

GS Engineering & Construction Corporation **and its subsidiaries**

Consolidated financial statements
for the years ended December 31, 2017 and 2016
with the independent auditors' report

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Independent auditors' report

The Board of Directors and Stockholders GS Engineering & Construction Corporation

We have audited the accompanying consolidated financial statements of GS Engineering & Construction Corporation (the "Company") and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statements of financial position as at December 31, 2017 and 2016, and the consolidated statements of profit or loss, consolidated statements of comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and a summary of significant accounting policies and other explanatory information.

Management's responsibility for the consolidated financial statements

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

Auditors' responsibility

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

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

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

Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Group as at December 31, 2017 and 2016, and the results of its financial performance and cash flows for the years then ended in accordance with Korean International Financial Reporting Standards.

Emphasis of matters

We draw attention to following matters. Our opinion is not modified in respect of these matters.

(1) Emphasis of matter in regard to key audit matters in engineer-to-order manufacturing sectors ("ETO")

In accordance with 'Auditing Practice Guidance 2016-1' in the Republic of Korea, key audit matters in ETO are those matters that, based on our professional judgement and communication with those charged with governance, are of most significance in our audit of the financial statements of the current period. These matters are addressed in the context of our audits of the separate financial statements as a whole, and we do not provide a separate opinion on these matters.

In forming our opinion on the financial statements of the Group, we considered the result of audit procedures related to key audit matters as below.

A. General information

The following includes information to be most common for the key audit matters of ETO included in the audit report.

As described in the Note 2 (Basis of preparation and a summary of significant accounting policies), when the outcome of a construction contract can be estimated reliably, contract revenue is recognized over the period of the contract by reference to the stage of completion. Contract costs are recognized as expenses by reference to the stage of completion of the contract activity at the end of the reporting period.

Contract revenue

Total contract revenue is measured at the fair value of the initial amount of revenue agreed in the contract. However, because most construction contracts are long-term contracts, the amount of revenue may increase due to contractual matters such as any variations in contract work, claims and incentive payments, or decrease due to penalties for delays.

The Group recognizes revenue when:

- It is probable that the customer will approve the variation and the amount of revenue arising from the variation; and
- The amount of revenue can be reliably measured.

Contract revenue in the reporting period is calculated by multiplying the total contract revenue by the cumulative progress at the end of the reporting period, less accumulated contract revenue recognized for the period.

Contract costs

Total contract costs are estimated based on initially expected costs which comprise material costs, labor costs and other expenses. The Group re-estimates the total contract costs every year if there are any changes in circumstances related to the total contract costs.

Progress of a construction

Progress of a contract activity is calculated based on the ratio of the cumulative incurred contract cost incurred up to the end of the reporting period (progress based on percentage-of-completion) to the estimated total contract cost for each contract. Therefore, the appropriateness of the progress of a construction will be affected by the appropriateness of the estimated total contract cost and the cumulative incurred contract cost.

The incurred costs during the current period in relation to future activities for individual contracts are excluded when calculating progress of the construction, and these amounts are presented according to their nature as inventories, pre-contract cost and others.

Unbilled contracts and overbilled contracts

The Group compared the total contract revenue as at the end of the reporting period multiplied by the cumulative progress of the construction and the cumulative amount invoiced to the customer by the end of the reporting period. If the amount of claim is less, the difference is accounted for as unbilled contracts and, if the amount of claim is greater, the difference is accounted for as overbilled contracts, assets and liabilities, respectively.

B. Revenue recognition based on the input method

The Group believes that uncertainty exists in the estimation of the total contract revenue and total contract cost as oil prices are worsening in oil-producing countries, which are the orders of some overseas plants due to the prolonged decline in oil prices and strong project management of the customer. Accordingly, it is anticipated that some construction sites will be delayed or additional contract costs will be incurred.

As described in the Note 8 (Construction Contract), the Group's total contract revenue increased by ₩861,578 million and the estimated total contract cost increased by ₩516,305 million. As a result, the Group estimated that the current profit or loss reduced by ₩266,069 million and the profit will be increased by ₩611,342 million in the future.

Considering all these situations, as there is a possibility that changes in the total contract revenue and total contract cost estimates will have a negative impact on the profit or loss (or future profit or loss), we identified significant risk in relation to the revenue recognition based on the input method.

We performed the following audit procedures with regard to revenue recognition based on the input method.

- Review the adequacy of accounting policies of revenue recognition
- Identify changes of the Group's internal control system and internal control testing related to the determination of accounting policies of the revenue recognition based on the input method
- Internal control testing whether a legitimate approver has reviewed and approved the relevant contract for the new construction contract during the current period
- Verify contract documents of major new construction contracts during the current period.
- Inquiry and analytical review on the status of progress and significant changes of major construction contracts
- Analytical review on financial indicators including contract amounts, total contract cost, cost ratios and ratios of unbilled amounts to contract amounts.

C. Uncertainty in estimating total contract costs

The majority of the Group's construction contracts are executed over a long period of time and as described in A. General information above, total contract costs are estimated based on the future estimates of the components.

Therefore, there may be additional costs that could not have been predicted until the previous posting due to the following reasons:

- Changes in macroeconomic and microeconomic variables that are the basis of the total contract cost estimation during the construction period
- Various changes in the domestic and overseas regions where constructions are executing; and
- Extension of construction period of some plant construction

For these reasons, there is uncertainty in estimating total contract costs. Therefore, a change in the total contract cost estimation will affect the profit or loss of the current or future period. Accordingly, we identified significant risks in relation to uncertainty in estimating the total contract costs.

We performed the following audit procedures regarding uncertainty in estimating total contract costs.

- Question and verify the related documents for projects with significant differences in total input costs relative to the estimated total contract costs of the contracts concluded during the year
- Question the reason for major contracts with significant changes in total contract costs during the period and confirm the evidence concerning reasons for the changes
- Question and verify the related documents showing the estimated total contract cost are properly reflected in the construction contracts for which there is a change in the contract during the current period
- Verify the document on whether the estimated total contract cost of the Group has been appropriately approved
- Question for the existence of major contracts with possible changes of the estimated total contract cost due to delays in construction and extension of construction period
- Question for the validity of total contract cost estimation about significant contracts in which changes in total contract costs do not exist for an extended period

D. Calculation of the progress of a construction

In the case of a construction contract where revenue recognition is performed according to the percentage-of-completion, the progress of the construction is a direct factor in the calculation of contract revenue (as described in A. General information). On the other hand, the calculation of the progress of the construction will be affected by the appropriateness of the total estimated construction costs and cumulative incurred contract cost. Accordingly, considering that the effect of uncertainty of the total estimated contract cost, timeliness of the total estimated contract costing, reliability of incurred cost aggregation on the current profit or loss can be significant, we have identified the progress of the construction estimation as a significant risk.

As at December 31, 2017, the major audit procedures performed in connection with the calculation of the progress of the construction are as follows.

- Question on whether there is any change in the actual costing system and control of the incurred contract costing method and the individual construction contract and internal control test
- Approval test of the occurrence, amounts and site classification for the accrued costs collected by the major sites
- Questions regarding construction contracts whose progress of the construction has changed significantly during the year
- Inquiry of whether the costs excluded from the calculation of the progress of the construction due to the failure to reflect the progress of the contract
- Independent recalculation of the progress of the construction by the auditors to determine the adequacy of the progress calculation process

- Comparison of the difference between the percentage of process yield and the percentage of completion by the information available to the auditors and review the validity of reason

E. Recoverability of unbilled contracts

As described in the Note 8 to the accompanying financial statements, unbilled contracts amounted to ₩1,520,936 million decreased by ₩533,184 million compared to the previous year as at the end of the current reporting period, which accounted for 32% of the total trade and other receivables.

Generally, unbilled contracts can be claimed based on the conditions of the contract, such as the completion of the related process construction and the customer's verification result of the project. So there is a possibility that unavoidable fluctuation of the payment condition may occur depending on the inspection results. A significant portion of the unbilled contracts is from plant construction in the Middle East and a long-term global oil price decline has caused deterioration in customers' ability to pay, which subsequently increased industry risk. Accordingly, we identified significant risks in relation to recoverability of unbilled contracts.

We performed the following audit procedures regarding the recoverability of unbilled contracts

- Review of payment terms described in the contract and whether there is an abnormally significant site on the unbilled contracts
- Identify construction sites of which the significant difference between the progress of the construction and construction billing rate exists and question about the cause
- Identify significant construction contracts with unbilled contracts, identify the possibility of financial risk of the customer and verify other related information.
- Question whether a specific reason such as a lawsuit exists in relation to the long-term unbilled contracts.

F. Accounting treatment for variations in contract work

Variations of contract work means the change of the scope of the construction carried out by the contract according to the instruction of the customer. The total revenue may change due to alterations in the original contract work and delays caused by the contractor in the completion of the contract. The Group recognizes revenue when it is probable that the customer will approve the variation and the amount of revenue arising from the variation.

As described in the Note 8 to the financial statements, the changes in the total estimated construction revenue amounted to ₩861,578 million. We concluded that the changes in the total construction revenue and costs, caused by variations in contract work, were significant and accordingly, we identified significant risks in relation to accounting treatment for variations in contract work.

We performed the following audit procedures for disclosures and accounting treatment in relation to variations in contract work:

- Questions about the reasons for the changes in construction contracts with significant fluctuations in contract revenue
- Review of internal control to approve construction contracts with modified terms by authorized personnel after reviewing the changes
- Questions about the possibility of liquidated damages due to delay on a construction site
- Confirmation of whether the customer is likely to approve the change amount of the contract for variations in the contract work.
- Inquiry as to whether calculation of the total estimated construction costs includes additional construction costs due to variations in construction.

Ernst & Young Han Young

March 15, 2018

This audit report is effective as at March 15, 2018, the independent auditors' report date. Accordingly, certain material subsequent events or circumstances may have occurred during the period from the independent auditors' report date to the time this report is used. Such events and circumstances could significantly affect the accompanying financial statements and may result in modifications to this report.

GS Engineering & Construction Corporation and its subsidiaries

Consolidated financial statements
for the years ended December 31, 2017 and 2016

“The accompanying consolidated financial statements, including all footnotes and disclosures, have been prepared by, and are the responsibility of, the Group.”

Byeong Yong Lim
Chief Executive Officer
GS Engineering & Construction Corporation

GS Engineering & Construction Corporation and its subsidiaries
Consolidated statements of financial position
as at December 31, 2017 and 2016

(Korean won in millions)

	Notes	2017	2016
Assets			
Current assets			
Cash and cash equivalents	10,32,33	₩ 2,442,298	₩ 2,356,329
Trade and other receivables, net	7,8,10,30,32,33	4,763,280	4,996,915
Inventories	9	1,090,698	825,251
Short-term financial assets	6,10,12,32,33	295,943	353,076
Other current assets	9	990,122	1,204,941
Total current assets		9,582,341	9,736,512
Non-current assets			
Property, plant and equipment, net	14	897,519	978,072
Intangible assets, net	15	209,482	193,648
Investment properties	16	879,889	498,208
Investments in associates	13	44,389	57,584
Long-term trade and other receivables, net	7,10,30,32,33	963,196	897,495
Long-term financial assets	6,10,11,32,33	449,892	413,557
Deferred tax assets	28	669,907	601,513
Total non-current assets		4,114,274	3,640,077
Total assets		₩ 13,696,615	₩ 13,376,589
Liabilities			
Current liabilities			
Trade and other payables	10,17,30,32,33	₩ 2,473,849	₩ 2,387,755
Short-term financial liabilities	10,12,18,32,33	3,061,155	1,823,609
Income tax payable		72,198	7,706
Other current liabilities	8,10,17,33	2,974,051	3,005,913
Total current liabilities		8,581,253	7,224,983
Non-current liabilities			
Long-term trade and other payables	10,17,32,33	8,588	34,487
Long-term financial liabilities	10,12,14,18,32,33	1,018,028	1,819,551
Net defined benefit liabilities	19	55,407	84,295
Non-current provisions	10,20,32,33	441,020	464,296
Deferred tax liabilities	28	27,544	50,519
Other non-current liabilities	10,17,33	325,060	345,293
Total non-current liabilities		1,875,647	2,798,441
Total liabilities		10,456,900	10,023,424
Equity			
Equity attributable to owners of the parent			
Issued capital	1,22	358,376	355,000
Share premium	22	627,156	610,856
Other components of equity	22	(87,208)	(87,208)
Accumulated other comprehensive loss	12,22	(65,365)	(104,053)
Retained earnings	23	2,334,347	2,504,197
		3,167,306	3,278,792
Non-controlling interests		72,409	74,373
Total equity		3,239,715	3,353,165
Total liabilities and equity		₩ 13,696,615	₩ 13,376,589

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

GS Engineering & Construction Corporation and its subsidiaries
Consolidated statements of profit or loss
for the years ended December 31, 2017 and 2016

(Korean won in millions, except per share amounts)

	Notes	2017	2016
Sales	5,8,30		
Construction operations		₩ 10,552,235	₩ 10,124,343
Housing construction and sales operations		844,940	667,037
Other operations		282,281	244,217
		<u>11,679,456</u>	<u>11,035,597</u>
Cost of sales	29,30		
Cost of construction operations		10,003,144	9,745,796
Cost of housing construction and sales operations		590,150	531,773
Cost of other operations		282,820	269,788
		<u>10,876,114</u>	<u>10,547,357</u>
Gross profit		<u>803,342</u>	<u>488,240</u>
Selling and administrative expenses	25,29	<u>484,673</u>	<u>345,262</u>
Operating profit	5	318,669	142,978
Other operating income	10,26	300,564	471,922
Other operating expenses	10,26	757,876	500,402
Share of profit of an associate and a joint venture	13	(6,088)	3,018
Finance income	10,27	288,816	291,906
Finance costs	10,27	<u>304,827</u>	<u>388,077</u>
Profit (loss) before income tax	5	(160,742)	21,345
Income tax expenses	28	<u>2,934</u>	<u>41,777</u>
Loss for the year		<u>₩ (163,676)</u>	<u>₩ (20,432)</u>
Profit (loss) attributable to:			
Equity holders of the parent		(168,388)	(25,781)
Non-controlling interests		4,712	5,349
Loss per share attributable to the equity holders of the parent (Korean won)			
Basic and diluted loss per share	24	(2,431)	(394)

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

GS Engineering & Construction Corporation and its subsidiaries
Consolidated statements of other comprehensive income
for the years ended December 31, 2017 and 2016

(Korean won in millions)

	<u>Notes</u>	<u>2017</u>	<u>2016</u>
Loss for the year		₩ (163,676)	₩ (20,432)
Other comprehensive income (loss)			
Other comprehensive income to be reclassified to profit or loss in subsequent periods (net of tax):			
Gain on valuation of available-for-sale financial assets	22	(6)	(73)
Loss on valuation of available-for-sale financial assets	22	850	1,577
Gain on exchange differences on translations of foreign operations	22	48,846	5,138
Loss on exchange differences on translations of foreign operations	22	(55,985)	1,467
Gain on valuation of derivative instruments	12,22	(13,192)	(1,465)
Loss on valuation of derivative instruments	12,22	52,210	26,388
Share of other comprehensive income of associates	13,22	-	77
Other comprehensive income not to be reclassified to profit or loss in subsequent periods (net of tax):			
Re-measurements on net defined benefit liabilities	19,23	5,946	(4,480)
Other comprehensive income for the year		38,669	28,629
Total comprehensive income (loss) for the year		<u>₩ (125,007)</u>	<u>₩ 8,197</u>
Attributable to:			
Equity holders of the parent		(123,754)	(2,856)
Non-controlling interests		(1,253)	11,053

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

GS Engineering & Construction Corporation and its subsidiaries
Consolidated statements of changes in equity
for the years ended December 31, 2017 and 2016
(Korean won in millions)

	Attributable to equity holders of the parent						Non-controlling Interests	Total equity
	Issued capital	Share premium	Other components of equity	other comprehensive income (loss)	Retained earnings	Total		
As at January 1, 2016	₩ 355,000	₩ 610,649	₩ (87,208)	₩ (131,459)	₩ 2,537,317	₩ 3,284,299	₩ 63,726	₩ 3,348,025
Total comprehensive income (loss)								
Profit (loss) for the year	-	-	-	-	(25,781)	(25,781)	5,349	(20,432)
Gain on valuation of available-for-sale financial assets	-	-	-	(73)	-	(73)	-	(73)
Loss on valuation of available-for-sale financial assets	-	-	-	1,577	-	1,577	-	1,577
Gain on exchange differences on translations of foreign operations	-	-	-	1,962	-	1,962	3,176	5,138
Loss on exchange differences on translations of foreign operations	-	-	-	(1,423)	-	(1,423)	2,890	1,467
Gain on valuation of derivative instruments	-	-	-	(1,465)	-	(1,465)	-	(1,465)
Loss on valuation of derivative instruments	-	-	-	26,751	-	26,751	(362)	26,389
Share of other comprehensive income of associates	-	-	-	77	-	77	-	77
Re-measurements on net defined benefit liabilities	-	-	-	-	(4,480)	(4,480)	-	(4,480)
Total comprehensive income (loss) for the year	-	-	-	27,406	(30,261)	(2,855)	11,053	8,198
Transactions with equity holders of the parent								
Hybrid securities	-	-	-	-	(1,653)	(1,653)	-	(1,653)
Dividends to equity holders of the parent	-	-	-	-	-	-	(819)	(819)
Changes in the non-controlling interest	-	(987)	-	-	-	(987)	567	(420)
Changes in consolidation	-	-	-	-	-	-	109	109
Redemption of convertible bond	-	(50)	-	-	-	(50)	-	(50)
Issuance of convertible bond	-	1,223	-	-	-	1,223	-	1,223
Subsidiary company's merger	-	20	-	-	-	20	(20)	-
Others	-	1	-	-	(1,206)	(1,205)	(243)	(1,448)
Total transactions with equity holders of the parent	-	207	-	-	(2,859)	(2,652)	(406)	(3,058)
As at December 31, 2016	₩ 355,000	₩ 610,856	₩ (87,208)	₩ (104,053)	₩ 2,504,197	₩ 3,278,792	₩ 74,373	₩ 3,353,165
As at January 1, 2017	₩ 355,000	₩ 610,856	₩ (87,208)	₩ (104,053)	₩ 2,504,197	₩ 3,278,792	₩ 74,373	₩ 3,353,165
Total comprehensive income (loss)								
Profit (loss) for the year	-	-	-	-	(168,388)	(168,388)	4,712	(163,676)
Gain on valuation of available-for-sale financial assets	-	-	-	(6)	-	(6)	-	(6)
Loss on valuation of available-for-sale financial assets	-	-	-	850	-	850	-	850
Gain on exchange differences on translations of foreign operations	-	-	-	52,828	-	52,828	(3,982)	48,846
Loss on exchange differences on translations of foreign operations	-	-	-	(53,637)	-	(53,637)	(2,348)	(55,985)
Gain on valuation of derivative instruments	-	-	-	(13,192)	-	(13,192)	-	(13,192)
Loss on valuation of derivative instruments	-	-	-	51,845	-	51,845	365	52,210
Re-measurements on net defined benefit liabilities	-	-	-	-	5,946	5,946	-	5,946
Total comprehensive income (loss) for the year	-	-	-	38,688	(162,442)	(123,754)	(1,253)	(125,007)
Transactions with equity holders of the parent								
Hybrid securities	-	-	-	-	(1,653)	(1,653)	-	(1,653)
Dividends to equity holders of the parent	-	-	-	-	-	-	(720)	(720)
Changes in the non-controlling interest	-	-	-	-	-	-	720	720
Conversion of convertible bond	3,376	16,272	-	-	-	19,648	-	19,648
Disposal of treasury stock	-	28	-	-	-	28	-	28
Others	-	-	-	-	(5,755)	(5,755)	(711)	(6,466)
Total transactions with equity holders of the parent	3,376	16,300	-	-	(7,408)	12,268	(711)	11,557
As at December 31, 2017	₩ 358,376	₩ 627,156	₩ (87,208)	₩ (65,365)	₩ 2,334,347	₩ 3,167,306	₩ 72,409	₩ 3,239,715

The accompanying notes are an integral part of these consolidated financial statements

GS Engineering & Construction Corporation and its subsidiaries
Consolidated statements of cash flows
for the years ended December 31, 2017 and 2016
(Korean won in millions)

	Notes	2017	2016
Cash flows from operating activities			
Cash generated from operations	31	₩ (51,271)	₩ 174,237
Interest received		60,937	52,156
Interest paid		(175,760)	(134,019)
Dividends received		1,561	4,597
Income tax paid		(40,956)	(15,761)
Net cash flows from (used in) operating activities		(205,489)	81,210
Cash flows from investing activities			
Decrease in other receivables		616,636	392,772
Decrease in short-term financial assets		132,845	101,903
Decrease in other long-term receivables		268,224	226,763
Decrease in long-term financial assets		26,533	33,327
Disposal of property, plant and equipment		15,462	4,506
Disposal of intangible assets		5,179	1,461
Disposal of investment properties		28,577	37,128
Changes in consolidation		-	104
Increase in other receivables		(444,373)	(268,514)
Increase in short-term financial assets		(135,315)	(131,078)
Increase in other long-term receivables		(306,723)	(388,797)
Increase in long-term financial assets		(75,144)	(118,175)
Acquisition of property, plant and equipment		(20,776)	(79,108)
Acquisition of intangible assets		(9,990)	(15,006)
Acquisition of investment properties		(61,210)	(1,459)
Acquisition of subsidiaries		(26,296)	(26,295)
Acquisition of investments in associates		(125)	(18,251)
Net cash flows from (used in) investing activities		13,504	(248,719)
Cash flows from financing activities			
Increase in short-term financial liabilities		2,219,184	1,984,531
Increase in long-term financial liabilities		505,646	955,001
Increase in other non-current liabilities		36,498	237,894
Increase in the non-controlling interests		711	116
Decrease in short-term financial liabilities		(2,342,819)	(2,892,726)
Decrease in other current liabilities		(12,286)	(11,780)
Decrease in long-term financial liabilities		(37,471)	(153,149)
Decrease in other non-current liabilities		(61,900)	(39,234)
Dividends		(720)	(820)
Interest payment in relation to the hybrid securities		(1,653)	(1,653)
Acquisition of treasury stock		(5,204)	-
Payment of stock issuance costs		(28)	-
Net cash flows from financing activities		299,958	78,180
Net foreign exchange difference		(22,004)	17,030
Net increase (decrease) in cash and cash equivalents		85,969	(72,299)
Cash and cash equivalents at the beginning of the year		2,356,329	2,428,628
Cash and cash equivalents at the end of the year		₩ 2,442,298	₩ 2,356,329

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

GS Engineering & Construction Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2017 and 2016

1. General information

General information of GS Engineering & Construction Corporation (the "Company") and its subsidiaries including Ezville Inc. (collectively referred to as the "Group") in accordance with KIFRS 1110 Consolidated Financial Statement are as follows.

1.1 Corporate information

The Company was incorporated on December 19, 1969, under the laws of the Republic of Korea to engage in civil works and architectural construction, construction and sales of new houses, repairs and maintenance, overseas general construction and technology consultation. The Company acquired Lucky Foreign Construction Co., Ltd., LG Engineering Co., Ltd. and Baekyang Development Co., Ltd. on January 4, 1979, August 1, 1999 and October 1, 2000, respectively.

The Company listed its shares on the Korea Exchange on August 3, 1981, and changed its name from LG Engineering & Construction Co., Ltd. to GS Engineering & Construction Corporation on March 18, 2005. Also, in accordance with the *Monopoly Regulation and Fair Trade Act*, the Korea Fair Trade Commission has designated the Group as the related entities to GS Group and placed restrictions on mutual investments between the Group and the entities within GS Group.

As at December 31, 2017, the Company operates overseas branches and construction sites in several foreign countries, including the United Arab Emirates, Kuwait, Canada, China and Singapore.

The Company's issued capital as at December 31, 2017 amounts to ₩358,376 million.

1.2 Summary of consolidated subsidiaries

Consolidated subsidiaries as at December 31, 2017, are as follows:

Subsidiary	Location	Year end	Principal business activity	Equity ownership (%)	
				2017	2016
Ezville Inc.	Korea	12.31	Home network system development and operation	85.61	85.61
G-Estec Co., Ltd.	Korea	12.31	Construction service	100.00	100.00
GCS Plus	Korea	12.31	Resort maintenance service	99.70	99.70
BSM	Korea	12.31	Processing	100.00	100.00
Xi O&M	Korea	12.31	Plant operation and maintenance service	100.00	100.00
GS E&C Nanjing Co., Ltd.	China	12.31	Construction	100.00	100.00
GS Nha Be Development One-member LLC	Vietnam	12.31	Construction	100.00	100.00
GS Saigon Development One-member LLC	Vietnam	12.31	Construction	100.00	100.00
GS E&C Delhi Pvt. Ltd.	India	3.31	Construction service	100.00	100.00
GS Engineering & Construction Mumbai Pvt. Ltd.	India	3.31	Construction service	100.00	100.00
GS E&C Thai Co., Ltd. (*1)	Thailand	8.31	Real estate	49.00	49.00
GS EAST ASIA MANILA Inc.	Philippines	12.31	IT Consulting	100.00	100.00
GS E&C Malaysia SDN.BHD.	Malaysia	12.31	Construction	100.00	100.00
GS Construction Arabia Co., Ltd. (*2)	Saudi Arabia	12.31	Construction	100.00	100.00
GS Saudi Co., Ltd.	Saudi Arabia	12.31	Construction	75.00	75.00
GS E&C Poland SP.ZO.O	Poland	12.31	Construction	100.00	100.00
GS Engineering & Construction Spain, S.L	Spain	12.31	Construction	100.00	100.00
GS E&C Construction Canada Ltd.	Canada	12.31	Construction	100.00	100.00
GS E&C Panama S.A.	Panama	12.31	Lease	100.00	100.00
GS Inima Environment S.A. (*4)	Spain	12.31	Construction	80.42	80.42

GS Engineering & Construction Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2017 and 2016

1. General information (cont'd)

1.2 Summary of consolidated subsidiaries (cont'd)

Subsidiary	Location	Year end	Principal business activity	Equity ownership (%)	
				2017	2016
GS Village Lake LLC	USA	12.31	Real estate	100.00	100.00
Pala-power General Construction Service (Proprietary) Limited	Botswana	12.31	Construction	100.00	100.00
GS Engineering & Construction Australia Pty Ltd (*3)	Australia	12.31	Construction	100.00	-

(*1) In accordance with a contractual arrangement with other shareholders, the Group is able to exercise control over the entity and has been included in consolidation.

(*2) Includes securities held by subsidiaries.

(*3) Newly incorporated in 2017.

