. Shares cannot be wholly or partially transferred without prior written consent of financial institutions.

(5) Details of non-controlling interest prior to intra-group eliminations as of and for the years ended December 31, 2017 and 2016 are as follows:

In millions of won

2017						
Description	KEPCO Ilijan Corporation	KEPCO Plant Service & Engineering Co., Ltd.	KEPCO Engineering & Construction Company, Inc.	Others	Total	
Percentage of ownership	49.00%	49.00%	33.92%			
Current assets	160,588	623,934	257,529	1,269,175	2,311,226	
Non-current assets	314,036	571,152	504,637	2,588,833	3,978,658	
Current liabilities	(21,546)	(278,562)	(221,860)	(394,320)	(916,288)	
Non-current liabilities	(36,255)	(16,127)	(83,274)	(2,014,925)	(2,150,581)	
Net assets	416,823	900,397	457,032	1,448,763	3,223,015	
Book value of non-controlling interest	204,243	441,194	155,025	612,245	1,412,707	
Sales	109,183	1,232,113	490,193	719,087	2,550,576	
Profit for the period	66,320	135,482	21,222	66,419	289,443	
Profit for the period attributable to						
non-controlling interest	32,497	66,386	7,199	20,447	126,529	
Cash flows from operating activities	123,534	129,801	62,578	60,021	375,934	
Cash flows from investing activities	(5,276)	(193,408)	(8,622)	(409,353)	(616,659)	
Cash flows from financing activities before dividends to non-controlling						
interest	(44,442)	(15,606)	(55,504)	339,432	223,880	
Dividends to non-controlling interest	(48,855)	(14,994)	(1,419)	(20,840)	(86,108)	
Effect of exchange rate fluctuation	(7,432)	(1,267)	(101)	(24,206)	(33,006)	
Net increase (decrease) of cash and cash						
equivalents	17,529	(95,474)	(3,068)	(54,946)	(135,959)	

2016						
Description	KEPCO Ilijan Corporation	KEPCO Plant Service & Engineering Co., Ltd.	KEPCO Engineering & Construction Company, Inc.	Others	Total	
Percentage of ownership	49.00%	49.00%	33.92%			
Current assets	↓ 154,758	553,924	270,553	1,211,510	2,190,745	
Non-current assets	403,272	532,497	516,043	2,379,882	3,831,694	
Current liabilities	(19,256)	(264,506)	(286,444)	(297,510)	(867,716)	
Non-current liabilities	(39,193)	(36,984)	(78,232)	(1,919,924)	(2,074,333)	
Net assets	499,581	784,931	421,920	1,373,958	3,080,390	
Book value of non-controlling interest	244,794	384,616	143,115	684,093	1,456,618	
Sales	116,667	1,214,304	506,012	674,461	2,511,444	
Profit for the period	51,552	86,657	17,796	102,170	258,175	
Profit for the period attributable to non-controlling interest	25,260	42,462	6,036	26,709	100,467	
Cash flows from operating activities	102,546	121,240	18,748	84,086	326,620	
Cash flows from investing activities Cash flows from financing activities before dividends to non-controlling	(117)	79,807	(7,556)	(367,674)	(295,540)	
interest	(56,863)	(39,911)	(1,634)	877,863	779,455	
Dividends to non-controlling interest	(55,705)	(36,139)	(2,539)	(22,054)	(116,437)	
Effect of exchange rate fluctuation Net increase (decrease) of cash and cash	1,529	127	(854)	7,216	8,018	
equivalents	(8,610)	125,124	6,165	579,437	702,116	

(6) Changes in goodwill

(i) Details of goodwill as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Acquisition cost Accumulated impairment	₩	2,582	2,582
Carrying book value	₩	2,582	2,582

(ii) There are no changes in goodwill for the years ended December 31, 2017 and 2016.

(7) Disposals of subsidiaries

KEPCO Canada Uranium Investment Limited Partnership was dissolved and the Company liquidated DG Kings Plaza, LLC during the year ended December 31, 2016.

(i) The fair value of proceeds from disposal as of December 31, 2016 are as follows:

In millions of won		2016
Cash received upon dissolution Net assets transferred due to dissolution	₩	898 34,148
	₩.	35,046

(ii) The carrying value of assets and liabilities of the subsidiary as at the date the Company lost its control during the year ended December 31, 2016 are as follows:

In millions of won		2016
Current assets		
Cash and cash equivalents	₩	898
Current financial assets, net		81
Non-current assets		
Available-for-sale financial assets		34,089
Current liabilities		
Current financial liabilities		(22)
	w	35,046

(7) Disposals of subsidiaries, continued

(iii) Gain from disposals of subsidiaries for the year ended December 31, 2016 is as follows:

In millions of won		2016
Fair value of proceeds from disposal	W	35,046
Net assets disposed		(35,046)
Non-controlling interests		-
Realization of unrealized gain		-
Other comprehensive income		
Gain from disposals of subsidiaries	₩	

(iv) Net cashflow from sale of subsidiary for the year ended December 31, 2016 is as follows:

In millions of won		2016
Consideration received in cash	₩	898
Less: cash held by disposed subsidiary		(898)
Net cash flow	₩	

17. Investments in Associates and Joint Ventures

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

			Percentage of	Acquisition	
Investees	Key operation activities	Location	ownership	cost	Book value
<associates></associates>					
Korea Gas Corporation (*1)	Importing and wholesaling LNG	KOREA	20.47% W	94,500	1,618,868
Korea Electric Power Industrial Development	Electricity metering and others				
Co., Ltd.		KOREA	29.00%	4,727	21,838
YTN Co., Ltd.	Broadcasting	KOREA	21.43%	59,000	40,606
Cheongna Energy Co., Ltd.	Generating and distributing				
	vapor and hot/cold water	KOREA	43.90%	48,353	8,337
Gangwon Wind Power Co., Ltd. (*2)	Power generation	KOREA	15.00%	5,725	13,855
Hyundai Green Power Co., Ltd.	Power generation	KOREA	29.00%	88,885	114,806
Korea Power Exchange (*5)	Management of power market		2010070	00,000	111,000
Korod i ovvor Exchango (o,	and others	KOREA	100.00%	127,839	237,631
AMEC Partners Korea Ltd. (*3)	Resources development	KOREA	19.00%	707	207,001
	Power generation	KOREA	30.66%	71,070	210
Hyundai Energy Co., Ltd. (*8)	÷	KOREA	36.10%		-
Ecollite Co., Ltd.	Artificial light-weight aggregate			1,516	
Taebaek Wind Power Co., Ltd.	Power generation	KOREA	25.00%	3,810	5,319
Taeback Guinemi Wind Power Co., Ltd.	Power generation	KOREA	25.00%	3,420	3,089
Pyeongchang Wind Power Co., Ltd.	Power generation	KOREA	25.00%	3,875	4,136
Daeryun Power Co., Ltd. (*3, 9)	Power generation	KOREA	13.13%	25,477	25,113
Changjuk Wind Power Co., Ltd.	Power generation	KOREA	30.00%	3,801	7,515
KNH Solar Co., Ltd.	Power generation	KOREA	27.00%	1,296	2,218
SPC Power Corporation	Power generation	PHILIPPINES	38.00%	20,635	52,283
Gemeng International Energy Co., Ltd.	Power generation	CHINA	34.00%	413,153	649,973
PT. Cirebon Electric Power	Power generation	INDONESIA	27.50%	40,365	97,410
KNOC Nigerian East Oil Co., Ltd. (*4)	Resources development	NIGERIA	14.63%	12	
KNOC Nigerian West Oil Co., Ltd. (*4)	Resources development	NIGERIA	14.63%	12	-
PT Wampu Electric Power	Power generation	INDONESIA	46.00%	21,292	29,403
PT. Bayan Resources TBK	Resources development	INDONESIA	20.00%	615,860	451,831
S-Power Co., Ltd.	Power generation	KOREA	49.00%	132,300	116,945
Pioneer Gas Power Limited (*7)	Power generation	INDIA	38.50%	49,831	38,659
Eurasia Energy Holdings	Power generation and resources	INDIA	00.0070	40,001	00,000
	development	RUSSIA	40.00%	461	
Xe-Pian Xe-Namnoy Power Co., Ltd.	Power generation	LAOS	25.00%	71,481	- 61,779
	•				01,773
Hadong Mineral Fiber Co., Ltd. (*3)	Recycling fly ashes	KOREA	8.33%	50	
Green Biomass Co., Ltd. (*11, 14)	Power generation	KOREA	8.80%	714	208
PT. Mutiara Jawa	Manufacturing and operating				
	floating coal terminal	INDONESIA	29.00%	2,978	
Samcheok Eco Materials Co., Ltd. (*10)	Recycling fly ashes	KOREA	2.35%	686	
Noeul Green Energy Co., Ltd.	Power generation	KOREA	29.00%	1,740	2,067
Naepo Green Energy Co., Ltd.	Power generation	KOREA	41.67%	29,200	20,598
Goseong Green Energy Co., Ltd. (*2)	Power generation	KOREA	1.12%	2,900	2,597
Gangneung Eco Power Co., Ltd. (*2)	Power generation	KOREA	1.61%	2,900	2,583
Shin Pyeongtaek Power Co., Ltd.	Power generation	KOREA	40.00%	43,920	34,903
Heang Bok Do Si Photovoltaic Power Co., Ltd.	Power generation	KOREA	28.00%	194	187
Dongducheon Dream Power Co., Ltd.	Power generation	KOREA	33.61%	111,134	53,233
Jinbhuvish Power Generation Pvt. Ltd. (*2)	Power generation	INDIA	5.16%	9,000	
SE Green Energy Co., Ltd.	Power generation	KOREA	47.76%	3,821	3,476
Daegu Photovoltaic Co., Ltd.	Power generation	KOREA	29.00%	1,230	1,718
Jeongam Wind Power Co., Ltd.	Power generation	KOREA	40.00%	5,580	3,763
Korea Power Engineering Service Co., Ltd.	Construction and service	KOREA	29.00%	290	3,659
Busan Green Energy Co., Ltd.					
	Power generation	KOREA	29.00%	5,243	7,363
Gunsan Bio Energy Co., Ltd. (formerly, Jungbu	Power generation	KODEA	10.070/		
Bio Energy Co., Ltd.) (*2)		KOREA	18.87%	1,000	
Korea Electric Vehicle Charging Service	Electric vehicle charge service	KOREA	28.00%	2,604	1,749
Ulleungdo Natural Energy Co., Ltd.	Renewable power generation	KOREA	29.85%	8,000	6,370
Korea Nuclear Partners Co., Ltd.	Electric material agency	KOREA	29.00%	290	383
Tamra Offshore Wind Power Co., Ltd.	Power generation	KOREA	27.00%	8,910	8,560
Korea Electric Power Corporation Fund (*12)	Developing electric enterprises	KOREA	98.09%	51,500	47,974
Energy Infra Asset Management Co., Ltd. (*3)	Asset management	KOREA	9.90%	297	476
	Denouveble neuver concretion	KOREA	28.00%	140	11
Daegu clean Energy Co., Ltd.	Renewable power generation	KONLA	20.0070	140	
Daegu clean Energy Co., Ltd. YaksuESS Co., Ltd	Installing ESS related equipment	KOREA	29.00%	210	
					194

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

In millions of won

				Acquisition	Book
Investees	Key operation activities	Location	Percentage of ownership	cost	value
	Power generation	KOREA	20.00%	₩ 2,000	1,77
Gwangyang Green Energy Co., Ltd.	•	KOREA	29.00%	_,	
PND solar., Ltd	Power generation	KUREA	29.00%	1,250	1,25
				2,240,761	3,837,42
Joint ventures>					
(EPCO-Uhde Inc. (*6)	Power generation	KOREA	52.80%	11,355	25
co Biomass Energy Sdn. Bhd. (*6)	Power generation	MALAYSIA	61.53%	14,439	
atang Chaoyang Renewable Power Co., Ltd.	Power generation	CHINA	40.00%	27,660	27,26
huweihat Asia Power Investment B.V.	Holding company	NETHERLANDS	49.00%	46,037	15,67
Shuweihat Asia Operation & Maintenance Company (*6)	Maintenance of utility plant	CAYMAN	55.00%	30	66
Vaterbury Lake Uranium L.P.	Resources development	CANADA	35.76%	26,602	19,78
ASM-BG Investicii AD	Power generation	BULGARIA	50.00%	16,101	21,20
RES Technology AD	Power generation	BULGARIA	50.00%	15,595	14,37
V Holdings, Inc.	Power generation	PHILIPPINES	40.00%	2,103	1,91
EPCO SPC Power Corporation (*6)	Construction and operation of	PHILIPPINES			
·	utility plant		75.20%	94,579	217,09
ansu Datang Yumen Wind Power Co., Ltd.	Power generation	CHINA	40.00%	16,621	10,84
Datang Chifeng Renewable Power Co., Ltd.	Power generation	CHINA	40.00%	121,928	171,05
Datang KEPCO Chaoyang Renewable Power Co., Ltd.	Power generation	CHINA	40.00%	10,858	11,06
abigh Electricity Company	Power generation	SAUDI ARABIA	40.00%	109,743	99,35
abigh Operation & Maintenance Company Limited	Maintenance of utility plant	SAUDI ARABIA	40.00%	70	3,98
amaica Public Service Company Limited	Power generation	JAMAICA	40.00%	301,910	221,1
W Nuclear Components Co., Ltd.	Manufacturing	KOREA	45.00%	833	6,70
Busan Shinho Solar Power Co., Ltd.	Power generation	KOREA	25.00%	2,100	4,34
S Donghae Electric Power Co., Ltd.	Power generation	KOREA	34.00%	204,000	220,72
Blobal Trade Of Power System Co., Ltd.	Exporting products and	KOREA			
	technology of small or medium business by proxy		29.00%	290	57
expressway Solar-light Power Generation Co., Ltd.	Power generation	KOREA	29.00%	1,856	2,46
CODE NOVUS I LLC	Power generation	USA	50.00%	19,213	_,
CODE NOVUS II LLC	Power generation	USA	50.00%	12,756	
Daejung Offshore Wind Power Co., Ltd.	Power generation	KOREA	49.90%	5,190	2,96
Amman Asia Electric Power Company (*6)	Power generation	JORDAN	60.00%	111,476	145,6
(APES, Inc. (*6)	R&D	KOREA	51.00%	5,629	7,47
Dangjin Eco Power Co., Ltd.	Power generation	KOREA	34.00%	61,540	57,92
Ionam Wind Power Co., Ltd.	Power generation	KOREA	29.00%	3,480	4,30
Chun-cheon Energy Co., Ltd.	Power generation	KOREA	29.90%	52,700	48,11
eonggwangbaeksu Wind Power Co., Ltd. (*3)	Power generation	KOREA	15.00%	3,000	2,73
Ighi Son 2 Power Ltd.	Power generation	VIETNAM	50.00%	2,781	2,73
(elar S.A (*6)	Power generation	CHILE	65.00%	77,220	67,23
PT. Tanjung Power Indonesia	0	INDONESIA	35.00%	746	
ncheon New Power Co., Ltd.	Power generation	KOREA			1,7 6
	Power generation		29.00%	461	
Seokmun Energy Co., Ltd.	Power generation	KOREA	29.00%	15,370	13,78
Daehan Wind Power PSC	Power generation	JORDAN	50.00%	285	0
Barakah One Company (*13)	Power generation	UAE	18.00%	118	62
Jawah Energy Company (*13)	Operation of utility plant	UAE	18.00%	296	25
AOMENTUM	International thermonuclear experimental reactor	FRANCE	33.33%	1	39
	construction management				
Daegu Green Power Co., Ltd.	Power generation	KOREA	29.00%	46,225	42,39
eonggwang Wind Power Co., Ltd.	Power generation	KOREA	41.00%	15,375	15,29
Chester Solar IV SpA (*6)	Power generation	CHILE	81.82%	1,700	1,70
Chester Solar V SpA (*6)	Power generation	CHILE	81.82%	525	52
Diego de Almagro Solar SpA (*6)	Power generation	CHILE	81.82%	2,091	2,09
South Jamaica Power Company Limited	Power generation	JAMAICA	20.00%	7,090	6,70
see serio of the series and s		o,,			0,70

₩ 3,710,739 5,330,696

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

- (*1) The effective percentage of ownership is 21.57% considering treasury stocks.
- (*2) The Company can exercise significant influence by virtue of its contractual right to appoint directors to the board of directors of the entity, and by strict decision criteria of the Company's financial and operating policy of the board of directors.
- (*3) The Company can exercise significant influence by virtue of its contractual right to appoint a director to the board of directors of the entity.
- (*4) The Company can exercise significant influence by virtue of its contractual right to appoint one out of four members of the steering committee of the entity. Moreover, the Company has significant financial transactions, which can affect its influence on the entity.
- (*5) The Government regulates the Company's ability to make operating and financial decisions over the entity, as the Government requires maintaining arms-length transactions between KPX and the Company's other subsidiaries. The Company can exercise significant influence by its right to nominate directors to the board of directors of the entity.
- (*6) According to the shareholders' agreement, all critical financial and operating decisions must be agreed to by all ownership parties. For these reasons, the entities are classified as joint ventures.
- (*7) As of reporting date, the annual reporting period of all associates and joint ventures ends on December 31, except for Pioneer Gas Power Limited whose reporting period ends on March 31.
- (*8) As of December 31, 2017, 15.64% of ownership of Hyundai Energy Co., Ltd. is held by NH Power II Co., Ltd. and NH Bank. According to the shareholders' agreement reached on March 2011, not only does the Company have a call option to acquire the investment in Hyundai Energy Co., Ltd. from NH Power II Co., Ltd. and NH Bank with a certain rate of return, NH Power II Co., Ltd. and NH Bank also have put options to dispose of their investment to the Company. In connection with this agreement, the Company applied the equity method on the investment in Hyundai Energy Co., Ltd. with 46.30% of ownership.
- (*9) The Company's percentage of ownership has decreased due to the acquisition of Daeryun Power Co., Ltd. and the effective percentage of ownership is 19.45% considering stock purchase options.
- (*10) The Company's effective percentage of ownership excluding the redeemable convertible preferred stock is 25.54%.
- (*11) The effective percentage of ownership is less than 20% but the Company can exercise significant influence by virtue of its contractual right to appoint a director to the board of directors of the entity and the fact that the dominant portion of the investee's sales transactions is generated from the Company.
- (*12) The effective percentage of ownership is more than 50% but the Company does not hold control over relevant business while it exercises significant influence by participating in the Investment Decision Committee. For this reason, the entity is classified as an associate.
- (*13) The effective percentage of ownership is less than 20% but the Company has joint control over the entity as decisions on the major activities require the unanimous consent of the parties that collectively control the entity
- (*14) The percentage of ownership decreased since the Company did not participate in the capital increase of Green Biomass Co., Ltd. during the period.
- (*15) The effective percentage of ownership is more than 50% but the Company does not hold control over the entity according to the shareholders' agreement. For this reason, the entity is classified as an associate.

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

			Percentage of	Acquisition	Book
Investees	Key operation activities	Location	ownership	cost	value
<associates></associates>					
Korea Gas Corporation (*1)	Importing and wholesaling LNG	KOREA	20.47%	¥ 94,500	1,933,87
Korea Electric Power Industrial Development	Electricity metering and others	KOREA	29.00%	4,727	20,47
Co., Ltd.					
YTN Co., Ltd.	Broadcasting	KOREA	21.43%	59,000	38,15
Cheongna Energy Co., Ltd.	Generating and distributing	KOREA	43.90%	48,353	12,37
	vapor and hot/cold water				
Gangwon Wind Power Co., Ltd. (*2)	Power generation	KOREA	15.00%	5,725	13,06
Hyundai Green Power Co., Ltd.	Power generation	KOREA	29.00%	88,885	115,99
Korea Power Exchange (*6)	Management of power market and others	KOREA	100.00%	127,839	223,23
AMEC Partners Korea Ltd. (*3)	Resources development	KOREA	19.00%	707	22
Hyundai Energy Co., Ltd. (*9)	Power generation	KOREA	30.66%	71,070	1,03
Ecollite Co., Ltd.	Artificial light-weight aggregate	KOREA	36.10%	1,516	
Taebaek Wind Power Co., Ltd.	Power generation	KOREA	25.00%	3,810	4,75
Taeback Guinemi Wind Power Co., Ltd.	Power generation	KOREA	25.00%	3,420	3,13
Pyeongchang Wind Power Co., Ltd.	Power generation	KOREA	25.00%	3,875	3,38
Daeryun Power Co., Ltd. (*3, 10)	Power generation	KOREA	13.13%	25,477	29,87
Changjuk Wind Power Co., Ltd.	Power generation	KOREA	30.00%	3,801	6,93
KNH Solar Co., Ltd.	Power generation	KOREA	27.00%	1,296	2,07
SPC Power Corporation	Power generation	PHILIPPINES	38.00%	20,635	56,8
Gemeng International Energy Co., Ltd.	Power generation	CHINA	34.00%	413,153	680,06
PT. Cirebon Electric Power	Power generation	INDONESIA	27.50%	40,365	96,6
KNOC Nigerian East Oil Co., Ltd. (*4)	Resources development	NIGERIA	14.63%	12	00,00
KNOC Nigerian West Oil Co., Ltd. (*4)	Resources development	NIGERIA	14.63%	12	
PT Wampu Electric Power	Power generation	INDONESIA	46.00%	21,292	23,18
PT. Bayan Resources TBK	Resources development	INDONESIA	20.00%	615,860	402,6
S-Power Co., Ltd.	Power generation	KOREA	49.00%	132,300	123,9
Pioneer Gas Power Limited (*8)	Power generation	INDIA	40.00%	49,831	50,74
Eurasia Energy Holdings	Power generation and	RUSSIA	40.00%	461	00,7
	resources development	110000//1	10.00 /0	101	
Xe-Pian Xe-Namnoy Power Co., Ltd.	Power generation	LAOS	25.00%	49,119	51,54
Hadong Mineral Fiber Co., Ltd. (*17)	Recycling fly ashes	KOREA	8.33%	43,113	51,5
Green Biomass Co., Ltd. (*12)	Power generation	KOREA	14.00%	714	4
PT. Mutiara Jawa	Manufacturing and operating	INDONESIA	29.00%	2,978	
	floating coal terminal	INDONESIA	23.00 /0	2,570	
Samcheok Eco Materials Co., Ltd. (*3, 11)	Recycling fly ashes	KOREA	2.35%	686	
Noeul Green Energy Co., Ltd.	Power generation	KOREA	29.00%	1,740	1,21
Naepo Green Energy Co., Ltd.	Power generation	KOREA	25.00%	29,200	25,43
Goseong Green Energy Co., Ltd. (*2)	Power generation	KOREA	1.12%	2,900	2,66
Gangneung Eco Power Co., Ltd. (*2)	Power generation	KOREA	1.61%	2,900	2,64
Shin Pyeongtaek Power Co., Ltd.	Power generation	KOREA	40.00%	40	2,0
Heang Bok Do Si Photovoltaic Power Co., Ltd.	Power generation	KOREA	28.00%	194	18
DS POWER Co., Ltd. (*2)	Power generation	KOREA	14.44%	17,900	7,19
Dongducheon Dream Power Co., Ltd.	Power generation	KOREA	33.61%	61,535	46,87
KS Solar Co., Ltd. (*3)	Power generation	KOREA	19.00%	637	40,07
Yeongwol Energy Station Co., Ltd. (*2)	Power generation	KOREA	10.00%	1,400	00
Jinbhuvish Power Generation Pvt. Ltd. (*2)	Power generation	INDIA	5.16%	9,000	
	Power generation				0.50
SE Green Energy Co., Ltd.	0	KOREA	47.76%	3,821	3,52
Daegu Photovoltaic Co., Ltd.	Power generation Power generation	KOREA	29.00%	1,230	1,70
Jeongam Wind Power Co., Ltd.	U U	KOREA	40.00%	5,580	4,00
Korea Power Engineering Service Co., Ltd.	Construction and service	KOREA	29.00%	290	2,8
Busan Green Energy Co., Ltd.	Power generation	KOREA	29.00%	14,564	13,80
Gunsan Bio Energy Co., Ltd. (formerly, Jungbu Bio Energy Co., Ltd.) (*2)	Power generation	KOREA	18.87%	1,000	
Korea Electric Vehicle Charging Service	Electric vehicle charge service	KOREA	28.00%	1,596	1,1
Ulleungdo Natural Energy Co., Ltd.	Renewable power generation	KOREA	29.85%	8,000	6,8
Korea Nuclear Partners Co., Ltd.	Electric material agency	KOREA	29.00%	290	24
Tamra Offshore Wind Power Co., Ltd.	Power generation	KOREA	27.00%	8,910	7,0
Korea Electric Power Corporation Fund (*13)	Developing electric enterprises	KOREA	98.09%	51,500	50,8
Energy Infra Asset Management Co., Ltd. (*3)	Asset management	KOREA	9.90%	297	25
Daegu clean Energy Co., Ltd.	Renewable power generation	KOREA	28.00%	140	14

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

In millions of won

Location KOREA NEPAL KOREA MALAYSIA CHINA NETHERLANDS CAYMAN CANADA BULGARIA BULGARIA BULGARIA PHILIPPINES PHILIPPINES	ownership 29.00% ₩ 52.77% 52.77% 52.8% 61.53% 61.53% 40.00% 55.00% 36.97% 50.00% 50.00%	Acquisition cost 210 18,568 2,134,911 11,355 9,661 27,660 46,037 30	Book value 19/ 18,66 4,092,255 30 28,23
NEPAL KOREA MALAYSIA CHINA NETHERLANDS CAYMAN CANADA BULGARIA BULGARIA PHILIPPINES	52.8% 61.53% 40.00% 49.00% 55.00% 36.97%	18,568 2,134,911 11,355 9,661 27,660 46,037	18,66 4,092,25 30
KOREA MALAYSIA CHINA NETHERLANDS CAYMAN CANADA BULGARIA BULGARIA PHILIPPINES	52.8% 61.53% 40.00% 49.00% 55.00% 36.97%	2,134,911 11,355 9,661 27,660 46,037	4,092,25
MALAYSIA CHINA NETHERLANDS CAYMAN CANADA BULGARIA BULGARIA PHILIPPINES	61.53% 40.00% 49.00% 55.00% 36.97%	11,355 9,661 27,660 46,037	30
MALAYSIA CHINA NETHERLANDS CAYMAN CANADA BULGARIA BULGARIA PHILIPPINES	61.53% 40.00% 49.00% 55.00% 36.97%	9,661 27,660 46,037	
MALAYSIA CHINA NETHERLANDS CAYMAN CANADA BULGARIA BULGARIA PHILIPPINES	61.53% 40.00% 49.00% 55.00% 36.97%	9,661 27,660 46,037	
MALAYSIA CHINA NETHERLANDS CAYMAN CANADA BULGARIA BULGARIA PHILIPPINES	61.53% 40.00% 49.00% 55.00% 36.97%	9,661 27,660 46,037	
CHINA NETHERLANDS CAYMAN CANADA BULGARIA BULGARIA PHILIPPINES	40.00% 49.00% 55.00% 36.97%	27,660 46,037	28,23
NETHERLANDS CAYMAN CANADA BULGARIA BULGARIA PHILIPPINES	49.00% 55.00% 36.97%	46,037	/-
CAYMAN CANADA BULGARIA BULGARIA PHILIPPINES	55.00% 36.97%		
BULGARIA BULGARIA PHILIPPINES			4
BULGARIA BULGARIA PHILIPPINES		26,602	21,3
BULGARIA PHILIPPINES	00.0070	16,101	21,3
PHILIPPINES	50.00%	15,595	13,5
	40.00%	2,103	2,0
THE THE	75.20%	94,579	245,3
			210,0
CANADA	12.50%	5,404	
CHINA	40.00%	16,621	12,8
CHINA	40.00%	121,928	166,5
CHINA	40.00%	10,858	10,8
SAUDI ARABIA	40.00%	109,743	97,8
SAUDI ARABIA	40.00%	70	4,4
JAMAICA	40.00%	301,910	249,4
KOREA	45.00%	833	7,1
KOREA	25.00%	2,100	3,8
KOREA	34.00%	204,000	205,9
KOREA	29.00%	290	4
KOREA	20.00%	1 956	2,3
			2,0
			3,0
			153,8
			4,7
			53,2
			4,4
			50,5
			2,6
			2,0
			2
			1,9
			5
			3
			1
			2
FRANCE	33.33%	1	2
KOPEA	20 00.0/	16 005	17 5
NUREA	29.00%	46,225	47,52
	JAMAICA KOREA KOREA KOREA USA USA USA KOREA	JAMAICA 40.00% KOREA 45.00% KOREA 25.00% KOREA 34.00% KOREA 29.00% USA 50.00% USA 50.00% USA 50.00% KOREA 49.90% JORDAN 60.00% KOREA 34.00% KOREA 34.00% KOREA 29.00% KOREA 29.90% KOREA 15.00% VIETNAM 50.00% VIETNAM 50.00% CHILE 65.00% INDONESIA 35.00% KOREA 29.00% KOREA 29.00% KOREA 29.00% KOREA 29.00% KOREA 29.00% KOREA 29.00% KOREA 29.00% KOREA 29.00% KOREA 29.00% KOREA 29.00% UAE 18.00% UAE 18.00% UAE 18.00%	JAMAICA 40.00% 301,910 KOREA 45.00% 833 KOREA 25.00% 2,100 KOREA 34.00% 204,000 KOREA 29.00% 290 KOREA 29.00% 1,856 USA 50.00% 19,213 USA 50.00% 12,756 KOREA 49.90% 4,990 JORDAN 60.00% 111,476 KOREA 56,100 5,629 KOREA 29.00% 3,480 KOREA 15.00% 1,788 CHILE 65.00% 4,180 INDONESIA 35.00% 746 KOREA 29.00% 580 JORDAN 50.00% 285 UAE 18.00% 118 UAE 18.00% 296

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

- (*1) The effective percentage of ownership is 21.57% considering treasury stocks.
- (*2) The Company can exercise significant influence by virtue of its contractual right to appoint directors to the board of directors of the entity, and by strict decision criteria of the Company's financial and operating policy of the board of directors.
- (*3) The Company can exercise significant influence by virtue of its contractual right to appoint a director to the board of directors of the entity.
- (*4) The Company can exercise significant influence by virtue of its contractual right to appoint one out of four members of the steering committee of the entity. Moreover, the Company has significant financial transactions, which can affect its influence on the entity.
- (*5) The Company has joint control over the entity by virtue of its contractual right to appoint directors to the board of directors of the entity, and by strict decision criteria of the Company's financial and operating policy of the board of directors.
- (*6) The Government regulates the Company's ability to make operating and financial decisions over the entity, as the Government requires maintaining arms-length transactions between KPX and the Company's other subsidiaries. The Company can exercise significant influence by its right to nominate directors to the board of directors of the entity.
- (*7) According to the shareholders' agreement, all critical financial and operating decisions must be agreed to by all ownership parties. For these reasons, the entities are classified as joint ventures.
- (*8) As of reporting date, the annual reporting period of all associates and joint ventures ends on December 31, except for Pioneer Gas Power Limited whose reporting period ends on March 31.
- (*9) As of December 31, 2016, 15.64% of ownership of Hyundai Energy Co., Ltd. is held by NH Power II Co., Ltd. and NH Bank. According to the shareholders' agreement reached on March 2011, not only does the Company have a call option to acquire the investment in Hyundai Energy Co., Ltd. from NH Power II Co., Ltd. and NH Bank with a certain rate of return, NH Power II Co., Ltd. and NH Bank also have put options to dispose of their investment to the Company. In connection with this agreement, the Company applied the equity method on the investment in Hyundai Energy Co., Ltd. with 46.30% of ownership.
- (*10) The Company's percentage of ownership has decreased due to the acquisition of Daeryun Power Co., Ltd. and the effective percentage of ownership is 19.45% considering stock purchase options.
- (*11) The Company's effective percentage of ownership excluding the redeemable convertible preferred stock is 25.54%.
- (*12) The effective percentage of ownership is less than 20% but the Company can exercise significant influence by virtue of its contractual right to appoint a director to the board of directors of the entity and the fact that the dominant portion of the investee's sales transactions is generated from the Company.
- (*13) The effective percentage of ownership is more than 50% but the Company does not hold control over relevant business while it exercises significant influence by participating in the Investment Decision Committee. For this reason, the entity is classified as an associate.
- (*14) The effective percentage of ownership is more than 50%, but the Company does not control the entity according to the shareholders' agreement. For this reason, the entity is classified as an associate.
- (*15) The entity is reclassified from associates to joint ventures since the terms of the shareholders' agreement had been amended.
- (*16) The effective percentage of ownership is less than 20%, but the Company has joint control over the entity as decisions on the major activities require the unanimous consent of the parties that collectively control the entity.

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

(*17) Although the percentage of ownership temporarily decreased to 8.33% from the difference in timing of capital payment by shareholders, the Company can excercise significant influence by virtue of its right to appoint a director to the board of directors of the entity based on the shareholders' agreement. The percentage of ownership is 25.00% at the time of completion of capital payment.

