

**KOREA WATER RESOURCES CORPORATION
AND SUBSIDIARIES**

**CONSOLIDATED FINANCIAL STATEMENTS
AS OF DECEMBER 31, 2018 AND FOR THE PERIOD
ENDED DECEMBER 31, 2018**

WITH INDEPENDENT AUDITORS' AUDIT REPORT

Contents

	Page
Independent Accountants' Audit Report	1
Consolidated Statements of Financial Position	5
Consolidated Statements of Comprehensive Income	7
Consolidated Statements of Changes in Shareholders' Equity	9
Consolidated Statements of Cash Flows	10
Notes to the consolidated Financial Statements	12

Independent Auditors' Audit Report

(Based on a report originally issued in Korean)

To the Board of Directors and Shareholders of
Korea Water Resources Corporation:

Audited consolidated financial statements

We have audited the accompanying consolidated financial statements of Korea Water Resources Corporation and its subsidiaries (the "Group"). The consolidated financial statements consist of the consolidated statement of financial position as of December 31, 2018 and the related consolidated statements of comprehensive income, consolidated statements of changes in shareholders' equity and consolidated statements of cash flows, all expressed in Korean won, for the period ended December 31, 2018 and a summary of significant accounting policies and other explanatory information.

Management's responsibility for the consolidated financial statements

The Group's management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with Korean government-owned and Quasi-government Accounting Regulations and 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.

Independent auditors' responsibility

Our responsibility is to express a conclusion on these consolidated financial statements based on our audit.

We conducted our audit in accordance with standards for audit of consolidated financial statements in the Republic of Korea. An audit is limited primarily to inquiries of Group personnel and analytical procedures applied to financial data, and this provides less assurance than an audit. We have not performed an audit, and accordingly, we do not express an audit opinion.

Audit conclusion

Based on our audit, nothing has come to our attention that causes us to believe that the accompanying consolidated financial statements of the Group are not presented fairly, in all material respects, in accordance with Korean government-owned and Quasi-government Accounting Regulations and Standards.

Emphasis of matter

We draw attention to Note 2 to the consolidated financial statements. Our audit conclusion is not qualified in respect of this matter.

As described in Note 2 to the consolidated financial statements, matters not described in Korean government-owned and Quasi-government Accounting Regulations and Standards relating to accounting are recognized in accordance with K-IFRS.

Other matter

The consolidated statement of financial position as of December 31, 2017, presented for comparative purpose, were audited by Deloitte Anjin LLC whose audit report dated February 27, 2018 expressed an unqualified opinion.

February 25, 2019



Seoul, Korea

This report is effective as of the auditors' audit report date. Accordingly, certain subsequent events or circumstances may have occurred between the auditors' audit report date and the time this report is read. Such events and circumstances could significantly affect the accompanying financial statements and may result in modifications to this report.

KOREA WATER RESOURCES CORPORATION AND SUBSIDIARIES (the “Group”)

CONSOLIDATED FINANCIAL STATEMENTS AS OF DECEMBER 31, 2018 AND 2017, AND FOR THE PERIODS ENDED DECEMBER 31, 2018 AND 2017

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

Lee, Hak Soo
Chief Executive Officer
Korea Water Resources Corporation.

KOREA WATER RESOURCES CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS
OF FINANCIAL POSITION
AS OF DECEMBER 31, 2018 AND 2017

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
	(In thousands of Korean won)	
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents (Notes 5, 6, 19 and 20)	₩264,522,916	₩160,865,887
Short-term financial instruments (Notes 19 and 20)	1,700,412	8,640,247
Short-term loans and receivables (Notes 19 and 20)	134,486,394	23,897,420
Derivative assets (Notes 7, 19 and 20)	-	2,180,359
Trade and other receivables, net (Notes 19 and 20)	766,712,676	338,920,824
Inventories	6,932,769,035	6,416,510,928
Current tax assets	56,549	50,122
Other non-financial assets	108,030,090	90,740,235
TOTAL CURRENT ASSETS	<u>8,208,278,072</u>	<u>7,041,806,022</u>
NON-CURRENT ASSETS		
Non-current profit or loss-Fair value measurement financial assets	2,387,228	-
Non-current Other comprehensive income	26,480,662	-
Non-current available-for-sale ("AFS") financial assets (Note 8)	-	23,131,909
Long-term loans and receivables (Notes 19 and 20)	16,237,327	17,762,987
Non-current derivative assets (Note 7)	65,161,316	28,672,132
Long-term trade and other receivables, net (Notes 19 and 20)	639,789,671	662,483,263
Property, plant and equipment (Notes 10 and 14)	1,713,823,552	1,592,189,869
Intangible assets other than goodwill (Notes 11, 14 and 25)	11,018,728,999	11,382,626,364
Investments in associates (Note 9)	67,292,756	75,025,579
Other non-financial assets	3,763,961	4,370,145
Deferred tax asset (Note 18)	34,814,380	39,227,137
TOTAL NON-CURRENT ASSETS	<u>13,588,479,852</u>	<u>13,825,489,385</u>
TOTAL ASSETS	<u>₩21,796,757,924</u>	<u>₩20,867,295,407</u>

(Continued)

KOREA WATER RESOURCES CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF
FINANCIAL POSITION (CONTINUED)
AS OF DECEMBER 31, 2018 AND 2017

	December 31, 2018	December 31, 2017
	(In thousands of Korean won)	
LIABILITIES		
CURRENT LIABILITIES		
Trade and other payables (Notes 19 and 20)	₩358,038,275	₩349,176,236
Short-term borrowings (Notes 12, 19 and 20)	42,805,666	5,018,749
Current portion of long-term borrowings (Notes 12, 19 and 20)	46,446,021	102,918,456
Current portion of debentures, net (Notes 12 and 19)	1,155,190,000	1,341,689,500
Derivative liabilities (Note 7, 19 and 20)	-	20,161,613
Current tax liabilities	10,619,859	1,738,161
Provisions	96,805,174	99,472,152
Other non-financial liabilities	1,191,566,141	1,135,920,047
TOTAL CURRENT LIABILITIES	2,901,471,136	3,056,094,914
NON-CURRENT LIABILITIES		
Long-term trade and other payables (Notes 19 and 20)	-	3,950
Long-term borrowings (Notes 12, 19 and 20)	505,036,441	342,475,031
Debentures, net (Notes 12 and 20)	10,279,771,435	9,932,699,270
Derivative liabilities (Notes 7, 19 and 20)	42,484,008	35,837,762
Other non-financial liabilities	46,513,761	41,392,575
Employee benefits (Note 13)	199,964,108	164,341,891
Deferred tax liabilities	58,149	58,149
Provisions (Note 24)	34,330,845	60,387,705
TOTAL NON-CURRENT LIABILITIES	11,108,158,747	10,577,196,333
TOTAL LIABILITIES	14,009,629,883	13,633,291,247
EQUITY		
Issued capital (Notes 1 and 15)	8,477,497,133	8,101,944,481
Undisposed deficits (Note 16)	(677,322,794)	(864,040,732)
Other equity components (Note 7)	(54,592,098)	(37,848,682)
EQUITY ATTRIBUTABLE TO OWNERS OF THE PARENT	7,745,582,241	7,200,055,067
NON-CONTROLLING INTERESTS	41,545,800	33,949,093
TOTAL EQUITY	7,787,128,041	7,234,004,160
TOTAL EQUITY AND LIABILITIES	₩21,796,757,924	₩20,867,295,407

See accompanying notes to the consolidated financial statements.

KOREA WATER RESOURCES CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF
COMPREHENSIVE INCOME
FOR THE PERIODS ENDED DECEMBER 31, 2018 AND 2017

	2018	2017
	(In thousands of Korean won)	
REVENUE (Notes 4, 17 and 22)	₩3,391,568,200	₩3,375,560,292
COST OF SALES (Note 22)	(2,745,360,887)	(2,793,723,888)
GROSS PROFIT	646,207,313	581,836,404
Selling, general and administrative expenses	(170,185,388)	(154,119,986)
OPERATING PROFIT (Note 4)	476,021,925	427,716,418
Other income	140,704,615	68,450,294
Other expenses	(20,145,814)	(42,887,498)
Other gain (loss), net	440,813	(1,889,366)
Financial income (Notes 7 and 19)	64,616,948	125,341,339
Financial costs (Notes 7 and 19)	(380,958,483)	(383,289,611)
Share of loss of equity-accounted investees, net	(7,140,614)	(1,145,493)
PROFIT BEFORE INCOME TAX EXPENSE	273,539,390	192,296,083
Income tax expense (Note 18)	33,365,610	7,362,031
PROFIT FOR THE PERIOD	240,173,780	184,934,052
OTHER COMPREHENSIVE INCOME		
Items that will not be reclassified to profit or loss:		
Defined benefit plan actuarial gain (loss)	(8,210,811)	1,678,689
Total items that will not be reclassified to profit or loss	(8,210,811)	1,678,689
Items that are or may be reclassified subsequently to profit or loss:		
Effective portion of unrealized change in fair values of cash flow hedges (Note 7)	(3,733,384)	18,896,898
Unrealized gain on valuation of AFS financial assets	-	913
Gain in valuation of other comprehensive	(31,496)	-
Foreign currency translation differences for foreign operations	(18,690,433)	(37,627,557)
Increase(decrease) on equity of equity method investment	(592,209)	(10,469,571)
Total items that are or may be reclassified subsequently to profit or loss (Note 7)	(23,047,522)	(29,199,317)
OTHER COMPREHENSIVE INCOME FOR THE PERIOD, NET OF INCOME TAX	(31,258,333)	(27,520,628)
TOTAL COMPREHENSIVE INCOME FOR THE PERIOD	₩208,915,447	₩157,413,424
(Continued)		

KOREA WATER RESOURCES CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF
COMPREHENSIVE INCOME (CONTINUED)
FOR THE PERIODS ENDED DECEMBER 31, 2018 AND 2017

	<u>2018</u>	<u>2017</u>
	(In thousands of Korean won)	
Profit attributable to:		
Owners of the Parent	₩240,448,793	₩179,248,453
Non-controlling interests	(275,013)	5,685,599
PROFIT FOR THE PERIOD	<u>₩240,173,780</u>	<u>₩184,934,052</u>
 Total comprehensive income attributable to:		
Owners of the Parent	₩214,322,886	₩157,603,263
Non-controlling interests	(5,407,439)	(189,839)
 TOTAL COMPREHENSIVE INCOME FOR THE PERIOD	<u>₩208,915,447</u>	<u>₩157,413,424</u>

See accompanying notes to the consolidated financial statements.

KOREA WATER RESOURCES CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS
OF CHANGES IN SHAREHOLDERS' EQUITY
FOR THE PERIODS ENDED DECEMBER 31, 2018 AND 2017

	Equity attributable to owners of the Group			Non-		
	Issued capital	Undisposed deficit	Other equity components	Subtotal	controlling interests	Total equity
	(In thousands of Korean won)					
Balance at January 1, 2017	₩ 7,687,517,325	(₩1,044,967,874)	(₩14,524,684)	₩6,628,024,767	₩32,549,938	₩6,660,574,705
Comprehensive income for the period						
Profit for the period	-	179,248,453	-	179,248,453	5,685,599	184,934,052
Other comprehensive income	-	1,678,689	(23,323,879)	(21,645,190)	(5,875,438)	(27,520,628)
Total comprehensive income for the period	-	180,927,142	(23,323,879)	157,603,263	(189,839)	157,413,424
Transactions with owners of the Group				-		-
Increase in paid-in capital	414,427,156	-	-	414,427,156	-	414,427,156
Others	-	-	(119)	(119)	1,588,994	1,588,875
Total transactions with owners of the Group	414,427,156	-	(119)	414,427,037	1,588,994	416,016,031
Balance at December 31, 2017	₩8,101,944,481	(₩864,040,732)	(₩37,848,682)	₩7,200,055,067	₩33,949,093	₩7,234,004,160
Balance at January 1, 2018	₩8,101,944,481	(₩864,040,732)	(₩37,848,682)	₩7,200,055,067	₩33,949,093	7,234,004,160
Accumulated effect of change on accounting policies	-	(45,520,045)	59,037	(45,461,008)	-	(45,461,008)
Comprehensive income for the period						
Profit for the period	-	240,448,794	-	240,448,794	(275,014)	240,173,780
Other comprehensive income	-	(8,210,811)	(17,915,096)	(26,125,907)	(5,132,426)	(31,258,333)
Total comprehensive income for the period	-	232,237,983	(17,915,096)	214,322,887	(5,407,440)	208,915,447
Transactions with owners of the Group						
Increase in paid-in capital	375,552,652	-	-	375,552,652	14,116,790	389,669,442
Inter-company transactions	-	-	1,112,643	1,112,643	(1,112,643)	-
Total transactions with owners of the Group	375,552,652	-	1,112,643	376,665,295	13,004,147	389,669,442
Balance at December 31, 2018	₩8,477,497,133	(₩677,322,794)	(₩54,592,098)	₩7,745,582,241	₩41,545,800	₩7,787,128,041

See accompanying notes to the consolidated financial statements

KOREA WATER RESOURCES CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
FOR THE PERIODS ENDED DECEMBER 31, 2018 AND 2017

	2018	2017
	(In thousands of Korean won)	
Cash flows from operating activities		
Profit for the period	₩240,173,780	₩184,934,052
Adjustments for:		
Retirement benefit	31,570,690	29,986,260
Depreciation	89,357,472	87,403,233
Amortization	529,731,167	614,237,966
No allowance for bad debt	50,866	(33,848)
Other bad debt expenses	1,047,149	508,991
Reversal of provision	(131,781,951)	-
Transfer of provision	103,058,113	97,923,850
Gain on disposal of property, plant and equipment, net	(999,291)	(2,085,381)
Loss on disposal of property, plant and equipment, net	292,573	1,438,402
Loss on disposal on intangible assets	219,570	-
Impairment loss on intangible assets	-	2,536,346
Loss on sale of inventory	46,335	-
Interest income	(8,135,331)	(12,610,934)
Dividend income	(30,521)	(743,367)
Gain on valuation of derivatives, net	(34,547,000)	-
Gain on derivatives, net	(6,894,000)	-
Gain on foreign currency valuation, net	(74,227)	(84,655,000)
Gain on foreign exchange	(977,311)	(27,332,038)
Interest expenses	242,369,544	262,545,872
Loss on valuation of investment stocks	24,772	-
Loss on valuation of derivatives	-	84,655,000
Loss on derivative transactions	810,000	27,332,000
Loss on repayment of financial liabilities	-	3,778,767
Foreign currency translation loss	34,547,000	1,132,758
Foreign exchange loss	4,818,738	2,906,620
Gain on disposal of investments in associates	7,140,614	1,145,493
Income tax expense	33,365,610	7,362,030
Other, net	(1,328,494)	(266,500)
Changes in:		
Trade accounts receivable	(13,160,637)	(7,819,494)
Inventories	(383,227,528)	(446,778,739)
Other operating assets	(79,770,218)	(38,730,737)
Long-term trade accounts receivable	40,470,509	(14,905,823)
Trade accounts payable	(3,994,396)	4,584,089
Other operating liabilities	(12,724,678)	(324,741,491)
Payment of employee benefits	(6,769,369)	(3,806,956)
Cash generated from operating activities	674,679,550	449,901,421

(Continued)

KOREA WATER RESOURCES CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)
FOR THE PERIODS ENDED DECEMBER 31, 2018 AND 2017

	2018	2017
	(In thousands of Korean won)	
Dividends received	₩30,521	₩743,367
Interest received	8,166,915	9,811,054
Interest paid	(388,966,273)	(241,046,888)
Income taxes refunded (paid)	420,189	1,088,814
Net cash provided by operating activities	<u>294,330,902</u>	<u>220,497,768</u>
Cash flows from investing activities		
Acquisition of short-term financial instruments	(110,588,975)	(304,296,299)
Disposal of short-term financial instruments	-	360,004,130
Acquisition of AFS financial assets	-	(6,275,822)
Disposal of AFS financial assets	-	184,947
Increase in long-term loans	(951,184)	(47,365,219)
Decrease in long-term loans	9,416,679	36,359,122
Increase in deposits	(83,681,734)	(50,005,273)
Decrease in deposits	67,464,594	49,878,781
Acquisition of property, plant and equipment	(205,596,384)	(150,842,186)
Sale of property, plant and equipment	1,593,879	2,772,560
Acquisition of intangible assets	(664,196,193)	(566,778,369)
Sale of intangible assets	143,157,795	39,600,001
Acquisition of government subsidy	-	5,000,000
Collection of construction charge`	5,403,116	-
Acquisition of investment assets of associates	(4,558,000)	-
Net cash used in investing activities	<u>(842,536,407)</u>	<u>(631,763,627)</u>
Cash flows from financing activities		
Repayment of long-term liquidity liabilities	(64,402,646)	(1,536,107,000)
Repayment of long-term borrowings	(5,523,641)	(12,557,000)
Repayment of debentures	(1,351,541,500)	(26,446,767)
Issue debentures	1,469,142,000	1,607,543,277
Short-term borrowings	37,786,916	5,018,749
Long-term borrowings	170,491,621	7,162,080
Cash contribution of Government and Local Government	375,552,653	414,427,155
Increase in share of non-controlling interest	14,116,790	1,588,876
Net cash provided in financing activities	<u>645,622,193</u>	<u>460,629,370</u>
Net increase in cash and cash equivalents	97,416,688	49,363,511
Cash and cash equivalents at January 1	160,865,887	111,502,376
Effect of exchange rate change on foreign currency denominated cash and cash equivalents	6,240,341	-
Cash and cash equivalents at December 31	<u>₩264,522,916</u>	<u>₩160,865,887</u>

See accompanying notes to the consolidated financial statements.