(*4) Summarized information of its subsidiaries are as follows:

Subsidiary	Domicile	Principal business activity	Year end	Equity ownership (%)
Aguas de Ensenada, S.A. de C.V.	Mexico	Construction	12.31	100.00
Ambient Servicos Ambientais de Ribeirao Preto, S.A.	Brazil	Construction	12.31	100.00
Aquaria Water LLC	USA	Construction	12.31	87.50
Araucaria Saneamento, S.A.	Brazil	Construction	12.31	51.00
GS Inima Chile S.A	Chile	Construction	12.31	100.00
GS Inima Mexico, S.A. de C.V.	Mexico	Construction	12.31	100.00
GS Inima USA Construction Corporation	USA	Construction	12.31	100.00
GS Inima USA Corporation	USA	Construction	12.31	100.00
GS Inima Brasil Ltda.	Brazil	Construction	12.31	100.00
Promoaqua Desalacion de los Cabos, S.A. de C.V.	Mexico	Construction	12.31	98.00
Saneamento do Vale do Paraiba, S.A.	Brazil	Construction	12.31	50.10
Servicos de Saneamento de Mogi Mirim, S.A.	Brazil	Construction	12.31	57.00
Tecnicas y Gestion Medioambiental, S.A.	Spain	Construction	12.31	100.00
Tractament Metropolitana de Fangs, S.L.	Spain	Construction	12.31	50.40
Casinima - Empreitada Ponte da Baia, A.C.E.	Portugal	Construction	12.31	50.00
GS Inima Servicios Corporativos, S.A. de C.V.	Mexico	Construction	12.31	100.00
Sociedad de Economia Mixta Aguas de Soria S.L.	Spain	Construction	12.31	59.20
Valorinima S.L.	Spain	Construction	12.31	80.00
Inima Amarante Sociedades Unipessoal, Ltda.	Portugal	Construction	12.31	100.00
Sanama Saneamento Alta Maceio S.A.	Brazil	Construction	12.31	60.00
INIMA-CVV S.A.	Chile	Construction	12.31	65.00
Caepa Companhia de Agua E Egesto de Paribuna S.A.	Brazil	Construction	12.31	95.00
Comasa Companhia Aguas de Santa Rita S.A	Brazil	Construction	12.31	75.00
Samar Solucoes Ambientais de Aracatuba S.A	Brazil	Construction	12.31	100.00
Ascan Water Services, S.L.(*)	Spain	Construction	12.31	100.00
GS Inima Water Management S.L.(*)	Spain	Construction	12.31	100.00

(*) Newly incorporated in 2017.

GS Engineering & Construction Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2017 and 2016

1. General information (cont'd)

1.3 Summarized financial information

Summarized financial information of subsidiaries as at December 31, 2017 and 2016 are as follows (Korean won in millions):

Subsidiary	2017				
	Assets	Liabilities	Equity	Sales	Profit (loss) for the year
Ezville Inc.	₩ 92,383	₩ 65,000	₩ 27,383	₩ 141,725	₩ 8,411
G-Estec Co., Ltd.	980	616	364	5,909	21
GCS Plus	19,986	8,993	10,993	68,491	2,164
BSM	3,106	1,689	1,417	15,032	1,330
Xi O&M	8,391	3,264	5,127	40,520	796
GS E&C Nanjing Co., Ltd.	198,889	152,591	46,298	191,725	31,092
GS Nha Be Development One-member LLC	143,774	130,426	13,348	-	245
GS Saigon Development One-member LLC	360,422	364,938	(4,516)	83,976	(15,093)
GS E&C Delhi Pvt. Ltd.	14,659	19,634	(4,975)	4,198	(14,446)
GS Engineering & Construction Mumbai Pvt. Ltd.	11,532	12,561	(1,029)	5,761	(12,224)
GS E&C Thai Co., Ltd.	33	-	33	-	(26)
GS EAST ASIA MANILA Inc.	521	1,499	(978)	156	(2,038)
GS E&C Malaysia SDN.BHD.	762	-	762	2,552	638
GS Construction Arabia Co., Ltd.	34,303	763,968	(729,665)	(3,349)	(143,713)
GS Saudi Co., Ltd.	7	4,230	(4,223)	-	-
GS E&C Poland SP.ZO.O	387	329	58	-	2
GS Engineering & Construction Spain, S.L	85,042	50,935	34,107	40,749	(2,639)
GS E&C Construction Canada Ltd.	407	1,436	(1,029)	-	(123)
GS E&C Panama S.A.	965	16	949	-	(132)
GS Inima Environment S.A.(*)	610,064	371,975	238,089	211,660	14,466
GS Village Lake LLC	10,819	229	10,590	-	(19)
Pala-power General Construction Service (Proprietary) Limited	38	55	(17)	-	(17)
GS Engineering & Construction Australia Pty Ltd	320	284	36	-	(407)

(*) Includes financial information of subsidiaries.

GS Engineering & Construction Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2017 and 2016

1. General information (cont'd)

1.3 Summarized financial information (cont'd)

Subsidiary	2016				
	Assets	Liabilities	Equity	Sales	Profit (loss) for the year
Ezville Inc.	₩ 76,311	₩ 52,336	₩ 23,975	₩ 92,840	₩ 5,008
Xi service(*1)	-	-	-	7,308	32
G-Estec Co., Ltd.	1,094	751	343	5,201	22
GCS Plus	16,664	7,835	8,829	44,458	855
BSM	2,704	1,816	888	11,847	477
Xi O&M	8,472	4,140	4,332	45,428	692
Sanglak Food Co., Ltd.(*2)	-	-	-	16,724	(79)
GS E&C Nanjing Co., Ltd.	110,280	68,932	41,348	201,797	20,319
GS Nha Be Development One-member LLC	156,648	141,892	14,756	-	(1,900)
GS Saigon Development One-member LLC	333,908	322,894	11,014	26,202	(7,183)
GS E&C Delhi Pvt. Ltd.	19,057	19,091	(34)	10,565	(18,500)
GS Engineering & Construction Mumbai Pvt. Ltd.	12,127	12,459	(332)	5,941	(13,359)
GS E&C Thai Co., Ltd.	70	9	61	-	(442)
GS EAST ASIA MANILA Inc.	4,584	2,857	1,727	1,359	(6,382)
GS E&C Malaysia SDN.BHD.	1,462	1,337	125	1,808	(150)
GS Construction Arabia Co., Ltd.	138,340	807,719	(669,379)	59,139	(282,874)
GS Saudi Co., Ltd.	8	4,771	(4,763)	-	(186)
GS E&C Poland SP.ZO.O	378	325	53	-	2
GS Engineering & Construction Spain, S.L	171,010	136,176	34,834	221,506	(10,736)
GS E&C Construction Canada Ltd.	511	1,465	(954)	735	575
GS E&C Panama S.A.	1,221	10	1,211	296	164
GS Inima Environment S.A.(*3)	590,004	340,782	249,222	202,236	11,598
GS Village Lake LLC	12,214	249	11,965	-	(127)
Pala-power General Construction Service (Proprietary) Limited	1	1	-	-	-

(*1) Merged with Ezville Inc. in 2016.

(*2) Merged with GCS Plus in 2016.

(*3) Includes financial information of subsidiaries.

The summarized financial information of the subsidiaries is based on amounts before inter-company eliminations. If the significant accounting treatments of the subsidiaries are different from those of the Company, such differences are adjusted.

2. Basis of preparation and a summary of significant accounting policies

2.1 Basis of preparation

The Group prepares statutory financial statements in the Korean language in accordance with Korean International Financial Reporting Standards (KIFRS) enacted by the *Act on External Audit of Stock Companies*. The accompanying financial statements have been translated into English from the Korean language financial statements. In the event of any differences in interpreting the financial statements or the independent auditors' report thereon, the Korean version, which is used for regulatory reporting purposes, shall prevail.

The financial statements have been prepared on a historical cost basis, except for investment properties, land and buildings classified as property, plant and equipment, derivative financial instruments, available-for-sale (AFS) financial assets, contingent consideration and non-cash distribution liabilities that have been measured at fair value. The carrying values of recognized assets and liabilities that are designated as hedged items in fair value hedges that would otherwise be carried at amortized cost are adjusted to record changes in the fair values attributable to the risks that are being hedged in effective hedge relationships. The financial statements are presented in Korean won (KRW) and all values are rounded to the nearest millions, except when otherwise indicated.

2.2 Basis of consolidation

The financial statements comprise the financial statements of the Group and its subsidiaries as at December 31, 2017. Control is achieved when the Group is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Specifically, the Group controls an investee if, and only if, the Group has:

- Power over the investee (i.e., existing rights that give it the current ability to direct the relevant activities of the investee)
- Exposure, or rights, to variable returns from its involvement with the investee, and
- The ability to use its power over the investee to affect its returns

When the Group has less than a majority of the voting or similar rights of an investee, the Group considers all relevant facts and circumstances in assessing whether it has power over an investee, including:

- The contractual arrangement with the other vote holders of the investee
- Rights arising from other contractual arrangements
- The Group's voting rights and potential voting rights

The Group re-assesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control. Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when the Group loses control of the subsidiary. Assets, liabilities, income and expenses of a subsidiary acquired or disposed of during the year are included in the statement of profit or loss from the date the Group gains control until the date the Group ceases to control the subsidiary.

Profit or loss and each component of other comprehensive income (OCI) are attributed to the equity holders of the parent of the Group and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance. When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with the Group's accounting policies. All intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated in full on consolidation.

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

If the Group loses control over a subsidiary, it derecognizes the related assets (including goodwill), liabilities, non-controlling interest and other components of equity, while any resultant gain or loss is recognized in profit or loss. Any investment retained is recognized at fair value.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies

2.3.1 Business combinations and goodwill

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, which is measured at acquisition date fair value, and the amount of any non-controlling interests in the acquiree. For each business combination, the Group elects whether to measure the non-controlling interests in the acquiree at fair value or at the proportionate share of the acquiree's identifiable net assets. Acquisition-related costs are expensed as incurred.

When the Group acquires a business, it assesses the financial assets and liabilities assumed for appropriate classification and designation in accordance with the contractual terms, economic circumstances and pertinent conditions as at the acquisition date. This includes the separation of embedded derivatives in host contracts by the acquiree. If the business combination is achieved in stages, any previously held equity interest is re-measured at its acquisition date fair value and any resulting gain or loss is recognized in profit or loss. It is then considered in the determination of goodwill.

Any contingent consideration to be transferred by the acquirer will be recognized at fair value at the acquisition date. Contingent consideration classified as an asset or liability that is a financial instrument and within the scope of KIFRS 1039 *Financial Instruments: Recognition and Measurement*, is measured at fair value with the changes in fair value recognized either in either profit or loss or as a change to OCI. If the contingent consideration is not within the scope of KIFRS 1039, it is measured in accordance with the appropriate KIFRS. Contingent consideration that is classified as equity is not re-measured and subsequent settlement is accounted for within equity.

Goodwill is initially measured at cost, being the excess of the aggregate of the consideration transferred and the amount recognized for non-controlling interests, and any previous interest held, over the net identifiable assets acquired and liabilities assumed. If the fair value of the net assets acquired is in excess of the aggregate consideration transferred, the Group re-assesses whether it has correctly identified all of the assets acquired and all of the liabilities assumed and reviews the procedures used to measure the amounts to be recognized at the acquisition date. If the re-assessment still results in an excess of the fair value of net assets acquired over the aggregate consideration transferred, then the gain is recognized in profit or loss.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the Group's cash-generating units that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill has been allocated to a cash-generating unit and part of the operation within that unit is disposed of, the goodwill associated with the disposed operation is included in the carrying amount of the operation when determining the gain or loss on disposal. Goodwill disposed in these circumstances is measured based on the relative values of the disposed operation and the portion of the cash-generating unit retained.

2.3.2 Investment in associates and joint ventures

An associate is an entity over which the Group has significant influence. Significant influence is the power to participate in the financial and operating policy decisions of the investee, but is not control or joint control over those policies. A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint venture. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control. The considerations made in determining significant influence or joint control are similar to those necessary to determine control over subsidiaries.

The Group's investments in its associate and joint venture are accounted for using the equity method. Under the equity method, the investment in an associate or a joint venture is initially recognized at cost. The carrying amount of the investment is adjusted to recognize changes in the Group's share of net assets of the associate or joint venture since the acquisition date. Goodwill relating to the associate or joint venture is included in the carrying amount of the investment and is neither amortized nor individually tested for impairment.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.2 Investment in associates and joint ventures (cont'd)

The statement of profit or loss reflects the Group's share of the results of operations of the associate or joint venture. Any change in OCI of those investees is presented as part of the Group's OCI. In addition, when there has been a change recognized directly in the equity of the associate or joint venture, the Group recognizes its share of any changes, when applicable, in the statement of changes in equity. Unrealized gains and losses resulting from transactions between the Group and the associate or joint venture are eliminated to the extent of the interest in the associate or joint venture.

The aggregate of the Group's share of profit or loss of an associate and a joint venture is shown on the face of the statement of profit or loss outside operating profit and represents profit or loss after tax and non-controlling interests in the subsidiaries of the associate or joint venture.

The financial statements of the associate or joint venture are prepared for the same reporting period as the Group. When necessary, adjustments are made to bring the accounting policies in line with those of the Group.

After application of the equity method, the Group determines whether it is necessary to recognize an impairment loss on its investment in its associate or joint venture. At each reporting date, the Group determines whether there is objective evidence that the investment in the associate or joint venture is impaired.

Group calculates the amount of impairment as the difference between the recoverable amount of the associate or joint venture and its carrying value, then recognizes the loss as 'Share of profit of an associate and a joint venture' in the statement of profit or loss.

Upon loss of significant influence over the associate or joint control over the joint venture, the Group measures and recognizes any retained investment at its fair value. Any difference between the carrying amount of the associate or joint venture upon loss of significant influence or joint control and the fair value of the retained investment and proceeds from disposal is recognized in profit or loss.

2.3.3 Segment reporting

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision-maker (Note 5). The chief operating decision-maker, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as the board of directors who is responsible for the Group's strategic decisions.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.4 Current versus non-current classification

The Group presents assets and liabilities in the statement of financial position based on current/non-current classification.

An asset is current when it is:

- Expected to be realized or intended to be sold or consumed in the normal operating cycle
- Held primarily for the purpose of trading
- Expected to be realized within twelve months after the reporting period, or
- Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period

All other assets are classified as non-current.

A liability is current when:

- It is expected to be settled in the normal operating cycle
- It is held primarily for the purpose of trading
- It is due to be settled within twelve months after the reporting period, or
- There is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period

2.3.5 Fair value measurement

The Group classifies all other liabilities as non-current. Deferred tax assets and liabilities are classified as non-current assets and liabilities.

The Group measures financial instruments such as derivatives at fair value at each balance sheet date. Fair values of financial instruments and fair value hierarchy are disclosed in Note 33.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability, or
- In the absence of a principal market, in the most advantageous market for the asset or liability

The principal or the most advantageous market must be accessible by the Group.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.5 Fair value measurement (cont'd)

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorized within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

- Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities
- Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable
- Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognized in the financial statements on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by re-assessing categorization (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

For the purpose of fair value disclosures, the Group has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy, as explained above.

2.3.6 Foreign currencies

The Group's financial statements are presented in Korean won, which is also the Group's functional and reporting currency.

1) Transactions and balances

Transactions in foreign currencies are initially recorded by the Group's entities at their respective functional currency spot rates at the date the transaction first qualifies for recognition. Monetary assets and liabilities denominated in foreign currencies are retranslated at the functional currency spot rates of exchange at the reporting date. Differences arising on settlement or translation of monetary items are recognized in profit or loss.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value is determined. The gain or loss arising on translation of non-monetary items measured at fair value is treated in line with the recognition of gain or loss on change in fair value of the item. (i.e., translation differences on items whose fair value gain or loss is recognized in profit or loss is also recognized in profit or loss, respectively).

2) Translation in foreign operations

The assets and liabilities of foreign operations are translated into Korean won at the rate of exchange prevailing at the reporting date and the statement of profit or loss is translated at exchange rates prevailing at the dates of the transactions. The exchange differences arising on translation of foreign operations are recognized in OCI. On disposal of a foreign operation, the component of OCI relating to that particular foreign operation is recognized in profit or loss.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.7 Financial instruments - initial recognition and subsequent measurement

1) Financial assets

Initial recognition and measurement

Financial assets within the scope of KIFRS 1039 are classified as financial assets at fair value through profit or loss, loans and receivables, held-to-maturity investments, AFS financial assets, or as derivatives designated as hedging instruments in an effective hedge, as appropriate. All financial assets are recognized initially at fair value plus transactions costs, except in the case of financial assets recorded at fair value through profit and loss.

Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the market place (regular way trades) are recognized on the trade date, i.e., the date that the Group commits to purchase or sell the asset.

The Group's principal financial assets include cash and other financial assets, trade and other receivables, marketable (non-marketable) financial instruments, and financial derivative instruments.

Subsequent measurement

The measurement of financial assets depends on their classification, as described below:

Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. After initial measurement, such financial assets are subsequently measured at amortized cost using the effective interest rate (EIR) method, less impairment. Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included in finance income in the statement of profit or loss. The losses arising from impairment are recognized in the statement of profit or loss in finance costs for loans and in other operating expenses for receivables.

Held-to-maturity investments

Non-derivative financial assets with fixed or determinable payments and fixed maturities are classified as held-to-maturity when the Group has the positive intention and ability to hold them to maturity. After initial measurement, held-to-maturity investments are measured at amortized cost using the EIR, less impairment. Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included in finance income in the statement of profit or loss. The losses arising from impairment are recognized in the statement of profit or loss in finance costs.

AFS financial investments

AFS financial investments include equity investments and debt securities. Equity investments classified as AFS are those, which are neither classified as held for trading nor designated at fair value through profit or loss. Debt securities in this category are those which are intended to be held for an indefinite period of time and which may be sold in response to needs for liquidity or in response to changes in the market conditions. After initial measurement, AFS financial investments are subsequently measured at fair value with unrealized gains or losses recognized as other comprehensive income in the AFS reserve until the investment is derecognized, at which time, the cumulative gain or loss is recognized in other operating income, or the investment is determined to be impaired, when the cumulative loss is reclassified from the AFS reserve to the statement of profit or loss in finance costs.

The Group evaluates whether the ability and intention to sell its AFS financial assets in the near term is still appropriate. When, in rare circumstances, the Group is unable to trade those financial assets due to inactive markets and management's intention to do so significantly changes in the foreseeable future, the Group may elect to reclassify these financial assets. Reclassification to loans and receivables is permitted when the financial asset meets the definition of loans and receivables and has the intent and ability to hold these assets for the foreseeable future or maturity. Reclassification to the held-to-maturity category is permitted only when the entity has the ability and intention to hold the financial asset accordingly.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.7 Financial instruments - initial recognition and subsequent measurement (cont'd)

For a financial asset reclassified from the AFS category, the fair value at the date of reclassification becomes its new amortized cost and any previous gain or loss on that asset that has been recognized in equity is amortized to profit or loss over the remaining life of the investment using the EIR. Any difference between the new amortized cost and the maturity amount is also amortized over the remaining life of the asset using the EIR.

Derecognition

A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is derecognized when:

- The rights to receive cash flows from the asset have expired, or
- The Group has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a 'pass-through' arrangement; and either (a) the Group has transferred substantially all the risks and rewards of the asset, or (b) the Group has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset

When the Group has transferred its rights to receive cash flows from an asset or has entered into a pass-through arrangement, it evaluates if, and to what extent, it has retained the risks and rewards of ownership. When it has neither transferred nor retained substantially all of the risks and rewards of the asset, nor transferred control of the asset, the asset is recognized to the extent of the Group's continuing involvement in the asset. Continuing involvement that takes the form of a guarantee over the transferred asset is measured at the lower of the original carrying amount of the asset and the maximum amount of consideration that the Group could be required to repay. In that case, the Group also recognizes an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that the Group has retained.

2) Impairment of financial assets

The Group assesses, at each reporting date, whether there is any objective evidence that a financial asset or a group of financial assets is impaired. A financial asset or a group of financial assets is deemed to be impaired if, and only if, there is objective evidence of impairment as a result of one or more events that has occurred after the initial recognition of the asset (an incurred 'loss event') and that loss event has an impact on the estimated future cash flows of the financial asset or the group of financial assets that can be reliably estimated. Evidence of impairment may include indications that the debtors or a group of debtors is experiencing significant financial difficulty, default or delinquency in interest or principal payments, the probability that they will enter bankruptcy or other financial reorganization and where observable data indicate that there is a measurable decrease in the estimated future cash flows, such as changes in arrears or economic conditions that correlate with defaults.

Financial assets carried at amortized cost

For financial assets carried at amortized cost, the Group first assesses whether impairment exists individually for financial assets that are individually significant, or collectively for financial assets that are not individually significant. If the Group determines that no objective evidence of impairment exists for an individually assessed financial asset, whether significant or not, it includes the asset in a group of financial assets with similar credit risk characteristics and collectively assesses them for impairment. Assets that are individually assessed for impairment and for which an impairment loss is, or continues to be, recognized are not included in a collective assessment of impairment.

If there is objective evidence that an impairment loss has incurred, the amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows (excluding future expected credit losses that have not yet been incurred). The present value of the estimated future cash flows is discounted at the financial asset's original EIR. If a loan has a variable interest rate, the discount rate for measuring any impairment loss is the current EIR.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.7 Financial instruments - initial recognition and subsequent measurement (cont'd)

The carrying amount of the asset is reduced through the use of an allowance account and the amount of the loss is recognized in the statement of profit or loss. Interest income continues to be accrued on the reduced carrying amount and is accrued using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss. The interest income is recorded as part of finance income in the statement of profit or loss. Loans together with the associated allowance are written off when there is no realistic prospect of future recovery and all collateral has been realized or has been transferred to the Group. If, in a subsequent year, the amount of the estimated impairment loss increases or decreases because of an event occurring after the impairment was recognized, the previously recognized impairment loss is increased or reduced by adjusting the allowance account.

AFS financial investments

For AFS financial investments, the Group assesses at each reporting date whether there is objective evidence that an investment or a group of investments is impaired. In the case of equity investments classified as AFS, objective evidence would include a significant or prolonged decline in the fair value of the investment below its cost. 'Significant' is evaluated against the original cost of the investment and 'prolonged' against the period in which the fair value has been below its original cost. Where there is evidence of impairment, the cumulative loss – measured as the difference between the acquisition cost and the current fair value, less any impairment loss on that investment previously recognized in the statement of profit or loss – is removed from OCI and recognized in the statement of profit or loss. Impairment losses on equity investments are not reversed through the statement of profit or loss; increases in their fair value after impairment are recognized directly in OCI.

In the case of debt instruments classified as AFS, the impairment is assessed based on the same criteria as financial assets carried at amortized cost. However, the amount recorded for impairment is the cumulative loss measured as the difference between the amortized cost and the current fair value, less any impairment loss on that investment previously recognized in the statement of profit or loss. Future interest income continues to be accrued based on the reduced carrying amount of the asset, using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss. The interest income is recorded as part of finance income. If, in a subsequent year, the fair value of a debt instrument increases and the increase can be objectively related to an event occurring after the impairment loss was recognized in the statement of profit or loss, the impairment loss is reversed through the statement of profit or loss.

3) Financial liabilities

Initial recognition and measurement

Financial liabilities within the scope of KIFRS 1039 are classified as financial liabilities at fair value through profit or loss, loans and borrowings, or as derivatives designated as hedging instruments in an effective hedge, as appropriate.

All financial liabilities are recognized initially at fair value and, in the case of loans and borrowings, plus directly attributable transaction costs.

The Group's financial liabilities include trade and other payables, current financial liabilities and long-term financial liabilities.

Subsequent measurement

The measurement of financial liabilities depends on their classification, as described below:

Loans and borrowings

After initial recognition, interest bearing loans and borrowings are subsequently measured at amortized cost using the EIR method. Gains and losses are recognized in the statement of profit or loss when the liabilities are derecognized as well as through EIR amortization process. Amortized cost is calculated by taking into account any discount or premium on acquisition and fee or costs that are an integral part of the EIR. The EIR amortization is included in finance cost in the statement of profit or loss.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.7 Financial instruments - initial recognition and subsequent measurement (cont'd)

Financial guarantee contracts

Financial guarantee contracts issued by the Group are those contracts that require a payment to be made to reimburse the holder for a loss it incurs because the specified debtor fails to make a payment when due in accordance with the terms of a debt instrument. Financial guarantee contracts are recognized initially as a liability at fair value, adjusted for transaction costs that are directly attributable to the issuance of the guarantee. Subsequently, the liability is measured at the higher of the best estimate of the expenditure required to settle the present obligation at the reporting date and the amount recognized less cumulative amortization.

Derecognition

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognized in the statement of profit or loss.

4) Offsetting of financial instruments

Financial assets and financial liabilities are offset and the net amount is reported in the statement of financial position if, and only if, there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, to realize the assets and settle the liabilities simultaneously.

2.3.8 Derivative financial instruments and hedge accounting

Derivatives are initially recognized at fair value on the date when a derivative contract is entered into and are subsequently re-measured at their fair value. Changes in the fair value of the derivatives that are not qualified for hedge accounting are recognized in the statements of profit or loss within 'other operating income (expenses)' or 'finance income (expenses)' according to the nature of transactions.

The Group designates certain derivatives as either:

- Fair value hedges when hedging the exposure to changes in the fair value of a recognized asset or liability or a firm commitment
- Cash flow hedges when hedging the exposure to variability in cash flows that is either attributable to a particular risk associated with a recognized asset or liability or a highly probable forecast transaction

At the inception of a hedge relationship, the Group formally designates and documents the hedge relationship to which the Group wishes to apply hedge accounting and the risk management objective and strategy for undertaking the hedge. The documentation includes identification of the hedging instrument, the hedged item or transaction, the nature of the risk being hedged. The Group also documents its assessment, both at hedge inception and on an ongoing basis, of whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in fair values or cash flows of hedged items.

The fair values of various derivative instruments used for hedging purposes are disclosed in Note 12. Movements on the hedging reserve in other comprehensive income are shown in Note 12. The full fair value of a hedging derivative is classified as a non-current asset or liability when the remaining maturity of the hedged item is longer than the Group's normal business cycle and as a current asset or liability when the remaining maturity of the hedged item is shorter than the Group's normal business cycle. Trading derivatives are classified as a non-current asset or liability when the remaining maturity of the hedged item is more than 12 months and as a current asset or liability when the remaining maturity of the hedged item is less than 12 months.

1) Fair value hedge

Changes in the fair value of derivatives that are designated and qualify as fair value hedges are recorded in the statements of profit or loss, together with any changes in the fair value of the hedged asset or liability that are attributable to the hedged risk.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.8 Derivative financial instruments and hedge accounting (cont'd)

2) Cash flow hedge

The effective portion of changes in the fair value of derivatives that is designated and qualified as cash flow hedges is recognized in other comprehensive income. The gain or loss relating to the ineffective portion is recognized immediately in the statements of profit or loss within other operating income (expenses). Amounts accumulated in equity are reclassified to profit or loss in the periods when the hedged item affects profit or loss (for example, when the forecast purchase that is hedged takes place).

When a hedging instrument expires or is sold, or when a hedge no longer meets the criteria for hedge accounting, any cumulative gain or loss existing in equity at that time remains in equity and is recognized when the forecast transaction is ultimately recognized in the statements of profit or loss. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in equity is immediately transferred to the statements of profit or loss within other operating income (expenses).