(2) The fair value of associates which are actively traded on an open market and have a readily available market value as of December 31, 2017 and 2016 are as follows:

Investees		2017	2016
<associates></associates>			
Korea Electric Power Industrial Development Co., Ltd.	W	38,667	45,474
Korea Gas Corporation		804,195	915,705
YTN Co., Ltd.		18,855	22,320
SPC Power Corporation		72,616	70,253
PT. Bayan Resources TBK		558,267	359,200

(3) Changes in investments in associates and joint ventures for the years ended December 31, 2017 and 2016 are as follows :

		20	017					
					Share of	Other comprehen -sive		
	Beginning			Dividends	income	income		Ending
Investees	balance	Acquisition	Disposal	received	(loss)	(loss)	Others	balance
<associates></associates>	MU 1 000 077				(040.000)	(70,640)	(100)	1 610 060
Korea Gas Corporation	₩ 1,933,877	-	-	-	(242,232)	(72,648)	(129)	1,618,868
Korea Electric Power Industrial Development	20.475			(2.061)	0 400	100	(106)	01.000
Co., Ltd. YTN Co., Ltd.	20,475	-	-	(2,061)	3,428	102 929	(106)	21,838
Cheongna Energy Co., Ltd.	38,156 12,373	-	-	(135)	1,095 (4,036)	929	561	40,606 8,337
Gangwon Wind Power Co., Ltd.	12,373	-	-	(852)	1,638	-	-	13,855
Hyundai Green Power Co., Ltd.	115,998	-		(8,889)	7,697	-	-	114,806
Korea Power Exchange	223,238	-	_	(0,000)	8,831	_	5,562	237,631
AMEC Partners Korea Ltd.	225	-		_	(10)	-	- 0,002	207,001
Hyundai Energy Co., Ltd.	1,031	-		_	(3,498)	-	2,467	210
Ecollite Co., Ltd.	-	-	-	-	(0, 100)	-	2,107	
Taebaek Wind Power Co., Ltd.	4,750	-		-	569	-	-	5,319
Taeback Guinemi Wind Power Co., Ltd.	3,131	-		-	(42)	-	-	3,089
Pyeongchang Wind Power Co., Ltd.	3,383	-	-	-	753	-	-	4,136
Daeryun Power Co., Ltd.	29,873	-	-	-	(4,762)	-	2	25,113
Changjuk Wind Power Co., Ltd.	6,930	-	-	(111)	696	-	-	7,515
KNH Solar Co., Ltd.	2,073	-	-	-	145	-	-	2,218
SPC Power Corporation	56,818	-	-	(5,562)	4,310	(3,276)	(7)	52,283
Gemeng International Energy Co., Ltd.	680,065	-	-	(13,365)	6,953	(23,680)	-	649,973
PT. Cirebon Electric Power	96,658	-	-	(550)	10,685	2,232	(11,615)	97,410
KNOC Nigerian East Oil Co., Ltd.	-	-	-	-	(1,914)	1,536	378	
KNOC Nigerian West Oil Co., Ltd.	-	-	-	-	(1,712)	1,407	305	
PT Wampu Electric Power	23,188	-	-	-	9,336	-	(3,121)	29,403
PT. Bayan Resources TBK	402,667	-	-	-	34,122	14,982	60	451,831
S-Power Co., Ltd.	123,912	-	-	-	(6,982)	-	15	116,945
Pioneer Gas Power Limited	50,740	-	-	-	(11,119)	(1,238)	276	38,659
Eurasia Energy Holdings	-	-	-	-	-	-	-	
Xe-Pian Xe-Namnoy Power Co., Ltd.	51,544	22,362	-	-	(4,264)	(7,863)	-	61,779
Hadong Mineral Fiber Co., Ltd.	-	-	-	-	(31)	-	31	
Green Biomass Co., Ltd.	47	-	-	-	(112)	-	273	208
PT. Mutiara Jawa	-	-	-	-	-	-	-	
Samcheok Eco Materials Co., Ltd.	-	-	-	-	-	-	-	
Noeul Green Energy Co., Ltd.	1,217	-	-	-	850	-	-	2,067
Naepo Green Energy Co., Ltd. (*2)	25,438	-	-	-	(1,400)	-	(3,440)	20,598
Goseong Green Energy Co., Ltd.	2,663	-	-	-	(66)	-	-	2,597
Gangneung Eco Power Co., Ltd.	2,646	-	-	-	(63)	-	-	2,583
Shin Pyeongtaek Power Co., Ltd.	-	43,880	-	-	(10,998)	(3,617)	5,638	34,903
Heang Bok Do Si Photovoltaic Power Co., Ltd.	181	-	-	-	6	-	-	187
DS POWER Co., Ltd. (*4)	7,190	-	-	-	(1,321)	-	(5,869)	
Dongducheon Dream Power Co., Ltd. (*1,3)	46,876	-	-	-	(10,980)	-	17,337	53,233
KS Solar Co., Ltd.	604	-	(613)	-	-	9	-	
Jinbhuvish Power Generation Pvt. Ltd.	-	-	-	-	-	-	-	
SE Green Energy Co., Ltd.	3,525	-	-	-	(49)	-	-	3,476
Daegu Photovoltaic Co., Ltd.	1,700	-	-	(349)	367	-	-	1,718
Jeongam Wind Power Co., Ltd.	4,000	-	-	-	(237)	-	-	3,763
Korea Power Engineering Service Co., Ltd.	2,810	-	-	(191)	1,030	-	10	3,659
Busan Green Energy Co., Ltd.	13,803	-	(9,320)	-	2,884	-	(4)	7,363
Gunsan Bio Energy Co., Ltd. (formerly,								
Jungbu Bio Energy Co., Ltd.)	-	-	-	-	-	-	-	4 7 40
Korea Electric Vehicle Charging Service	1,103	1,008	-	-	(362)	-	-	1,749
Ulleungdo Natural Energy Co., Ltd.	6,894	-	-	-	(524)	-	-	6,370
Korea Nuclear Partners Co., Ltd.	248	-	-	-	135	-	-	383
Tamra Offshore Wind Power Co., Ltd.	7,015	-	-	-	1,545	-	-	8,560

(3) Changes in investments in associates and joint ventures for the years ended December 31, 2017 and 2016 are as follows, continued:

		2	017					
Investees	Beginning balance	Acquisition	Disposal	Dividends received	Share of income (loss)	Other comprehen -sive income (loss)	Others	Ending balance
Korea Electric Power Corporation Fund	₩ 50,856	-	-	-	(2,171)	(711)	-	47,974
Energy Infra Asset Management Co., Ltd.	259	-	-	-	217	-	-	476
Daegu clean Energy Co., Ltd.	140	-	-	-	(129)	-	-	11
YaksuESS Co., Ltd	196	-	-	-	(2)	-	-	194
Nepal Water & Energy Development Company					(_/			
Private Limited	18,667	15,009		_	(677)	(2,501)		30,498
Gwangyang Green Energy Co., Ltd.		2,000	-	_	(228)	(2,001)	-	1,772
PND solar., Ltd		1,250		_	(220)			1,250
	4,092,252	85,509	(9,933)	(32,065)	(212,629)	(94,337)	8,624	3,837,421
	<u> </u>	<u>,</u>			<u> </u>		<u> </u>	
<joint ventures=""></joint>								
KEPCO-Uhde Inc.	301	-	-	-	(43)	-	-	258
Eco Biomass Energy Sdn. Bhd.	-	-	-	-	-	-	-	-
Datang Chaoyang Renewable Power Co., Ltd.	28,239	-	-	(839)	840	(978)	-	27,262
Shuweihat Asia Power Investment B.V.	-	-	-	(1,707)	4,275	12,457	650	15,675
Shuweihat Asia Operation & Maintenance								
Company	450	-	-	(770)	1,055	(172)	100	663
Waterbury Lake Uranium L.P.	21,314	-	-	-	(23)	(949)	(561)	19,781
ASM-BG Investicii AD	21,488	-	-	(946)	(150)	810	-	21,202
RES Technology AD	13,582	-	-	-	1,053	(260)	-	14,375
KV Holdings, Inc.	2,098	-	-	-	61	(241)	-	1,918
KEPCO SPC Power Corporation	245,367	-	-	(37,443)	42,359	(33,230)	41	217,094
Canada Korea Uranium Limited partnership	-	-	-	-	-	-	-	-
Gansu Datang Yumen Wind Power Co., Ltd.	12,821	-	-	-	(1,299)	(682)	-	10,840
Datang Chifeng Renewable Power Co., Ltd.	166,535	-	-	-	14,079	(9,559)	-	171,055
Datang KEPCO Chaoyang Renewable Power								
Co., Ltd.	10,843	-	-	-	837	(620)	-	11,060
Rabigh Electricity Company	97,802	-	-	(18,112)	35,769	(15,227)	(876)	99,356
Rabigh Operation & Maintenance Company								
Limited	4,427	-	-	(2,130)	2,236	(546)	-	3,987
Jamaica Public Service Company Limited	249,453	-	-	-	-	(28,300)	-	221,153
KW Nuclear Components Co., Ltd.	7,133	-	-	(208)	(222)	-	-	6,703
Busan Shinho Solar Power Co., Ltd.	3,814	-	-	(63)	595	-	-	4,346
GS Donghae Electric Power Co., Ltd.	205,948	-	-	-	14,714	-	65	220,727
Global Trade Of Power System Co., Ltd.	477	-	-	-	100	-	-	577
Expressway Solar-light Power Generation Co.,								
Ltd.	2,343	-	-	-	120	-	-	2,463
KODE NOVUS I LLC	-	-	-	-	-	-	-	-
KODE NOVUS II LLC	-	-	-	-	-	-	-	-
Daejung Offshore Wind Power Co., Ltd.	3,015	200	-	-	(246)	-	-	2,969
Amman Asia Electric Power Company	153,857	-	-	(12,213)	19,957	(15,925)	-	145,676
KAPES, Inc.	4,758	-	-	-	2,752	-	(34)	7,476
Dangjin Eco Power Co., Ltd.	53,253	5,440	-	-	(752)	(3)	(10)	57,928
Honam Wind Power Co., Ltd.	4,451	-	-	(487)	338	-	-	4,302
Chun-cheon Energy Co., Ltd.	50,592	-	-	-	(2,474)	-	-	48,118

(3) Changes in investments in associates and joint ventures for the years ended December 31, 2017 and 2016 are as follows, continued:

			2	2017					
						Share of	Other comprehen -sive		
		Beginning			Dividends	income	income		Ending
Investees		balance	Acquisition	Disposal	received	(loss)	(loss)	Others	balance
Yeonggwangbaeksu Wind Power Co., Ltd.	₩	2,689	-	-	-	45	-	-	2,734
Nghi Son 2 Power Ltd.		229	993	-	-	(1,039)	-	-	183
Kelar S.A		-	73,040	-	-	(633)	(5,175)	1	67,233
PT. Tanjung Power Indonesia		1,946	-	-	-	2,112	(2,281)	(1)	1,776
Incheon New Power Co., Ltd.		563	-	-	-	56	-	-	619
Seokmun Energy Co., Ltd.		391	14,790	-	-	(1,219)	(176)	-	13,786
Daehan Wind Power PSC		16	-	-	-	(40)	22	2	-
Barakah One Company		116	-	-	-	570	(60)	-	626
Nawah Energy Company		290	-	-	-	(5)	(27)	-	258
MOMENTUM		67	-	-	-	321	3	-	391
Daegu Green Power Co., Ltd.		47,528	-	-	-	(5,133)	-	(4)	42,391
Yeonggwang Wind Power Co., Ltd.		-	15,375	-	-	(25)	(56)	-	15,294
Chester Solar IV SpA		-	1,700	-	-	-	-	-	1,700
Chester Solar V SpA		-	525	-	-	-	-	-	525
Diego de Almagro Solar SpA		-	2,091	-	-	-	-	-	2,091
South Jamaica Power Company Limited		-	7,090	-				(386)	6,704
		1,418,196	121,244		(74,918)	130,941	(101,175)	(1,013)	1,493,275
	₩	5,510,448	206,753	(9,933)	(106,983)	(81,688)	(195,512)	7,611	5,330,696

- (*1) It was determined that there is objective evidence of impairment due to prolonged operating losses. As a result, the Company recognized an impairment loss of W23,798 million in impairment loss on investments in associates and joint ventures for the year ended December 31, 2017.
- (*2) It was determined that there is objective evidence of impairment due to prolonged operating losses. As a result, the Company recognized an impairment loss of ₩3,440 million in impairment loss on investments in associates and joint ventures for the year ended December 31, 2017.
- (*3) 'Others' include W41,170 million of assets held-for-sale (note 42).
- (*4) 'Others' include W4,438 million of assets held-for-sale (note 42), and also include W1,439 million of available-for-sale financial assets which is reclassified due to loss of significant influence.

(3) Changes in investments in associates and joint ventures for the years ended December 31, 2017 and 2016 are as follows, continued:

						Other comprehen		
Investees	Beginning balance	Acquisition	Disposal	Dividends received	Share of income (loss)	-sive income (loss)	Others	Ending balance
<associates></associates>	Dalance	Acquisition	Disposal	Tecerveu	(1033)	(1033)	Others	Dalance
Daegu Green Power Co., Ltd.	₩ 80,267	3,347	(34,422)	-	(1,814)	148	(47,526)	
Korea Gas Corporation	2,102,813			(3,213)	(146,308)	(14,551)	(4,864)	1,933,877
Korea Electric Power Industrial Development	_,,			(-),	(,,	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(),== .,	.,,
Co., Ltd.	18,994	-	-	(1,598)	4,491	-	(1.412)	20,47
YTN Co., Ltd.	38,365	-	-	-	(227)	32	(14)	38,156
Cheongna Energy Co., Ltd.	19,490	-	-	-	(7,117)	-	-	12,373
Gangwon Wind Power Co., Ltd.	12,890	-	-	(1,136)	1,270	45	-	13,06
Hyundai Green Power Co., Ltd.	113,664	-	-	(8,888)	11,222	-	-	115,99
Korea Power Exchange	208,735	-	-	-	15,847	-	(1,344)	223,238
AMEC Partners Korea Ltd.	230	-	-	-	(5)	-	-	22
Hyundai Energy Co., Ltd.	6,990	-	-	-	(21,163)	-	15,204	1,03
Ecollite Co., Ltd.	-	-	-	-	-	-	-	
Taebaek Wind Power Co., Ltd.	4,956	-	-	-	(206)	-	-	4,750
Taeback Guinemi Wind Power Co., Ltd.	2,587	570	-	-	(26)	-	-	3,13
Pyeongchang Wind Power Co., Ltd.	3,402	-	-	-	(19)	-	-	3,383
Daeryun Power Co., Ltd.	36,156	-	-	-	(6,282)	(1)	-	29,873
JinanJangsu Wind Power Co., Ltd.	77	-	(64)	-	(13)	-	-	
Changjuk Wind Power Co., Ltd.	6,143	-	-	(190)	977	-	-	6,93
KNH Solar Co., Ltd.	1,924	-	-	-	144	5	-	2,07
SPC Power Corporation	58,033	-	-	(7,151)	6,416	(477)	(3)	56,81
Gemeng International Energy Co., Ltd.	728,396	-	-	(16,476)	26,714	(58,493)	(76)	680,06
PT. Cirebon Electric Power	60,574	-	-	(1,242)	31,511	2,568	3,247	96,65
KNOC Nigerian East Oil Co., Ltd.	-	-	-	-	(1,346)	(398)	1,744	
KNOC Nigerian West Oil Co., Ltd.	-	-	-	-	(973)	(356)	1,329	
Dolphin Property Limited	61	-	-	(35)	-	(69)	43	
PT Wampu Electric Power	18,963	-	-	-	3,493	(3)	735	23,188
PT. Bayan Resources TBK (*2)	525,066	-	-	-	(23,257)	208	(99,350)	402,66
S-Power Co., Ltd.	130,908	-	-	-	(7,006)	-	10	123,91
Pioneer Gas Power Limited	51,187	-	-	-	(698)	251	-	50,74
Eurasia Energy Holdings	-	-	-	-	-	-	-	
Xe-Pian Xe-Namnoy Power Co., Ltd.	31,863	16,402	-	-	1,576	1,703	-	51,544
Busan Solar Co., Ltd.	925	-	(887)	-	(38)	-	-	
Hadong Mineral Fiber Co., Ltd.	-	-	-	-	-	-	-	
Green Biomass Co., Ltd.	-	-	-	-	(138)	-	185	4
PT. Mutiara Jawa	-	-	-	-	-	-	-	
Samcheok Eco Materials Co., Ltd.	-	-	-	-	-	-	-	
Noeul Green Energy Co., Ltd.	295	1,340	-	-	(418)	-	-	1,21
Naepo Green Energy Co., Ltd.	26,746	-	-	-	(1,308)	-	-	25,43
Goseong Green Energy Co., Ltd.	2,670	-	-	-	71	-	(78)	2,66
Gangneung Eco Power Co., Ltd.	2,688	-	-	-	56	-	(98)	2,64
Shin Pyeongtaek Power Co., Ltd.	-	-	-	-	-	-	-	
Heang Bok Do Si Photovoltaic Power Co., Ltd.	189	-	-	-	(10)	-	2	18
DS POWER Co., Ltd.	10,960	-	-	-	(3,738)	-	(32)	7,19
Dongducheon Dream Power Co., Ltd.	55,667	-	-	-	(8,757)	-	(34)	46,87
KS Solar Co., Ltd.	618	-	-	-	(14)	-	-	60
eongwol Energy Station Co., Ltd. (*1)	1,290	-	-	-	85	25	(1,400)	
Jinbhuvish Power Generation Pvt. Ltd. (*3)	8,350	-	-	-	(49)	(198)	(8,103)	
SE Green Energy Co., Ltd.	3,575	-	-	-	(50)	-	-	3,52
Daegu Photovoltaic Co., Ltd.	1,886	-	-	(411)	225	-	-	1,70
Jeongam Wind Power Co., Ltd.	702	3,900	-	-	(602)	-	-	4,00
Korea Power Engineering Service Co., Ltd.	1,805		-	-	1,005	-	-	2,81
Busan Green Energy Co., Ltd.	14,512	-	-	-	(709)	-	-	13,800
Gunsan Bio Energy Co., Ltd. (formerly,	,				, 1			-,
Jungbu Bio Energy Co., Ltd.)	904	-	-	-	(904)	-	-	

(3) Changes in investments in associates and joint ventures for the years ended December 31, 2017 and 2016 are as follows, continued:

		20	16					
Investees	Beginning balance	Acquisition	Disposal	Dividends received	Share of income (loss)	Other comprehen -sive income (loss)	Others	Ending balance
Korea Electric Vehicle Charging Service	₩ 1,446	-	-	-	(343)	-	-	1,103
Ulleungdo Natural Energy Co., Ltd.	7,417	-	-	-	(516)	-	(7)	6,894
Korea Nuclear Partners Co., Ltd.	289	-	-	-	(41)	-	-	248
Tamra Offshore Wind Power Co., Ltd.	-	8,910	-	-	(1,895)	-	-	7,015
Korea Electric Power Corporation Fund	-	51,500	-	-	(644)	-	-	50,856
Energy Infra Asset Management Co., Ltd.	-	297	-	-	(38)	-	-	259
Daegu clean Energy Co., Ltd.	-	140	-	-	-	-	-	140
YaksuESS Co., Ltd	-	210	-	-	(14)	-	-	196
Nepal Water & Energy Development Company								
Private Limited	-		-	-	-	-	18,667	18,667
	4,405,668	86,616	(35,373)	(40,340)	(131,583)	(69,561)	(123,175)	4,092,252
<joint ventures=""></joint>	0.540				(150)		(0.000)	
KEPCO-Uhde Inc. (*4)	8,549			-	(159)	-	(8,089)	301
Eco Biomass Energy Sdn. Bhd.	-	-	-	-	-	-	-	00.000
Datang Chaoyang Renewable Power Co., Ltd.	27,640	-	-	-	1,417	(818)	-	28,239
Shuweihat Asia Power Investment B.V.	20,474	-	(14,154)	(2,957)	6,131	(9,494)	-	
Shuweihat Asia Operation & Maintenance	406			(021)	0.41	(46)		450
Company	486	-	-	(931)	941	(46)	- (100)	450
Waterbury Lake Uranium L.P.	20,299	-	-	-	-	1,138	(123)	21,314
ASM-BG Investicii AD RES Technology AD	20,203 13,789	-	-	-	1,508 (68)	(223) (139)	-	21,488 13,582
KV Holdings, Inc.	2,010	-	-	(302)	429	(139)	-	2,098
KEPCO SPC Power Corporation	2,010	-	-	(5,955)	423	(5,308)	(26)	2,050
Canada Korea Uranium Limited Partnership	200,524	-	-	(0,900)	40,132	(5,506)	(20)	240,007
Gansu Datang Yumen Wind Power Co., Ltd.	16,107		_	_	(2,836)	(450)	_	12,821
Datang Chifeng Renewable Power Co., Ltd.	171,224		_	(7,384)	7,455	(4,760)		166,535
Datang KEPCO Chaoyang Renewable Power	171,224			(7,504)	7,400	(4,700)		100,000
Co., Ltd.	10,580	-	-	(440)	1,002	(299)	-	10,843
Rabigh Electricity Company	59,368	-	-	-	18,961	19,473	-	97,802
Rabigh Operation & Maintenance Company	,				-,	-, -		. ,
Limited	3,586	-	-	(1,934)	2,253	229	293	4,427
Jamaica Public Service Company Limited	241,918	-	-	-	-	7,535	-	249,453
KW Nuclear Components Co., Ltd.	4,985	-	-	(2,191)	4,344	-	(5)	7,133
Busan Shinho Solar Power Co., Ltd.	3,678	-	-	(185)	321	-	-	3,814
GS Donghae Electric Power Co., Ltd.	200,379	-	-	-	5,575	-	(6)	205,948
Global Trade Of Power System Co., Ltd.	426	-	-	-	51	-	-	477
Expressway Solar-light Power Generation Co.,								
Ltd.	2,100	-	-	-	243	-	-	2,343
KODE NOVUS I LLC	-	-	-	-	-	-	-	
KODE NOVUS II LLC	-	258	-	-	(260)	-	2	
Daejung Offshore Wind Power Co., Ltd.	3,352	-	-	-	(337)	-	-	3,015
Amman Asia Electric Power Company	137,668	-	-	(12,684)	17,811	11,062	-	153,857
KAPES, Inc.	4,501	-	-	-	311	-	(54)	4,758
Dangjin Eco Power Co., Ltd.	48,281	5,100	-	-	(696)	(26)	594	53,253
Honam Wind Power Co., Ltd.	3,926	-	-	(104)	629	-	-	4,45
Nepal Water & Energy Development Company								
Private Limited	17,765	-	-	-	359	543	(18,667)	
Chun-cheon Energy Co., Ltd.	31,976	19,832	-	-	(1,121)	(95)	-	50,592
Yeonggwangbaeksu Wind Power Co., Ltd.	2,668	-	-	-	16	-	5	2,689
Nghi Son 2 Power Ltd.	269	716	-	-	(740)	(16)	-	229

(3) Changes in investments in associates and joint ventures for the years ended December 31, 2017 and 2016 are as follows, continued:

In millions of won

			2	016					
Investees		Beginning balance	Acquisition	Disposal	Dividends received	Share of income (loss)	Other comprehen- sive income (loss)	Others	Ending balance
Kelar S.A	₩	-	-	-	-	-	-	-	-
PT. Tanjung Power Indonesia		617	-	-	-	1,337	-	(8)	1,946
Incheon New Power Co., Ltd.		514	-	-	-	41	8	-	563
Seokmun Energy Co., Ltd.		-	-	-	-	(197)	793	(205)	391
Daehan Wind Power PSC		-	285	-	-	(261)	(8)	-	16
Barakah One Company		-	118	-	-	-	-	(2)	116
Nawah Energy Company		-	296	-	-	-	-	(6)	290
MOMENTUM		-	1	-	-	65	-	1	67
Daegu Green Power Co., Ltd.		-	-	-	-	-	-	47,528	47,528
		1,287,862	26,606	(14,154)	(35,067)	112,657	19,060	21,232	1,418,196
	W	5,693,530	113,222	(49,527)	(75,407)	(18,926)	(50,501)	(101,943)	5,510,448

(*1) 'Others' include W1,400 million of assets held-for-sale (note 42).

- (*2) It was determined that there is objective evidence of impairment due to prolonged operating losses. As a result, the Company recognized an impairment loss of W99,338 million in impairment loss on investments in associates and joint ventures for the year ended December 31, 2016.
- (*3) Due to discontinuation of operations during the year ended December 31, 2016, the Company recognized an impairment loss of 448,103 million in impairment loss on investments in associates and joint ventures for the year ended December 31, 2016.
- (*4) It was determined that there is objective evidence of impairment due to prolonged operating losses. As a result, the Company recognized an impairment loss of W8,099 million in impairment loss on investments in associates and joint ventures for the year ended December 31, 2016.

KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES Notes to the Consolidated Financial Statements, Continued **December 31, 2017**

17. Investments in Associates and Joint Ventures, Continued

(4) Summary of financial information of associates and joint ventures as of and for the years ended December 31, 2017 and 2016 are as follows:

					Profit (loss) for
Investees		Total assets	Total liabilities	Sales	the period
<associates></associates>					
Korea Gas Corporation	₩	37,139,439	28,999,025	22,172,305	(1,205,110
Korea Electric Power Industrial Development Co., Ltd.		155,033	79,730	334,547	16,126
YTN Co., Ltd.		298,122	108,554	131,080	3,638
Cheongna Energy Co., Ltd.		461,958	448,535	56,533	(9,203
Gangwon Wind Power Co., Ltd.		94,281	2,243	25,963	11,121
Hyundai Green Power Co., Ltd.		1,150,729	754,846	477,373	26,543
Korea Power Exchange		263,499	25,868	105,107	8,83
AMEC Partners Korea Ltd.		1,135	4	1	(53
Hyundai Energy Co., Ltd.		474,939	511,486	92,992	(43,317
Ecollite Co., Ltd.		2,052	352	-	(121
Taebaek Wind Power Co., Ltd.		39,227	17,953	7,056	2,312
Taeback Guinemi Wind Power Co., Ltd.		12,369	12	-	(140
Pyeongchang Wind Power Co., Ltd.		77,152	60,606	11,907	3,038
Daeryun Power Co., Ltd.		779,258	655,377	156,508	(23,978
Changjuk Wind Power Co., Ltd.		35,794	10,745	6,981	2,317
KNH Solar Co., Ltd.		24,432	16,215	3,947	628
SPC Power Corporation		137,586	-	68,149	37,395
Gemeng International Energy Co., Ltd.		6,496,294	4,584,608	1,334,833	21,769
PT. Cirebon Electric Power		903,429	549,212	280,452	38,448
KNOC Nigerian East Oil Co., Ltd.		241,808	329,639	-	(10,754
KNOC Nigerian West Oil Co., Ltd.		147,185	227,588	-	(9,768
PT Wampu Electric Power		212,095	148,177	779	8,114
PT. Bayan Resources TBK		908,106	556,881	811,515	243,62
S-Power Co., Ltd.		859,633	617,224	489,042	(14,470
Pioneer Gas Power Limited		339,271	296,898	8,215	(27,796
Eurasia Energy Holdings		548	978	-	
Xe-Pian Xe-Namnoy Power Co., Ltd.		858,789	607,462	-	(16,677
Hadong Mineral Fiber Co., Ltd.		203	231	-	(260
Green Biomass Co., Ltd.		6,379	4,018	2,337	(956
PT. Mutiara Jawa		27,098	29,670	13,574	3,455
Samcheok Eco Materials Co., Ltd.		23,729	270	15	(541
Noeul Green Energy Co., Ltd.		127,980	120,852	43,099	2,932
Naepo Green Energy Co., Ltd.		121,375	71,945	5,696	(5,603
Goseong Green Energy Co., Ltd.		1,081,238	841,330	-	(5,811
Gangneung Eco Power Co., Ltd.		186,765	20,344	-	(3,407
Shin Pyeongtaek Power Co., Ltd.		175,870	90,662	-	(4,585
Heang Bok Do Si Photovoltaic Power Co., Ltd.		2,782	2,120	451	22
Dongducheon Dream Power Co., Ltd.		1,575,175	1,365,845	813,440	(33,740
Jinbhuvish Power Generation Pvt. Ltd.		66,047	13,640	-	
SE Green Energy Co., Ltd.		7,278	-	-	(103
Daegu Photovoltaic Co., Ltd.		17,262	11,339	3,714	1,263
Jeongam Wind Power Co., Ltd.		67,427	58,019	-	(580
Korea Power Engineering Service Co., Ltd.		15,738	3,121	22,283	3,783
Busan Green Energy Co., Ltd.		193,253	167,864	34,280	9,946
Gunsan Bio Energy Co., Ltd. (formerly, Jungbu		,	,	,	-,
Bio Energy Co., Ltd.)		9,648	16,462	-	(6,109
Korea Electric Vehicle Charging Service		14,650	8,404	8,399	(1,295
Ulleungdo Natural Energy Co., Ltd.		25,842	4,501	-	(1,758
Korea Nuclear Partners Co., Ltd.		2,033	711	1,345	465
Tamra Offshore Wind Power Co., Ltd.		163,740	132,036	4,392	(191
Korea Electric Power Corporation Fund		49,170	265	4,352	(131
Energy Infra Asset Management Co., Ltd.		5,240	431	5,807	2,203
Daegu clean Energy Co., Ltd.		252	212	5,007	(460
YaksuESS Co., Ltd				- 381	
		7,105	6,437	301	(6
Nepal Water & Energy Development Company					

(4) Summary of financial information of associates and joint ventures as of and for the years ended December 31, 2017 and 2016 are as follows, continued:

		2017			
Investees		Total assets	Total liabilities	Sales	Profit (loss) for the period
Gwangyang Green Energy Co., Ltd.	₩	20,165	11,393	-	(1,139)
PND solar., Ltd	••	10,508	6,729	-	(406)
<joint ventures=""></joint>					
KEPCO-Uhde Inc.		515	7	-	(86)
Eco Biomass Energy Sdn. Bhd.		-	-	-	-
Datang Chaoyang Renewable Power Co., Ltd.		138,463	70,309	17,776	2,149
Shuweihat Asia Power Investment B.V.		32,001	10	-	(170)
Shuweihat Asia Operation & Maintenance Company		1,220	14	2,580	1,918
Waterbury Lake Uranium L.P.		55,563	250	-	-
ASM-BG Investicii AD		87,110	44,706	12,611	(262)
RES Technology AD		71,595	42,845	7,793	2,164
KV Holdings, Inc.		4,795	-	671	677
KEPCO SPC Power Corporation		318,911	30,222	186,725	57,364
Gansu Datang Yumen Wind Power Co., Ltd.		81,960	54,859	6,938	(3,253)
Datang Chifeng Renewable Power Co., Ltd.		762,605	334,843	113,329	35,294
Datang KEPCO Chaoyang Renewable Power Co., Ltd.		60,913	33,264	8,442	2,094
Rabigh Electricity Company		2,364,522	1,936,403	287,105	78,948
Rabigh Operation & Maintenance Company Limited		19,992	10,025	22,668	5,668
Jamaica Public Service Company Limited		1,276,279	752,617	946,365	24,601
KW Nuclear Components Co., Ltd.		25,693	10,221	6,486	1,493
Busan Shinho Solar Power Co., Ltd.		47,959	30,573	7,984	2,383
GS Donghae Electric Power Co., Ltd.		2,179,465	1,530,266	351,814	43,180
Global Trade Of Power System Co., Ltd.		3,576	1,586	4,079	365
Expressway Solar-light Power Generation Co., Ltd.		19,143	10,651	3,018	643
KODE NOVUS I LLC		755	108,132	14	(8,117)
KODE NOVUS II LLC		292	47,683	-	(6,018)
Daejung Offshore Wind Power Co., Ltd.		6,193	243	-	(493)
Amman Asia Electric Power Company		759,114	516,174	18,034	33,514
KAPES, Inc.		70,679	56,021	129,962	5,397
Dangjin Eco Power Co., Ltd.		163,197	521		(2,182)
Honam Wind Power Co., Ltd.		39,675	24,951	5,961	1,166
Chun-cheon Energy Co., Ltd.		699,652	538,733	164,294	(8,145)
Yeonggwangbaeksu Wind Power Co., Ltd.		94,810	76,621	11,124	297
Nghi Son 2 Power Ltd.		741	376		(2,068)
Kelar S.A		613,293	513,101	90,435	17,590
PT. Tanjung Power Indonesia		374,702	369,627	209,923	6,219
Incheon New Power Co., Ltd.		7,194	5,059	2,972	184
Seokmun Energy Co., Ltd.		247,735	200,197	35,135	(3,939)
Daehan Wind Power PSC		928	1,752	-	(904)
Barakah One Company		17,574,885	17,571,409	-	(1,358)
Nawah Energy Company		1,459	23	-	(1,000)
MOMENTUM		5,028	3,854	11,555	939
Daegu Green Power Co., Ltd.		602,809	531,103	256,359	(17,700)
Yeonggwang Wind Power Co., Ltd.		212,802	176,062	200,000	(17,700) (62)
Chester Solar IV SpA		11,660	9,626	331	151
Chester Solar V SpA		2,081	1,569		(49)
Diego de Almagro Solar SpA		8,266	5,830	-	(103)
South Jamaica Power Company Limited		153,958		-	(703)
South Samaica Fower Company Limited		100,900	120,436	-	(700)

(4) Summary of financial information of associates and joint ventures as of and for the years ended December 31, 2017 and 2016 are as follows, continued:

				Profit (loss) for
Investees	Total assets	Total liabilities	Sales	the period
<associates></associates>				
Korea Gas Corporation	₩ 39,927,836		21,108,116	(673,558
Korea Electric Power Industrial Development Co., Ltd.	144,346		304,067	17,18
YTN Co., Ltd.	304,536		130,690	2,05
Cheongna Energy Co., Ltd.	469,843	447,216	46,484	(16,127
Gangwon Wind Power Co., Ltd.	102,550		22,774	8,133
Hyundai Green Power Co., Ltd.	1,151,975		469,547	38,743
Korea Power Exchange	255,533	32,295	101,222	15,08
AMEC Partners Korea Ltd.	1,216	32	103	(25
Hyundai Energy Co., Ltd.	505,979	499,205	61,813	(45,800
Ecollite Co., Ltd.	2,157	336	-	(105
Taebaek Wind Power Co., Ltd.	43,162	24,162	5,741	(2,796
Taeback Guinemi Wind Power Co., Ltd.	12,523	1	-	(106
Pyeongchang Wind Power Co., Ltd.	75,440	61,909	3,997	(45
Daeryun Power Co., Ltd.	793,283	644,930	249,558	(32,291
Changjuk Wind Power Co., Ltd.	37,878	15,162	5,782	1,73
KNH Solar Co., Ltd.	25,878	18,199	4,006	638
SPC Power Corporation	191,562	42,042	73,674	42,61
Gemeng International Energy Co., Ltd.	5,822,879	3,821,905	1,233,972	66,37
PT. Cirebon Electric Power	988,975	637,491	265,813	114,653
KNOC Nigerian East Oil Co., Ltd.	272,964	358,211	-	(7,051
KNOC Nigerian West Oil Co., Ltd.	165,396		-	(6,562
PT Wampu Electric Power	222,004		19,260	7,550
PT. Bayan Resources TBK	945,436		593,441	40
S-Power Co., Ltd.	886,841		453,606	(14,885
Pioneer Gas Power Limited	345,791		14,353	39
Eurasia Energy Holdings	618		-	
Xe-Pian Xe-Namnoy Power Co., Ltd.	772,699		-	6,458
Hadong Mineral Fiber Co., Ltd.		. 20	-	-,
Green Biomass Co., Ltd.	9,336		2,892	(972
PT. Mutiara Jawa	28,104		7,175	(1,361
Samcheok Eco Materials Co., Ltd.	24,143		-	(1,945
Noeul Green Energy Co., Ltd.	115,062		203	(1,155
Naepo Green Energy Co., Ltd.	104,029		4,912	(5,230
Goseong Green Energy Co., Ltd.	356,546		1,012	(5,489
Gangneung Eco Power Co., Ltd.	176,805			(3,494
Shin Pyeongtaek Power Co., Ltd.	54,174		_	(3,291
Heang Bok Do Si Photovoltaic Power Co., Ltd.	2,937		427	(3,231
DS POWER Co., Ltd.	726,699		276,324	(10,031
Dongducheon Dream Power Co., Ltd.	1,670,945		946,379	(10,031
KS Solar Co., Ltd.	27,213		4,152	(27,930
			4,152	
Jinbhuvish Power Generation Pvt. Ltd.	70,273		-	(950
SE Green Energy Co., Ltd.	7,381		-	(103
Daegu Photovoltaic Co., Ltd.	18,909		3,317	739
Jeongam Wind Power Co., Ltd.	13,199		-	(1,496
Korea Power Engineering Service Co., Ltd.	13,401		27,394	3,463
Busan Green Energy Co., Ltd.	147,843	100,247	-	(2,444
Gunsan Bio Energy Co., Ltd. (formerly, Jungbu	14.040	40.007		(5.400
Bio Energy Co., Ltd.)	11,340		-	(5,489
Korea Electric Vehicle Charging Service	10,545		5,177	(1,225
Ulleungdo Natural Energy Co., Ltd.	24,836		-	(1,730
Korea Nuclear Partners Co., Ltd.	1,363		372	(140
Tamra Offshore Wind Power Co., Ltd.	127,880		983	(6,307
Korea Electric Power Corporation Fund	51,970	128	3	(647
Energy Infra Asset Management Co., Ltd.	2,779	160	32	(381
Daegu clean Energy Co., Ltd.	500	-	-	
YaksuESS Co., Ltd	6,474	5,801	-	(48

(4) Summary of financial information of associates and joint ventures as of and for years ended December 31, 2017 and 2016 are as follows, continued:

		2016			Profit (loss) for
Investees		Total assets	Total liabilities	Sales	the period
Nepal Water & Energy Development Company					
Private Limited	₩	43,788	10,477	-	(703
<joint ventures=""></joint>					
KEPCO-Uhde Inc.		624	33	-	(16,855
Eco Biomass Energy Sdn. Bhd.		-	-	-	
Datang Chaoyang Renewable Power Co., Ltd.		142,684	72,086	18,628	3,46
Shuweihat Asia Power Investment B.V.		282	4	-	12,38
Shuweihat Asia Operation & Maintenance Company		1,016	13	2,388	1,72
Waterbury Lake Uranium L.P.		56,181	47	-	
ASM-BG Investicii AD		79,898	36,921	12,604	3,10
RES Technology AD		68,553	41,389	7,798	(139
KV Holdings, Inc.		5,245	1	-	1,07
KEPCO SPC Power Corporation		448,069	121,783	165,046	63,68
Canada Korea Uranium Limited Partnership		285	144	-	(59
Gansu Datang Yumen Wind Power Co., Ltd.		89,517	57,464	4,263	(6,81
Datang Chifeng Renewable Power Co., Ltd.		813,804	397,344	99,795	19,04
Datang KEPCO Chaoyang Renewable Power Co., Ltd.		62,600	35,493	8,742	2,50
Rabigh Electricity Company		2,691,654	2,258,772	278,431	37,79
Rabigh Operation & Maintenance Company Limited		25.032	13,965	25.607	4.87
Jamaica Public Service Company Limited		1,291,008	659,296	827,298	25,32
KW Nuclear Components Co., Ltd.		26,417	11,990	26,481	9,45
Busan Shinho Solar Power Co., Ltd.		47,789	32,533	6,770	1,24
GS Donghae Electric Power Co., Ltd.		1,952,297	1,346,568	19,851	16,39
Global Trade Of Power System Co., Ltd.		1,661	18	2,667	20
Expressway Solar-light Power Generation Co., Ltd.		20,790	12,710	3,395	96
KODE NOVUS I LLC		14,286	104,252	2,362	(50,15
KODE NOVUS II LLC		3,236	50,267	810	(22,58)
Daejung Offshore Wind Power Co., Ltd.		6,076	30,207	010	(22,50)
Amman Asia Electric Power Company		881,164	624,590	- 13,631	29,68
KAPES, Inc.		145,576	136,247	31,852	45
				31,002	
Dangjin Eco Power Co., Ltd.		149,926	1,001	-	(2,023
Honam Wind Power Co., Ltd.		41,614	26,375	6,776	2,17
Chun-cheon Energy Co., Ltd.		548,306	379,113	-	(3,68
Yeonggwangbaeksu Wind Power Co., Ltd.		99,773	81,881	11,208	(2)
Nghi Son 2 Power Ltd.		757	302	-	(1,48
Kelar S.A		617,803	712,124	-	(4,10
PT. Tanjung Power Indonesia		203,051	197,491	122,583	3,82
ncheon New Power Co., Ltd.		7,902	5,961	2,985	16
Seokmun Energy Co., Ltd.		235,905	234,556	-	(54
Daehan Wind Power PSC		750	714	-	(52
Barakah One Company		17,117,338	17,116,680	-	
Nawah Energy Company		1,645	-	-	
MOMENTUM		2,749	2,547	2,886	19
Daegu Green Power Co., Ltd.		636,438	547,017	265,621	(3,98

(5) Financial information of associates and joint ventures reconciled to the Company's investments in consolidated financial statements as of December 31, 2017 and 2016 are as follows:

		2017 Percentage of	Share in	Investment	Intercompany		
Investees	Net assets	ownership (*)	net assets	differential	transaction	Others	Book value
<associates></associates>	100 00000	officiality ()	101 00000	unoronnu	landaotion		<u>Dook fulde</u>
Korea Gas Corporation	8,140,414	21.57%	1,755,887	-	-	(137,019)	1,618,868
Korea Electric Power Industrial Development			.,,			(,,	.,,
Co., Ltd.	75,303	29.00%	21,838	-	-	_	21,838
YTN Co., Ltd.	189,568	21.43%	40,624	_	(18)	_	40,606
Cheongna Energy Co., Ltd.	13,423	43.90%	5,893	2,584	(140)	_	8,337
Gangwon Wind Power Co., Ltd.	92,038	15.00%	13,806	2,004	(140)	49	13,855
-				-	-		
Hyundai Green Power Co., Ltd.	395,883	29.00%	114,806	-	-	-	114,806
Korea Power Exchange	237,631	100.00%	237,631	-	-	-	237,631
AMEC Partners Korea Ltd.	1,131	19.00%	215	-	-	-	215
Hyundai Energy Co., Ltd.	(36,547)	46.30%	(16,921)	-	(1,037)	17,958	
Ecollite Co., Ltd.	1,700	36.10%	614	-	-	(614)	
Taebaek Wind Power Co., Ltd.	21,274	25.00%	5,319	-	-	-	5,319
Taeback Guinemi Wind Power Co., Ltd.	12,357	25.00%	3,089	-	-	-	3,089
Pyeongchang Wind Power Co., Ltd.	16,546	25.00%	4,136	-	-	-	4,136
Daeryun Power Co., Ltd.	123,881	19.45%	24,095	1,014	-	4	25,113
Changjuk Wind Power Co., Ltd.	25,049	30.00%	7,515	-	-	-	7,515
KNH Solar Co., Ltd.	8,217	27.00%	2,218	-	-	-	2,218
SPC Power Corporation	137,586	38.00%	52,283	-	-	-	52,283
Gemeng International Energy Co., Ltd.	1,911,686	34.00%	649,973	-	-	-	649,973
PT. Cirebon Electric Power	354,217	27.50%	97,410	-	-	-	97,410
KNOC Nigerian East Oil Co., Ltd.	(87,831)	14.63%	(12,850)	-	-	12,850	
KNOC Nigerian West Oil Co., Ltd.	(80,403)	14.63%	(11,763)	-	-	11,763	
PT Wampu Electric Power	63,918	46.00%	29,403	-	-		29,403
PT. Bayan Resources TBK	351,225	20.00%	70,245	482,109	-	(100,523)	451,831
S-Power Co., Ltd.	242,409	49.00%	118,780		(1,835)		116,945
Pioneer Gas Power Limited	42,373	38.50%	16,314	22,278	(1,000)	67	38,659
Eurasia Energy Holdings	(430)	40.00%	(172)	22,270	_	172	00,000
Xe-Pian Xe-Namnoy Power Co., Ltd.	251,327	25.00%	62,832	74	(838)	(289)	61,779
Hadong Mineral Fiber Co., Ltd.	(28)	8.33%	(2)	74	(030)	(203)	01,773
-	2,361		208	-	-	Z	208
Green Biomass Co., Ltd.		8.80%		-	-	-	200
PT. Mutiara Jawa	(2,572)	29.00%	(746)	-	-	746	
Samcheok Eco Materials Co., Ltd.	23,459	2.35%	551	-	-	(551)	0.00
Noeul Green Energy Co., Ltd.	7,128	29.00%	2,067	-	-	-	2,067
Naepo Green Energy Co., Ltd.	49,430	41.67%	20,598	-	-	-	20,598
Goseong Green Energy Co., Ltd.	239,908	1.12%	2,676	-	(79)	-	2,597
Gangneung Eco Power Co., Ltd.	166,421	1.61%	2,681	-	(98)	-	2,583
Shin Pyeongtaek Power Co., Ltd.	85,208	40.00%	34,083	7,808	(6,988)	-	34,903
Heang Bok Do Si Photovoltaic Power Co.,							
Ltd.	662	28.00%	185	-	-	2	187
Dongducheon Dream Power Co., Ltd.	209,330	33.61%	70,356	-	(4,409)	(12,714)	53,233
Jinbhuvish Power Generation Pvt. Ltd.	52,407	5.16%	2,704	-	-	(2,704)	
SE Green Energy Co., Ltd.	7,278	47.76%	3,476	-	-	-	3,476
Daegu Photovoltaic Co., Ltd.	5,923	29.00%	1,718	-	-	-	1,718
Jeongam Wind Power Co., Ltd.	9,408	40.00%	3,763	-	-	-	3,763
Korea Power Engineering Service Co., Ltd.	12,617	29.00%	3,659	-	-	-	3,659
Busan Green Energy Co., Ltd.	25,389	29.00%	7,363	-	-	-	7,363
Gunsan Bio Energy Co., Ltd. (formerly,	20,000	20.00 /0	.,000				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Jungbu Bio Energy Co., Ltd.)	(6,814)	18.87%	(1,286)	-	-	1,286	
Korea Electric Vehicle Charging Service	6,246	28.00%	1,749	-	-	.,200	1,749
Ulleungdo Natural Energy Co., Ltd.	21,341	29.85%	6,370	-	-	-	6,370
Korea Nuclear Partners Co., Ltd.	1,322	29.00%	383	-	-	_	383
Tamra Offshore Wind Power Co., Ltd.	31,704			-	-	-	
		27.00%	8,560	-	-	-	8,560
Korea Electric Power Corporation Fund	48,905	98.09%	47,971	-	-	3	47,974
Energy Infra Asset Management Co., Ltd.	4,809	9.90%	476	-	-	-	476
Daegu clean Energy Co., Ltd.	40	28.00%	11	-	-	-	11

(5) Financial information of associates and joint ventures reconciled to the Company's investments in consolidated financial statements as of December 31, 2017 and 2016 are as follows, continued:

		2017					
		Percentage of	Share in	Investment	Intercompany		
Investees	Net assets	ownership (*)	net assets	differential	transaction	Others	Book valu
YaksuESS Co., Ltd	₩ 668	29.00%	193	-	-	1	19
Nepal Water & Energy Development Company							
Private Limited	46,451	62.13%	28,860	972	-	666	30,49
Gwangyang Green Energy Co., Ltd.	8,772	20.00%	1,754	18	-	-	1,77
PND solar., Ltd	3,779	29.00%	1,096	154	-	-	1,25
<joint ventures=""></joint>							
KEPCO-Uhde Inc.	508	50.85%	258	-	-	-	25
Eco Biomass Energy Sdn. Bhd.	-	61.53%	-	-	-	-	
Datang Chaoyang Renewable Power Co., Ltd.	68,154	40.00%	27,262	-	-	-	27,26
Shuweihat Asia Power Investment B.V.	31,991	49.00%	15,675	-	-	-	15,67
Shuweihat Asia Operation & Maintenance							
Company	1,206	55.00%	663	-	-	-	663
Waterbury Lake Uranium L.P.	55,313	35.76%	19,780	-	-	1	19,78
ASM-BG Investicii AD	42,404	50.00%	21,202	-	-	-	21,20
RES Technology AD	28,750	50.00%	14,375	-	-	-	14,37
KV Holdings, Inc.	4,795	40.00%	1,918	-	-	-	1,91
KEPCO SPC Power Corporation	288,689	75.20%	217,094	-	-	-	217,09
Gansu Datang Yumen Wind Power Co., Ltd.	27,101	40.00%	10,840	-	-	-	10,84
Datang Chifeng Renewable Power Co., Ltd.	427,762	40.00%	171,105	-	-	(50)	171,05
Datang KEPCO Chaoyang Renewable Power	127,702	10.00 /0	1,1,100			(00)	171,00
Co., Ltd.	27,649	40.00%	11,060	_	_	_	11,06
Rabigh Electricity Company	428,119	40.00%	171,248		(70,978)	(914)	99,35
Rabigh Operation & Maintenance Company	420,113	40.00 /0	171,240	-	(70,570)	(314)	00,00
	0.067	40.000/	2 007				2.00
Limited	9,967	40.00%	3,987	-	-	-	3,98
Jamaica Public Service Company Limited	523,662	40.00%	209,464	(80,161)	-	91,850	221,15
KW Nuclear Components Co., Ltd.	15,472	45.00%	6,962	-	-	(259)	6,70
Busan Shinho Solar Power Co., Ltd.	17,386	25.00%	4,346	-	-	-	4,34
GS Donghae Electric Power Co., Ltd.	649,199	34.00%	220,727	-	-	-	220,72
Global Trade Of Power System Co., Ltd.	1,990	29.00%	577	-	-	-	57
Expressway Solar-light Power Generation Co.,	0.400	00.00%	0.400				0.40
	8,492	29.00%	2,463	-	-	-	2,46
KODE NOVUS I LLC	(107,377)	50.00%	(53,689)	-	-	53,689	
KODE NOVUS II LLC	(47,391)	50.00%	(23,696)	-	-	23,696	0.00
Daejung Offshore Wind Power Co., Ltd.	5,950	49.90%	2,969	-	-	-	2,96
Amman Asia Electric Power Company	242,940	60.00%	145,764	-	-	(88)	145,67
KAPES, Inc.	14,658	51.00%	7,476	-	-	-	7,47
Dangjin Eco Power Co., Ltd.	162,676	34.00%	55,310	2,618	-	-	57,92
Honam Wind Power Co., Ltd.	14,724	29.00%	4,270	32	-	-	4,30
Chun-cheon Energy Co., Ltd.	160,919	29.90%	48,115	3	-	-	48,11
Yeonggwangbaeksu Wind Power Co., Ltd.	18,189	15.00%	2,728	6	-	-	2,73
Nghi Son 2 Power Ltd.	365	50.00%	183	-	-	-	18
Kelar S.A	100,192	65.00%	65,125	2,424	-	(316)	67,23
PT. Tanjung Power Indonesia	5,075	35.00%	1,776	-	-	-	1,77
Incheon New Power Co., Ltd.	2,135	29.00%	619	-	-	-	61
Seokmun Energy Co., Ltd.	47,538	29.00%	13,786	-	-	-	13,78
Daehan Wind Power PSC	(824)	50.00%	(412)	-	-	412	
Barakah One Company	3,476	18.00%	626	-	-	-	62
Nawah Energy Company	1,436	18.00%	258	-	-	-	25
MOMENTUM	1,174	33.33%	391	-	-	-	39
Daegu Green Power Co., Ltd.	71,706	29.00%	20,795	-	84	21,512	42,39
Yeonggwang Wind Power Co., Ltd.	36,740	41.00%	15,063	231	-	-	15,29
Chester Solar IV SpA	2,034	81.82%	1,664	-	-	36	1,70
Chester Solar V SpA	512	81.82%	419	-	-	106	52
Diego de Almagro Solar SpA	2,436	81.82%	1,993			98	2,09

(*) The percentage of ownership shown above is after considering the treasury stocks and others.

(5) Financial information of associates and joint ventures reconciled to the Company's investments in consolidated financial statements as of December 31, 2017 and 2016 are as follows, continued:

		Percentage of	Share in	Investment	Intercompany		
Investees	Net assets	ownership (*)	net assets	differential	transaction	Others	Book valu
<associates></associates>							
Korea Gas Corporation W	9,386,486	21.57%	2,024,665	-	-	(90,788)	1,933,87
Korea Electric Power Industrial							
Development Co., Ltd.	70,604	29.00%	20,475	-	-	-	20,47
YTN Co., Ltd.	178,212		38,191	-	(30)	(5)	38,15
Cheongna Energy Co., Ltd.	22,627	43.90%	9,933	2,584	(144)	-	12,373
Gangwon Wind Power Co., Ltd.	86,797	15.00%	13,020	-	-	49	13,06
Hyundai Green Power Co., Ltd.	399,994		115,998	-	-	-	115,99
Korea Power Exchange	223,238	100.00%	223,238	-	-	-	223,23
AMEC Partners Korea Ltd.	1,184	19.00%	225	-	-	-	22
Hyundai Energy Co., Ltd.	6,774		3,136	-	(1,079)	(1,026)	1,03
Ecollite Co., Ltd.	1,821	36.10%	657	-	-	(657)	
Taebaek Wind Power Co., Ltd.	19,000	25.00%	4,750	-	-	-	4,75
Taeback Guinemi Wind Power Co., Ltd.	12,522	25.00%	3,131	-	-	-	3,13
Pyeongchang Wind Power Co., Ltd.	13,531	25.00%	3,383	-	-	-	3,38
Daeryun Power Co., Ltd.	148,353	19.45%	28,855	1,014	-	4	29,873
Changjuk Wind Power Co., Ltd.	22,716	30.00%	6,815	-	-	115	6,93
KNH Solar Co., Ltd.	7,679	27.00%	2,073	-	-	-	2,073
SPC Power Corporation	149,520	38.00%	56,818	-	-	-	56,81
Gemeng International Energy Co., Ltd.	2,000,974	34.00%	680,331	-	-	(266)	680,06
PT. Cirebon Electric Power	351,484	27.50%	96,658	-	-	-	96,65
KNOC Nigerian East Oil Co., Ltd.	(85,247)	14.63%	(12,472)	-	-	12,472	
KNOC Nigerian West Oil Co., Ltd.	(78,317)	14.63%	(11,458)	-	-	11,458	
PT Wampu Electric Power	50,409	46.00%	23,188	-	-	-	23,18
PT. Bayan Resources TBK	99,473	20.00%	19,895	482,109	-	(99,337)	402,66
S-Power Co., Ltd.	256,849	49.00%	125,856	-	(1,944)	-	123,91
Pioneer Gas Power Limited	68,813	40.00%	27,525	23,147	-	68	50,74
Eurasia Energy Holdings	(485)	40.00%	(194)	-	-	194	
Xe-Pian Xe-Namnoy Power Co., Ltd.	229,227	25.00%	57,307	(4,802)	(672)	(289)	51,54
Hadong Mineral Fiber Co., Ltd.	(20)	25.00%	(5)	-	-	5	
Green Biomass Co., Ltd.	335	14.00%	47	-	-	-	4
PT. Mutiara Jawa	(6,567)	29.00%	(1,904)	70	-	1,834	
Samcheok Eco Materials Co., Ltd.	23,889	2.35%	561	-	-	(561)	
Noeul Green Energy Co., Ltd.	4,196	29.00%	1,217	-	-	-	1,21
Naepo Green Energy Co., Ltd.	101,753	25.00%	25,438	-	-	-	25,43
Goseong Green Energy Co., Ltd.	245,793	1.12%	2,742	-	(79)	-	2,66
Gangneung Eco Power Co., Ltd.	170,302	1.61%	2,744	-	(98)	-	2,64
Shin Pyeongtaek Power Co., Ltd.	(6,344)	40.00%	(2,538)	-	(3,380)	5,918	
Heang Bok Do Si Photovoltaic Power Co.,							
Ltd.	640	28.00%	179	-	-	2	18
DS POWER Co., Ltd.	107,906	14.44%	15,582	-	(7,302)	(1,090)	7,19
Dongducheon Dream Power Co., Ltd.	243,172		81,730	-	(4,768)	(30,086)	46,87
KS Solar Co., Ltd.	3,178		604	-	-	-	60
Jinbhuvish Power Generation Pvt. Ltd.	55,760		2,877	-	-	(2,877)	
SE Green Energy Co., Ltd.	7,381	47.76%	3,525	-	-	-	3,52
Daegu Photovoltaic Co., Ltd.	5,862		1,700	-	-	-	1,70
Jeongam Wind Power Co., Ltd.	10,000	40.00%	4,000	-	-	-	4,00
Korea Power Engineering Service Co., Ltd.	9,688		2,810	-	-	-	2,81
Busan Green Energy Co., Ltd.	47,596		13,803	-	-	-	13,80
Gunsan Bio Energy Co., Ltd. (formerly,	17,000	20.00 /0	.0,000				10,000
Jungbu Bio Energy Co., Ltd.)	(697)	18.87%	(132)	-	-	132	
Korea Electric Vehicle Charging Service	3,941	28.00%	1,103	-	-	-	1,10
Ulleungdo Natural Energy Co., Ltd.	23,098		6,895	-	-	(1)	6,894
Korea Nuclear Partners Co., Ltd.	856		248	-	_		24
Noroa nadicari artificio 60., Ltu.	000	20.0070	240	-	-	-	240
Tamra Offshore Wind Power Co., Ltd.	25,980	27.00%	7,015			-	7,01

(5) Financial information of associates and joint ventures reconciled to the Company's investments in consolidated financial statements as of December 31, 2017 and 2016 are as follows, continued:

		2016					
		Percentage of	Share in	Investment	Intercompany		
Investees	Net assets	ownership (*)	net assets	differential	transaction	Others	Book valu
Energy Infra Asset Management Co., Ltd.	₩ 2,619	9.90%	259		_	_	25
Daegu clean Energy Co., Ltd.	500	28.00%	140	_	_	_	14
YaksuESS Co., Ltd.	673	29.00%	140	-	-	1	19
Nepal Water & Energy Development Company	075	29.00 /8	190	-	-	I	130
Private Limited	33,311	52.77%	17,578	972	-	117	18,66
<joint ventures=""></joint>							
KEPCO-Uhde Inc.	591	50.85%	301	-	-	-	30
Eco Biomass Energy Sdn. Bhd.	-	61.53%	-	-	-	-	
Datang Chaoyang Renewable Power Co., Ltd.	70,598	40.00%	28,239	-	-	-	28,23
Shuweihat Asia Power Investment B.V.	278	49.00%	136	-	-	(136)	
Shuweihat Asia Operation & Maintenance	270	1010070	100			(100)	
Company	1,003	55.00%	552	-	-	(102)	450
Waterbury Lake Uranium L.P.	56,134	36.97%	20,753			561	21,314
ASM-BG Investicii AD	42,977	50.00%	20,730			(1)	21,31
RES Technology AD	27,164	50.00%	13,582			(1)	13,58
KV Holdings, Inc.	5,244	40.00%	2,098	_	_	-	2,09
KEPCO SPC Power Corporation	326,286	75.20%	245,367	-	-	_	245,36
Canada Korea Uranium Limited Partnership	320,280 141	12.50%	245,507	-	-	(18)	240,00
Gansu Datang Yumen Wind Power Co., Ltd.	32,053	40.00%	12,821	-	-	(10)	12,82
0				-	-		
Datang Chifeng Renewable Power Co., Ltd. Datang KEPCO Chaoyang Renewable Power	416,460	40.00%	166,584	-	-	(49)	166,53
Co., Ltd.	27,107	40.00%	10,843	-	-	-	10,84
Rabigh Electricity Company	432,882	40.00%	173,153	-	(75,311)	(40)	97,80
Rabigh Operation & Maintenance Company							
Limited	11,067	40.00%	4,427	-	-	-	4,42
Jamaica Public Service Company Limited	631,712	40.00%	252,685	(80,161)	-	76,929	249,45
KW Nuclear Components Co., Ltd.	14,427	45.00%	6,492	90	-	551	7,13
Busan Shinho Solar Power Co., Ltd.	15,256	25.00%	3,814	-	-	-	3,81
GS Donghae Electric Power Co., Ltd.	605,729	34.00%	205,948	-	-	-	205,94
Global Trade Of Power System Co., Ltd.	1,643	29.00%	476	-	-	1	47
Expressway Solar-light Power Generation Co.,							
Ltd.	8,080	29.00%	2,343	-	-	-	2,34
KODE NOVUS I LLC	(89,966)	50.00%	(44,983)	4,732	-	40,251	
KODE NOVUS II LLC	(47,031)	50.00%	(23,516)	-	-	23,516	
Daejung Offshore Wind Power Co., Ltd.	6,042	49.90%	3,015	-	-	-	3,01
Amman Asia Electric Power Company	256,574	60.00%	153,944	-	-	(87)	153,85
KAPES, Inc.	9,329	51.00%	4,758	-	-	-	4,75
Dangjin Eco Power Co., Ltd.	148,925	34.00%	50,635	2,618	-	-	53,25
Honam Wind Power Co., Ltd.	15,239	29.00%	4,419	32	-	-	4,45
Chun-cheon Energy Co., Ltd.	169,193	29.90%	50,589	3	-	-	50,59
Yeonggwangbaeksu Wind Power Co., Ltd.	17,892	15.00%	2,684	5			2,68
Nghi Son 2 Power Ltd.	455	50.00%	2,004	5	_	1	2,00
Kelar S.A	(94,321)	65.00%	(61,309)	2,424	_	58,885	
PT. Tanjung Power Indonesia	(54,321) 5,560	35.00%	1,946	2,424	-	50,003	1,94
				-	-	-	
Incheon New Power Co., Ltd.	1,941	29.00%	563 201	-	-	-	56
Seokmun Energy Co., Ltd.	1,349	29.00%	391	-	-	-	39
Daehan Wind Power PSC	36	50.00%	18	-	-	(2)	1
Barakah One Company	658	18.00%	118	-	-	(2)	11
Nawah Energy Company	1,645	18.00%	296	-	-	(6)	29
MOMENTUM	202	33.33%	67	-	-	-	6
Daegu Green Power Co., Ltd.	89,421	29.00%	25,932	84	-	21,512	47,52

(*) The percentage of ownership shown above is after considering the treasury stocks and others.

(6) As of December 31, 2017 and 2016, unrecognized equity interest in investments in associates and joint ventures whose book value has been reduced to zero due to accumulated losses are as follows:

In millions of won	20	17	2016		
	Unrecognized equity interest	Accumulated unrecognized equity interest	Unrecognized equity interest	Accumulated unrecognized equity interest	
Shin Pyeongtaek Power Co., Ltd.	↔ (2,537)	-	1,211	2,537	
Seokmun Energy Co., Ltd.	-	-	(205)	-	
Kelar S.A	(61,309)	-	43,920	61,309	
Hadong Mineral Fiber Co., Ltd.	(3)	2	-	5	
PT. Mutiara Jawa	(1,159)	746	554	1,905	
Eurasia Energy Holdings	(22)	172	6	194	
KODE NOVUS I LLC	8,706	53,689	22,194	44,983	
KODE NOVUS II LLC	181	23,696	12,340	23,515	
Gunsan Bio Energy Co., Ltd. (formerly, Jungbu Bio Energy Co., Ltd.)	1,154	1,286	132	132	
Daehan Wind Power PSC	412	412	-	-	

(7) As of December 31, 2017, shareholders' agreements on investments in associates and joint ventures that may cause future economic resource or cash outflows are as follows:

(i) Gemeng International Energy Co., Ltd.

Gemeng International Energy Co., Ltd., issued put options on 8% of its shares to its financial investors, KEPCO Woori Sprott PEF (NPS Co-Pa PEF). If the investment fund is not collected until the maturity date (December 25, 2023, two years extension is possible), PEF can exercise the option at strike price which is the same as a principal investment price (including operating fees ratio of below 1% per annum), and also, the Company provided a performance guarantee on this agreement.

(ii) Hyundai Energy Co., Ltd.

The Company had placed guarantees for a fixed return on the investment to NH Power II Co., Ltd. and National Agricultural Cooperative Federation ("NACF") and had obtained the rights to acquire the investment securities in return preferentially. In addition, NH Power II Co., Ltd. and NACF have a right, which can be exercised for 30 days starting from 2 months to 1 month prior to 17 years after the termination date of the contract to sell their shares to the Company.

(iii) Taebaek Wind Power Co., Ltd.

In case non-controlling shareholders decide to dispose of their shares in Taebaek Wind Power Co., Ltd. after the warrant period of defect repair for wind power generator has expired, the Company acquires those shares at fair value. The acquisition is to be made after the conditions of the acquisition are discussed among the parties involved, with consideration of various factors such as financial status and business situation.

(iv) Pyeongchang Wind Power Co., Ltd.

In case non-controlling shareholders decide to dispose of their shares in Pyeongchang Wind Power Co., Ltd. after commercial operation of the power plant has started, the Company acquires those shares at fair value. The acquisition is to be made after the conditions of the acquisition are discussed among the parties involved, with the careful consideration of various factors such as financial status and business situation.

(7) As of December 31, 2017, shareholders' agreements on investments in associates and joint ventures that may cause future economic costs or cash outflows are as follows, continued:

(v) Jeongam Wind Power Co., Ltd.

In case non-controlling shareholders decide to dispose of their shares in Jeongam Wind Power Co., Ltd. after the construction of the power plant has been completed, the Company is obligated to acquire those shares at fair value.

(vi) Daejung Offshore Wind Power Co., Ltd.

In case Samsung Heavy Industries Co., Ltd., a co-participant of the joint venture agreement, decides to dispose of its shares in Daejung Offshore Wind Power Co., Ltd., the Company is obligated to acquire those shares after evaluating the economic feasibility of the facilities installed by Samsung Heavy Industries Co., Ltd.

(vii) Samcheok Eco Materials Co., Ltd.

The Company has the rights to purchase the stocks should preferred stockholders elect to sell their stocks on the expected sell date (3 years from preferred stock payment date) and is required to guarantee the promised yield when preferred stockholders sell their stocks.

(viii) Hyundai Green Power Co., Ltd.

As of December 31, 2017, Hyundai Green Power Co., Ltd., an associate of the Company, which engages in the byproduct gas power generating business, entered into a project financing agreement with a limit of W919.2 billion with Korea Development Bank and others. At a certain period in the future, the Company has an appraisal right against the financial investors (Korea Development Bank and others) and also has an obligation to sell its shares when claimed by the financial investors. At a certain period in the future, the Company has an appraisal right against Hyundai Steel Company and a third party designated by Hyundai Steel Company (collectively, "Hyundai Steel Company"), the operating investor of Hyundai Green Power Co., Ltd., according to the conditions of the agreement and also has an obligation to sell its shares upon request from Hyundai Steel Company.