KOREA WATER RESOURCES CORPORATION AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED
FINANCIAL STATEMENTS
AS OF DECEMBER 31, 2018 AND 2017, AND
FOR THE PERIODS ENDED DECEMBER 31, 2018 AND 2017

1. REPORTING ENTITY:

Korea Water Resources Development Corporation (“KWRDC”) was incorporated in 1967 in accordance with the Korea Water Resources Development Corporation Act of the Republic of Korea.

KWRDC was reorganized as Industrial Sites & Water Resources Development Corporation on December 24, 1973, pursuant to the Act for Promotion of Industrial Site Development and had been reorganized again as Korea Water Resources Corporation (the “Parent”), pursuant to the Korea Water Resources Corporation Act (the “K-water Act”) on July 1, 1988.

The Parent is engaged in the business of promoting public interests by developing and managing water resources, facilitating water supply and improving the quality of water. In addition, the Parent is involved in development projects for industrial complexes and special-purpose areas in accordance with the K-water Act.

As of December 31, 2018, issued capital of the Parent amounts to ₩8,486 billion, and the present ownership of the Parent is as follows:

	(Unit: In thousands of Korean won)	
	Share capital	Percentage of ownership
Government of the Republic of Korea	₩7,877,921,930	92.8%
Korea Development Bank	601,390,088	7.1%
Local government	7,026,278	0.1%
	<u>₩8,486,338,296</u>	<u>100.0%</u>

Details of financial information for the consolidated subsidiaries as of and for the twelve-month period ended December 31, 2018 and as of and for the year ended December 31, 2017, are as follows:

(i) December 31, 2018

			(Unit: In thousands of Korean won)			
Consolidated subsidiary	Location	Percentage of shareholding	Assets	Liabilities	Revenue	Net profit (loss)
KDS Hydro Pte. Ltd.	Singapore	80.00%	₩497,651,199	₩355,945,244	₩16,467,991	₩1,184,200
Waterway Plus Co., Ltd.	Korea	100.00%	7,077,683	1,530,548	9,969,896	41,593
K-Water Thailand Co., Ltd.	Thailand	99.99%	6,612	1,323	-	(1,811)
JSC Nenskra Hydro	Georgia	93.01%	189,024,756	-	-	(7,832,681)
Tina Hydro Power Limited	Solomon Island	80.00%	1,918,349	1,870,227	-	(1,840,508)
K-Water operation management	Korea	100.00%	2,332,392	1,817,877	8,553,498	14,515

(ii) December 31, 2017

(Unit: In thousands of Korean won)

Consolidated subsidiary	Location	Percentage of shareholding	Assets	Liabilities	Revenue	Net profit (loss)
KDS Hydro Pte. Ltd.	Singapore	80.00%	₩538,714,132	₩368,958,600	₩113,310,631	₩28,429,674
Waterway Plus Co., Ltd.	Korea	100.00%	7,364,948	1,860,340	9,509,891	65,909
K-Water Thailand Co., Ltd.	Thailand	99.99%	8,058	1,269	-	2,028
JSC Nenskra Hydro	Georgia	100.00%	98,470,069	461,717	-	(5,434,944)

2. **BASIS OF PREPARATION:**

(1) Statement of compliance

The Parent and subsidiaries (the “Group”) prepared consolidated financial statements in accordance with the Korean government-owned and Quasi-government Accounting Regulations and Standards.

These consolidated financial statements were prepared in accordance with Korean International Financial Reporting Standard (“K-IFRS”) No. 1034, ‘Financial Reporting’ as part of the period covered by the Group’s K-IFRS annual consolidated financial statements. Selected explanatory notes are included to explain events and transactions that are significant to an understanding of the changes in financial position and performance of the Group since the last annual consolidated financial statements as of and for the year ended December 31, 2017. These consolidated financial statements do not include all the disclosures required for full annual consolidated financial statements.

If there are no regulations other than Korean government-owned and Quasi-government Accounting Regulations and Standards, based on Article 2-5 in the aforementioned regulations, accounting standards of the Group are adopted in accordance with K-IFRSs. Material differences between K-IFRS and Korean government-owned and Quasi-government Accounting Regulations and Standards are as follows:

(i) Government grants (Article 44: Accounting of Government Grants)

Government grants used for the acquisition of certain assets are deducted from the acquisition cost of the acquired assets and such grants are offset against the depreciation expenses of the acquired assets during the useful lives of the assets. Government grants received for consignment management service provided by the Group are recognized as other income.

(ii) Contribution to the Employee Welfare Fund (Article 49)

The Group contributes to the employee welfare fund, and contributions are recognized as operating expenses in accordance with Employee Welfare Fund Act.

(iii) Presentation of financial statements (Article 2)

Financial statements are prepared and accounts are created and classified in accordance with guidelines set by the Minister of Strategy and Finance.

(2) Use of estimates and judgments

(i) Management's judgments, estimates and assumptions

The preparation of the consolidated financial statements in conformity with K-IFRSs 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.

In preparing these consolidated financial statements, the significant judgments made by management in applying the Group's accounting policies and the key sources of estimation uncertainty were the same as those that applied to the consolidated financial statements as of and for the year ended December 31, 2017, except for the following accounting estimates and assumption from the adoption of K-IFRS 1109.

(a) Impairment of financial assets

The loss allowance in accordance with the K-IFRS 1109 is based on assumptions for the risk of default and the expected credit losses. The Group judges, based on past events, current market conditions and forecasts for future conditions at the reporting date, making assumptions and selecting input factors for the measuring the impairment.

3. SIGNIFICANT ACCOUNTING POLICIES:

Except as described below, the accounting policies applied by the Group for these consolidated financial statements are the same as those applied by the Group for its consolidated financial statements as of and for the year ended December 31, 2017.

(1) Change in accounting policies

The Group has applied the following amendments to standards and interpretation, with a date of initial application of January 1, 2018:

(i) K-IFRS 1109 – Financial Instruments

The Group has applied initially with the amendments from the other standards relating to the K-IFRS 1109 from this period with a date of initial application of January 1, 2018. K-IFRS 1109 contains new regulations for 1) the classification and measurement of financial assets and financial liabilities, 2) impairments of financial assets, 3) hedging account. The Group selected the way not to restate the financial statements of the past periods on initial application of this standard. According to this, the financial statements represented respectively are not restated.

The main issues and the effects of the new regulation to the financial statements of the Group are as follows:

(a) Classification and measurement of financial assets

All financial assets under K-IFRS 1109 are measured as amortized cost or fair value subsequently, based on a business model for managing the financial assets and contractual cash flows.

Under the business model for the purpose of containing for collecting contractual cash flows, debt instruments with contractual cash flows consisting only of principles and the interests is measured subsequently at amortized cost (financial assets at AC).

Under the business model for the purpose of both collecting contractual cash flows and selling financial assets, debt instruments with contractual cash flows consisting only of principles and the interests is measured subsequently at fair value and recognized as other comprehensive income (financial assets at FVOCI).

Other debt instruments and equity instruments except for the above are measured subsequently at fair value and recognized through the profit the year (financial assets at FVPL).

In spite of the above mention, the Group may select and designate irrevocably the following at the initial recognition of financial assets.

By change of classification of debt instruments and equity instruments, valuation gain of available-for-sale financial assets of ₩76,343 thousand recognized as other comprehensive income reclassified subsequently in profit or loss was reclassified as retained earnings and valuation loss of available-for-sale financial assets of ₩136,587 thousand recognized as other comprehensive income reclassified subsequently in profit or loss was reclassified as retained earnings. Available-for-sale financial assets measured at amortized cost reduced retained earnings of ₩125,482 thousand through valuation at fair value.

Other reclassifications of financial assets except for the above did not affect financial position, profit for the year, other comprehensive income, and total comprehensive income.

(b) Impairment of financial assets

K-IFRS 1109 recognizes expected credit loss and the change for the reporting date for reflecting change of credit risk after initial recognition of financial assets according to expected credit loss model different from K-IFRS 1039. Occurrence of credit events are not necessary for recognition of credit loss.

The Group recognizes loss allowance for expected credit losses on i) debt instrument measured subsequently at amortized cost or FVOCI, ii) lease receivables, iii) contract assets, and iv) loan commitments and financial guarantee contracts to which impairment requirements apply in accordance with K-IFRS 1109. Especially, the Group shall measure the loss allowance for financial instruments at amounts equal to the lifetime expected credit losses at each reporting date if the credit risk on that financial assets has increased significantly or credit has been impaired at the time of purchase of financial assets.

If, at the reporting date, the credit risk on a financial instrument has not increased significantly since initial recognition, the Group shall measure the loss allowance for that financial instrument at an amount equal to 12-month expected credit losses. K-IFRS 1109 provides simplified approach measuring the loss allowance at an amount equal to lifetime expected credit losses for trade receivables, contract assets and lease receivables.

The Group determined the credit risk at the initial recognition date for financial instruments in accordance with K-IFRS 1109 and recognized additional loss allowance of ₩62,922 thousand resulting from auditing and evaluating impairment of financial assets, contract assets, and financial guarantee contracts.

(c) Classification and measurement of financial liabilities

In accordance with K-IFRS 1109, the Group shall present a gain or loss on a financial liability that is designated as at fair value through profit or loss if the amount of change in the fair value of the financial liability that is attributable to changes in the credit risk of that liability shall be presented in other comprehensive income and the remaining amount of change in the fair value of the liability shall be presented in profit or loss.

(d) Hedge accounting

New hedge accounting model keeps three hedge accounting type. But K-IFRS 1109 has more flexibility on transaction type appropriate to hedge accounting. K-IFRS 1109 has not affected significantly to hedge accounting for the Group.

(e) Classification and measurement of financial assets and financial liabilities in accordance with K-IFRS 1109 and 1039 at the initial application date of January 1, 2018 are as follows:

			(Unit: In thousands of Korean won)		
			Impairment under		
	K-IFRS 1039	K-IFRS 1109	K-IFRS 1039	K-IFRS 1109	K-IFRS 1109
Cash and cash equivalent	Loan and receivables	Financial assets at AC	₩160,865,887	₩-	₩160,865,887
Loan	Loan and receivables	Financial assets at FVPL	26,403,233	-	26,403,233
Short-term financial assets	Financial assets at FVPL	Financial assets at FVPL	23,897,420	-	23,897,420
Trade and other receivables	Loan and receivables	Financial assets at AC	1,001,404,087	(83,010)	1,001,321,077
Derivative instrument assets	Derivatives hedging-instrument-designated	Derivatives hedging-instrument-designated	30,852,491	-	30,852,491
Non-listed stock	Financial asset for AFS	Financial assets at FVPL	17,380,105	(165,543)	17,214,561
		Financial assets at FVOCI	5,751,805	-	5,751,805
Trade and other payables	Financial liabilities at AC	Financial liabilities at AC	348,867,779	-	348,867,779
Borrowing and debenture	Financial liabilities at AC	Financial liabilities at AC	11,724,801,006	-	11,724,801,006
Derivative liabilities	Derivatives hedging-instrument-designated	Derivatives hedging-instrument-designated	55,999,375	-	55,999,375

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

The core principle under K-IFRS 1115 is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The amendments introduce a five-step approach to revenue recognition and measurement: 1) Identify the contract with a customer, 2) Identify the performance obligations in the contract, 3) Determine the transaction price, 4) Allocate the transaction price to the performance obligations in the contract and 5) Recognize revenue when (or as) the entity satisfies a performance obligation. This standard will supersede K-IFRS 1011 - Construction Contracts, K-IFRS 1018 - Revenue, K-IFRS 2113 - Customer Loyalty Programs, K-IFRS 2115 - Agreements for the Construction of Real Estate, K-IFRS 2118 - Transfers of Assets from Customers and K-IFRS 2031 - Revenue-Barter Transactions Involving Advertising Services. The amendments are effective for annual periods beginning on or after January 1, 2018.

(iii) K-IFRS 1102 – Share-based Payment (amendment)

K-IFRS 1102 has main issues 1) that accounting treatments for effect of vesting condition and non-vesting condition when a cash-settled share-based payment transaction is measured at fair value must be the same as equity-settled share-based payment transaction, 2) share-based payment transaction without a net settlement feature for withholding tax obligation shall be classified in its entirety as an equity-settled share-based payment transaction if it would have been so classified, and 3) if the terms and conditions of a cash-settled share-based payment transaction are modified with the result that it becomes an equity-settled share-based payment transaction, the liability for the cash-settled share-based payment transaction as at the modification date is derecognized on that date and any difference between the carrying amount of the liability derecognized and the amount of equity recognized on the modification date is recognized immediately in profit or loss.

(iv) K-IFRS 1040 – Investment Property (amendment)

In accordance with the amendments, the Group shall transfer a property to investment property when, and only when, there is a change in use. A change in use occurs when the property meets the definition of investment property and there is evidence of the change in use. Examples of evidence of a change in use except for the examples listed in K-IFRS 1040 may exist and also there may be change in use for a property in construction.

(v) K-IFRS 2122 – Foreign Currency Transaction and Advance Consideration (new)

The amendments to K-IFRS 2122 clarify that the date of the transaction for the purpose of determining the exchange rate to use on initial recognition of the related asset, expense or income is the date on which an entity pays or receives advance consideration.