2.3.9 Inventories

Inventories are stated at the lower of cost and net realizable value. Raw materials and supplies are determined using the periodic average method. Other inventories are determined using the specific identification method.

2.3.10 Property, plant and equipment

All property, plant and equipment is stated at cost, net of accumulated depreciation and accumulated impairment losses, if any. Such cost includes the cost of replacing part of the property, plant and equipment and borrowing costs for long-term construction projects if the recognition criteria are met. Likewise, when a major inspection is performed, its cost is recognized in the carrying amount of the plant and equipment as a replacement if the recognition criteria are satisfied. All other repair and maintenance costs are recognized in profit or loss as incurred.

Land is not depreciated but depreciation on other assets is calculated using the straight-line method to allocate the difference between their cost and their residual values over their estimated useful lives, as follows:

➤ Buildings	6 to 40 years
➤ Structures	4 to 40 years
➤ Machinery	6 to 16 years
➤ Construction equipment	4 to 12 years
➤ Vehicles	4 to 10 years
➤ Tools	4 to 10 years
➤ Equipment	4 to 10 years

The assets' residual values, useful lives and methods of depreciation are reviewed at each financial year end, and adjusted prospectively, if appropriate.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.11 Leases

The determination of whether an arrangement is, or contains, a lease is based on the substance of the arrangement at the inception of the lease. The arrangement is, or contains, a lease if fulfilment of the arrangement is dependent on the use of a specific asset or assets and the arrangement conveys a right to use the asset or assets, even if that right is not explicitly specified in an arrangement.

Company as a lessee

A lease is classified at the inception date as a finance lease or an operating lease. A lease that transfers substantially all the risks and rewards incidental to ownership to the Group is classified as a finance lease.

Finance leases are capitalized at the commencement of the lease at the inception date fair value of the leased property or, if lower, at the present value of the minimum lease payments. Lease payments are apportioned between finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are recognized in finance costs in the statement of profit or loss.

A leased asset is depreciated over the useful life of the asset. However, if there is no reasonable certainty that the Group will obtain ownership by the end of the lease term, the asset is depreciated over the shorter of the estimated useful life of the asset and the lease term.

An operating lease is a lease other than a finance lease. Operating lease payments are recognized as an operating expense in the statement of profit or loss on a straight-line basis over the lease term.

2.3.12 Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period of time to get ready for its intended use or sale are capitalized as part of the cost of the asset. All other borrowing costs are expensed in the period in which they occur. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds.

2.3.13 Intangible assets

Amortization of intangible assets is calculated using the straight-line method over their estimated useful lives. Membership rights are regarded as intangible assets with indefinite useful life and not amortized because there is no foreseeable limit to the period over which the asset is expected to be utilized.

➤ Rental rights	20 years
➤ Technical rights	10 years
➤ Concession assets	30 years
➤ Software	4 to 5 years
➤ Others	5 years

2.3.14 Investment properties

Investment property is held to earn rentals or for capital appreciation or both. Investment property is measured initially at its cost, including transaction costs incurred in acquiring the asset. After recognition as an asset, investment property is carried at cost less accumulated depreciation and impairment losses. Investment property, except for land, is depreciated using the straight-line method over the useful lives of 40 years.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.15 Impairment of non-financial assets

The Group assesses, at each reporting date, whether there is an indication that an asset may be impaired. If any indication exists, or when annual impairment testing for an asset is required, the Group estimates the asset's recoverable amount. An asset's recoverable amount is the higher of an asset's or cash-generating unit's (CGU) fair value less costs of disposal and its value in use. The recoverable amount is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets.

When the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In determining fair value less costs of disposal, recent market transactions are taken into account. If no such transactions can be identified, an appropriate valuation model is used. These calculations are corroborated by valuation multiples, quoted share prices for publicly traded companies or other available fair value indicators. Impairment losses of continuing operations are recognized in the statement of profit or loss in expense categories consistent with the function of the impaired asset.

For assets excluding goodwill, an assessment is made at each reporting date to determine whether there is an indication that previously recognized impairment losses no longer exist or have decreased. If such indication exists, the Group estimates the asset's or CGU's recoverable amount. A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognized for the asset in prior years. Such reversal is recognized in the statement of profit or loss unless the asset is carried at a revalued amount, in which case, the reversal is treated as a revaluation increase.

Intangible assets with indefinite useful lives are tested for impairment annually as at December 31, either individually or at the CGU level.

2.3.16 Pension benefits

The Group operates a defined benefit pension plan in Korea, which requires contributions to be made to a separately administered fund.

The cost of providing benefits under the defined benefit plan is determined using the projected unit credit method. Re-measurements, comprising of actuarial gains and losses, the effect of the asset ceiling, excluding net interest (not applicable to the Group) and the return on plan assets (excluding net interest), are recognized immediately in the statement of financial position with a corresponding debit or credit to retained earnings through OCI in the period in which they occur. Re-measurements are not reclassified to profit or loss in subsequent periods. Past service costs are recognized in profit or loss on the earlier of:

- The date of the plan amendment or curtailment, and
- The date that the Group recognizes restructuring-related costs

Net interest is calculated by applying the discount rate to the net defined benefit liability or asset. The Group recognizes the changes in the net defined benefit obligation under 'cost of sales' and 'selling and administrative expenses' in the consolidated statement of profit or loss.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.17 Provisions

Provisions are recognized when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When the Group expects some or all of a provision to be reimbursed, for example, under an insurance contract, the reimbursement is recognized as a consolidated asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the statement of profit or loss net of any reimbursement.

If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, when appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognized as a finance cost.

2.3.18 Current and deferred income tax

1) Current income tax

Current income tax assets and liabilities for the current and prior periods are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted, at the reporting date in the countries where the Group operates and generates taxable income.

Current income tax relating to items recognized directly in equity is recognized in equity and not in the statement of profit or loss. Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

2) Deferred tax

Deferred tax is provided using the liability method on temporary differences at the reporting date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes at the reporting date.

Deferred tax liabilities are recognized for all taxable temporary differences, except:

- Where the deferred tax liability arises from the initial recognition of goodwill or an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss
- In respect of taxable temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, where the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future

Deferred tax assets are recognized for all deductible temporary differences, the carry forward of unused tax credits and unused tax losses, to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, and the carry forward of unused tax credits and unused tax losses can be utilized, except:

- Where the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss
- In respect of deductible temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized

The carrying amount of deferred tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized. Unrecognized deferred tax assets are reassessed at each reporting date and are recognized to the extent that it has become probable that future taxable profits will allow the deferred tax asset to be recovered.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.18 Current and deferred income tax (cont'd)

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date. Deferred tax relating to items recognized outside profit or loss is recognized outside profit or loss. Deferred tax items are recognized in correlation to the underlying transaction either in other comprehensive income or directly in equity. Deferred tax assets and deferred tax liabilities are offset, if a legally enforceable right exists to set off current tax assets against current income tax liabilities and the deferred taxes relate to the same taxable entity and the same taxation authority.

2.3.19 Revenue recognition

Revenue is measured at the fair value of the consideration received or receivable, and represents amounts receivable for goods and rendering of services arising from normal activities of the Group. It is stated as net of value added taxes, returns, rebates and discounts, after elimination of inter-company transactions.

The Group recognizes revenue when the amount of revenue can be reliably measured; when it is probable that future economic benefits will flow to the Group; and when specific criteria have been met for each of the Group's activities, as described below. The revenue can be reliably measured only when any contingency related to sales is resolved. The Group bases its estimate on historical results, taking into consideration the type of customer, the type of transaction and the specifics of each arrangement.

1) Construction contracts

A construction contract as defined by KIFRS 1011 *Construction Contracts*, is a contract specifically negotiated for the construction of an asset.

When the outcome of a construction contract can be estimated reliably and it is probable that the contract will be profitable, contract revenue is recognized over the period of the contract by reference to the stage of completion. Contract costs are recognized as expenses by reference to the stage of completion of the contract activity at the end of the reporting period. When it is probable that total contract costs will exceed total contract revenue, the expected loss on the construction contract is immediately recognized as an expense.

When the outcome of a construction contract cannot be estimated reliably, contract revenue is recognized only to the extent of contract costs incurred that are likely to be recoverable. Variations in contract work, claims and incentive payments are included in contract revenue to the extent that may have been agreed with the customer and are capable of being reliably measured. Contract costs are recognized as an expense in the period in which they are incurred.

The stage of completion is measured by reference to the contract costs incurred up to the end of the reporting period as a percentage of total estimated costs for each contract. Costs incurred in the year in connection with future activity on a contract are excluded from contract costs in determining the stage of completion. These amounts are recognized as inventory, prepaid expenses or other assets.

The Group reports the net contract position for each contract as either an asset or a liability. A contract represents an asset where costs incurred plus recognized profits (less recognized losses) exceed progress billings (due from customers for contract work); a contract represents a liability where the opposite is the case (due to customers for contract work).

The Group uses the percentage-of-completion method to recognize its revenues from building and selling apartment houses in accordance with "2011-I-KQA", an official opinion issued by Korea Accounting Institute. This accounting treatment is valid only under the KIFRS as stated in sub-clause 1 of clause 1, Article 13 of the *Act on External Audit of Stock Companies*.

2. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

2.3.19 Revenue recognition (cont'd)

2) Rendering of services

Revenue is recognized at the time of completion when the services are rendered. Other revenue are recognized when the risks have been transferred to customers, the amount of revenue can be reliably measured and high probability that future economic benefits will flow to the Group.

3) Interest income

Interest income is recognized using the effective interest method according to the time passed. When a loan and receivable is impaired, the Group reduces the carrying amount to its recoverable amount and continues unwinding the discount as interest income. Interest income on impaired loan and receivables is recognized using the original effective interest rate.

4) Dividend income

Dividend income is recognized when the right to receive payment is established.

2.4 New and amended standards and interpretations

The Group applied for the first time certain standards and amendments, which are effective for annual periods beginning on or after January 1, 2017. The nature and the impact of each new standard and amendment are described below:

Amendments to KIFRS 1007 Statement of Cash Flows: Disclosure Initiative

The amendments require entities to provide disclosure of changes in their liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes (such as foreign exchange gains or losses). The Group has provided the information for both the current and the comparative period in Note 31.

Amendments to KIFRS 1012 Income Taxes: Recognition of Deferred Tax Assets for Unrealised Losses

The amendments clarify that an entity needs to consider whether tax law restricts the sources of taxable profits against which it may make deductions on the reversal of deductible temporary difference related to unrealized losses. Furthermore, the amendments provide guidance on how an entity should determine future taxable profits and explain the circumstances in which taxable profit may include the recovery of some assets for more than their carrying amount.

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Amendments to KIFRS 1112 Disclosure of Interests in Other Entities: Clarification of the scope of disclosure requirements in KIFRS 1112

The amendments clarify that the disclosure requirements in KIFRS 1112, other than those in paragraphs B10–B16, apply to an entity's interest in a subsidiary, a joint venture or an associate (or a portion of its interest in a joint venture or an associate) that is classified (or included in a disposal group that is classified) as held for sale.

The standards and interpretations that are issued, but not yet effective, up to the date of issuance of the Group's financial statements are not applicable.

3. Significant accounting judgments, estimates and assumptions

The preparation of the Group's consolidated financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the disclosure of contingent liabilities, at the end of the reporting period. However, uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of the asset or liability affected in future periods.

Other disclosures relating to the Group's exposure to risks and uncertainties are provided in Note 32.

3.1 Estimates and assumptions

The key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are discussed below. The Group based its assumptions and estimates on parameters available when the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising beyond the control of the Group. Such changes are reflected in the assumptions when they occur.

1) Impairment of non-financial assets

The Group assesses, at each reporting date, whether there is an indication that an asset may be impaired. Goodwill and intangible assets with indefinite useful lives are tested for impairment annually as at December 31 either individually or at the CGU level, as appropriate or when circumstances indicate that the carrying value may be impaired. Other non-financial assets are assessed for impairment when circumstances indicate that its asset may be impaired.

To calculate the value in use, the Group estimates the expected future cash inflows derived from CGU and applies the appropriate discount rate to those future cash inflows.

2) Taxes

Deferred tax assets are recognized for unused tax losses to the extent that it is probable that taxable profit will be available against which the losses can be utilized. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and the level of future taxable profits together with future tax planning strategies

3) Defined benefit plans

The present value of the defined benefit pension plan is determined using actuarial valuations. An actuarial valuation involves making various assumptions that may differ from actual developments in the future. These include the determination of the discount rate, future salary increases and mortality rates. Due to the complexities involved in the valuation and its long-term nature, a defined benefit obligation is highly sensitive to changes in these assumptions. All assumptions are reviewed at each reporting date.

In determining the appropriate discount rate, management considers the interest rates of corporate bonds in currencies consistent with the currencies of the post-employment benefit obligation with at least an 'AA+' rating or above, as set by an internationally acknowledged rating agency. The mortality rate is based on publicly available mortality tables for the specific countries. Future salary increases and pension increases are based on expected future inflation rates for the respective countries.

Further details about pension obligations are disclosed in Note 19.

3. Significant accounting judgments, estimates and assumptions (cont'd)

3.1 Estimates and assumptions (cont'd)

4) Revenue recognition

Revenue for construction contracts is recognized on the basis of the percentage-of-completion method, under which revenue is recognized as work progress in the ratio of actual cost incurred to estimated total cost. A variation is an instruction by the customer for a change in the scope of the work to be performed under the contract. A variation may lead to an increase or a decrease in contract revenue. Examples of variations are changes in the specifications or design of the asset and changes in the duration of the contract.

Contract revenue is measured at the fair value of the initial amount of revenue agreed in the contract. The measurement of contract revenue is affected by a variety of uncertainties that depend on the outcome of future events such as delays caused by the contractor, claim, and incentive. The estimates often need to be revised as events occur and uncertainties are resolved. Therefore, the amount of contract revenue may increase or decrease from one period to the next. A variation is recognized in contract revenue when the following four circumstances are satisfied. It is probable that the customer will approve the variation and the amount of revenue arising from the variation. Negotiations have reached an advanced stage such that it is probable that the customer will accept the claim. The contract is sufficiently advanced that it is probable that the specified performance standards will be met or exceeded. The amount of revenue can be reliably measured.

The total contract cost is measured at the end of each reporting period. However, the measurement of contract revenue is affected by various uncertainties that depend on the outcome of future events including project, geographic and economic characteristics. When the uncertainties that prevented the cost of the contract being estimated reliably no longer exist, expenses associated with the construction contract shall be recognized.

4. Standards issued but not yet effective

The standards and interpretations that are issued, but not yet effective, up to the date of issuance of the Group's financial statements are disclosed below. The Group intends to adopt these standards, if applicable, when they become effective.

4.1 KIFRS 1109 *Financial Instruments*

The KASB issued the final version of KIFRS 1109 *Financial Instruments* that replaces KIFRS 1039 *Financial Instruments: Recognition and Measurement* and all previous versions of KIFRS 1109. KIFRS 1109 brings together all three aspects of the accounting for financial instruments project: classification and measurement, impairment and hedge accounting. KIFRS 1109 is effective for annual periods beginning on or after January 1, 2018, with early application permitted. Except for hedge accounting, retrospective application is required but providing comparative information is not compulsory. For hedge accounting, the requirements are generally applied prospectively, with some limited exceptions. The Group plans to adopt the new standard on the required effective date.

In order to assess the financial impact of the initial adoption of KIFRS 1109, the Group performed a preliminary assessment of its potential impact on the financial statements for 2018 based on the current situation and available information as of December 31, 2017. The potential impact of adoption of the standard on the financial statements are as follows. The Group will analyze more specific financial impacts based on additional information in the future, which may change the results of the preliminary assessment as of December 31, 2017.

4.1.1. Classification and measurement of financial assets

The new KIFRS 1109 requires the Group classify financial instruments as subsequently measured at amortized cost, fair value through other comprehensive income (FVOCI), or fair value through profit or loss (FVTPL), on the basis of the holder's business model and instrument's contractual cash flow characteristics as shown below.

Business model	Contractual cash flow characteristics	
	Composed solely of principal and interest	Other
Purpose of collecting contractual cash flows	Amortized cost measurement (*1)	
Purpose of collecting and selling contractual cash flows	FVOCI measurement (*1)	FVTPL measurement (*2)
Purpose of selling, etc.	FVTPL measurement	

(*1) An entity may irrevocably designate a financial asset as measured at FVTPL if doing so eliminates or reduces an accounting mismatch.

(*2) An entity may make an irrevocable election to present in OCI changes in the fair value of an investment in an equity instrument that is not held for trading.

The requirements for classifying the financial assets as measured at amortized cost or FVOCI under KIFRS 1109 are more stringent than the requirements of the current KIFRS 1039; as a result, the increase in the proportion of financial assets subject to FVTPL measurement may increase the volatility in profit or loss upon adoption of KIFRS 1109.

As at December 31, 2017, the Group has loans and receivables of ₩7,045,479 million, derivatives designated as hedges of ₩96,466 million (derivative assets of ₩61,329 million and firm commitments assets of ₩35,137 million), AFS financial assets of ₩251,727 million, which comprises of debt instruments of ₩5,606 million and equity instruments of ₩246,121 million.

1) Financial assets measured at amortized cost

According to KIFRS 1109, the contractual terms of the debt instruments give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding, and the standard requires debt instruments held to collect contractual cash flows to be measured at amortized cost.

4. Standards issued but not yet effective (cont'd)

4.1 KIFRS 1109 *Financial Instruments* (cont'd)

4.1.1 Classification and measurement of financial assets (cont'd)

As at December 31, 2017, the Group measures loans and receivables of ₩7,045,479 million at amortized cost. On the basis of the preliminary assessment, when KIFRS 1109 is applied to financial instruments, the cash flows relating to solely payments of principal and interest on the principal amount outstanding on specified dates per the contractual terms will be risen. Furthermore the instruments that are held to collect cash flows are measured at amortized cost. Hence, they will not have a material impact on the financial statements.

2) Financial assets measured at FVOCI

According to KIFRS 1109, the contractual terms of the debt instruments give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding, and the standard requires debt instruments held to collect and sell contractual cash flows to be measured at FVOCI.

As at December 31, 2017, the Group holds debt instruments of ₩5,606 million, classified as AFS financial assets. On the basis of the preliminary assessment, when KIFRS 1109 is applied to debt instruments, most of the debt instruments will be classified as a financial assets measured at FVOCI.

3) Equity instrument that is not held for trading

According to KIFRS 1109, an entity may make an irrevocable election to present in OCI changes in the fair value of an investment in an equity instrument that is not held for trading. Items of comprehensive income are not subsequently recycled to profit or loss.

As at December 31, 2017, the Group holds equity instruments of ₩246,121 million classified as AFS financial assets. Furthermore, unrealized gains and losses of AFS equity instruments are recycled to loss of ₩1,111 million for the year ended December 31, 2017. The Group will be analyzing more specific financial impact of classification of equity instruments and will disclose the results in the notes to the financial statements of 2018.

4) Other financial assets

In accordance with KIFRS 1109, the Group measures the following instruments at FVTPL: 1) cash flows that do not represent solely payments of principal and interest on the principal amount outstanding; or 2) debt instruments held for the purpose of trading; and 3) other equity instruments that are not designated as measured at FVOCI.

As at December 31, 2017, the Group holds derivative asset designated as hedge of ₩96,466 million. On the basis of the preliminary assessment, when KIFRS 1109 is applied to other financial assets, most of the assets will be classified as a financial assets measured at FVTPL. Hence, they will not have a material impact on the financial statements.

4.1.2 Classification and measurement of financial liabilities

Based on the new KIFRS 1109, changes in the fair value of a financial liability designated as measured at FVTPL that arise from changes in the liability's credit risk are presented in OCI, instead of profit or loss. The changes in the liability's credit risk are recognized in profit or loss if the changes create or enlarge an accounting mismatch had it been presented in other comprehensive income.

Some of the changes in the fair value of financial liabilities designated as at FVTPL, which were recognized in profit or loss under the current KIFRS 1039, are presented in OCI; therefore, gains and losses on valuation of financial liabilities may decrease.

As at December 31, 2017, the Group has designated financial liabilities at fair-value through profit or loss of ₩23,434 million and derivative financial instruments for hedge including firm commitment liabilities of ₩66,981 million (derivative financial liabilities for hedge of ₩5,603 million and firm commitment liabilities of ₩61,378 million) as financial liabilities at FVTPL. On the basis of the preliminary assessment, the adoption of KIFRS 1109 will not have a material impact on the financial statements.

4. Standards issued but not yet effective (cont'd)

4.1 KIFRS 1109 *Financial Instruments* (cont'd)

4.1.3 Impairment: financial assets and contract assets

Under the current KIFRS 1039, impairment losses are recognized when there is objective evidence of impairment based on an incurred loss model; however, under the new KIFRS 1109, impairment losses are recognized for debt instruments that were accounted for at amortized cost, or FVOCI, lease receivables, contract assets, loan commitment, and financial guarantee contracts, based on an expected credit loss impairment model.

After the initial recognition of financial assets KIFRS 1109 allows 12-month expected credit losses, or lifetime expected credit losses to be recognized based on changes in credit risk as per the three-stage model table below ; as a result, credit losses can be recognized earlier than the current KIFRS 1039.

Classification (*1)		Loss allowance
Stage 1	The credit risk on a financial instrument has not increased significantly since initial recognition (*2)	12-month expected credit losses: The expected credit losses that result from default events on a financial instrument that are possible within the 12 months after the reporting date.
Stage 2	The credit risk on a financial instrument has increased significantly since initial recognition	Lifetime expected credit losses: The expected credit losses that result from all possible default events over the expected life of a financial instrument.
Stage 3	Credit-impaired	

(*1) For trade receivables or contract assets in accordance with KIFRS 1115 *Revenue from Contracts with Customers*, which does not contain a significant financing component, the Group is to measure the loss allowance at an amount equal to lifetime expected credit losses; however, if it contains a significant financial component, the Group can choose as its accounting policy to measure the loss allowance at an amount equal to lifetime expected credit losses. For lease receivables, the Group can also choose as its accounting policy to measure the loss allowance at an amount equal to lifetime expected credit losses.

(*2) For financial instruments with low credit risk at the reporting date, it may be considered that the credit risk did not increase significantly.

Under KIFRS 1109, the Group is to recognize the cumulative changes in lifetime expected credit losses since initial recognition as a loss allowance for a financial asset that is considered credit-impaired at initial recognition.

As at December 31, 2017, the Group holds financial assets of ₩7,051,085 million (loans and receivables ₩7,045,479 million and debt instruments of ₩5,606 million classified as AFS financial assets) measured at amortize, and recognized allowance for loss of ₩634,819 million on the instrument.

4.1.4. Hedge accounting

KIFRS 1109 continuously applies mechanics of hedge accounting (fair value hedge accounting, cash flow hedge, foreign entities net investment hedge) specified in the current KIFRS 1039; however, the standard was changed from the complex and rule-based hedge accounting requirements of KIFRS 1039 to the principle-based approach which focuses on the risk management activities. Requirements for application of hedge accounting are relaxed by enlarging items designated as hedges and hedging instruments, eliminating the high risk avoidance effects evaluation, and the quantitative effectiveness criteria testing (80 ~ 125%).

Upon application of hedge accounting of KIFRS 1109, some transactions that do not meet the criteria for hedge accounting of the current KIFRS 1039 may be accounted for using the hedge accounting; therefore, volatility in profit or loss may be reduced.

4. Standards issued but not yet effective (cont'd)

4.1 KIFRS 1109 *Financial Instruments* (cont'd)

4.1.4. Hedge accounting (cont'd)

As at December 31, 2017, the Group has derivative financial assets for hedge of ₩61,329 million, derivative financial liabilities for hedge of ₩5,603 million, firm commitment assets of ₩35,137 million and firm commitment liabilities of ₩61,378 million. Under hedge accounting, the Group recognized loss of ₩153,087 million related to change of the fair value of hedged item and profit of ₩3,936 million related to reclassification from other comprehensive income. As at December 31, 2017, the Group has the associated losses that were recognized in OCI of ₩10,607 million related to change of fair value of hedging instrument.

The Group can elect to continue to apply the current KIFRS 1039 hedge accounting requirements upon initial application of KIFRS 1109.

4.2 KIFRS 1115 *Revenue from Contracts with Customers*

Under the new KIFRS 1115, revenue is recognized by applying a five-stage revenue recognition model to its all contracts with customers.

- ① Identify a contract with a customer.
- ② Identify the performance obligations in the contract.
- ③ Determine the transaction price.
- ④ Allocate the transaction price to the separate performance obligations in the contract.
- ⑤ Recognize revenue when the entity satisfies a performance obligation.

Under KIFRS 1115, revenue is recognized at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer. The new revenue standard will supersede all current revenue recognition requirements under KIFRS. Either a full retrospective application or a modified retrospective application is required for annual periods beginning on or after 1 January 2018. Early adoption is permitted.

The Group plans to apply the modified retrospective approach and accordingly, recognize the cumulative effect of first-time adoption by adjusting the beginning balance of retained earnings in 2018

As at December 31, 2017, for the purpose of adopting KIFRS 1115, the Group has formed a task force team comprised of members from the accounting, IT and other division. The Group will analyze the financial impact of the adoption of KIFRS 1115 and disclose the results to the notes to the financial statements of 2018.

Based on the current status and information available as at December 31, 2017, the Group conducted a preliminary assessment of the potential impact on the 2018 financial statements upon the adoption of KIFRS 1115.

The results are as follows:

The results of the preliminary assessment as at December 31, 2017 may be subject to change as additional information becomes available to the Group.

4.2.1. Identifying performance obligation

The Group's main business comprises of infra works, architecture construction, housing construction and sale, overseas construction. For the year ended December 31, 2017, the Group recognized revenue of construction contracts of ₩11,211,187 million which is 95.99% of the Group's total revenue.

Under KIFRS 1115, the standard requires entities to combine contracts entered into at or near the same time with the same customer if they meet required criteria, such as negotiation as a package with a single commercial objective. The Group expects the most construction contracts with customers to be identified as a single performance obligations that meets the requirements of KIFRS 1115.

4. Standards issued but not yet effective (cont'd)

4.2 KIFRS 1115 Revenue from Contracts with Customers (cont'd)

4.2.2 Performance obligation that would be satisfied over time: construction contracts

The Group constructs various facilities such as apartments, commercial facilities, plants, roads, bridges which are required by customers for 3-4 years generally.

Under KIFRS 1115, entities recognize revenue at a point in time or over time when the performance obligation is satisfied. To recognize revenue over time, one of the following criteria is required; ① customer simultaneously receives and consumes the benefits provided by the entity's performance as the entity performs or ② the entity's performance creates or enhances an asset that the customer controls as the asset is created or enhanced or ③ the entity's performance does not create an asset with an alternative use to the entity and the entity has an enforceable right to payment for performance completed to date.

On the basis of the preliminary assessment, the Group's performance by most construction contracts creates or enhances an asset that the customer controls as the asset is created or enhanced. For this reason, the Group is to recognize transaction price of construction contracts allocated to the performance obligation as revenue over time.