(8) Significant restrictions on the Company's abilities on associates or joint ventures are as follows:

Company	Nature and extent of any significant restrictions						
Daeryun Power Co., Ltd.	Principals on subordinated loans or dividends can only be paid when all conditions of the loan agreement are satisfied or prior written consent of financial institutions is obtained.						
Changjuk Wind Power Co., Ltd.	Principals on subordinated loans or dividends can only be paid when all conditions of the loan agreement are satisfied or prior written consent of financial institutions is obtained.						
Taebaek Wind Power Co., Ltd.	Financial institutions can reject or defer an approval with regard to the request for fund executions on subordinated loans of shareholders in order to pay senior loans based on the loan agreement.						
Pyeongchang Wind Power Co., Ltd.	Principals on subordinated loans or dividends can only be paid when all conditions of the loan agreement are satisfied or prior written consent of financial institutions is obtained.						
Daegu Green Power Co., Ltd.	Principals on subordinated loans or dividends can only be paid when all conditions of the loan agreement are satisfied or prior written consent of financial institutions is obtained. Shares cannot be wholly or partially transferred without prior written consent of financial institutions is obtained.						
KNH Solar Co., Ltd.	Principal and interest, dividends to shareholders cannot be paid without written consent of financial institutions.						

18. Property, Plant and Equipment

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

In millions of won		2017						
	_	Acquisition cost	Government grants	Accumulated depreciation	Accumulated impairment losses (*)	Book value		
Land	₩	13,318,542	(21,968)	-	-	13,296,574		
Buildings		18,777,678	(63,539)	(6,722,376)	(1,776)	11,989,987		
Structures		66,184,484	(196,414)	(22,071,667)	(8,039)	43,908,364		
Machinery		75,826,292	(183,188)	(28,904,982)	(45,512)	46,692,610		
Ships		4,175	-	(3,772)	-	403		
Vehicles		276,425	(6,322)	(195,260)	(127)	74,716		
Equipment		1,440,870	(761)	(1,020,192)	(6)	419,911		
Tools		1,010,537	(1,027)	(809,842)	(32)	199,636		
Construction-in-progress		25,610,649	(49,084)	-	(38,108)	25,523,457		
Finance lease assets		2,390,680	(27)	(2,093,001)	-	297,652		
Asset retirement costs		9,395,821	-	(3,356,337)	-	6,039,484		
Others	-	11,247,021		(8,807,401)		2,439,620		
	₩	225,483,174	(522,330)	(73,984,830)	(93,600)	150,882,414		

(*) The Company separately recognizes impairment loss on each asset, reflecting various factors such as physical impairment and others during the replacement.

In millions of won				2016		
	-	Acquisition cost	Government grants	Accumulated depreciation	Accumulated impairment losses (*)	Book value
Land	₩	12,969,741	(3,204)	-	-	12,966,537
Buildings		17,722,326	(61,188)	(5,936,849)	(853)	11,723,436
Structures		63,291,437	(197,641)	(19,959,839)	(1,183)	43,132,774
Machinery		67,769,168	(111,064)	(24,344,832)	(2,391)	43,310,881
Ships		4,175	-	(3,625)	-	550
Vehicles		247,751	(107)	(176,781)	-	70,863
Equipment		1,270,660	(732)	(894,265)	-	375,663
Tools		921,115	(430)	(742,083)	-	178,602
Construction-in-progress		27,334,368	(135,807)	-	(38,108)	27,160,453
Finance lease assets		2,390,779	-	(1,984,426)	-	406,353
Asset retirement costs		7,129,771	-	(3,064,359)	-	4,065,412
Others	-	10,361,294		(8,009,762)		2,351,532
	₩	211,412,585	(510,173)	(65,116,821)	(42,535)	145,743,056

(*) The Company separately recognizes impairment loss on each asset, reflecting various factors such as physical impairment and others during the replacement.
18. Property, Plant and Equipment, Continued

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

In millions of won					2017			
	-	Beginning				Impairment		Ending
	_	balance	Acquisition	Disposal	Depreciation	(*)	Others	balance
Land	₩	12,969,741	32,773	(8,961)	-	-	324,989	13,318,542
(Government grants)		(3,204)	-	5	-	-	(18,769)	(21,968)
Buildings		11,784,624	40,592	(19,715)	(794,804)	(923)	1,043,752	12,053,526
(Government grants)		(61,188)	(900)	28	5,996	-	(7,475)	(63,539)
Structures		43,330,415	428	(519,366)	(2,421,168)	(6,856)	3,721,325	44,104,778
(Government grants)		(197,641)	-	1,905	10,011	-	(10,689)	(196,414)
Machinery		43,421,945	421,892	(242,428)	(4,821,595)	(43,121)	8,139,105	46,875,798
(Government grants)		(111,064)	(10,834)	489	17,390	-	(79,169)	(183,188)
Ships		550	-	-	(147)	-	-	403
Vehicles		70,970	3,447	(174)	(34,236)	(127)	41,158	81,038
(Government grants)		(107)	(107)	14	1,070	-	(7,192)	(6,322)
Equipment		376,395	53,529	(413)	(158,614)	(6)	149,781	420,672
(Government grants)		(732)	(43)	-	454	-	(440)	(761)
Tools		179,032	30,990	(166)	(74,909)	(32)	65,748	200,663
(Government grants)		(430)	-	-	354	-	(951)	(1,027)
Construction-in-progress		27,296,260	11,996,508	(6,487)	-	-	(13,713,740)	25,572,541
(Government grants)		(135,807)	(42,728)	-	-	-	129,451	(49,084)
Finance lease assets		406,353	-	(29,696)	(107,390)	-	28,412	297,679
(Government grants)		-	-	-	1	-	(28)	(27)
Asset retirement costs		4,065,412	-	-	(518,565)	-	2,492,637	6,039,484
Others		2,351,532	10,411	(28)	(762,711)	-	840,416	2,439,620
	-							<u> </u>
	₩	145,743,056	12,535,958	(824,993)	(9,658,863)	(51,065)	3,138,321	150,882,414

(*) Korea Midland Power Co., Ltd. and Korea Western Power Co., Ltd., 100% owned subsidiaries, have determined that there are impairment indicators for the shutdowns of certain power generation units and fire, and performed an impairment test over the individual assets. As a result, the Company recognized the amount of the carrying amount in excess of its recoverable amount as impairment loss in the consolidated statements of comprehensive income.

18. 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 millions of won				2016			
	Beginning balance	Acquisition	Disposal	Depreciation	Impairment	Others	Ending balance
Land 4	, ,	13,973	(52,569)	-	-	611,877	12,969,741
(Government grants) Buildings	(3,147) 9,676,432	-	14 (9,020)	- (676,866)	-	(71) 2,794,078	(3,204) 11,784,624
(Government grants)	(63,932)	-	731	5,299	-	(3,286)	(61,188)
Structures	40,258,162	455	(524,310)	(2,233,333)	-	5,829,441	43,330,415
(Government grants)	(193,119)	-	2,597	9,491	-	(16,610)	(197,641)
Machinery (Government grants)	36,864,749 (108,935)	193,017 (33)	(243,757) 1,210	(4,353,596) 12,272	-	10,961,532 (15,578)	43,421,945 (111,064)
Ships	786	-		(281)	-	45	550
Vehicles	60,472	2,493	(34)	(27,615)	-	35,654	70,970
(Government grants) Equipment	(29) 310,571	(58) 67,134	- (323)	25 (128,084)	-	(45) 127,097	(107) 376,395
(Government grants)	(1,026)	- 07,134	(323)	(128,084) 452	-	(158)	(732)
Tools	160,630	27,856	(327)	(69,842)	-	60,715	179,032
(Government grants)	(691)	-	-	295	-	(34)	(430)
Construction-in-progress (Government grants)	35,267,026 (139,898)	11,752,352 (28,434)	(94,443)	-	-	(19,628,675) 32,525	27,296,260 (135,807)
Finance lease assets	511,509	(20,434)	(31)	(96,254)	-	(8,905)	406,353
Asset retirement costs	4,106,087	-	-	(509,310)	-	468,635	4,065,412
Others	2,259,244		(9)	(813,248)		905,545	2,351,532
ť	₄ 141,361,351	12,028,789	(920,271)	(8,880,595)		2,153,782	145,743,056

19. Investment Properties

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

In millions of won			20	17	
		Acquisition cost	Government grants	Accumulated depreciation	Book value
Land Buildings	₩	264,205 36,165	(83)	(15,573)	264,205 20,509
	₩	300,370	(83)	(15,573)	284,714
In millions of won			20	16	

		Acquisition cost	Government grants	Accumulated depreciation	Book value
		<u>determinent grunte</u>		Dook fuldo	
Land	₩	336,421	-	-	336,421
Buildings		29,168	(64)	(11,845)	17,259
	₩	365,589	(64)	(11,845)	353,680

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

In millions of won			2017	1	
		Beginning balance	Depreciation	Others	Ending balance
Land	₩	336,421	-	(72,216)	264,205
Buildings (Government grants)		17,323 (64)	(1,178) 2	4,447 (21)	20,592 (83)
	₩	353,680	(1,176)	(67,790)	284,714

In millions of won			2016		_
		Beginning balance	Depreciation	Others	Ending balance
Land	₩	253,960	-	82,461	336,421
Buildings (Government grants)		15,963 (13)	(679) 1	2,039 (52)	17,323 (64)
	₩	269,910	(678)	84,448	353,680

19. Investment Properties, Continued

(3) Income and expenses related to investment properties for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Rental income Operating and maintenance expenses related to rental income	₩	9,581 (1,172)	9,460 (678)
	₩	8,409	8,782

(4) Fair value of investment properties as of December 31, 2017 and 2016 are as follows:

In millions of won		201	7	2016		
	_	Book value	Fair value	Book value	Fair value	
Land Buildings	₩	264,205 20,509	309,241 23,319	336,421 17,259	374,042 20,708	
	₩	284,714	332,560	353,680	394,750	

The fair values of the investment properties as of the reporting date were determined in consideration of the fluctuation on the publicly announced individual land price after the K-IFRS transition date (January 1, 2010).

(5) All of the Company's investment property is held under freehold interests.

20. Construction Contracts

(1) Changes in total contract amount in which revenue is not yet recognized for the years ended December 31, 2017 and 2016 are as follows:

In millions of won			201	7	
	_	Beginning balance	Increase (decrease) (*)	Recognized as revenue	Ending balance
Nuclear power plant construction in UAE and others	₩	7,236,888	151,891	(3,212,184)	4,176,595

(*) For the year ended December 31, 2017, the increased balance of contracts from new orders and other is W438,142 million and the decreased balance of contracts due to changes in scope of construction work is W286,251 million.

In millions of won			201	6	
	_	Beginning balance	Increase (decrease) (*)	Recognized as revenue	Ending balance
Nuclear power plant construction in UAE and others	₩	12,308,839	(1,045,094)	(4,026,857)	7,236,888

(*) For the year ended December 31, 2016, the increased balance of contracts from new orders and other is W718,118 million and the decreased balance of contracts due to changes in scope of construction work is W1,763,212 million.

20. Construction Contracts, Continued

(2) Accumulated earned revenue, expense and others related to the Company's construction contracts as of December 31, 2017 and 2016 are as follows:

In millions of won			20	17	
	-	Accumulated earned revenue	Accumulated expense	Accumulated profit	Unearned advance receipts
Nuclear power plant construction in UAE and others	₩	18,236,992	16,937,772	1,299,220	-
In millions of won			20	16	
	-	Accumulated earned revenue	Accumulated expense	Accumulated profit	Unearned advance receipts
Nuclear power plant construction in UAE and others	₩	15,314,737	14,396,890	917,847	

(3) Gross amount due from customers recognized as assets and due to customers recognized as liabilities for contract work as of December 31, 2017 and 2016 are as follows:

In millions of won		201	7	December 31, 2016	
		Assets (*1)	Liabilities (*2)	Assets (*1)	Liabilities (*2)
Nuclear power plant construction in UAE and others	₩	55,755	542,921	44,930	651,985

(*1) Included in trade and other receivables, net, in the consolidated statements of financial position.

(*2) Included in non-financial liabilities in the consolidated statements of financial position.

(4) The contract between the Company and ENEC (purchaser) states that disclosure of information related to UAE nuclear power plant construction projects such as contract date, contractual completion date, completion progress, unbilled construction, impairment losses, etc. is not allowed without consent from the purchaser. ENEC did not agree to disclose such information. Accordingly, the Company did not disclose such information based on K-IFRS 1011 45.2(2) as it is probable that ENEC may file a lawsuit for breach of contract if the Company does so. Also, the Company has not disclosed such information in a registration statement, investment prospectus or annual report and reported to the audit committee that those items will not be disclosed in the notes to the financial statements.

(5) Changes in estimates of contract revenues and costs related to the Company's construction services for the year ended December 31, 2017 are as follows:

In millions of won						2017				
	-					As	sets	Receiva cons coi		
	-	Expected loss on constructi -on contracts	Changes in estimates of contract revenue and costs	Amounts recognized in current profit or loss	Amounts recogniz- ed in future profit or loss	Gross	Allowance for doubtful accounts	Gross	Allowance for doubtful accounts	Changes in estimate- d total contract costs
Transmission and distribution Electric power generation (nuclear) Plant maintenance &	₩	-	80,529	30,553	49,976	29,843 2,147	-	-	-	-
engineering service	₩	404	(17,273)	(9,897) 20,656	(7,376)	23,765		29,365 29,365	(7,872)	23,484
	<u></u>	404	03,200	20,000	42,000	00,700		29,300	(7,072)	/30,233

21. Intangible Assets other than Goodwill

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

In millions of won				2017		
	_	Acquisition cost	Government grants	Accumulated amortization	Accumulated impairment losses	Book value
Software Licenses and franchises Copyrights, patents rights	₩	534,191 3,398	(486)	(408,300) (3,398)	-	125,405 -
and other industrial rights		43,857	-	(19,876)	-	23,981
Mining rights		553,876	-	(14,243)	-	539,633
Development expenditures Intangible assets under		836,996	(3,702)	(752,478)	-	80,816
development Usage rights of donated assets and		143,851	(10,540)	-	(3,941)	129,370
other		459,682	(11)	(358,024)	-	101,647
Leasehold rights		24,306	-	(19,262)	-	5,044
Others	_	297,289		(103,995)	(12,069)	181,225
	₩_	2,897,446	(14,739)	(1,679,576)	(16,010)	1,187,121

In millions of won

	_	Acquisition cost	Government grants	Accumulated amortization	Accumulated impairment losses	Book value
Software	₩	458,382	(595)	(365,161)	-	92,626
Licenses and franchises		3,398	-	(3,398)	-	-
Copyrights, patents rights						
and other industrial rights		35,756	-	(15,675)	-	20,081
Mining rights		549,371	-	(10,511)	-	538,860
Development expenditures		785,966	(5,152)	(723,561)	-	57,253
Intangible assets under						
development		119,474	(11,090)	-	(3,941)	104,443
Usage rights of donated assets and						
other		426,346	(21)	(342,244)	-	84,081
Leasehold rights		23,350	-	(18,718)	-	4,632
Greenhouse gas emissions rights		6,283	-	-	-	6,283
Others		173,213		(88,527)	(12,124)	72,562
	₩	2,581,539	(16,858)	(1,567,795)	(16,065)	980,821

2016

21. Intangible Assets other than Goodwill, Continued

(2) Changes in intangible assets as of December 31, 2017 and 2016 are as follows:

In millions of won					2017			
	-	Beginning balance	Acquisition	Disposal	Amortization	Impairment	Others	Ending balance
Software	₩	93,221	12,700	(5)	(44,809)	-	64,784	125,891
(Government grants)		(595)	(17)	-	255	-	(129)	(486)
Licenses and franchises Copyrights, patents rights								
and other industrial rights		20,081	30	(7)	(3,350)	-	7,227	23,981
Mining rights		538,860	26,751	(272)	(4,640)	-	(21,066)	539,633
Development expenditures		62,405	494	-	(25,924)	-	47,543	84,518
(Government grants) Intangible assets under		(5,152)	-	-	2,811	-	(1,361)	(3,702)
development		115,533	56,527	-	-	(20)	(32,130)	139,910
(Government grants) Usage rights of donated		(11,090)	-	-	-	-	550	(10,540)
assets and other		84,102	-	-	(14,462)	-	32,018	101,658
(Government grants)		(21)	-	-	10	-	-	(11)
Leasehold rights Greenhouse gas emissions		4,632	-	-	(545)	-	957	5,044
rights		6,283	-	-	-	-	(6,283)	-
Others		72,562	47,402	(377)	(23,018)	54	84,602	181,225
(Government grants)	-							
	₩	980,821	143,887	(661)	(113,672)	34	176,712	1,187,121

In millions of won					2016			
	-	Beginning balance	Acquisition	Disposal	Amortization	Impairment	Others	Ending balance
Software	₩	57,886	18,267	-	(32,378)	-	49,446	93,221
(Government grants)		(699)	-	-	249	-	(145)	(595)
Licenses and franchises Copyrights, patents rights								
and other industrial rights		21,875	85	(39)	(2,697)	-	857	20,081
Mining rights		499,537	26,311	-	(899)	-	13,911	538,860
Development expenditures		51,807	212	-	(21,993)	-	32,379	62,405
(Government grants) Intangible assets under		(6,835)	-	-	2,771	-	(1,088)	(5,152)
development		94,886	66,588	-	-	(3,945)	(41,996)	115,533
(Government grants) Usage rights of donated		(10,483)	(1,597)	-	-	-	990	(11,090)
assets and other		48,591	-	-	(15,513)	-	51,024	84,102
(Government grants)		(32)	-	-	11	-	-	(21)
Leasehold rights		745	-	-	(351)	-	4,238	4,632
Greenhouse gas emissions								
rights		805	6,283	-	-	-	(805)	6,283
Others		97,750	8,273	(550)	(8,916)	3	(23,998)	72,562
(Government grants)	-	(1)			1		-	-
	₩	855,832	124,422	(589)	(79,715)	(3,942)	84,813	980,821

21. Intangible Assets other than Goodwill, Continued

(3) Significant specific intangible assets as of December 31, 2017 and 2016 are as follows:

In millions of won and thousands of Australian dollars

	2017			
Туре	Description	Currency	Amount	Remaining useful lives
Software	ERP system and others	KRW	1,135	3 years and 2 months ~ 3 year and 4 months
	AMI GATEWAY S/W	KRW	3,528	3 years and 2 months
Copyrights, patents rights and other industrial rights	Smart technology verification and standard design project conducting right	KRW	11,724	4 years and 9 months
Mining rights Development	Mining right of Bylong mine	AUD	401,225	- (*)
expenditures	Electricity sales information system	KRW	29,391	4 years 3 months
Intangible assets under development	Contributions to ARP NRC DC	KRW	46,458	-
Usage rights of donated	Sejong Haengbogdosi sharing charge	KRW	40,460	8 years and 11 months
assets and others	Dangjin power plant load facility usage right	KRW	20,463	3 years 3 months
Others	Occupancy and use of public waters	KRW	103,269	18 years 11 months

2017

(*) Mining rights are amortized using the units-of-production method and the amortization has not commenced yet.

In millions of won and thousands of Australian dollars

	2016				
Туре	Description	Currency	Amount	Remaining useful lives	
Software	ERP system and others	KRW	506	11 months ~ 1 year and 11 months	
	SCADA O/S (POWERON RELIANCE)	KRW	4,206	3 years and 1 month	
Copyrights, patents rights and other industrial rights	Smart technology verification and standard design project conducting right	KRW	5,750	5 years and 9 months	
Mining rights	Mining right of Bylong mine	AUD	401,225	- (*)	
Development expenditures	Development of maintenance system for utility plant	KRW	518	11 months	
Intangible assets under development	Contributions to ARP NRC DC	KRW	41,190	-	
Usage rights of donated	Sejong Haengbogdosi sharing charge	KRW	44,502	9 years and 11 months	
assets and others	Dangjin power plant load facility usage right	KRW	26,759	4 years and 3 months	
Others	Sillim electricity supply facility usage right	KRW	2,196	4 years and 11 months	

(*) Mining rights are amortized using the units-of-production method and the amortization has not commenced yet.

(4) For the years ended December 31, 2017 and 2016, the Company recognized research and development expenses of W721,437 million and W705,504 million, respectively.

22. Trade and Other Payables

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

In millions of won		201	7	2016			
		Current	Non-current	Current	Non-current		
Trade payables	₩	2,936,990	-	2,610,373	-		
Other trade payables		1,649,933	2,825,039	1,498,582	3,033,780		
Accrued expenses		1,087,844	1,951	1,152,933	2,161		
Leasehold deposits received		1,562	1,308	1,426	1,008		
Other deposits received		186,817	102,896	197,711	93,751		
Finance lease liabilities		131,792	286,468	121,176	420,003		
Dividends payable		4,448	-	3,204	-		
Others (*)		135	5,818	6	7,472		
	₩	5,999,521	3,223,480	5,585,411	3,558,175		

(*) Details of others as of December 31, 2017 and 2016 are as follows:

In millions of won	2017		7	2010	2016	
		Current	Non-current	Current	Non-current	
Advance received from local governments	₩	-	5,818	-	7,472	
Others		135		6	-	
	₩	135	5,818	6	7,472	

23. Borrowings and Debt Securities

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

In millions of won		2017	2016
Current liabilities			
Short-term borrowings	W	1,038,328	805,523
Current portion of long-term borrowings		128,543	310,977
Current portion of debt securities		7,961,182	7,825,310
Less : Current portion of discount on long-term borrowings		(886)	(979)
Less : Current portion of discount on debt securities		(3,882)	(1,753)
		9,123,285	8,939,078
Non-current liabilities			
Long-term borrowings		2,455,737	1,799,750
Debt securities		43,270,825	43,012,960
Less : Discount on long-term borrowings		(21,113)	(25,859)
Less : Discount on debt securities		(81,424)	(86,880)
Add : Premium on debt securities		82	156
		45,624,107	44,700,127
	W	54,747,392	53,639,205

(2) Repayment schedule of borrowings and debt securities as of December 31, 2017 and 2016 are as follows:

In millions of won

	2	017	
Туре		Borrowings	Debt securities
Less than 1 year	W	1,166,871	7,961,182
1~ 5 years		1,117,222	25,047,075
Over 5 years		1,338,515	18,223,750
	₩	3,622,608	51,232,007
In millions of won	2	016	
Туре	Z	Borrowings	Debt securities
Less than 1 year	\mathbf{w}	1,116,500	7,825,310
1~ 5 years		295,162	24,462,410
Over 5 years		1,504,588	18,550,550
	\mathbf{W}	2,916,250	50,838,270

(3) Short-term borrowings as of December 31, 2017 and 2016 are as follows:

In millions of won and thousands of foreign currencies

		2017			
Туре	Creditor	Interest rate (%)	Maturity	Foreign currency	Local currency
Local short-term borrowings	KTB Investment and securities and others	1.57~2.47	2018.01.12~ 2018.09.19	- ₩	686,561
Foreign short-term borrowings	SCNT and others	4.60~6.50	2018.12.03	USD 8,955	9,594
Foreign short-term borrowings	Export-import Bank of Korea	3M Libor+0.41~0.63	2018.12.18	AUD 327,259	273,314
Local bank overdraft	Nonghyup Bank	3.04	2018.01.02		51,300
Local bank overdraft	Woori Bank	Standard overdraft rate+1.12	2018.02.27	-	17,559

₩ 1,038,328

In millions of won and thousands of foreign currencies

2016							
Туре	Creditor	Interest rate (%)	Maturity	Foreign currency	Local currency		
Local short-term borrowings	Woori Investment Bank and others	1.54~2.51	2017.01.25~ 2017.09.13	- ₩	436,800		
Foreign short-term borrowings	SCNT and others	1.58~6.50	2017.03.30~ 2017.12.03	USD 35,086	42,401		
Foreign short-term borrowings	Export-import Bank of Korea	3M Libor+0.54~0.63	2017.05.17~ 2017.12.18	AUD 311,174	271,360		
Local bank overdraft	Nonghyup Bank	2.45	2017.01.05	-	37,000		
Local bank overdraft	Woori Bank	Standard overdraft rate+1.12	2017.02.25	-	17,962		
				W	805,523		

(4) Long-term borrowings as of December 31, 2017 and 2016 are as follows:

In millions of won and thousands of foreign currencies

		2017			
	Туре	Interest rate (%)	Maturity	Foreign currency	Local currency
Local long-term borrowing	as				
Korea Development	Others	0.50	2018~2044	- 7	₩ 4,909
Bank	Facility	2.45~4.60	2023~2028	-	68,883
	Facility	1yr KoFC bond rate	2018	-	25,000
)	+0.31			-,
	Operating funds	2.59~3.04	2018~2020	-	47,000
	Operating funds	1yr KoFC bond rate	2020		14,000
	e per a la grande	+0.95	2020		,
KEB Hana Bank	Commercial Paper	3M CD+0.24~0.32	2021~2022	-	400,000
	Facility	4.60	2028	_	15,038
	Facility	3yr KTB rate-1.25	2018~2028	_	8,947
IBK	PF Refinancing	CD+1.25	2030	_	22,500
Export-Import Bank of	Project loans	1.50	2026	_	25,042
Korea	Operating funds	2.21	2020	-	35,000
Korea Energy Agency(*)	Development of power	3yr KTB rate-2.25	2020	-	6,765
Korea Energy Agency(*)		3yr KTB rate-2.25	2023~2025	-	0,705
	resources	Our KTD rate 2.25	2010 2024		0 101
	Facility	3yr KTB rate-2.25	2018~2024	-	3,121
	Project loans	-	2022~2025	-	3,733
	Others	KTB rate -2.25	2024~2028	-	18,455
Shinhan Bank	Collateral borrowing	2.32	2019	-	30,000
	Facility	CB rate +1.10	2028	-	22,557
	Operating funds	2.70	2018	-	15,000
	Others	4.10	2035	-	105,000
	Others	Standard overdraft	2035	-	105,000
		rate +1.10			
Kookmin Bank	Facility	3.16	2020	-	10,000
	Facility	MOR+0.79	2023		35,000
Others	Facility	1.75~4.60	2026~2029	-	148,423
	Facility	CB rate +1.10~1.20	2022~2028	-	46,278
	PF Refinancing	4.10	2030	-	62,500
	Others	4.50~8.00	2022~2039	-	102,346
					1,380,497
Foreign long-term borrow	ings				
Korea Energy Agency(*)	Project loans	-	2021~2023	USD 8,744	9,368
Export-Import Bank	Direct loan and others	1M Libor+1.80~3.20	2036	USD 64,913	69,548
of Korea and others	Direct loan and others	3M Libor+2.75~3.70	2027	JOD 168,663	254,514
	Commercial loan and others	3M Libor+1.50~2.50	2030~2033	USD 289,026	309,662
	PF Loan	6M Libor+1.70~2.50	2032	USD 123,253	132,054
SCNT and others	Shareholder's loan	6.50~8.00	2023	USD 41,718	44,697
	Shareholder's loan	8.00	2031	JOD 5,136	7,750
PT PJB	Shareholder's loan	12.75	2019	IDR 10,932,568	864
Samsung Life Insurance	Syndicated Loan	3.10	2032	JPY 5,325,000	50,540
and others	By Haleated Learn	0.10	2002	01 1 0,020,000	00,040
Woori Bank and others	Syndicated Loan	JPY 6M Libor +2.00	2032	JPY 3,435,000	32,602
SMBC and others	Equity Bridge Loan	1M Libor+0.90	2032	USD 70,986	76,054
IFC and others	Others				
Federal Financing Bank	PF loan	6M Libor+5.00 2.39	2031 2031	PKR 16,652,350 USD 48,366	161,195 51,819
U					
Others	Others	-	2019	USD 2,907	3,116
					1,203,783
					2,584,280
Less : Discount of long-term					(21,999)
Less : Current portion of Ion	•				(128,543)
Add : Current portion of disc	count on long-term borrowings				886
				¥	↓ 2,434,624

2017

(*) As of July 1, 2017, loan business for energy-related projects has been integrated into Korea Energy Agency in accordance with the Korean government's restructuring of the public institutions.

(4) Long-term borrowings as of December 31, 2017 and 2016 are as follows, continued:

In millions of won and thousands of foreign currencies

		2016		Foreign	Local
	Туре	Interest rate (%)	Maturity	currency	currency
_ocal long-term borrowing	gs				
Korea Development	Others	0.50	2018~2044	- ₩	5,663
Bank	Facility	2.45~4.60	2023~2028	-	61,835
	Facility	1yr KoFC bond rate	2018	-	125,000
		+0.31			
	Operating funds	2.75	2018	-	12,000
KEB Hana Bank	Commercial Paper	3M CD+0.14	2017	-	100,000
	Facility	4.60	2028	-	16,851
	Facility	3yr KTB rate -1.25	2017~2028	-	9,655
IBK	PF Refinancing	CD+1.25	2030	-	22,500
Export-Import Bank of Korea	Project loans	1.50	2026	-	30,935
Korea Resources Corporation	Development of power resources	3yr KTB rate -2.25	2022~2025	-	14,039
	Facility	3yr KTB rate -2.25	2017~2024	-	3,842
	Project loans	-	2022~2025	-	3,733
	Others	KTB rate -2.25	2024~2025	-	12,131
Shinhan Bank	Collateral borrowing	2.22	2017	-	30,000
	Facility	CB rate+1.10	2028	-	25,276
	Operating funds	2.70~2.86	2017~2018	-	25,000
	Others	4.10	2035	-	55,000
	Others	3yr KTB rate+1.10	2035	-	55,000
Kookmin Bank	Facility	MOR+0.62~0.79	2017~2023	-	45,000
Others	Facility	1.75~4.60	2026~2029	-	146,472
	Facility	CB rate+1.10~1.20	2022~2028	-	34,951
	PF Refinancing	4.10	2030	-	62,500
	Others	8.00	2036	-	102,347
	Others	-	2028	-	7,250
- oreign long-term borrow	rings				
Korea National Oil	Project loans	-	2021~2023	USD 8,744	10,567
Corporation	,			,	
Export-Import Bank	Direct loan and others	3M Libor+2.75~3.70	2027	JOD 178,892	305,332
of Korea and others	Commercial loan and others	3M Libor+1.50~2.50	2030~2033	USD 299,859	362,379
	PF Loan	6M Libor+2.50~2.70	2032	USD 119,647	144,594
SCNT and others	Shareholder's loan	6.50~8.00	2023	USD 40,618	49,086
	Shareholder's loan	8.00	2031	JOD 7,128	12,166
PT PJB	Shareholder's loan	12.75	2019	IDR 16,705,505	1,500
Samsung Life Insurance	Syndicated Loan	3.10	2032	JPY 1,758,000	18,227
and others					
Woori Bank and others	Syndicated Loan	JPY 6M Libor+2.10	2032	JPY 1,172,000	12,151
SMBC and others	Equity Bridge Loan	1M Libor+0.90	2019	USD 37,978	45,897
IFC and others	Others	6M Libor+5.00	2031	PKR 11,706,160	134,972
Others	Others	-	2019	USD 5,691	6,876
					1,103,747
					2,110,727
.ess : Discount of long-term	n borrowings				(26,838
ess : Current portion of lor					(310,977

₩ 1,773,891

(5) Local debt securities as of December 31, 2017 and 2016 are as follows:

In millions of won	Issue date	Maturity	Interest rate (%)		2017	2016
Electricity Bonds	2009.12.03~ 2017.12.14	2018.01.07~	1.62~5.45	₩	20,700,000	19,860,000
Electricity Bonds	2017.12.14 2013.06.25	2037.09.18 2018.06.25	3M CD + 0.31		150,000	310,000
Corporate Bonds (*1)	2009.05.04~ 2017.11.10	2018.01.18~ 2047.10.17	1.36~5.84		21,122,708	19,552,708
					41,972,708	39,722,708
Less : Discount on lo	cal debt securities				(37,816)	(34,667)
Less : Current portion	n of local debt securit	ties			(5,200,000)	(5,650,010)
Add : Current portion	of discount on local	debt securities			923	728
			1	₩	36,735,815	34,038,759

(*1) Corporate Bonds of HeeMang Sunlight Power Co., Ltd (W2,697 million) can be redeemed every March 31 after five years from its issue date, March 31, 2016.