(vi) Annual Improvements to K-IFRS 2014-2016 Cycle

The annual improvements include amendments to a number of K-IFRSs. In regard to K-IFRS 1028 - Investments in Associates and Joint Ventures, the amendments clarify that the election to measure an investment in an associate at fair value is held by an entity that is a venture capital organization (or other qualifying entity) and available for each investment in an associate or a joint venture on an investment-by-investment basis. In addition, the annual improvements include amendments to K-IFRS 1101 - First-time Adoption of Korean International Financial Reporting Standards.

The effects on the financial statements as at the initial application date in accordance with standards and interpretation newly applied since this period are as follows:

(Unit: In thousands of Korean won)			
	K-IFRS 1039	Impairment under K-IFRS 1109	K-IFRS 1109
Current assets	₩7,041,806,022	₩350,670,831	₩7,392,476,853
Non-current assets	13,825,489,384	(382,673,420)	13,442,815,964
Total assets	₩20,867,295,407	(₩32,002,589)	₩20,835,292,817
Current liabilities	3,056,094,914	13,457,211	3,069,552,126
Non-current liabilities	10,577,196,333	-	10,577,196,333
Total liabilities	₩13,633,291,247	₩13,457,211	₩13,646,748,458
Total equity	₩7,234,004,160	(₩45,459,801)	₩7,188,544,359

The effects on each account in equity as at the initial application date in accordance with the change in accounting policies above are as follows:

(Unit: In thousands of Korean won)					
	Issued capital	Undisposed deficit	Other equity components	Non-controlling Interests	Total
At December 31, 2017	₩8,101,944,481	(₩864,040,732)	(₩37,848,682)	₩33,949,093	₩7,234,004,160
Initial application of K-IFRS 1109					
Effect of reclassification	-	(225,787)	60,244	-	(165,543)
Effect of impairment	-	(83,010)	-	-	(83,010)
Effect of income tax	-	60,150	-	-	60,150
Subtotal	₩-	(₩248,647)	₩60,244	₩-	(₩188,403)
Initial application of K-IFRS 1115					
Effect of significant	-	(59,724,799)	-	-	(59,724,799)
Effect of income tax	-	14,453,401	-	-	14,453,401
Subtotal	₩-	(₩45,271,398)	₩-	₩-	(₩45,271,398)
At January 1, 2018 (Initial application date)	₩8,101,944,481	(₩909,560,777)	(₩37,788,438)	₩33,949,093	₩7,188,544,359

(2) New or revised K-IFRSs issued, but not yet effective are as follows:

(i) K-IFRS 1116 – Lease

This standard provides both to lessees and lessors with comprehensive model for identifying lease commitment and treating accounting. This standard replaces current regulation relating to lease including the K-IFRS 1017 and the related interpretation and the Group shall apply this standard from the fiscal year beginning at January 1, 2019.

In accordance with K-IFRS 1116, the Group shall assess whether the contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

And it was deleted the regulation that lessees must classify lease into finance lease or operating lease and instead of that, lessees shall recognize right-of-use assets and their lease liabilities for all leases except for the short-term leases and leases of low-value assets

At the commencement date, a lessee shall measure the right-of-use asset at cost and after the commencement date, to apply a cost model, a lessee shall measure the right-of-use asset at cost less any accumulated depreciation and any accumulated impairment losses and adjusted for any remeasure of the lease liability. At the commencement date, a lessee shall measure the lease liability at the present value of the lease payments that are not paid at that date. After the commencement date, a lessee shall measure the lease liability by adjusting the carrying amount to reflect interest, lease payments, and the lease modifications. Also, K-IFRS 1017 presented the operating lease payment as cash flows in operating activities but in accordance with K-IFRS 1116, a lessee shall classify cash payments for the principal portion of the lease liability within financing activities and cash payments for the interest portion of the lease liability within operating activities.

In contrast to a lessee, in accordance with K-IFRS 1116, a lessor complies most regulations of accounting for the lessor under K-IFRS 1017 and a lessor must classify each of its leases as either an operating lease or a finance lease.

If the Group applies this standard, it recognized the right-of-use assets and the related liabilities for all leases except for short-term leases and leases of low-value assets. The requirements of this standard relating to the right-of-use assets and the related liabilities are expected to affect significantly on the financial statements. Otherwise, it is not expected that finance leases of a lessee and leases of a lessor (finance leases and operating leases) affect significantly on the financial statements.

4. SEGMENT INFORMATION:

The Group is not required to disclose operating segment information. The Group instead has elected to present certain financial information for its six business units, as described below.

Business segments	Main goods and services
Multiregional waterworks business	Operational management of multiregional waterworks
Multipurpose dams operation business	Operational management of multipurpose dams
Site development business	Sales and rent of land
Construction business	Construction of tangible assets (waterworks, dams, etc.)
Local waterworks and sewage treatment business	Operation and management of local waterworks and sewage treatment
Other businesses	Foreign business, aggregate business, consignment business, Kyung-in canal operation business, Four River Restoration operation business and renewable energy business

(1) The following table provides information of operations for each operating segment for the periods ended December 31, 2018 and 2017:

(i) December 31, 2018

	(Unit: In thousands of Korean won)				
	Total revenue	Interbusiness unit revenue	External revenue	Operating profit	Depreciation and amortization
Multiregional waterworks business	₩1,142,324,992	₩-	₩1,142,324,992	₩135,094,423	₩437,103,676
Multipurpose dams operation business	544,110,586	2,578,674	541,531,912	158,221,886	126,921,192
Site development business	572,863,589	-	572,863,589	220,240,443	1,846,884
Construction business	570,060,384	-	570,060,384	(9,259,823)	130,615
Local waterworks and sewage treatment business	184,914,316	-	184,914,316	(2,348,247)	3,383,412
Other businesses	396,830,773	16,957,766	379,873,007	(25,926,757)	72,923,421
Total	₩3,411,104,640	₩19,536,440	₩3,391,568,200	₩476,021,925	₩642,309,200

(ii) December 31, 2017

	(Unit: In thousands of Korean won)				
	Total revenue	Interbusiness unit revenue	External revenue	Operating profit	Depreciation and amortization
Multiregional waterworks business	₩1,116,183,838	₩-	₩1,116,183,838	₩98,600,351	₩474,451,764
Multipurpose dams operation business	468,331,165	-	468,331,165	107,062,370	127,486,179
Site development business	544,912,165	-	544,912,165	136,684,875	1,567,915
Construction business	618,247,496	-	618,247,496	-	22,727
Local waterworks and sewage treatment business	184,804,454	-	184,804,454	20,820,177	27,907,434
Other businesses	453,024,683	9,943,508	443,081,175	64,548,646	70,205,180
Total	<u>₩3,385,503,801</u>	<u>₩9,943,508</u>	<u>₩3,375,560,293</u>	<u>₩427,716,419</u>	<u>₩701,641,199</u>

The Group does not provide information of asset and liability for each operating segment and regional financial information because most of the businesses are done domestically.

5. CASH AND CASH EQUIVALENTS:

Details of cash and cash equivalents as of DECEMBER 31, 2018 AND 2017, are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Cash on hand	₩800	₩-
Demand deposits	48,708,511	83,763,307
Cash equivalents classified as short-term investment assets	215,813,605	77,102,580
	<u>₩264,522,916</u>	<u>₩160,865,887</u>

6. RESTRICTED FINANCIAL INSTRUMENTS:

Details of cash and cash equivalents that are restricted in use as of DECEMBER 31, 2018 AND 2017, are as follows:

	(Unit: In thousands of Korean won)		
	Description	December 31, 2018	Dec. 31, 2017
Cash and cash equivalents	Restricted in use for designated purpose (*1)	₩15,765,344	₩40,202,215

(*1) Restricted cash and cash equivalents consist of advance payments received from customers in light of local waterworks and restricted in use only for designated purposes

7. PROFIT-LOSS FAIR VALUE MEASUREMENT FINANCIAL ASSETS:

- (1) Details of profit-loss fair value measurement financial assets as of DECEMBER 31, 2018 AND 2017, are as follows:

(Unit: In thousands of Korean won)

	December 31, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current
Profit-loss fair value measurement financial assets:				
Beneficiary securities	₩-	₩2,387,228	₩-	₩17,380,105
	₩-	₩2,387,228	₩-	₩17,380,105

- (2) Details of derivative instruments as of DECEMBER 31, 2018 AND 2017, are as follows:

(Unit: In thousands of Korean won)

	December 31, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current
Financial derivative assets:				
Currency swap	₩-	₩14,439,857	₩2,180,359	₩-
Interest rate swap	-	50,721,459	-	28,672,132
	₩-	₩65,161,316	₩2,180,359	₩28,672,132
Financial derivative liabilities:				
Currency swap	₩-	₩27,700,721	₩20,161,613	₩24,759,399
Interest rate swap	-	14,783,287	-	11,078,363
	₩-	₩42,484,008	₩20,161,613	₩35,837,762

- (3) Purpose

The Group entered into currency swap contracts to hedge cash flow risk associated with change in foreign exchange rate and interest rate of foreign currency debentures. Moreover, the Group entered into interest rate swap contracts to hedge cash flow risk associated with change in interest rate of Korean won-denominated debentures.

- (4) Details of risks and the Group's strategy

Details of risks: The Group is exposed to risks of fluctuations in exchange rates of Korean won against foreign currencies and interest rate appreciation on the repayment of foreign currency-denominated debentures. Also, the Group is exposed to cash flow risk associated with change in interest rate of Korean won-denominated debentures.

Strategy: The Group entered into cross-currency interest rate swap contracts to fix the principal and interest amount in Korean won and interest rate swap contracts to fix the interest rate of Korean won-denominated debentures.

(5) Details of cross-currency swaps (cash flow hedge) as of December 31, 2018, are as follows:

(Unit: In thousands of Korean won, JPY and USD)

Counterparties	Contract period	Notional amount		Interest rate		Contract foreign exchange rate
		Payment	Receipt	Payment (%)	Receipt (%)	
KDB	16.05.20 ~ 31.05.20	₩117,250,000	USD 100,000	1.84	2.77	1,172.50
KDB	17.05.23 ~ 22.05.23	111,900,000	USD 100,000	2.055	2.75	1,119.00
KEB	17.05.23 ~ 22.05.23	167,850,000	USD 150,000	2.045	2.75	1,119.00
KB	17.05.23 ~ 22.05.23	111,900,000	USD 100,000	2.05	2.75	1,119.00
KEB	18.05.15 ~ 23.05.15	323,700,000	USD 300,000	2.15	3.875	1,079.00
NOMURA	18.09.20 ~ 23.09.20	225,442,000	CHF 200,000	1.97	0.15	1,127.21

(6) Details of interest rate swaps (cash flow hedge) as of December 31, 2017, are as follows:

(Unit: In thousands of Korean won)

Counterparties	Contract period	Notional amount	Interest rate	
			Payment (%)	Receipt (%)
Standard Chartered	10.07.16 ~ 20.07.16	50,000,000	4.97	Pegged with IRS Index
Standard Chartered	10.08.09 ~ 20.08.09	40,000,000	4.86	Pegged with IRS Index
BNP-PARIBAS	10.08.09 ~ 20.08.09	30,000,000	4.86	Pegged with IRS Index
BNP-PARIBAS	10.08.09 ~ 20.08.09	30,000,000	4.86	Pegged with IRS Index
BNP-PARIBAS	10.11.23 ~ 20.11.23	20,000,000	4.56	Pegged with BPSTAR(*1) Index
NOMURA	14.08.20 ~ 29.08.20	50,000,000	3.109	4.07
NOMURA	14.09.04 ~ 29.09.04	50,000,000	3.073	4.06
BNP-PARIBAS	14.09.15 ~ 29.09.15	100,000,000	3.1	4.06
NOMURA	16.01.26 ~ 36.01.26	30,000,000	2.038	2.91
Societe Generale	17.03.09 ~ 22.06.09	30,000,000	2.11	CD+0.24
NOMURA	17.11.09 ~ 37.11.09	50,000,000	2.555	2.86
KEB	18.03.16 ~ 23.03.16	200,000,000	2.64	CD+0.33
KEB	18.06.22 ~ 43.06.22	100,000,000	2.571	2.94
KDB	18.09.19 ~ 43.09.19	60,000,000	2.289	2.57
KEB	18.12.18 ~ 43.12.18	30,000,000	1.99	2.37

(*1) BNP Paribas Index (“BPSTAR”)

(*2) Certificate of Deposit (“CD”)

(7) Valuation and transaction gains (losses) of derivative instruments for the periods ended December 31, 2018 and 2017, are as follows:

(Unit: In thousands of Korean won)

	Valuation gain (loss)		Transaction gain (loss)		Changes in other comprehensive incomes (*1)	
	2018	2017	2018	2017	2018	2017
Cash flow hedge	₩34,547,000	(₩84,655,000)	₩6,084,000	(₩27,332,000)	(₩3,733,384)	₩18,896,898

(*1) Valuation gain of derivatives of ₩11,294,433 thousand in other comprehensive income in financial position as of December 31, 2018 is deducted with tax effect directly deducted from equity.

8. Trade and other receivables:

(1) Details of trade and other receivables as of December 31, 2018 and 2017, are as follows:

(i) December 31, 2018

	Receivables	Bad debt allowances	Present value discount	Book value
(Unit: In thousands of Korean won)				
Current assets				
Trade receivables	₩242,632,313	(₩331,760)	₩-	₩242,300,553
Unclaimed construction	366,046,748	-	-	366,046,748
Other receivables	165,912,209	(7,546,834)	-	158,365,375
Subtotal	774,591,270	(7,878,594)	-	766,712,676
Non-current assets				
Trade receivables	455,228,150	-	(7,665)	455,220,485
Other receivables	184,622,498	-	-	184,622,498
Subtotal	639,850,648	-	(7,665)	639,842,983
Total	₩1,414,441,918	(₩7,878,594)	(₩7,665)	₩1,406,555,659

(ii) December 31, 2017

	Receivables	Bad debt allowances	Present value discount	Book value
(Unit: In thousands of Korean won)				
Current assets				
Trade receivables	₩228,667,514	(₩195,234)	₩-	₩228,472,280
Unclaimed construction	-	-	-	-
Other receivables	117,443,952	(6,995,408)	-	110,448,544
Subtotal	346,111,466	(7,190,642)	-	338,920,824
Non-current assets				
Trade receivables	496,392,360	-	(33,731)	496,358,630
Other receivables	166,124,633	-	-	166,124,633
Subtotal	662,516,993	-	(33,731)	662,483,263
Total	₩1,008,628,459	(₩7,190,642)	(₩33,731)	₩1,001,404,087

(2) Details of other receivables as of December 31, 2018 and 2017, are as follows:

	Dec. 31, 2018			Dec. 31, 2017		
	Receivables	Bad debt allowances	Book value	Receivables	Bad debt allowances	Book value
Current assets						
Other receivables	₩119,082,785	(₩7,546,834)	₩111,535,951	₩82,605,908	(₩6,995,408)	₩75,610,500
Accrual revenue	46,572,627	-	46,572,627	34,690,566	-	34,690,566
Deposits	256,796	-	256,796	147,478	-	147,478
Subtotal	165,912,208	(7,546,834)	158,365,374	117,443,952	(6,995,408)	110,448,544
Non-current assets						
Deposits	184,622,498	-	184,622,498	166,124,633	-	166,124,633
	₩350,534,706	(₩7,546,834)	₩342,987,872	₩283,568,585	(₩6,995,408)	₩276,573,177

(2) Credit risk and allowances

The trade and other receivables above are categorized as amortized cost measurement financial assets. Trade receivables do not contain interest factor and ordinary collection period is 30 days.