As at December 31, 2017, the Group is planning to present financial impact of revenue recognition of parcel-out construction to the 2018 financial statements when the accounting policies are confirmed. The Group is analyzing continuously the timing of the performance obligation is satisfied. For the year ended December 31, 2017, the Group recognized revenue of housing construction and sales operation of ₩844,940 million, which is 7.23% of the Group's total revenue.

4.2.3 Progress measurement using input method

Under KIFRS 1115, the Group recognize revenues when performance obligation is satisfied by transferring promised goods or services to a customer at a point in time or over time. Revenue from performance obligation satisfied over time is measured based on the progress in satisfying the performance obligation. The way of measuring progress contains output methods and input methods. These methods is used when the progress is reliably measured. Based on the results of preliminary impact assessment, the Group's almost construction contract is considered to be applicable to the progress measurement using the input method.

Under KIFRS 1115, a faithful depiction of an entity's performance might be to recognize revenue at an amount equal to the cost of a good used to satisfy a performance obligation if the entity expects at contract inception that all of the following conditions would be met: the goods are not distinct at contract inception and the customer is expected to obtain control of the good significantly before receiving services related to the good; the cost of the transferred good is significant relative to the total expected costs to completely satisfy the performance obligation; and the entity procures the good from a third party and is not significantly involved in designing and manufacturing the good.

The construction contracts that we carry out in our plant and electric power sector are contracts including purchasing and installation of special equipment, and most of them are carried out over a long period of 3 years or more. For the year ended December 31, 2017, the Group recognized revenue of ₩3,417,497 million for the construction contracts for plant and electric power revenue, accounting for 29.26% of the Group's total revenue.

The Group is planning to present the financial impact of the volume of costs of special machinery over total estimated costs in the construction contracts for plant and electricity, customer's significant control of special machinery based on individual contract, and significant involvement in the design and production of goods to the 2018 financial statements when the accounting policies are confirmed.

4. Standards issued but not yet effective (cont'd)

4.2 KIFRS 1115 *Revenue from Contracts with Customers* (cont'd)

4.2.4 Contracted incremental cost

The Group capitalizes the related costs that it has entered into for construction contracts. These costs are the costs that have been incurred to enter into a construction contract with the customer, which would not have been possible without a contract.

Under KIFRS 1115, contracted incremental costs are recognized as assets when they are expected to be recovered and are amortized over the term of the contract. However, if the amortization period is less than one year, the Group will apply the simplified method of recognizing contracted incremental cost as an expense at the time of occurrence.

The Group is planning to present financial impact of capitalizing incremental costs of signed contracts to the 2018 financial statements when the accounting policies are confirmed.

4.2.5 Other matters

The Group has reviewed the financial impact of other matters (variable consideration, performance obligation, warranty obligation, significant financing component etc.) based on KIFRS 1115, and is planning to present the results to the 2018 financial statements when the accounting policies are confirmed.

4.3 Amendments to KIFRS 1116 *Leases*

KIFRS 1116 was issued in January 2016 and it replaces KIFRS 1017 Leases, KIFRS 2104 Determining whether an Arrangement contains a Lease, KIFRS 2015 Operating Leases-Incentives and KIFRS 2027 Evaluating the Substance of Transactions Involving the Legal Form of a Lease.

The Group assesses whether a contract is, or contains, a lease at inception of a contract and also assesses whether a contract is, or contains, a lease at the initial adoption of KIFRS 1116. However, the Group may not reassess all arrangements entered into before the date of initial application of the standard by applying the simplified approach. The Group plans to apply the amendments for the annual period beginning on or after January 1, 2019. The Group is assessing the effect of the amendments on its financial statements.

For a contract that is, or contains a lease, the Group will account for each lease component within the contract as a lease separately from non-lease components of the contract.

At the commencement date of a lease, a lessee will recognise a liability to make lease payments (i.e., the lease liability) and an asset representing the right to use the underlying asset during the lease term (i.e., the right-of-use asset). The standard includes two recognition exemptions for lessees – leases of 'low-value' assets (i.e., underlying asset \$ 5,000 or less) and short-term leases (i.e., leases with a lease term of 12 months or less). As a practical expedient, a lessee may elect, by class of underlying asset, not to separate non-lease components from lease components, and instead account for each lease component and any associated non-lease components as a single lease component.

In accordance with KIFRS 1008 Accounting Policies, Changes in Accounting Estimates and Errors, a lessee can choose to apply the new standard using either a full retrospective approach or a modified retrospective approach.

The Group plans to complete the financial impact analysis of the amendments in details and provide reasonable estimates.

4. Standards issued but not yet effective (cont'd)

4.4 Amendments to KIFRS 1110 and KIFRS 1028 *Sale or Contribution of Assets between an Investor and its Associate or Joint Venture*

The amendments address the conflict between KIFRS 1110 and KIFRS 1028 in dealing with the loss of control of a subsidiary that is sold or contributed to an associate or joint venture. The amendments clarify that the gain or loss resulting from the sale or contribution of assets that constitute a business, as defined in KIFRS 1103, between an investor and its associate or joint venture, is recognized in full. Any gain or loss resulting from the sale or contribution of assets that do not constitute a business, however, is recognized only to the extent of unrelated investors' interests in the associate or joint venture. The KASB has deferred the effective date of these amendments indefinitely, but an entity that early adopts the amendments must apply them prospectively. The Group will apply these amendments when they become effective.

4.5 Amendments to KIFRS 1102 Classification and Measurement of Share-based Payment Transactions

The KASB issued amendments to KIFRS 1102 *Share-based Payment* that address three main areas: the effects of vesting conditions on the measurement of a cash-settled share-based payment transaction; the classification of a share-based payment transaction with net settlement features for withholding tax obligations; and accounting where a modification to the terms and conditions of a share-based payment transaction changes its classification from cash settled to equity settled.

On adoption, entities are required to apply the amendments without restating prior periods, but retrospective application is permitted if elected for all three amendments and other criteria are met. The amendments are effective for annual periods beginning on or after 1 January 2018, with early application permitted. The Group has reviewed the financial impact, and will apply these amendments on the required effective date.

GS Engineering & Construction Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2017 and 2016

5. Segment information

(1) Details of the Group's reportable segments are as follows:

Operating segments	Principal business activity
Infra works	Road, railroad and others
Architectural construction	Office building, factory, apartment and others
Plant construction	Petroleum refining facility, waste water treatment plant and others
Power	Power plant, power control facility and others
Others	Resort, lease and others

(2) Sales and operating profit (loss) for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017						Consolidation adjustments	Consolidated total
	Infra works	Architectural construction	Plant construction	Power	Others	Total		
Sales	₩ 1,319,383	₩ 6,715,668	₩ 2,981,350	₩ 728,907	₩ 139,866	₩ 11,885,174	₩ (205,718)	₩ 11,679,456
Inter-company sales	(21,121)	(70,163)	(54,897)	(419)	(59,118)	(205,718)	205,718	-
Net sales	1,298,262	6,645,505	2,926,453	728,488	80,748	11,679,456	-	11,679,456
Operating profit (loss)(*)	260	926,858	(548,704)	(57,916)	(1,829)	318,669		318,669
Profit (loss) before income tax(*)	(14,582)	954,635	(971,308)	(121,022)	(8,465)	(160,742)		(160,742)

(*) Operating profit (loss) and profit (loss) before income tax are net of eliminating intercompany transactions.

	2016						Consolidation adjustments	Consolidated total
	Infra works	Architectural construction	Plant construction	Power	Others	Total		
Sales	₩ 1,388,242	₩ 4,867,957	₩ 4,204,290	₩ 663,457	₩ 125,545	₩ 11,249,491	₩ (213,895)	₩ 11,035,596
Inter-company sales	(5,766)	(54,099)	(96,495)	(372)	(57,163)	(213,895)	213,895	-
Net sales	1,382,476	4,813,858	4,107,795	663,085	68,382	11,035,596	-	11,035,596
Operating profit (loss) (*)	(3,519)	654,212	(456,171)	(45,135)	(6,409)	142,978		142,978
Profit (loss) before income tax (*)	(35,433)	785,841	(643,652)	(73,333)	(12,077)	21,346		21,346

(*) Operating profit (loss) and profit (loss) before income tax are net of eliminating intercompany transactions.

GS Engineering & Construction Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2017 and 2016

5. Segment information (cont'd)

(3) Assets and liabilities as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	Infra works	Architectural construction	Plant construction	Power	Others	Total	Consolidation adjustment	Consolidated total
2017								
Assets	₩ 1,435,473	₩ 6,023,291	₩ 3,713,988	₩ 486,615	₩ 2,790,692	₩ 14,450,059	₩ (753,444)	₩ 13,696,615
Liabilities	894,203	1,298,756	5,667,761	802,889	2,768,101	11,431,710	(974,811)	10,456,899
2016								
Assets	₩ 1,598,547	₩ 5,101,874	₩ 4,342,202	₩ 564,978	₩ 2,530,602	₩ 14,138,203	₩ (761,614)	₩ 13,376,589
Liabilities	1,022,647	1,379,529	5,407,238	739,452	2,497,449	11,046,315	(1,022,891)	10,023,424

(4) Geographic information for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	Korea	Middle East	China and South-East Asia	Others	Total
2017					
Sales	₩ 8,159,295	₩ 1,865,778	₩ 981,306	₩ 878,795	₩ 11,885,174
Inter-company sales	(143,522)	(19,679)	(35,795)	(6,722)	(205,718)
Net sales	8,015,773	1,846,099	945,511	872,073	11,679,456
2016					
Sales	₩ 6,183,075	₩ 2,230,487	₩ 1,494,041	₩ 1,341,888	₩ 11,249,491
Inter-company sales	(121,119)	(43,243)	(34,460)	(15,073)	(213,895)
Net sales	6,061,956	2,187,244	1,459,581	1,326,815	11,035,596

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6. Restricted financial instruments

Details of restricted financial instruments as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	Bank	2017	2016	Remarks
Short-term financial assets	KEB Hana and others	₩ 101	₩ 2,013	Pledge of apartment sales income
	NH and others	30,779	-	Pledge of construction billing
	Shinhan	4,889	316	Leasehold deposits
	Shinhan	5,060	5,060	Loans for employees' housing
	Shinhan and others	30,000	30,000	Supports interest for cooperative firm
	SC	33,213	40,124	L/C issued for overseas sites
	Shinhan	2,300	1,700	Provisional attachment
	KEB Hana	20,000	20,000	Pledge of time deposits
	Woori	4,453	-	Credit card receivables of Elysian
	Qatar National Bank	-	4	Bonds issued for overseas sites
Long-term financial assets	Banobras and others	4,937	7,869	Other deposits and others
	Shinhan	214	214	Leasehold deposits
	Shinhan and others	20	22	Deposit for overdraft

7. Trade and other receivables

(1) Trade and other receivables as at December 31, 2017 and 2016 are as follows (Korean won in millions):

		2017		
		Receivables	Allowance for doubtful accounts	Receivables, net
Current assets				
Trade receivables	Receivables from construction contracts	₩ 2,678,740	₩ (111,833)	₩ 2,566,907
	Receivables from apartment sales	97,927	-	97,927
	Unbilled amount related to construction	1,565,091	(44,155)	1,520,936
	Notes receivable	78,449	-	78,449
	Other trade receivable	12,238	(834)	11,404
		4,432,445	(156,822)	4,275,623
Other receivables	Other receivables	₩ 566,262	₩ (173,635)	₩ 392,627
	Accrued revenue	35,226	(14,402)	20,824
	Short-term loans	164,563	(90,357)	74,206
		766,051	(278,394)	487,657
		₩ 5,198,496	₩ (435,216)	₩ 4,763,280
Non-current assets				
Long-term trade and other receivables	Long-term trade receivables	₩ 76,828	₩ -	₩ 76,828
	Long-term loans	740,653	(243,216)	497,437
	Leasehold deposits	193,850	(150)	193,700
	Deposits provided for business	195,623	(392)	195,231
		₩ 1,206,954	₩ (243,758)	₩ 963,196

7. Trade and other receivables (cont'd)

		2016		
		Receivables	Allowance for doubtful accounts	Receivables, net
Current assets				
Trade receivables	Receivables from construction contracts	₩ 2,258,317	₩ (128,392)	₩ 2,129,925
	Receivables from apartment sales	64,084	-	64,084
	Unbilled amount related to construction	2,054,120	-	2,054,120
	Notes receivable	1,617	-	1,617
	Other trade receivable	8,590	(886)	7,704
		4,386,728	(129,278)	4,257,450
Other receivables	Other receivables	₩ 561,492	₩ (41,933)	₩ 519,559
	Accrued revenue	26,821	(12,917)	13,904
	Short-term loans	307,683	(101,680)	206,003
		895,996	(156,530)	739,466
		₩ 5,282,724	₩ (285,808)	₩ 4,996,916
Non-current assets				
Long-term trade and other receivables	Long-term trade receivables	₩ 75,022	₩ -	₩ 75,022
	Long-term loans	714,500	(227,414)	487,086
	Leasehold deposits	189,703	-	189,703
	Deposits provided for business	147,927	(2,243)	145,684
		₩ 1,127,152	₩ (229,657)	₩ 897,495

(2) Aging schedule on trade and other receivables are as follows (Korean won in millions):

	2017		2016	
	Trade receivables	Other receivables	Trade receivables	Other Receivables
Receivables not impaired				
Up to 1 year	₩ 3,605,098	₩ 314,489	₩ 3,454,170	₩ 376,133
1 to 2 years	158,209	84,593	381,831	59,325
Over 2 years	409,284	72,358	293,067	100,394
	4,172,591	471,440	4,129,068	535,852
Individually impaired	259,854	294,611	257,660	360,144
	₩ 4,432,445	₩ 766,051	₩ 4,386,728	₩ 895,996
Allowance for doubtful accounts	₩ (156,822)	₩ (278,394)	₩ (129,278)	₩ (156,530)

7. Trade and other receivables (cont'd)

(3) Changes in allowance for doubtful accounts as at December 31, 2017 and 2016 are as follows (Korean won in millions):

		2017			
		Beginning	Allowance for doubtful accounts	Reversal / write-off	Ending
Trade and other receivables	Trade receivables	₩ 129,278	₩ 7,287	₩ (23,898)	₩ 112,667
	Unbilled amount related to construction	-	44,800	(645)	44,155
	Other receivables	41,933	136,113	(4,411)	173,635
	Accrued revenue	12,917	4,142	(2,657)	14,402
	Short-term loans	101,680	18,979	(30,302)	90,357
		285,808	211,321	(61,913)	435,216
Long-term trade and other receivables	Long-term loans	₩ 227,414	₩ 23,369	₩ (7,567)	₩ 243,216
	Deposits provided for business	2,243	-	(1,851)	392
	Leasehold deposits	-	150	-	150
		229,657	23,519	(9,418)	243,758
		₩ 515,465	₩ 234,840	₩ (71,331)	₩ 678,974
		2016			
		Beginning	Allowance for doubtful accounts	Reversal / write-off	Ending
Trade and other receivables	Trade receivables	₩ 227,266	₩ 10,265	₩ (108,253)	₩ 129,278
	Other receivables	15,009	30,942	(4,018)	41,933
	Accrued revenue	7,611	6,295	(989)	12,917
	Short-term loans	164,726	35,473	(98,519)	101,680
		414,612	82,975	(211,779)	285,808
Long-term trade and other receivables	Long-term loans	₩ 201,078	₩ 32,304	₩ (5,968)	₩ 227,414
	Deposits provided for business	715	3,751	(2,223)	2,243
		201,793	36,055	(8,191)	229,657
		₩ 616,405	₩ 119,030	₩ (219,970)	₩ 515,465

8. Construction contracts

(1) Changes in the outstanding balances of construction contracts for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

2017				
	Beginning	Increase	Sales recognized	Ending
Infra works	₩ 4,285,176	₩ 85,329	₩ 1,281,485	₩ 3,089,020
Architectural construction	8,921,791	6,474,933	5,667,265	9,729,459
Plant construction	5,840,179	1,972,562	2,689,957	5,122,784
Power	1,439,050	226,362	727,540	937,872
	20,486,196	8,759,186	10,366,247	18,879,135
Housing construction and sales operations	₩ 1,513,035	₩ 150,463	₩ 844,940	₩ 818,558
	₩ 21,999,231	₩ 8,909,649	₩ 11,211,187	₩ 19,697,693

2016				
	Beginning	Increase	Sales recognized	Ending
Infra works	₩ 3,411,302	₩ 2,234,870	₩ 1,360,996	₩ 4,285,176
Architectural construction	6,928,514	6,038,203	4,044,926	8,921,791
Plant construction	7,682,505	2,054,597	3,896,923	5,840,179
Power	1,844,281	256,996	662,227	1,439,050
	19,866,602	10,584,666	9,965,072	20,486,196
Housing construction and sales operations	₩ 1,194,512	₩ 985,560	₩ 667,037	₩ 1,513,035
	₩ 21,061,114	₩ 11,570,226	₩ 10,632,109	₩ 21,999,231

(2) Details of construction contracts in progress as at December 31, 2017 and 2016 are as follows (Korean won in millions):

2017				
	Accumulated sales	Accumulated cost	Accumulated Profit (loss)	Reserve for receivables (*)
Infra works	₩ 8,819,988	₩ 8,483,652	₩ 336,336	₩ 42,259
Architectural construction	20,338,279	17,859,141	2,479,138	53,739
Plant construction	29,663,642	30,132,648	(469,006)	449,887
Power	5,451,045	5,465,091	(14,046)	59,835
	64,272,954	61,940,532	2,332,422	605,720
Housing construction and sales operations	₩ 1,834,396	₩ 1,386,497	₩ 447,899	₩ 50,725
	₩ 66,107,350	₩ 63,327,029	₩ 2,780,321	₩ 656,445

2016				
	Accumulated sales	Accumulated cost	Accumulated profit	Reserve for receivables (*)
Infra works	₩ 7,826,516	₩ 7,514,348	₩ 312,168	₩ 145,224
Architectural construction	15,924,998	14,130,308	1,794,690	73,511
Plant construction	28,859,927	28,925,476	(65,549)	522,284
Power	4,825,147	4,788,778	36,369	109,430
	57,436,588	55,358,910	2,077,678	850,449
Housing construction and sales operations	₩ 1,201,494	₩ 1,004,799	₩ 196,695	₩ 167,954
	₩ 58,638,082	₩ 56,363,709	₩ 2,274,373	₩ 1,018,403

(*) Included in trade receivables.

2016				
	Accumulated sales	Accumulated cost	Accumulated profit	Reserve for receivables (*)
Infra works	₩ 7,826,516	₩ 7,514,348	₩ 312,168	₩ 145,224
Architectural construction	15,924,998	14,130,308	1,794,690	73,511
Plant construction	28,859,927	28,925,476	(65,549)	522,284
Power	4,825,147	4,788,778	36,369	109,430
	57,436,588	55,358,910	2,077,678	850,449
Housing construction and sales operations	₩ 1,201,494	₩ 1,004,799	₩ 196,695	₩ 167,954
	₩ 58,638,082	₩ 56,363,709	₩ 2,274,373	₩ 1,018,403

(*) Included in trade receivables.

8. Construction contracts (cont'd)

(3) Details of unbilled and overbilled amount related to construction as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017		2016	
	Unbilled amount	Overbilled amount	Unbilled amount	Overbilled amount
Infra works	₩ 304,137	₩ 116,243	₩ 478,567	₩ 110,874
Architectural construction	353,561	1,164,182	310,181	997,248
Plant construction	656,240	466,595	996,626	303,347
Power	206,998	67,428	268,746	69,182
	₩ 1,520,936	₩ 1,814,448	₩ 2,054,120	₩ 1,480,651

As at December 31, 2017, the unbilled amount from housing construction and sales operations is ₩93,418 million (₩60,522 million in 2016) and overbilled amount from housing construction and sales operations is ₩50,635 million (₩167,744 million in 2016).

(4) Details of major joint construction contracts as at December 31, 2017 are as follows (Korean won in millions):

	Total contract amount	Amounts attributable to the Group	Equity interest attributable to the Group	Principal contractee
Karbala Refinery Project	₩ 6,638,496	₩ 2,489,436	37.50%	Hyundai E&C
Clean Fuels Project(MAA)	4,774,545	1,591,515	33.33%	JGC
NSRP Project	5,766,804	1,441,701	25.00%	JGC
P-10 Project	1,565,485	798,397	51.00%	GS E&C
STAR Project	2,345,190	781,730	33.33%	GS E&C
UHV Plant Project	1,136,606	681,964	60.00%	GS E&C
PP-12 Combined Thermal Power Plant	1,362,472	681,236	50.00%	Arabian Bemco Contracting Co. Ltd.
Marina South Parcel	1,371,414	548,566	40.00%	Hyundai E&C
P8E C/R & Utility Construction	882,192	529,315	60.00%	GS E&C
Boryeong LNG Terminal Project	912,422	501,832	55.00%	GS E&C

(5) Provision for construction losses under the stage-of-completion method, changes in contract revenues and costs arising from accounting estimates changes and unbilled amount related to construction for the year ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017					
	Provision for construction losses	Changes in contract revenues	Changes in estimated contract costs	Profit (loss) for current year due to changes in estimates	Expected profit due to changes in estimate	Changes in unbilled amount related to construction
Architectural construction	₩ 6,296	₩ 805,271	₩ (349,208)	₩ 557,430	₩ 597,049	₩ 557,430
Infra works	5,562	21,669	64,259	(54,137)	11,547	(54,137)
Power	16,407	34,852	121,802	(80,131)	(6,819)	(80,131)
Plant construction	48,257	(214)	679,452	(689,231)	9,565	(689,231)
	₩ 76,522	₩ 861,578	₩ 516,305	₩ (266,069)	₩ 611,342	₩ (266,069)

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8. Construction contracts (cont'd)

		2016					
	Provision for construction losses	Changes in contract revenues	Changes in estimated contract costs	Profit (loss) for current year due to changes in estimates	Expected profit due to changes in estimate	Changes in unbilled amount related to construction	
Architectural construction	₩ 4,584	₩ 271,785	₩ (424,953)	₩ 341,113	₩ 355,625	₩ 341,113	
Infra works	1,742	210,722	216,243	(47,675)	42,154	(47,675)	
Power	6,526	168,074	145,370	(46,127)	68,831	(46,127)	
Plant construction	24,466	543,909	1,089,617	(668,397)	122,689	(668,397)	
	<u>₩ 37,318</u>	<u>₩ 1,194,490</u>	<u>₩ 1,026,277</u>	<u>₩ (421,086)</u>	<u>₩ 589,299</u>	<u>₩ (421,086)</u>	

(6) Under the stage-of-completion method, the construction contracts of which the contract revenue exceeds 5% of the preceding year's total revenue for the year ended December 31, 2017 and 2016 are as follows (Korean won in millions):

		2017							
					Unbilled amount related to construction		Receivables from construction contracts		
		Contract date	Contract due	Progress rate	Amount	Accumulated impairment	Amount	Allowance for doubtful accounts	
Plant	Karbala Refinery Project	2014-04-22	2018-11-27	44.67%	₩ -	₩ -	₩ 258,350	₩ -	
	ERC Refinery Project (*)	2007-08-29	2019-06-30	90.61%	238,280	-	55,527	-	
	Clean Fuels Project(MAA)(*)	2014-04-13	2018-12-31	77.02%	-	-	100,521	-	
	NSRP Project (*)	2013-07-22	2018-06-30	97.16%	-	-	2,578	-	
	RRW Unit Restoration	2017-06-29	2019-01-10	13.55%	-	-	221,847	-	
	Rabigh II CP-3&4(OOK)	2012-06-25	2017-07-17	98.72%	-	-	50,539	-	
	Rumaitha/Shanayel Facilities PhaseIII(*)	2014-04-14	2018-06-30	92.48%	14,469	-	-	-	
	LPIC Project PKG-3	2015-12-17	2019-12-03	25.92%	-	-	17,161	-	
	UHV Plant Project	2012-10-01	2017-01-25	97.34%	12,303	-	1,682	-	
	KNPC North LPG Tank Farm	2011-04-10	2017-08-28	97.91%	-	-	3,946	-	
	KOC Wara Pressure Maintenance Project(*)	2011-09-15	2018-06-30	99.10%	63,528	-	1,453	-	
	Bahrain LNGIT Project	2015-12-02	2019-02-15	38.71%	-	-	17,588	-	
	Star Project(C)(*)	2013-05-20	2018-12-31	91.34%	57,643	-	9,907	-	
	Misa-Riverside Central Xi	2014-10-01	2017-02-27	100.00%	-	-	-	-	
	Gran City Xi	2016-10-01	2020-02-29	23.01%	-	-	6	-	
Architectural-construction	P10-Project	2015-10-20	2018-12-31	66.54%	-	-	61,934	-	
	Gran City Xi 2 nd	2017-05-01	2020-10-31	4.86%	9,227	-	-	-	
	Marina South Parcel(*)	2013-08-01	2018-06-30	90.29%	26,387	-	23,524	-	
	Han-River Central Xi	2014-05-01	2017-01-20	99.96%	-	-	-	-	
	PP-12 Combined								
Power	Thermal Power Plant (*)	2012-05-16	2018-06-30	97.51%	91,575	-	-	-	
	Dangjin no.4 Combined Cycle Power Plant and Drainage Construction	2014-05-01	2017-07-05	99.74%	-	-	-	-	
	Anyang Cogeneration Power Plant No.2 Construction	2014-09-22	2021-10-31	53.56%	-	-	1,588	-	
	Thomson-East Coast line Contract T301	2016-03-18	2024-02-28	15.42%	36,860	-	23,200	-	
Infra works	Doha Link Project	2014-12-30	2018-12-31	71.67%	-	-	75,180	-	

(*) Expected construction period.