(6) Foreign debt securities as of December 31, 2017 and 2016 are as follows:

In millions of won and thousands of foreign currencies

		2017			
Туре	Issue date	Maturity	Interest rate (%)	Foreign currency	Local currency
FY-96	1996.04.01~1996.12.06	2026.12.01~2096.04.01	6.00~8.37	USD 249,070	266,854
FY-97	1997.01.31~1997.08.04	2027.02.01~2027.08.01	6.75~7.00	USD 314,717	337,188
FY-04	2004.04.23	2034.04.23	5.13	USD 286,920	307,40
FY-08	2008.11.27	2018.11.27	4.19	JPY 20,000,000	189,82
FY-11	2011.07.13	2021.07.13	4.75	USD 500,000	535,700
FY-12	2012.09.19	2022.09.19	3	USD 750,000	803,550
FY-13	2013.02.05~2013.11.27	2018.02.05~2018.11.27	1.88~2.88	USD 1,900,000	2,035,66
FY-13	2013.09.26~2013.10.23	2019.03.26~2019.04.23	1.50~1.63	CHF 400,000	437,88
FY-13	2013.09.25	2020.09.25	5.75	AUD 325,000	271,42
FY-13	2013.02.20~2013.07.25	2018.02.20~2018.07.25	3M Libor+0.84~1.50	USD 500,000	535,70
FY-14	2014.02.11~2014.12.02	2019.02.11~2029.07.30	2.38~3.57	USD 1,500,000	1,607,10
FY-15	2015.06.15	2025.06.15	3.25	USD 300,000	321,42
FY-16	2016.01.21	2021.07.21	2.5	USD 300,000	321,42
FY-17	2017.04.12~2017.07.25	2020.04.12~2027.07.25	2.38~3.13	USD 1,100,000	1,178,54
FY-17	2017.10.30	2037.10.30	1.7	EUR 40,000	51,17
FY-17	2017.11.16	2037.11.16	2.36	SEK 450,000	58,45
					9,259,29
	ount on foreign debt securities				(47,490
	um on foreign debt securities				8
	ent portion of foreign debt sec				(2,761,182
dd : Currei	nt portion of discount on forei	gn debt securities			2,95
				Ŵ	6,453,66

(6) Foreign debt securities as of December 31, 2017 and 2016 are as follows, continued:

In millions of won and thousands of foreign currencies

2016						
Туре	Issue date	Maturity	Interest rate (%)	Foreign currency	Local currency	
FY-96	1996.04.01~1996.12.06	2026.12.01~2096.04.01	6.00~8.37	USD 249,068 W	300,999	
FY-97	1997.01.31~1997.08.04	2027.02.01~2027.08.01	6.75~7.00	USD 314,717	380,335	
FY-04	2004.04.23	2034.04.23	5.13	USD 286,920	346,743	
FY-08	2008.11.27	2018.11.27	4.19	JPY 20,000,000	207,362	
FY-11	2011.07.13~2011.07.29	2017.01.30~2021.07.13	3.63~4.75	USD 800,000	966,800	
FY-12	2012.05.10~2012.09.19	2017.05.10~2022.09.19	2.50~3.13	USD 1,750,000	2,114,875	
FY-13	2013.02.05~2013.11.27	2018.02.05~2018.11.27	1.88~2.88	USD 1,900,000	2,296,150	
FY-13	2013.09.26~2013.10.23	2019.03.26~2019.04.23	1.50~1.63	CHF 400,000	472,532	
FY-13	2013.09.25	2020.09.25	5.75	AUD 325,000	283,416	
FY-13	2013.02.20~2013.07.25	2018.02.20~2018.07.25	3M Libor+0.84~1.50	USD 500,000	604,250	
FY-14	2014.02.11~2014.12.02	2019.02.11~2029.07.30	2.38~3.57	USD 1,500,000	1,812,750	
FY-14	2014.01.28~2014.07.31	2017.01.28~2017.07.31	3M Libor+0.55~1.05	USD 500,000	604,250	
FY-15	2015.06.15	2025.06.15	3.25	USD 300,000	362,550	
FY-16	2016.01.21	2021.07.21	2.50	USD 300,000	362,550	
				-	11,115,562	
Less : Disco	ount on foreign debt securities	5			(53,966)	
Add : Prem	ium on foreign debt securities				156	
Less : Curre	ent portion of foreign debt sec	curities			(2,175,300)	
Add : Curre	nt portion of discount on forei	gn debt securities		_	1,025	
				10/		
				₩_	8,887,477	

(7) Changes in borrowings and debt securities for the year ended December 31, 2017 are as follows:

In millions of won

	Effect of exchange rate						
	Beginning balance	Cash flow	fluctuations	Others	Ending balance		
₩	53,639,205	2,269,513	(1,169,418)	8,092	54,747,392		

24. Finance Lease Liabilities

(1) Lease contracts

The Company entered into power purchase agreements ("PPA") with GS EPS and three other providers. The Company recognizes these PPAs as finance leases; under the PPAs, there is no transfer of ownership or bargain purchase option of the plants at the end of the agreement, however, the present value of the future minimum power purchase payments equals substantially all of the plants' respective fair values over a twenty-year period which makes up the major part of the respective plant's economic life.

(2) Finance lease liabilities as of December 31, 2017 and 2016 are as follows and are included in current and non-current trade and other payables, net, in the consolidated statements of financial position:

In millions of won		201	7	2016		
	 	Minimum lease payments	Present value of minimum lease payments	Minimum lease payments	Present value of minimum lease payments	
Less than 1 year	₩	174,534	131,792	175,512	121,176	
1 ~ 5 years		272,994	204,069	404,029	306,282	
More than 5 years		108,748	82,399	152,247	113,721	
	₩	556,276	418,260	731,788	541,179	

(3) Current and non-current portion of finance lease liabilities as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Current finance lease liabilities Non-current finance lease liabilities	₩	131,792 286,468	121,176 420,003
	₩	418,260	541,179

(4) Minimum lease payment and contingent rent payment recognized as an expense as a lessee for the years ended December 31, 2017 and 2016 are as follows:

In millions of won	_	2017	2016
Minimum lease payment	₩	158,859	177,585
Contingent rent payment		(21,024)	(20,956)

(5) The Company does not have any irrevocable operating lease contracts as of December 31, 2017 and 2016.

(6) Changes in finance lease liabilities for the years ended December 31, 2017 and 2016 are as follows:

In millions of won

		Acquisition of				
	Beginning balance	Cash flow	finance lease assets	Ending balance		
₩	541,179	(122,919)	-	418,260		

25. Employment Benefits

(1) Employment benefit obligations as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Net defined benefit obligations Other long-term employee benefit obligations	₩	1,476,201 6,868	1,678,470 7,788
	₩	1,483,069	1,686,258

(2) Principal assumptions on actuarial valuation as of December 31, 2017 and 2016 are as follows:

	2017	2016
Discount rate	2.75% ~ 2.90%	2.45% ~ 2.64%
Future salary and benefit levels	4.88%	5.23%
Weighted average duration	13.40 years	13.34 years

(3) Details of expense relating to defined benefit plans for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Current service cost	₩.	392,820	378,930
Interest cost		79,524	67,104
Expected return on plan assets		(31,307)	(23,612)
Loss from settlement		(1,055)	(706)
	₩	439,982	421,716

Expenses as described above are recognized in those items below in the financial statements.

In millions of won		2017	2016
Cost of sales	W	332,249	312,391
Selling and administrative expenses		59,111	61,362
Others (Construction-in-progress and others)		48,622	47,963
	Ŵ	439,982	421,716

In addition, for the years ended December 31, 2017 and 2016, employee benefit obligations expenses of W65,603 million and W62,435 million, respectively, is recognized as cost of sales, and W11,983 million and W11,450 million, respectively, is recognized as selling and administrative expenses, and W13,332 million and W14,024 million, respectively, are recognized as construction-in-progress and others, relates to the Company's defined contribution plans.

25. Employment Benefits, Continued

(4) Details of defined benefit obligations as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Present value of defined benefit obligation from funded plans	₩	2,951,842	2,867,377
Fair value of plan assets		(1,475,641)	(1,188,907)
Present value of defined benefit obligation from unfunded plans		1,476,201	1,678,470
Net liabilities incurred from defined benefit plans	₩	1,476,201	1,678,470

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

In millions of won		2017	2016
Beginning balance	W	2,867,377	2,426,414
Current service cost		392,820	378,930
Interest cost (*)		79,524	67,104
Remeasurement component		(258,223)	120,993
Loss from settlement		(1,055)	(707)
Actual payments		(128,707)	(125,233)
Others		106	(124)
Ending balance	₩	2,951,842	2,867,377

(*) Corporate bond (AAA rated) yield at year-end is applied to measure the interest cost on employee benefit obligations.

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

In millions of won		2017	2016
Beginning balance	₩.	1,188,907	930,632
Expected return		31,307	23,612
Remeasurement component		(10,435)	(5,706)
Contributions by the employers		325,080	312,125
Actual payments		(59,218)	(71,756)
Ending balance	₩	1,475,641	1,188,907

In addition, loss on accumulated remeasurement component amounted to W43,513 million and W222,997 million has been recognized as other comprehensive income or loss for the years ended December 31, 2017 and 2016, respectively.

25. Employment Benefits, Continued

(7) Details of the fair value of plan assets as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Equity instruments	\mathbf{W}	79,204	86,054
Debt instruments		517,040	383,654
Bank deposit		293,477	305,670
Others		585,920	413,529
	₩.	1,475,641	1,188,907

For the years ended December 31, 2017 and 2016, actual returns on plan assets amounted to W20,872 million and W17,906 million, respectively.

(8) Remeasurement component recognized in other comprehensive income (loss) for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Actuarial gain from changes in financial assumptions	₩	(300,058)	(27,792)
Experience adjustments		41,835	148,785
Expected return		10,435	5,706
	₩	(247,788)	126,699

Remeasurement component recognized as other comprehensive income or loss is recorded in retained earnings.

26. Provisions

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

In millions of won	_	20	17	2016		
	-	Current	Non-current	Current	Non-current	
Employment benefits						
Provisions for employment benefits	₩	913,787	-	810,607	-	
Litigation						
Litigation provisions		48,621	24,955	79,359	118,878	
Decommissioning cost						
Nuclear plants		-	13,007,228	-	10,195,928	
Spent fuel		-	1,339,046	-	1,374,225	
Radioactive waste		11,494	1,626,877	2,566	1,476,936	
PCBs		-	180,087	-	191,744	
Other recovery provisions		-	6,659	-	507	
Others						
Power plant regional support program		153,756	-	152,851	-	
Transmission regional support program		243,365	-	282,608	-	
Provisions for tax		61	-	106	136	
Provisions for financial guarantee		-	23,475	458	29,207	
Provisions for RPS		271,624	-	417,404	-	
Provisions for greenhouse gas emissions						
obligations		414,252	-	249,644	-	
Others	-	80,538	16,387	4,385	39,590	
	₩	2,137,498	16,224,714	1,999,988	13,427,151	

26. Provisions, Continued

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

In millions of won			2017	,		
	Beginning balance	Increase in provision	Payment	Reversal	Other	Ending balance
Employment benefits						
Provisions for employment benefits $\qquad \forall$	₩ 810,607	984,896	(880,255)	(1,461)	-	913,787
Litigation						
Litigation provisions	198,237	34,629	(152,461)	(7,096)	267	73,576
Decommissioning cost			(0.700)			
Nuclear plants	10,195,928	2,818,033	(6,733)	-	-	13,007,228
Spent fuel	1,374,225	307,682	(342,861)	-	-	1,339,046
Radioactive waste	1,479,502	222,632	(63,763)	-	-	1,638,371
PCBs	191,744	5,309	(14,266)	(2,700)	-	180,087
Other recovery provisions	507	5,939	-	-	213	6,659
Others						
Power plant regional support program	152,851	94,039	(103,889)	-	10,755	153,756
Transmission regional support program	282,608	143,178	(182,421)	-	-	243,365
Provisions for tax	242	-	(25)	(136)	(20)	61
Provisions for financial guarantee	29,665	3,760	(20)	(9,945)	(5)	23,475
Provisions for RPS	417,404	242,946	(388,726)	(0,010)	-	271,624
Provisions for greenhouse gas	+17,+04	242,040	(000,720)			271,024
emissions obligations	249.644	422,666	(256,758)	(1,300)	-	414,252
Others (*)	43,975	6,639	(230,730)	(26,477)	76,136	96,925
	40,070	0,039	(0,040)	(20,477)	70,130	30,325
۸	₩ 15,427,139	5,292,348	(2,395,506)	(49,115)	87,346	18,362,212

(*) As described in note 50.(1), the Company believes that the possibility of economic outflow is probable on the cost of construction suspension of Shin-Kori Unit 5 and 6 for three months. For this reason, the Company recognized W77,261 million of provision as addition to construction-in-progress.

In millions of won				2016			
	_	Beginning balance	Increase in provision	Payment	Reversal	Other	Ending balance
Employment benefits							
Provisions for employment benefits	₩	718,365	1,047,342	(947,982)	(7,108)	(10)	810,607
Litigation							
Litigation provisions		167,965	124,931	(294,403)	(20,736)	220,480	198,237
Decommissioning cost							
Nuclear plants		9,684,286	513,383	(1,741)	-	-	10,195,928
Spent fuel		1,375,185	469,982	(470,942)	-	-	1,374,225
Radioactive waste		1,502,140	49,092	(71,998)	-	268	1,479,502
PCBs		182,400	30,675	(21,331)	-	-	191,744
Other recovery provisions		862	-	-	(20)	(335)	507
Others							
Power plant regional support program		129,655	50,252	(41,540)	-	14,484	152,851
Transmission regional support program		228,785	253,664	(199,841)	-	-	282,608
Provisions for tax		136	125	-	-	(19)	242
Provisions for financial guarantee		4,288	29,741	-	(4,298)	(66)	29,665
Provisions for RPS		363,178	420,154	(309,975)	(55,953)	-	417,404
Provisions for greenhouse gas							
emissions obligations		78,829	298,618	(116,336)	(11,467)	-	249,644
Others	_	7,856	37,491	(2,699)	(9)	1,336	43,975
	₩_	14,443,930	3,325,450	(2,478,788)	(99,591)	236,138	15,427,139

27. Government Grants

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

In millions of won		2017	2016
Land	₩	(21,968)	(3,204)
Buildings		(63,539)	(61,188)
Structures		(196,414)	(197,641)
Machinery		(183,188)	(111,064)
Vehicles		(6,322)	(107)
Equipment		(761)	(732)
Tools		(1,027)	(430)
Construction-in-progress		(49,084)	(135,807)
Finance lease assets		(27)	-
Investment properties		(83)	(64)
Software		(486)	(595)
Development expenditures		(3,702)	(5,152)
Intangible assets under development		(10,540)	(11,090)
Usage rights of donated assets and other		(11)	(21)
Other intangible assets other than goodwill		<u> </u>	-
	₩	(537,152)	(527,095)

27. Government Grants, Continued

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

In millions of won					2017			
		Beginning balance	Receipt	Acquisition	Offset the items of depreciation expense and others	Disposal	Others	Ending balance
Cash	₩	-	(55,533)	-	-	-	55,533	-
Land		(3,204)	-	-	-	5	(18,769)	(21,968)
Buildings		(61,188)	-	-	5,996	28	(8,375)	(63,539)
Structures		(197,641)	-	-	10,011	1,905	(10,689)	(196,414)
Machinery		(111,064)	-	-	17,390	489	(90,003)	(183,188)
Vehicles		(107)	-	-	1,070	14	(7,299)	(6,322)
Equipment		(732)	-	-	454	-	(483)	(761)
Tools		(430)	-	-	354	-	(951)	(1,027)
Construction-in-progress		(135,807)	-	129,451	-	-	(42,728)	(49,084)
Finance lease assets		-	-	-	1	-	(28)	(27)
Investment properties		(64)	-	-	2	-	(21)	(83)
Software		(595)	-	-	255	-	(146)	(486)
Development expenditures Intangible assets under		(5,152)	-	-	2,811	-	(1,361)	(3,702)
development		(11,090)	-	-	-	-	550	(10,540)
Usage rights of donated								
assets and other		(21)	-	-	10	-	-	(11)
Others		-					-	
	₩	(527,095)	(55,533)	129,451	38,354	2,441	(124,770)	(537,152)

In millions of won					2016			
	-	Beginning balance	Receipt	Acquisition	Offset the items of depreciation expense and others	Disposal	Others	Ending balance
Cash	₩	-	(32,878)	-	-	-	32,878	-
Land		(3,147)	-	-	-	14	(71)	(3,204)
Buildings		(63,932)	-	-	5,299	731	(3,286)	(61,188)
Structures		(193,119)	-	-	9,491	2,597	(16,610)	(197,641)
Machinery		(108,935)	-	-	12,272	1,210	(15,611)	(111,064)
Vehicles		(29)	-	-	25	-	(103)	(107)
Equipment		(1,026)	-	-	452	-	(158)	(732)
Tools		(691)	-	-	295	-	(34)	(430)
Construction-in-progress		(139,898)	-	32,525	-	-	(28,434)	(135,807)
Investment properties		(13)	-	-	1	-	(52)	(64)
Software		(699)	-	-	249	-	(145)	(595)
Development expenditures Intangible assets under		(6,835)	-	-	2,771	-	(1,088)	(5,152)
development Usage rights of donated		(10,483)	-	991	-	-	(1,598)	(11,090)
assets and other		(32)	-	-	11	-	-	(21)
Others	-	(1)			1		-	
	₩	(528,840)	(32,878)	33,516	30,867	4,552	(34,312)	(527,095)

28. Deferred Revenues

Deferred revenue related to the Company's construction contracts for the years ended December 31, 2017 and 2016 are as follows which included in current and non-current non-financial liabilities in the consolidated statements of financial position:

In millions of won		2017	2016
Beginning balance	₩	7,825,765	7,165,297
Increase during the current year / period Recognized as revenue during the current year		978,389	1,087,765
/ period		(478,973)	(427,297)
Ending balance	₩	8,325,181	7,825,765

29. Non-financial Liabilities

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

In millions of won		201	7	2016			
	_	Current	Non-current	Current	Non-current		
Advance received	₩	3,772,713	181,612	4,498,739	148,404		
Unearned revenue		41,593	19,718	26,084	41,936		
Deferred revenue		476,631	7,848,550	445,018	7,380,747		
Withholdings		164,370	10,529	263,263	10,781		
Others	_	1,129,001	12,025	1,135,106	9,737		
	₩	5,584,308	8,072,434	6,368,210	7,591,605		

30. Contributed Capital

(1) Details of shares issued as of December 31, 2017 and 2016 are as follows:

_	2017						
-	Shares authorized	Shares issued	Par v per s		Owned by government (*)	Owned by others	Total
Common shares	1,200,000,000	641,964,077	₩	5,000	1,640,385	1,569,435	3,209,820

(*) Korea Development Bank's ownership of W1,056,176 million is included.

In millions of won except share information

,	2016						
-	Shares authorized	Shares issued	Par va per sl		Owned by government (*)	Owned by others	Total
Common shares	1,200,000,000	641,964,077	₩	5,000	1,640,385	1,569,435	3,209,820

(*) Korea Development Bank's ownership of W1,056,176 million is included.

(2) Details in number of outstanding capital stock for the years ended December 31, 2017 and 2016 are as follows:

Number of shares	2017	2016
Beginning balance	641,964,077	641,964,077
Ending balance	641,964,077	641,964,077

(3) Details of share premium as of December 31, 2017 and 2016 are as follows:

In millions of won	2017	2016
Share premium	₩ 843	,758 843,758

31. Retained Earnings and Dividends Paid

(1) Details of retained earnings as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Legal reserve (*) Voluntary reserves Retained earnings before appropriations	₩-	1,604,910 34,833,844 16,931,804	1,604,910 31,847,275 19,721,686
Retained earnings	₩	53,370,558	53,173,871

(*) The KEPCO Act requires KEPCO to appropriate a legal reserve equal to at least 20 percent of net income for each accounting period until the reserve equals 50 percent of KEPCO's common stock. The legal reserve is not available for cash dividends; however, this reserve may be credited to paid-in capital or offset against accumulated deficit by the resolution of the shareholders.

(2) Details of voluntary reserves as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Reserve for investment on social overhead capital Reserve for research and human development (*) Reserve for business expansion Reserve for equalizing dividends	₩	5,277,449 330,000 29,016,395 210,000	5,277,449 330,000 26,029,826 210,000
	₩	34,833,844	31,847,275

(*) The reserve for research and human development is appropriated by KEPCO to use as qualified tax credits to reduce corporate tax liabilities. The reserve is available for cash dividends for a certain period as defined by the Tax Incentive Control Law of Korea.

(3) Changes in retained earnings for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Beginning balance	W	53,173,871	48,187,241
Net profit for the period attributed to owner of the			
Company		1,298,720	7,048,581
Changes in equity method retained earnings		10,065	(2,532)
Remeasurement of defined benefit liability, net of tax		158,991	(69,330)
Dividend paid		(1,271,089)	(1,990,089)
Ending balance	₩	53,370,558	53,173,871

(4) Dividends paid for the years ended December 31, 2017 and 2016 are as follows:

In millions of won					
	Number of shares issued	Number of treasury stocks	Number of shares eligible for dividends	Dividends paid per share (In won)	Dividends paid
Common shares	641,964,077	-	641,964,077	₩ 1,980	1,271,089
In millions of won			2016		
	Number of shares issued	Number of treasury stocks	Number of shares eligible for dividends	Dividends paid per share (In won)	Dividends paid
Common shares	641,964,077	-	641,964,077	₩ 3,100	1,990,089

31. Retained Earnings and Dividends Paid, Continued

(5) Changes in retained earnings of investments in associates and joint ventures for the years ended December 31, 2017 and 2016 are as follows :

In millions of won		2017	2016		
Beginning balance Changes	₩	(4,943) 10,065	(2,411) (2,532)		
Ending balance	₩	5,122	(4,943)		

(6) Changes in remeasurement components related to defined benefit liability for the years ended December 31, 2017 and 2016 are as follows :

In millions of won		2017	2016
Beginning balance	₩	(222,997)	(202,878)
Changes		239,636	(119,316)
Income tax effect		(80,645)	49,986
Transfer to reserve for business expansion		20,493	49,211
Ending balance	₩	(43,513)	(222,997)

32. Statement of Appropriation of Retained Earnings

For the year ended December 31, 2016, KEPCO's retained earnings were appropriated on March 21, 2017. For the year ended December 31, 2017, KEPCO's retained earnings are expected to be appropriated on March 30, 2018. Statements of appropriation of retained earnings of KEPCO, the controlling company, for the years ended December 31, 2017 and 2016 are as follows:

In millions of won except for dividends per share	2017	2016
I . Retained earnings before appropriations		
Unappropriated retained earnings carried over from prior years $\qquad \qquad \qquad$		-
Net income	1,506,852	4,261,986
Remeasurement of the defined benefit plan	72,723	(4,328)
	1,579,575	4,257,658
${\mathbb I}.$ Transfer from voluntary reserves		
Ⅲ. Subtotal (I+II)	1,579,575	4,257,658
IV. Appropriations of retained earnings	(1,579,575)	(4,257,658)
Legal reserve Dividends (government, individual) (Amount of dividends per share (%) : Current year – ₩790 (16%) Prior year – ₩1,980 (40%))	- (507,152)	- (1,271,089)
Reserve for business expansion	(1,072,423)	(2,986,569)
V. Unappropriated retained earnings to be carried over forward to subsequent year	-	-

33. Hybrid Bonds

Hybrid securities classified as equity (non-controlling interest) as of December 31, 2017 and 2016 are as follows:

In millions of won Issuer	Hybrid bond	Issued date	Maturity	Yield (%)		2017	2016
Korea Western Power Co Ltd.	1st hybrid bond	2012.10.18	-	_	₩	-	100,000
Korea South-East	13t Hybrid borid	2012.10.10			••		100,000
Power Co., Ltd. Korea South-East	1st hybrid bond	2012.12.07	2042.12.06	4.38		170,000	170,000
Power Co., Ltd. Expense of issuance	2nd hybrid bond	2012.12.07	2042.12.06	4.44	_	230,000 (1,090)	230,000 (1,340)
					₩	398,910	498,660

Although these instruments have contractual maturity dates, the contractual agreements allow these subsidiaries to indefinitely extend the maturity dates and defer the payment of interest without modification to the other terms of the instruments. When the Company decides not to pay dividends on ordinary shares, they are not required to pay interest on the hybrid bonds.

Substantially, as these instruments have no contractual obligation to pay principal and interest, these instruments have been classified as equity (non-controlling interest) in the Company's consolidated financial statements.

Korea Western Power Co., Ltd., a subsidiary of the Company, repaid all of its hybrid bond classified as equity (non-controlling interest) in full during the year ended December 31, 2017.

34. Other Components of Equity

(1) Other components of equity as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Other capital surplus Accumulated other comprehensive loss Other equity	₩	1,233,793 (271,457) 13,294,973	1,235,146 (33,875) 13,294,973
	₩	14,257,309	14,496,244

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

In millions of won	_		2017		2016			
	_	Gain on disposal of treasury stocks	Others	Subtotal	Gain on disposal of treasury stocks	Others	Subtotal	
Beginning balance Disposal of subsidiary Issuance of share	₩	387,524	847,622	1,235,146 -	387,524	809,864 36,008	1,197,388 36,008	
capital of subsidiary		-	(1,378)	(1,378)	-	1,750	1,750	
Others	-		25	25				
Ending balance	₩_	387,524	846,269	1,233,793	387,524	847,622	1,235,146	

34. Other Components of Equity, Continued

(3) Changes in accumulated other comprehensive income (loss) for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017								
		Available-for-sale financial asset valuation reserve	Shares in other comprehensive income of investments in associates and joint ventures	Reserve for overseas operations translation	Reserve for loss on valuation of derivatives	Total				
Beginning balance Changes in the unrealized fair value of available-for-sale	₩	36,370	221,455	(223,056)	(68,644)	(33,875)				
financial assets, net of tax Shares in other comprehensive income of associates and		(7,102)	-	-	-	(7,102)				
joint ventures, net of tax Foreign currency translation		-	(154,991)	-	-	(154,991)				
of foreign operations, realized Net change in the unrealized fair value of derivatives using cash flow hedge accounting, net		-	-	(95,103)	-	(95,103)				
of tax		-			19,614	19,614				
Ending balance	₩	29,268	66,464	(318,159)	(49,030)	(271,457)				

In millions of won				2016		
		Available-for-sale financial asset valuation reserve	Shares in other comprehensive Income (loss) of investments in associates and joint ventures	Reserve for overseas operations translation	Reserve for gain (loss) on valuation of derivatives	Total
Beginning balance Changes in the unrealized fair value of available-for-sale	₩	(24,905)	276,373	(254,462)	(95,719)	(98,713)
financial assets, net of tax Shares in other comprehensive loss of associates and		61,275	-	-	-	61,275
joint ventures, net of tax Foreign currency translation		-	(54,918)	-	-	(54,918)
of foreign operations, net of tax Net change in the unrealized fair value of derivatives using cash flow hedge accounting, net		-	-	31,406	-	31,406
of tax		-			27,075	27,075
Ending balance	₩	36,370	221,455	(223,056)	(68,644)	(33,875)

(4) Details of changes in other equity for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016	
Statutory revaluation reserve Changes in other equity	₩	13,295,098 (125)	13,295,098 (125)	
	₩	13,294,973	13,294,973	

35. Sales

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

In millions of won			2017		2016			
		Domestic	Overseas	Total	Domestic	Overseas	Total	
Sales of goods	₩	55,373,316	399,232	55,772,548	54,982,095	397,392	55,379,487	
Electricity		54,649,882	-	54,649,882	54,304,529	-	54,304,529	
Heat supply		205,838	-	205,838	181,597	-	181,597	
Others		517,596	399,232	916,828	495,969	397,392	893,361	
Sales of service		186,990	164,167	351,157	195,697	161,046	356,743	
Sales of construction services Revenue related to		92,501	3,119,683	3,212,184	132,219	3,894,638	4,026,857	
transfer of assets from customers		478,973		478,973	427,297		427,297	
	₩	56,131,780	3,683,082	59,814,862	55,737,308	4,453,076	60,190,384	

36. Selling and Administrative Expenses

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

In millions of won		2017	2016
Salaries	₩.	735,383	734,930
Retirement benefit expense		71,094	72,812
Welfare and benefit expense		179,406	162,243
Insurance expense		15,414	11,513
Depreciation		190,245	169,431
Amortization of intangible assets		44,990	35,171
Bad debt expense		126,714	38,719
Commission		673,740	605,879
Advertising expense		114,519	34,658
Training expense		7,027	6,314
Vehicle maintenance expense		9,998	10,390
Publishing expense		3,672	3,643
Business development expense		3,700	3,477
Rent expense		38,380	40,020
Telecommunication expense		24,916	25,448
Transportation expense		495	596
Taxes and dues		48,395	46,531
Expendable supplies expense		7,731	6,834
Water, light and heating expense		10,545	9,720
Repairs and maintenance expense		63,477	75,122
Ordinary development expense		211,417	188,063
Travel expense		16,658	16,115
Clothing expense		8,410	8,273
Survey and analysis expense		698	666
Membership fee		1,122	1,132
Others		154,709	331,532
	₩.	2,762,855	2,639,232

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

In millions of won		2017	2016
Accommodation development expenses	\mathbf{W}	55,799	186,896
Miscellaneous wages		32,300	31,907
Litigation and filing expenses		11,881	12,328
Compensation for damages		12,297	60,341
Outsourcing expenses		2,647	3,530
Reward expenses		2,786	3,267
Overseas market development expenses		1,876	2,177
Others		35,123	31,086
	₩	154,709	331,532

37. Other Non-operating Income and Expense

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

In millions of won		2017	2016
Reversal of other provisions	W	35,265	22,034
Reversal of other allowance for bad debt		2,166	5,489
Gains on government grants		430	111
Gains on assets contributed		4,218	12,254
Gains on liabilities exempted		3,166	1,959
Compensation and reparations revenue		89,196	114,530
Revenue from research contracts		12,580	13,143
Rental income		192,136	211,580
Others		50,988	31,787
	W	390,145	412,887

(2) Details of others of other non-operating income for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Refund of claim for rectification	W	9,655	8,722
Adjustment of research project		3,884	4,148
Maintenance expenses on lease building		135	354
Training expenses		3,045	4,478
Deposit redemption		34	991
Reversal of expenses on litigation		360	893
Revenue on royalty fee		2,888	2,486
Reimbursement of insurance fee		1,498	-
Gains on guarantee contracts		456	2,796
Others		29,033	6,919
	₩.	50,988	31,787

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

In millions of won		2017	2016
Compensation and indemnification expense	\mathbf{W}	37	-
Accretion expenses of other provisions		7,535	4,556
Depreciation expenses on investment properties		1,176	678
Depreciation expenses on idle assets		6,644	6,639
Other bad debt expense		1,778	4,585
Donations		119,421	114,094
Others		43,464	58,072
	W	180,055	188,624

37. Other Non-operating Income and Expense, Continued

(4) Details of others of other non-operating expense for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Operating expenses related to the idle assets	₩	136	459
Research grants		1,180	1,461
Supporting expenses on farming and fishing village		11,956	15,201
Operating expenses on fitness center		3,498	2,706
Expenses on adjustment of research and development grants		806	-
Taxes and dues		2,270	4,582
Expenses on R&D supporting		5,459	690
Others		18,159	32,973
	₩	43,464	58,072

38. Other Gains (Losses)

(1) Composition of other gains (losses) for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Other gains			
Gains on disposal of property, plant and equipment	W	48,316	74,035
Gains on disposal of intangible assets		564	-
Reversal of impairment loss on intangible assets		54	3
Gains on foreign currency translation		20,485	15,311
Gains on foreign currency transaction		93,151	55,377
Gains on insurance proceeds		400	-
Others		269,562	187,792
Other losses			
Losses on disposal of property, plant and equipment		(70,514)	(42,715)
Losses on disposal of intangible assets		(183)	(158)
Impairment loss on property, plant and equipment		(51,067)	-
Impairment loss on intangible assets		(20)	(3,945)
Losses on foreign currency translation		(25,495)	(23,835)
Losses on foreign currency transaction		(36,241)	(72,058)
Others		(92,385)	(119,309)
	\mathcal{W}	156,627	70,498

(2) Details of others of other gains for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Gains on disposal of inventories	\mathbf{W}	6,024	9,494
Gains on valuation of inventories		-	2
Gains on proxy collection of TV license fee		39,711	38,991
Gains on compensation of impaired electric poles		1,526	3,650
Gains on compensation for infringement on contract		18,990	3,040
Gains on harbor facilities dues		3,025	2,957
Gains on technical fees		2,105	1,271
Reversal of occupation development training fees		1,697	1,756
Gains on disposal of waste		4,261	4,222
Gains on insurance		10,410	3,786
Gains on tax rebate		2,161	5,226
Gains on other commission		4,790	4,639
Gains on research tasks		-	10
Gains on settlement and others		-	2,188
Gains on sales of greenhouse gas emissions rights		-	46
Others		174,862	106,514
	\mathbf{W}	269,562	187,792

38. Other Gains (Losses), Continued

(3) Details of others of other losses for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Losses on valuation of inventories	W	3,875	2,683
Losses on disposal of inventories		3,273	3,092
Losses due to disaster		5,374	1,522
Losses on rounding adjustment of electric charge surtax		1,253	1,260
Losses on adjustments of levies		1	1,184
Forfeit of taxes and dues		656	4,582
Losses on litigation		-	2,581
Others		77,953	102,405
	₩	92,385	119,309

39. Finance Income

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

In millions of won		2017	2016
Interest income	₩	206,143	241,778
Dividends income		11,477	9,446
Gains on disposal of financial assets		1,130	1,482
Gains on valuation of Financial assets at fair value through profit or loss		12	-
Gains on valuation of derivatives		16,165	293,830
Gains on transaction of derivatives		29,257	45,549
Gains on foreign currency translation		1,115,832	161,905
Gains on foreign currency transaction		150,602	37,553
	₩	1,530,618	791,543

(2) Interest income included in finance income for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Cash and cash equivalents	\mathbf{W}	35,474	61,380
Available-for-sale financial assets		290	-
Held-to-maturity investments		82	97
Loans and receivables		30,014	25,106
Short-term financial instrument		29,412	45,763
Long-term financial instrument		8,144	7,195
Trade and other receivables		102,727	102,237
	\overline{W}	206,143	241,778

40. Finance Expenses

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

In millions of won			2016	
Interest expense	Ŵ	1,789,552	1,752,868	
Losses on sale of financial assets		2,343	9	
Impairment of available-for-sale financial assets		2,713	86,703	
Losses on valuation of derivatives		890,832	5,762	
Losses on transaction of derivatives		198,218	101,987	
Losses on foreign currency translation		207,944	406,849	
Losses on foreign currency transaction		35,175	57,889	
Losses on repayment of financial liabilities		5	23,000	
Other		1,170	2,020	
	W	3,127,952	2,437,087	

(2) Interest expense included in finance expenses for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Trade and other payables	Ŵ	57,160	68,375
Short-term borrowings		35,891	6,969
Long-term borrowings		87,011	91,584
Debt securities		1,698,232	1,922,900
Other financial liabilities		491,665	482,428
		2,369,959	2,572,256
Less: Capitalized borrowing costs		(580,407)	(819,388)
	\mathbf{W}	1,789,552	1,752,868

Capitalization rates for the years ended December 31, 2017 and 2016 are 2.30% ~3.60% and 2.29% ~ 4.16% respectively.