- ① Details of aging analysis on trade receivables as of December 31, 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Normal receivables	₩677,904,079	₩707,739,522
Receivables overdue but not impaired	16,663,237	16,922,384
- More than 12 months	12,842,781	8,989,830
- 12 months ~ 24 months	2,333,888	2,541,374
- 6 months ~ 12 months	1,431,099	4,529,669
- 3 months ~ 6 months	14,587	850,853
- 1 months ~ 3 months	40,882	10,659
Impaired receivables	3,293,148	397,968
- More than 24 months	275,801	78,659
- 12 months ~ 24 months	49,143	174,249
- 6 months ~ 12 months	1,973,255	94,964
- 3 months ~ 6 months	943,391	13,999
- 1 months ~ 3 months	51,558	36,097
Subtotal	697,860,464	725,059,874
Less: bad debt allowance	(331,760)	(195,234)
Less: present value discount	(7,665)	(33,731)
Total	₩697,521,039	₩724,830,909

- ② Details of aging analysis on other receivables as of December 31, 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Normal receivables	₩658,394,590	₩242,013,935
Receivables overdue but not impaired	46,382,256	33,083,032
- More than 12 months	1,520,786	11,072
- 12 months ~ 24 months	18,867,478	10,626,424
- 6 months ~ 12 months	10,894,139	11,618,832
- 3 months ~ 6 months	4,839,656	6,871,884
- 1 months ~ 3 months	10,260,196	3,954,820
Impaired receivables	11,804,609	8,471,618
- More than 24 months	6,657,388	6,438,384
- 12 months ~ 24 months	2,011,051	648,998
- 6 months ~ 12 months	2,538,211	267,690
- 3 months ~ 6 months	439,037	1,078,960
- 1 months ~ 3 months	158,921	37,586
Subtotal	716,581,455	283,568,585
Subtraction: bad debt allowance	(7,546,834)	(6,995,408)
Total	₩709,034,621	₩276,573,177

(*) Other receivables contain contract assets (unclaimed construction).

(3) Details of changes in bad debt allowance of trade and other receivables in 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)			
	December 31, 2018		December 31, 2017	
	Trade receivables	Other receivables	Trade receivables	Other receivables
Beginning balance	₩195,234	₩6,995,408	₩253,683	₩6,572,684
IFRS Adjustment (beginning)	136,826	(53,816)	-	-
Bad debt expenses	50,866	1,047,149	-	508,991
Reversal	-	-	(33,848)	-
Deletion of trade and other receivables	(51,165)	(441,907)	(24,601)	(86,267)
Ending balance	₩331,761	₩7,546,834	₩195,234	₩6,995,408

9. Fair value financial assets recognized other comprehensive income-:

(1) Details of changes in fair value financial assets recognized other comprehensive income (unlisted stocks) are as follows:

	(Unit: In thousands of Korean won)				
	Beginning balance	Acquisitions	Disposals	Assessment	Ending balance
Unlisted equity securities	₩5,751,805	₩20,772,301	₩-	(₩43,443)	₩26,480,663

(2) Details of unlisted stocks as of December 31, 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)					
	Ownership	Stocks	Acquisition cost	Fair value	Dec 31, 2018 Book value	Dec 31, 2017 Book value
Korea construction management corporation	18.90%	178,200	₩4,000,000	₩4,000,000	₩4,000,000	₩4,000,000
Korea foreign infra/urban development resources corporation	11.00%	-	20,772,301	20,727,924	20,727,924	-
P-waters, Limited	2.00%	36,144	180,720	180,720	180,720	180,720
Luzon clean water	2.80%	67,500,000	1,468,822	1,468,822	1,468,822	1,468,822
Specialized Construction mutual aid	0.01%	113	101,989	103,196	103,196	102,262
Total	-	-	₩26,523,832	₩26,480,662	₩26,480,662	₩5,751,804

(*) Share ratio 11.0% of Korea foreign infra/urban development resources (KIND) was acquired newly.

10. AVAILABLE-FOR-SALE FINANCIAL ASSETS:

(1) Details of changes in AFS financial assets as of December 31, 2017, are as follows:

(Unit: In thousands of Korean won)

	Beginning balance	Acquisitions	Disposals	Assessment	Ending balance
Unlisted equity securities	₩17,040,121	₩6,275,822	(₩184,947)	₩913	₩23,131,909

(2) Details of unlisted stocks as of December 31, 2017 are as follows:

(Unit: In thousands of Korean won)

	Ownership	Stocks	Dec31, 2017 Acquisition cost	Dec31, 2017 Fair value	Dec 31, 2017 Book value
Korea construction management corporation	18.90%	178,200	₩-	₩4,000,000	₩4,000,000
Korea foreign infra/urban development resources corporation	8.93%	-	17,459,282	17,380,105	17,380,105
P-waters, Limited	2.00%	36,144	180,720	180,720	180,720
Luzon clean water	2.80%	67,500,000	1,468,822	1,468,822	1,468,822
Specialized Construction mutual aid	0.01%	113	102,262	102,262	102,262
Total			₩19,209,879	₩23,131,909	₩23,131,909

(*1) AFS financial assets that do not have a quoted market price in an active market and whose fair value cannot be reliably measured are measured at cost.

11. Short-term financial instruments

Details of short-term financial instruments as of December 31, 2018 and 2017 are as follows:

(Unit: In thousands of Korean won)

	Dec 31, 2018 Current	Dec 31, 2017 Current
Specific money trust	₩134,486,394	₩23,897,420

12. Other financial assets

Other financial assets as of December 31, 2018 and 2017 are as follows:

(Unit: In thousands of Korean won)

	December 31, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current
Employee loan	₩-	₩8,609,583	₩-	₩9,824,472
Other loan	1,700,412	7,627,744	8,640,246	7,938,515
	<u>₩1,700,412</u>	<u>₩16,237,327</u>	<u>₩8,640,246</u>	<u>₩17,762,987</u>

13. Inventories

Details of inventories as of December 31, 2018 and 2017 are as follows:

(Unit: In thousands of Korean won)

	December 31, 2018		December 31, 2017	
	Acquisition		Acquisition	
	cost	Book value	cost	Book value
Raw materials	₩3,357,834	₩3,357,834	₩3,727,340	₩3,727,340
Product	6,921,120,487	6,921,120,487	6,404,515,538	6,404,515,538
Store	8,167,065	8,167,065	8,135,069	8,135,069
Other stock	123,649	123,649	132,981	132,981
	<u>₩6,932,769,035</u>	<u>₩6,932,769,035</u>	<u>₩6,416,510,928</u>	<u>₩6,416,510,928</u>

14. Non-Financial Assets

Details of non-financial assets as of December 31, 2018 and 2017 are as follows:

(Unit: In thousands of Korean won)

	December 31, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current
Prepayment	₩-	₩-	₩76,734,054	₩-
Accrual assets	24,370,294	-	14,006,182	-
Others	-	3,763,960	-	4,370,145
	<u>₩24,370,294</u>	<u>₩3,763,960</u>	<u>₩90,740,236</u>	<u>₩4,370,145</u>

15. INVESTMENT IN ASSOCIATES:

(1) Details of associates as of DECEMBER 31, 2018 AND 2017, are as follows:

(Unit: In thousands of Korean won)

Associates companies	Principal activity	Country of incorporation	Owner-ship (%)	December 31, 2018		Owner-ship (%)	December 31, 2017	
				Acquisition cost	Book value		Acquisition cost	Book value
KWPP Holdings Co.	Angat Dam hydropower project in Philippines	Philippines	38.50	₩268	₩9,434	38.50	₩268	₩9,465
Angat Hydropower Co. (*1)	Angat Dam hydropower project in Philippines	Philippines	40.00	100,845,106	67,283,322	40.00	100,845,106	75,016,114
				<u>₩100,845,374</u>	<u>₩69,629,261</u>		<u>₩100,845,374</u>	<u>₩75,025,579</u>

(*1) After the Group acquired share 99.99% (₩22,302,766 thousand) of Angat Hydropower Co. in 2014, it was classified into a subsidiary but after its share 59.99% (₩45,236,869 thousand) was disposed (gain on disposal of investment in subsidiary of ₩31,855,209 thousand) in 2014, it was classified into an associate.

(2) Changes in investment in associates for the periods ended December 31, 2018 and 2017, are as follows:

i. December 31, 2018

(Unit: In thousands of Korean won)

	Net book value at January 1, 2018	Acquisitions	Equity gain (loss) in associates, net	Unrealized loss on valuation of equity method investments	Net book value at December 31, 2018
KWPP Holdings Co.	₩9,465	₩-	₩167	(₩198)	₩9,434
Angat Hydropower Co.	75,016,114	-	(7,140,781)	(592,011)	67,283,322
	<u>₩75,025,579</u>	<u>₩-</u>	<u>(₩7,140,614)</u>	<u>(₩592,209)</u>	<u>₩67,292,756</u>

ii. December 31, 2017

(Unit: In thousands of Korean won)

	Net book value at January 1, 2017	Acquisitions	Equity gain (loss) in associates, net	Unrealized loss on valuation of equity method investments	Net book value at December 31, 2017
KWPP Holdings Co.	₩17,026	₩-	(₩6,404)	(₩1,157)	₩9,465
Angat Hydropower Co.	86,619,501	-	(1,139,089)	(10,464,299)	75,016,113
	<u>₩86,636,527</u>	<u>₩-</u>	<u>(₩1,145,493)</u>	<u>(₩10,465,456)</u>	<u>₩75,025,578</u>

(3) Details of financial information in associates for the periods ended December 31, 2018 and 2017, are as follows:

(i) December 31, 2018

	Assets	Liabilities	Revenue	Net profit(loss)
	(Unit: In thousands of Korean won)			
KWPP Holdings Co.	₩593,181	₩568,543	₩29,708	₩433
Angat Hydropower Co.	445,920,248	277,546,699	32,907,342	(17,869,489)

(ii) December 31, 2017

	Assets	Liabilities	Revenue	Net profit(loss)
	(Unit: In thousands of Korean won)			
KWPP Holdings Co.	₩553,465	₩528,650	₩32,573	(₩16,650)
Angat Hydropower Co.	465,095,383	277,370,864	49,058,362	(2,850,520)

16. PROPERTY, PLANT AND EQUIPMENT:

(1) Details of property, plant and equipment as of DECEMBER 31, 2018 AND 2017, are as follows:

(i) December 31, 2018

	(Unit: In thousands of Korean won)			
	Acquisition cost	Government Grant	Accumulated depreciation	Net book value
Land	₩249,805,084	₩-	₩-	₩249,805,084
Buildings	548,428,547	(5,315,130)	(208,664,390)	334,449,027
Structures	466,941,233	-	(141,127,182)	325,814,051
Machinery and equipment	1,071,274,804	-	(574,236,414)	497,038,390
Ships	13,994,046	-	(10,186,062)	3,807,984
Vehicles	15,659,612	-	(9,851,352)	5,808,260
Furniture and fixtures	79,467,367	-	(53,562,401)	25,904,966
Tools	84,312,596	-	(70,330,277)	13,982,319
Construction in progress	257,213,473	-	-	257,213,473
	<u>₩2,787,096,762</u>	<u>(₩5,315,130)</u>	<u>(₩1,067,958,078)</u>	<u>₩1,713,823,554</u>

(ii) December 31, 2017

	(Unit: In thousands of Korean won)			
	Acquisition cost	Government grant	Accumulated depreciation	Net book value
Land	₩184,398,914	₩-	₩-	₩184,398,914
Buildings	489,781,121	(5,786,451)	(191,874,013)	292,120,657
Structures	413,808,428	-	(126,459,526)	287,348,902
Machinery and equipment	1,049,772,577	-	(536,650,827)	513,121,750
Ships	13,830,312	-	(9,838,329)	3,991,983
Vehicles	14,906,151	-	(8,808,225)	6,097,926
Furniture and fixtures	67,046,089	-	(46,354,759)	20,691,330
Tools	79,808,199	-	(67,590,587)	12,217,612
Construction in progress	272,200,795	-	-	272,200,795
	<u>₩2,585,552,586</u>	<u>(₩5,786,451)</u>	<u>(₩987,576,266)</u>	<u>₩1,592,189,869</u>

(2) Changes in property, plant and equipment for the periods ended December 31, 2018 and 2017, are as follows:

(i) December 31, 2018

(Unit: In thousands of Korean won)

	Net book value at January 1, 2018	Acquisitions (*1)	Disposals	Depreciations	Transfers	Others (*2)	Net book value at December 31, 2018
Land	₩184,398,914	₩11,157,616	(₩1,907)	₩-	₩54,170,629	₩79,832	₩249,805,084
Buildings	297,907,109	34,359	(306,383)	(17,340,124)	59,507,809	(38,613)	339,764,157
Government grants	(5,786,451)	-	-	471,321	-	-	(5,315,130)
Structures	287,348,901	-	(1)	(14,719,969)	53,190,718	(5,600)	325,814,049
Machinery and equipment	513,121,750	-	(1,012,840)	(42,690,317)	27,595,151	24,646	497,038,390
Ships	3,991,983	-	(906)	(755,833)	572,740	-	3,807,984
Vehicles	6,097,926	1,646,305	(19,981)	(1,924,849)	-	8,859	5,808,260
Furniture and fixtures	20,691,330	13,085,829	(4,200)	(7,863,902)	8,243	(12,334)	25,904,966
Tools	12,217,612	-	(1,159)	(4,428,678)	6,181,297	13,247	13,982,319
Construction in progress	272,200,795	200,864,154	(15,053,764)	-	(201,226,588)	428,875	257,213,472
	<u>₩1,592,189,869</u>	<u>₩226,788,263</u>	<u>(₩16,401,141)</u>	<u>(₩89,252,351)</u>	<u>₩-</u>	<u>₩498,913</u>	<u>₩1,713,823,552</u>

(*1) Others include ₩172,336 thousand transferred from intangible assets.

(ii) December 31, 2017

(Unit: In thousands of Korean won)

	Net book value at January 1, 2017	Acquisitions	Disposals	Depreciations	Transfers	Others (*1)	Net book value at December 31, 2017
Land	₩182,608,107	₩1,791,992	(₩1,184)	₩-	₩-	₩-	₩184,398,915
Buildings	296,196,911	3,579,476	(1,229,193)	(16,177,400)	15,537,314	-	297,907,108
Government grants	(827,286)	-	-	40,835	-	(5,000,000)	(5,786,451)
Structures	300,653,089	10,681	(58,662)	(14,035,754)	779,548	-	287,348,902
Machinery and equipment	481,551,957	31,097	(812,149)	(43,840,134)	30,039,822	46,151,156	513,121,749
Ships	3,430,195	2,100	(15,407)	(771,452)	1,346,547	-	3,991,983
Vehicles	4,305,897	3,424,317	(46)	(1,627,424)	7,245	(12,063)	6,097,926
Furniture and fixtures	16,377,629	10,725,791	(1,451)	(6,455,013)	45,856	(1,483)	20,691,329
Tools	11,163,608	3,014	(7,489)	(4,536,891)	5,595,370	-	12,217,612
Construction in progress	195,272,012	131,332,611	-	-	(53,351,702)	(1,052,125)	272,200,796
	<u>₩1,490,732,119</u>	<u>₩150,901,079</u>	<u>(₩2,125,581)</u>	<u>(₩87,403,233)</u>	<u>₩-</u>	<u>₩40,085,485</u>	<u>₩1,592,189,869</u>

(*1) Others include ₩46,151,099 thousand transferred from intangible assets.