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8. Construction contracts (cont'd)

						2016			
						Unbilled amount related to construction		Receivables from construction contracts	
		Contract date	Contract due	Progress rate		Amount	Accumulated impairment	Amount	Allowance for doubtful accounts
Plant	Ruwais Refinery Expansion Project PKG-2	2009-12-14	2016-11-15	99.99%	₩	70,687	₩ -	₩ 233,218	₩ -
	Karbala Refinery Project	2014-04-22	2018-11-27	32.82%		-	-	253,203	-
	ERC Refinery Project (*)	2007-08-29	2017-12-31	83.73%		221,157	-	70,175	-
	Clean Fuels Project (MMA)	2014-04-13	2018-03-10	47.65%		36,052	-	95,712	-
	NSRP Project (*)	2013-07-22	2017-06-30	99.68%		41,274	-	28,125	-
	Rabigh II CP-3&4(OOK) (*)	2012-06-25	2017-06-30	98.55%		61,017	-	59,336	-
	Takreer Inter Refinery Pipeline-2 Project	2010-09-16	2016-08-31	99.98%		41,449	-	98,210	-
	LPIC Project PKG-3	2015-12-17	2019-09-30	3.78%		-	-	14,773	-
	Rumaitha/Shanayel Facilities Phase III	2014-04-14	2017-05-31	83.25%		34,060	-	19,715	-
	Bahrain LNGIT Project	2015-12-02	2018-07-15	4.75%		-	-	19,226	-
	Ruwais Refinery Expansion Project PKG-7	2009-12-14	2016-11-15	99.96%		22,519	-	37,599	-
	Star Project(C)	2013-05-20	2018-04-04	61.06%		79,244	-	8,249	-
	UHV Plant Project	2012-10-01	2017-01-25	98.76%		26,649	-	1,827	-
	KNPC North LPG Tank Farm (*)	2011-04-10	2017-06-30	96.86%		16,679	-	12,185	-
	KOC Wara Pressure Maintenance Project (*)	2011-09-15	2017-06-30	99.65%		76,651	-	1,617	-
Architectural- construction	Misa-Riverside Central Xi	2014-10-01	2017-02-28	78.32%		60,522	-	134	-
	Marina South Parcel	2013-08-01	2017-05-31	77.01%		14,989	-	24,239	-
	Han-River Central Xi	2014-05-01	2017-01-31	92.86%		46,883	-	-	-
	Gran City Xi	2016-10-01	2020-02-29	2.48%		546	-	-	-
Power	PP-12 Combined Thermal Power Plant (*)	2012-05-16	2017-06-30	96.84%		127,481	-	609	-
	Dangjin no.4 Combined Cycle Power Plant and Drainage Construction	2014-05-01	2017-06-30	83.99%		-	-	-	-
	Anyang Cogeneration Power Plant No.2 Construction	2014-09-22	2021-12-31	26.61%		-	-	3,064	-
	Thomson-East Coast line Contract T301	2016-03-18	2024-02-28	2.92%		14,102	-	6,123	-
Infra works	Doha Link Project	2014-12-30	2018-12-31	47.74%		26,709	-	80,465	-

(*) Expected construction period.

Of the construction contracts whose total contract revenue amounts to 5% or more of the previous fiscal year's sales, construction contracts before commencement which did not generate profits are excluded. On the other hand, there are no construction contracts that are excluded from the disclosure due to related laws or contracts with the client.

9. Inventories and other current assets

(1) Inventories as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017		2016
Land held for development	₩ 758,058	₩	236,638
Finished housing	1,253		5,851
Goods and products	851		785
Raw materials	58,645		77,638
Unfinished housing construction	271,527		503,856
Supplies	364		483
	₩ 1,090,698	₩	825,251

(2) Other current assets as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017		2016
Prepaid construction costs	₩ 399,672	₩	365,297
Advance payments	378,870		630,527
Prepaid expenses	108,495		120,296
Prepaid value added tax	87,972		69,641
Prepaid income taxes	15,113		19,180
	₩ 990,122	₩	1,204,941

10. Categories of financial assets and liabilities

(1) Categories of financial assets as at December 31, 2017 and 2016 are as follows (Korean won in millions):

2017					
	Loans and other receivables	Financial assets at fair-value through profit or loss	Derivative financial instruments	Available -for-sale financial assets	Total
Cash and cash equivalents	₩ 2,442,298	₩ -	₩ -	₩ -	₩ 2,442,298
Trade and other receivables (*1)	3,242,344	-	-	-	3,242,344
Short-term financial assets (*2)	199,476	-	61,329	-	260,805
Long-term trade and other receivables	963,196	-	-	-	963,196
Long-term financial assets	198,165	-	-	251,727	449,892
	₩ 7,045,479	₩ -	₩ 61,329	₩ 251,727	₩ 7,358,535

(*1) Excludes unbilled amount related to construction.

(*2) Excludes firm commitments assets.

2016					
	Loans and other receivables	Financial assets at fair-value through profit or loss	Derivative financial instruments	Available -for-sale financial assets	Total
Cash and cash equivalents	₩ 2,356,329	₩ -	₩ -	₩ -	₩ 2,356,329
Trade and other receivables (*1)	2,942,796	-	-	-	2,942,796
Short-term financial assets (*2)	175,681	329	10,768	-	186,778
Long-term trade and other receivables	897,495	-	-	-	897,495
Long-term financial assets	186,751	-	-	226,807	413,558
	₩ 6,559,052	₩ 329	₩ 10,768	₩ 226,807	₩ 6,796,956

(*1) Excludes unbilled amount related to construction.

(*2) Excludes firm commitments assets.

10. Categories of financial assets and liabilities (cont'd)

(2) Categories of financial liabilities as at December 31, 2017 and 2016 are as follows (Korean won in millions):

2017				
	Financial liabilities at fair-value through profit or loss	Derivative financial instruments	Other financial liabilities at amortized costs	Total
Trade and other payables	₩ -	₩ -	₩ 2,473,849	₩ 2,473,849
Short-term financial liabilities (*1)	23,434	3,131	2,973,213	2,999,778
Other current liabilities (*2)	-	-	222,425	222,425
Long-term trade and other payables	-	-	8,588	8,588
Long-term financial liabilities	-	2,472	1,015,556	1,018,028
Other non-current liabilities (*3)	-	-	300,613	300,613
Non-current provision liabilities (*4)	-	-	227,246	227,246
	₩ 23,434	₩ 5,603	₩ 7,221,490	₩ 7,250,527

(*1) Excludes firm commitments liabilities.

(*2) Consists of accrued expenses, accrued dividends and current membership guarantee deposits.

(*3) Consists of security deposits and non-current membership guarantee deposits.

(*4) Represents provisions for financial guarantees.

2016				
	Financial liabilities at fair-value through profit or loss	Derivative financial instruments	Other financial liabilities at amortized costs	Total
Trade and other payables	₩ -	₩ -	₩ 2,387,755	₩ 2,387,755
Short-term financial liabilities (*1)	3,100	97,808	1,697,670	1,798,578
Other current liabilities (*2)	-	-	242,833	242,833
Long-term trade and other payables	-	-	34,487	34,487
Long-term financial liabilities	-	3,315	1,816,237	1,819,552
Other non-current liabilities (*3)	-	-	321,091	321,091
Non-current provision liabilities (*4)	-	-	291,707	291,707
	₩ 3,100	₩ 101,123	₩ 6,791,780	₩ 6,896,003

(*1) Excludes firm commitments liabilities.

(*2) Consists of accrued expenses, accrued dividends and current membership guarantee deposits.

(*3) Consists of security deposits and non-current membership guarantee deposits.

(*4) Represents provisions for financial guarantees.

10. Categories of financial assets and liabilities (cont'd)

(3) Net gains and losses on financial instruments by category for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017					
	Loans and receivables	Assets (liabilities) at fair-value through profit or loss	Derivative financial instruments	Available- for-sale financial assets	Other financial liabilities at amortized costs	Total
Interest income	₩ 44,170	₩ -	₩ -	₩ 65	₩ -	₩ 44,235
Interest expense	-	-	-	-	(191,438)	(191,438)
Gain (loss) on foreign currency translation	(189,264)	-	-	-	70,949	(118,315)
Gain (loss) on foreign currency transaction	(107,599)	-	-	-	67,139	(40,460)
Gain (loss) on derivatives valuation (*)	-	5,557	52,340	-	-	57,897
Gain (loss) on derivatives transaction	-	7,032	86,593	-	-	93,625
Dividend income	-	-	-	1,561	-	1,561
Other finance income (loss)	(213,851)	(94)	-	(13,723)	51,338	(176,330)
	<u>₩ (466,544)</u>	<u>₩ 12,495</u>	<u>₩ 138,933</u>	<u>₩ (12,097)</u>	<u>₩ (2,012)</u>	<u>₩ (329,225)</u>

(*) Excludes gain (loss) on valuation of firm commitments.

	2016					
	Loans and receivables	Assets (liabilities) at fair-value through profit or loss	Derivative financial instruments	Available- for-sale financial assets	Other financial liabilities at amortized costs	Total
Interest income	₩ 44,911	₩ -	₩ -	₩ 37	₩ -	₩ 44,948
Interest expense	-	-	-	-	(126,523)	(126,523)
Gain (loss) on foreign currency translation	124,783	-	-	-	(64,701)	60,082
Gain (loss) on foreign currency transaction	(61,108)	-	-	-	23,695	(37,413)
Gain (loss) on derivatives valuation(*)	-	(2,771)	(54,932)	-	-	(57,703)
Gain (loss) on derivatives transaction	-	1,327	2,708	-	-	4,035
Dividend income	-	-	-	4,596	-	4,596
Other finance income (loss)	(52,258)	(670)	-	(18,572)	(2,201)	(73,701)
	<u>₩ 56,328</u>	<u>₩ (2,114)</u>	<u>₩ (52,224)</u>	<u>₩ (13,939)</u>	<u>₩ (169,730)</u>	<u>₩ (181,679)</u>

(*) Excludes gain (loss) on valuation of firm commitments.

11. Available-for-sale financial assets

(1) Details of available-for-sale financial assets as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
Government bonds	₩ 396	₩ 309
Debt securities	5,210	5,243
Non-marketable equity securities(*)	246,121	221,255
	₩ 251,727	₩ 226,807

(*) Impairment loss of ₩13,240 million was recognized for the year ended December 31, 2017.

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

	2017	2016
Beginning	₩ 226,807	₩ 208,552
Acquisition	65,418	52,203
Disposal	(26,998)	(16,662)
Impairment	(12,129)	(17,653)
Valuation	-	1
Changes in exchange rate	(1,371)	366
Ending	₩ 251,727	₩ 226,807

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11. Available-for-sale financial assets (cont'd)

(3) Details of non-marketable equity securities as at December 31, 2017, and 2016 are as follows (Korean won in millions):

Investee	Number of shares	Equity interest (%)	Acquisition cost		Book value	
			2017	2016	2017	2016
Dong Yang Engineering and Construction Corp.	545	0.02	₩ 3	₩ 3	₩ 3	₩ 3
CL Co., Ltd.	9,113	16.43	91	91	91	91
Central Yongin Corp.	80,000	8.89	400	-	400	-
International Convention Center Jeju	100,000	0.27	500	500	500	500
The Korea Economic Daily	646	0.00	14	14	14	14
GS Cu Chi Development One-member Limited	0.05	5.00	713	713	615	615
KIAMCO Gyeonggi Railway Investment Private Investment Trust	8,104,011,384	10.76	8,107	8,107	8,107	8,107
Tropical Bintan Pte., Ltd.	625,000	12.50	2,444	2,444	-	-
Gaya Railway Co., Ltd.	305,490	2.30	1,527	1,527	1,527	1,527
Kangnam Inter Circular Road Co., Ltd.	-	-	-	2,070	-	2,070
Kangreung Sewage Pipe Co., Ltd.	50,682	3.30	253	253	253	253
Kyunggi Railroad Co., Ltd.	495,000	2.53	2,475	2,475	2,475	2,475
Keangnam Enterprise Ltd.	158	0.01	1	19	1	19
Gyongbuk Green Energy	286,552	10.55	1,433	1,433	1,433	1,433
Gumi Green Water Co., Ltd.	335,412	18.90	1,677	1,677	1,677	1,677
Gunsan Green Energy Center Co., Ltd.	246,962	33.50	1,235	-	1,235	-
Green Energy Development Co., Ltd.	81,000	27.00	405	405	405	405
Nonsan Drain Co., Ltd.	91,868	11.90	459	459	459	459
Evergreen Goyang Co., Ltd.	24,267	1.76	121	121	121	121
Dangyul Co., Ltd.	128,228	11.29	641	641	641	641
Daegu Green Energy Center Co., Ltd.	474,400	10.20	2,372	2,372	2,372	2,372
Daejeon Green Energy Centre Ltd.	396,792	10.20	1,984	1,984	1,984	1,984
Daejeon Sewage Pipe Co., Ltd.	108,456	4.00	830	830	830	830
Dong-Ah Construction Industrial Co., Ltd.	95	0.00	1	1	1	1
Dream Hub Project Financial Investment	4,000,000	2.00	20,000	20,000	-	-
Masan Drain Co., Ltd.	220,890	8.14	1,104	1,104	1,104	1,104
Midan City Development Co., Ltd (*1)	2,391,480	13.40	13,240	13,240	-	12,129
Mileseum Co., Ltd.	86,645	1.63	433	433	433	433
Pumyang Asset Management	725	0.12	4	4	4	4
Pusan New Road Co., Ltd.	430,860	43.88	2,154	4	2,154	4
North Han-River Barraks	5,576	5.47	28	28	28	28
Blue Core PFV Co., Ltd.	1,000,000	10.00	5,000	-	5,000	-
Bichaenoori Co., Ltd.	11,500	11.50	58	58	-	-
Bichaenoori Development Co., Ltd.	657,800	11.50	3,289	3,289	-	-
S-Y highway Co., Ltd.	4,737,712	7.00	23,689	31,905	23,689	31,905
Seo-seoul City Expressway Co., Ltd.	600,087	3.53	3,000	3,000	3,000	3,000
Seoul-Munsan Highway Co., Ltd.	9,667,840	45.50	48,339	22,292	48,339	22,292
Seoul Northern Highway Co., Ltd.	2,730,560	5.60	13,653	13,653	13,653	13,653
Seoul Tunnel Co., Ltd.	1,147,200	6.74	5,736	5,736	5,736	5,736
Siheung Ecopia Co., Ltd.	30,530	3.51	153	153	153	153
Ssangyong E&C Co., Ltd.	1,075	0.00	5	-	5	-
Asiad Country Club Co., Ltd. (Formerly, Busan Travel & Development Co., Ltd.)	80,000	2.67	400	400	-	-
Ansan 4dong 90 block PFV Co., Ltd.	320,000	16.00	3,200	3,200	3,200	3,200
Alpha Dome City Co., Ltd.	-	-	-	19,668	-	-
Alpha Dome City Co., Ltd. (deferred shares)	13,175	0.98	66	66	-	-
Alpha Dome City Asset Management Co., Ltd.	-	-	-	20	-	20
Alpharos Mixed-use Development Co., Ltd.	9,580	9.58	48	48	-	-
Alpharos PFV Co., Ltd.	2,299,200	9.58	11,496	11,496	-	-
Yangju Eco Corporation	-	-	-	10	-	10
SR Construction Co., Ltd.	-	-	-	41	-	41
STX E&C Co., Ltd.	-	-	-	38	-	38

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11. Available-for-sale financial assets (cont'd)

Investee	Number of shares	Equity interest (%)	Acquisition cost		Book value	
			2017	2016	2017	2016
Youngduk & Bio Co., Ltd.	34,870	4.22	₩ 174	₩ 174	₩ 174	₩ 174
Oksan Ochang Highway Corporation	5,988,000	60.00	29,940	29,940	29,940	29,940
Ulsan green Co., Ltd.	701,368	19.74	3,507	3,507	3,507	3,507
Wonju Green Co., Ltd.	226,376	11.03	1,132	1,132	1,132	1,132
Eun Pyung New Road Corp.	435,200	55.06	2,176	2,176	2,176	2,176
Eumseong Sewage Pipe Co., Ltd.	67,210	6.30	336	336	336	336
Uijeongbu LRT Inc. (*2)	8,663,394	47.54	45,226	45,226	-	-
Jeonju Sewage Pipe Co., Ltd.	207,060	7.90	1,035	1,035	1,035	1,035
The 2 nd YoungDong Highway Co., Ltd.	1,454,472	2.73	7,272	7,272	6,687	6,687
The 2 nd Outer Circular Highway Co., Ltd.	2,894,436	20.62	14,472	3,357	14,472	3,357
Cheongra Housing Development Real Estate Investment Co., Ltd.	-	-	-	3,000	-	3,000
Jinsung Construction Co., Ltd.	10,095	1.39	101	101	101	101
Paju-Yangju Powerful Army Co., Ltd.	89,289	8.00	447	447	447	447
Public Development Co., Ltd.	394,655	17.09	3,947	3,947	4,258	4,258
Pyeongtaek EOS	328,200	6.00	1,641	1,050	1,641	1,050
Clean Gimpo Co., Ltd.	403,032	22.81	1,949	1,949	1,949	1,949
Pureun seobu environment	13,488	2.77	67	-	67	-
Poonglim Industrial Co., Ltd.	280	0.00	1	1	1	1
Korea Investment Trust Management	9,960,000,000	29.07	9,960	9,960	9,960	9,960
Hanil Engineering & Construction Co., Ltd.	-	-	-	77	-	77
Hwasung Ecotec Co.,LTD	8,689	0.90	43	-	43	-
Construction Guarantee Cooperative	16,363	0.42	17,095	14,092	17,247	14,244
Fire Guarantee Cooperative	40	0.01	20	20	20	20
Engineering Construction Financial Cooperative (*3)	13,700	1.16	6,612	4,606	6,612	4,606
Electric Construction Financial Cooperative	600	0.01	98	98	98	98
Information & Communication Financial Cooperative	440	0.04	61	61	61	61
Others (*4)			13,886	13,462	12,515	13,692
			₩ 343,979	₩ 325,051	₩ 246,121	₩ 221,255

(*1) Impairment loss was recognized for the year ended December 31, 2017.

(*2) The entity has been declared bankrupt during the current year.

(*3) The Group provided it as collateral in relation to payment guarantees for the outstanding principal balance of land.

(*4) Non-marketable equity security held by a subsidiary.

If fair value of non-marketable equity securities cannot be measured by a reliable measurement model, it is valued at its acquisition cost. Equity securities held by the Group with 20% or more of the voting power of the investee which does not have significant influence are classified as available for sale investment and are included in the above non-marketable equity securities.

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12. Derivative instruments

The Group entered into currency forward contracts with financial institutions to hedge the foreign currency risk of long-term construction contracts which satisfy the criteria for firm commitments and these instruments are designated as a fair value hedge.

Also, the Group entered into currency forward contracts with financial institutions to hedge the foreign currency risk of sub-contracts and these instruments are designated as a cash flow hedge.

Details of derivative instruments as at December 31, 2017 and 2016 are as follows (Korean won in millions):

		2017								
		Valuation		Gain or loss			Accumulated other comprehensive income (*1)			
		Assets	Liabilities	Gain	Loss	Net	Gain	Loss	Net	
Derivatives that are not designated as hedging instruments	For sale	₩ -	₩ 67	₩ -	₩ 67	₩ (67)	₩ -	₩ -	₩ -	
	Put option (*2)									
		-	23,367	5,624	-	5,624	-	-	-	
		-	23,434	5,624	67	5,557	-	-	-	
Derivatives that are designated as hedging instruments	Cash flow hedge	₩ 11,380	₩ 5,588	₩ 3,073	₩ 3,154	₩ (81)	₩ 11,011	₩ 21,618	₩ (10,607)	
	Fair value hedge									
		49,949	15	52,421	-	52,421	-	-	-	
		61,329	5,603	55,494	3,154	52,340	11,011	21,618	(10,607)	
Firm commitments assets or liabilities		₩ 35,137	₩ 61,378	₩ 3,017	₩ 156,104	₩(153,087)	₩ -	₩ -	₩ -	
		₩ 96,466	₩ 90,415	₩ 64,135	₩ 159,325	₩ (95,190)	₩ 11,011	₩ 21,618	₩ (10,607)	

(*1) Gain (loss) on valuation of derivatives are presented before income tax effects.

(*2) The conversion right in relation to foreign convertible bond was provided to the bond holder, and the fair value of the conversion right assessed by the external institution was accounted for as derivative liabilities.

		2016									
		Valuation			Gain or loss			Accumulated other comprehensive income (*)			
		Assets		Liabilities		Gain		Loss		Net	
		₩		₩		₩		₩		₩	
Derivatives that are not designated as hedging instruments	For sale	₩	329	₩	3,100	₩	329	₩	3,100	₩	(2,771)
Derivatives that are designated as hedging instruments	Cash flow hedge	₩	8,465	₩	38,560	₩	3,442	₩	9,648	₩	(6,206)
	Fair value hedge										
			2,303		62,563		2,303		51,029		(48,726)
			10,768		101,123		5,745		60,677		(54,932)
Firm commitments assets or liabilities		₩	166,299	₩	25,031	₩	94,673	₩	59,277	₩	35,396
		₩	177,396	₩	129,254	₩	100,747	₩	123,054	₩	(22,307)

(*) Gain (loss) on valuation of derivatives are presented before income tax effects.

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13. Investments in associates

(1) Changes in investments in associates for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017										
	Equity ownership (%)	Beginning		Increase		Gain (loss) on equity method		Changes in equity		Ending	
Major Development Co., Ltd.	40.00	₩	-	₩	-	₩	-	₩	-	₩	-
GS KOCREF New Stay REIT Co., Ltd.	25.24		14,764		-		(13,473)		-		1,291
Sejong Industry Complex Corp. (*)	20.00		-		10		(10)		-		-
Hakun 7 Industry Complex Co.,Ltd (*)	20.00		-		10		(1)		-		9
Beopwon Industry Urban Development Corp. (*)	20.00		-		100		(66)		-		34
HyangSan 2 Urban Development Corp. (*)	50.00		-		5		-		-		5
FGS East Asia Technical Resource Management Inc.	25.00		-		-		-		-		-
Cadiz San Fernando, A.I.E.	21.95		1,473		-		332		(280)		1,525
Participes de Biorreciclaje S.A.	33.33		5,251		-		419		75		5,745
Shariket Miyeh Ras Djinet, Spa	25.49		8,772		-		1,718		(1,386)		9,104
Shariket Tahlya Miyah Mostaganem, Spa	25.50		24,349		-		4,964		(3,857)		25,456
		₩	54,609	₩	125	₩	(6,117)	₩	(5,448)	₩	43,169

(*) Newly acquired in 2017.

	2016										
	Equity ownership (%)	Beginning		Increase		Gain (loss) on equity method		Changes in equity		Ending	
Major Development Co., Ltd.	40.00	₩	-	₩	-	₩	-	₩	-	₩	-
GS KOCREF New Stay REIT Co., Ltd.	25.24		-		18,200		(3,436)		-		14,764
FGS East Asia Technical Resource Management, Inc.	25.00		-		31		(31)		-		-
GS Korea for Project Management Company	49.00		-		19		1		-		20
Cadiz San Fernando, A.I.E.	21.95		1,354		-		311		(192)		1,473
Participes de Biorreciclaje S.A.	33.33		4,761		-		547		(57)		5,251
Shariket Miyeh Ras Djinet, Spa	25.49		7,697		-		1,066		9		8,772
Shariket Tahlya Miyah Mostaganem, Spa	25.50		19,716		-		4,561		72		24,349
		₩	33,528	₩	18,250	₩	3,019	₩	(168)	₩	54,629

(2) Changes in joint venture for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

2017										
	Equity ownership (%)	Beginning		Gain (loss) on equity method		Changes in equity		Ending		
G&M Estate Co., Ltd.	50.00	₩	494	₩	28	₩	-	₩		522
GS Korea for Project Management Company(*)	49.00		20		1		(2)			19
Hialeah Water, LLP	50.00		2,459		-		(1,780)			679
		₩	2,973	₩	29	₩	(1,782)	₩		1,220

(*) Since the entity is considered to be under a joint control, it was reclassified from investments in associates to investments in joint ventures.

2016										
	Equity ownership (%)	Beginning		Gain (loss) on equity method		Changes in equity		Ending		
G&M Estate Co., Ltd.	50.00	₩	396	₩	98	₩	-	₩		494
Hialeah Water, LLP	50.00		2,096		(100)		463			2,459
		₩	2,492	₩	(2)	₩	463	₩		2,953

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13. Investments in associates (cont'd)

(3) Equity method of accounting has been suspended due to accumulated losses, and unrecognized losses in equity for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

		2017		
		Beginning	Increase (decrease)	Ending
Major Development Co., Ltd.	₩	6,871	₩ (385)	₩ 6,486
FGS East Asia Technical Resource Management, Inc.		108	230	338
		2016		
		Beginning	Increase (decrease)	Ending
Major Development Co., Ltd.	₩	34,230	₩ (27,359)	₩ 6,871
FGS East Asia Technical Resource Management, Inc.		-	108	108

(4) A summary of financial information on associates and joint ventures is as follows (Korean won in millions):

		2017				
		Assets	Liabilities	Net assets	Sales	Profit or loss for the year
Associates	Major Development Co., Ltd.	₩ 74,026	₩ 90,241	₩ (16,215)	₩ 21,668	₩ 964
	GS KOCREF New Stay REIT Co., Ltd.	272,721	204,539	68,182	-	(850)
	Sejong Industry Complex Corp. (*)	17	22	(5)	-	(55)
	Hakun 7 Industry Complex Co.,Ltd (*)	154	108	46	-	(4)
	Beopwon Industry Urban Development Corp. (*)	5,408	5,329	79	-	(331)
	HyangSan 2 Urban Development Corp. (*)	10	1	9	-	(1)
	FGS East Asia Technical Resource Management, Inc.	526	1,781	(1,255)	92	(1,102)
	Cadiz San Fernando, A.I.E.	10,470	3,524	6,946	5,557	1,514
	Participes de Biorreciclaje S.A.	79,934	62,418	17,516	19,049	5,111
	Shariket Miyeh Ras Djinet Spa	97,019	61,299	35,720	24,535	6,739
	Shariket Tahlya Miyah Mostaganem, Spa	202,154	102,330	99,824	41,305	19,466
Joint venture	G&M Estate Co., Ltd.	1,348	304	1,044	1,689	56
	GS Korea for Project Management Company	48	11	37	293	1
	Hialeah Water, LLP	4,295	2,937	1,358	-	-

(*) Newly acquired in 2017.