41. Income Taxes

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

In millions of won		2017	2016
Current income tax expense			
Payment of income tax	W	881,583	2,689,640
Adjustment due to changes in estimates related to prior years		4,484	231,113
Current income tax directly recognized in equity		(56,098)	30,059
		829,969	2,950,812
Deferred income tax expense			
Generation and realization of temporary differences		1,283,012	509,762
Changes of unrecognized tax losses, tax credit			
and temporary differences for prior periods		44,573	(86,845)
Changes in deferred tax on tax losses carryforwards			-
Tax credit carryforwards		15,270	(8,588)
		1,342,855	414,329
Income tax expense	W	2,172,824	3,365,141

(2) Reconciliation between actual income tax expense and amount computed by applying the statutory tax rate of 24.2% to income before income taxes for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Income before income tax	₩	3,614,218	10,513,468
Income tax expense computed at applicable tax rate of 24.2%		874,641	2,544,259
Adjustments			
Effect of applying gradual tax rate		(5,082)	(5,082)
Effect of non-taxable income		(32,032)	(29,554)
Effect of non-deductible expenses		15,032	22,258
Effects of tax credits and deduction		(161,069)	(194,731)
Recognition (reversal) of unrecognized deferred tax asset, net		44,573	(86,845)
Effect of change in deferred tax due to change in tax rate (from 24.2% to 27.5%)		1,055,154	-
Deferred income tax related to investments in subsidiaries and associates		394,145	862,956
Others, net		(17,022)	20,767
		1,293,699	589,769
Adjustment in respect of prior years due to change in estimate		4,484	231,113
Income tax expense	₩	2,172,824	3,365,141
Effective tax rate		60.10%	32.00%

(3) Income tax directly adjusted to shareholders' equity (except for accumulated other comprehensive income (loss)) for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Dividends of hybrid securities Gain on disposal of investments in subsidiaries Effect of change in effective tax rate	₩	5,248 - (25)	5,253 (7,006) -
	₩	5,223	(1,753)

41. Income Taxes, Continued

(4) Income tax recognized as other comprehensive income (loss) for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Income tax recognized as other comprehensive income (loss)			
Loss on valuation of available-for-sale financial assets Net change in the unrealized fair value of derivatives using	$\overline{\mathbf{W}}$	(2,551)	(8,143)
cash flow hedge accounting, net of tax		(11,016)	(18,335)
Remeasurement of defined benefit obligations		(80,645)	49,986
Investments in associates		8,649	7,731
Others		24,242	573
	₩	(61,321)	31,812

(5) Changes in deferred income tax assets (liabilities) recognized in the statements of financial position for the years ended December 31, 2017 and 2016 are as follows:

In millions of won				2017		
		Beginning balance	Amounts recognized in profit or loss	Amount recognized in other comprehensive income (loss)	Amounts recognized directly in equity	Ending balance
Deferred income tax on temporary differences						
Employee benefits	₩	493,331	86,008	(80,645)	-	498,694
Cash flow hedge		(53,583)	130,044	(11,016)	-	65,445
Investments in associates or subsidiaries		(7,166,345)	(1,510,295)	8,649	(25)	(8,668,016)
Property, plant and equipment		(5,527,318)	(1,333,122)	-	-	(6,860,440)
Finance lease		(345,431)	(81,518)	-	-	(426,949)
Intangible assets		8,987	(1,339)	-	-	7,648
Financial assets at fair value through profit or loss		(62)	952	-	-	890
Available-for-sale financial assets		(68,347)	62,055	(2,551)	-	(8,843)
Deferred revenue		213,859	16,852	-	-	230,711
Provisions		3,583,371	1,239,462	-	-	4,822,833
Doubtful receivables		2,696	(2,637)	-	-	59
Other finance liabilities		30,249	(2,742)	-	5,248	32,755
Gains on foreign exchange translation		138,938	(140,292)	-	-	(1,354)
Allowance for doubtful accounts		17,252	25,679	-	-	42,931
Accrued income		(5,367)	3,542	-	-	(1,825)
Special deduction for property, plant and equipment		(194,309)	(6,618)	-	-	(200,927)
Reserve for research and human development		(12,883)	9,842	-	-	(3,041)
Others		695,870	232,642	24,242		952,754
		(8,189,092)	(1,271,485)	(61,321)	5,223	(9,516,675)
Deferred income tax on unused tax losses and tax credit						
Tax credit		35,703	(15,272)			20,431
		35,703	(15,272)		<u> </u>	20,431
	₩	(8,153,389)	(1,286,757)	(61,321)	5,223	(9,496,244)

41. Income Taxes, Continued

Changes in deferred income tax assets (liabilities) recognized in the statements of financial position for the years (5) ended December 31, 2017 and 2016 are as follows, continued:

In millions of v

In millions of won				2016		
		Beginning balance	Amounts recognized in profit or loss	Amount recognized in other comprehensive income (loss)	Amounts recognized directly in equity	Ending balance
Deferred income tax on temporary differences						
Employee benefits	₩	407,342	36,003	49,986	-	493,331
Cash flow hedge		(29,013)	(6,235)	(18,335)	-	(53,583)
Investments in associates or subsidiaries		(6,449,998)	(717,072)	7,731	(7,006)	(7,166,345)
Property, plant and equipment		(5,495,786)	(31,532)	-	-	(5,527,318)
Finance lease		(272,430)	(73,001)	-	-	(345,431)
Intangible assets		9,420	(433)	-	-	8,987
Financial assets at fair value through profit or loss		(4)	(58)	-	-	(62)
Available-for-sale financial assets		(49,199)	(11,005)	(8,143)	-	(68,347)
Deferred revenue		215,361	(1,502)	-	-	213,859
Provisions		3,372,423	210,948	-	-	3,583,371
Doubtful receivables		1,405	1,291	-	-	2,696
Other finance liabilities		26,298	(1,302)	-	5,253	30,249
Gains or losses on foreign exchange translation		128,714	10,224	-	-	138,938
Allowance for doubtful accounts		18,976	(1,724)	-	-	17,252
Accrued income		(11,231)	5,864	-	-	(5,367)
Special deduction for property, plant and equipment		(194,347)	38	-	-	(194,309)
Reserve for research and human development		(20,688)	7,805	-	-	(12,883)
Others		576,585	118,712	573		695,870
		(7,766,172)	(452,979)	31,812	(1,753)	(8,189,092)
Deferred income tax on unused tax losses and tax credit						
Tax losses		(3)	3	-	-	-
Tax credit		27,115	8,588			35,703
		27,112	8,591			35,703
	₩	(7,739,060)	(444,388)	31,812	(1,753)	(8,153,389)

Deferred income tax assets (liabilities) recognized in the statements of financial position as of December 31, 2017 (6) and 2016 are as follows:

In millions of won		2017	2016
Deferred income tax assets	₩.	919,153	795,131
Deferred income tax liabilities		(10,415,397)	(8,948,520)
	₩	(9,496,244)	(8,153,389)

(7) Details of deductible temporary differences, tax losses and unused tax credits for which no deferred income tax assets were recognized as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Deductible temporary differences	₩	444,42	6 426,718
42. Assets Held-for-Sale

Assets held-for-sale as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Land (*1)	Ŵ	2,765	2,907
Building (*1)		19,369	20,366
Investments in associates (*2, 3, 4)		5,837	42,569
	₩	27,971	65,842

(*1) The board of directors of KEPCO Engineering & Construction Company, Inc., a subsidiary of the Company, determined to dispose the office building in Yongin as part of the government's plan to relocate state-run companies for balanced national development and moved the head office to Kimchun, Kyungsangbukdo, in 2015. As the Company believes the book value of Yongin office will be recovered by a disposal transaction rather than continuous operation, it reclassified buildings, land and structures as assets held-for-sale.

(*2) Korea Western Power Co., Ltd., a subsidiary of the Company, planned to dispose certain portion of its investment in Dongducheon Dream Power Co., Ltd. and had classified the relevant book value as non-current assets held-for-sale. However, due to uncertainty of sale, it reclassified the relevant book value to investments in associates during the year ended December 31, 2017.

- (*3) Korea Hydro & Nuclear Power Co., Ltd., a subsidiary of the Company, initiated efforts to sell its shares in Yeongwol Energy Station Co., Ltd. during the year ended December 31, 2016. KHNP won the first trial of the lawsuit against the counterparty on November 2, 2017. However, the planned sale period has been extended since the appeal is ongoing as of December 31, 2017. The Company expects the sale to occur in 2018.
- (*4) KEPCO Engineering & Construction Company, Inc., a subsidiary of the Company, excercised a put option to sell the shares of DS POWER Co., Ltd. on December 11, 2017 and the shares are expected to be sold on Feburuary 28, 2018. Thus, the Company reclassified the relevant book value to assets held-for-sale.

43. Expenses Classified by Nature

Expenses classified by nature for the years ended December 31, 2017 and 2016 are as follows:

In millions of won			2017	
	_	Selling and administrative expenses	Cost of sales	Total
Raw materials used	₩		15,924,707	15,924,707
Salaries		735,383	3,479,591	4,214,974
Retirement benefit expense		71,094	397,852	468,946
Welfare and benefit expense		179,406	543,738	723,144
Insurance expense		15,414	90,677	106,091
Depreciation		190,245	9,461,974	9,652,219
Amortization of intangible assets		44,990	68,682	113,672
Bad debt expense		126,714	-	126,714
Commission		673,740	469,695	1,143,435
Advertising expense		114,519	10,917	125,436
Training expense		7,027	14,362	21,389
Vehicle maintenance expense		9,998	7,468	17,466
Publishing expense		3,672	4,248	7,920
Business promotion expense		3,700	4,973	8,673
Rent expense		38,380	148,509	186,889
Telecommunication expense		24,916	73,956	98,872
Transportation expense		495	9,145	9,640
Taxes and dues		48,395	437,643	486,038
Expendable supplies expense		7,731	31,994	39,725
Water, light and heating expense		10,545	30,150	40,695
Repairs and maintenance expense		63,477	2,047,943	2,111,420
Ordinary development expense		211,417	510,020	721,437
Travel expense		16,658	69,015	85,673
Clothing expense		8,410	4,985	13,395
Survey and analysis expense		698	3,661	4,359
Membership fee		1,122	8,482	9,604
Power purchase		-	14,264,331	14,264,331
Others	_	154,709	3,980,137	4,134,846
	₩	2,762,855	52,098,855	54,861,710

43. Expenses Classified by Nature, Continued

Expenses classified by nature for the years ended December 31, 2017 and 2016 are as follows, continued:

In millions of won			2016	
	-	Selling and administrative expenses	Cost of sales	Total
Raw materials used	₩	-	13,470,586	13,470,586
Salaries		734,930	3,425,712	4,160,642
Retirement benefit expense		72,812	374,826	447,638
Welfare and benefit expense		162,243	507,691	669,934
Insurance expense		11,513	79,987	91,500
Depreciation		169,431	8,704,525	8,873,956
Amortization of intangible assets		35,171	44,544	79,715
Bad debt expense		38,719	-	38,719
Commission		605,879	423,179	1,029,058
Advertising expense		34,658	9,693	44,351
Training expense		6,314	13,347	19,661
Vehicle maintenance expense		10,390	7,016	17,406
Publishing expense		3,643	4,615	8,258
Business promotion expense		3,477	4,836	8,313
Rent expense		40,020	133,670	173,690
Telecommunication expense		25,448	75,925	101,373
Transportation expense		596	5,153	5,749
Taxes and dues		46,531	464,962	511,493
Expendable supplies expense		6,834	34,668	41,502
Water, light and heating expense		9,720	25,820	35,540
Repairs and maintenance expense		75,122	1,896,656	1,971,778
Ordinary development expense		188,063	517,441	705,504
Travel expense		16,115	63,611	79,726
Clothing expense		8,273	5,363	13,636
Survey and analysis expense		666	3,209	3,875
Membership fee		1,132	8,714	9,846
Power purchase		-	10,755,739	10,755,739
Others	_	331,532	4,488,065	4,819,597
	₩	2,639,232	45,549,553	48,188,785

44. Earnings Per Share

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

In won				
	Туре		2017	2016
Basic earnings per s	share	₩	2,023	10,980

(2) Net profit for the period and weighted average number of common shares used in the calculation of basic earnings per share for the years ended December 31, 2017 and 2016 are as follows

In millions of won except number of shares Type		2017	2016
Net income attributable to controlling interest	₩	1,298,720	7,048,581
Profit used in the calculation of total basic earnings per share		1,298,720	7,048,581
Weighted average number of common shares		641,964,077	641.964.077

(3) Weighted average number of common shares used in the calculation of basic earnings per share for the years ended December 31, 2017 and 2016 are as follows:

In number of shares Type	2017	2016
The number of common shares issued at beginning of the year	641,964,077	641,964,077
Weighted average number of common shares	641,964,077	641,964,077

(4) There are no potential dilutive instruments and diluted earnings per share are same as basic earnings per share for the years ended December 31, 2017 and 2016.

45. Risk Management

(1) Capital risk management

The Company manages its capital to ensure that entities in the Company will be able to continue while maximizing the return to shareholder through the optimization of the debt and equity balance. The capital structure of the Company consists of net debt (offset by cash and cash equivalents) and equity. The Company's overall capital risk management strategy remains consistent with the prior year.

Details of the Company's capital management accounts as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Total borrowings and debt securities	₩.	54,747,392	53,639,205
Cash and cash equivalents		2,369,739	3,051,353
Net borrowings and debt securities		52,377,653	50,587,852
Total shareholder's equity		72,964,641	73,050,545
Debt to equity ratio		71.78%	69.25%

(2) Financial risk management

The Company is exposed to various risks related to its financial instruments, such as, market risk (currency risk, interest rate risk, price risk), credit risk. The Company monitors and manages the financial risks relating to the operations of the Company through internal risk reports which analyze exposures by degree and magnitude of risks. The Company uses derivative financial instruments to hedge certain risk exposures. The Company's overall financial risk management strategy remains consistent with the prior year.

(i) Credit risk

Credit risk is the risk of finance loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises primarily from the sales activities, securities and derivatives. In addition, credit risk exposure may exist within financial guarantees and unused line of credits. As these financial institutions the Company makes transactions with are reputable financial institutions, the credit risk from them are considered limited. The Company decides credit transaction limits based on evaluation of client's credit, through information obtained from the credit bureau and disclosed financial position at committing contracts.

1) Credit risk management

Electricity sales, the main operations of the Company are the necessity for daily life and industrial activities of Korean nationals, and have importance as one of the national key industries. The Company dominates the domestic market supplying electricity to customers. The Company is not exposed to significant credit risk as customers of the Company are diverse and are from various industries and areas. The Company uses publicly available information and its own internal data related to trade receivables, to rate its major customers and to measure the credit risk that a counter party will default on a contractual obligation. For the incurred but not recognized loss, it is measured considering overdue period.

② Impairment and allowance account

In accordance with the Company policies, individual material financial assets are assessed on a regular basis, trade receivables that are assessed not to be impaired individually are, in addition, assessed for impairment on a collective basis. Value of the acquired collateral (including the confirmation of feasibility) and estimated collectable amounts are included in this assessment.

Allowance for bad debts assessed on a collective basis are recognized for (i) the group of assets which individually are not material and (ii) incurred but not recognized losses that are assessed using statistical methods, judgment and past experience.

(2) Financial risk management, continued

Book values of the financial assets represent the maximum exposed amounts of the credit risk. Details of the Company's level of maximum exposure to credit risk as of December 31, 2017 and 2016 are as follows:

In millions of won		2017	2016
Cash and cash equivalents	₩	2,369,739	3,051,353
Derivative assets (trading)		22,020	367,477
Available-for-sale financial assets		699,833	1,014,732
Held-to-maturity investments		3,144	3,244
Loans and receivables		905,641	834,207
Long-term/short-term financial instruments		2,244,514	2,695,926
Financial assets at fair value through profit or loss		111,512	-
Derivative assets (applying hedge accounting)		10,606	413,897
Trade and other receivables		9,683,769	9,692,391
Financial guarantee contracts (*)		1,154,862	1,396,152

(*) Maximum exposure associated with the financial guarantee contracts is the maximum amounts of the obligation.

As of the reporting date, there are no financial assets and non-financial assets that were acquired through the exercise of the right of collateralized assets and reinforcement of credit arrangement.

(ii) Market risk

Market risk is the risk that the Company's fair values of the financial instruments or future cash flows are affected by the changes in the market. Market risk consists of interest rate risk, currency risk and other price risk.

(iii) Sensitivity analysis

Significant assets and liabilities with uncertainties in underlying assumptions

1 Defined benefit obligation

A sensitivity analysis of defined benefit obligation assuming a 1% increase and decrease movements in the actuarial valuation assumptions as of December 31, 2017 and 2016 are as follows:

In millions of won		_	201	7	2016		
Туре	Accounts		1% Increase	1% Decrease	1% Increase	1% Decrease	
Future salary increases	Increase (decrease) in defined benefit obligation	₩	354,852	(305,494)	344,874	(304,685)	
Discount rate	Increase (decrease) in defined benefit obligation		(313,597)	377,148	(305,031)	371,689	

Changes of employee benefits assuming a 1% increase and decrease movements in discount rate on plan asset for the years ended December 31, 2017 and 2016 are W8,926 million and W9,096 million, respectively.

(2) Financial risk management, continued

Provisions

Changes in provisions due to movements in underlying assumptions as of December 31, 2017 and 2016 are as follows:

Туре	Accounts	2017	2016
PCBs	Inflation rate	1.23%	1.29%
	Discount rate	2.55%	2.77%
Nuclear plants	Inflation rate	1.21%	1.40%
	Discount rate	2.94%	3.55%
Spent fuel	Inflation rate	2.93%	2.93%
	Discount rate	4.49%	4.49%

A sensitivity analysis of provisions assuming a 0.1% increase and decrease movements in the underlying assumptions as of December 31, 2017 and 2016 are as follows:

In millions of won		illions of won 2017		2016		
Туре	Accounts		0.1% Increase	0.1% Decrease	0.1% Increase	0.1% Decrease
Discount rate	PCBs	₩	(811)	816	(817)	822
	Nuclear plants		(262,949)	270,370	(209,277)	215,139
	Spent fuel		(51,015)	52,997	(52,353)	54,387
Inflation rate	PCBs		826	(822)	834	(830)
	Nuclear plants		287,926	(280,249)	240,115	(233,553)
	Spent fuel		53,763	(51,823)	55,173	(53,182)

(2) Financial risk management, continued

Management judgment effected by uncertainties in underlying assumptions

① Foreign currency risk

The Company undertakes transactions denominated in foreign currencies; consequently, exposures to exchange rate fluctuations arise. The carrying amounts of the Company's foreign currency denominated monetary assets and monetary liabilities as of December 31, 2017 and 2016 are as follows:

In thousands of foreign currencies	es Assets		Liabilitie	s
Туре	2017	2016	2017	2016
AED	5 602	7 470	2.040	1 524
	5,693	7,479	2,049	1,534
AUD	145	187	652,259	632,613
BDT	60,208	49,110	1,001	833
BWP	797	4,296	-	3,222
CAD	82	-	171	-
CHF	-	-	400,004	400,308
CNY	13,007	-	26,140	-
EUR	5,708	17,585	68,003	14,111
GBP	3	3	2,327	110
IDR	167,775	52,568	-	-
INR	1,228,259	1,059,092	227,078	161,631
JOD	1,624	1,746	5	5
JPY	799,501	520,746	21,624,128	20,442,504
KZT	359	12,157	-	-
MGA	2,762,572	3,408,579	319,581	150,430
NOK	-	-	482	-
PHP	189,261	415,818	125,431	136,700
PKR	251,190	274,090	4,676	5,051
SAR	1,191	1,149	44	-
SEK	-	-	449,002	-
USD	1,653,858	1,319,524	8,321,335	9,445,567
UYU	12,955	1,307	10,586	586
ZAR	361	386	4	75

A sensitivity analysis on the Company's income for the period assuming a 10% increase and decrease in currency exchange rates as of December 31, 2017 and 2016 are as follows:

In millions of won	20	17	2016		
Туре		10% Increase	10% Decrease	10% Increase	10% Decrease
Increase (decrease) of profit before income tax	₩	(844,122)	844,122	(1,101,372)	1,101,372
Increase (decrease) of shareholder's equity (*)		(844,122)	844,122	(1,101,372)	1,101,372

(*) The effect on the shareholders' equity excluding the impact of income taxes.

The sensitivity analysis above is conducted for monetary assets and liabilities denominated in foreign currencies other than functional currency, without consideration of hedge effect of related derivatives, as of December 31, 2017 and 2016.

To manage its foreign currency risk related to foreign currency denominated receivables and payables, the Company has a policy to enter into currency forward agreements. In addition, to manage its foreign currency risk related to foreign currency denominated expected sales transactions and purchase transactions, the Company enters into cross-currency swap agreements.

(2) Financial risk management, continued

② Interest rate risk

The Company is exposed to interest rate risk due to its borrowing with floating interest rates. A 1% increase or decrease is used when reporting interest rate risk internally to key management personnel and represents management's assessment of the reasonably possible change in interest rates.

The Company's borrowings and debt securities with floating interest rates as of December 31, 2017 and 2016 are as follows:

In millions of won Type		2017	2016
Short-term borrowings	₩	290,873	289,322
Long-term borrowings		1,743,252	1,459,969
Debt securities		685,700	1,518,500
	₩	2,719,825	3,267,791

A sensitivity analysis on the Company's long-term borrowings and debt securities assuming a 1% increase and decrease in interest rates, without consideration of hedge effect of related derivatives for the years ended December 31, 2017 and 2016 are as follows:

In millions of won	201	7	2016			
Туре	1% Increase	1% Decrease	1% Increase	1% Decrease		
Increase (decrease) of profit before income tax $~~$ $\!$	(27,198)	27,198	(32,678)	32,678		
Increase (decrease) of shareholder's equity (*)	(27,198)	27,198	(32,678)	32,678		

(*) The effect on the shareholders' equity excluding the impact of income taxes.

To manage its interest rate risks, the Company enters into certain interest swap agreements or maintains an appropriate mix of fixed and floating rate borrowings.

③ Electricity rates risk

The Company is exposed to electricity rates risk due to the rate regulation of the government which considers the effect of electricity rate on the national economy.

A sensitivity analysis on the Company's income for the period assuming a 1% increase and decrease in price of electricity for the years ended December 31, 2017 and 2016 are as follows:

In millions of won		20	017	2016			
Туре		1% Increase	1% Decrease	1% Increase	1% Decrease		
Increase (decrease) of profit before income tax	₩	546,499	(546,499)	543,045	(543,045)		
Increase (decrease) of shareholder's equity (*)		546,499	(546,499)	543,045	(543,045)		

(*) The effect on the shareholders' equity excluding the impact of income taxes.

(2) Financial risk management, continued

(iv) Liquidity risk

The Company has established an appropriate liquidity risk management framework for the management of the Company's short, medium and long-term funding and liquidity management requirements. The Company manages liquidity risk by continuously monitoring forecasted and actual cash flows, and by matching the maturity profiles of financial assets and liabilities.

In addition, the Company has established credit lines on its trade financing and bank overdrafts, and through payment guarantees it has received, it maintains an adequate credit (borrowing) line. In addition, the Company has the ability to utilize excess cash or long-term borrowings for major construction investments.

The following table shows the details of maturities of non-derivative financial liabilities as of December 31, 2017 and 2016. This table, based on the undiscounted cash flows of the non-derivative financial liabilities including estimated interests, has been prepared based on the respective liabilities' earliest maturity date.

In millions of won				2017		
	_	Less than			More than	
Туре		1 year	1~2 Years	2~5 Years	5 years	Total
Borrowings and debt securities	₩	10,748,437	7,948,320	21,331,394	22,694,867	62,723,018
Finance lease liabilities		174,534	87,709	185,284	108,749	556,276
Trade and other payables		5,867,729	301,165	698,289	1,937,558	8,804,741
Financial guarantee contracts (*)	_	7,081	18,054	1,049,667	80,060	1,154,862
	₩ _	16,797,781	8,355,248	23,264,634	24,821,234	73,238,897
In millions of won				2016		
		Less than			More than	
Туре		1 year	1~2 Years	2~5 Years	5 years	Total
Borrowings and debt securities	₩	10,613,185	9,786,209	19,353,498	24,461,835	64,214,727
Finance lease liabilities		175,512	174,534	229,495	152,247	731,788
Trade and other payables		5,464,234	307,222	660,426	2,170,525	8,602,407
Financial guarantee contracts (*)	_	249,200	40,617	865,842	240,493	1,396,152
	₩	16,502,131	10,308,582	21,109,261	27,025,100	74,945,074

(*) This represents the total guarantee amounts associated with the financial guarantee contracts. Financial guarantee liabilities which are recognized as of December 31, 2017 and 2016 are \$\productW23,475\$ million and \$\productW29,665\$ million, respectively.

(2) Financial risk management, continued

The expected maturities for non-derivative financial assets as of December 31, 2017 and 2016 in detail are as follows:

In millions of won		2017								
Туре		Less than 1 year	1~5 Years	More than 5 years	Other (*)	Total				
Cash and cash equivalents	₩	2,369,739	-	-	-	2,369,739				
Available-for-sale financial assets		-	-	214,156	485,677	699,833				
Held-to-maturity investments		5	3,139	-	-	3,144				
Loans and receivables Long-term/short-term financial		244,309	261,672	429,628	10,821	946,430				
Instruments		1,702,084	201,821	340,304	305	2,244,514				
Financial assets at fair value through										
profit or loss		-	-	111,512	-	111,512				
Trade and other receivables	_	7,930,715	920,539	788,795	52,031	9,692,080				
	₩	12,246,852	1,387,171	1,884,395	548,834	16,067,252				

In millions of won				2016		
	_	Less than 1		More than		
Туре		year	1~5 Years	5 years	Other (*)	Total
Cash and cash equivalents	₩	3,051,353	-	-	-	3,051,353
Available-for-sale financial assets		-	-	-	1,014,732	1,014,732
Held-to-maturity investments		114	3,126	4	-	3,244
Loans and receivables Long-term/short-term financial		198,133	233,564	439,666	5,591	876,954
instruments		2,281,460	200,001	214,122	343	2,695,926
Trade and other receivables	_	7,790,953	915,679	919,901	74,199	9,700,732
	₩	13,322,013	1,352,370	1,573,693	1,094,865	17,342,941

(*) The maturities cannot be presently determined.

Derivative liabilities classified by maturity periods which from reporting date to maturity date of contract as of December 31, 2017 and 2016 are as follows:

In millions of won				2017		
Туре		Less than 1 year	1~2 Years	2~5 Years	More than 5 years	Total
Net settlement						
- Trading Gross settlement	₩	(774)	-	-	-	(774)
- Trading		(51,496)	(19,887)	(16,597)	(4,967)	(92,947)
- Hedging	_	(17,547)	(28,977)	(192,205)	(44,137)	(282,866)
	₩	(69,817)	(48,864)	(208,802)	(49,104)	(376,587)
In millions of won				2016		
	_	Less than		-	More than	
Туре		1 year	1~2 Years	2~5 Years	5 years	Total
Gross settlement						
- Trading	W	(3,081)	(24,044)	-	(2,799)	(29,924)
- Hedging	_	(2,645)	(2,645)	(56,484)	(56,575)	(118,349)
	₩	(5,726)	(26,689)	(56,484)	(59,374)	(148,273)

(3) Fair value risk

The fair value of the Company's actively-traded financial instruments (i.e. short-term financial assets held for trading, availablefor-sale financial assets, etc.) is based on the traded market-price as of the reporting period end. The fair value of the Company's financial assets is the amount which the asset could be exchanged for or the amount a liability could be settled for.

The fair values of financial instruments where no active market exists or where quoted prices are not otherwise available are determined by using valuation techniques. Valuation techniques include using recent arm's length market transactions between knowledgeable, willing parties, if available, reference to the current fair value of another instrument that is substantially the same, discounted cash flow analysis and option pricing models. If there is a valuation technique commonly used by market participants to price the instrument and that technique has been demonstrated to provide reliable estimates of prices obtained in actual market transactions, the Company uses that technique.

For trade receivables and payables, the Company considers the carrying value net of impairment as fair value. While for disclosure purposes, the fair value of financial liabilities is estimated by discounting a financial instruments with similar contractual cash flows based on the effective interest method.

(i) Fair value and book value of financial assets and liabilities as of December 31, 2017 and 2016 are as follows:

In millions of won		201	7	201	6
Туре		Book value	Fair value	Book value	Fair value
Assets recognized at fair value					
Available-for-sale financial assets (*1)	₩	699,833	699,833	1,014,732	1,014,732
Derivative assets (trading)		22,020	22,020	367,477	367,477
Derivative assets (applying hedge accounting)		10,606	10,606	413,897	413,897
Long-term financial instruments		542,430	542,430	414,466	414,466
Short-term financial instruments		1,702,084	1,702,084	2,281,460	2,281,460
Financial assets at fair value through					
profit or loss		111,512	111,512	-	-
	=	3,088,485	3,088,485	4,492,032	4,492,032
Assets carried at amortized cost					
Held-to-maturity investments		3,144	3.144	3,244	3.244
Loans and receivables		905,641	905.641	834,207	834,207
Trade and other receivables		9,683,769	9,683,769	9,692,391	9,692,391
Cash and cash equivalents		2,369,739	2,369,739	3,051,353	3,051,353
	=	12,962,293	12,962,293	13,581,195	13,581,195
Liabilities recognized at fair value					
Derivative liabilities (trading)		150,929	150,929	21,529	21,529
Derivative liabilities (applying hedge accounting)	1	277,130	277,130	117,157	117,157
Derivative indiffices (upplying fledge decounting)	-	428,059	428,059	138,686	138,686
	=	.20,000	.20,000		
Liabilities carried at amortized cost					
Secured borrowings		1,055,554	1,055,554	744,565	744,565
Unsecured bond		51,146,783	53,436,659	50,749,793	54,455,659
Finance lease liabilities		418,260	418,260	541,179	541,179
Unsecured borrowings		2,476,196	2,477,055	2,089,885	2,099,574
Trade and other payables (*2)		8,804,741	8,804,741	8,602,407	8,602,407
Bank overdraft	_	68,859	68,859	54,962	54,962
	₩	63,970,393	66,261,128	62,782,791	66,498,346

(*1) Book values of equity securities held by the Company that were measured at cost as of December 31, 2017 and 2016 are ₩37,926 million and ₩138,557 million, respectively, as a quoted market price does not exist in an active market and its fair value cannot be measured reliably.

(*2) Excludes finance lease liabilities.

(3) Fair value risk, continued

(ii) Interest rates used for determining fair value

The interest rates used to discount estimated cash flows, when applicable, are based on the government yield curve at the reporting date plus an adequate credit spread.

The discount rate used for calculating fair value as of December 31, 2017 and 2016 are as follows:

Туре	2017	2016
Derivatives	0.03% ~ 4.16%	0.02% ~ 4.16%
Borrowings and debt securities	0.08% ~ 4.38%	0.02% ~ 4.38%
Finance lease	9.00% ~ 10.83%	9.00% ~ 10.83%

(iii) Fair value hierarchy

The following table provides an analysis of financial instruments that are measured subsequent to initial recognition at fair value, classified as Level 1, 2 or 3, based on the degree to which the fair value is observable.

- Level 1: Unadjusted quoted prices in active markets for identical assets or liabilities;
- Level 2: Inputs other than quoted prices that are observable for the asset or liability either directly or indirectly; and Level 3: Inputs that are not based on observable market data.

Fair values of financial instruments by hierarchy level as of December 31, 2017 and 2016 are as follows:

In millions of won			2017		
Туре		Level 1	Level 2	Level 3	Total
Financial assets at fair value					
Available-for-sale financial assets	₩	274,453	214,156	173,298	661,907
Derivative assets Financial assets at fair value through		-	18,466	14,160	32,626
profit or loss		-	111,512	-	111,512
	₩	274,453	344,134	187,458	806,045
Financial liabilities at fair value					
Derivative liabilities	₩	-	428,059	-	428,059
In millions of won			2016		
Туре		Level 1	Level 2	Level 3	Total
Financial assets at fair value					
Available-for-sale financial assets	₩	268,171	437,015	269,461	974,647
Derivative assets		-	770,851	10,523	781,374
	₩	268,171	1,207,866	279,984	1,756,021
Financial liabilities at fair value					
Derivative liabilities	₩	-	138,686	-	138,686

The fair value of available-for-sale financial assets publicly traded is measured at the closing bid price quoted at the end of the reporting period. Meanwhile, the fair value of unquoted available-for-sale financial assets is calculated using the valuation results from an external pricing service in which weighted average borrowing rates of interest of evaluated companies are used as a discount rate. The fair value of derivatives is measured using valuation model which is determined at the present value of estimated future cash flows discounted at current market interest rate.