17. INTANGIBLE ASSETS:

(1) Details of intangible assets other than goodwill as of DECEMBER 31, 2018 AND 2017, are as follows:

(i) December 31, 2018

(Unit: In thousands of Korean won)						
	Acquisition cost	Contributions toward construction	Government grants	Accumulated amortization and impairment	Impairment	Net book value
Software	₩148,091,556	₩-	₩-	(₩96,382,672)	₩-	₩51,708,885
Industrial proprietary rights	449,094	-	-	(382,724)	-	66,370
Intangible assets under development	3,346,072,736	-	(6,334,196)	-	(1,168,853,889)	2,170,884,651
Concession assets usage rights	16,456,895,445	(4,403,786)	(16,376,591)	(8,632,869,226)	(16,022,902)	7,787,222,940
Other intangible assets	6,278,677,575	-	-	-	(5,269,831,422)	1,008,846,153
	<u>₩26,230,186,406</u>	<u>(₩4,403,786)</u>	<u>(₩22,710,787)</u>	<u>(₩8,729,634,622)</u>	<u>(₩6,454,708,213)</u>	<u>₩11,018,728,999</u>

(ii) December 31, 2017

(Unit: In thousands of Korean won)						
	Acquisition cost	Contributions toward construction	Government grants	Accumulated amortization and impairment	Impairment	Net book value
Software	₩130,553,984	₩-	₩-	(₩91,660,130)	₩-	₩38,893,855
Industrial proprietary rights	449,094	-	-	(359,800)	-	89,294
Intangible assets under development	2,980,918,042	-	(6,334,196)	-	(1,168,853,889)	1,805,729,958
Concession assets usage rights	16,675,020,674	(4,889,628)	(41,035,237)	(8,082,733,765)	(16,022,902)	8,530,339,142
Other intangible assets	6,277,408,428	-	-	(2,891)	(5,269,831,422)	1,007,574,115
	<u>₩26,064,350,222</u>	<u>(₩4,889,628)</u>	<u>(₩47,369,433)</u>	<u>(₩8,174,756,586)</u>	<u>(₩6,454,708,213)</u>	<u>₩11,382,626,364</u>

(2) Changes in intangible assets for the periods ended December 31, 2018 and 2017, are as follows:

(i) December 31, 2018

(Unit: In thousands of Korean won)

	Net book value at January 1, 2018	Additions	Disposals	Amortizations	Impairment loss	Transfers	Others (*1)	Net book value at December 31, 2018
Software	₩38,893,855	₩16,006,581	(₩15)	(₩4,722,522)	₩-	₩-	₩1,530,986	₩51,708,885
Industrial proprietary rights	89,294	-	-	(22,924)	-	-	-	66,370
Intangible assets under development	1,812,064,154	668,227,387	-	-	-	(259,245,569)	(43,827,125)	2,177,218,847
(Government grants)	(6,334,196)	-	-	-	-	-	-	(6,334,196)
Concession assets usage rights	8,571,374,379	529,998,495	(581,660,283)	(550,135,462)	-	259,245,569	(425,709,010)	7,803,113,688
(Government grants)	(41,035,237)	-	-	1,829,941	-	-	23,314,548	(15,890,748)
Other intangible assets	1,007,574,115	1,578,784	(304,813)	(5,881)	-	-	3,948	1,008,846,153
	<u>₩11,382,626,364</u>	<u>₩1,215,811,247</u>	<u>(₩581,965,111)</u>	<u>(₩553,056,848)</u>	<u>₩-</u>	<u>₩-</u>	<u>(₩444,686,653)</u>	<u>₩11,018,728,999</u>

(*1) Others include ₩172,336 thousand transferred to tangible assets from intangible assets in development.

(ii) December 31, 2017

(Unit: In thousands of Korean won)

	Net book value at January 1, 2017	Additions	Disposals	Amortizations	Impairment loss (*1)	Transfers	Others (*2)	Net book value at December 31, 2017
Software	₩19,266,029	₩22,158,618	(₩1)	(₩3,531,110)	₩-	₩-	₩1,000,319	₩38,893,855
Industrial proprietary rights	116,307	-	-	(27,013)	-	-	-	89,294
Intangible assets under development	1,641,154,459	563,692,728	-	-	(2,536,346)	(344,147,366)	(46,099,322)	1,812,064,153
(Government grants)	(6,334,196)	-	-	-	-	-	-	(6,334,196)
Concession assets usage rights	8,881,051,224	8,200	(39,600,000)	(614,232,411)	-	344,147,366	-	8,571,374,379
(Government grants)	(44,590,329)	-	-	3,555,092	-	-	-	(41,035,237)
Other intangible assets	1,007,490,928	85,709	-	(2,523)	-	-	2	1,007,574,116
	<u>₩11,498,154,422</u>	<u>₩585,945,255</u>	<u>(₩39,600,001)</u>	<u>(₩614,237,965)</u>	<u>(₩2,536,346)</u>	<u>₩-</u>	<u>(₩45,099,001)</u>	<u>₩11,382,626,364</u>

(*1) The difference of ₩2,536,346 thousand between recoverable amount of other intangible asset and the carrying amount is recognized as impairment loss.

(*2) Others included ₩46,151,099 thousand transferred to tangible assets from intangible assets in development.

(3) Significant individual intangible assets as of DECEMBER 31, 2018 AND 2017, are detailed as follows:

(i) December 31, 2018

		(Unit: In thousands of Korean won)
	Description	Amount
Software	Development expense, other intangible assets and construction in progress for data processing	₩51,708,885
Industrial proprietary rights	Copyright, patents and industrial proprietary rights	66,370
Intangible assets under development	Water facilities under construction	2,170,884,651
Concession assets usage rights	Management right of water facilities in capital area	6,433,543,797
	Usage rights of water dams, usage rights of hydrogen dams, concession assets usage rights and management right of aggregate complex	1,353,679,142
Other intangible assets	Waterfront business rights	1,000,000,000
	Membership	8,846,153

(ii) December 31, 2017

		(Unit: In thousands of Korean won)
	Description	Amount
Software	Development expense, other intangible assets and construction in progress for data processing	₩38,893,855
Industrial proprietary rights	Copyright, patents and industrial proprietary rights	89,294
Intangible assets under development	Water facilities under construction	1,805,729,958
Concession assets usage rights	Management right of water facilities in capital area	7,629,551,458
	Usage rights of water dams, usage rights of hydrogen dams, concession assets usage rights and management right of aggregate complex	900,787,684
Other intangible assets	Waterfront business front	1,000,000,000
	Membership	7,574,115

18. Contract asset and contract liability

As mentioned in note 2, Accounting Standard No. 1115 'Revenue occurring in contract with customers' is applied from the beginning of 2018. The effect of this change of accounting policy to the financial statements is mentioned in note 2.

(1) Contract assets and contract liabilities recognized by the Company are as follows:

			(Unit: In thousands of Korean won)
	December 31, 2018	December 31, 2017	
Contract asset – Unclaimed construction	₩366,046,748	₩350,753,841	
Contract liabilities – extra-invoiced construction	60,290,392	13,457,211	

19. Trade and other payables

Details of trade and other payables as of December 31, 2018 and 2017 are as follows:

(Unit: In thousands of Korean won)

	December 31, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current
Trade payables	₩16,911,777	₩-	₩20,906,173	₩-
Other payables	199,631,508	-	205,003,317	-
Accrued expenses	137,713,592	-	120,262,658	-
Dividend payables	312,406	-	312,406	-
Others	3,468,992	-	2,691,682	3,950
	₩358,038,275	₩-	₩349,176,236	₩3,950

20. BORROWINGS AND DEBENTURES:

(1) Details of borrowings and debentures as of DECEMBER 31, 2018 AND 2017, are as follows:

(Unit: In thousands of Korean won)

	December 31, 2018	December 31, 2017
Current:		
Short-term borrowings	₩42,805,666	₩5,018,749
Current portion of long-term borrowings	46,446,021	102,918,456
Current portion of debentures	1,155,190,000	1,341,689,500
	₩1,244,441,687	₩1,449,626,705
Non-current:		
Long-term borrowings	₩506,362,555	₩344,324,609
Less: Present value of discount on long-term borrowings	(1,326,115)	(1,849,578)
Debentures	10,286,318,000	9,937,819,000
Less: Present value of discount on debentures	(6,546,565)	(5,119,730)
	₩10,784,807,875	₩10,275,174,301
	₩12,029,249,562	₩11,724,801,006

(2) Repayment schedule of borrowings and debenture are as follows:

① December 31, 2018

	Borrowings	Debenture	Total
In 1 year	₩89,251,687	₩1,155,190,000	₩1,244,441,687
1~5 years	219,774,000	4,914,508,000	5,134,282,000
After 5 year	286,588,555	5,371,810,000	5,658,398,555
	₩595,614,242	₩11,441,508,000	₩12,037,122,242

② December 31, 2017

	Borrowings	Debenture	Total
In 1 year	₩107,937,205	₩1,341,689,500	₩1,449,626,705
1~5 years	139,335,403	4,780,679,000	4,920,014,403
After 5 year	204,989,206	5,157,140,000	5,362,129,206
	₩452,261,814	₩11,279,508,500	₩11,731,770,314

(3) Details of short-term borrowings as of December 31, 2018 and 2017, are as follows:

Financial institutions	Interest rate	Maturity	December 31, 2018	December 31, 2017
DAEWOO ENGINEERING & CONSTRUCTION CO., LTD.	Libor+1%	2018	₩42,805,666	₩5,018,749

(4) Details of long-term borrowings as of December 31, 2018 and December 31, 2017, are as follows:

(Unit: In thousands of Korean won)					
	Financial institutions	Interest rate	Maturity	December 31, 2018	December 31, 2017
Long-term borrowings	Korea Development Bank	Floating interest rate	2023	₩42,179,600	₩74,194,000
denominated in Korean won	Korea Workers' Compensation & Welfare Service	Floating interest rate	2020	200,000,000	-
	Global Infra Fund	Floating interest rate	2018	-	32,388,246
Long-term borrowings denominated in foreign currencies	Islamic Development Bank	Libor(6M)+4.75%	2024	310,628,977	340,660,819
Total				₩552,808,577	₩447,243,065
Less: Difference from present value of long-term borrowings				(1,326,115)	(1,849,578)
Less: Current portion of long-term borrowings				(46,446,021)	(102,918,456)
Net of long-term borrowings				₩505,036,441	₩342,475,031

(5) Details of debentures as of DECEMBER 31, 2018 AND 2017, are as follows:

(Unit: In thousands of Korean won, JPY and USD)						
Series	Interest rate	Maturity	Dec. 31, 2018		Dec. 31, 2017	
			Foreign currency	Korean won	Foreign currency	Korean won
101st–241th	5.49%, etc.	01/14/2020– 12/21/2047		₩10,370,000,000		₩10,300,000,000
Land compensation (15-01–17-12)	2.60%, etc.	01/07/2017– 12/31/2020		5,689,000		33,592,000
Euro-JPY bonds	2.00%	01/10/2018			JPY 15,000,000	142,366,500
Euro-USD bonds	2.00%, etc.	23/05/2022 - 20/05/2031	USD 750,000	838,575,000	USD 750,000	803,550,000
CHF bonds	2.00%, etc.	23/05/2022 - 20/05/2031	CHF 200,000	227,244,000	-	-
				₩11,441,508,000		₩11,279,508,500
Less: Present value discount				(6,546,565)		(5,119,730)
Less: Current portion				(1,155,190,000)		(1,341,689,500)
				₩10,279,771,435		₩9,932,699,270

21. Other financial liabilities

Details of other financial liabilities as of December 31, and 2017 are as follows:

(Unit: In thousands of Korean won)				
	December 31, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current
Derivatives	₩-	₩42,484,008	₩20,161,613	₩35,837,762

22. EMPLOYEE BENEFITS:

(1) Defined contribution retirement benefit plan

The Group sponsors defined contribution plan for certain qualified employees. The plan assets are managed independently from the Group's assets by the plan administrator. If employees leave before they meet the requirements to be qualified for the defined contribution plan, the Group's contribution payable is reduced by the amount of the contribution lost.

Profit or loss recognized by defined contribution retirement plan in 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Cost of good sells	₩12,178,930	₩11,905,681
Selling and administrative expenses	1,656,821	4,993,589
(Retirement benefit)	767,649	470,894
Other	₩14,603,400	₩17,370,164

(2) Defined benefit retirement benefit plan

(i) Actuarial assumptions as of DECEMBER 31, 2018 AND 2017, are as follows:

	December 31, 2018	December 31, 2017
Discount rate	2.40%	2.47%
Expected rate on plan assets	2.40%	2.47%
Future salary increase rate	3.98%	4.97%

(ii) Details of expenses recognized in profit or loss for the periods ended December 31, 2018 and 2017, are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Current service costs	₩27,423,840	₩26,187,464
Interest on obligation	4,533,457	4,028,510
Interest on plan assets	(275,228)	(229,714)
	<u>₩31,682,069</u>	<u>₩29,986,260</u>

The amounts recognized in employee expenses in the accompanying consolidated statements of comprehensive income are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Cost of sales	₩25,287,716	₩20,504,408
Selling, general and administrative expenses	4,119,462	3,782,587
Others	2,274,891	5,699,265
	<u>₩31,682,069</u>	<u>₩29,986,260</u>

- (iii) Present value of defined benefit obligations and fair value of plan assets as of DECEMBER 31, 2018 AND 2017, are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Present value of defined benefit obligations	₩213,079,957	₩177,153,192
Fair value of plan assets	(13,115,849)	(12,811,300)
Recognized as defined benefit liabilities	<u>₩199,964,108</u>	<u>₩164,341,892</u>

- (iv) Movements in present value of defined benefit obligations for the periods ended December 31, 2018 and 2017, are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Beginning balance	₩177,153,192	₩152,344,059
Current service costs	27,423,839	26,187,464
Interest on obligation	4,533,457	4,028,510
Actuarial loss (gain)	10,793,299	(2,236,133)
Benefits paid	(6,823,830)	(3,170,708)
Ending balance	<u>₩213,079,957</u>	<u>₩177,153,192</u>

- (v) Movements in plan assets for the twelve-month periods ended December 31, 2018 and 2017, are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Beginning balance	₩12,811,300	₩11,966,842
Operating commissions	(32,517)	(33,173)
Interest on plan assets	275,228	229,714
Actuarial loss	(38,906)	(21,504)
Contributions by employer directly to plan assets	257,584	1,151,734
Benefit paid by the plan	(156,840)	(482,313)
Ending balance	<u>₩13,115,849</u>	<u>₩12,811,300</u>

- (vi) Accumulated actuarial loss recorded in other comprehensive income as of DECEMBER 31, 2018 AND 2017, is as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Accumulated actuarial loss	(₩12,847,923)	(₩4,637,112)

- (vii) Main categories of the plan assets as of DECEMBER 31, 2018 AND 2017, are as follows:

	(Unit: In thousands of Korean won)	
	Fair value of plan assets	
	December 31, 2018	December 31, 2017
Financial deposits and others	₩13,115,849	₩12,811,300

For the twelve-month period ended December 31, 2018, the actual return on plan assets is ₩236,322 thousand.