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13. Investments in associates (cont'd)

		2016			Profit or loss for the year	
		Assets	Liabilities	Net assets	Sales	
Associates	Major Development Co., Ltd.	₩ 112,658	₩ 129,836	₩ (17,178)	₩ 289,390	₩ 67,710
	GS KOCREF New Stay REIT Co., Ltd.	133,246	64,215	69,031	-	(2,722)
	FGS East Asia Technical Resource Management, Inc.	617	1,050	(433)	-	(557)
	GS Korea for Project Management Company	61	19	42	299	1
	Cadiz San Fernando, A.I.E.	9,298	2,591	6,707	5,484	1,419
	Participes de Biorreciclaje S.A.	85,744	69,662	16,082	20,756	1,673
	Shariket Miyeh Ras Djinet, Spa	114,815	80,402	34,413	24,901	4,185
	Shariket Tahlya					
	Miyah Mostaganem, Spa	223,092	127,604	95,488	42,436	17,885
Joint venture	G&M Estate Co., Ltd.	1,321	332	989	1,668	195
	Hialeah Water, LLP	8,819	3,899	4,920	-	(199)

14. Property, plant and equipment

(1) Details of property, plant and equipment as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017			2016		
	Acquisition cost	Accumulated depreciation	Net book value	Acquisition cost	Accumulated depreciation	Net book value
Land	₩ 456,856	₩ -	₩ 456,856	₩ 455,491	₩ -	₩ 455,491
Buildings	389,320	(136,681)	252,639	407,491	(133,292)	274,199
Structures	112,186	(40,741)	71,445	113,481	(38,405)	75,076
Machinery	57,019	(33,965)	23,054	46,751	(32,585)	14,166
Construction equipment	97,229	(43,333)	53,896	114,043	(40,343)	73,700
Vehicles	23,112	(18,104)	5,008	22,841	(17,484)	5,357
Tools	22,761	(16,534)	6,227	23,648	(15,305)	8,343
Equipment	132,211	(107,019)	25,192	142,827	(107,247)	35,580
Construction- in progress	3,202	-	3,202	36,160	-	36,160
	₩ 1,293,896	₩ (396,377)	₩ 897,519	₩ 1,362,733	₩ (384,661)	₩ 978,072

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

	2017								
	Beginning	Acquisition	Disposal	Depreciation	Transfer	Exchange differences	Impairment	Changes in consolidation	Ending
Land	₩ 455,491	₩ 1,366	₩ -	₩ -	₩ -	₩ (1)	₩ -	₩ -	₩ 456,856
Buildings	274,199	475	(2,269)	(9,551)	-	(10,220)	-	5	252,639
Structures	75,076	132	(94)	(2,766)	-	(26)	(877)	-	71,445
Machinery	14,166	1,799	(3,811)	(2,431)	14,580	(1,249)	-	-	23,054
Construction equipment	73,700	3,676	(5,479)	(11,659)	-	(6,342)	-	-	53,896
Vehicles	5,357	1,432	(41)	(1,478)	-	(262)	-	-	5,008
Tools	8,343	2,737	(1,453)	(2,827)	-	(657)	-	84	6,227
Equipment	35,580	3,155	(2,687)	(9,059)	-	(950)	(847)	-	25,192
Construction- in progress	36,160	6,005	-	-	(37,072)	(1,891)	-	-	3,202
	₩ 978,072	₩ 20,777	₩ (15,834)	₩ (39,771)	₩ (22,492)	₩ (21,598)	₩ (1,724)	₩ 89	₩ 897,519

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14. Property, plant and equipment (cont'd)

2016									
	Beginning	Acquisition	Disposal	Depreciation	Transfer	Exchange differences	Changes in consolidation	Ending	
Land	₩ 605,044	₩ -	₩ (2)	₩ -	₩ (149,552)	₩ 1	₩ -	₩ 455,491	
Buildings	283,648	229	-	(10,981)	(564)	1,867	-	274,199	
Structures	75,846	2,766	(527)	(2,967)	-	(42)	-	75,076	
Machinery	12,462	5,288	(970)	(3,383)	-	270	499	14,166	
Construction equipment	72,027	27,025	(8,027)	(17,955)	-	630	-	73,700	
Vehicles	3,880	2,556	(24)	(1,187)	-	132	-	5,357	
Tools	8,116	2,779	(679)	(2,865)	(433)	205	1,220	8,343	
Equipment	46,291	4,603	(475)	(14,437)	447	(849)	-	35,580	
Construction-in progress	231,217	31,982	-	-	(227,493)	454	-	36,160	
	₩ 1,338,531	₩ 77,228	₩ (10,704)	₩ (53,775)	₩ (377,595)	₩ 2,668	₩ 1,719	₩ 978,072	

(3) Collateral pledged to financial institutions for borrowings as at December 31, 2017 and 2016 is as follows (Korean won in millions):

2017					
	Carrying amount	Secured amount	Related account	Related amount	Secured party
Land	₩ 61,854	₩ 47,236	Borrowings and others	₩ 36,636	SC and others
Buildings	51,953				
2016					
	Carrying amount	Secured amount	Related account	Related amount	Secured party
Land	₩ 101,959	₩ 152,691	Borrowings and others	₩ 117,954	SC and others
Buildings	53,340				

15. Intangible assets

(1) Changes in intangible assets for the years ended as at December 31, 2017 and 2016 are as follows (Korean won in millions):

2017							
	Beginning	Acquisition	Disposal	Amortization	Exchange differences	Changes in consolidation	Ending
Goodwill	₩ 54,490	₩ -	₩ -	₩ -	₩ 498	₩ -	₩ 54,988
Lease rights	546	-	-	(328)	-	-	218
Memberships	45,617	541	(4,927)	-	(86)	-	41,145
Computer software	4,331	1,192	(268)	(1,267)	(166)	45	3,867
Concession assets	69,022	8,235	-	(4,802)	(4,937)	25,622	93,140
Technical rights	19,620	-	-	(3,704)	172	-	16,088
Others	22	22	-	(8)	-	-	36
	₩ 193,648	₩ 9,990	₩ (5,195)	₩ (10,109)	₩ (4,519)	₩ 25,667	₩ 209,482

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15. Intangible assets (cont'd)

	2016								
	Beginning	Acquisition	Disposal	Amortization	Transfer	Exchange differences	Changes in consolidation	Ending	
Goodwill	₩ 55,043	₩ -	₩ -	₩ -	₩ -	₩ (553)	₩ -	₩ 54,490	
Lease rights	873	-	-	(327)	-	-	-	546	
Memberships	44,950	826	(171)	-	-	12	-	45,617	
Computer Software	2,868	2,254	(33)	(1,221)	-	121	342	4,331	
Concession Assets	17,342	10,640	-	(4,621)	-	(780)	46,441	69,022	
Technical Rights	23,537	-	-	(3,725)	-	(192)	-	19,620	
Others	35	1,312	(1,296)	(12)	(17)	-	-	22	
	₩ 144,648	₩ 15,032	₩ (1,500)	₩ (9,906)	₩ (17)	₩ (1,392)	₩ 46,783	₩ 193,648	

(2) Impairment tests for goodwill

Goodwill is monitored by the management at the operating segment level (CGU or group of CGU). The following is a summary of goodwill allocation for each operating segment (Korean won in millions):

Operating segments	Allocated goodwill
Plant	₩ 54,681

Goodwill impairment reviews are undertaken annually. The impairment review performed in 2017 suggests that the carrying value of CGU does not exceed the recoverable amount. The recoverable amounts of all CGUs have been determined based on value-in-use calculations. The key assumptions used for value-in-use calculations in 2017 are as follows:

	Operation profit margin (*1)	Perpetual growth rate (*2)	Post-tax discount rate (*3)
Main assumption	6.2% ~ 14.1%	2.00%	10.20%

(*1) Operation profit margin rate is used to extrapolate cash flows for the next five years.

(*2) Perpetual growth rate is consistent with the projected growth rate after five years in industry reports.

(*3) Post-tax discount rate is applied to cash flow projections.

Possible variations in the amount or timing of the estimated future cash flow may lead to changes in the recoverable amount. Accordingly, management continues to monitor revenue and industrial trend.

16. Investment properties

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

	2017	2016
Beginning	₩ 498,208	₩ 91,550
Acquisition	442,614	2,118
Transfer	-	452,536
Disposal	(30,763)	(40,402)
Depreciation	(7,236)	(4,092)
Impairment	(22,934)	(3,502)
Ending	₩ 879,889	₩ 498,208
Acquisition cost	₩ 915,745	₩ 507,573
Accumulated depreciation	(12,126)	(5,937)
Accumulated impairment losses	(23,730)	(3,428)

Fair values of investment properties approximate their book values as at December 31, 2017 and 2016.

(2) Gain and loss on investment properties recognized in profit or loss for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
Lease income	₩ 6,616	₩ 4,737
Operating expenses	11,753	11,443
	₩ (5,137)	₩ (6,706)

(3) Collateral pledged to financial institutions for borrowings as at December 31, 2017 and 2016 are as follows (Korean won in millions):

		2017			
	Carrying amount	Secured amount	Related account	Related amount	Secured party
Land	₩ 585,130	₩ 315,146	Long-term borrowings and others	₩ 253,061	Woori and others
Buildings	222,177				
		2016			
	Carrying amount	Secured amount	Related account	Related amount	Secured party
Land	₩ 150,195	₩ 152,922	Long-term borrowings	₩ 127,435	Woori
Buildings	220,043				

17. Current and non-current liabilities

(1) Trade and other payables as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017		2016
Trade payables	₩ 2,333,026	₩	2,233,989
Other payables	140,823		153,766
	₩ 2,473,849	₩	2,387,755

(2) Details of other current liabilities as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017		2016
Advance from construction contracts	₩ 605,720	₩	850,448
Advance from apartment sales	50,725		167,954
Overbilled amounts related to construction	1,814,448		1,480,650
Advance from customers	82,364		65,550
Withholdings	126,200		102,203
Deposits received	19,361		20,360
Accrued expenses	58,153		61,284
Dividends payable	1		6
Unearned revenue	1,540		4,587
Value added tax withheld	20,218		15,790
Membership guarantee deposits	164,272		181,543
Other liabilities	31,049		55,538
	₩ 2,974,051	₩	3,005,913

(3) Details of long-term trade and other payables as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017		2016
Long-term trade and other payables	₩ 8,588	₩	34,487

(4) Details of other non-current liabilities as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017		2016
Long-term deposits received	₩ 24,448	₩	24,202
Leasehold deposits received	244,808		276,393
Membership guarantee deposits	55,804		44,698
	₩ 325,060	₩	345,293

18. Financial liabilities

(1) Details of short-term and long-term financial liabilities as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017		2016	
Short-term financial liabilities				
Short-term borrowings	₩	1,684,305	₩	1,027,109
Current portion of long-term debts		1,311,258		670,818
Present value discount		(8,532)		(124)
Discount on debentures		(851)		(133)
Conversion right adjustments		(12,968)		-
Derivative liabilities		87,943		125,939
	₩	3,061,155	₩	1,823,609
Long-term financial liabilities				
Long-term borrowings	₩	669,032	₩	1,241,250
Present value discount		(2,122)		(39,442)
Debentures		266,591		539,066
Discount on debentures		(803)		(3,814)
Conversion right adjustments		(657)		(1,251)
Derivative liabilities		2,472		3,315
Others (*)		83,515		80,427
	₩	1,018,028	₩	1,819,551

(*) Present value of exercise price of put options, which the Group provided to financial investors by shareholders' agreement with regard to participation in the acquisition of a subsidiary, was recorded as financial liabilities.

(2) Details of short-term borrowings as at December 31, 2017 and 2016 are as follows (Korean won in millions):

Type	Creditor	Maturity	Annual interest rate (%)	2017	2016
Usance	KEB Hana	2018-06-26	0.30~2.06	₩ 15,369	₩ 15,497
	SC	-	-	-	1
	SG	-	-	-	1,877
	Kookmin	2018-06-26	0.30~2.14	20,621	39,067
	NH	2018-06-11	0.30~1.81	8,674	2,239
	Suhyup	2018-05-08	0.35~1.94	2,457	5,048
	Shinhan	-	-	-	683
	Woori	2018-06-26	0.30~2.14	23,226	12,628
	KDB	2018-06-20	0.50~2.26	20,082	7,926
	Gaepo Dream 2 nd Co., Ltd.	-	-	-	82,700
General borrowings in Korea won	Gaepo Dream 2 nd Co., Ltd.	2018-09-20	3.65	42,500	-
	Dream Arena 1 st Co., Ltd.	-	-	-	84,100
	Dream Arena 1 st Co., Ltd.	2018-09-20	3.65	42,500	-
	Double K 1 st Co., Ltd. (*1)	2018-06-11	3.70	15,000	-
	DGB CAPITAL Co., Ltd.	2018-04-03	4.70	10,000	-
	Bluedream 9 th L.L.C.	2018-10-15	3.65	34,100	-
	Bluedream 14 th L.L.C.	2018-08-07	3.80	60,000	-
	Bluedream 13 th L.L.C.	2018-07-06	3.80	51,300	-
	Bluedream 11 th L.L.C.	2018-09-03	3.65	33,100	-
	Bluedream 10 th L.L.C.	2018-09-03	3.65	33,000	-
	KDB Capital Corporation	2018-04-03	4.70	10,000	-
	Bank of China (*1)	2018-06-11	3.80	30,000	-
	NH Capital Co., Ltd.	2018-04-03	4.70	15,000	-
	YKJP 4 th Co., Ltd. (*1)	2018-08-23	3.65	50,000	-

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18. Financial liabilities (cont'd)

Type	Creditor	Maturity	Annual interest rate (%)		2017	2016
General borrowings in Korea won	Utopia 18 th Co., Ltd.	2018-04-03	4.70	₩	50,000	₩ -
	KB Capital Co., Ltd.	2018-04-03	4.70		10,000	-
	Qplain L.L.C (*1)	2018-07-06	3.75		40,000	-
	Planup bangseo (*1)	2018-09-10	3.65		50,000	-
	Planup power (*1)	2018-09-14	3.70		50,000	-
	Korea Investment Capital	2018-04-03	4.70		20,000	-
	ACUON Capital Co., Ltd.	2018-04-03	4.70		5,000	-
	SC	2018-07-31	3.58		35,000	35,000
	HSBC	-	-		-	50,000
	HSBC	-	-		-	120,850
General borrowings in Foreign currency	HSBC	2018-01-26	6M Libor + 3.34		53,570	-
	Qatar National Bank Consortium	2018-06-30	5.00		14,713	16,595
	UOB	-	-		-	46,781
	ICBC	-	-		-	36,255
	ICBC	2018-05-10	3M Libor + 2.40		53,570	-
	China Everbright Bank	-	-		-	12,085
	China Everbright Bank	2018-07-20	3M Libor + 2.30		10,714	-
	Korea Exim	2018-11-15	3M Libor + 1.85		10,209	35,695
	Korea Exim	2018-06-14	3M Libor + 1.92		257,136	-
	Korea Exim	2018-05-14	3M Libor + 1.91		160,710	-
	Korea Exim	-	-		-	212,286
	KDB	-	-		-	127,453
Subsidiaries	LG Display(Guangzhou) L.L.C	2018-05-19	0.05		79,148	-
	SABB	2018-05-06	3M Libor + 1.50		58,921	66,454
	Caixa and others (*2)	2018-03-06	TR + 8.70		208,685	15,889
				₩	1,648,305	₩ 1,027,109

(*1) Future cash flows from the business are pledged as collateral.

(*2) Future cash flows from the service concession arrangements have been pledged as collateral (see Note 34).

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18. Financial liabilities (cont'd)

(3) Details of long-term borrowings as at December 31, 2017 and 2016 are as follows (Korean won in millions):

Type	Creditor	Maturity	Annual interest rate (%)	2017	2016
Long-term borrowings in Korean won	IBK Capital (*1)	-	-	-	10,444
	IBK Capital	2019-07-11	4.65	7,280	12,720
	SC	-	-	-	80,000
	Kookmin (*1)	2019-11-11	5.60	7,000	-
	Good Planet Limited (*1)	2018-04-06	4.50	10,000	60,000
	Double K 3 rd Co., Ltd. (*1)	2019-11-11	5.60	8,000	-
	Double K 2 nd Co., Ltd. (*1)	2018-11-12	4.50	45,000	-
	Tongyang Life Insurance Co., Ltd.	2019-07-11	4.65	10,920	19,080
	Macquarie (*1)	-	-	-	6,964
	KDB Capital (*1)	-	-	-	8,703
	Suhyup	2019-07-11	4.65	7,280	12,720
	Aju Capital (*1)	2019-07-11	4.65~5.60	26,820	3,180
	Elysia the 1 st Co.,Ltd(*1)	2020-09-15	4.50~5.00	56,400	-
	SK Securities	2018-01-29	3.48	500,000	500,000
	Woori	2045-06-12	2.30~2.80	127,435	127,435
	China Construction Bank (*1)	2019-05-10	4.80	43,000	17,407
	IBK (*1)	2019-10-04	4.80	60,800	100,000
	GRE L.L.C (*1)	2019-10-10	4.70	132,700	-
	KB Capital (*1)	-	-	-	2,901
	KB Capital (*1)	2019-11-11	5.60	7,000	-
	KTB Securities	2019-02-20	3.48~3.49	300,000	300,000
	Korea Exim	2019-05-29	4.40	75,000	120,000
	Hyundai Capital (*1)	-	-	-	5,802
Long-term borrowings in foreign currency	Korea Exim	2019-06-17	6M Eurib + 2.20	10,233	10,141
	HSBC	-	-	-	12,085
	First Gulf Bank	-	-	-	60,425
	Arab Bank, S'pore	2018-01-19	6M Libor + 2.40	53,570	60,425
	Mashreq	2019-02-13	3M Libor + 2.00	107,140	-
	National Bank of Kuwait	-	-	-	59,231
	Qatar National Bank Consortium	2020-06-30	5.00	14,713	8,297
Subsidiaries	Caixa and others (*2)	2038-11-07	TR + 8.70	129,273	101,877
				1,739,564	1,699,837
Less: current portion				(1,070,532)	(458,587)
				669,032	1,241,250
Less: discount on long-term borrowings				(2,122)	(39,442)
				₩ 669,910	₩ 1,201,808

(*1) Future cash flows from the business are pledged as collateral.

(*2) Future cash flows from the service concession arrangements have been pledged as collateral (see Note 34).

18. Financial liabilities (cont'd)

(4) Details of debentures as at December 31, 2017 and 2016 are as follows (Korean won in millions):

Type	Series	Maturity	Annual interest rate (%)	2017	2016
Bonds in Korean won with fixed interest rate	127th - non-guaranteed debentures	-	-	₩ -	₩ 200,000
	128-2nd - non-guaranteed debentures	2018-02-05	3.70	60,000	60,000
	Convertible bonds (*1)	2021-04-12	2.90	230,100	250,000
Bonds in foreign currency	Convertible bonds (*2)	2021-07-21	4.50	160,710	181,272
Bonds of subsidiaries in foreign currency	Bond (*3)	2021-03-03	CDI + 4.35	10,127	14,363
	Bond (*3)	2018-12-19	CDI + 4.00	-	3,831
	Bond (*3)	2018-10-17	CDI + 3.75	11,409	-
	Bond (*3)	2030-03-01	TR + 9.00	34,971	41,831
				507,317	751,297
Less: current portion				(240,726)	(212,231)
				266,591	539,066
Less: discount on debentures				(803)	(3,814)
Less: conversion right adjustments				(657)	(1,251)
				₩ 265,131	₩ 534,001

(*1) Convertible bonds

The Group issued non-guaranteed convertible bonds on April 08, 2016 in accordance with the resolution made at the Board of Directors' meeting. Details of the bonds are as follows:

	Description
Aggregate principal amount of the bonds	₩250,000,000,000
Par interest rate	2.90%
Yield to maturity	2.90%
Conversion period	From April 12, 2017 to March 12, 2021
Type of shares to be issued in accordance with the conversion	Fully paid ordinary shares
Details of conversion rights	1. Conversion price: ₩28,829 per share 2. Payments: paid at once on maturity, redemption at the option of the bondholders 3. Issued: private offering 4. Adjustments to conversion price: adjustments described under "Terms and Conditions of the Bonds" (consolidation, subdivision, reclassification or capital reduction, share dividends, capitalization of profits or reserves, distributions, rights issues of shares or options over shares, issues at less than current market price and others)

18. Financial liabilities (cont'd)

(*2) Convertible bonds

The Group issued non-guaranteed foreign convertible bonds on July 07, 2016 in accordance with the resolution made at the Board of Directors' meeting. Details of the bonds are as follows:

	Description
Aggregate principal amount of the bonds	150,000,000 USD
Par interest rate	4.50%
Yield to maturity	4.50%
Conversion period	From July 21, 2017 to July 14, 2021
Type of shares to be issued in accordance with the conversion	Fully paid ordinary shares
Details of conversion rights	1. Conversion price: ₩33,779 per share 2. Payments: paid at once on maturity, redemption at the option of the bondholders, redemption at the option of the issuer 3. Issued: private offering (Korea) and public offering (Foreign) 4. Adjustments to conversion price: adjustments described under "Terms and Conditions of the Bonds" (consolidation, subdivision, reclassification or capital reduction, share dividends, capitalization of profits or reserves, distributions, rights issues of shares or options over shares, issues at less than current market price and others)

(*3) Future cash flows from the service concession arrangements have been pledged as collateral (see Note 34).

19. Net defined benefit liability

(1) Defined contribution retirement pension

The Group operates a defined contribution pension plan under which the amount contributed by the Group is expensed. The amount recognized in the consolidated statement of profit or loss for the year ended December 31, 2017 is 956 million.

(2) Defined benefit retirement pension

The Group operates a defined benefit pension plan for its employees, which is recorded at the present value of benefits paid using the projected unit credit method based on actuarial assumptions and on a discount basis by Aon Hewitt, an independent actuary firm.

1) The amounts recognized in the consolidated statements of financial position are as follows (Korean won in millions):

	2017	2016
Present value of the defined benefit obligation (*)	₩ 421,701	₩ 404,944
Fair value of plan assets	(366,295)	(320,649)
Defined benefit liability in the consolidated statements of financial position	₩ 55,406	₩ 84,295

(*) The present value of the defined benefit obligation is calculated by deducting contributions to the National Pension Fund of ₩645 million as at December 31, 2017 (2016: ₩678 million).

19. Net defined benefit liability (cont'd)

(2) Defined benefit retirement pension (cont'd)

2) Changes in the carrying amount of defined benefit obligation for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
Beginning balance	₩ 404,902	₩ 380,012
Current service cost	57,968	57,330
Interest expenses	9,236	8,570
Remeasurements:		
Actuarial gain and loss arising from changes in demographic assumptions	(83)	(3,005)
Actuarial gain and loss arising from changes in financial assumptions	(8,958)	(831)
Experience adjustments	(1,557)	7,858
Exchange differences	(124)	41
Payments from plans:		
Benefit payments	(39,522)	(45,070)
Liabilities transferred from (to) a related party	(161)	39
Ending balance	₩ 421,701	₩ 404,944

3) Changes in the carrying amount of defined benefit obligation for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
Beginning balance	₩ 320,649	₩ 255,862
Interest income	7,317	5,700
Remeasurements:		
Return on plan assets (excluding amounts included in interest income)	(2,810)	(1,889)
Contributions:		
Employers	74,050	97,324
Payments from plans:		
Benefit payments	(32,190)	(35,833)
Service costs	(618)	(515)
Assets transferred to a related party	(103)	-
Ending balance	₩ 366,295	₩ 320,649

4) The amounts recognized in the consolidated statements of profit or loss for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
Current service cost	₩ 57,968	₩ 57,330
Net interest	2,538	3,385
Ending balance (*)	₩ 60,506	₩ 60,715

(*) Represents total expenses for pension benefits:

	2017	2016
Cost of sales	₩ 44,371	₩ 45,250
Selling and general administrative expenses	16,135	15,465
	₩ 60,506	₩ 60,715

19. Net defined benefit liability (cont'd)

(2) Defined benefit retirement pension (cont'd)

5) The principal actuarial assumptions as at December 31, 2017 and 2016 are as follows:

	2017	2016
Discount rate	2.85%	2.51%
Future salary increase (including inflation)	3.00%	3.00%

Mortality rates used as actuarial assumptions are based on post-2015 figures announced by the Insurance Development Institute.

6) A quantitative sensitivity analysis for significant assumptions as at December 31, 2017 is as follows (Korean won in millions):

Assumptions	Sensitivity level (%)	Impact on defined benefit obligation	
		1% increase	1% decrease
Discount rate	1.00	₩ (22,713)	₩ 25,525
Future salary increases	1.00	25,307	(22,959)

20. Non-current provisions

Details of non-current provisions as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017			
	Beginning	Increase	Decrease	Ending
Provisions for financial guarantee	₩ 291,707	₩ 82,269	₩ 146,730	₩ 227,246
Provisions for construction warranty	159,329	96,028	52,029	203,328
Provisions for others	13,259	83,443	86,256	10,446
	₩ 464,295	₩ 261,740	₩ 285,015	₩ 441,020

	2016			
	Beginning	Increase	Decrease	Ending
Provisions for financial guarantee	₩ 271,120	₩ 194,330	₩ 173,743	₩ 291,707
Provisions for construction warranty	127,298	72,684	40,653	159,329
Provisions for others	4,255	52,358	43,354	13,259
	₩ 402,673	₩ 319,372	₩ 257,750	₩ 464,295

21. Commitments and contingencies

(1) As at December 31, 2017, the Group has been provided with guarantees of ₩10,442,745 million (2016: ₩11,715,421 million) from the Construction Guarantee and other business partners in relation to its construction performance, sales of housing lots and construction warranties. As at December 31, 2017, the Group has been provided with guarantees of ₩183,127 million (2016: ₩142,733 million) from the Korea Development Bank and others in relation to letters of credit and ₩3,692,527 million (2016: ₩4,413,339 million) from the Korea Development Bank and others in relation to the performance of its overseas construction projects.

(2) As at December 31, 2017, the Group has provided construction performance guarantees and payment guarantees of ₩33,213 million (2016: ₩39,507 million) in relation to its overseas construction projects and the Group has provided guarantees of ₩12,828,136 million (2016: ₩10,616,245 million) to its business partners.

(3) As at December 31, 2017, in relation to housing loans and temporary relocation costs of future tenants during the construction period, the Group has provided guarantees of ₩1,700,410 million (2016: ₩379,548 million) within the limit of ₩4,257,855 million through agreements with financial institutions. Also, in relation to redevelopment projects, the Group has provided payment guarantees of ₩1,025,371 million (2016: ₩1,274,507 million) within the limit of ₩1,513,826 million through agreements with reconstruction project cooperatives as at December 31, 2017.

(4) As at December 31, 2017, for the Group's investees incorporated under the Act on Private Investment in Social Overhead Capital, the Group has provided payment guarantees of ₩440,454 million (2016: ₩405,151 million), its portion of total payment guarantee amount of ₩1,942,737 million (2016: ₩2,185,457 million) provided together with its partners, and pledged investments with a carrying value of ₩176,023 million (2016: ₩120,222 million) as collateral as at December 31, 2017. Also, the Group and its partners have provided put options and other commitments of ₩93,557 million (2016: ₩110,144 million) to the financial investors of Ulsan Green Co., Ltd. and others.

(5) In relation to asset securitization, the Group has provided payment guarantees of ₩104,854 million (2016: ₩110,030 million) to LNBK Yeongjong Limited and other parties, as at December 31, 2017.

(6) As at December 31, 2017, the Group has provided construction completion commitments of ₩1,596,749 million (2016: ₩1,939,350 million) for construction owners.

(7) As at December 31, 2017, the Group has provided 23 checks (22 blank checks and 1 check amounting to ₩1,898 million), 27 notes amounting to ₩284,407 million (2016: 19 checks (18 blank checks and 1 check amounting to ₩1,898 million) and 27 notes amounting to ₩371,958 million) in face value as collaterals to guarantee its construction contracts.

(8) The Group has contingent liabilities in respect of legal claims arising in the ordinary course of business. The Group is involved in 70 lawsuits with aggregated claims sought by the Group amounting to ₩725,728 million (2016: 64 litigations amounting to ₩534,472 million) as the plaintiff, and 115 lawsuits with aggregated claims against the Group amounting to ₩633,969 million (2016: 121 litigations amounting to ₩384,025 million) as the defendant. As at December 31, 2017, the outcome of these cases cannot be reasonably determined. The lawsuits which the Group is involved in as the defendant include a class action.

(9) As at December 31, 2017, the Group has provided put options to Copa Inima, a financial investor who participated in the acquisition of a subsidiary in accordance with the shareholders' agreement, and regarding the participation in the acquisition of a subsidiary, the put options can be exercised in three months after seven years from May 31, 2012 (acquisition date) at the exercise price which is the principal amount including the annual compound interest of 3.84%.