(3) Fair value risk, continued

Changes of financial assets and liabilities which are classified as level 3 for the years ended December 31, 2017 and 2016 are as follows:

In millions of won					2017			
		Beginning balance	Acquisition	Reclassified category	Valuation	Disposal	Foreign currency translation	Ending balance
Financial assets at fair value Available-for-sale financial assets Unlisted securities	₩	269,461	-	(92,128)	(6,201)	-	2,166	173,298
In millions of won					2016			
		Beginning balance	Acquisition	Reclassified category	Valuation	Disposal	Foreign currency translation	Ending balance
Financial assets at fair value Available-for-sale financial assets Unlisted securities	₩	180,390	-	98,472	(9,401)	-	-	269,461

46. Service Concession Arrangements

(1) Gas Complex · Thermal Power Plant at Ilijan, Philippines (BOT)

(i) Significant terms and concession period of the arrangement

The Company has entered into a contract with National Power Corporation (the "NPC"), based in the Republic of the Philippines whereby the Company can collect the electricity rates which are composed of fixed costs and variable costs during the concession period after building, rehabilitating, and operating the power plant.

(ii) Rights and classification of the arrangement

The Company has the rights to use and own the power plant during the concession period from 2002 to 2022. At the end of the concession period, the Company has an obligation to transfer its ownership of the power plant to NPC.

(iii) The Company's expected future collections of service concession arrangements as of December 31, 2017 are as follows:

Туре		Amounts
Less than 1 year	₩	111,912
1~ 2 years		111,912
2~3 years		111,912
Over 3 years		158,543
	₩	494,279

(2) Hydroelectric Power Generation at Semangka, Indonesia (BOT)

(i) Significant terms and concession period of the arrangement

The Company has entered into a contract with PT. Perusahaan Listrik Negara (the "PLN") whereby the Company provides electricity generated and charge tariff rates designed to recover capital cost, fixed O&M cost, water usage cost, variable O&M cost and special facilities cost during the concession period after building, rehabilitating, and operating the power plant for approximately 30 years (2018~2048) subsequent to the completion of plant construction.

(ii) Rights and classification of the arrangement

The Company has the rights to use and own the power plant during the concession period from 2018 to 2048. At the end of the concession period, PNL has an option to take over the ownership of the power plant from the Company.

(iii) The Company's expected future collections of service concession arrangements as of December 31, 2017 are as follows:

In millions of won Type		Amounts
Less than 1 year	\mathbf{W}	20,332
1~ 2 years		26,888
2~ 3 years		26,888
Over 3 years		591,687
	\mathbf{W}	665,795

(iv) Accumulated contract costs and profits related to the Company's contract in process as of December 31, 2017 were W145,613 million and W9,163 million, respectively. There are no amount due from customers and advance receipts in progress.

47. Related Parties

Туре	Related party
Parent	Republic of Korea government
Subsidiaries (100 subsidiaries)	 Korea Hydro & Nuclear Power Co., Ltd., Korea South-East Power Co., Ltd., Korea Midland Power Co., Ltd., Korea Southern Power Co., Ltd., Korea East-West Power Co., Ltd., KEPCO Engineering & Constructiv Company, Inc., KEPCO Plant Service & Engineering Co., Ltd., KEPCO Nuclear Fuel Co., Ltd., KEPCO KDN Co., Ltd., Garoli Tidal Power Plant Co., Ltd., Gyeonggi Green Energy Co., Ltd., Korea Ofshore Wind Power Co., Ltd., KOSEP Material C. Ltd., KEPCO International HongKong Ltd., KEPCO International Philippines Inc., KEPCO International HongKong Ltd., KEPCO International Philippines Inc., KEPCO International Ltd., KEPCO Gansu International Ltd., KEPCO Philippines Holdings Inc., KEPCO Lebanon SARL, KEPC Neimenggu International Ltd., KEPCO Australia Pty., Ltd., KOSPO Australia Pty., Ltd., KOSPO Australia Pty., Ltd., KEPCO Canada Energy Ltd., KEPCO Netherlands B.V., KOREPA ustralia Pty., Ltd., KOVEPO Australia Pty., Ltd., KOPC Canada Energy Ltd., KEPCO Netherlands B.V., KOREA Invouraren Uranium Investment Corp., KEPCO Middle East Holdi Company, Qatrana Electric Power Company, Korea Electric Power Nigeria Ltd., KOWEPO International Corporation, KOSF Jordan LLC, Korea Waterbury Uranium Limited Partnership, PT. Cirebon Power Service, EWP America Inc., KHNP Cana Energy, Ltd., KEPCO Bylong Australia Pty., Ltd., KNF Canada Energy Ltd., KEPCO Holdings de Mexico, KST Elect Power Company, KEPCO Netherlands SJ B.V., PT. KOMIPO America Inc, KOSE USA, INC., PT. EWP Indonesia, EWP (Barbados) 1 SRL, PT. Tanggamus Electric Power, KOMIPO America Inc, KOSE USA, INC., PT. EWP Indonesia, KEPCO Netherlands JJ B.V., Global One Pioneer B.V., Global Energy Pioneer B.V., M Power Limited, EWP Philippines Corporation, KEPCO Singapore Holdings, LLC, Solar Investment Trust 1 (formerly, Global One Carbon Private Limite KEPCO KPS Philippines Corp., KOSPO Chile SpA, PT. KOWEPO Sumsel Operation And Maintenance Services, Commer and Industry Energy Co., Ltd., Gyeongju Wind Power Co., Ltd., California Power Holdings, LLC, Springfield Power, LLL
Associates (56 associates)	Dongducheon Dream Power Co., Ltd., Korea Gas Corporation, SE Green Energy Co., Ltd., Daegu Photovoltaic Co., Lt Jeongam Wind Power Co., Ltd., Korea Power Engineering Service Co., Ltd., Heang Bok Do Si Photovoltaic Power Co., Lt Korea Electric Power Industrial Development Co., Ltd., Goseong Green Energy Co., Ltd., Gangneung Eco Power Co., Lt Shin Pyeongtaek Power Co., Ltd., Naepo Green Energy Co., Ltd., Noeul Green Energy Co., Ltd., VTN Co., Ltd., Cheong Energy Co., Ltd., Samcheok Eco Materials Co., Ltd., Gangwon Wind Power Co., Ltd., Gwangyang Green Energy Co., Ltd. Hyundai Green Power Co., Ltd., Korea Power Exchange, AMEC Partners Korea Ltd., Hyundai Energy Co., Ltd., Ecollite C Ltd., Taebaek Wind Power Co., Ltd., Taeback Guinemi Wind Power Co., Ltd., Pyeongchang Wind Power Co., Ltd., Daery Power Co., Ltd., Changjuk Wind Power Co., Ltd., KNH Solar Co., Ltd., S-Power Co., Ltd., Hadong Mineral Fiber Co., Lt Green Biomass Co., Ltd., KOC Nigerian West Oil Co., Ltd., PT Wampu Electric Power, PT. Bayan Resources TE Nepal Water & Energy Development Company Private Limited, Pioneer Gas Power Limited, Eurasia Energy Holdings, X Pian Xe-Namnoy Power Co., Ltd., formerly, Jungbu Bio Energy Co., Ltd.), Korea Electric Vehice Charging Service, Ulleung Natural Energy Co., Ltd., Korea Nuclear Partners Co., Ltd., Tama Offshore Wind Power Co., Ltd., Korea Electric Pow Corporation Fund, Energy Infra Asset Management Co., Ltd., Daegu Clean Energy Co., Ltd., YaksuESS Co., Ltd, PND sole Ltd
Joint ventures (45 joint ventures)	Daegu Green Power Co., Ltd., KEPCO SPC Power Corporation, Daejung Offshore Wind Power Co., Ltd., KAPES, In Dangjin Eco Power Co., Ltd., Honam Wind Power Co., Ltd., Seokmun Energy Co., Ltd., Incheon New Power Co., Lt Chun-cheon Energy Co., Ltd., Yeonggwangbaeksu Wind Power Co., Ltd., KW Nuclear Components Co., Ltd., KEPCO-Uh Inc., GS Donghae Electric Power Co., Ltd., Busan Shinho Solar Power Co., Ltd., Global Trade Of Power System Co., Lt Expressway Solar-light Power Generation Co., Ltd., Gansu Datang Yumen Wind Power Co., Ltd., Datang Chife Renewable Power Co., Ltd., Rabigh Electricity Company, Eco Biomass Energy Sdn. Bhd., Rabigh Operation & Maintenar Company Limited, Datang KEPCO Chaoyang Renewable Power Co., Ltd., Shuweihat Asia Power Investment B. Shuweihat Asia Operation & Maintenance Company, Waterbury Lake Uranium L.P., ASM-BG Investicii AD, RES Technolo AD, Jamaica Public Service Company Limited, KV Holdings, Inc., Datang Chaoyang Renewable Power Co., Ltd., KO NOVUS I LLC, KODE NOVUS II LLC, Amman Asia Electric Power Company, Kelar S.A, PT. Tanjung Power Indonesia, Nu
	Son 2 Power Ltd., Daehan Wind Power PSC, MOMENTUM, Barakah One Company, Nawah Energy Compa Yeonggwang Wind Power Co., Ltd., Chester Solar IV SpA, Chester Solar V SpA, Diego de Almagro Solar SpA, South Jama Power Company Limited

(1) Related parties of the Company as of December 31, 2017 are as follows:

Transactions between the Company and its subsidiaries are eliminated during the consolidation and are not disclosed in notes. (2)

Related party transactions for the years ended December 31, 2017 and 2016 are as follows: (3)

<Sales and Others>

In millions of won				
Company name	Transaction type		2017	2016
<associates></associates>				
Dongducheon Dream Power Co., Ltd.	Electricity sales	W	17,041	15,221
Korea Gas Corporation	Electricity sales		88,011	89,030
Daegu Photovoltaic Co., Ltd.	Service		349	-
Jeongam Wind Power Co., Ltd.	Electricity sales		30	6
Korea Power Engineering Service Co., Ltd.	Service		1,317	1,455
KS Solar Co., Ltd.	Electricity sales		5	20
Heang Bok Do Si Photovoltaic Power Co., Ltd.	Service		2	2
Korea Electric Power Industrial Development Co., Ltd.	Service		14,044	10,723
Goseong Green Energy Co., Ltd.	Electricity sales		24,069	9,195
Gangneung Eco Power Co., Ltd.	Service		2,391	5,223
Shin Pyeongtaek Power Co., Ltd.	Electricity sales		9,025	3,579
Naepo Green Energy Co., Ltd.	Electricity sales		185	104
Noeul Green Energy Co., Ltd.	Electricity sales		32	177
Samcheok Eco Materials Co., Ltd.	Electricity sales		237	64
YTN Co., Ltd.	Electricity sales		1,987	1,785
Busan Green Energy Co., Ltd.	Service		120	133
Gunsan Bio Energy Co., Ltd. (formerly, Jungbu Bio Energy				
Co., Ltd.)	, Electricity sales		-	6
Korea Electric Vehicle Charging Service	Electricity sales		700	89
Ulleungdo Natural Energy Co., Ltd.	Service		1.013	691
Tamra Offshore Wind Power Co., Ltd.	Service		55	12
Daegu clean Energy Co., Ltd.	Electricity sales		421	-
Cheongna Energy Co., Ltd.	Service		7,980	6,831
Gangwon Wind Power Co., Ltd.	Electricity sales		994	1,273
Hyundai Green Power Co., Ltd.	Design service		14,280	14,835
Korea Power Exchange	Service		8,446	7,141
Hyundai Energy Co., Ltd.	Service		15,627	24,719
Taebaek Wind Power Co., Ltd.	Service		813	796
Pyeongchang Wind Power Co., Ltd.	Design service		1,176	497
Daeryun Power Co., Ltd.	Electricity sales		1,796	1,516
Changjuk Wind Power Co., Ltd.	Electricity sales		788	863
KNH Solar Co., Ltd.	Electricity sales		17	17
S-Power Co., Ltd.	Service		12,852	5,994
Busan Solar Co., Ltd.	Electricity sales			8
Green Biomass Co., Ltd.	Electricity sales		-	2
SPC Power Corporation	Dividend income		5,562	8,346
Gemeng International Energy Co., Ltd.	Dividend income		13,365	16,476
PT. Cirebon Electric Power	Dividend income		550	
Dolphin Property Limited	Dividend income		-	35
PT. Bayan Resources TBK	Service		717	160
Nepal Water & Energy Development Company Private			, , ,	100
Limited	Service		900	375
Pioneer Gas Power Limited	Service		62	164
Xe-Pian Xe-Namnoy Power Co., Ltd.	Service		661	773
PT. Mutiara Jawa	Service		47	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
i i. wuudla Jawa	JEIVICE		77	

(3) Related party transactions for the years ended December 31, 2017 and 2016 are as follows, continued:

In millions of won			Sales and ot	hers
Company name	Transaction type		2017	2016
<joint ventures=""></joint>				
Daegu Green Power Co., Ltd.	Electricity sales	₩	1,131	768
KEPCO SPC Power Corporation	Service		45,005	10,344
Daejung Offshore Wind Power Co., Ltd.	Electricity sales		1	1
KAPES, Inc.	Commission		1,420	1,176
Dangjin Eco Power Co., Ltd.	Technical fee		670	1,787
Honam Wind Power Co., Ltd.	Electricity sales		552	169
Seokmun Energy Co., Ltd.	Service		1,765	1,627
Incheon New Power Co., Ltd.	Construction revenue		539	524
Chun-cheon Energy Co., Ltd.	Electricity sales		4,855	3,079
Yeonggwangbaeksu Wind Power Co., Ltd.	Electricity sales		1,654	1,591
KW Nuclear Components Co., Ltd.	Service		644	3,327
KEPCO-Uhde Inc.	Service		34	6
GS Donghae Electric Power Co., Ltd.	Electricity sales		11,204	12,994
Busan Shinho Solar Power Co., Ltd.	Electricity sales		87	210
Datang Chifeng Renewable Power Co., Ltd.	Interest income		500	8,216
Rabigh Electricity Company	Dividend income		19,179	699
Rabigh Operation & Maintenance Company Limited	Dividend income		2,784	2,395
Datang Chaoyang Renewable Power Co., Ltd.	Dividend income		839	-
Shuweihat Asia Power Investment B.V.	Dividend income		1,707	2,957
Shuweihat Asia Operation & Maintenance Company	Electricity sales		1,319	1,179
ASM-BG Investicii AD	Service		1,062	322
Jamaica Public Service Company Limited	Service		-	1,905
KV Holdings, Inc.	Dividend income		-	302
Datang KEPCO Chaoyang Renewable Co., Ltd.	Dividend income		-	440
Amman Asia Electric Power Company	Service		14,205	21,915
Kelar S.A	Service		570	1,702
Nghi Son 2 Power Ltd.	Electricity sales		2,693	-
Barakah One Company	Electricity sales		7,059	25,244
Nawah Energy Company	Service		34,421	-
<others></others>				
Yeongwol Energy Station Co., Ltd.	Service		830	858
DS POWER Co., Ltd.	Service		5,819	35,133
Korea Development Bank	Electricity sales		3,239	3,102
	Interest income		1,685	3,164

(3) Related party transactions for the years ended December 31, 2017 and 2016 are as follows, continued:

<Purchase and Others>

In millions of won		Purchase ar	d others
Company name	Transaction type	2017	2016
<associates></associates>			
Dongducheon Dream Power Co., Ltd.	Electricity purchase	₩ 813,440	946,463
Korea Gas Corporation	Purchase of power generation fuel	3,245,519	3,633,198
Daegu Photovoltaic Co., Ltd.	REC purchase	3,646	3,243
Korea Power Engineering Service Co., Ltd.	Services	1,292	723
KS Solar Co., Ltd.	REC purchase	900	4.080
Heang Bok Do Si Photovoltaic Power Co., Ltd.	Rental fee and others	570	410
Korea Electric Power Industrial Development Co., Ltd.	Electricity metering service fee	289,293	250,057
Noeul Green Energy Co., Ltd.	Services	15,862	
Samcheok Eco Materials Co., Ltd.	Electricity purchase	14	-
YTN Co., Ltd.	Advertisement fee	731	554
Busan Green Energy Co., Ltd.	Services	12,189	-
Korea Electric Vehicle Charging Service	Services	1.093	-
Ulleungdo Natural Energy Co., Ltd.	Electricity purchase	119	60
Tamra Offshore Wind Power Co., Ltd.	Electricity purchase	2,105	-
Cheongna Energy Co., Ltd.	Services	59	73
Gangwon Wind Power Co., Ltd.	Electricity purchase	25,968	22,780
Hyundai Green Power Co., Ltd.	Electricity purchase	458,378	469,547
Korea Power Exchange	Trading fees	207,855	91,433
Hyundai Energy Co., Ltd.	Electricity purchase	87,607	1,313
Taebaek Wind Power Co., Ltd.	REC purchase	6,534	5,741
Pyeongchang Wind Power Co., Ltd.	Services	4.033	1,594
Daeryun Power Co., Ltd.	Electricity purchase	146,189	244,023
Changjuk Wind Power Co., Ltd.	Electricity purchase	6,981	5,786
KNH Solar Co., Ltd.	Electricity purchase	3,947	4,006
S-Power Co., Ltd.	Electricity purchase	457,329	437,206
Busan Solar Co., Ltd.	Electricity purchase		1,079
Green Biomass Co., Ltd.	Woodchip purchase	1,345	2,232
Nepal Water & Energy Development	woodenip purchase		2,202
Company Private Limited	Service	72	-
<joint ventures=""></joint>			
Daegu Green Power Co., Ltd.	Electricity purchase	252,024	263,797
KAPES, Inc.	Service	164,165	140,555
Honam Wind Power Co., Ltd.	Electricity purchase	5,962	6,776
Seokmun Energy Co., Ltd.	REC purchase	21,674	-
Chun-cheon Energy Co., Ltd.	REC purchase	194,136	-
Yeonggwangbaeksu Wind Power Co., Ltd.	Electricity purchase	11,124	11,208
GS Donghae Electric Power Co., Ltd.	Electricity purchase	351,367	903
Busan Shinho Solar Power Co., Ltd.	REC purchase	7,984	6,770
Global Trade Of Power System Co., Ltd.	Service	414	882
Expressway Solar-light Power Generation Co., Ltd.	Electricity purchase	2,941	2,942
Jamaica Public Service Company Limited	Service	154	127
Barakah One Company	Service	2,631	-
<others></others>			
Yeongwol Energy Station Co., Ltd.	REC purchase	14,256	14,875
Korea Development Bank	Interest expense	4,573	8,231
	Provision of dividends	418,407	654,829

(4) Receivables and payables arising from related party transactions as of December 31, 2017 and 2016 are as follows:

In millions of won			Receiva	bles	Payables		
Company name	Туре		2017	2016	2017	2016	
<associates> Dongducheon Dream Power Co., Ltd.</associates>	Trade receivables	w	2,230	1,073			
Jonguucheon Dream Fower Co., Llu.		vv		1,073	-	-	
	Non-trade receivables and others		655	-	-	-	
	Trade payables		-	-	77,817	93,493	
Korea Gas Corporation	Trade receivables		9,833	8,739	-	-	
	Non-trade receivables and others		339	78	-	-	
	Trade payables		-	-	524,881	399,563	
	Non-trade payables and others		-	-	569	9,090	
Daegu Photovoltaic Co., Ltd.	Trade payables		-	-	71	56	
Jeongam Wind Power Co., Ltd.	Non-trade payables and others		-	-	4	4	
KS Solar Co., Ltd.	Trade receivables		-	2	-	-	
	Trade payables		-	-	-	53	
Korea Electric Power Industrial	Trade receivables		333	362	-	-	
Development Co., Ltd.	Non-trade receivables and others		42	47	-	-	
	Non-trade payables and others		-	-	18,006	18,628	
Goseong Green Energy Co., Ltd.	Non-trade receivables and others		19	-	-	-	
	Non-trade payables and others		-	-	7,140	3,900	
Gangneung Eco Power Co., Ltd.	Trade receivables		1	1	-	-	
	Non-trade receivables and others		4,747	2,137	-	-	
Shin Pyeongtaek Power Co., Ltd.	Non-trade receivables and others		210	215	-	-	
	Non-trade payables and others		-	-	52	-	
Naepo Green Energy Co., Ltd.	Trade receivables		17	14	-	-	
Noeul Green Energy Co., Ltd.	Trade receivables		3	18	-	-	
	Non-trade payables and others		-	-	2,041	-	
Samcheok Eco Materials Co., Ltd.	Trade receivables		20	21	-	-	
YTN Co., Ltd.	Trade receivables		98	165	-	-	
	Non-trade payables and others		-	-	209	132	
Busan Green Energy Co., Ltd.	Trade receivables		7	9	-	-	
	Non-trade receivables and others		1,691	-	-	-	
Korea Electric Vehicle Charging Service	Trade receivables		23	12	-	-	
	Trade payables		-	-	45	-	
Ulleungdo Natural Energy Co., Ltd.	Non-trade receivables and others		-	111	-	-	
Cheongna Energy Co., Ltd.	Trade receivables		182	165	-	-	
	Non-trade payables and others		-	-	1	82	
Gangwon Wind Power Co., Ltd.	Trade receivables		6	8	-	-	
	Trade payables		-	-	3,033	2,031	
Hyundai Green Power Co., Ltd.	Trade receivables		946	569	-	-	
	Trade payables		-	-	32,589	31,507	
Korea Power Exchange	Trade receivables		463	1,066	-	-	
	Non-trade receivables and others		128	53	-	-	
	Non-trade payables and others		-	-	1,142	1,235	
Hyundai Energy Co., Ltd.	Trade receivables		49	72		-	
	Non-trade receivables and others		6,598	68,798	-	-	
				,			
	Trade payables		-	-	223	86	

(4) Receivables and payables arising from related party transactions as of December 31, 2017 and 2016 are as follows, continued:

In millions of won		Receivables		bles	Payab	oles
Company name	Туре		2017	2016	2017	2016
<associates></associates>						
Ecollite Co., Ltd.	Non-trade receivables and others	₩	210	210	-	-
Taebaek Wind Power Co., Ltd.	Trade receivables	••	116	-	-	-
	Non-trade receivables and others		-	112	_	-
	Trade payables		_	-	533	386
	Non-trade payables and others		_		121	304
Pyeongchang Wind Power Co., Ltd.	Trade receivables		3	4	121	504
yeongchang wind i ower co., Etd.	Non-trade payables and others		-	4	163	255
Daeryun Power Co., Ltd.	Trade receivables		162	140	103	200
Daeryun Fower Co., Llu.			102	-		-
	Trade payables				15,706	21,646
Changjuk Wind Power Co., Ltd.	Trade receivables		101	100	-	-
	Trade payables		-	-	515	358
	Non-trade payables and others		-	-	546	334
KNH Solar Co., Ltd.	Trade receivables		1	1	-	-
	Non-trade payables and others		-	-	193	204
S-Power Co., Ltd.	Trade receivables		117	142	-	-
	Non-trade receivables and others		5,183	393	-	-
	Trade payables		-	-	25,061	51,844
Green Biomass Co., Ltd.	Non-trade payables and others		-	-	85	113
SPC Power Corporation	Non-trade receivables and others		76	-	-	-
Nepal Water & Energy Development	Non-trade receivables and others					
Company Private Limited			227	889	_	-
Pioneer Gas Power Limited	Non-trade receivables and others			82	_	_
Xe-Pian Xe-Namnoy Power Co., Ltd.	Non-trade receivables and others		53	58	-	-
Ae-Fian Ae-Mannoy Fower Co., Ltd.			55	00	-	-
<joint ventures=""></joint>						
Daegu Green Power Co., Ltd.	Trade receivables		98	52	-	-
	Non-trade receivables and others		10	1	-	-
	Trade payables		-	-	25,257	27,400
KEPCO SPC Power Corporation	Non-trade receivables and others		-	2,349	-	-
KAPES, Inc.	Non-trade receivables and others		-	235	-	-
	Trade payables		-	-	55	-
	Non-trade payables and others		-	-	-	11,992
Dangjin Eco Power Co., Ltd.	Non-trade receivables and others		1,211	833	-	-
	Non-trade payables and others		-	-	41	-
Honam Wind Power Co., Ltd.	Trade payables		-	_	381	424
Hondriff Wind Fower 66., Etd.	Non-trade payables and others		-	_	3,013	3,082
Seokmun Energy Co., Ltd.	Trade receivables		93	114	0,010	0,002
Seokinun Energy Co., Eta.	Non-trade receivables and others		276	160	-	-
			270	160	2 052	-
Inchean New Dewar Co. 1td	Non-trade payables and others				3,052	-
Incheon New Power Co., Ltd.	Trade receivables		128	128	-	-
Chun-cheon Energy Co., Ltd.	Trade receivables		129	-	-	-
	Non-trade receivables and others		252	255	-	-
	Trade payables		-	-	29,676	-

(4) Receivables and payables arising from related party transactions as of December 31, 2017 and 2016 are as follows, continued:

In millions of won		Receiva	bles	Payat	oles
Company name	Туре	2017	2016	2017	2016
<joint ventures=""></joint>					
Yeonggwangbaeksu Wind Power	Trade receivables	7	6	-	-
Co., Ltd.	Non-trade receivables and others	144	145	-	-
	Trade payables	-	-	619	761
	Non-trade payables and others	-	-	1,300	1,362
KW Nuclear Components Co., Ltd.	Trade receivables	4	-	-	-
KEPCO-Uhde Inc.	Non-trade payables and others	-	-	4	4
GS Donghae Electric Power Co., Ltd.	Trade receivables	450	775	-	-
	Non-trade receivables and others	1,892	1,497	-	-
	Trade payables	-	-	73,570	-
	Non-trade payables and others	-	-	-	993
Busan Shinho Solar Power Co., Ltd.	Trade receivables	2	3	-	-
	Trade payables	-	-	159	129
	Non-trade payables and others	-	-	811	670
Datang Chifeng Renewable Power	Non-trade receivables and others				
Co., Ltd.		82	210	-	-
Rabigh Operation & Maintenance	Trade receivables	-	2,275	-	-
Company Limited	Non-trade receivables and others	869	-	-	-
ASM-BG Investicii AD	Non-trade receivables and others	37	64	-	-
Jamaica Public Service Company Limited	Trade receivables	-	615	-	-
Amman Asia Electric Power Company	Trade receivables	2,675	2,509	-	-
Nawah Energy Company	Trade receivables	10,419	-	-	-
<others></others>					
Yeongwol Energy Station Co., Ltd.	Trade receivables	7,068	7,064	-	-
	Trade payables	-	-	-	229
DS POWER Co., Ltd.	Trade receivables	340	1.775	-	
Korea Development Bank	Accrued interest income	204	672	-	-
	Non-trade receivables and others	501,029	217,481	-	-
	Non-trade payables and others		-	200	408
	Derivatives	569	25,306	22,398	3,278
				,	-, -

(5) Loans and others arising from related party transactions as of December 31, 2017 and 2016 are as follows:

In millions of wo	Company name		Beginning balance	Loans	Collection	Others	Ending balance
Associates	KNOC Nigerian East Oil Co., Ltd.,						
	KNOC Nigerian West Oil Co., Ltd.	₩	29,282	169	-	(3,110)	26,341
	(Allowance for doubtful accounts)		(18,191)	-	-	1,640	(16,551)
Associates	PT. Cirebon Electric Power		26,733	2,199	(7,876)	(5,620)	15,436
Associates	Xe-Pian Xe-Namnoy Power Co., Ltd.		1,413	-	-	-	1,413
Associates	PT Wampu Electric Power		14,022	905	-	(1,639)	13,288
Associates	Gunsan Bio Energy Co., Ltd. (formerly, Jungbu Bio Energy Co., Ltd.)		9,396	-	-	-	9,396
Associates	Hyundai Energy Co., Ltd.		2,465	-	-	-	2,465
	(Allowance for doubtful accounts)		-	-	-	(2,465)	(2,465)
Joint ventures	KEPCO SPC Power Corporation		27,795	-	(7,803)	(2,743)	17,249
Joint ventures	Datang Chifeng Renewable Power						
	Co., Ltd.		16,344	-	(7,647)	(1,452)	7,245
Joint ventures	Rabigh Electricity Company		2,641	-	(2,496)	(145)	-
Joint ventures	KODE NOVUS II LLC		4,532	-	-	(514)	4,018
	(Allowance for doubtful accounts)		(4,532)	-	-	514	(4,018)
Joint ventures	Kelar S.A		-	54,631	(3,568)	(4,443)	46,620
Joint ventures	Daehan Wind Power PSC		683	640	-	(112)	1,211
Joint ventures	Chester Solar IV SpA	-		4,802		(195)	4,607
		₩	112,583	63,346	(29,390)	(20,284)	126,255

(6) Borrowings arising from related party transactions as of December 31, 2017 and 2016 are as follows:

In millions of won

Related parties	Туре		Beginning balance	Borrowings	Repayment	Others	Ending balance
neidteu parties	Туре		Dalance	Donowings	nepayment	Others	Dalance
Korea Development	Facility	₩	207,993	27,324	(141,434)	-	93,883
Bank	Others		5,663	-	(754)	-	4,909
	Operating funds		37,000	49,000	(25,000)	-	61,000
	Syndicated Loan		6,075	11,855	-	(1,629)	16,301

(7) Guarantees provided to associates or joint ventures as of December 31, 2017 are as follows:

Primary guarantor	Secondary guarantor	Type of guarantees	Credit limit	Guarantee
Korea Electric Power Corporation	Shuweihat Asia Operation & Maintenance Company	Performance guarantees	USD 11,000	SAPCO
Korea Electric Power Corporation	KNOC Nigerian East Oil Co., Ltd. and KNOC Nigerian West Oil Co., Ltd.	Performance guarantees	USD 34,650	Korea National Oil Corporation (Nigerian government)
Korea Electric Power Corporation	Rabigh Operation & Maintenance Company Limited	Performance guarantees and others	USD 1,387	RĂBEC
Korea Electric Power Corporation	Nghi Son 2 Power Ltd.	Bidding guarantees	USD 10,000	SMBC Ho Chi Minh

(7) Guarantees provided to associates or joint ventures as of December 31, 2017 are as follows, continued:

Primary guarantor	Secondary guarantor	Type of guarantees	Credit limit	Guarantee
Korea Electric Power Corporation	Barakah One Company	Debt guarantees	USD 900,000	Export-Import Bank of Kore and others
		Performance guarantees and others	USD 3,404,275	
orea Western Power Co., Ltd.	Cheongna Energy Co., Ltd.	Collateralized money invested	KRW 27,211	KEB Hana Bank and others
		Guarantees for supplemental funding and others (*1)	-	
Korea Western Power Co., Ltd.	Xe-Pian Xe-Namnoy Power Co., Ltd.	Payment guarantees for business reserve	USD 2,500	Krung Thai Bank
		Collateralized money invested Impounding bonus guarantees	USD 62,253 USD 5,000	Krung Thai Bank SK E&C
Corea Western Power Co., Ltd.	Rabigh Operation & Maintenance Company Limited	Performance guarantees and others	SAR 5,600	Saudi Arabia British Bank
orea Western Power Co., Ltd.	Daegu Photovoltaic Co., Ltd.	Collateralized money invested	KRW 1,230	Korea Development Bank
Corea Western Power Co., Ltd.	Dongducheon Dream Power Co., Ltd.	Collateralized money invested	KRW 53,233	Kookmin Bank and others
Corea Western Power Co., Ltd.	PT. Mutiara Jawa	Collateralized money invested	USD 2,610	Woori Bank
Korea Western Power Co., Ltd.	Heang Bok Do Si Photovoltaic Power Co., Ltd.	Collateralized money invested	KRW 194	Nonghyup Bank
Korea Western Power Co., Ltd.	Shin Pyeongtaek Power Co., Ltd.	Collateralized money invested	KRW 43,920	Kookmin Bank
Corea East-West Power Co., Ltd.	Busan Shinho Solar Power Co., Ltd.	Collateralized money invested	KRW 2,100	Korea Development Bank and others
Corea East-West Power Co., Ltd.	Seokmun Energy Co., Ltd.	Collateralized money invested	KRW 15,370	Kookmin Bank and others
orea East-West Power Co., Ltd.	Chun-cheon Energy Co., Ltd.	Collateralized money invested Guarantees for supplemental funding (*1)	KRW 52,700 KRW 60,270	Kookmin Bank and others Kookmin Bank and others
Corea East-West Power Co., Ltd.	Honam Wind Power Co., Ltd.	Collateralized money invested	KRW 3,480	Shinhan Bank and others
Corea East-West Power Co., Ltd.	GS Donghae Electric Power Co., Ltd.	Collateralized money invested	KRW 204,000	Korea Development Bank and others
Corea East-West Power Co., Ltd.	Yeonggwangbaeksu Wind Power Co., Ltd.	Collateralized money invested	KRW 3,000	Kookmin Bank and others
Corea East-West Power Co., Ltd.	Yeonggwang Wind Power Co., Ltd.	Collateralized money invested	KRW 15,375	KEB Hana Bank and others
Corea East-West Power Co., Ltd.	PT. Tanjung Power Indonesia	Debt guarantees	USD 46,983	The Bank of Tokyo- Mitsubishi and others
WP Barbados 1 SRL	Jamaica Public Service	Other guarantees Performance guarantees	USD 3,150 USD 14,400	PT Adaro Indonesia Societe Generale
	Company Limited	Guarantees for supplemental funding and others (*1, 3)	USD 60,000	JCSD Trustee Services Limited and others
Corea Southern Power Co., Ltd.	KNH Solar Co., Ltd.	Collateralized money invested Performance guarantees and guarantees for supplemental	KRW 1,296 -	Shinhan Bank and Kyobo Life Insurance Co., Ltd.
Corea Southern Power Co., Ltd.	Daeryun Power Co., Ltd.	funding and others (* 1) Collateralized money invested Guarantees for supplemental funding and others (* 1)	KRW 25,477 -	Korea Development Bank and others
orea Southern Power Co., Ltd.	Changjuk Wind Power Co., Ltd.	Collateralized more (1) Guarantees for supplemental funding (*1)	KRW 3,801 -	Shinhan Bank
orea Southern Power Co., Ltd.	Daegu Green Power Co., Ltd.	Collateralized money invested	KRW 46,226	Shinhan Bank
orea Southern Power Co., Ltd.	Kelar S.A	Performance guarantees	USD 63,707	KEB Hana Bank, SMBC, Mizuho Bank and others
orea Southern Power Co., Ltd.	DS POWER Co., Ltd.	Collateralized money invested Guarantees for supplemental funding and others (*1)	KRW 2,900 -	Korea Development Bank and others
Corea Southern Power Co., Ltd.	Pyeongchang Wind Power Co., Ltd.	Collateralized money invested	KRW 3,875	Woori Bank and Shinhan Bank
		Performance guarantees and guarantees for supplemental funding and others (*1)	-	

funding and others (*1)