23. Provisions

- (1) Provisions as of December 31, 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)			
	December 31, 2018		December 31, 2017	
	Acquisition		Acquisition	
	cost	Book value	cost	Book value
Current provision for employment	₩88,064,261	₩-	₩86,679,602	₩-
Provision for lawsuit	-	34,330,845	-	37,641,847
Provision for recovery	-	-	-	22,745,859
Provision for greenhouse gas	3,747,484	-	1,498,816	-
Other current provision	4,993,429	-	11,293,735	-
	₩96,805,174	₩34,330,845	₩99,472,153	₩60,387,706

- (2) Changes in provisions as of December 31, 2018 and 2017 are as follows:

① December 31, 2018

	(Unit: In thousands of Korean won)				
	Beginning	Transfer	Use	reversal	Ending
Current provision for employment	₩86,679,602	₩85,162,325	(₩83,777,666)	₩-	₩88,064,261
Provision for lawsuit	37,641,847	2,392,583	(5,703,584)	-	34,330,845
Provision for recovery	22,745,859	17,463,824	(40,209,683)	-	-
Provision for greenhouse gas	1,498,816	3,747,484	(1,498,816)	-	3,747,484
Other current provision	11,293,735	3,816,845	(13,497,067)	3,379,916	4,993,429
	₩159,859,859	₩112,583,061	(₩144,686,816)	₩3,379,916	₩131,136,019

② December 31, 2017

	(Unit: In thousands of Korean won)				
	Beginning	Transfer	Use	reversal	Ending
Current provision for employment	₩81,340,357	₩76,265,041	(₩70,925,797)	₩-	₩86,679,602
Provision for lawsuit	44,703,748	16,690,932	(23,752,833)	-	37,641,847
Provision for recovery	25,023,275	3,496,081	(5,773,498)	-	22,745,859
Provision for greenhouse gas	27,020	1,471,796	-	-	1,498,816
Other current provision	35,097,000	-	(23,803,265)	-	11,293,735
	<u>₩186,191,400</u>	<u>₩97,923,850</u>	<u>(₩124,255,393)</u>	<u>₩-</u>	<u>₩159,859,859</u>

24. GOVERNMENT GRANTS:

(1) Details of government grants as of DECEMBER 31, 2018 AND 2017, are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Buildings	(₩5,315,130)	(₩5,786,451)
Intangible assets under development	(6,334,196)	(6,334,196)
Concession assets usage rights	(16,376,591)	(41,035,237)
	<u>(₩28,025,917)</u>	<u>(₩53,155,884)</u>

(2) Details of government grants related to assets for the periods ended December 31, 2018 and 2017, are as follows:

(i) December 31, 2018

(Unit: In thousands of Korean won)

	Book value at January 1, 2018	Received	Acquisitions	Offset of depreciation	Profit	Others	Book value at December 31, 2018
Buildings	(₩5,786,451)	₩-	₩-	₩471,321	₩-	₩-	(₩5,315,130)
Intangible assets under development	(6,334,196)	-	-	-	-	-	(₩6,334,196)
Concession assets usage rights	(41,035,237)	-	-	1,344,098	-	23,314,548	(₩16,376,591)
	<u>(₩53,155,884)</u>	<u>₩-</u>	<u>₩-</u>	<u>₩1,815,419</u>	<u>₩-</u>	<u>₩23,314,548</u>	<u>(₩28,025,917)</u>

(ii) December 31, 2017

(Unit: In thousands of Korean won)

	Book value at January 1, 2017	Received	Acquisitions	Offset of depreciation	Profit	Others	Book value at December 31, 2017
Buildings	(₩827,286)	(₩5,000,000)	₩-	₩40,835	₩-	₩-	(₩5,786,451)
Intangible assets under development	(6,334,196)	-	-	-	-	-	(₩6,334,196)
Concession assets usage rights	(44,590,329)	-	-	3,555,092	-	-	(₩41,035,237)
	<u>(₩51,751,811)</u>	<u>(₩5,000,000)</u>	<u>₩-</u>	<u>₩3,595,927</u>	<u>₩-</u>	<u>₩-</u>	<u>(₩53,155,884)</u>

25. Construction charges

(1) Change in construction charge revenue in 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)	
	2018	2017
Setoff with deferred construction charge revenue	₩281,930	₩266,500
Construction charge setoff with depreciation	485,843	485,843
	₩767,773	₩752,343

(2) Changes in deferred revenue relating to construction charge in 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)	
	2018	2017
Beginning	₩41,392,575	₩41,659,075
Increment	5,403,116	-
Deletion	(281,930)	(266,500)
Ending	₩46,513,761	₩41,392,575

(3) Changes in construction charge recognized as subtraction of assets are as follows:

	(Unit: In thousands of Korean won)	
	2018	2017
Beginning	₩4,889,628	₩5,375,471
Deletion	(485,843)	(485,843)
Ending	₩4,403,785	₩4,889,628

26. Non-financial liabilities

	(Unit: In thousands of Korean won)			
	December 31, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current
Advance payment	₩1,116,491,357	₩-	₩1,105,089,646	₩-
Accrued revenue	200,601	-	193,710	-
Withholdings	14,583,792	-	21,951,071	-
Long-term deferred construction charge revenue	60,290,392	-	-	-
Extra invoiced construction	-	46,513,761	-	41,392,575
Other non-financial liabilities	-	-	8,685,620	-
Total	₩1,191,566,142	₩46,513,761	₩1,135,920,047	₩41,392,575

27. ISSUED CAPITAL:

(1) Details of issued capital as of DECEMBER 31, 2018 AND 2017, are as follows:

(i) December 31, 2018

	(Unit: In thousands of Korean won)		
	Government	Others	Total
Share capital	₩7,877,921,930	₩608,416,367	₩8,486,338,296

(ii) December 31, 2017

	(Unit: In thousands of Korean won)		
	Government	Others	Total
Share capital	₩7,500,557,930	₩608,416,367	₩8,108,974,296

(2) Details of discount on shares issued as of DECEMBER 31, 2018 AND 2017, are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Discount on shares issued	₩8,841,163	₩7,029,816

28. UNDISPOSED DEFICITS:

(1) Details of undisposed deficits as of December 31, 2018 and December 31, 2017, are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Legal reserve (*1)	₩-	₩-
Other legal reserves(*1)	-	-
Undisposed deficits	(722,140,291)	(917,017,301)
	<u>(₩722,140,291)</u>	<u>(₩917,017,301)</u>

(*1) In accordance with the K-water Act, an amount equal to at least 20% of net income in each fiscal year is required to be appropriated as a legal reserve until the reserve equals 50% of share capital. The legal reserve may not be utilized for cash dividends, but may only be used to offset a deficit, if any, or may be transferred to share capital.

- (2) Changes in undisposed deficits for the periods ended December 31, 2018 and 2017, are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Beginning balance	(₩917,017,301)	(₩1,080,255,882)
Profit for the period	248,607,867	161,559,892
Actuarial gain (loss)	(8,210,811)	1,678,689
Others	(45,520,045)	-
Ending balance	(₩722,140,290)	(₩917,017,301)

- (3) Dividends paid for period ended December 31, 2018 and 2017, are as follows:

	(Unit: In thousands of Korean won)			
	December 31, 2018		December 31, 2017	
	Investment	Dividend	Investment	Dividend
Investment	₩8,486,338,296	₩-	₩8,108,974,296	₩-

- (4) Changes in actuarial loss for the periods ended December 31, 2018 and 2017, are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Beginning balance	(₩41,785,055)	(₩43,463,744)
Changes for the period	(10,832,205)	2,214,629
Tax effect	2,621,394	(535,940)
Ending balance	(₩49,995,866)	(₩41,785,055)

29. Disposal statements of deficit

Disposal statements of deficit for 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)			
	2018		2017	
	Expected date : 2019.02.26		Determined date : 2019.02.27	
I. Undisposed deficit	-	(722,140,291)	-	(917,017,301)
Undisposed deficit	(917,017,301)		(1,080,255,882)	
Net income	248,607,867		161,559,892	
Actuarial gain(loss)	(8,210,811)		1,678,689	
IFRS adjustment effect	(45,520,045)		-	
II. Disposed amount		-		-
III. Undisposed Deficit carried forward		(722,140,291)		(917,017,301)

30. Other equity components

(1) Details of other equity factor in 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Other equity surplus	(₩516,117)	(₩1,628,759)
Other comprehensive accumulated income	(54,075,982)	(36,219,923)
	(₩54,592,099)	(₩37,848,682)

(2) Changes of other equity surplus in 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Beginning	(₩1,628,759)	(₩1,628,640)
Equity changes of subsidiaries	1,112,643	(119)
Ending	(₩516,116)	(₩1,628,759)

(3) Changes in other comprehensive income in 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)					
	2018					
	Gain (loss) on FVOCI	Gain (loss) on AFC evaluation	Gain (loss) on derivatives evaluation	Equity method equity changes	Foreign business translation gain (loss)	Total
Beginning	₩-	(₩59,037)	₩15,027,817	(₩12,427,654)	(₩38,761,049)	(₩36,219,923)
Changes	(42,235)	59,037	(4,925,308)	(592,209)	(13,558,007)	(19,058,723)
Tax effect	10,739	-	1,191,925	-	-	1,202,664
Ending	(₩31,496)	₩-	₩11,294,434	(₩13,019,863)	(₩52,319,056)	(₩54,075,982)

	2017				
	Gain (loss) on AFC evaluation	Gain (loss) on derivatives evaluation	Equity method equity changes	Foreign business translation gain (loss)	Total
Beginning	(₩59,950)	(₩3,869,081)	(₩1,958,083)	(₩7,008,931)	(₩12,896,044)
Changes	1,205	24,929,945	(10,469,571)	(31,752,119)	(17,290,540)
Tax effect	(292)	(6,033,047)	-	-	(6,033,339)
Ending	(₩59,037)	₩15,027,817	(₩12,427,654)	(₩38,761,050)	(₩36,219,923)

31. REVENUE:

Details of revenue of the Group for the periods ended December 31, 2018 and 2017, are as follows:

(Unit: In thousands of Korean won)

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
Revenue from selling product:		
Held-for-sale land revenue	₩572,863,589	₩544,912,165
Water supply business revenue	1,142,324,992	1,116,183,837
Multipurpose dams business revenue	295,754,255	292,126,733
Power generation revenue	203,927,355	135,410,190
Dam management revenue	44,428,976	40,794,242
Ara waterway operation business revenue	38,939,997	100,896,577
Renewable energy revenue	78,448,826	87,332,692
Certified emission reduction	4,164,965	6,726,134
	<u>₩2,380,852,955</u>	<u>₩2,324,382,570</u>
Revenue from providing service:		
Local waterworks business revenue	160,590,884	157,493,061
Sewage treatment business revenue	24,323,432	27,311,394
Four River management business revenue	25,572,727	24,663,636
	<u>₩210,487,043</u>	<u>₩209,468,091</u>
Revenue from construction contract:		
Water resource revenue	73,308,462	92,539,680
Sewage construction revenue	5,642,838	9,437,524
Private investment construction revenue (waterworks)	440,707,365	303,732,462
Private investment construction revenue (multipurpose dams)	46,570,809	155,259,186
Private investment construction revenue (local)	-	49,038,559
Private investment construction revenue (Kyung-in Canal Project)	3,830,910	8,240,085
	<u>₩570,060,384</u>	<u>₩618,247,496</u>
Other revenue:		
Foreign business revenue	₩9,063,715	7,284,073
Aggregate business revenue	-	19,564,695
Incidental business revenue	204,512,918	196,613,369
	<u>₩213,576,633</u>	<u>₩223,462,137</u>
	<u>₩3,374,977,015</u>	<u>₩3,375,560,294</u>

32. Selling and administrative expenses

	(Unit: In thousands of Korean won)	
	2018	2017
Contribution on employment benefit fund	₩6,758,000	₩6,500,000
Salary	53,818,288	42,834,599
Retirement benefit	3,025,391	8,776,176
Employment benefit expenses	6,699,299	6,365,157
Insurance	862,218	4,395,443
Depreciation	4,781,457	4,229,981
Amortization	630,023	593,587
Bad debt expenses (reversal)	50,866	(33,848)
Service fees	14,700,612	7,946,004
Advertisement expenses	9,753,437	11,849,562
Education and training expenses	5,707,574	6,617,792
Vehicle management expenses	361,369	352,129
Publication expenses	433,314	492,015
Business expenses	127,574	157,616
Rental expenses	1,758,762	1,523,220
Communication expenses	2,333,733	2,360,340
Taxes and duties	3,257,520	2,495,935
Supplies expenses	650,932	733,372
Sewage expenses	1,676,661	1,535,394
Repair expenses	9,247,816	9,542,670
Development expenses	36,424,189	27,923,041
Transportation expenses	2,478,129	2,443,614
Clothing expenses	200,071	388,285
Investigation expenses	489,235	342,175
Promotion expenses	960,074	805,292
Sales commission	980,145	894,216
Other selling and administrative expenses	-	-
- Reward expenses	314,352	277,751
- Registration expenses	174,950	166,463
- Cooperation expenses	54,100	73,566
- Miscellaneous expenses	1,475,302	1,538,440
Total	₩170,185,393	₩154,119,987

33. Other revenue and expenses

(1) Details of other revenue in 2018 and 2017 are as follows:

(Unit: In thousands of Korean won)

	2018	2017
Reversal of other bad debt allowance	₩3,379,916	₩-
Construction charge revenue	281,930	266,500
Rental revenue	2,386,175	2,142,666
Miscellaneous revenue		
- Compensation revenue	11,012,318	10,908,362
- Miscellaneous income	123,644,276	55,132,765
Total	₩140,704,615	₩68,450,293

(2) Detail of other expenses in 2018 and 2017 are as follows:

(Unit: In thousands of Korean won)

	2018	2017
Transfer of other provision	₩15,254,300	₩22,142,824
Other bad debt expenses	1,047,149	508,991
Contribution expenses	2,291,192	1,904,907
Miscellaneous expenses		
- Cost loss	104,885	31
- Miscellaneous loss	951,481	16,678,225
- Sale cancellation loss	258,865	318,900
- Sale return loss	237,942	1,333,621
Total	₩20,145,814	₩42,887,499

34. Other gain and loss

(Unit: In thousands of Korean won)

	2018	2017
Gain on disposal of tangible assets	₩999,291	₩2,085,381
Loss on disposal of tangible assets	(292,573)	(1,438,402)
Loss on disposal of intangible assets	(219,570)	-
Impairment loss on intangible assets	-	(2,536,346)
Miscellaneous gain (loss)		
- Loss on disposal of inventories	(46,335)	-
Total	₩440,813	(₩1,889,367)

35. Financial revenue

(1) Details of financial revenue in 2018 and 2017 are as follows:

(Unit: In thousands of Korean won)

	2018	2017
Interest income	₩22,092,759	₩12,610,934
Dividend income	31,651	743,367
Gain on evaluation of derivatives	34,547,000	-
Gain on transaction of derivatives	6,894,000	-
Gain on evaluation of foreign currencies	74,227	84,655,000
Gain on transaction of foreign currencies	977,311	27,332,038
Total	₩64,616,948	₩125,341,339

(2) Details of interest income in 2018 and 2017 are as follows:

(Unit: In thousands of Korean won)

	2018	2017
Cash and cash equivalent	₩19,733,400	₩7,026,435
Trade and other receivables	2,359,359	5,584,499
Total	₩22,092,759	₩12,610,934

36. Financial cost

(1) Details of financial costs in 2018 and 2017 are as follows:

(Unit: In thousands of Korean won)

	2018	2017
Interest expenses	₩265,595,188	₩262,545,872
Loss on evaluation of derivatives	-	84,655,000
Loss on transaction of derivatives	810,000	27,332,000
Loss on transaction of FV-PL	24,772	-
Loss on repayment of financial liabilities	-	3,778,767
Loss on evaluation of foreign currencies	109,709,786	1,132,758
Loss on transaction of foreign currencies	4,818,738	3,845,213
Total	₩380,958,484	₩383,289,610

(2) Details of interest expenses in 2018 and 2017 are as follows:

	(Unit: In thousands of Korean won)	
	2018	2017
Trade and other payables	₩65,950	₩94,095
Long-term borrowings	30,824,301	2,936,969
Debenture	366,016,953	380,748,221
Derivatives	27,237,023	29,685,478
Subtotal	₩424,144,227	₩413,464,763
Less: capitalization of interest cost	(158,549,037)	(150,918,890)
Total	₩265,595,190	₩262,545,873

37. INCOME TAX EXPENSE:

(1) The components of income tax expense for the periods ended December 31, 2018 and 2017, are as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Current tax expense	₩11,881,171	₩2,935,617
Adjustment for prior years	(1,188,440)	912,963
Income taxes directly charged to equity	3,824,057	(6,569,279)
Origination and reversal of temporary differences	18,848,822	10,082,729
Total income tax expense	₩33,365,610	₩7,362,030

(2) Reconciliation of effective tax rate for the periods ended December 31, 2018 and 2017, is as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
Profit before income tax expense	₩273,539,390	₩192,296,083
Tax rate	24.20%	24.20%
Income tax using the Group's statutory tax rate	66,196,532	46,535,652
Adjustments:		
Effect of graduated tax rates	(547,079)	(462,000)
Current adjustments for prior periods	(1,188,440)	900,125
Non-taxable income	(475,376)	(5,164,627)
Non-deductible expenses	5,654,647	6,033,047
Others	(36,274,674)	(40,480,166)
Income tax expense	₩33,365,610	₩7,362,030
Average effective tax rate	12.20%	3.83%

(3) Details of tax effect recognized in other comprehensive income in 2018 and 2017 are as follows:
(Unit: In thousands of Korean won)

	2018	2017
Amount occurred on accounts recognized in other comprehensive income		
Gain (loss) on evaluation of derivatives	₩1,191,925	(₩6,033,047)
Gain (loss) on evaluation of fair value financial assets	10,739	(292)
Actuarial gain (loss)	2,621,394	(535,940)
Total	₩3,824,058	(₩6,569,279)

(4) Details of deferred tax assets (liabilities) as of December 31, 2018 and 2017 are as follows:

① December 31, 2018

(Unit: In thousands of Korean won)

	Beginning	Amount recognized in profit or loss	Amount recognized in other comprehensive income	Ending
Depreciation	₩9,621,978	₩94,712,667	₩-	₩104,334,644
Government subsidy	11,653,724	(5,977,275)	-	5,676,449
Construction charge	1,183,290	(117,574)	-	1,065,716
Deferred revenue of construction charge	10,017,003	1,239,327	-	11,256,330
Defined benefit obligation	33,861,796	7,510,405	2,621,394	43,993,594
Pension assets	(2,938,217)	(11,365)	-	(2,949,583)
Financial assets at FV	18,892	46,056	10,739	75,687
Investment stocks	3,347,189	1,728,069	-	5,075,258
Accrued expenses of aggregate management	5,504,498	(5,504,498)	-	-
Surplus of bad debt allowances	799,671	(58,736)	-	740,935
Special depreciation	(3,045,381)	148,640	-	(2,896,741)
Construction interest on inventory	(168,314,912)	(23,296,555)	-	(191,611,467)
Ownership tax on inventory	(4,704,404)	(3,741,029)	-	(8,445,433)
Accrued revenue	(10,108)	(31,423)	-	(41,531)
Taxes and duties	(3,601)	-	-	(3,601)
Pre-depreciation allowance	(15,459,355)	(802,884)	-	(16,262,239)
Dividend payable	(5,430)	-	-	(5,430)
Acquisition tax	(37,450)	-	-	(37,450)
Provision for lawsuit	11,676,148	(2,313,617)	-	9,362,532
Payment guarantee for foreign subsidiary	116,281	39,516	-	155,796
Loss on evaluation of derivatives	(1,222,249)	-	1,191,925	(30,325)
Depreciation of marina management right	1,225,815	-	-	1,225,815
Provision of greenhouse gas	362,713	544,178	-	906,891
Foreign currency ordinary deposit	4,612	-	-	4,612
Impairment on 4 major rivers	(242,000,000)	-	-	(242,000,000)
Foreign currency adjustment asset	5,545,146	-	-	5,545,146
Common purchase tax	243,518	(11,274)	-	232,244
Acquisition tax	141,689	(7,353)	-	134,336
Unclaimed contraction (contraction assets)	-	(81,125,427)	-	(81,125,427)
Others	(13,336,308)	(1,456,323)	-	(14,792,631)
Deficit carried forward	1,708,164,058	(23,717,033)	-	1,684,447,025
Subtotal	₩1,352,410,606	(₩42,203,508)	₩3,824,058	₩1,314,031,152
Deferred income tax assets with low realizability	(1,313,241,616)	33,966,693	-	(1,279,274,923)
Deferred tax assets (liabilities)	39,168,990	(8,236,815)	3,824,058	34,756,229

② December 31, 2017

	(Unit: In thousands of Korean won)			
	Beginning	Amount recognized in profit or loss	Amount recognized in other comprehensive income	Ending
Depreciation	₩6,375,172	₩3,246,806	₩-	₩9,621,978
Government subsidy	12,523,938	(870,214)	-	11,653,724
Construction charge	1,300,864	(117,574)	-	1,183,290
Deferred revenue of construction charge	10,346,410	(329,407)	-	10,017,003
Defined benefit obligation	22,943,746	11,453,990	(535,940)	33,861,796
Pension assets	(2,895,976)	(42,241)	-	(2,938,217)
Financial assets at FV	19,184	-	(292)	18,892
Investment stocks	58,149	3,289,041	-	3,347,189
Accrued expenses of aggregate management	6,055,633	(551,135)	-	5,504,498
Surplus of bad debt allowances	769,110	30,561	-	799,671
Special depreciation	(3,221,889)	176,509	-	(3,045,381)
Construction interest on inventory	(142,396,463)	(25,918,449)	-	(168,314,912)
Ownership tax on inventory	(2,750,858)	(1,953,545)	-	(4,704,404)
Accrued revenue	(11,829)	1,721	-	(10,108)
Taxes and duties	(3,601)	-	-	(3,601)
Pre-depreciation allowance	(15,960,292)	500,936	-	(15,459,355)
Dividend payable	(5,430)	-	-	(5,430)
Acquisition tax	(37,450)	-	-	(37,450)
Provision for lawsuit	18,848,459	(7,172,310)	-	11,676,148
Payment guarantee for foreign subsidiary	107,552	8,729	-	116,281
Loss on evaluation of derivatives	1,235,247	3,575,550	(6,033,047)	(1,222,249)
Depreciation of marina management right	1,225,815	-	-	1,225,815
Provision of greenhouse gas	6,539	356,175	-	362,713
Foreign currency ordinary deposit	-	4,612	-	4,612
Impairment on 4 major rivers	(242,000,000)	-	-	(242,000,000)
Foreign currency adjustment asset	5,545,146	-	-	5,545,146
Common purchase tax	244,243	(726)	-	243,518
Acquisition tax	149,041	(7,353)	-	141,689
Other	(14,778,621)	1,442,313	-	(13,336,308)
Deficit carried forward	1,731,527,342	(23,363,284)	-	1,708,164,058
소 계	₩1,395,219,181	(₩36,239,295)	(₩6,569,279)	₩1,352,410,606
Deferred income tax assets with low realizability	(1,345,967,463)	32,725,847	-	(1,313,241,616)
Deferred tax assets (liabilities)	49,251,718	(3,513,448)	(6,569,279)	39,168,990

(5) Details of temporary difference not recognized as deferred tax assets in 2018 and 2017 are as follows:

(Unit: In thousands of Korean won)

	December 31, 2018	December 31, 2017
Temporary difference subtracted		
Taxable deficit	₩1,279,274,923	₩1,313,241,616

(6) Details of deferred tax assets are as follows:

(Unit: In thousands of Korean won)

	December 31, 2018	December 31, 2017
Deferred tax assets	₩34,814,380	₩39,227,137
Deferred tax liabilities	(58,149)	(58,149)

38. Characteristic categories of expenses

(1) 2018

(Unit: In thousands of Korean won)

	Changes in inventories	Selling and administrative expense	Cost of goods sold	Total
Changes in inventory:				
Raw materials	₩369,506	₩-	₩-	₩369,506
Products	(516,604,949)	-	-	(516,604,949)
Supplies	(31,996)	-	-	(31,996)
Other inventories	36,454	-	-	36,454
Purchased amount of inventories	-	-	1,868,828,368	1,868,828,368
Salary	-	51,067,396	356,913,523	407,980,919
Retirement expenses	-	5,776,283	37,730,185	43,506,468
Employment benefit	-	6,699,299	39,292,464	45,991,763
Insurance expenses	-	862,218	852,532	1,714,749
Depreciation	-	4,781,457	83,821,760	88,603,216
Amortization	-	630,023	551,535,229	552,165,251
Bad debt expenses	-	50,866	-	50,866
Service fees	-	14,700,612	51,090,166	65,790,777
Advertisement expenses	-	9,753,437	1,102,821	10,856,258
Education and training expenses	-	5,707,574	1,158,885	6,866,459
Vehicle management expenses	-	361,369	1,957,129	2,318,497
Publication expenses	-	433,314	788,969	1,222,283
Business expenses	-	127,574	12,743	140,316
Rental expenses	-	1,758,762	3,813,666	5,572,428
Communication expenses	-	2,333,733	5,792,787	8,126,520
Taxes and duties	-	3,257,520	84,117,999	87,375,519
Supplies expenses	-	650,932	2,295,352	2,946,284
Sewage expenses	-	1,414,615	5,050,086	6,464,701
Repairment expenses	-	9,247,816	113,823,555	123,071,371
Development expenses	-	36,424,189	8,129,076	44,553,264
Transportation expenses	-	2,478,129	18,134,730	20,612,859
Clothing expenses	-	200,071	5,300	205,371
Investigation expenses	-	489,235	3,105,679	3,594,914
Promotion expenses	-	370,471	-	370,471
Sales commission	-	589,603	-	589,603
Others	-	10,018,894	22,238,867	32,257,761
Total	(₩516,230,985)	₩170,185,392	₩3,261,591,871	₩2,915,546,271

(2) 2017

(Unit: In thousands of Korean won)

	Changes in inventories	Selling and administrative expense	Cost of goods sold	Total
Changes in inventory:				
Raw materials	(₩735,260)	₩-	₩-	(₩735,260)
Products	(577,850,728)	-	-	(577,850,728)
Purchased amount of inventories	-	-	1,960,343,250	1,960,343,250
Salary	-	42,834,599	349,941,166	392,775,765
Retirement expenses	-	8,776,176	35,545,162	44,321,338
Employment benefit	-	6,365,157	39,038,040	45,403,197
Insurance expenses	-	4,395,443	1,121,475	5,516,918
Depreciation	-	4,229,981	82,676,180	86,906,161
Amortization	-	593,587	613,361,362	613,954,949
Bad debt expenses	-	(33,848)	-	(33,848)
Service fees	-	7,946,004	49,834,974	57,780,978
Advertisement expenses	-	11,849,562	1,040,920	12,890,482
Education and training expenses	-	6,617,792	1,058,162	7,675,954
Vehicle management expenses	-	352,129	2,043,479	2,395,608
Publication expenses	-	492,015	686,715	1,178,729
Business expenses	-	157,616	16,562	174,178
Rental expenses	-	1,523,220	3,387,926	4,911,146
Communication expenses	-	2,360,340	5,647,383	8,007,723
Taxes and duties	-	2,495,935	75,889,993	78,385,928
Supplies expenses	-	733,372	2,015,555	2,748,928
Sewage expenses	-	1,535,394	3,510,705	5,046,098
Repairment expenses	-	9,542,670	104,212,493	113,755,163
Development expenses	-	27,923,041	7,280,825	35,203,866
Transportation expenses	-	2,443,614	17,172,893	19,616,507
Clothing expenses	-	388,285	5,489	393,773
Investigation expenses	-	342,175	2,914,886	3,257,061
Promotion expenses	-	805,292	-	805,292
Sales commission	-	894,216	-	894,216
Others	-	8,556,220	13,564,282	22,120,502
합 계	(₩578,585,988)	₩154,119,987	₩3,372,309,877	₩2,947,843,874

39. CATEGORIES OF FINANCIAL INSTRUMENTS:

(1) Financial assets and liabilities by categories as of DECEMBER 31, 2018 AND 2017, are detailed as follows:

(i) December 31, 2018

(Unit: In thousands of Korean won)				
Current financial assets	Financial assets measured at amortized cost	Financial assets at FVOCI	Derivative hedging instrument designated	Total
Cash and cash equivalents	₩264,522,916	₩-	₩-	₩264,522,916
Short-term loans	1,700,412	-	-	1,700,412
Short-term financial assets	134,486,394	-	-	134,486,394
Trade and other receivables	766,712,676	-	-	766,712,676
Total	₩1,167,422,398	₩-	₩-	₩1,167,422,398

(Unit: In thousands of Korean won)					
Non-current financial assets	Financial assets measured at amortized cost	Financial assets at FVOCI	Financial assets at FVPL	Derivative hedging instrument designated	Total
Derivative instrument assets	₩-	₩-	₩-	₩65,161,316	₩65,161,316
Profit or loss-fair value measurement financial assets	-	-	2,387,228	-	2,387,228
Other comprehensive income-fair value measurement financial assets	-	26,480,662	-	-	26,480,662
Long-term loan	16,237,327	-	-	-	16,237,327
Trade and other receivables	639,789,671	-	-	-	639,789,671
Total	₩656,026,998	₩26,480,662	₩2,387,228	₩65,161,316	₩750,056,204

(Unit: In thousands of Korean won)		
Current financial liabilities	Financial liabilities measured at amortized cost	Total
Short-term borrowings	₩42,805,666	₩42,805,666
Current portion of long-term borrowings	46,446,021	46,446,021
Current portion of debentures	1,155,190,000	1,155,190,000
Trade and other payables	357,725,869	357,725,869
Total	₩1,602,167,556	₩1,602,167,556

(Unit: In thousands of Korean won)

Non-current financial liabilities	Financial liabilities measured at amortized cost	Derivative hedging instrument designated	Total
Long-term borrowings	₩505,036,441	₩-	₩505,036,441
Debentures	10,279,771,435	-	10,279,771,435
Derivative instrument liabilities	-	33,087,219	33,087,219
Total	₩10,784,807,876	₩33,087,219	₩10,817,895,095

(ii) December 31, 2017

(Unit: In thousands of Korean won)

Current financial assets	Financial assets at FVTPL	Loans and receivables	Derivative hedging instrument designated	Total
Cash and cash equivalents	₩-	₩160,865,887	₩-	₩160,865,887
Short-term loans	-	8,640,246	-	8,640,246
Short-term financial assets	23,897,420	-	-	23,897,420
Trade and other receivables	-	338,920,824	-	338,920,824
Derivative instrument assets	-	-	2,180,359	2,180,359
Total	₩23,897,420	₩508,426,957	₩2,180,359	₩534,504,736

(Unit: In thousands of Korean won)

Non-current financial assets	Loans and receivables	AFS financial assets	Derivative hedging instrument designated	Total
AFS assets	₩-	₩23,131,909	₩-	₩23,131,909
Loans and receivables	17,762,987	-	-	17,762,987
Derivative instrument assets	-	-	28,672,132	28,672,132
Trade and other receivables	₩17,762,987	₩23,131,909	₩28,672,132	₩69,567,028
Total	662,483,263	-	-	662,483,263

(Unit: In thousands of Korean won)			
Current financial liabilities	Financial liabilities measured at amortized cost	Derivative hedging instrument designated	Total
Short-term borrowings	₩5,018,749	₩-	₩5,018,749
Current portion of long-term borrowings	102,918,456	-	102,918,456
Current portion of debentures	1,341,689,500	-	1,341,689,500
Derivative instrument liabilities	-	20,161,613	20,161,613
Trade and other payables	348,863,829	-	348,863,829
Total	₩1,798,490,534	₩20,161,613	₩1,818,652,147

(Unit: In thousands of Korean won)			
Non-current financial liabilities	Financial liabilities measured at amortized cost	Derivative hedging instrument designated	Total
Long-term borrowings	₩342,475,031	₩-	₩342,475,031
Debentures	9,932,699,270	-	9,932,699,270
Derivative instrument liabilities	-	35,837,762	35,837,762
Trade and other payables	3,950	-	3,950
Total	₩10,275,178,251	₩35,837,762	₩10,311,016,013

(2) Financial income and costs by categories for the periods ended December 31, 2018 and 2017, are as follows:

(Unit: In thousands of Korean won)		
	December 31, 2018	December 31, 2017
Loans and receivables (including cash and cash equivalents):		
Interest income	₩22,092,759	₩12,610,934
AFS financial assets:		
Dividend income	31,651	743,367
Derivative hedging instrument designated:		
Loss on transaction of derivative instruments, net	6,084,000	(27,332,000)
Gain (loss) on valuation of derivative instruments, net	34,547,000	(84,655,000)
Financial liabilities measured at amortized cost:		
Interest expense	(265,595,188)	(262,545,872)
Loss on repayment of financial liabilities	-	(3,778,767)
Gain (loss) on foreign currency transactions, net	(3,841,426)	23,486,825
Gain (loss) on foreign currency translation, net	(109,635,559)	83,522,242
	₩316,316,763	₩257,948,271

40. RISK MANAGEMENT:

(1) Capital risk management

The fundamental goal of capital management is to maintain the Group's going-concern ability and to maximize shareholders' value by means of minimizing capital finance cost. The Group's management audits the Group's capital structure periodically and maintains optimal capital structure by borrowings, capital increase and so forth.