21. Commitments and contingencies (cont'd)

(10) As at December 31, 2017, the Group provided payment guarantees of ₩2,119,600 million (2016: ₩2,328,900 million) within the limit of ₩2,119,600 million through agreements with financial institutions for the borrowings of the developers of the construction projects. Details of guaranteed borrowings are ABCP and ABSTB amounting to ₩1,515,900 million (2016: ₩1,778,000million) and other PF loans amounting to ₩603,700 million (2016: ₩550,900 million), respectively (excluding borrowings for intermediate payments, relocation expenses, completion guarantee, SOC and others).

Major guarantees for the developers' debts that the Group provided as at December 31, 2017, are as follows (Korean won in millions):

Location	Creditor	Loan balance	Guaranteed amount	Details	Loan period	Type
Gyeonggi province	Securities and others	₩ 230,100	₩ 230,100	Debt guarantee	2016.06~2019.06	ABCP, ABSTB and other loans
Gyeonggi province	Securities	220,000	220,000	Debt guarantee	2017.05~2018.05	ABCP, ABSTB
Gyeonggi province	Securities and others	193,500	193,500	Debt guarantee	2017.04~2018.10	ABCP, ABSTB and other loans
Gyeonggi province	Securities and others	150,000	150,000	Debt guarantee	2017.05~2019.05	ABCP, ABSTB and other loans
Gyeonggi province	Securities and others	132,600	132,600	Debt guarantee	2017.04~2020.01	ABCP, ABSTB and other loans
Gyeonggi province	Securities	123,700	123,700	Debt guarantee	2017.06~2018.08	ABCP, ABSTB
Gyeonggi province	Securities and others	115,000	115,000	Debt guarantee	2017.04~2018.10	ABCP, ABSTB and other loans
Gyeonggi province	Securities and others	113,000	113,000	Debt guarantee	2016.05~2019.11	ABCP, ABSTB and other loans
Seoul	Banks and others	109,500	109,500	Debt guarantee	2017.03~2018.04	ABCP, ABSTB and other loans
Gyeonggi province	Securities	100,000	100,000	Debt guarantee	2017.12~2018.06	ABCP, ABSTB

(11) As at December 31, 2017, the Group has provided payment guarantees to the Korea Securities Finance Corporation by June 2, 2018 for the employee's stock ownership acquisition fund personal loan.

(12) The Group has entered into an operating lease contract for 20 years for renting Gran Seoul with Kocref Chungjin No.18 Entrust Management Real Estate Investment Company in 2014. Also, the Group has entered into an operating lease contract for 20 years for renting Yongin Institute of Technology with Kookmin Bank, the trustee of Korea Investment Private Institute Real Estate Investment. The Group does not hold any purchase option to purchase the leased buildings upon maturity of the lease period in relation to the contracts above.

Minimum lease fees based on the operating lease contracts above as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
Up to 1 year	₩ 78,855	₩ 78,791
1 to 5 years	313,934	314,078
Over 5 years	519,595	597,895
	₩ 912,384	₩ 990,764

(13) In relation to the commitments and contingencies above, the Group may be required to make accelerated repayments or provide additional guarantees for the borrowings, payment guarantees, and major lease agreements under the contract if the credit rating of unsecured bonds issued by the Group falls below a certain level. As at December 31, 2017, the credit rating of unsecured bonds is unlikely to be downgraded.

(14) GS Inima Environment S.A., a subsidiary, has provided as collateral future cash flows from the service concession arrangements and has pledged payment guarantees related to borrowings from financial institutes.

22. Issued capital and share premium

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

	2017	2016
Authorized shares	200,000,000 shares	200,000,000 shares
Par value per share	₩5,000	₩5,000
Outstanding shares	71,675,237 shares	71,000,000 shares
Issued capital	₩358,376 million	₩355,000 million

(2) Details of share premium as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
Gain on disposal of treasury stock	₩ 9,752	₩ 9,725
Additional paid-in capital	574,545	558,104
Gain on business combination	15,002	15,002
Other share premium	27,857	28,025
	₩ 627,156	₩ 610,856

(3) Details of other components of equity as at December 31, 2017 and 2016, are as follows (Korean won in millions):

	2017	2016
Treasury stock (*1)	₩ (75,733)	₩ (75,733)
Other components of equity (*2)	(67,616)	(67,616)
Hybrid securities (*3)	56,141	56,141
	₩ (87,208)	₩ (87,208)

(*1) To stabilize the Group's share price, the Group purchased 1,439,281 shares of own stock and recognized the acquisition in other components of equity as at December 31, 2017.

(*2) The present value of the exercise price of the put option, which the Group has provided to financial investors who participated in the acquisition of a subsidiary in accordance with the shareholders' agreement, was recorded.

(*3) The details of hybrid securities are as follows:

	Description
Amounts	₩56,995,527,600
Maturity date	April 14, 2045 (The Group has an option to extend its maturity period.)
Interest rate	Annual interest rate of 2.9% (under step-up provisions, after 5 years of issuance, an additional interest rate will be added on the average yield of 5-year unsecured bonds and redetermined every year.)
Interest payment term	Interest is payable every 3 months, and the Group has an option to extend payments.
Dividend policy	If the interest of the hybrid bonds is not paid, It is not allowed to pay dividend or interest for the same priority ranking debt, preferred stock, or common stock.
Exchange policy	Hybrid securities are exchangeable with treasury stock for, ₩39,600 the hybrid securities face value of.
Exercise period	From May 14, 2015 to March 14, 2045
Others	After 5 years of issuance, call option is exercisable for the entire unexchanged securities with at the Group's discretion on interest payment dates thereafter. According to the amendments to IFRS, call option is exercisable for the entire unexchanged securities when these securities are not qualified to be recorded as equity.

22. Issued capital and share premium (cont'd)

(4) Details of other comprehensive loss as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
Gain on valuation of derivative instruments	₩ 8,203	₩ 21,395
Loss on valuation of derivative instruments	(15,242)	(67,087)
Gain on valuation of available-for-sale financial assets	345	351
Loss on valuation of available-for-sale financial assets	(436)	(1,286)
Gain on exchange differences on translations of foreign operations	94,839	42,011
Loss on exchange differences on translations of foreign operations	(154,170)	(100,533)
Share of other comprehensive income of associates	1,096	1,096
	₩ (65,365)	₩ (104,053)

23. Retained earnings

Retained earnings as at December 31, 2017 and 2016 consist of the following (Korean won in millions):

	2017	2016
Legal reserves	₩ 81,138	₩ 80,630
Appropriated retained earnings for business stabilization	844,653	844,653
Discretionary reserves	2,695,229	2,712,280
Remeasurements of net defined benefit liability	(42,730)	(48,676)
Other consolidated retained earnings	49,867	38,772
Unappropriated accumulated deficit	(1,293,811)	(1,123,463)
	₩ 2,334,346	₩ 2,504,196

24. Loss per share

Basic and diluted loss per share of equity holders of the Company for the years ended December 31, 2017 and 2016 are as follows (Korean won except for shares):

	2017 (*1)	2016 (*1)
Profit (loss) attributable to equity holders of the parent (*2)	₩ (170,040,631,362)	₩ (27,434,226,290)
Weighted average number of ordinary shares in issue (*3)	69,944,655	69,560,719
Basic and diluted loss per share	₩ (2,431)	₩ (394)

(*1) Although the Group holds convertible bonds and hybrid securities which have a potential dilutive effect, diluted loss per share amounts are the same as basic loss per share amounts due to an anti-dilutive effect on loss per share.

(*2) Excludes interest payment of the hybrid securities.

(*3) Weighted average number of ordinary shares outstanding for the years ended December 31, 2016 are calculated by deducting 1,439,281 shares of treasury stock from 71,000,000 shares of common stock. There is no change in the number of shares outstanding during the same period. The details of calculation of weighted average number of ordinary shares outstanding for the year ended December 31, 2017 are as follows (Korean won except for shares):

		2017		
	Period	Number of shares	Number of days	Number of shares * number of days
Shares at the beginning	2017.01.01~2017.12.31	71,000,000	365	25,915,000,000
Treasury stock	2017.01.01~2017.12.31	(1,439,281)	365	(525,337,565)
	2017.03.08~2017.03.10	(51,052)	3	(153,156)
	2017.03.08~2017.03.13	(17,836)	6	(107,016)
	2017.06.08~2017.06.12	(37,236)	5	(186,180)
	2017.06.08~2017.06.29	(53,512)	22	(1,177,264)
	2017.06.08~2017.06.30	(30,189)	23	(694,347)
Conversion of convertible bonds	2017.04.13~2017.12.31	3,393	263	892,359
	2017.04.18~2017.12.31	203,589	258	52,525,962
	2017.05.25~2017.12.31	237,521	221	52,492,141
	2017.07.20~2017.12.31	27,145	165	4,478,925
	2017.07.25~2017.12.31	33,931	160	5,428,960
	2017.07.28~2017.12.31	169,658	157	26,636,306
				25,529,799,125
Weighted average number of ordinary shares outstanding				69,944,655

25. Selling and general administrative expenses

Selling and general administrative expenses for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017		2016
Salaries	₩ 166,552	₩	150,235
Pension benefits	16,135		15,465
Employee welfare benefits	30,873		30,561
Taxes and dues	12,213		11,460
Commissions	96,089		76,884
Rents	32,135		28,554
Depreciation	6,112		5,585
Amortization	4,308		4,319
Depreciation of investment properties	48		66
Advertising	20,026		15,146
Bad debt expenses(Reversal of allowance for bad debt)	28,174		(50,515)
Development	35,830		34,614
Warranty	16,167		2,610
Insurance premium	6,569		7,538
Travel	6,281		7,157
Reversal of financial guarantee liability	(528)		(861)
Others	7,689		6,444
	₩ 484,673	₩	345,262

26. Other operating income and expenses

(1) Other operating income for the years ended December 31, 2017 and 2016 consists of the following (Korean won in millions):

	2017	2016
Gain on disposal of property, plant and equipment	₩ 270	₩ 634
Gain on disposal of investment properties	52	1,996
Gain on disposal of other assets	1,200	-
Gain on foreign currency transactions	27,249	51,036
Gain on foreign currency translation	28,696	112,647
Reversal of allowance for bad debt	42,686	13,300
Gain on valuation of derivatives	55,494	6,074
Gain on derivatives transactions	112,765	70,032
Gain on valuation of firm commitments	3,017	94,673
Dividend income	1,561	4,588
Gain on disposal of available-for-sale financial assets	17	1,516
Miscellaneous gain	27,532	112,195
Gain on exchange differences on translations of foreign operations	25	3,231
	₩ 300,564	₩ 471,922

(2) Other operating expenses for the years ended December 31, 2017 and 2016 consist of the following (Korean won in millions):

	2017	2016
Bad debt expense	223,381	112,467
Loss on disposal of property, plant and equipment	₩ 642	₩ 6,826
Impairment loss on property, plant and equipment	1,724	-
Loss on disposal of intangible assets	16	40
Loss on disposal of investment property	2,238	4,940
Impairment loss on investment property	22,934	3,502
Loss on disposal of other assets	46	-
Loss on foreign currency transactions	97,114	98,399
Loss on foreign currency translation	192,779	32,398
Loss on valuation of derivatives	3,221	63,777
Loss on derivatives transactions	19,140	65,997
Loss on valuation of firm commitments	156,104	59,277
Loss on disposal of trade receivables	4,982	3,605
Loss on disposal of financial assets	149	127
Impairment loss on financial assets	13,240	19,734
Miscellaneous loss and others	20,066	21,752
Loss on exchange differences on translations of foreign operations	100	7,561
	₩ 757,876	₩ 500,402

27. Finance income and costs

(1) Finance income for the years ended December 31, 2017 and 2016 consists of the following (Korean won in millions):

	2017		2016
Interest income	₩ 44,235	₩	44,948
Dividend income	-		8
Gain on foreign currency transactions	75,743		81,354
Gain on foreign currency translation	67,925		28,702
Gain on valuation of derivatives	5,624		-
Reversal of financial guarantee liabilities	95,289		136,894
	₩ 288,816	₩	291,906

(2) Finance costs for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017		2016
Interest expenses	₩ 191,438	₩	126,523
Loss on foreign currency transaction	46,338		71,404
Loss on foreign currency translation	22,157		48,869
Loss on disposal of financial assets	445		897
Loss on retirement of bonds	-		4,128
Financial guarantee expenses	44,449		136,257
	₩ 304,827	₩	388,078

28. Income tax

(1) Income tax expense for the years ended December 31, 2017 and 2016 consists of the following (Korean won in millions):

	2017		2016
Current tax on profits for the year	₩ 93,588	₩	49,416
Origination and reversal of temporary differences (*1)	(91,369)		3,753
Total income tax expense (benefit)	₩ 2,219	₩	53,169
Deferred income tax charged to equity (*2)	₩ (715)	₩	11,392
Income tax expense	2,934		41,777

(*1) Changes in deferred income tax for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017		2016
Beginning balance of deferred tax assets	₩ 550,993	₩	554,746
Changes in deferred income tax	91,369		(3,753)
Ending balance of deferred tax assets	₩ 642,362	₩	550,993

28. Income tax (cont'd)

(*2) Income tax credited (charged) directly to equity as at December 31, 2017 and 2016 is as follows (Korean won in millions):

	2017			2016		
	Before tax	Tax (charge) credit	After tax	Before tax	Tax (charge) credit	After tax
Gain on valuation of available for-sale securities	₩ -	₩ 6	₩ (6)	₩ (96)	₩ (23)	₩ (73)
Loss on valuation of available for-sale securities	1,111	261	850	2,081	504	1,577
Gain on valuation of derivatives	(17,215)	(4,023)	(13,192)	(1,933)	(468)	(1,465)
Loss on valuation of derivatives	68,578	16,368	52,210	34,975	8,587	26,388
Gain on exchange differences on translations of foreign operations	58,248	5,369	52,879	6,255	4,378	1,877
Loss on exchange differences on translations of foreign operations	(74,310)	(20,673)	(53,637)	(1,878)	(455)	(1,423)
Remeasurements of the net defined benefit pension plans	7,980	2,035	5,945	(5,910)	(1,429)	(4,481)
Consideration for conversion rights	(227)	(58)	(169)	1,548	375	1,173
Equity method and others	-	-	-	-	(77)	77
	<u>₩ 44,165</u>	<u>₩ (715)</u>	<u>₩ 44,880</u>	<u>₩ 35,042</u>	<u>₩ 11,392</u>	<u>₩ 23,650</u>

(2) A reconciliation between loss before tax at the Korea statutory tax rate to income tax expense at the effective income tax rate of the Group as at December 31, 2017 and 2016 is as follows (Korean won in millions):

	2017	2016
Profit (loss) before tax	₩ (160,742)	₩ 21,346
Tax calculated at domestic tax rates applicable to profits in the respective countries	(40,989)	5,166
Tax effects of:		
Income not subject to tax	(776)	(568)
Expenses not deductible for tax purposes	8,598	7,856
Foreign income tax expense	6,046	20,198
Re-measurement of deferred tax liabilities	40,276	14,862
Additional income taxes for prior periods and others	(10,221)	(5,737)
	<u>43,923</u>	<u>36,611</u>
Income tax expense	<u>₩ 2,934</u>	<u>₩ 41,777</u>

29. Expenses classified by nature

Expenses classified by nature for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
Labor cost	₩ 1,025,524	₩ 1,037,698
Materials	3,009,367	3,010,580
Outsourcing	4,894,787	4,548,389
Employee welfare benefits	136,618	145,836
Bad debt expense(Reversal of allowance for bad debt)	28,350	(50,515)
Rents	191,783	242,565
Depreciation and amortization	49,880	63,681
Taxes and dues	145,341	114,378
Service fees	940,491	872,869
Others	711,358	960,950
Changes in inventories	227,288	(53,812)
	₩ 11,360,787	₩ 10,892,619

The total amounts include cost of sales, selling and general administrative expenses.

30. Related party transactions

(1) Related parties as at December 31, 2017 are as follows:

Relationship	Related parties
Associates(*1)	Major Development Co., Ltd., FGS East Asia Technical Resource Management, Inc. , GS KOCREF New Stay REIT Co., Ltd. , Cadiz San Fernando, A.I.E., Participes de Biorreciclaje S.A., Shariket Miyeh Ras Djinet, Spa, Shariket Tahlya Miyah Mostaganem, Spa, Sejong Industry Complex Corp.(*2), Hakun 7 Industry Complex Co.,Ltd(*2), Beopwon Industry Urban Development Corp.(*2), HyangSan 2 Urban Development Corp.(*2)
Joint venture(*1)	G&M Estate Co., Ltd., Hialeah Water, LLP, GS Korea for Project Management Company(*3)
Others	GS Holdings, GS Retail Co., Ltd., GS Global Corp., Samyangtongsang Ltd., GS Home Shopping Inc., GS Energy Corporation, GS Power Co., Ltd., Haeyang City Gas. Co., Ltd., Seorabeol City Gas Co., Ltd., GS Nanotech Co., Ltd., Sal de Vida Korea Corporation, Boryeong LNG Terminal Co., Ltd., GS EM Co., Ltd., GS Park 24 Co., Ltd., Incheon Total Energy Co., GS-Caltex Corporation, Inno Polytech Corporation, GS Mbiz Co., Ltd., Sangji Shipping Co., Ltd., GS BIO Co., Ltd., GS EcoMetal Co., Ltd., Fresh Serve CO., Ltd., GS Netvision Co., Ltd., CVS net Co., Ltd., GS Teleservices Co., Ltd., APlusB Co., Ltd., TenByTen Inc., GS EPS Co., Ltd., PLS Co., Ltd., GS ENTEC Corp., GS E&R Corp., E&R Solar Co., Ltd., GS Yeogyang Windpower Co., Ltd., GS Donghae Electric Power Co., Ltd., GS Pocheon Green Energy Corp., Yeongyang Wind Power Corporation-2, YGE. Co., Ltd., Gumi green Energe Co., Ltd.,GS Sports Ltd., Parnas Hotel Co., Ltd., Seoul Munsan Highway Corporation, Oksan Ochang Highway Corporation, Eun Pyeong New Road Corp., PNS Co., Ltd., Pusan New road Co., Ltd., GS Neotek, Samyang INT'L Co., Ltd., Boheun Development Co., Ltd., Chemtech International Co., Ltd., Oksan Distribution, GS ITM, Seungsan Group Corporation, Gaseung Development Company, Central Motors Corp., Winasset Co., Ltd., NC TAS, Sam Joung Development Co., Ltd., Procure Co., Ltd., Kyung Won Construction Co., Ltd., Yeongdeok Windpower Corporation1 Co., Ltd., Gunsan Green Energy Center Co., Ltd.

(*1) Equity ownership information is disclosed in Note 13.

(*2) Newly acquired in 2017.

(*3) Since the entity is considered to be under a joint control, it was reclassified from associates to joint ventures.

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30. Related party transactions (cont'd)

(2) Significant transactions with related parties for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

		2017													
		Sales, others						Purchase, others						Changes in ownership	
Related party		Sales		Other income		Total	Purchase		Other expenses		Total				
Associates	Major Development Co., Ltd.	₩	101	₩	-	₩	101	₩	-	₩	-	₩	-	₩	-
	GS KOCREF New Stay REIT CO., Ltd.		112,006		-		112,006		-		-		-		-
	Sejong Industry Complex Corp. (*1)		-		-		-		-		-		-		10
	Hakun 7 Industry Complex Co.,Ltd (*1)		-		-		-		-		-		-		10
	Beopwon Industry Urban Development Corp.(*1)		-		-		-		-		-		-		100
	HyangSan 2 Urban Development Corp. (*1)		-		-		-		-		-		-		5
	FGS East Asia Technical Resource Management, Inc.		164		62		226		76		153		229		-
	G&M Estate Co., Ltd.		306		-		306		1,379		-		1,379		-
	Samyang INT'L Co., LTD.		-		-		-		15,230		-		15,230		-
	Seungsan Group Corporation		-		-		-		-		17		17		-
Joint venture Others	GS Holdings		197		-		197		-		21,635		21,635		-
	GS Global Corp.		12		-		12		23,047		-		23,047		-
	GS Netvision		-		-		-		24		-		24		-
	GS Donghae Electric Power Co., Ltd.		14,314		-		14,314		39		-		39		-
	GS Retail Co., Ltd.		490		-		490		993		114		1,107		-
	GS SPORTS Ltd.		575		-		575		-		4,065		4,065		-
	GS ITM		-		-		-		6,684		365		7,049		-
	GS ENTEC Corp.		-		-		-		7,008		-		7,008		-
	GS E&R Corp.		2,348		-		2,348		-		-		-		-
	GS Teleservice		-		-		-		-		22		22		-
	GS Pocheon Green Energy Corp.		228,863		-		228,863		-		-		-		-
	GS Home Shopping Inc.		607		-		607		-		-		-		-
	Gyongbuk Green Energy (*2)		(1,373)		-		(1,373)		-		-		-		-
	Gumi green water Co., Ltd. (*2).		9,098		-		9,098		-		-		-		-
	Boryeong LNG Terminal Co., Ltd.		49,839		-		49,839		-		-		-		-
	Pusan New road Co., Ltd.		80		-		80		-		-		-		2,150
	Seoul Munsan Highway Corporation		39,015		-		39,015		5		-		5		26,047
	Oksan Ochang Highway Corporation		45,641		-		45,641		-		-		-		-
	Eun Pyeong New Road Corp.		31		11		42		-		-		-		-
	Uijeongbu Light Rail Transit Co., Ltd. (*2)		299		2,003		2,302		-		-		-		-
	GS Neotek		209		-		209		16,021		28		16,049		-

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30. Related party transactions (cont'd)

		2017							
		Sales, others			Purchase, others				
	Related party	Sales	Other income	Total	Purchase	Other expenses	Total	Changes in ownership	
Others	GS Energy Corporation	₩ 3,278	₩ -	₩ 3,278	₩ 106	₩ -	₩ 106	₩	-
	GS Mbiz Co., Ltd	-	-	-	2,366	-	2,366	₩	-
	GS EPS Co., Ltd.	79,573	-	79,573	11	-	11	₩	-
	GS-Caltex Corporation	36,011	-	36,011	32	1	33	₩	-
	GS Power Co., Ltd.	164,840	-	164,840	933	-	933	₩	-
	GS Park 24 Co., Ltd.	956	-	956	30	3	33	₩	-
	Parnas Hotel Co., Ltd.	19,440	-	19,440	-	-	-	₩	-
	Gunsan Green Energy Center Co., Ltd.	-	-	-	-	-	-	₩	1,235
		₩ 806,920	₩ 2,076	₩ 808,996	₩ 73,984	₩ 26,403	₩ 100,387	₩	29,557

(*1) Newly acquired in 2017.

(*2) Excluded from related parties in 2017.

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30. Related party transactions (cont'd)

		2016													
		Sales, others				Purchase, others									
	Related party	Sales		Other income		Total		Purchase		Other expenses		Total		Changes in ownership	
Associates	Major Development Co., Ltd.	₩	548	₩	-	₩	548	₩	-	₩	-	₩	-	₩	-
	FGS East Asia Technical Resource Management Inc.		53		16		69		-		-		-		31
	GS KOCREF New Stay REIT CO., Ltd.		6,828		-		6,828		-		-		-		18,200
Joint venture	GS Korea for Project Management Company		-		-		-		-		-		-		19
	G&M Estate Co., Ltd.		255		-		255		1,293		-		1,293		-
Others	Samyang INT'L Co., LTD.		-		-		-		15,998		-		15,998		-
	Seungsan Group Corporation		-		-		-		-		14		14		-
	NC TAS		2		-		2		324		-		324		-
	GS Holdings		193		-		193		-		19,617		19,617		-
	GS Global Corp.		18		-		18		17,665		-		17,665		-
	GS Netvision		-		-		-		39		-		39		-
	GS Donghae Electric Power Co., Ltd.		4,275		-		4,275		6		-		6		-
	GS Retail Co., Ltd.		475		2		477		1,020		378		1,398		-
	GS SPORTS Ltd.		365		-		365		2		3,916		3,918		-
	GS ITM		-		-		-		5,020		1,303		6,323		-
	GS ENTEC Corp.		-		-		-		9,154		-		9,154		-
	GS E&R Corp.		2,170		-		2,170		-		-		-		-
	GS Teleservice		-		-		-		2		32		34		-
	GS Pocheon Green Energy Corp.		84,596		-		84,596		-		-		-		-
	GS Home Shopping Inc.		760		-		760		-		-		-		-
	PNS Co., Ltd.		14		-		14		-		-		-		-
	Gyeongbuk Green Energy(*)		9,205		-		9,205		-		-		-		1,433
	Kyung Won Construction Co., Ltd.		1		-		1		-		-		-		-
	Gumi green water Co., Ltd.(*)		9,482		-		9,482		-		-		-		1,355
	Boryeong LNG Terminal Co., Ltd.		110,192		-		110,192		-		-		-		-
	Pusan New road Co., Ltd.		-		-		-		-		-		-		4
Others	Seoul Munsan Highway Corporation		2,291		150		2,441		-		-		-		17,517
	Oksan Ochang Highway Corporation		39,884		-		39,884		-		-		-		-
	Eun Pyeong New Road Corp.		72		11		83		-		-		-		-
	Uijeongbu Light Rail Transit Co., Ltd.(*)		-		3,659		3,659		-		-		-		-
	GS Neotek		81		-		81		22,774		17		22,791		-
	GS Energy Corporation		1,921		-		1,921		120		-		120		-
	GS Mbiz Co., Ltd		2		-		2		1,149		-		1,149		-
	GS EPS Co., Ltd.		137,339		-		137,339		6		-		6		-
	GS-Caltex Corporation		7,770		-		7,770		83		-		83		-
	GS Power Co., Ltd.		129,982		-		129,982		296		-		296		-
	GS Park 24 Co., Ltd.		871		-		871		18		-		18		-
	Parnas Hotel Co., Ltd.		76,478		1,551		78,029		386		6		392		-
		₩	626,123	₩	5,389	₩	631,512	₩	75,355	₩	25,283	₩	100,638	₩	38,559

(*) Excluded from related parties in 2017.