(7) Guarantees provided to associates or joint ventures as of December 31, 2017 are as follows, continued:

In millions of won and thousa Primary guarantor	Secondary guarantor	Type of guarantees	Credit limit	Guarantee
Korea Southern Power Co., Ltd.	Taebaek Wind Power Co., Ltd.	Guarantees for supplemental funding and others (*1)	-	Shinhan Bank
Korea Southern Power Co., Ltd.	Jeongam Wind Power Co., Ltd	Collateralized money invested Guarantees for supplemental funding and others (*1)	KRW 5,580 -	SK Securities Co., Ltd.
Korea Southern Power Co., Ltd.	Naepo Green Energy Co., Ltd.	Collateralized money invested	KRW 29,200	Hana Financial Investment Co., Ltd. and others
		Guarantees for supplemental funding and others (*1)	-	
KEPCO Engineering & Construction Company, Inc.	DS POWER Co., Ltd.	Collateralized money invested	KRW 15,000	Korea Development Bank and others
Korea Midland Power Co., Ltd.	Hyundai Green Power Co., Ltd.	Collateralized money invested Guarantees for supplemental funding and others (*1)	KRW 87,003 -	Korea Development Bank and others
Korea Midland Power Co.,	PT. Cirebon Electric Power	Debt guarantees	USD 11,550	Mizuho Bank
Ltd. Korea Midland Power Co., Ltd.	PT Wampu Electric Power	Debt guarantees	USD 5,068	SMBC
Korea Midland Power Co., Ltd.	Gangwon Wind Power Co., Ltd.	Collateralized money invested	KRW 7,409	IBK and others
Korea Midland Power Co., Ltd.	YaksuESS Co., Ltd	Collateralized money invested Guarantees for supplemental	KRW 210	Hanwha Life Insurance Co., Ltd.
Korea South-East Power Co., Ltd.	Hyundai Energy Co., Ltd.	funding and others (*1) Collateralized money invested Performance guarantees and guarantees for supplemental funding and others (*1)	KRW 47,067 KRW 78,600	Korea Development Bank and others
Korea South-East Power Co., Ltd.	RES Technology AD	Collateralized money invested	KRW 15,595	UniCredit Bulbank and other
Korea South-East Power Co., Ltd.	ASM-BG Investicii AD	Collateralized money invested	KRW 16,101	UniCredit Bulbank and others
Korea South-East Power Co., Ltd.	Express Solar-light Power Generation Co., Ltd.	Guarantees for supplemental funding (*1, 2)	KRW 2,500	Woori Bank
Korea South-East Power Co., Ltd.	S-Power Co., Ltd.	Collateralized money invested	KRW 132,300	Korea Development Bank and others
KOSEP USA, INC.	KODE NOVUS II LLC	Guarantees for supplemental funding and others (*1)	-	Korea Development Bank
KOSEP USA, INC.	KODE NOVUS I LLC	Guarantees for supplemental funding and others (*1)	-	Export-Import Bank of Korea and others
Korea Hydro & Nuclear Power Co., Ltd.	Yeongwol Energy Station Co., Ltd.	Collateralized money invested	KRW 1,400	Meritz Fire & Marine Insurance Co., Ltd.
Korea Hydro & Nuclear Power Co., Ltd.	Noeul Green Energy Co., Ltd.,	Collateralized money invested	KRW 1,740	KEB Hana Bank and others
Korea Hydro & Nuclear Power Co., Ltd.	Busan Green Energy Co., Ltd.	Collateralized money invested	KRW 5,243	Shinhan Bank and others
KEPCO Plant Service & Engineering Co., Ltd.	Incheon New Power Co., Ltd.	Collateralized money invested	KRW 8,160	Shinhan Bank
		Guarantees for supplemental funding and others (*1)	-	

(*1) The Company guarantees to provide supplemental funding for business with respect to excessive business expenses or insufficient repayment of borrowings.

- (*2) The Company has granted the right to Hana Financial Investment Co., Ltd., as an agent for the creditors to Express Solar-light Power Generation Co., Ltd. ("ESPG"), to the effect that in the event of acceleration of ESPG's payment obligations under certain borrowings to such creditors, Hana Financial may demand the Company to dispose of shares in ESPG held by the Company and apply the resulting proceeds to repayment of ESPG's obligations.
- (*3) This includes a guarantee for the shareholder's capital payment in connection with the business of 190MW gas complex thermal power plant in Jamaica. EWP (Barbados) 1 SRL's capital contribution amount is USD 6,400 thousand and the total amount of guarantees is USD 27,000 thousand which consists of USD 12,000 thousand of EWP (Barbados) 1 SRL's contribution and USD 15,000 thousand of SJEH's portion (50%) of contribution obligation.

(8) As of December 31, 2017, there is no financial guarantee contract provided by related parties.

(9) Derivatives transactions with related parties as of December 31, 2017 are as follows:

(i) Currency Swap

In millions of won and thousands of U.S. dollars

			Contract Amount		Contract interest rate per annum		Contract	
Counterparty	Contract year		Рау	Receive	Pay (%)	Receive (%)	. <u>-</u>	exchange rate
Korea Development	2016~2019	₩	105,260	USD 100,000	2.48%	2.38%	₩	1,052.60
Bank	2015~2025		111,190	USD 100,000	2.62%	3.25%		1,111.90
	2017~2027		111,610	USD 100,000	2.31%	3.13%		1,116.10
	2017~2020		114,580	USD 100,000	1.75%	2.38%		1,145.80
	2016~2021		121,000	USD 100,000	2.15%	2.50%		1,210.00
	2017~2022		113,300	USD 100,000	1.94%	2.63%		1,133.00

(ii) Currency forward

In millions of won and thousands of foreign currencies

• • • •			Contract an	Contract	
Contract Counterparty Date		Maturity date	Рау	Receive	exchange rate
Korea Development	2017.12.27	2021.07.12	104,849	USD 100,000	1,048.49
Bank	2017.12.14	2018.01.10	11,950	USD 11,000	1,086.35
	2017.12.20	2018.01.16	15,130	USD 14,000	1,080.70
	2017.12.28	2018.01.31	11,782	USD 11,000	1,071.10

(10) Salaries and other compensations to the key members of management of the Company for the years ended December 31, 2017 and 2016 are as follows:

In millions of won Type		2017	2016
Salaries	W	1,271	1,463
Employee benefits		54	33
	₩	1,325	1,496

48. Non-Cash Transactions

Significant non-cash investing and financing transactions for the years ended December 31, 2017 and 2016 are as follows:

In millions of won Transactions		2017	2016
Transfer from construction-in-progress to other assets	W	13,676,233	19,971,599
Recognition of asset retirement cost and related provision for decommissioning costs		2,494,802	470,941
Transfer from provision for disposal of spent nuclear fuel to accrued expenses		342,861	283,675

49. Commitments for Expenditure

(1) The commitments for acquisition of property, plant and equipment as of December 31, 2017 and 2016 are as follows:

In millions of won		201	7	2016		
Contracts		Amounts	Balance	Amounts	Balance	
Purchase of switch (25.8kV Eco) 11,395	₩	40,226		40,226	28,072	
Purchase of switch (25.8kV Eco) 12,450	~~	50,526	35,494	40,220	20,072	
Purchase of cable (PVC,1C,2000SQ) 153,000M and		30,320	55,454			
others (Shin-Bupyung-Youngseo)		50,256	42,857	50,256	50,256	
Purchase of cable (PVC, 1C, 2500SQ) 103,374M and		00,200	42,007	00,200	00,200	
others (Bukdangjin-Shintangjung)		42,500	29,987	42,500	42,500	
Purchase of GIS (362KV 6300A 63KA) 23CB -		1		,	,	
YoungseoS/S		34,500	34,500	-	-	
Purchase of GIS (362KV 6300A 63KA) 26CB -						
Shin-gosungS/S		36,950	-	36,950	19,897	
Purchase of GIS (362KV 6300A 63KA) 26CB –						
HwasungS/S		40,000	29,231	-	-	
Purchase of GIS (362KV 6300A 63KA) 27CB -						
KwangyangS/S		37,476	18,044	37,476	27,760	
Purchase of GIS (362KV 6300A 63KA) and 1 other 18CB		04.000		04.000	00 700	
– BukbusanS/S		34,000	-	34,000	20,766	
Purchase of GIS (800KV 8000A 50KA) 10CB –		60 700	44.055	60 700	60 700	
Shin-JungbuS/S Purchase of transformer (765/345/23kV 666.7MVA,		63,730	44,955	63,730	63,730	
2TANK) 6 units – Shin-JungbuS/S		37,500	37,500	37,500	37,500	
Purchase of cable (TR CNCE-W/AL,1C,400SQ)		37,000	37,500	37,500	37,500	
4,500,000M		71,986	_	71,986	50,593	
Purchase of Concrete Poles (10M, 350KGF) 104,755 and		71,300		71,300	50,555	
6 others		129,175	-	129,175	105,905	
Purchase of cable (TR CNCE-W/AL, 1C, 400SQ)		120,170		120,170	100,000	
4,645,000M		78,076	76,762	-	-	
Purchase of Concrete Poles (10M, 350KGF) 121,900 and						
6 others		133,387	112,981	-	-	
Advanced E-Type low voltage electricity meter 1,600,000						
units		65,408	64,592	-	-	
Purchase of Ground Switch (44-D-A125, 600AX4) and 1						
other 4,016 units		56,482	55,990	-	-	
Construction of Shin-Kori units (#1,2)		7,363,514	93,637	6,856,150	-	
Construction of Shin-Kori units (#3,4)		8,625,387	6,757,146	8,625,387	7,286,503	
Construction of Shin-Hanwool units (#1,2)		7,982,342	1,015,813	7,982,342	1,157,700	
Construction of Shin-Hanwool units (#3,4)		8,261,818	8,097,056	8,261,818	8,170,896	
Construction of Yeosu thermal power units (#1)		174,291	-	174,291	1,139	
Other 32 contracts Purchase of main machine for construction of Seoul		262,400	114,041	430,204	222,555	
Combined units (#1,2)		361,203	99,031	360,500	300.663	
Construction of Seoul Combined units (#1,2)		227,685	60,568	225,205	129,589	
Electricity construction of Shin-Boryeong units (#1,2)		379,115		354,740	26,878	
Purchase of smoke eliminating machine for construction		070,110		001,710	20,070	
of Shin-Boryeong units (#1,2)		169,544	36,417	121,093	2,023	
Purchase of coal handling machine for construction of		100,011	00,117	121,000	2,020	
Shin-Boryeong units (#1,2)		146,353	-	146,353	3,543	
Service of designing Shin-Boryeong units (#1,2)		127,810	16,371	126,038	24,333	
Purchase of main machine for construction of Shin-						
Boryeong units (#1,2)		866,065	4,981	851,132	10,746	
Construction of Shin-Boryeong units (#1,2)		316,190	23,100	288,438	17,828	
Purchase of furnace for construction of Shin-Seocheon						
thermal power plant		302,030	222,555	-	-	
Purchase of turbine generator for construction of Shin-						
Seocheon thermal power plant		104,402	83,522	-	-	
Electricity construction of Shin-Seocheon thermal power		000 450	400.000			
plant		200,453	196,993	-	-	
Purchase of main machine for Jeju LNG combined		166,287	15,409	-	-	
Purchase of coal handling machine for construction of						
Taean (#9,10) and IGCC units (conditional contract for		100 075	E 100	100.045	00.010	
installation)		193,375	5,129	192,945	38,218	

49. Commitments for Expenditure, Continued

(1) The commitments for acquisition of property, plant and equipment as of December 31, 2017 and 2016 are as follows, continued

In millions of won	207	17	2016		
Contracts	Amounts	Balance	Amounts	Balance	
Purchase of furnace for construction of Taean units					
(#9,10) 🗸	4 566,945	33,817	584,148	46,059	
Service of designing Taean units (#9,10)	111,322	13,671	109,700	18,981	
Purchase of desulfurization machine for construction of					
Taean units (#9,10)	-	-	92,086	1,017	
Purchase of turbine generator for construction of Taean					
units (#9,10)	205,267	550	228,794	6,788	
Purchase of combined generating machine for					
construction of Taean IGCC units	190,923	-	208,972	2,102	
Purchase of oxygen plant for construction of Taean IGCC					
units	94,564	199	98,979	221	
Service of designing Taean IGCC plant units	44,802	2,669	44,802	3,342	
Purchase of gasification plant for construction of Taean					
IGCC units	456,037	-	457,991	-	
Construction of Samcheok units (#1,2)	488,347	-	457,943	15,851	
Purchase of furnace for construction of Samcheok units					
(#1,2)	1,082,641	5,963	1,091,303	51,594	
Purchase of coal handling machine for construction of					
Samcheok units (#1,2)	304,924	52,362	303,273	155	
Service of designing Samcheok units (#1,2)	114,047	4,745	114,047	36,510	
Purchase of main equipments	168,076	-	152,286	39,248	
Lanscaping construction and other	63,110	-	-	-	
Construction of yard for Andong natural gas power plant	41,961	-	41,961	2,600	
Purchase of turbine main equipment for Samcheok units				,	
(#1,2)	215,333	874	-	-	
Service of designing Dangjin units (#9,10)	122,426	-	122,426	6,125	

(2) As of December 31, 2017, details of contracts for inventory purchase commitment are as follows:

The Company imports all of its uranium ore concentrates from sources outside Korea (including the United States, United Kingdom, Kazakhstan, France, Russia, South Africa, Canada and Australia) which are paid for with currencies other than Won, primarily in U.S. dollars. In order to ensure stable supply, the Company entered into long-term and medium-term contracts with various suppliers, and supplements such supplies with purchases of fuels on spot markets. The long-term and medium-term contract periods vary among contractors and the stages of fuel manufacturing process. Contract prices for processing of uranium are generally based on market prices. Contract periods for ore concentrates, conversion, enrichment and design and fabrication are as follows:

Туре	Periods	Contracted quantity
Concentrate	2017 ~ 2030	39,662 Ton U3O8
Transformed	2017 ~ 2030	22,934 Ton U
Enrichment	2017 ~ 2029	25,530 Ton SWU
Molded	2017 ~ 2022	2,004 Ton U

50. Contingencies and Commitments

(1) Ongoing litigations related with contingent liabilities and contingent assets as of December 31, 2017 and 2016 are as follows:

In millions of won	2017		2016		
	Number of cases	Claim amount	Number of cases	Claim amount	
As the defendant	565 W	477,719	675 W	636,433	
As the plaintiff	185	690,934	193	489,605	

As of December 31, 2017, among the litigations mentioned above, there are ongoing litigations of Korea Hydro & Nuclear Power Co., Ltd. ("KHNP"), a subsidiary of KEPCO, against KEPCO Engineering & Construction Company, Inc., a subsidiary of KEPCO, as a co-defendant (one case amounting to W62,744million).

A group of plaintiffs (consisting 2,167 individuals) filed a lawsuit against NSSC regarding NSSC's approval on May 18, 2015 of extending the operation of Wolsong Unit 1 nuclear power plant. The appeal was ongoing as of December 31, 2017. Also, Greenpeace and others filed an administrative litigation against NSSC requesting cancelation of the construction permit of Shin-Kori Unit 5 and 6 it was ongoing as of December 31, 2017. The Company joined these litigations as a stakeholder with the permission of the Court.

The book value of property, plant and equipment and provision for decommissioning costs of Wolsong Unit 1 nuclear power plant is W607,967 million and W642,015 million, respectively, as of December 31, 2017. If the continuance of operation of Wolsong Unit 1 nuclear power plant is annulled, significant losses may be incurred in connection with the property, plant and equipment of Wolsong Unit 1. In addition, the amount of provision may increase significantly, and the timing of actual cash outflows may be accelerated.

The Company suspended the construction of Shin-Kori Unit 5 and 6 starting from July 24, 2017 to October 24, 2017, which is the public debate period regarding whether to continue the construction for Shin-Kori Unit 5 and 6, and is in the process of reviewing the appropriateness of the additional costs requested by the suppliers that occurred during that period. The Company believes that the possibility of economic outflow is probable and recognized W77,261 million of provision as described in note 26.(2).

As of December 31, 2017, the Company has suspended the construction design of Shin-Hanwool Unit 3 and 4. The construction contract amount and the outstanding balance are described in note 49. (1), and the carrying amount of Shin-Hanwool Unit 3 and 4 is W159,008 million as of December 31, 2017.

The Company is the defendant against a number of claims. The followings are potentially significant ongoing claims pertaining to the Company.

- ① Hyundai Engineering & Construction Co., Ltd.("Hyundai E&C"), SK Engineering & Construction Co., Ltd. and GS Engineering & Construction Co., Ltd. filed a lawsuit for increase in contract bill (formerly, amounted to ₩1,000 million) against KHNP in September 2013, in relation to the design changes on the plant construction of Shin-Hanwool 1 & 2. Hyundai Engineering & Construction Co., Ltd. and two other companies increased the contract bill to ₩133,426 million in October 2014, ₩204,040 million in November 2015, and ₩204,564 million in January 2017, respectively, and submitted an application to demand extra contract payments due to the design changes. KHNP has paid ₩217,724 million of the claim amounts in full upon the first ruling in November 2016 and recognized the amount as addition to construction-in-progress accordingly.
- ② In December 2013, the Supreme Court of Korea ruled that regular bonuses also fall under the category of ordinary wages on the condition that those bonuses are paid regularly and uniformly. Also, the Supreme Court ruled that employees are entitled to retroactively demand certain wages based on the new ordinary wages that include regular bonuses as additional wages. However, the request may be limited to the extent of the principle of good faith.

The Company believes that the possibility of economic outflow is probable on the ongoing and the expected lawsuit. For this reason, the Company recognized W56,052 million of other provision in relation to the lawsuit as of December 31, 2017.

50. Contingencies and Commitments, Continued

(1) Ongoing litigations related with contingent liabilities and assets as of December 31, 2017 and 2016 are as follows, continued:

Except these significant ongoing claims, there are 10 arbitration cases pertaining to the Company as of December 31, 2017 and the significant arbitration cases are as follows:

- ① KEPCO and KEPCO KDN Co., Ltd., a subsidiary of KEPCO, have been accused of breach of contract in relation to ERP software, which is provided by SAP Korea Ltd. The litigation was filed in the International Chamber of Commerce International Court of Arbitration but the Company has not recognized any provision because the probability of economic benefit outflow is remote and the related amount cannot be reliably estimated.
- ② Hyundai Samsung Joint Venture (HSJV), one of the subcontractors of the Company, filed an arbitration against the Company at the London Court of International Arbitration (LCIA) in 2016 due to disagreements in UAE nuclear power plant construction project, but the Company has not recognized any losses because the probability of economic benefit outflow is remote and the related amount cannot be reasonably estimated.
- ③ In prior years, Hyundai E&C, GS Engineering & Construction Corp., and Hansol SeenTec Co., Ltd. filed on arbitration against the Company to the Korea Commercial Arbitration Board in relation to the request for additional construction costs but the Company has not recognized any provision because the probability of economic benefit outflow is remote and the related amount cannot be reliably estimated.
- ④ In prior years, Halla Corporation filed on arbitration against the Company to the Korea Commercial Arbitration Board in relation to the request for additional construction costs and the Company filed on arbitration against Halla Corporation to the Korea Commercial Arbitration Board in relation to the request for a penalty payment for the delayed construction work. The Company has recognized W4,916 million of provision for the best estimate of the expenditure required to fulfill its obligations in relation to this arbitration as of December 31, 2017.

(2) Guarantees of payments and commitments provided to other companies as of December 31, 2017 and 2016 are as follows:

- In order to secure its status as a shareholder of Navanakorn Electric Co., Ltd., the Company has signed a fund supplement contract. According to the contract, in case Navanakorn Electric Co., Ltd. does not have sufficient funds for its operation or repayment of borrowings, the Company bears a payment obligation in proportion to its ownership.
- ② The Company has outstanding borrowings with a limit of USD 275,600 thousand from its creditors such as International Finance Corporation. Regarding the borrowing contract, the Company has guaranteed capital contribution of USD 69,808 thousand and additional contribution up to USD 19,000 thousand for contingencies, if any. Moreover, for one of the electricity purchasers, Central Power Purchasing Agency Guarantee Ltd., the Company has provided payment guarantee up to USD 2,777 thousand, in case of construction delay or insufficient contract volume after commencement of the construction.
- ③ The Company has provided PT. Perusahaan Listrik Negara performance guarantee up to USD 2,293 thousand and Mizuho bank and others investment guarantee up to USD 43,500 thousand in proportion to its ownership in the electricity purchase contract with PT. Cirebon Energi Prasarana in relation to the second electirc power generation business in Cirebon, Indonesia.
- ④ The Company has provided the Bank of Tokyo Mitsubishi UFJ (BTMU) borrowing guarantee up to USD 41,258 thousand proportion to its ownership in the equity bridge loan guarantee with PT. Cirebon Energi Prasarana in relation to the second electric power generation business in Cirebon, Indonesia.
- (5) The Company has provided the Export-Import Bank of Korea, BNP Paribas and ING Bank guarantee of mutual investment of USD 2,440 thousand, which is equivalent to the ownership interest of PT BS Energy and PT Nusantara Hydro Alam, in order to guarantee the expenses related to hydroelectric power business of Tanggamus, Indonesia.
- (6) The Company has provided the Export-Import Bank of Korea and SMBC guarantee of mutual investment of USD 401 thousand, which is equivalent to the ownership interest of PT Mega Power Mandiri, in order to guarantee the expenses related to hydroelectric power business of PT Wampu Electric Power, an associate of the Company.
- ⑦ The Company has provided Samsung C&T Corporation bidding guarantee up to USD 793 thousand to participate in the bidding of the Sri Lanka combined cycle project.

50. Contingencies and Commitments, Continued

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

In millions of won and thousands of foreign currencies

Commitments	Financial institutions	Currency	Limited amount	Exercised amount
Commitments on bank-overdraft	Nonghyup Bank and others	KRW	1,555,000	68,859
Commitments on bank-daylight overdraft	Nonghyup Bank	KRW	280,000	-
Limit amount available for CP	Shinhan Bank and others	KRW	1,100,000	-
Limit amount available for card	KEB Hana Bank and others	KRW	46,733	2,775
	Banco de Oro	PHP	5,000	5,000
Loan limit	Kookmin Bank and others	KRW	895,500	425,411
	BNP Paribas and others	USD	1,910,700	20,000
Certification of payment on L/C	Woori Bank and others	USD	1,029,604	233,166
Certification of performance	KEB Hana Bank	EUR	1,958	1,958
guarantee on contract	KEB Hana Bank and others	INR	230,515	230,515
-	Korea Development Bank and others	JPY	620,000	620,000
	Seoul Guarantee Insurance and others	KRW	104,248	104,248
	Bank of Kathmandu	NPR	32,633	32,633
	KEB Hana Bank	SAR	102,186	87,991
	Standard Chartered and others	USD	753,652	696,806
	KEB Hana Bank	CAD	168	168
Certification of bidding	SMBC and others	USD	60,000	10,230
_	ABSA and others	ZAR	55,730	55,730
Advance payment bond, Warranty	KEB Hana Bank	INR	157,830	157,830
bond, Retention bond and others	Export-Import Bank of Korea and others	USD	3,850,534	753,025
Others	Nonghyup Bank and others	KRW	451,521	15,037
	KEB Hana Bank and others	USD	1,063,670	758,536
Inclusive credit	Shinhan Bank	INR	47,489	47,489
	KEB Hana Bank	KRW	258,000	117,398
	Shinhan Bank and others	USD	32,125	16,155
Trade finance	BNP Paribas and others	USD	800,000	-

50. Contingencies and Commitments, Continued

(4) As of December 31, 2017, blank check and assets provided as collaterals or pledges to financial institutions by the Company are follows:

In millions of won and thousands of foreign currencies						
Guarantor	Guarantee	Type of guarantee	Currency	Amount	Description	
Korea East-West Power Co., Ltd.	Korea Development Bank and others	Shareholdings of Gyeongju Wind Power Co., Ltd.	KRW	15,958	Collateral for borrowings	
Korea Midland Power Co.,Ltd.	IBK and others	Shareholdings of Commerce and Industry Energy Co., Ltd.	KRW	13,605	Collateral for borrowings	
Korea Southern Power Co., Ltd.	Shinhan Bank and others	Shareholdings of KOSPO Youngnam Power Co., Ltd.	KRW	40,000	Collateral for borrowings	
Korea South-East Power Co., Ltd.	International Finance Corporation and others	Shareholdings of Mira Power Limited	KRW	44,192	Collateral for borrowings	
Korea Hydro & Nuclear Power Co., Ltd.	Korea Development Bank and others	Shareholdings of Gyeonggi Green Energy Co., Ltd.	KRW	47,000	Collateral for borrowings	
Gyeonggi Green Energy Co., Ltd.	Korea Development Bank and others	Factory estate and others	KRW	327,080	Collateral for borrowings (*)	
Commerce and Industry Energy Co., Ltd.	IBK and others	Land, buildings, structures and machinery and others	KRW	110,500	Collateral for borrowings	
		Cash and cash equivalents	KRW	11,642		
Gyeongju Wind Power Co., Ltd.	SK Securities Co., Ltd. and others	Property, plant and equipment and others	KRW	97,980	Collateral for borrowings	
		Existing or expected trade receivables	KRW	4,800		
		Cash and cash equivalents	KRW	8,769		
KOSPO Youngnam Power Co., Ltd.	Shinhan Bank and others	Bank deposit and insurance claim	KRW	396,120	Collateral for borrowings	
Qatrana Electric Power Company	The Islamic Development Bank and others	Finance Lease receivable and property, plant and equipment and others	JOD	188,580	Collateral for borrowings	
KST Electric Power Company	Scotiabank Inverlat, S.A	Finance Lease receivable and others	USD	289,026	Collateral for borrowings	

(*)The Company was provided with shares of Gyeonggi Green Energy Co., Ltd., one of its subsidiaries, from the investors as collateral related to long-term borrowings. Additionally, pledge for shares, pledge for transfer of rights of long-term borrowings, pledge for insurance claims and other pledges were established.

The Company has ₩1,197 million of project loans from Korea Energy Agency as December 31, 2017. The Company has provided a blank check as repayment guarantee.

- (5) The Company temporarily suspended operations of the Gangneung hydroelectric generating plant, with a carrying amount of W88,447 million as of December 31, 2017, to improve the quality of water used in generating electricity. The expenses related to the suspension of operations of W137 million and depreciation on the utility plant of W6,644 million are recorded in other expenses for the year ended December 31, 2017.
- (6) Due to the Korean government's announcement of suspension of operation in the Gaeseong Industrial District, it is uncertain if the Company can exercise the property rights for the Company's facility in the Gaeseong Industrial District as of December 31, 2017. The book value of facility is W18,724 million and the amount of trade receivables related to the companies residing in Gaeseong industrial complex is W2,911 million. The Company has entered into an insurance agreement covering up to W7,000 million with the Export-Import Bank of Korea related to Gaeseong industrial complex. The ultimate outcome of this event cannot be reasonably estimated.

51. Subsequent Events

(1) Subsequent to December 31, 2017, Korea Hydro & Nuclear Power Co., Ltd., Korea South-East Power Co., Ltd., Korea Midland Power Co., Ltd. and Korea Southern Power Co., Ltd. issued additional corporate bond, asset backed short-term bond, non-guaranteed bonds and foreign currency borrowings for funding facilities and operations as follows:

Company Name	Туре	Issued date	Maturity	Interest rate (%)		Amounts
Korea Hydro & Nuclear	#48-1 corporate bond	2018.03.13	2021.03.13	2.40	₩	160,000
Power Co., Ltd.	#48-2 corporate bond	2018.03.13	2023.03.13	2.70		20,000
	#48-3 corporate bond	2018.03.13	2028.03.13	2.86		30,000
	#48-4 corporate bond	2018.03.13	2048.03.13	2.94		90,000
Korea South-East Power Co., Ltd	Global bond 9 Asset backed short-term bond	2018.03.13 2018.04.10	2028.03.13 2018.04.10	3.35 1.79		HKD 1,650,000 190,000
Korea Midland Power Co., Ltd	#41-1 non-guaranteed corporate bond	2018.02.20	2023.02.20	2.72		60,000
	#41-2 non-guaranteed corporate bond	2018.02.20	2028.02.20	2.92		130,000
Korea Southern Power Co., Ltd	#43-1 non-guaranteed bond	2018.01.11	2021.01.11	2.32		120,000
	#43-2 non-guaranteed bond	2018.01.11	2023.01.11	2.57		20,000
	#43-3 non-guaranteed bond	2018.01.11	2028.01.11	2.76		60,000
	Non-guaranteed foreign currency bond (Global bond 18)	2018.01.29	2021.01.29	3.00		USD 400,000

(2) In January 2018, the Company sold all of its shares in KODE NOVUS II LLC and other investors in the joint venture sold all of their shares in KODE NOVUS I LLC and KODE NOVUS II LLC. In accordance with the agreement between the shareholders and the creditors of KODE NOVUS I LLC and KODE NOVUS II LLC, the Company's right to indemnity and supplemental funding obligations to the investors and creditors have been eliminated. Accordingly, the Company reversed the entire amount of the provisions for the right to indemnity.

52. Adjusted Operating Profit

The operating profit in the Company's consolidated statements of comprehensive income prepared in accordance with K-IFRS included in this report differs from that in its consolidated statements of comprehensive income prepared in accordance with IFRS as issued by IASB. The table below sets forth a reconciliation of the Company's results from operating activities as presented in the Company's consolidated statements of comprehensive income prepared in accordance with K-IFRS for each of the years ended December 31, 2017 and 2016 to the operating profit or loss as presented in the Company's consolidated statements of comprehensive with IFRS as issued by IASB for each of the company's consolidated statements of comprehensive income prepared in accordance with K-IFRS for each of the years ended December 31, 2017 and 2016 to the operating profit or loss as presented in the Company's consolidated statements of comprehensive income prepared in accordance with IFRS as issued by IASB for each of the corresponding years.

In millions of won	2017		2016	
Operating profit on the consolidated statements of				
comprehensive income	W	4,953,152	12,001,599	
Add				
Other income				
Reversal of other provisions		35,265	22,034	
Reversal of other allowance for bad debt		2,166	5,489	
Gains on government grants		430	111	
Gains on assets contributed		4,218	12,254	
Gains on liabilities exempted		3,166	1,959	
Compensation and reparations revenue		89,196	114,530	
Revenue from research contracts		12,580	13,143	
Rental income		192,136	211,580	
Others		50,988	31,787	
Other gains				
Gains on disposal of property, plant and equipment		48,316	74,035	
Gains on disposal of intangible assets		564	-	
Reversal of impairment loss on intangible assets		54	3	
Gains on foreign currency translation		20,485	15,311	
Gains on foreign currency transaction		93,151	55,377	
Gains on insurance proceeds		400	-	
Others		269,562	187,792	
Deduct				
Other expense				
Compensation and indemnification expense		(37)	-	
Accretion expenses of other provisions		(7,535)	(4,556)	
Depreciation expenses on investment properties		(1,176)	(678)	
Depreciation expenses on idle assets		(6,644)	(6,639)	
Other bad debt expense		(1,778)	(4,585)	
Donations		(119,421)	(114,094)	
Others		(43,464)	(58,072)	
Other loss				
Losses on disposal of property, plant and equipment		(70,514)	(42,715)	
Losses on disposal of intangible assets		(183)	(158)	
Impairment loss on property, plant and equipment		(51,067)	-	
Impairment loss on intangible assets		(20)	(3,945)	
Losses on foreign currency translation		(25,495)	(23,835)	
Losses on foreign currency transaction		(36,241)	(72,058)	
Others		(92,385)	(119,309)	
Adjusted operating profit	₩	5,319,869	12,296,360	