As of DECEMBER 31, 2018 AND 2017, the Group defines net debt and equity as follows:

(Unit: In thousands of Korean won)

	December 31, 2018	December 31, 2017
Net debt:		
Debts (borrowings and debentures)	₩12,029,249,563	₩11,724,801,006
Less: Cash and cash equivalents	(264,522,916)	(160,865,887)
	11,764,726,647	11,563,935,119
Equity	7,787,128,041	7,234,004,160
Total net debt and equity	₩19,551,854,688	₩18,797,939,279
Adjusted debt ratio	60.17%	61.52%

(2) Financial risk management

(i) Goal of financial risk management

The board of directors is responsible for preparing overall systems for financial risk management and supervising financial risk management. The board of directors established Risk Management Committee to develop the strategy for financial risk management and supervise financial risk management. The committee audits the compliance of the risk management policy and procedure periodically and reports the results to the board of directors.

The Group's policies for financial risk management are prepared to recognize and analyze the Group's financial risk, establish the Group's risk threshold and control and manage the Group's financial risk to be not more than the risk threshold. The Group's risk management systems and policies are audited periodically to reflect the market environments and the Group's underlying operations. The Group makes employees understand their own roles and responsibilities and structures control environments by training employees and outlining financial risk management standards and procedures.

(ii) Credit risk management

(a) Exposure to credit risk

The carrying amount of financial assets represents the maximum credit exposure. The Group limits its exposure to credit risk by depositing cash and cash equivalents in financial institutions that have a high credit rate. The maximum exposure to credit risk at the reporting date is as follows:

	(Unit: In thousands of Korean won)	
	December 31, 2018	December 31, 2017
AFS financial assets	₩-	₩23,131,909
Profit or loss-Fair value measurement financial assets	2,387,228	-
Other comprehensive income –Fair value measurement financial assets	26,480,662	-
Loans and receivables	1,424,447,752	1,027,841,051
Cash and cash equivalent	264,522,916	160,865,887
Short-term financial instruments	134,486,394	23,897,420
Derivative assets used for hedging	65,161,316	30,852,491
Financial guarantee contracts (*)	180,720	180,720
	<u>₩1,917,666,988</u>	<u>₩1,266,769,478</u>

(*) The above amounts are maximum amounts that the Group should pay in case the principal debtors make claims.

(iii) Liquidity risk management

(a) December 31, 2018

The following are the contractual maturities of financial liabilities as of December 31, 2018, including estimated interest payments and excluding the impact of netting agreements:

(Unit: In thousands of Korean won)

	Carrying amount	Contractual cash flows	6 months or less	6–12 months
Trade and other payables	₩357,725,869	₩357,725,869	₩357,725,869	₩-
Debentures	11,434,961,435	8,792,413,064	488,617,525	1,035,591,525
Borrowings	594,288,128	618,892,339	57,281,160	38,515,915
Derivative financial liabilities used for hedging	42,484,008	42,484,008	-	-
	<u>₩12,429,459,440</u>	<u>₩9,811,515,280</u>	<u>₩903,624,554</u>	<u>₩1,074,107,440</u>

(Unit: In thousands of Korean won)

	1 year–2 years	2–5 years	More than 5 years
Trade and other payables	₩-	₩-	₩-
Debentures	1,343,643,373	4,761,401,523	1,163,159,118
Borrowings	19,102,420	216,578,012	287,414,833
Derivative financial liabilities used for hedging	4,249,900	19,937,487	18,296,621
	<u>₩1,366,995,693</u>	<u>₩4,997,917,022</u>	<u>₩1,468,870,572</u>

(b) December 31, 2017

The following are the contractual maturities of financial liabilities as of December 31, 2017, including estimated interest payments and excluding the impact of netting agreements:

(Unit: In thousands of Korean won)

	Carrying amount	Contractual cash flows	6 months or less	6–12 months
Trade and other payables	₩348,867,779	₩348,867,779	₩348,863,829	₩-
Debentures	11,274,388,770	13,537,636,151	1,099,465,795	611,693,295
Borrowings	450,412,237	453,687,565	16,941,075	92,863,881
Derivative liabilities used for hedging	55,999,375	55,999,375	-	20,161,613
	<u>₩12,129,668,161</u>	<u>₩14,396,190,870</u>	<u>₩1,465,270,699</u>	<u>₩724,718,789</u>

(Unit: In thousands of Korean won)

	1 year–2 years	2–5 years	More than 5 years
Trade and other payables	₩3,950	₩-	₩-
Debentures	1,489,833,849	4,281,069,167	6,055,574,045
Borrowings	23,147,961	16,766,926	303,967,722
Derivative liabilities used for hedging	-	27,992,874	7,844,888
	<u>₩1,512,985,760</u>	<u>₩4,325,828,967</u>	<u>₩6,367,386,655</u>

(iv) Currency risk

The Group's exposure to foreign currency risk is as follows based on notional amounts:

(Unit: In thousands of Korean won)

	December 31, 2018		December 31, 2017	
	USD	CHF	USD	JPY
Borrowings	353,434,642	-	345,679,569	-
Debentures	838,575,000	227,244,000	803,550,000	142,366,500

As of December 31, 2018, the Group entered into currency swap contracts to hedge foreign currency risk, and the currency swap was designated as a hedging instrument for a hedge of foreign currency risk related to liabilities denominated in foreign currencies. Currency swap was designed to offset fluctuation of foreign currency-denominated liabilities; therefore, assuming all other variables are consistent, there might be no effect on income before taxes resulting from fluctuation in foreign exchange rate.

(v) Interest rate risk

Borrowings with floating rates were exposed to interest rate risk. The Group entered into currency and interest rate swap contracts to hedge interest rate risk of a considerable portion of borrowings with floating rates. The Group measures its interest rate risk based on 100 basis points (“bp”), which reflects the management’s assessment of reasonable level of interest rate risk.

- (a) At the reporting date, the interest rate profile of the Group’s interest-bearing financial liabilities is as follows:

(Unit: In thousands of Korean won)		
	December 31, 2018	December 31, 2017
Debentures	₩170,000,000	₩277,140,000
Borrowings	595,614,242	333,663,308
	<u>₩765,614,242</u>	<u>₩610,803,308</u>

- (b) Cash flow sensitivity analysis for variable-rate instruments

A change of 100 bp in interest rates at the reporting date would have increased (decreased) equity and profit or loss by the amounts shown below. This analysis assumes that all other variables, in particular foreign currency rates, remain constant. The analysis was performed on the same basis for 2017.

	(Unit: In thousands of Korean won)			
	December 31, 2018		December 31, 2017	
	<u>100 bp increase</u>	<u>100 bp decrease</u>	<u>100 bp increase</u>	<u>100 bp decrease</u>
Debentures and Borrowings	(₩7,656,142)	₩7,656,142	(₩6,108,033)	₩6,108,033

(2) Fair values

(i) Fair values versus carrying amounts

The fair values of financial assets and liabilities, together with the carrying amounts shown in the consolidated statements of financial position, are as follows:

(Unit: In thousands of Korean won)

	December 31, 2018		December 31, 2017	
	Carrying amount	Fair value	Carrying amount	Fair value
Assets carried at fair value:				
Short-term financial assets	₩134,486,394	₩134,486,394	₩23,897,420	₩23,897,420
Profit or loss-Fair value measurement financial assets	2,387,228	2,387,228	-	-
Other comprehensive income-fair value measurement financial assets	26,480,662	26,480,662	-	-
AFS financial assets	-	-	23,131,909	23,131,909
Derivative instrument assets	65,161,316	65,161,316	30,852,491	30,852,491
	<u>₩228,515,600</u>	<u>₩228,515,600</u>	<u>₩77,881,820</u>	<u>₩77,881,820</u>
Assets carried at amortized cost:				
Loans and receivables	₩1,424,447,752	₩1,424,447,752	₩1,027,807,320	₩1,027,807,320
Cash and cash equivalents	264,522,916	264,522,916	160,865,887	160,865,887
	<u>₩1,688,970,668</u>	<u>₩1,688,970,668</u>	<u>₩1,188,673,207</u>	<u>₩1,188,673,207</u>
Liabilities carried at fair value:				
Derivative instrument liabilities	₩42,484,008	₩42,484,008	₩55,999,375	₩55,999,375
Liabilities carried at amortized cost:				
Debentures	₩11,434,961,435	₩11,434,961,435	₩11,274,388,770	₩11,274,388,770
Borrowings	594,288,128	594,288,128	450,412,237	450,412,237
Trade and other payables	357,725,869	357,725,869	348,867,779	348,867,779
	<u>₩12,386,975,432</u>	<u>₩12,386,975,432</u>	<u>₩12,073,668,786</u>	<u>₩12,073,668,786</u>

(ii) Fair value hierarchy

The different levels have been defined as follows:

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

The table below analyzes financial instruments carried at fair value, by valuation method, as of December 31, 2018:

	(Unit: In thousands of Korean won)			
	Level 1	Level 2	Level 3	Total
Short-term financial assets	₩134,486,394	₩-	₩-	₩134,486,394
Derivative financial assets	-	65,161,316	-	65,161,316
Profit or loss fair value measurement	-	-	2,387,228	2,387,228
Financial assets				
Other comprehensive income-fair value	-	-	26,480,662	26,480,662
measurement financial assets				
Derivative financial liabilities	-	-	-	-

41. TRANSACTIONS AND BALANCES WITH RELATED COMPANIES:

(1) Details of related parties as of December 31, 2018, are as follows:

Control relationship	Related party
Ultimate parent company	Korean government
Associates	KWPP Holdings Co. and Angat Hydropower Co.

(2) Significant transactions that occurred in the normal course of business with related companies for 2018 and 2017, are summarized as follows:

- ① Payment guarantees providing to related parties as of December 31, 2018 do not exist.

② Details of compensation for main executives are as follows:

(Unit: In thousands of Korean won)

	2018	2017
Short-term Employee salary	₩1,048,686	₩1,000,944
Retirement benefit	4,866	9,945
Total	₩1,053,552	₩1,010,889

③ Assets pledged as collateral for related parties as of December 31, 2018, are as follows:

(Unit: In thousands of Korean won and USD, PHP)

Financial Institutions	Related party	Collateral assets	Carrying amount	Borrowings
BPI, KEB Hana Bank, MayBank, UCPB, PBB, ShinHanBank, BoC	Angat Hydro Power Co.	Shares of Angat Hydropower Co. 20,360,980 stocks KWPP Holdings Co., 50 stocks	₩100,845,106	PHP 9,909,311

(*1) Bank of the Philippine Islands (“BPI)

(*2) United Coconut Planters Bank (“UCPB”)

(*3) Public Bank Berhad (“PBB”)

42. NON-CASH INVESTING AND FINANCING ACTIVITIES:

Significant non-cash investing and financing activities for the periods ended December 31, 2018 and 2017, are as follows:

(Unit: In thousands of Korean won)

	December 31, 2018	December 31, 2017
Reclassification of construction in progress to asset	₩259,245,569	₩344,147,366
Reclassification of intangible assets under development to asset	201,226,588	50,406,994
Transfer to current portion of long-term borrowing	46,446,021	102,918,456
Transfer to current portion of debentures	1,155,190,000	1,341,689,500

43. CONTINGENCIES:

(1) Assets pledged as collateral for other parties

As of December 31, 2018, the Group has provided 36,114 shares (book value: ₩180,720 thousand) of P-waters Corporation as collateral to NH Bank for the borrowings of P-waters Corporation.

(2) Litigations

There are 109 pending litigations as of December 31, 2018. The Group is a plaintiff and defendant in 19 and 90 litigations, respectively.

Details of pending litigations as a defendant as of December 31, 2018, are as follows:

(Unit: In thousands of Korean won)

Nature of litigation	Number of litigations	Amount of litigation	Note
Claims for construction costs	16	₩100,349,735	Demand for additional payment
Claims related to construction and management of dams	15	₩95,317,696	Damage claims and compensation for loss
Claims for Four River Restoration Project	4	₩27,899,606	Compensation for loss
Claims for Ara waterway	7	₩9,000,043	Compensation for loss, Solicitation money
Claims for EDC in Busan	13	₩1,522,717	Compensation for loss, Return unreasonable gain
Claims for GC in songsan	8	₩15,339,331	Compensation for loss
Claims fore Water Business	13	₩4,575,956	Compensation for loss, Repurchase
Other claims	14	₩101,959,684	Damage claims and others
	90	₩355,964,768	

The amount of provision the Group recognized with respect to the lawsuits is ₩34,330,845 thousand as of December 31, 2018.

(3) Major construction contracts

As of December 31, 2018, the Group has entered into various contracts totaling ₩16,933 billion for the development of new cities and industrial complex sites and construction of water facilities, dams and others. In connection with these contracts, contractors have designated the Group as a beneficiary of performance guarantee insurance by Seoul Guarantee Insurance and Construction Guarantee and others amounting to 15% of total contract amount.

(4) Credit line agreements

The Group has entered into loan agreements with KEB Hana Bank and four other Korean financial institutions. The available credit lines under these agreements amounted to ₩290,000 million as of December 31, 2018. The Group has not drawn any amount as of December 31, 2018.

(5) Guarantees received

Details of guarantees received from the third parties of the Group as of December 31, 2018, are as follows:

		(Unit: In thousands of USD)
Guarantees from	Guarantee amount	Description
The Export-Import Bank of Korea	USD 24,800	Equity injection guarantee for Star Hydro Power Ltd.