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30. Related party transactions (cont'd)

(3) Receivables and payables arising from related party transactions as at December 31, 2017 and 2016 are as follows (Korean won in millions):

		2017								
		Receivables				Payables				
	Related party	Trade receivables	Other receivables	Loans	Total	Trade payables	Other payables	Total		
Associates	Major Development Co., Ltd.	₩ 20,069	₩ -	₩ -	₩ 20,069	₩ -	₩ 18	₩ 18		
	GS KOCREF New Stay REIT CO., Ltd.	14,816	-	-	14,816	-	2,379	2,379		
	FGS East Asia Technical Resource Management, Inc.	-	80	1,714	1,794	44	5	49		
	Cadiz San Fernando, A.I.E.	265	-	-	265	198	-	198		
	Participes de Biorreciclaje S.A	961	-	-	961	-	-	-		
	Shariket Miyeh Ras Djinet, Spa	1,117	-	-	1,117	1,557	-	1,557		
	Shariket Tahlya Miyah Mostaganem Spa	5,892	-	-	5,892	375	-	375		
	Joint venture G&M Estate Co., Ltd.	-	63	-	63	99	490	589		
	Others Samyang INT'L Co., Ltd.	-	-	-	-	4,533	147	4,680		
	Seungsan Group Corporation	-	3,149	-	3,149	-	314	314		
Joint venture	GS Holdings	-	-	-	-	-	2,825	2,825		
	GS Global Corp.	-	41	-	41	-	774	774		
	GS Donghae Electric Power Co., Ltd.	5,318	27	-	5,345	-	-	-		
	GS Retail Co., Ltd.	-	54	-	54	199	7,709	7,908		
	GS SPORTS Ltd.	27	291	-	318	-	129	129		
	GS ITM	-	-	-	-	1,868	86	1,954		
	GS ENTEC Corp.	-	119	-	119	345	-	345		
	GS E&R Corp.	211	-	-	211	-	-	-		
	GS Teleservice	-	-	-	-	-	347	347		
	GS Pocheon Green Energy Corp.	26,991	-	-	26,991	-	21,336	21,336		
Others	GS Home Shopping Inc.	56	8	-	64	-	1,511	1,511		
	Kyung Won Construction Co., Ltd.	-	-	-	-	-	114	114		
	Boryeong LNG Terminal Co., Ltd.	1	-	-	1	-	29,885	29,885		
	Seoul Munsan Highway Corporation	42,987	221	-	43,208	-	458	458		
	Oksan Ochang Highway Corporation	26,356	33	-	26,389	-	862	862		
	Eun Pyeong New Road Corp.	1,947	50	163	2,160	-	-	-		
	GS Neotek	28	1,032	-	1,060	4,725	1,620	6,345		
	GS Energy Corporation	-	159	-	159	-	4,765	4,765		
	GS Mbiz Co., Ltd.	-	-	-	-	1,678	-	1,678		
	GS EPS Co., Ltd.	-	-	-	-	-	2,839	2,839		
Others	GS-Caltex Corporation	14,629	3	-	14,632	-	14,725	14,725		
	GS Power Co., Ltd.	1,587	-	-	1,587	-	4,252	4,252		
	GS Park 24 Co., Ltd.	-	94	-	94	3	-	3		
	Parnas Hotel Co., Ltd.	-	-	-	-	-	2,600	2,600		
		₩ 163,258	₩ 5,424	₩ 1,877	₩ 170,559	₩ 15,624	₩ 100,190	₩ 115,814		

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30. Related party transactions (cont'd)

		2016							
		Receivables				Payables			
	Related party	Trade receivables	Other receivables	Loans	Total	Trade payables	Other payables	Total	
Associates	Major Development Co., Ltd.	₩ 55,082	₩ -	₩ -	₩ 55,082	₩ -	₩ -	₩ -	-
	GS KOCREF New Stay REIT CO., Ltd.	5,027	-	-	5,027	-	-	-	-
	FGS East Asia Technical Resource Management, Inc.	-	76	1,088	1,164	-	-	-	-
	Cadiz San Fernando, A.I.E.	183	-	-	183	199	-	199	-
	Participes de Biorreciclaje S.A	2,278	-	-	2,278	-	-	-	-
	Shariket Miyeh Ras Djinet, Spa	2,288	-	-	2,288	-	-	-	-
	Shariket Tahlya Miyah Mostaganem, Spa	7,303	-	-	7,303	-	-	-	-
	Joint venture G&M Estate Co., Ltd.	-	61	-	61	48	95	143	-
	Others Samyang INT'L Co., Ltd.	-	-	-	-	8,891	147	9,038	-
	Seungsan Group Corporation	-	3,149	-	3,149	-	311	311	-
Joint venture	GS Holdings	-	-	-	-	-	2,825	2,825	-
	GS Global Corp.	-	41	-	41	2,284	908	3,192	-
	GS Netvision	-	-	-	-	28	-	28	-
	GS Donghae Electric Power Co., Ltd.	1,110	27	-	1,137	-	-	-	-
	GS Retail Co., Ltd.	-	30	-	30	737	5,334	6,071	-
	GS SPORTS Ltd.	47	-	-	47	-	750	750	-
	GS ITM	-	-	-	-	1,382	202	1,584	-
	GS ENTEC Corp.	-	-	-	-	699	-	699	-
	GS E&R Corp.	194	-	-	194	-	-	-	-
	GS Teleservice	-	-	-	-	-	348	348	-
Others	GS Pocheon Green Energy Corp.	31,836	-	-	31,836	-	66,254	66,254	-
	GS Home Shopping Inc.	62	31	-	93	-	1,511	1,511	-
	Gyongbuk Green Energy	9,205	33	-	9,238	-	-	-	-
	Kyung Won Construction Co., Ltd.	-	-	-	-	-	114	114	-
	Gumi green water Co., Ltd.	5,837	-	-	5,837	-	-	-	-
	Boryeong LNG Terminal Co., Ltd.	1	-	-	1	-	26,608	26,608	-
	Seoul Munsan Highway Corporation	13,874	-	-	13,874	-	464	464	-
	Oksan Ochang Highway Corporation	2,046	-	-	2,046	-	2,875	2,875	-
	Eun Pyeong New Road Corp.	1,916	39	163	2,118	-	-	-	-
	Uijeongbu Light Rail Transit Co., Ltd.	-	8,434	63,752	72,186	-	-	-	-
Others	GS Neotek	22	-	-	22	2,420	1,617	4,037	-
	GS Energy Corporation	-	104	-	104	-	6,905	6,905	-
	GS Mbiz Co., Ltd.	-	-	-	-	221	-	221	-
	GS EPS Co., Ltd.	-	-	-	-	-	11,545	11,545	-
	GS-Caltex Corporation	164	4	-	168	-	9,541	9,541	-
	GS Power Co., Ltd.	926	-	-	926	-	26,172	26,172	-
	GS Park 24 Co., Ltd.	-	101	-	101	3	-	3	-
	Parnas Hotel Co., Ltd.	-	1,278	-	1,278	10	21,838	21,848	-
		₩ 139,401	₩ 13,408	₩ 65,003	₩ 217,812	₩ 16,922	₩ 186,364	₩ 203,286	-
									-

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30. Related party transactions (cont'd)

Allowance for doubtful accounts of receivables from related parties as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	Allowance for doubtful accounts	
	2017	2016
Uijeongbu Light Rail Transit Co., Ltd.(*)	-	72,285

(*) Excluded from related parties in 2017.

Allowance for doubtful accounts of receivables from related parties includes allowance for doubtful accounts of short and long-term loans, accrued revenues and others.

(4) Changes in loans to related parties for the years ended December 31, 2017, and 2016 are as follows (Korean won in millions):

	2017												
	Annual interest rate (%)	Maturity date	Beginning	Increase	Effects of changes in foreign exchange rates	Ending	Interest income	Equity transaction					
FGS East Asia Technical Resource Management, Inc.	4.60	2019.07.13	₩ 1,088	₩ 812	₩ (186)	₩ 1,714	₩ 62	₩ -					
Sejong Industry Complex Corp. (*)	-	-	-	-	-	-	-	10					
Hakun 7 Industry Complex Co.,Ltd (*)	-	-	-	-	-	-	-	10					
Beopwon Industry Urban Development Corp. (*)	-	-	-	-	-	-	-	100					
HyangSan 2 Urban Development Corp. (*)	-	-	-	-	-	-	-	5					
Eun Pyeong New Road Corp.	6.90	-	163	-	-	163	11	-					
Pusan New Road Co., Ltd.	-	-	-	-	-	-	-	2,150					
Seoul Munsan Highway Corporation	-	-	-	-	-	-	-	26,047					
Gunsan Green Energy Center Co., Ltd. (*)	-	-	-	-	-	-	-	1,235					
			₩ 1,251	₩ 812	₩ (186)	₩ 1,877	₩ 73	₩ 29,557					

(*) Newly acquired in 2017.

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30. Related party transactions (cont'd)

	2016															
	Annual interest rate (%)	Maturity date	Beginning		Increase		Effects of changes in foreign exchange rates		Change of consolidation range		Ending	Interest income		Equity transaction		
FGS East Asia Technical Resource Management, Inc.	6M LIBOR + 2.5	2017.07.13	₩	-	₩	1,021	₩	67	₩	-	₩	1,088	₩	16	₩	31
GS KOCREF New Stay REIT Co., Ltd.	-	-		-		-		-		-		-		-		18,200
GS Korea for Project Management Company	-	-		-		-		-		-		-		-		19
Eun Pyeong New Road Corp.	6.90	-		163		-		-		-		163		11		-
Uijeongbu Light Rail Transit Co., Ltd.(*)	4.60~6.90	2033.12.31		47,401		16,621		-		(270)		63,752		3,636		-
Gyeongbuk Green Energy(*)	-	-		-		-		-		-		-		-		1,433
Gumi Green Water Co., Ltd.(*)	-	-		-		-		-		-		-		-		1,355
Pusan New Road Co., Ltd.	-	-		-		-		-		-		-		-		4
Seoul Munsan Highway Corporation	-	-		-		-		-		-		-		-		17,517
			₩	47,564	₩	17,642	₩	67	₩	(270)	₩	65,003	₩	3,663	₩	38,559

(*) Excluded from related parties in 2017.

(5) Details of payment guarantees the Group provides to the related parties as at December 31, 2017 and 2016 are as follows (Korean won in millions):

		Type	Beneficiary	Period	2017	2016
Associates Major	Development Co., Ltd.	Payment guarantee	Kyobo Securities Co., Ltd.	2017.06~2018.06	₩ 70,000	₩ 70,000
	GS KOCREF New Stay REIT Co., Ltd.	Payment guarantee	Samsung Life Insurance Co., Ltd.	2016.06~2026.10	193,900	193,900
	Oksan Ochang Highway Corporation	Payment guarantee	Meritz Fire & Marine Insurance CO., Ltd and others	2015.10~2036.07	6,000	6,000
Others	Uijeongbu Light Rail Transit Co., Ltd.(*)	Payment guarantee	Kookmin Bank and others	-	-	2,709
		Payment guarantee	Kyobo Securities Co., Ltd. and others	-	-	12,408

(*) Excluded from related parties in 2017.

(6) Compensation for key management personnel of the Group as at December 31, 2017 and 2016 consists of the following (Korean won in millions):

	2017	2016
Salaries	₩ 26,024	₩ 27,392
Pension benefits	₩ 4,267	₩ 4,925
	₩ 30,291	₩ 32,317

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31. Cash flows

(1) Cash flows from operating activities for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
	₩	₩
Loss for the year	(163,676)	(20,432)
Adjustments for:		
Income tax expense	2,934	41,777
Interest expenses	191,438	126,523
Interest income	(44,235)	(44,948)
Dividend income	(1,561)	(4,596)
Depreciation	39,771	53,775
Amortization	10,109	9,906
Depreciation of investment properties	7,236	4,092
Bad debt expenses	275,468	122,731
Reversal of bad debt expense	(66,599)	(74,079)
Provision for severance benefits	61,462	60,727
Loss on disposal of trade receivables	4,982	3,605
Gain or loss on foreign currency translation, net	118,314	(60,082)
Gain or loss on disposal of property, plant and equipment, net	372	6,192
Impairment loss on property, plant and equipment, net	1,724	-
Gain or loss on disposal of intangible assets, net	16	40
Gain or loss on disposal of investment properties, net	2,186	2,944
Impairment loss on investment properties	22,934	3,502
Gain or loss on valuation of derivatives, net	(57,897)	57,703
Gain or loss on derivatives transactions, net	(93,625)	(4,035)
Gain or loss on valuation of firm commitments, net	153,087	(35,396)
Financial guarantee expenses	44,449	136,257
Reversal of provision for financial guarantee	(95,818)	(137,755)
Construction warranty expenses	94,200	64,952
Reversal of provision for construction warranties	(1,951)	(7,904)
Gain or loss on disposal of other assets	(1,154)	-
Gain or loss on disposal of financial assets, net	577	(492)
Impairment loss on financial assets	13,240	19,734
Gain or loss on retirement of bonds	-	4,128
Loss on overseas operations translation	100	7,561
Gain on overseas operations translation	(25)	(3,231)
Valuation gain or loss on investments in associates	6,088	(3,018)
Others	(2,795)	15,912
	685,027	366,525
Changes in operating assets and liabilities		
Trade and other receivables	(614,565)	(197,766)
Inventories	29,908	(65,330)
Settlement of derivatives transactions	58,559	26,983
Other current assets	(67,322)	(21,205)
Other non-current assets	(5,968)	(7,456)
Trade and other payables	157,550	155,967
Other current liabilities	54,260	53,432
Current provision	(23,483)	(13,920)
Non-current provision	(51,154)	(14,701)
Other non-current liabilities	(103)	2,833
Payment of severance benefits	(82,309)	(106,520)
Overseas operations translation	(27,995)	15,827
	(572,622)	(171,856)
Cash flows from (used in) operations	₩ (51,271)	₩ 174,237

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December 31, 2017 and 2016

31. Cash flows (cont'd)

(2) Details of significant non-cash transactions for the years ended December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
Reclassification of borrowings	₩ 1,051,614	₩ 441,123
Non-cash acquisition of investment properties	381,404	452,537
Reclassification of bonds payable	240,368	200,175
Reclassification of advance payments to inventories	198,625	33,273
Reclassification of construction-in-progress to property, plant and equipment	37,072	2,402
Reclassification of payables	25,299	156,143
Conversion of convertible bonds	19,717	-
Write off of trade receivables and long-term loans	14,201	153,893
Evaluation of convertible bond	13,053	-
Reclassification loans	6,970	96,379
Reclassification of membership guarantee deposits	5,225	24,168

(3) Details of changes in liabilities arising from financing activities for the year ended December 31, 2017 are as follows (Korean won in millions):

	Cash flows from financing activities		Impact on non-cash transactions											
			Beginning	Discount	Current portion	Transfer	Exchange differences	Ending						
Short-term borrowings	₩	1,027,109	₩	502,044	₩	-	₩	211,525	₩	(56,373)	₩	1,684,305		
Current portion of Debentures		212,098		(194,297)		2,153		240,368		(13,053)		(20,362)	226,907	
Current portion of long-term borrowing		458,462		(431,374)		589		1,051,614		(6,733)		(10,558)	1,062,000	
Other current liabilities		181,543		(12,046)		-		(5,225)		-		-	164,272	
Debentures		534,001		(15,275)		6,077		(240,368)		(19,717)		413	265,131	
Long-term borrowings		1,201,809		483,450		472		(1,051,614)		34,583		(1,790)	666,910	
Other non-current liabilities		345,293		(25,650)		-		5,225		-		192	325,060	
	₩	3,960,315	₩	306,852	₩	9,291	₩	-	₩	206,605	₩	(88,478)	₩	4,394,585

32. Financial risk management

The Group's activities are exposed to a variety of financial risks: market risk (including currency risk, fair value interest rate risk, cash flow interest rate risk and price risk), credit risk and liquidity risk. The Group supports to generate stable and continuous business performance and simultaneously focuses on improvement of cost competitiveness by improving financial structure and reducing financial cost.

The Group's overall risk management program focuses to minimize potential adverse effects on the Group's financial risk by monitoring periodical financial risk and rearranging the financial risk management policy.

(1) Financial risk

(a) Market risk

i) Foreign exchange risk

The Group operates internationally and is exposed to foreign exchange risk arising from various currency exposures. The Group's principal monetary assets and liabilities denominated in currencies other than its functional currency as at December 31, 2017 and 2016 are as follows (Korean won in millions / foreign currencies in thousands):

	2017			
	Financial assets		Financial liabilities	
	Foreign currency	Korean won equivalent	Foreign currency	Korean won equivalent
USD	1,055,136	1,130,472	1,321,522	1,415,879
EUR	153,622	196,521	85,665	109,587
KWD	10,570	37,503	153	543
JPY	-	-	936,329	8,887
SGD	-	-	32	25

	2016			
	Financial assets		Financial liabilities	
	Foreign currency	Korean won equivalent	Foreign currency	Korean won equivalent
USD	1,099,050	1,328,203	1,056,326	1,276,569
EUR	147,867	187,436	62,275	78,939
KWD	1,461	5,767	15,028	59,342
JPY	274,285	2,844	2,385,653	24,735

As at December 31, 2017 and 2016, if the Group's functional currency had fluctuated by 5% against foreign currencies with all other variables held constant, profit before income tax would have been affected as follows (Korean won in millions):

	2017		2016	
	5% increase	5% decrease	5% increase	5% decrease
USD	₩ (14,270)	₩ 14,270	₩ 2,582	₩ (2,582)
EUR	4,347	(4,347)	5,425	(5,425)
KWD	1,848	(1,848)	(2,679)	2,679
JPY	(444)	444	(1,095)	1,095
SGD	(1)	1	-	-

32. Financial risk management (cont'd)

ii) Interest rate risk

The Group's interest rate risk arises from variable-rate borrowings, and related interest expense is exposed to interest rate risk. As at December 31, 2017, the financial liabilities that are exposed to interest rate risk are the variable-rate borrowings issued at variable rates amounting to ₩1,112,368 million (2016: ₩920,750 million).

As at December 31, 2017 and 2016, if interest rates had fluctuated by 100bp with all other variables held constant, interest expenses would have been affected as follows (Korean won in millions):

	2017		2016	
	100bp increase	100bp decrease	100bp increase	100bp decrease
Interest expenses	₩ 4,565	₩ (4,565)	₩ 5,832	₩ (5,832)

(b) Credit risk

Credit risk occurs in the ordinary course of business and investment activities of the Group when the customers or counterparties could not comply with the obligations of the contract. To manage the credit risk, the Group evaluates the credit of customers periodically, considering past experience and other factors and sets individual credit limit considering the credit quality of customer.

Credit risk arises from cash equivalents, derivative financial instruments and deposits with banks and financial institutions, as well as credit risk to primary customers, including outstanding receivables and firm committed transactions.

The Group's credit risk is managed in accordance with the Group's credit policy with the purpose of minimizing possible loss through efficient credit risk management, support for rapid decision making and implementation of safety measures on the Group's accounts receivable.

Details of maximum exposure to credit risk as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
Cash equivalents (excluding cash on hands)	₩ 2,435,918	₩ 2,349,204
Trade and other receivables	4,763,280	4,996,916
Short-term financial assets	295,943	353,076
Long-term financial assets (*1)	203,771	192,302
Long-term trade and other receivables	963,196	897,495
Non-current provisions (*2)	4,963,105	5,772,685

(*1) Excludes equity securities.

(*2) The maximum exposure to credit risk is the principal amount of contractual cash flow from the PF, redevelopment projects, SOC, overseas operations and others that are subject to provision of non-current liabilities.

32. Financial risk management (cont'd)

(c) Liquidity risk

The Group's liquidity risk arises when it lacks sufficient cash to fulfill payment obligations from financial liabilities or to meet operational needs.

The Group manages its liquidity through monitoring forecasts of the Group's liquidity requirements to ensure it has sufficient cash to meet operational needs.

Major commitments related to financing arrangements with domestic financial institutions as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	Financial institutions	2017		2016	
		Limited amount	Used amount	Limited amount	Used amount
Short-term and long-term financial liability (*)	Korea Eximbank and others	₩ 5,384,915	₩ 4,017,805	₩ 4,984,818	₩ 3,618,129

(*) Excludes firm commitment liability.

The table below summarizes the maturity profile of the Group's financial assets based on contractual undiscounted payments (Korean won in millions):

	2017					
	Book value	Cash flow on contract	Residual maturity			
			Less than 1 year	Between 1 year and 2 years	Between 2 years and 3 years	Over 3 years
Trade and other payables	₩ 2,473,849	₩ 2,473,849	₩ 2,473,849	₩ -	₩ -	₩ -
Long-term trade and other payables	8,588	9,106	-	9,106	-	-
Short-term and long-term financial liability (*1)	4,017,805	4,507,647	2,882,948	914,306	140,257	570,136
Non-current provisions (*2)	227,246	4,963,104	2,186,367	1,137,800	1,133,400	505,537
	<u>₩ 6,727,488</u>	<u>₩ 11,953,706</u>	<u>₩ 7,543,164</u>	<u>₩ 2,061,212</u>	<u>₩ 1,273,657</u>	<u>₩ 1,075,673</u>

(*1) Excludes firm commitment liability and includes interest income.

(*2) The cash flows on contract is the principal amount from the PF, redevelopment projects, SOC, overseas operations and others that are recognized as non-current liabilities.

32. Financial risk management (cont'd)

	2016					
	Book value	Cash flow on contract	Residual maturity			
			Less than 1 year	Between 1 year and 2 years	Between 2 years and 3 years	Over 3 years
Trade and other payables	₩ 2,387,755	₩ 2,387,755	₩ 2,387,755	₩ -	₩ -	₩ -
Long-term trade and other payables	34,487	35,451	-	26,345	9,106	-
Short-term and long-term financial liability (*1)	3,618,129	3,929,785	1,701,768	920,203	667,200	640,614
Non-current provisions (*2)	291,707	5,772,685	2,338,525	1,148,830	1,390,200	895,130
	<u>₩ 6,332,078</u>	<u>₩ 12,125,676</u>	<u>₩ 6,428,048</u>	<u>₩ 2,095,378</u>	<u>₩ 2,066,506</u>	<u>₩ 1,535,744</u>

(*1) Excludes firm commitment liability and includes interest income.

(*2) The cash flows on contract is the principal amount from the PF, redevelopment projects, SOC, overseas operations and others that are recognized as non-current liabilities.

(2) Capital risk management

The Group's capital management objectives are to safeguard the Group's ability to continue as a going concern in order to provide returns to shareholders and benefits to other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

Gearing ratios as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016
Total liabilities (A)	₩ 10,456,899	₩ 10,023,424
Total equity (B)	3,239,715	3,353,165
Deposits (C)	2,435,918	2,349,204
Borrowings (D)	3,905,253	3,433,479
Debt-to-equity ratio (A/B)	323%	299%
Net borrowings ratio ((D-C)/B)	45%	32%

33. Fair value

For the year ended December 31, 2017, there are no significant changes in the business environment and economic environment that affect the fair value of financial assets and financial liabilities of the Group.

(1) Fair value of financial instruments by category

Carrying amount and fair value of financial instruments by category as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017		2016	
	Book value	Fair value	Book value	Fair value
Financial assets				
Cash and cash equivalents	₩ 2,442,298	₩ 2,442,298	₩ 2,356,329	₩ 2,356,329
Trade and other receivables (*1)	3,242,344	3,242,344	2,942,795	2,942,795
Short-term financial assets	295,943	295,943	353,077	353,077
Long-term trade and other receivables	963,196	963,196	897,495	897,495
Long-term financial assets	449,892	449,892	413,558	413,558
	₩ 7,393,673	₩ 7,393,673	₩ 6,963,254	₩ 6,963,254
Financial liabilities				
Trade and other payables	₩ 2,473,849	₩ 2,473,849	₩ 2,387,755	₩ 2,387,755
Short-term financial liabilities	3,061,155	3,061,155	1,823,610	1,823,610
Other current liabilities (*2)	222,425	222,425	242,833	242,833
Long-term trade and other payables	8,588	8,588	34,487	34,487
Long-term financial liabilities	1,018,028	1,018,028	1,819,552	1,819,552
Other non-current liabilities (*3)	300,613	300,613	321,091	321,091
Non-current provisions (*4)	227,246	227,246	291,707	291,707
	₩ 7,311,904	₩ 7,311,904	₩ 6,921,035	₩ 6,921,035

(*1) Excludes dues from customers related to construction.

(*2) Consists of accrued expenses, accrued dividends and current membership guarantee deposits.

(*3) Consists of security deposits and non-current membership guarantee deposits.

(*4) Represents financial guarantee provision liabilities.

(2) Financial instruments measured at cost

Certain investments in non-marketable equity securities include entities at their initial phase of business operations and the carrying arrangements have been measured at cost as the variability of estimated cash flows is significant, which the probabilities of the various estimates cannot be reasonably assessed and accordingly the fair value of the underlying assets cannot be reliably assessed are measured at cost.

(3) Fair value hierarchy

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

- Level 1: Quoted (unadjusted) market prices in active markets for identical assets or liabilities
- Level 2: Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable
- Level 3: Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

Valuation methods used to measure the fair value of financial instruments include the following:

- Disclosed market price of similar product or dealer price
- Fair value of derivatives is measured by discounting to present value using forward exchange rate as at December 31, 2017 and 2016.
- Cash flow discount method is used for others.

33. Fair value (cont'd)

(4) Fair value hierarchy classifications of the financial assets and financial liabilities that are measured at fair value

Fair value hierarchy classifications of the financial assets and financial liabilities that are measured at fair value as at December 31, 2017 and 2016 are as follows (Korean won in millions):

2017	Level 1	Level 2	Level 3	Total
Financial assets				
Derivatives assets	₩ -	₩ 96,466	₩ -	₩ 96,466
Financial liabilities				
Derivatives liabilities	₩ -	₩ 90,415	₩ -	₩ 90,415
Debentures and borrowings	-	3,905,253	-	3,905,253
	₩ -	₩ 3,995,668	₩ -	₩ 3,995,668
2016	Level 1	Level 2	Level 3	Total
Financial assets				
Derivatives assets	₩ -	₩ 177,396	₩ -	₩ 177,396
Financial liabilities				
Derivatives liabilities	₩ -	₩ 129,254	₩ -	₩ 129,254
Debentures and borrowings	-	3,433,479	-	3,433,479
	₩ -	₩ 3,562,733	₩ -	₩ 3,562,733

Details of valuation methods and input variables of financial instruments classified as level 2 of the fair value hierarchy as at December 31, 2017 and 2016 are as follows (Korean won in millions):

	2017	2016	Valuation methods	Total
Derivative assets	₩ 96,466	₩ 177,396		
Derivative liabilities	90,415	129,254	DCF and others	CDI and others
Debentures and borrowings	3,905,253	3,433,479		Discount rate considering credit risk

Carrying values are deemed the approximation of fair value and thus fair value hierarchy of items disclosed in carrying value is not presented.

(5) Transfers between levels of each fair value hierarchy

There are no transfers between levels of each fair value hierarchy for the year ended December 31, 2017.

34. Service concession arrangements

GS Inima Environment S.A. has constructed, operated and maintained Service Concession Arrangements through its subsidiaries and details of significant business information are as follows (Korean won in millions):

Subsidiaries	Principal business activity	Countries	Start date	Expiry date	Amount	Classification
Ambient Servicos Ambientais de Ribeirao Preto, S.A.	Sewage purifying plant , DBOOT	Brazil	September 1995	June 2023	₩ 67,509	Financial assets
Araucaria Saneamento, S.A. (Campos do Jordao)	Sewage purifying plant , DBL	Brazil	April 2010	April 2033	36,216	Financial assets
Saneamento do Vale do Pariba, S.A.	Sewage purifying plant , DBL	Brazil	March 2011	June 2034	25,342	Financial assets
Servicos de Saneamento de Mogi Mirim, S.A.	Sewage purifying plant , DBOOT	Brazil	May 2008	September 2038	22,140	Financial assets
Sociedad de Economia Mixta Aguas de Soria, S.L.	Water supply and drainage combine management TOT	Spain	January 2014	December 2038	14,105	Intangible assets